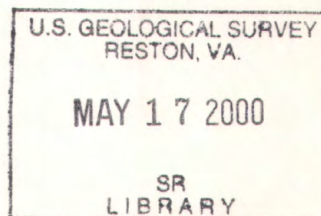
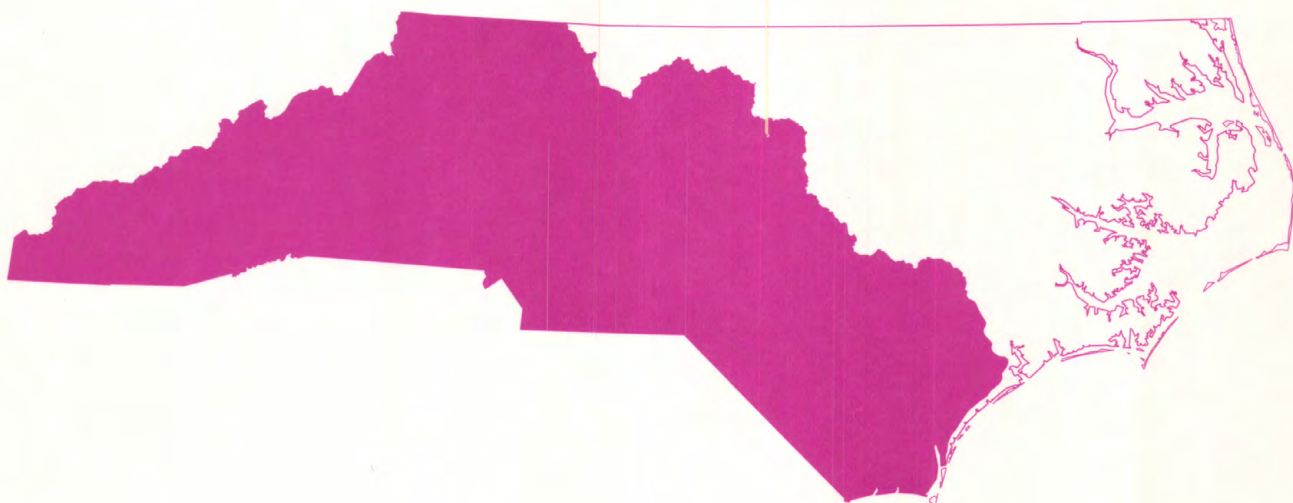


# Water Resources Data North Carolina Water Year 1999

**Volume 1B. Surface-Water Records**

**Water-data Report NC-99-1B**



U.S. Department of the Interior  
U.S. Geological Survey



Prepared in cooperation with the North Carolina Department of Environment and Natural Resources, and with other State, municipal, and Federal agencies.

# CALENDAR FOR WATER YEAR 1999

1998

## OCTOBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

## NOVEMBER

S	M	T	W	T	F	S
1	2	4	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

## DECEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	15	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

1999

## JANUARY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

## FEBRUARY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

## MARCH

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

## APRIL

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

## MAY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

## JUNE

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

## JULY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

## AUGUST

S	M	T	W	T	F	S
1	2	3	4	5	6	7
9	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

## SEPTEMBER

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		



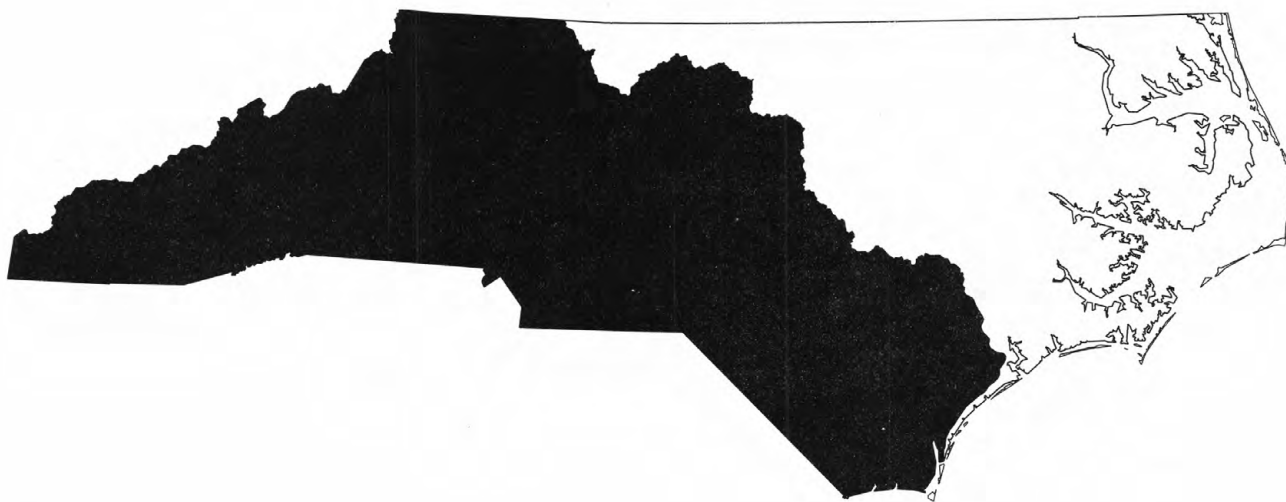
U.S. Department of the Interior  
U.S. Geological Survey

# Water Resources Data North Carolina Water Year 1999

## Volume 1B. Surface-Water Records

By B.C. Ragland, R.G. Barker, and J.B. Robinson

Water-Data Report NC-99-1B



Prepared in cooperation with the North Carolina Department of Environment and Natural Resources, and with other State, municipal, and Federal agencies



U. S. DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

GEOLOGICAL SURVEY

CHARLES G. GROAT, Director

For information on the water program in North Carolina write to:

District Chief  
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Raleigh, NC 27607

2000



## PREFACE

This volume of the annual hydrologic-data report of North Carolina is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow and quality of water provide hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for North Carolina are contained in two volumes.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

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Pamilee L. Breton edited much of the text, tables and graphs of this report. Pamilee L. Breton, Bobby C. Ragland, assembled the report.

This report was prepared in cooperation with the State of North Carolina, other agencies, and under the general supervision of Gerald L. Ryan, District Chief; and Wanda C. Meeks, Regional Hydrologist, Southeastern Region.

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CRN40 (p) .....	353003080591745	405
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CRN43 (p) .....	352440080505045	407
CRN45 (p) .....	350903081004545	408
CRN47 (p) .....	351229080460245	409
CRN48 (p) .....	350637080475645	410
CRN49 (p) .....	352224080500345	411
CRN50 (p) .....	351503080510145	412
Lakes and reservoirs in South Atlantic slope basin .....		413-421

## OHIO RIVER BASIN

## KANAWHA RIVER BASIN

South Fork New River (head of Kanawha River) near Jefferson (d) .....	03161000	422-423
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## TENNESSEE RIVER BASIN

French Broad River (head of Tennessee River) at Rosman (d) .....	03439000	424-425
Catheys Creek near Brevard (d) .....	03440000	426-427
Davidson River near Brevard (d) .....	03441000	428-429
French Broad River at Blantyre (d) .....	03443000	430-431
French Broad River:		
Mills River near Mills River (d) .....	03446000	432-433
Swannanoa River:		
North Fork Swannanoa River near Walkertown (d) .....	0344894205	434-435
Mills River:		
Beetree Creek near Swannanoa (d) .....	03450000	436-437
Swannanoa River at Biltmore (d) .....	03451000	438-439

## OHIO RIVER BASIN--Continued

## TENNESSEE RIVER BASIN--Continued

French Broad River at Asheville (d,p) .....	03451500	440-442
Ivy River near Marshall (d) .....	03453000	444-445
French Broad River at Marshall (d) .....	03453500	446-447
West Fork Pigeon River above Lake Logan near Hazelwood (d) .....	03455500	448-449
Lake Logan at Dam near Hazelwood (g,p) .....	03455773	450-452
West Fork Pigeon River near Retreat (d) .....	0345577330	454-455
West Fork Pigeon River at Bethel (d) .....	03456100	456-457
East Fork Pigeon River near Canton (d) .....	03456500	458-459
Pigeon River near Canton (d) .....	03456991	460-461
Pigeon River near Hepco (d) .....	03459500	462-463
Cataloochee Creek near Cataloochee (d,c) .....	03460000	464-466
Pigeon River below Power Plant near Waterville (d,t,o) .....	03460795	468-473
North Toe River (head of Nolichucky River):		
South Toe River near Celo (d) .....	03463300	474-475
South Fork Holston River:		
Watauga River near Sugar Grove (d) .....	03479000	476-477
Tennessee River:		
Little Tennessee River near Prentiss (d) .....	03500000	478-479
Cartoogechaye Creek near Franklin (d) .....	03500240	480-481
Little Tennessee River at Needmore (d,p) .....	03503000	482-484
Nantahala River near Rainbow Springs (d) .....	03504000	486-487
Tuckasegee River:		
Oconaluftee River at Birdtown (d) .....	03512000	488-489
Tuckasegee River at Bryson City (d) .....	03513000	490-491
Hiwassee River above Murphy (d) .....	03548500	492-493
Valley River at Tomotla (d) .....	03550000	494-495
Lakes and reservoirs in Ohio River basin .....		496-500



## WATER-RESOURCES DATA FOR NORTH CAROLINA, 1999

## DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

The following continuous-record streamflow stations in North Carolina have been discontinued or converted to partial-record stations. Daily streamflow or stage records were collected and published for the period of record shown for each station.

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Chowan River Basin			
02053400	Ahoskie Creek near Rich Square, NC	3.70	1964-73
02053450	Ahoskie Creek at Mintons Store, NC	24.0	1964-73
02053510	Ahoskie Creek tributary at Poortown, NC	2.60	1963-73
Roanoke River Basin			
02068000	Dan River near Asbury, NC	71.4	1924-26
02069000	Dan River at Pine Hall, NC	501	1924-26
02071500	Dan River at Leaksville, NC	1,150	1986-91
02074218	Dan River near Mayfield, NC	1,778	1929-49
02075160	Moon Creek near Yanceyville, NC	29.90	1976-84
02077230	South Hyco Creek near Hesters Store, NC	29.9	1961-74
02077240	Double Creek near Roseville, NC	7.47	1988-89
02077250	South Hyco Creek near Roseville, NC	56.5	1964-67
02077300	Hyco River at McGehees Mill, NC	191	1964-75
02077660	Mayo Creek near Woodsdale, NC	52.7	1977-82
Pamlico River Basin			
02081800	Cedar Creek near Louisburg, NC	47.8	1966-80
02082000	Tar River near Nashville, NC	701	1956-75
02082500	Sapony Creek near Nashville, NC	64.8	1928-71
0208273070	Devils Cradle Creek at NC 39 near Kearney, NC	2.89	1950-70
02082731	Devils Cradle Creek nr Alert, NC	13.4	1984-85
02083833	Pete Mitchell Swamp at Sr1409 nr Penny Hill, NC	11.0	1993-97
02084070	Green Mill Run at Arlington Boulevard at Greenville, NC	9.10	1993-97
02084164	Juniper Branch near Simpson, NC	7.5	1980-85
0208423100	Flat Swamp at SR 1157 near Robersonville, NC	21.3	1975-86
02084317	Black Swamp near Batts Crossroads, NC	1.02	1986-88
02084500	Herring Run near Washington, NC	9.59	1982
02084556	North Lake Canal above Pungo Lake near Wenona, NC	.29	1950-80
02084558	Albemarle Canal near Swindell, NC	68.0	1976-80
0208463120	Outflow Ditch from Jennett Sedge at Buxton, NC	Indeterminate	1977-81
Neuse River Basin			
02084903	Sevenmile Creek tributary at SR 1120 near Buckhorn, NC	1.34	1994-95
02084904	Sevenmile Creek tributary at I-85 near Miles, NC	.004	1981-82
02084905	Sevenmile Creek tributary at SR 1144 near Miles, NC	1.57	1981-82
02084908	Sevenmile Creek tributary at I-85 near Efland, NC	.29	1981-82
02085220	Little River near Orange Factory, NC	80.4	1962-87
02086000	Dial Creek near Bahama, NC	4.76	1925-71
0208650112	Flat River tributary near Willardsville, NC	1.14	1989-91
02086624	Knap of Reeds Creek near Butner, NC	43.0	1988-90
02086849	Ellerbee Creek nr Gorman, NC	21.9	1982-95
02087000	Neuse River near Northside, NC	535	1982-89
0208700780	Little Lick Creek above Secondary Road 1814 near Oak Grove, NC	10.1	1991-95
0208705200	Smith Creek at Grissom, NC	6.2	1927-80
			1982-95
			1984-85

## DISCONTINUED SURFACE-WATER DISCHARGE STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Neuse River Basin--Continued			
0208721055	Perry Creek at SR 2012 near Millbrook, NC	2.43	1986-89
0208732810	Marsh Creek at SR 2030 at Millbrook, NC	1.44	1986-89
02087570	Neuse River at Smithfield, NC	1,206	1959-90
02088315	Beaverdam Creek near Grantham, NC	5.01	1978-82
02088470	Little River near Kenly, NC	191	1964-89
02088682	Big Ditch at Retha Street at Goldsboro, NC	2.17	1980-84
02089216	Daileys Creek near Liddell, NC	3.80	1978-81
02089222	Bear Creek near Parkstown, NC	4.27	1978-82
02090500	Contentnea Creek near Wilson, NC	236	1930-54
02090512	Hominy Swamp at Phillips Street at Wilson, NC	8.20	1978-85
0209096970	Moccasin Run near Patetown, NC	1.89	1988-98
02090625	Turner Swamp near Eureka, NC	2.1	1968-87
02091700	Little Contentnea Creek near Farmville, NC	93.3	1956-87
02091960	Creeping Swamp near Calico, NC	9.80	1971-77
02091970	Creeping Swamp near Vanceboro, NC	27.0	1971-85
02092000	Swift Creek near Vanceboro, NC	182	1950-89
02092020	Palmetto Swamp near Vanceboro, NC	24.0	1971-76
0209257120	W. P. Brice Creek below SR 1101 near Riverdale, NC	11.2	1986-91
Hewletts Creek Basin			
02093229	Hewletts Creek at SR 102 near Wilmington, NC	1.98	1977-90
Cape Fear River Basin			
0209330990	Brooks Lake tributary near Browns Summit, NC	.06	1985-90
0209331325	Candy Creek at SR 2700 near Monticello, NC	1.10	1985-90
02093500	Haw River near Benaja, NC	168	1928-71
02094000	Horsepen Creek at Battle Ground, NC	15.9	1925-31
			1934-59
02095000	South Buffalo Creek near Greensboro, NC	33.6	1928-58
0209509100	South Buffalo Creek at SR 2821 at McLeansville, NC	43.5	1986-88
02095500	North Buffalo Creek near Greensboro, NC	37.1	1929-90
0209555450	Buffalo Creek at SR 2719 near Osceola, NC	97.4	1986-87
0209560800	Reedy Fork Creek at NC 61 near Osceola, NC	243	1986-88
02096000	Stony Creek near Burlington, NC	44.2	1952-59
02096700	Big Alamance Creek near Elon College, NC	116	1957-80
02096842	Cane Creek 0.1 mile above SR 1126 near Buckhorn, NC	.64	1979-81
02096850	Cane Creek near Teer, NC	33.7	1959-73
02097000	Haw River near Pittsboro, NC	1,310	1928-73
02097243	Third Fork Creek at Durham, NC	1.68	1968-73
02097500	Morgan Creek near Chapel Hill, NC	30.1	1923-32
0209782150	New Hope River tributary at SR 1716 near Farrington, NC	2.05	1986-88
02098000	New Hope River near Pittsboro, NC	285	1949-73
02098500	West Fork Deep River near High Point, NC	32.1	1923-26
			1928-58
02100000	Muddy Creek near Archdale, NC	16.7	1934-41
02101000	Bear Creek at Robbins, NC	134	1939-71
0210106600	Deep River nr Glendon, NC	859	1993-96
0210108450	Suck Creek tributary near Zion Grove, NC	.67	1986-88
02103000	Little River at Manchester, NC	348	1938-50
02103500	Little River at Linden, NC	459	1928-71
02104000	Cape Fear River at Fayetteville, NC	4,395	1889-1903
			1928-40
02104387	Buckhead Creek near Owens, NC	2.62	1976-80

## DISCONTINUED SURFACE-WATER DISCHARGE STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Cape Fear River Basin--Continued			
02104500	Rockfish Creek near Hope Mills, NC	292	1929-31 1939-54
02105524	Ellis Creek tributary at SR 1325 near White Oak, NC	1.81	1979-81
02106000	Little Coharie Creek near Roseboro, NC	92.8	1950-92
02106681	Black River near Dunn, NC	48.3	1976-77
02107000	South River near Parkersburg, NC	379	1951-86
02107500	Colly Creek near Kelly, NC	103	1950-71
02107600	Northeast Cape Fear River near Seven Springs, NC	47.5	1958-75
0210782005	Nahunga Creek at SR 1301 near Warsaw, NC	8.30	1983-90
0210783273	Herrings Marsh Run Tributary at Red Hill, NC	1.14	1991-97
0210789100	Grove Creek at Kenansville, NC	22.6	1983-90
0210797940	Limestone Creek at NC 24 near Hadley, NC	1.61	1986-88
02108500	Rockfish Creek near Wallace, NC	69.3	1955-81
02108548	Little Rockfish Creek at Wallace, NC	7.8	1976-92
Pee Dee River Basin			
02112500	Fisher River near Dobson, NC	109	1920-32
02113500	Yadkin River at Siloam, NC	1,226	1976-87
02115500	Forbush Creek near Yadkinville, NC	22.1	1940-71
02115750	Muddy Creek near Lewisville, NC	82.8	1964-70
02115800	Silas Creek near Clemmons, NC	11.8	1964-70
02115842	Tar Branch tributary at First Street at Winston-Salem, NC	.04	1979-82
02115850	Salem Creek at Winston-Salem, NC	51.3	1964-70
02115854	Salem Creek tributary at Hawthorne Road, Winston-Salem, NC	.50	1979-82
02115856	Salem Creek near Atwood, NC	65.6	1971-82
02115860	Muddy Creek near Muddy Creek, NC	186	1964-79 1988-91
02115900	South Fork Muddy Creek near Clemmons, NC	42.9	1964-79 1988-91
02117030	Humpy Creek near Fork, NC	1.05	1968-83
02117500	Rocky Creek at Turnersburg, NC	101	1940-71
02119000	South Yadkin River at Cooleemee, NC	569	1928-65
02119400	Third Creek near Stony Point, NC	4.84	1956-69
02120500	Third Creek at Cleveland, NC	87.4	1940-71
02121000	Yadkin River near Salisbury, NC	3,450	1895-1927
02121180	North Potts Creek at Linwood, NC	9.62	1980-90
02121493	Leonard Creek near Bethesda, NC	5.16	1978-81
02122500	Yadkin River at High Rock, NC	4,000	1919-27
02123000	Uwharrie River near Trinity, NC	11.3	1934-41
02123500	Uwharrie River near Eldorado, NC	342	1938-71
02124471	Dutch Buffalo Creek at NC 49 near Mount Pleasant, NC	45.1	1985-87
02125500	Richardson Creek near Marshville, NC	170	1940-44
02125557	Gourdvine Creek at SR 1715 near Olive Branch, NC	8.75	1978-82
02125696	Lane Creek at SR 2115 near Trinity, NC	3.98	1969-79
02125699	Wicker Branch at SR 1940 near Trinity, NC	5.83	1978-82
02125816	Lane's Creek near Marshville, NC	87.8	1985-87
02126500	Little Brown Creek near Polkton, NC	13.5	1935-41
02127000	Brown Creek near Polkton, NC	110	1937-71
02127500	Pee Dee River near Ansonville, NC	6,330	1938-42
02129500	North Fork Jones Creek near Wadesboro, NC	9.43	1935-41
0213228795	Jordan Creek near Silver Hill, NC	0.36	1983-93
Santee River Basin			
02137000	Mill Creek at Old Fort, NC	20.7	1960-75
02138000	Catawba River near Marion, NC	172	1941-81

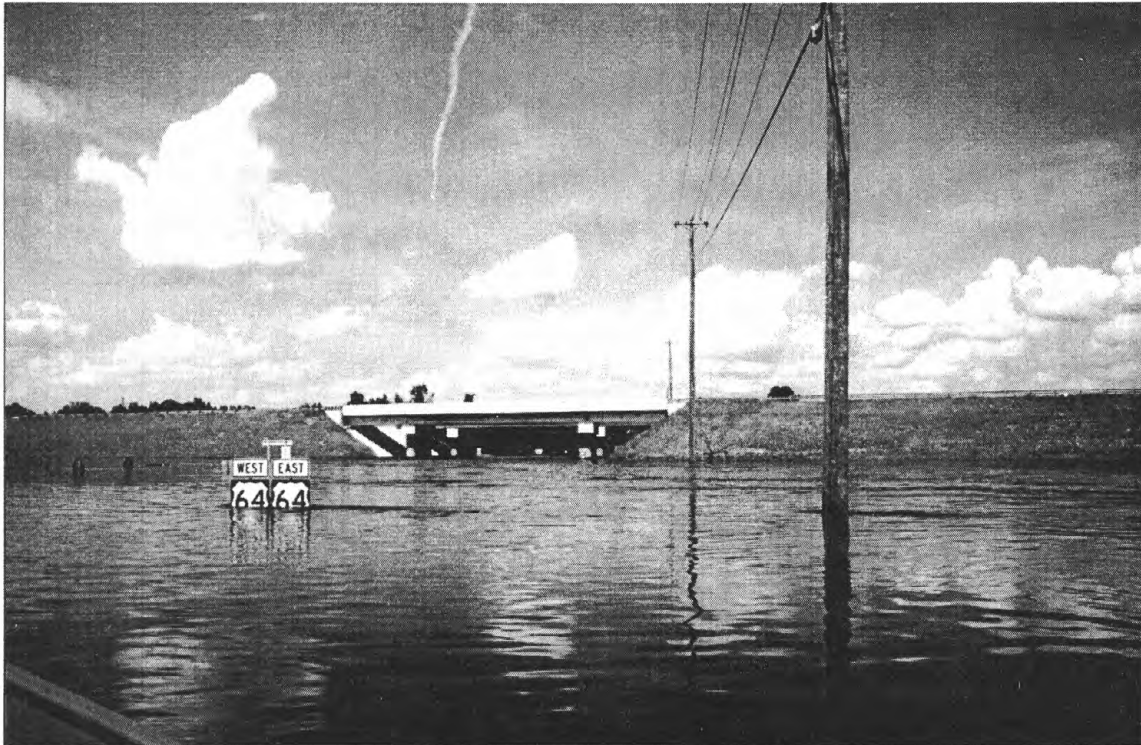
## DISCONTINUED SURFACE-WATER DISCHARGE STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Santee River Basin--Continued			
0213875850	High Shoals Creek near Dysartsville, NC	2.38	1986-88
02139200	Bailey Fork near Morganton, NC	7.86	1966-70
02139650	East Prong near Morganton, NC	8.94	1966-74
0214042720	North Harper Creek near Kawana, NC	1.25	1986-88
02141150	Lower Creek at Mulberry Street at Lenoir, NC	31.8	1966-78
02141245	Lower Creek at SR1501 near Morganton, NC	89.5	1993-94
0214183365	Upper Little River at SR1740 near Petra Mills, NC	33.9	1993-94
0214192500	Middle Little River at Moretz Dam near Bethlehem, NC	46.1	1993-94
02142500	Catawba River at Catawba, NC	1,535	1896-99
			1935-62
02142600	Mountain Creek near Terrell, NC	42.4	1957-62
0214620760	Irwin Creek at Starita Road at Charlotte, NC	4.40	1989-94
02146450	Briar Creek at Sharon Road, Charlotte, NC	18.5	1962-73
02146500	Little Sugar Creek near Charlotte, NC	41.0	1924-78
02146579	Irvin's Creek at Lebanon Road near Mint Hill, NC	5.27	1983-90
0214677974	Steele Creek above Secondary Road 1344 near Shopton, NC	3.57	1990-98
0214678230	Walker Branch at SR1123 near Pine Harbor, NC	4.52	1991-94
02148500	Broad River near Chimney Rock, NC	97.0	1927-58
02149702	Green River near Saluda, NC	104	1972-75
02150000	Green River near Mill Spring, NC	174	1940-54
02151000	Second Broad River at Cliffside, NC	220	1925-97
02152000	Sandy Run Creek near Boiling Springs, NC	67.0	1925-28
02152500	First Broad River near Lawndale, NC	200	1940-71
02152610	Sugar Branch near Boiling Springs, NC	1.42	1968-87
Kanawha River Basin			
03161500	South Fork New River near Crumpler, NC	325	1908-16
03162500	North Fork New River at Crumpler, NC	277	1908-16
			1928-58
Tennessee River Basin			
03439500	French Broad at Calvert, NC	103	1924-55
03440500	Davidson River near Davidson River, NC	31.0	1904-09
03441440	Little River above High Falls near Cedar Mountain, NC	26.8	1963-90
03441500	Little River near Penrose, NC	41.4	1942-55
03442000	Crab Creek near Penrose, NC	10.9	1942-55
03444000	Boylston Creek near Horseshoe, NC	14.8	1942-55
03444500	South Fork Mills River at the Pink Beds, NC	9.99	1926-49
			1965-73
03445000	South Fork Mills River near Sitton, NC	40.0	1904-09
			1925-26
03445500	North Fork Mills River at Pinkbed, NC	23.1	1904-09
03446500	Clear Creek near Hendersonville, NC	42.2	1945-55
03447000	Mud Creek at Naples, NC	109	1938-55
03447500	Cane Creek at Fletcher, NC	63.1	1942-58
03448000	French Broad River at Bent Creek, NC	676	1933-86
03448500	Hominy Creek at Candler, NC	79.8	1942-77
03448960	North Fork Swannanoa River below Burnett Reservoir near Black Mountain, NC	22.1	1976-77
03449000	North Fork Swannanoa River near Black Mountain, NC	23.8	1926-58
03449500	Swannanoa River at Swannanoa, NC	58.8	1907-09
			1926-31
0345092550	Ross Creek at Beaucatcher Road at Asheville, NC	2.46	1986-89
0345112600	Nasty Branch at Asheville, NC	1.19	1986-89
03451510	Reed Creek above Barnard Avenue at Asheville, NC	2.13	1986-89
03452000	Sandymush Creek near Alexander, NC	79.5	1942-55

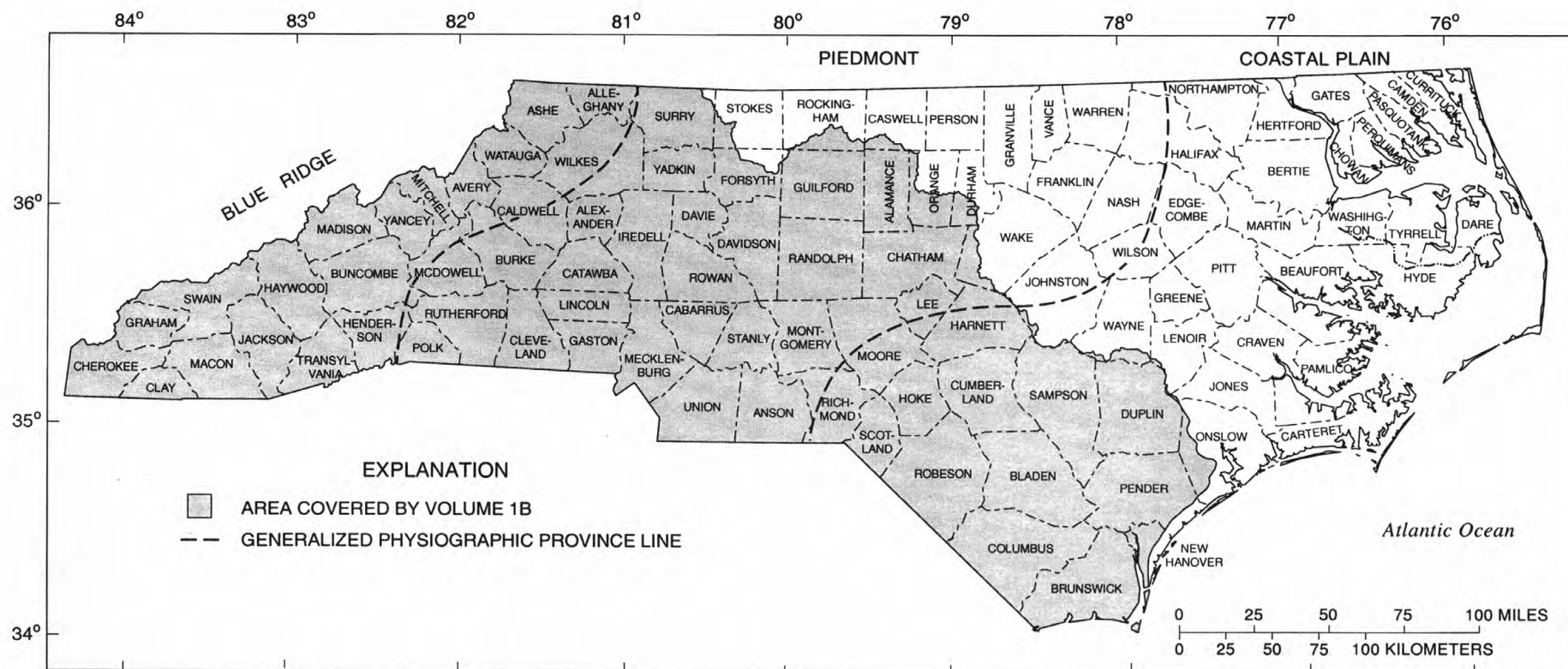


## DISCONTINUED SURFACE-WATER DISCHARGE STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Tennessee River Basin--Continued			
03452001	Sandymush Creek 1.1 mile above mouth near Alexander, NC	79.5	1975-77
03454000	Big Laurel Creek near Stackhouse, NC	126	1934-71
03454500	French Broad River at Hot Springs, NC	1,567	1934-49
03456000	West Fork Pigeon River below Lake Logan near Waynesville, NC	55.3	1954-80
03457000	Pigeon River at Canton, NC	133	1907-09 1928-83
03457500	Allen Creek near Hazelwood, NC	14.4	1949-72
03458500	Pigeon River near Crabtree, NC	243	1920-29
03459000	Jonathan Creek near Cove Creek, NC	65.3	1930-72
03460500	Pigeon River near Mount Sterling, NC	460	1924-30
03462000	North Toe River at Altapass, NC	104	1938-57
03462500	North Toe River above Spruce Pine, NC	111	1934-38
03463500	South Toe River at Newdale, NC	60.8	1934-52
03464000	Cane River near Sioux, NC	157	1934-71
03464500	Nolichucky River at Poplar, NC	608	1925-55
03480500	Elk River near Banner Elk, NC	17.8	1934-40
03481000	Elk River near Elk Park, NC	42.0	1934-55
03500500	Cullasaja River at Highlands, NC	14.9	1931-71
03501000	Cullasaja River at Cullasaja, NC	86.5	1907-09 1921-71
03501500	Little Tennessee River at Franklin, NC	295	1909-10 1921-25
03502000	Little Tennessee River at Iotla, NC	323	1929-45
03502500	Little Tennessee River at Etna, NC	374	1926-29
03503500	Little Tennessee River at Almond, NC	451	1912-17
03505500	Nantahala River at Nantahala, NC	144	1942-81
03506500	Nantahala River at Almond, NC	174	1912-17 1920-43
03507000	Little Tennessee River at Judson, NC	664	1912-44
03508000	Tuckasegee River at Tuckasegee, NC	143	1934-76
03508136	Caney Fork near Cowarts, NC	32.0	1975-76
03508910	Scott Creek at Willets-Ochre Hill, NC	22.4	1993-95
03509000	Scott Creek above Sylva, NC	51.0	1941-75 1993-95
03509500	Scott Creek at Sylva, NC	55.0	1928-41
03510500	Tuckasegee River at Dillsboro, NC	347	1933-81
03511000	Oconaluftee River at Cherokee, NC	131	1921-49
03513500	Noland Creek near Bryson City, NC	13.8	1935-71
03514000	Hazel Creek at Proctor, NC	44.4	1942-52
03515000	Little Tennessee River at Fontana Dam, NC	1,571	1938-55
03516000	Snowbird Creek near Robbinsville, NC	42.0	1942-52
03517000	Cheoah River at Johnson, NC	177	1912-18 1920-26
03517500	Cheoah River at Tapoco, NC	215	1924-27
03546000	Shooting Creek near Hayesville, NC	37.6	1922-24 1942-45 1946-55
03547000	Hiwassee River below Chatuge Dam near Hayesville, NC	190	1942-74
03548000	Hiwassee River below Hayesville, NC	252	1934-45
03554000	Nottely River near Ranger, NC	272	1901-05 1914-17 1919-29 1932-45
03555000	Hiwassee River at Hiwassee Dam, NC	968	1934-43



Highway 33 completely covered by the Tar River at the U.S. highway 64 interchange near Tarboro, N.C., September 1999.



COUNTIES AND PHYSIOGRAPHIC PROVINCES OF NORTH CAROLINA

## INTRODUCTION

Water-resources data for the 1999 water year for North Carolina consist of records of stage, discharge, water-quality for streams; stage and contents for lakes and reservoirs; precipitation; and ground water levels and water-quality of ground-water. This volume contains discharge records for 131 gaging stations; stage and contents for 45 lakes and reservoirs; stage for 5 gaging stations; water quality for 22 gaging stations; stage and contents for 56 lakes and reservoirs; continuous daily tide stage at 3 sites; and continuous precipitation at 63 sites. Additional water data were collected at 55 sites not involved in the systematic data-collection program, and are published as miscellaneous measurements in this report. The collection of water-resources data in North Carolina is a part of the National Water-Data System operated by the U.S. Geological Survey in cooperation with State, municipal, and Federal agencies.

Stream-discharge records, and contents and stage for lakes or reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were published annually; beginning in 1961, these water-supply papers were published every 5 years through 1970. Records of chemical quality, water temperature, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Water-supply papers can be found in the libraries of principal cities and universities throughout the United States or can be purchased from the U.S. Geological Survey, Earth Science Information Center, Open-File Reports Section, Denver Federal Center, Box 25286, Mail Stop 517, Denver, Colorado 80225.

Streamflow data since the 1961 water year and water-quality data since the 1964 water year have been released by the U.S. Geological Survey in annual reports on a State-by-State basis. These reports provide timely release of water data in each State for each water year. Through 1970 these data also were released in the water-supply paper series mentioned above.

Publication of streamflow and water-quality data, beginning with the 1971 water year, and ground-water data, beginning with the 1975 water year currently is limited to reports on a State-by-State basis. Beginning with the 1975 water year, these Survey reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report NC-99-1." Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

Additional information for ordering specific reports, can be obtained from the District Chief at the address listed on the back of the title page of this report or by calling (919) 571-4000.

## COOPERATION

Cooperative agreements between the U.S. Geological Survey (USGS) and organizations of the State of North Carolina for the systematic collection of water-resources data began in 1895 and continued through 1909. Following a lapse of 8 years, the State of North Carolina resumed cooperation in October 1918. Organizations that assisted in collecting the data contained in this report through cooperative agreements with the USGS are:

North Carolina Cooperative Extension Service  
North Carolina Department of Environment and Natural Resources  
North Carolina Department of Transportation  
City of Asheville  
City of Brevard  
City of Charlotte  
City of Danville, Virginia  
City of Durham  
City of Morganton  
City of Greensboro  
City of Raleigh

City of Rocky Mount  
Mecklenburg County  
Orange County  
Town of Bethel  
Town of Chapel Hill  
Triangle Area Water Supply Monitoring  
Steering Committee  
Winston-Salem/Forsyth County  
Utility Commission  
Pender County Emergency Management

The following Federal agencies assisted in the data-collection program by furnishing funds or services:

Corps of Engineers, U.S. Army  
Tennessee Valley Authority  
Agriculture Research Station, U.S. Department of Agriculture  
National Weather Service, NOAA, U.S. Department of Commerce

The following organizations aided in collecting records:

Carolina Power and Light Co.; Champion International Corp.;  
Duke Power Co.; Yadkin, Inc.; Weyerhaeuser Co.; Virginia Power



## SUMMARY OF WATER-RESOURCES CONDITIONS

Precipitation

Precipitation amounts for the first quarter, October through December, of the 1999 water year varied from 3.11 (Asheville) and 3.13 (Charlotte) inches below average in the western part of the State to 0.95 (Elizabeth City) inch above average in the eastern part of the State. Average precipitation amounts are based on data from 1961 through 1990, the 30-year base period used by the National Weather Service. Rainfall data collected at six key National Weather Service stations (figs. 1 and 2) indicate that rainfall was at or above average in the northern Coastal Plain and below average in the southern Coastal Plain, Piedmont, and Blue Ridge Provinces of North Carolina.

The second quarter of the 1999 water year, January through March, brought drier conditions to the northern Coastal Plain, and below-average conditions continued throughout the State except in the central Piedmont Province (Raleigh) and the southern Blue Ridge Province (Asheville). Rainfall in Raleigh was 0.48 inch above average and in Asheville was 0.70 inch above average. Below-average rainfall amounts were observed at the other index stations; the greatest rainfall deficiency was reported in Charlotte at 4.48 inches below average.

The third quarter, April through June, brought below-average amounts of rainfall across the State except in the southern Coastal Plain Province (Wilmington), where a greater-than-average rainfall of 3.81 inches above normal was reported. Below-normal rainfall was observed in the northern Coastal Plain Province (Elizabeth City), where a deficit of 2.86 inches was recorded. The Piedmont and Blue Ridge Provinces continued to struggle with dry conditions; rainfall deficits were reported at Raleigh (4.92 inches), Greensboro (1.04 inches), Charlotte (0.25 inches), and Asheville (2.66 inches) for the third quarter.

The State continued to observe below- to near-average rainfall amounts during the first 2 months of the fourth quarter, July and August. Parts of eastern North Carolina experienced extremely heavy and, in some cases, unprecedented rainfall amounts during September as a result of Hurricanes Dennis and Floyd. Asheville recorded a deficit rainfall of 1.67 inches, and Charlotte observed a rainfall amount of 0.76 inch above average for the month of September. However, conditions in the Piedmont and Coastal Plain Provinces proved otherwise. Hurricane Dennis approached the North Carolina coast, turned and meandered offshore for several days, making landfall in North Carolina on September 4 and moving in a west-northwesterly direction over the Neuse and Tar River Basins. Rainfall amounts generally were greatest near the coast but as much as 7 inches were reported in the central Neuse and Tar River Basins. Hurricane Floyd made landfall between Wilmington and Jacksonville on September 15 and moved in a north-northeasterly direction over the lower Cape Fear, Neuse, Tar, lower Roanoke, and Chowan River Basins. The storm delivered 12 to 18 inches of rain to much of the Neuse and Tar River Basins, and triggered wide spread regional flooding throughout the eastern part of the State during the remainder of September and most of October. Index sites in the Piedmont and Coastal Plain Provinces recorded rainfall amounts for September well above average at Greensboro (8.02 inches), Raleigh (21.79 inches), Wilmington (23.45 inches), and Elizabeth City (12.23 inches). Rainfalls at Raleigh and Wilmington were in excess of 18 inches above average and were the highest monthly rainfall amounts on record for the month of September.

In summary, below-average precipitation was reported for most areas in the Blue Ridge, Piedmont, and Coastal Plain Provinces from October 1998 through August 1999. As a result, some restrictions on water use were implemented at numerous locations across the State. The month of September brought unprecedented and, in some cases, record rainfall amounts to the Piedmont and Coastal Plain Provinces of North Carolina. The National Weather Service reported the following rainfall amounts for selected stations for the period of October through August, prior to the arrival of Hurricanes Dennis and Floyd in September: Asheville, 36.66 inches (7.06 inches below average); Charlotte, 28.89 inches (10.70 inches below average); Greensboro, 35.01 inches (4.09 inches below average); Raleigh, 31.49 inches (6.75 inches below average); Elizabeth City, 41.20 inches (2.78 inches below average); and Wilmington, 46.14 inches (3.09 inches below average). The National Weather Service reported the following annual (including the month of September) rainfall amounts for the entire 1999 water year at these selected stations: Asheville, 38.86 inches (8.73 inches below average); Charlotte, 33.15 inches (9.94 inches below average); Greensboro, 43.63 inches (1.01 inches above average); Raleigh, 53.28 inches (11.85 inches above average); Elizabeth City, 53.43 inches (4.95 inches above average); and Wilmington, 69.59 inches (15.32 inches above average).

Surface Water

Streamflow conditions in North Carolina are greatly influenced by precipitation. Excess rainfall can produce rapid responses in streamflow. Streamflow also declines following periods of deficient rainfall. The rate and magnitude of decline depend on basin size, the season, evapotranspiration, and on the amount of ground water in storage at the onset of the dry period. The effects on streamflow of variable rainfall in North Carolina during the 1999 water year are illustrated in figures 3-8. Monthly conditions are depicted in maps (figs. 3 and 4) that show the regions of above-normal (excessive), normal, and below-normal (deficient) streamflow.

Data for the 30-year base period, 1961-90, from 35 index gaging stations across the State were used to compute monthly flow statistics (figs. 3 and 4). These stations are located on streams that are free of significant regulations or diversions and range in size from about 30 to

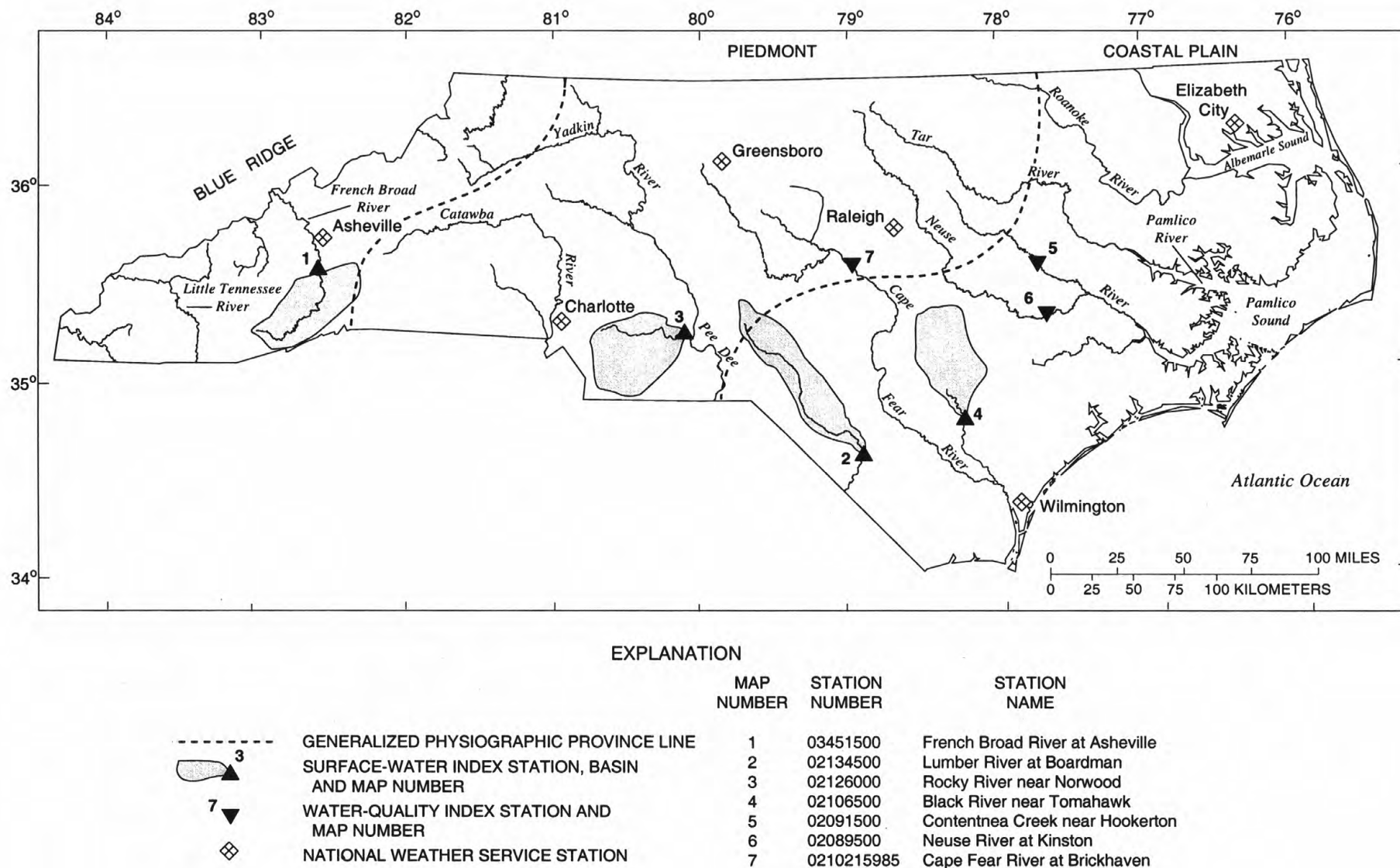


Figure 1.--Location of selected long-term index stations for precipitation, discharge, and water-quality.

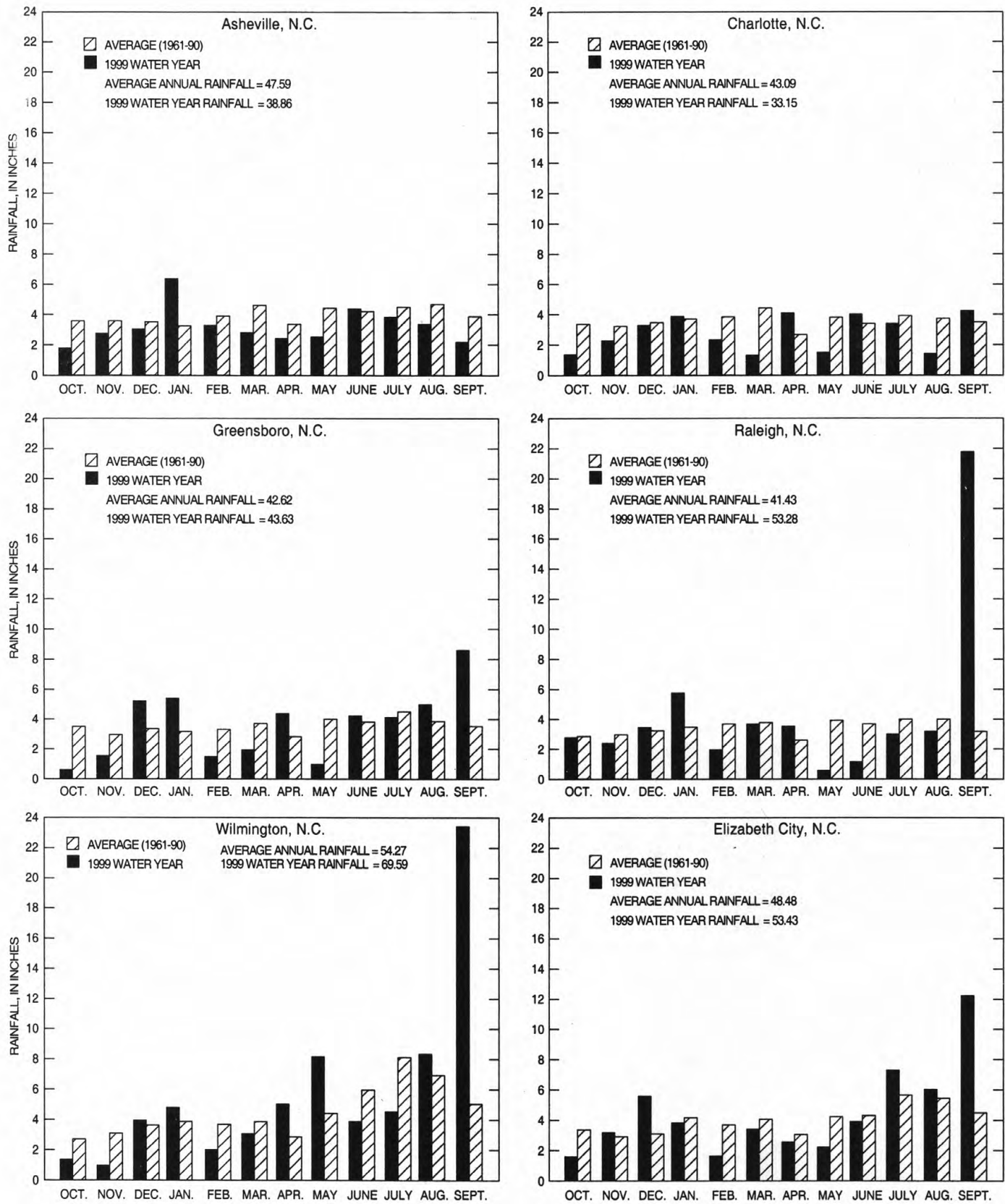


Figure 2.--Monthly rainfall at index stations for 1999 water year and average monthly rainfall for the period 1961-90 (data from National Oceanic and Atmospheric Administration reports).

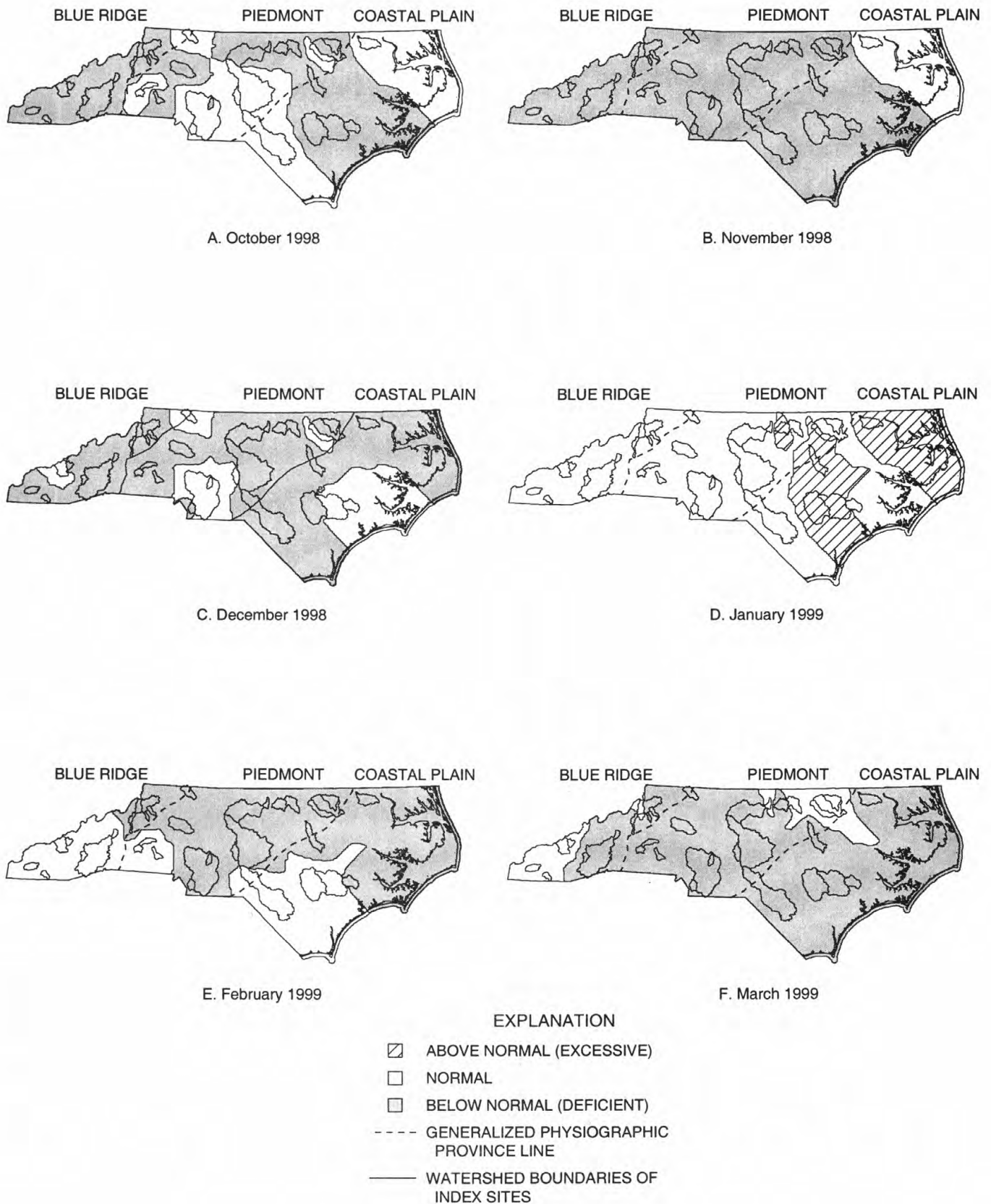


Figure 3.--Monthly streamflow during October - March 1999 water year.



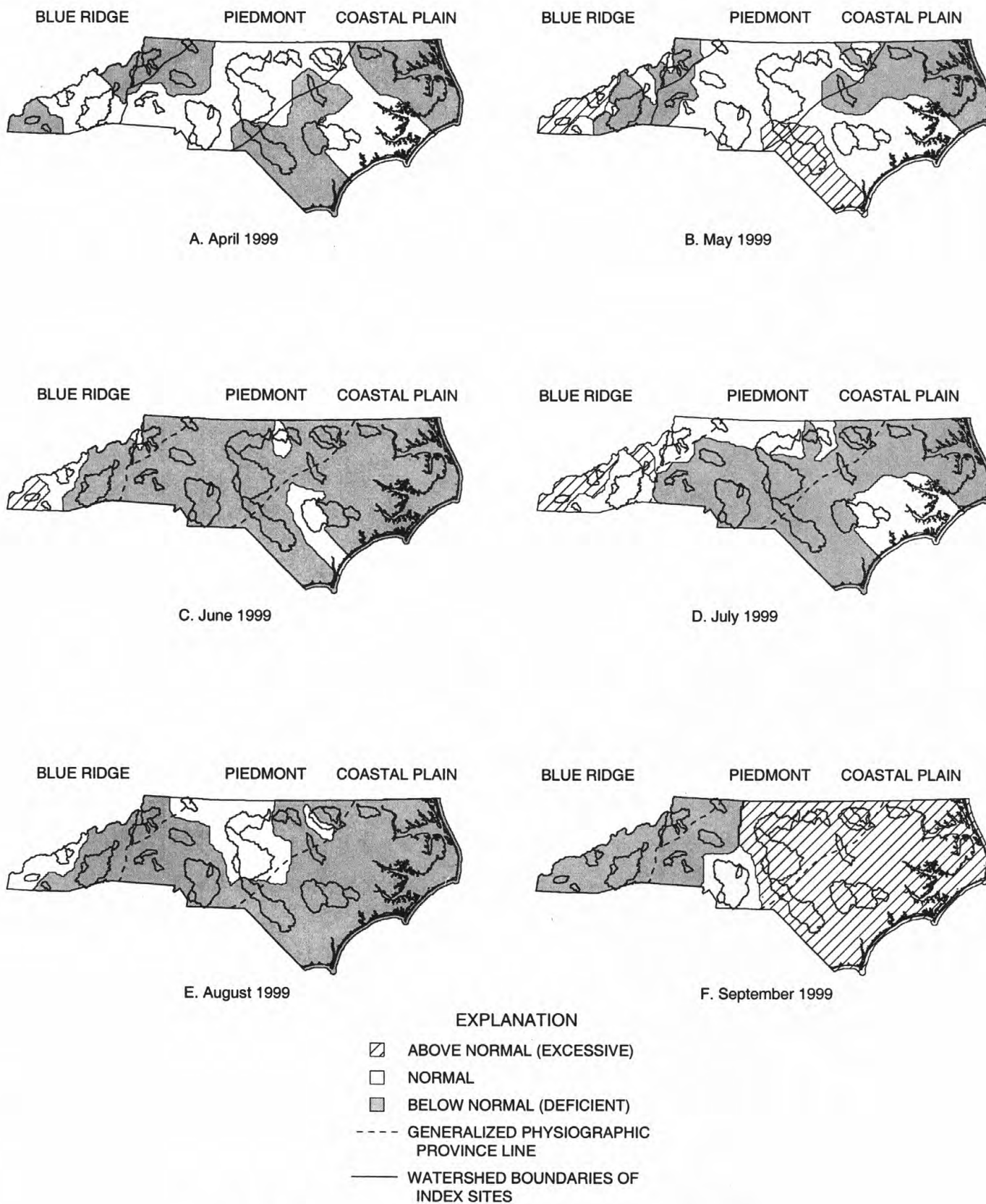


Figure 4.--Monthly streamflow during April - September 1999 water year.

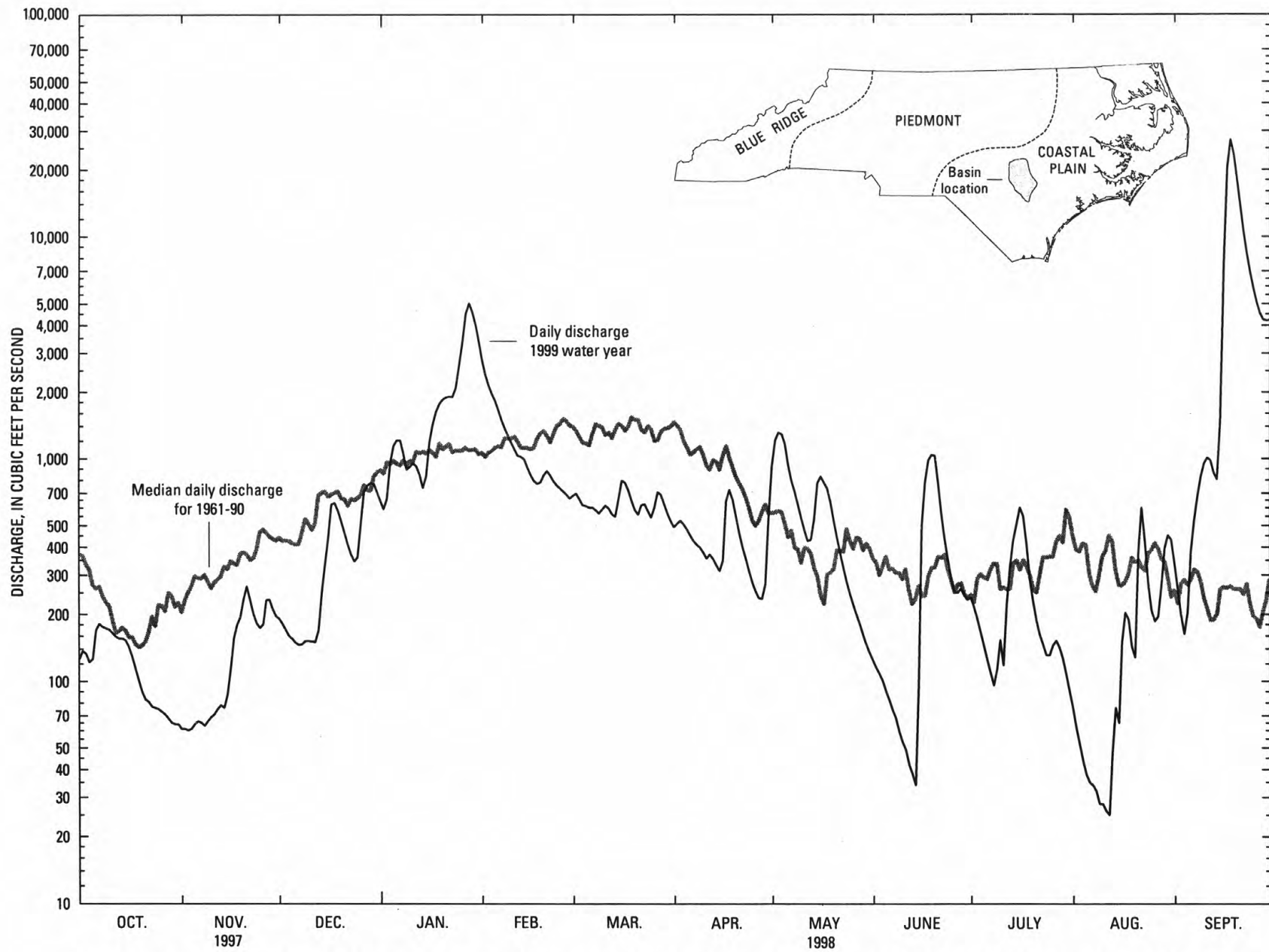


Figure 5.--Daily discharge for 1999 water year and median daily discharge for 1961-90 water years for Black River near Tomahawk (02106500). Location shown in figure 1.

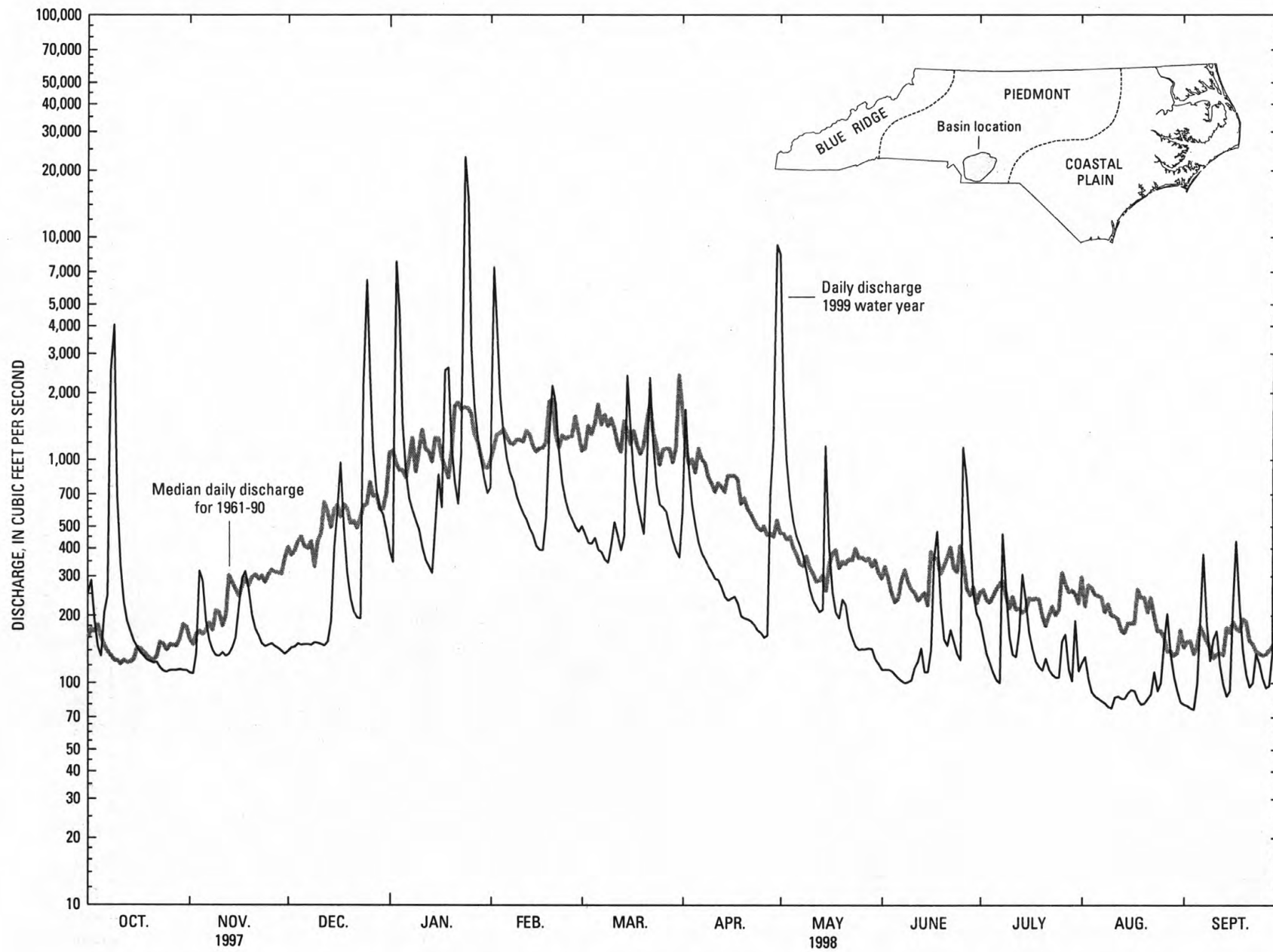


Figure 6.--Daily discharge for 1999 water year and median daily discharge for 1961-90 water years for Rocky River near Norwood (02126000). Location shown in figure 1.

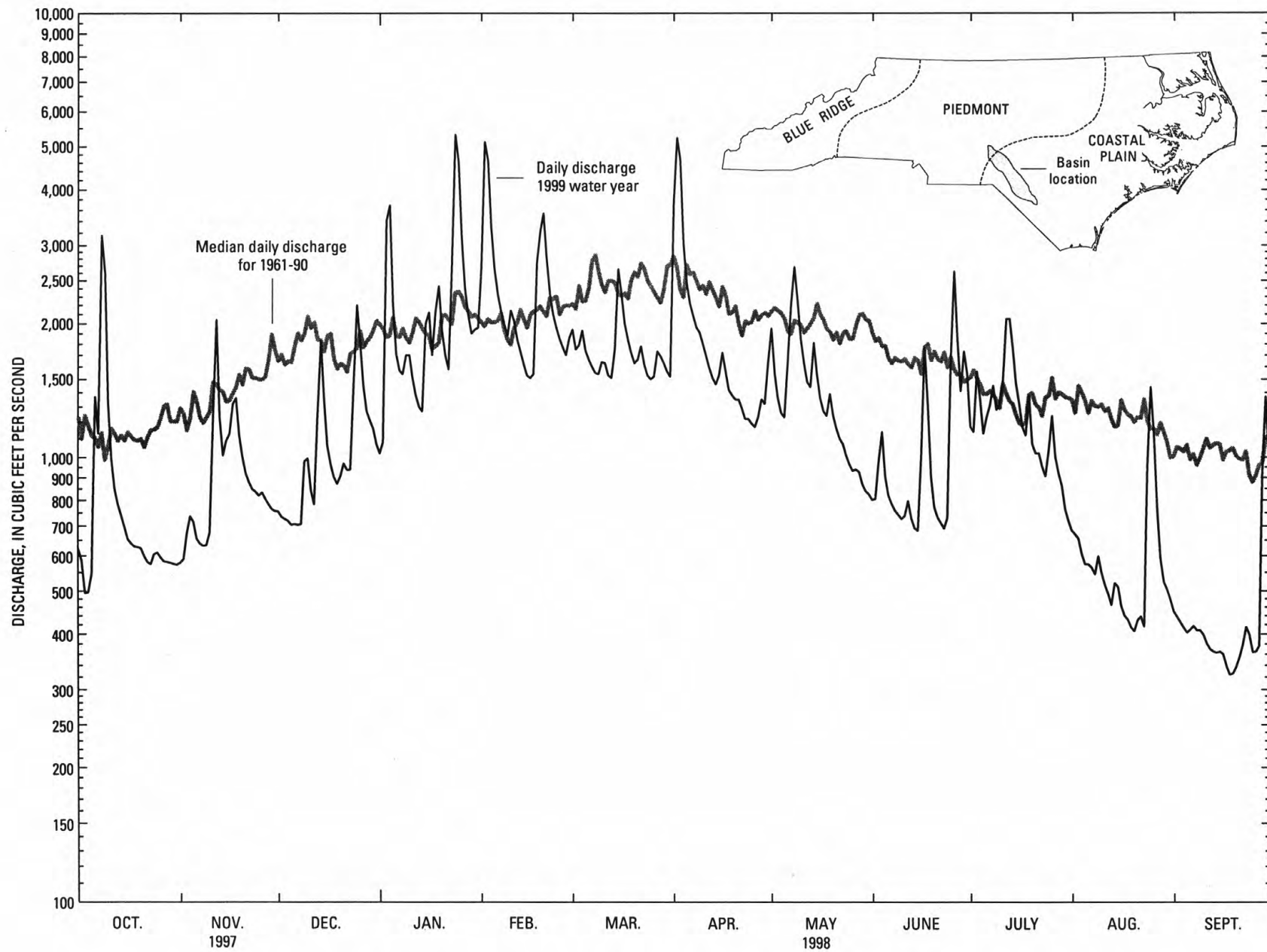


Figure 7.--Daily discharge for 1998 water year and median daily discharge for 1961-90 water years for Lumber River at Boardman (02134500). Location shown in figure 1.



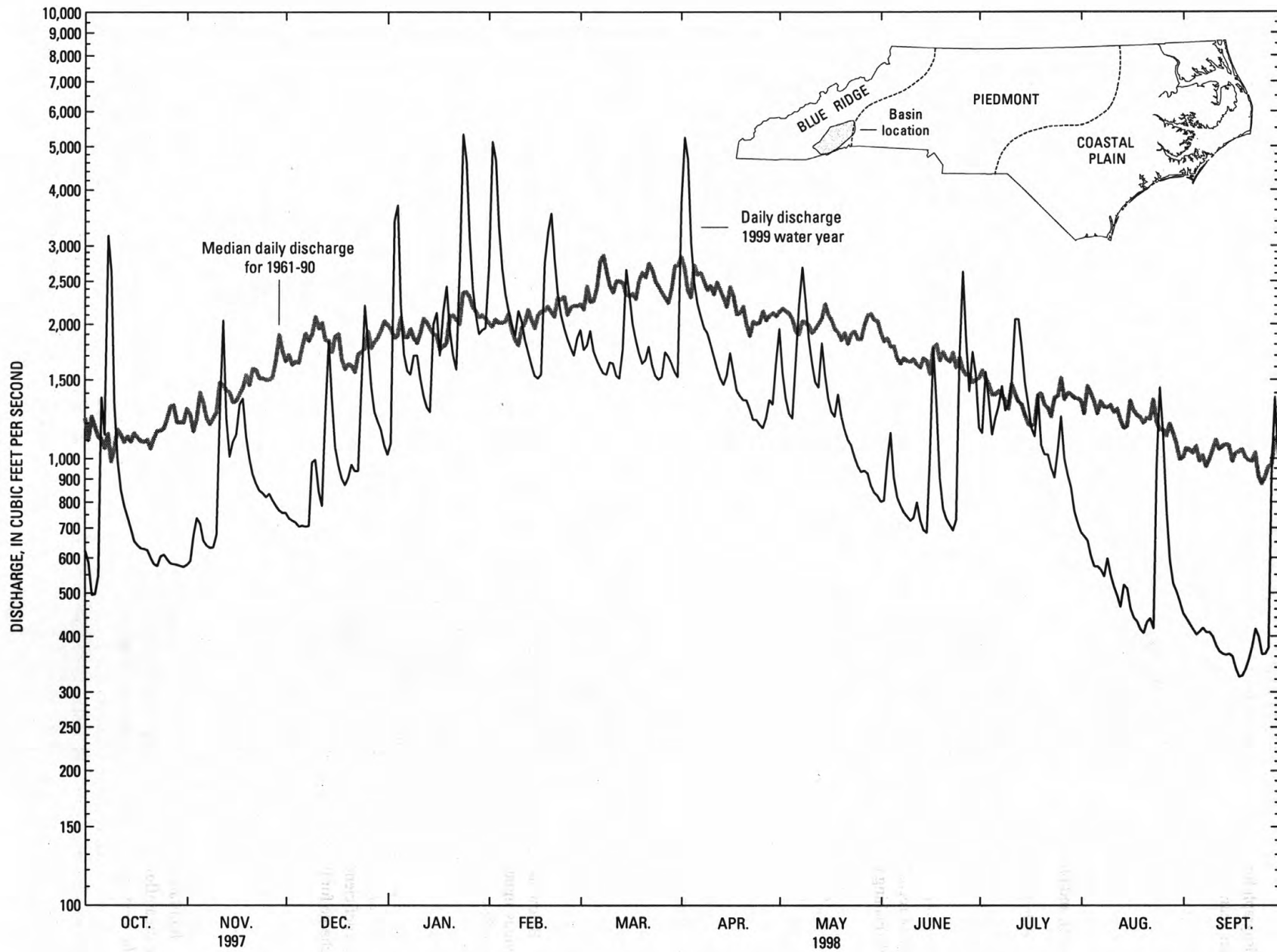


Figure 8.--Daily discharge for 1999 water year and median daily discharge for 1961-90 water years for French Broad River at Asheville (03451500). Location shown in figure 1.

1,400 square miles. The descriptors, “above normal,” “normal,” and “below normal,” refer to flow in the upper quartile, the middle two quartiles, and the lower quartile, respectively.

Responses of daily streamflow to basinwide weather patterns throughout the year at four long-term index stations across the State (fig. 1) are shown in figures 5-8. The daily mean discharge hydrograph for the 1999 water year is superimposed on the 1961-90 median daily discharge hydrograph for each of these index stations. Daily mean discharge was below the median daily discharge at the four sites for most of the 1999 water year.

Across the State, below-average precipitation conditions occurred during the month of October. As a result, 71 percent of the 35 index sites had deficient flows (fig. 3A). The remaining sites were at normal-flow conditions. Six index sites had monthly mean discharges that were third lowest or less for the periods of record. The site rankings for the periods of record are as follows: third lowest were Indian Creek near Laboratory (50 years of record) and South Toe River near Celo (44 years of record); second lowest was Little Fishing Creek near White Oak (41 years of record); and the lowest were Hyco Creek near Leasburg (37 years of record), Cataloochee Creek near Cataloochee (57 years of record), and Nantahala River near Rainbow Springs (60 years of record).

Below-average precipitation totals continued across the State, except in Elizabeth City where the precipitation total was slightly above normal during November. The continued wide-spread, below-average precipitation resulted in extensive deficient monthly mean discharges for streams throughout the State. Only one index site, Potecasi Creek near Union, had normal-flow conditions (fig. 3B). Seven index sites reached their second lowest or less monthly mean discharge for the periods of record. The site rankings for the periods of record are as follows: second lowest were Tar River near Tar River (61 years of record), Elk Creek at Elkville (35 years of record), Cataloochee Creek near Cataloochee (57 years of record), and Watauga River near Sugar Grove (61 years of record); the lowest were Hyco Creek near Leasburg (37 years of record), Little Fishing Creek near White Oak (41 years of record), and South Toe River near Celo (44 years of record).

December rainfall totals were near average across the State, which helped shift several streams into the normal-flow range; however, 77 percent of the index sites continued to have deficient flow conditions for the month (fig. 3C). Monthly mean discharge at Indian Creek near Laboratory (50 years of record) reached its third lowest monthly mean discharge for the period of record.

January rainfall totals were above average at the six index weather stations across the State except at Elizabeth City where a slightly less-than-average rainfall amount was recorded for the month. Monthly mean discharges were in the normal range across the State except for six index sites which had excessive flows for the month—Potecasi Creek near Union, Swift Creek at Hillardston, Flat River at Bahama, Little River near Princeton, Black River at Tomahawk, and the Northeast Cape Fear River near Chinquapin (fig. 3D).

The month of February brought below-average precipitation totals at the six index weather stations across the State. Sixty-three percent of the index sites slipped into the deficient discharge range (fig. 3E). One station, Hyco Creek near Leasburg (37 years of record), recorded its second lowest monthly mean discharge for the period of record. The remaining index sites remained at, or decreased to, the normal-discharge range.

Below-average rainfall amounts persisted throughout the month of March. Streamflow conditions remained fairly steady compared to the previous month, with 71 percent of the index sites having deficient flow conditions. The remainder of the index sites were in the normal streamflow range (fig. 3F). Two index sites reached their third lowest or less monthly mean discharge for the periods of record. The site rankings for the periods of record are as follows: third lowest was Big Bear Creek near Richfield (47 years of record), second lowest was First Broad River near Casar (42 years of record).

Rainfall totals in April were above-average from the mountains to the coast, except for Asheville and Elizabeth City, which reported below-normal rainfall amounts. Many index sites returned to the normal monthly mean discharge range, leaving 38 percent of the index sites in the deficient range (fig. 4A). One station, South Fork New River near Jefferson (74 years of record), recorded its third lowest monthly mean discharge for the period of record.

In May, rainfall totals across the State were well below average (1.9 to 3.34 inches) except at Wilmington, which recorded 3.73 inches above average. Despite the widespread below-average rainfall, 60 percent of the index sites remained in the normal streamflow range with the remainder of the index sites in the deficient streamflow range (fig. 4B). One station, Rocky River near Norwood (71 years of record), recorded its third lowest monthly mean discharge for the period of record.

Rainfall totals for the month of June were above average in the western part of the State and below average in the eastern part of the State. One streamflow index site, Valley River at Tomotla, had excessive monthly mean streamflow conditions in June. Despite above-average rainfall in the western half of the State, 80 percent of the index sites across the State were in the deficient streamflow range (fig. 4C). Five index sites reached their third lowest or less monthly mean discharge for the periods of record. The site rankings for the periods of record are as follows: third lowest were Elk Creek at Elkville (35 years of record) and Big Bear Creek near Richfield (47 years of record); second lowest were Fishing Creek near Enfield (74 years of record) and Little Fishing Creek near White Oak (41 years of record); and the lowest was Little River near Princeton (71 years of record).

In July, rainfall amounts were below average at the six index weather sites across the State except for Elizabeth City which recorded about 1.6 inches above average. Though rainfall at Asheville was slightly below average, four index sites in the mountain region had excessive monthly mean discharges (fig 4D). One of these index sites, South Toe River near Celo (44 years of record), recorded its third highest monthly mean flow for the period of record. Deficient streamflow conditions occurred at 49 percent of the index sites. Four index sites reached their third lowest or less monthly mean discharge for the periods of record. The site rankings for the periods of record are as follows: third lowest were Little Fishing Creek near White Oak (41 years of record) and South Toe River near Celo (44 years of record); second lowest was Twelve Mile Creek near Waxhaw (40 years of record); and the lowest was Little River near Princeton (71 years of record) for the second consecutive month.

Rainfall at index weather sites in August were below average in the western part of the State and above average in the eastern part. Rainfall amounts were above average at Greensboro and below average at Raleigh. Though above-average rainfall occurred in the eastern part of the State, 74 percent of the streamflow index sites remained at, or decreased to, the deficient-flow range (fig. 4E). Nine index sites reached their third lowest or less monthly mean discharge for the periods of record. The site rankings for the periods of record are as follows: third lowest were Little Fishing Creek near White Oak (41 years of record), Elk Creek at Elkville (35 years of record), Rocky River near Norwood (71 years of record), and Indian Creek near Laboratory (50 years of record); second lowest were South Yadkin River near Mocksville (62 years of record), Big Bear Creek near Richfield (47 years of record), Twelve Mile Creek near Waxhaw (40 years of record), and First Broad River near Casar (42 years of record); and the lowest was Henry Fork near Henry River (67 years of record), which experienced its lowest monthly mean flow since 1925. The remainder of the sites were in the normal streamflow range.

In September, Hurricanes Dennis and Floyd brought record rainfall amounts that led to widespread and prolonged flooding in portions of central and most of eastern North Carolina. The western Piedmont and Blue Ridge Provinces had near-average to below-average rainfall amounts. The Raleigh (21.79 inches) and Wilmington (23.45 inches) index weather stations recorded their highest monthly rainfall amounts on record. Index streamflow sites in the western half of the State remained at, or decreased to, the deficient-flow range (fig. 4F). Seven of these index sites reached their third lowest or less monthly mean discharge for the periods of record, and First Broad River near Casar had its lowest monthly mean flow for the periods of record. Three index sites reached their third to second lowest monthly mean discharge for the periods of record. The site rankings for the periods of record are as follows: third lowest was Deep River at Moncure (71 years of record); second lowest were Hyco Creek near Leasburg (37 years of record) and Flat River at Bahama (76 years of record). Monthly mean discharge conditions in the eastern part of the State were unprecedented. With the exception of the Lumber River Basin, all major river basins in eastern North Carolina experienced flooding at the 500-year recurrence interval in some portion of the basin. Monthly mean flow was excessive at 43 percent of the 35 streamflow index sites. Ten index sites reached their highest monthly mean discharge for the periods of record. The site names and the dates of the previous high are as follows: Potecasi Creek near Union (1960), Tar River near Tar River (1996), Swift Creek near Hillardston (1996), Fishing Creek near Enfield (1928), Little River near Princeton (1996), Little Fishing Creek near White Oak (1996), Trent River near Trenton (1955), Black River at Tomahawk (1996), Northeast Cape Fear River near Chinquapin (1955), and the Lumber River near Boardman (1945).

In summary, below-average precipitation occurred during the 1999 water year throughout much of the State until August, producing drought or near-drought conditions. September hurricanes, Dennis and Floyd, brought record rainfall amounts to the Coastal Plain and Piedmont Provinces of North Carolina. Streamflow conditions reflected the rainfall pattern, yielding below-average discharges through the early part of September before the hurricanes brought unprecedented 500-year recurrence interval flooding to much of eastern North Carolina.

#### Water Quality

Water-quality data are summarized for Contentnea Creek near Hookerton (733 mi<sup>2</sup> drainage area), Neuse River at Kinston (2,692 mi<sup>2</sup>), Cape Fear River near Brickhaven (3,160 mi<sup>2</sup>), and Flat River at Bahama (149 mi<sup>2</sup>). These stations drain watersheds in the Piedmont (Cape Fear River and Flat River) and Coastal Plain (Neuse River and Contentnea Creek) Provinces of North Carolina. The USGS collected water samples at these sites during the 1999 water year as part of the USGS National Water-Quality Assessment (NAWQA) Program (Spruill and others, 1998), and for two projects that are part of the USGS Cooperative Program (Garrett and Bales, 1995; Childress and Bathala, 1997).

Concentrations of total phosphorus and orthophosphate as P, nitrite plus nitrate and ammonia plus organic nitrogen as N, total and dissolved organic carbon, total dissolved solids, and suspended-sediment are illustrated along with hydrographs of daily mean discharge for the 1999 water year (fig. 9). Greatest total phosphorus concentrations occurred in Contentnea Creek and the Neuse River in July (greater than 0.16 mg/L; figs. 9a, b). Decreases in total phosphorus concentrations in January correspond with seasonal increases in discharge in Contentnea Creek and the Neuse River (fig. 9a, b). Total phosphorus concentrations were lowest in the Flat River—all but two values were censored at or estimated below than the laboratory reporting level (<0.05). Greatest orthophosphate concentrations occurred during seasonal decreases in discharge in Contentnea Creek, and the Neuse and Cape Fear Rivers. Orthophosphate concentrations were less than or near the laboratory reporting level (0.01 mg/L) in the Flat River.

Nitrite plus nitrate concentrations were similar in the Neuse River and Contentnea Creek and ranged from 0.05 to 1.0 mg/L. The minimum

concentrations, much less than the minimum of 0.2 mg/L recorded in the 1998 water year, occurred during September in floodwaters from Hurricane Floyd. The median nitrite plus nitrate concentrations (0.7 mg/L each) for the Neuse River and Contentnea Creek were the same as in the 1998 water year. The lowest median and range in nitrite plus nitrate concentrations occurred in the Flat River (fig. 9d). In the Cape Fear River high nitrite plus nitrate concentrations correspond with seasonal increases in discharge (fig. 9c). In the Neuse River and Contentnea Creek, ammonia plus organic nitrogen concentrations were generally less than nitrite plus nitrate concentrations, whereas ammonia plus organic nitrogen concentrations were generally greater than nitrite plus nitrate concentrations in the Cape Fear and Flat Rivers. Maximum concentrations of ammonia plus organic nitrogen occurred in floodwaters from Hurricane Floyd in the Neuse and Flat Rivers.

The maximum total organic carbon (TOC) concentration was measured in the only sample collected from the Flat River. This sample was collected on September 6 during extreme runoff resulting from Hurricane Dennis. Otherwise, TOC concentrations ranged from 4.4 to 15.6 mg/L in the Neuse River and Contentnea Creek, and from 0.8 to 10 mg/L in the Cape Fear River. Maximum TOC concentrations were measured in floodwaters from Hurricane Floyd. Samples were analyzed for dissolved organic carbon (DOC), the dissolved fraction of TOC, in the Neuse River and Contentnea Creek. DOC typically composed nearly all of the TOC (fig. 9b).

Dissolved solids concentrations were greater in the Cape Fear River (88 to 182 mg/L, fig. 9c) than in the Neuse River and Contentnea Creek (47 to 108 mg/L, fig. 9a, b). Concentrations decreased during seasonal increases in discharge. The maximum suspended-sediment concentration (143 mg/L) occurred in the Flat River and was associated with the early September sampling of runoff from Hurricane Dennis.

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- Spruill, T.B., Harned, D.A., Ruhl, P.M., Eimers, J.L., McMahon, Gerard, Smith, K.E., Galeone, D.R., and Woodside, M.D., 1998, Water quality in the Albemarle-Pamlico Drainage Basin, North Carolina and Virginia, 1992-95: U.S. Geological Survey Circular 1157, 36 p.



## 02091500 Contentnea Creek at Hookerton

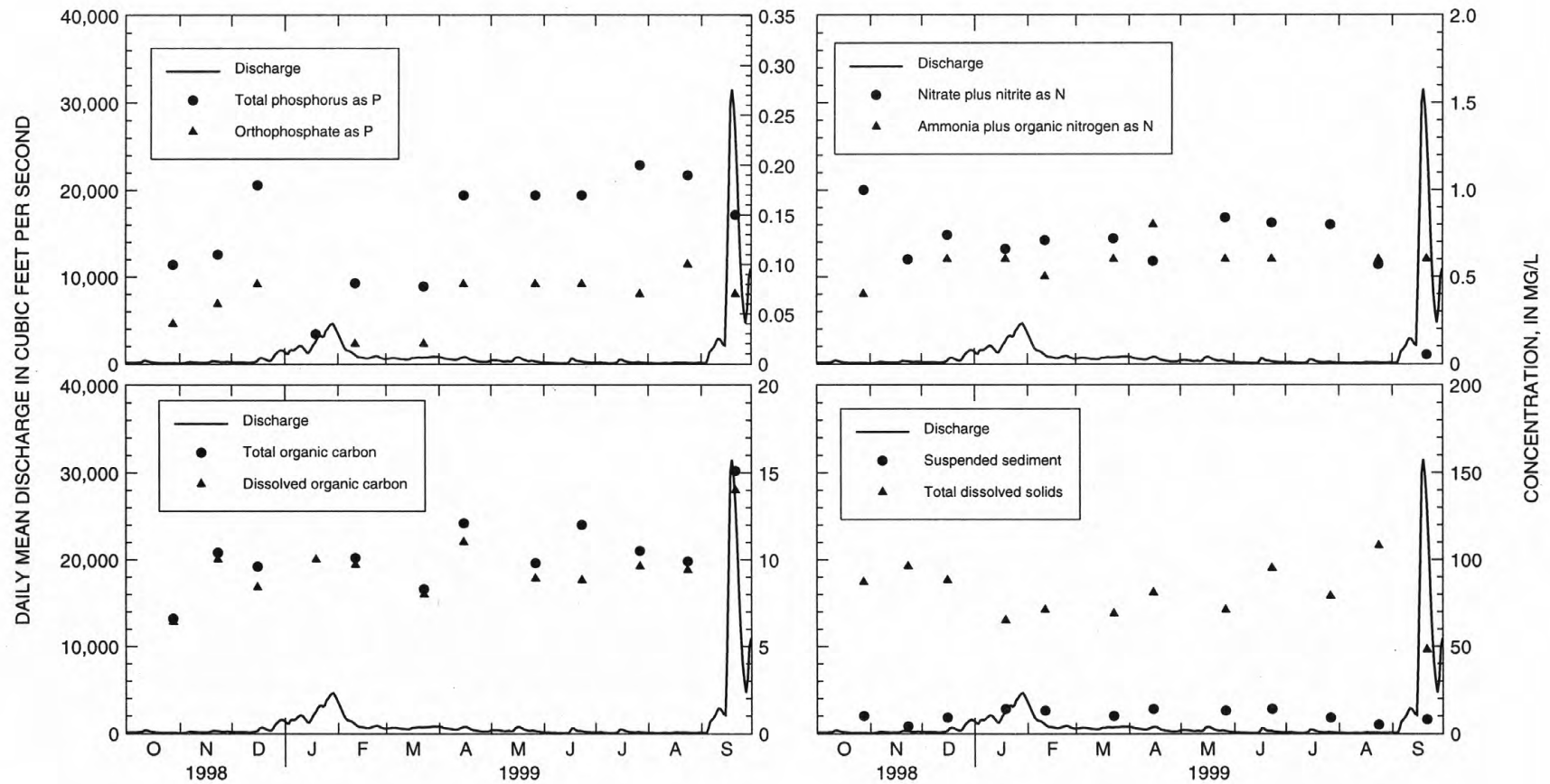


Figure 9a.--Concentration of selected constituents and daily mean discharge for Contentnea Creek at Hookerton during the 1999 water year.

02089500 Neuse River at Kinston

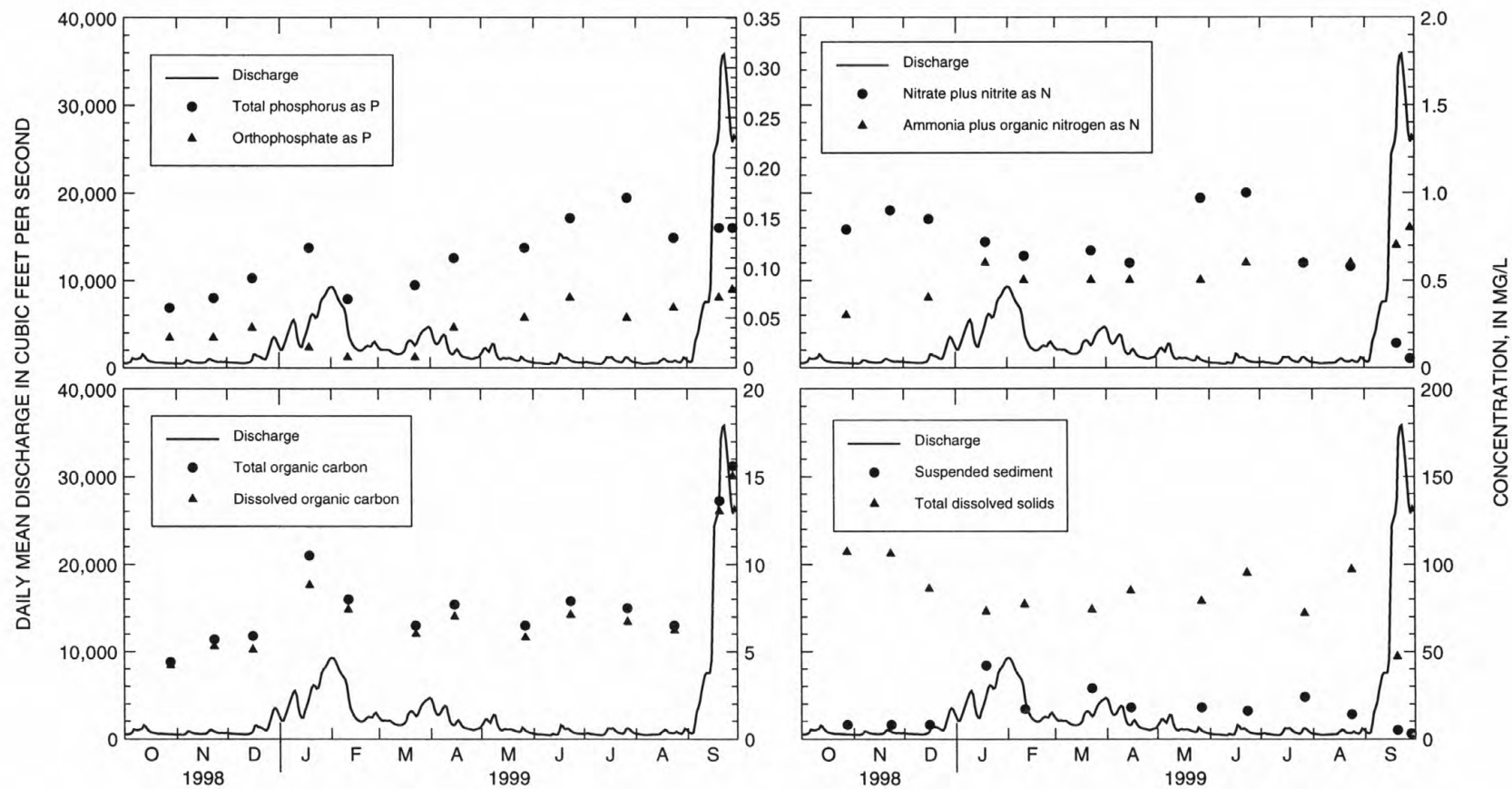


Figure 9b.--Concentration of selected constituents and daily mean discharge for Neuse River at Kinston during the 1999 water year.

0210215985 Cape Fear River near Brickhaven

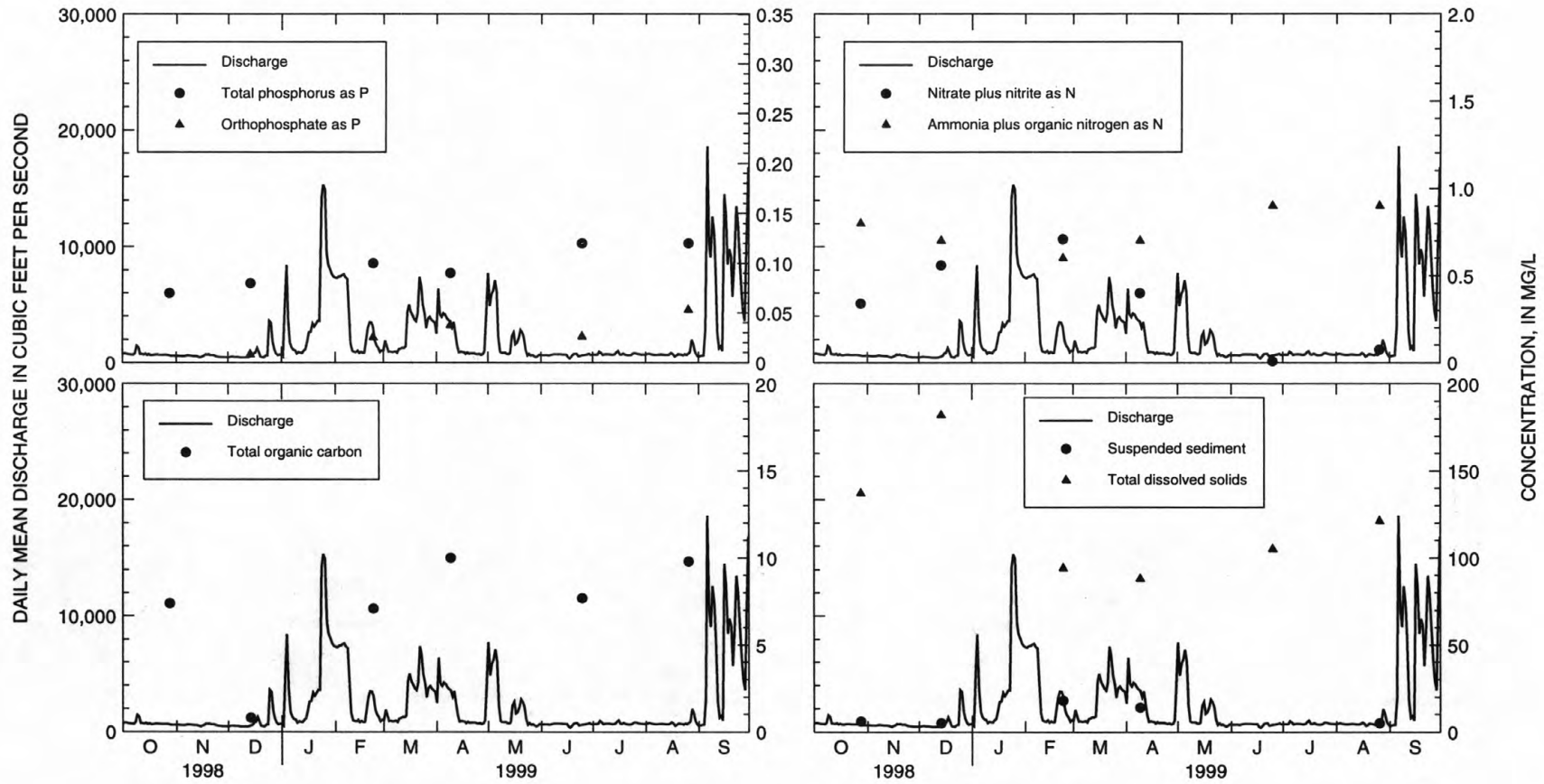


Figure 9c.--Concentration of selected constituents and daily mean discharge for Cape Fear River near Brickhaven during the 1999 water year.

02085500 Flat River at Bahama

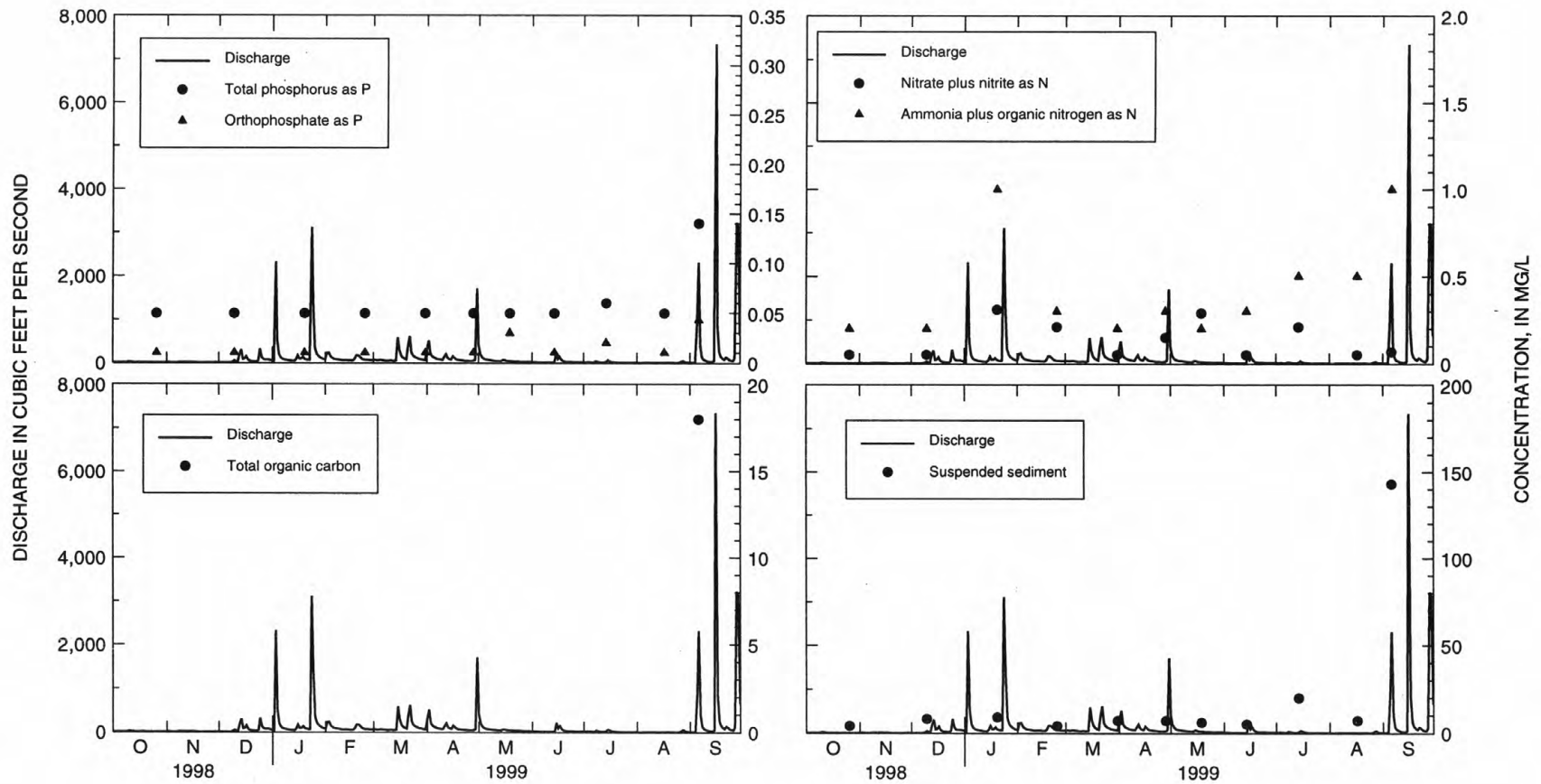


Figure 9d.--Concentration of selected constituents and daily mean discharge for Flat River at Bahama during the 1999 water year.



### SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities.

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 39 stations. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives; (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO<sub>2</sub> emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred. (3) Provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO<sub>2</sub> and NO<sub>x</sub> scheduled to begin in 2000.

Data from the network, as well as information about individual sites, are available through the world wide web at:

<http://nadp.nrel.colostate.edu/NADP>

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 53 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key federal, State, and local water resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies.

Additional information about the NAWQA Program is available through the world wide web at:

[http://wwwrvares.er.usgs.gov/nawqa/nawqa\\_home.html](http://wwwrvares.er.usgs.gov/nawqa/nawqa_home.html)

### EXPLANATION OF RECORDS

The surface-water records published in this report are for the 1999 water year that began October 1, 1998, and ended September 30, 1999. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data. Locations of the stations where the data were collected are shown in figures. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

#### Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems

used by the USGS to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream order number" system is used for surface-water stations, and the "latitude-longitude" system is used for miscellaneous surface-water sites and wells.

### Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in USGS reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight- or ten-digit number for each station, such as 02053200 (0208700780), which appears just to the left of the station name, includes the two-digit part number "02" plus the six- or eight digit downstream-order number "053200." The part number designates the major river basin; for example, part "02" is the South Atlantic Slope Basin.

### Latitude-Longitude System

The identification numbers for wells and miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude; the next seven digits denote degrees, minutes, and seconds of longitude; and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site identification number, once assigned, is a part number, and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description (fig.).

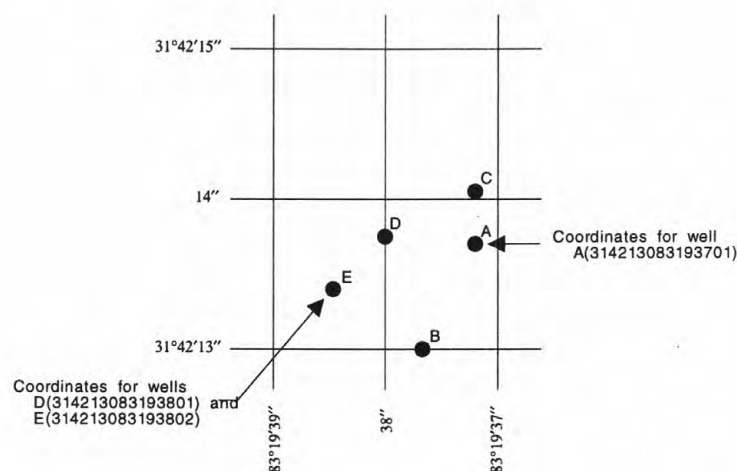


Figure 10.--System for numbering miscellaneous sites and wells.

### Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges can be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content can be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles, such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, and they are presented separately in this report.

#### Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consists of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that can affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that can affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained by analog-digital recorders that punch stage values on paper tapes at selected time intervals, or electronic data loggers that either store data electronically on site or transmit it by satellite or telephone telemetry to a computer at the office. Measurements of discharge are made with current meters using methods adapted by the USGS as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations (TWRI), Book 3, Chapter A6.

In computing streamflow records, results of individual discharge measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables are prepared indicating the approximate discharge for any stage within the range of the measurements. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements, and notes of the personnel making the measurements, are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter can so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

At some stream-gaging stations, the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have surveys available from curves or tables that define the relationship of stage and content. The tables are developed from bathymetric surveys. The application of stage to stage-content curves or tables gives the contents from which daily, monthly, or yearly changes are then determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the computed contents may become increasingly in error over time, as time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

For some gaging stations there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents can be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections.

#### Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1991 wateryear. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data



## Data Presentation--Continued

table, and less information is provided in the text or station manuscript above the table. These changes were made as a result of a pilot program to reformat the annual water-data report to meet current user and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of five parts: (1) the manuscript or station description; (2) the data table of daily mean values of discharge for the current water year with summary data; (3) a tabular statistical summary of monthly mean flow data for a designated period, by water year; (4) a summary statistics table that includes statistical data of annual, daily, and instantaneous flow as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; (5) and a hydrograph of discharge.

Station manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments that follow clarify information presented under the various headings of the station description.

**LOCATION.**-- Information on site locations is obtained from the most accurate maps available. The location of the gage is given with respect to cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name. River miles, given for only a few stations, were either determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council, or were provided by the U.S. Army Corps of Engineers. Latitudes and longitudes used in this report are reported as National American Datum of 1927 unless otherwise specified.

**DRAINAGE AREA.**--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

**PERIOD OF RECORD.**--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time when the present station was not, and in a location such that records from it can reasonably be considered equivalent to records from the present station.

**REVISED RECORDS.**--Because of new information, published records occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all of the reports in which revisions have been published for the station and the water years for which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" means that only the instantaneous minimum was revised; and "(P)" means that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

**GAGE.**--The type of gage in current use, the datum of the current gage referenced to sea level (see glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

**REMARKS.**--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station, information regarding extremes for period of record and current year data and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

**COOPERATION.**--Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. This information may or may not have been obtained by the USGS.

**REVISIONS.**--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there possibly would be no current or, future station manuscript published to document the revision in a "Revised Records" entry, data users who obtained the record from previously published data reports may wish to contact the District office to determine if the published records were ever revised after the station was discontinued. If the data were obtained by computer retrieval, however, the data would be current, and any published revision of data is always accompanied by revision of the corresponding data in computer storage. Manuscript information for lake or reservoir



## Data Presentation--Continued

stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

Headings for AVERAGE DISCHARGE, EXTREMES FOR PERIOD OF RECORD, AND EXTREMES FOR CURRENT YEAR which were included prior to the 1987 water year have been deleted and the information contained in these paragraphs, except for the listing of secondary instantaneous peak discharges in the EXTREMES FOR CURRENT YEAR paragraph, is now presented in the tabular summaries following the discharge table or in the REMARKS paragraph, as appropriate. No changes have been made to the data presentations of lake contents.

Data table of daily mean values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed "TOTAL" gives the sum of the daily figures for each month; the line headed "MEAN" gives the average flow in cubic feet per second for the month; and the lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"); or in inches (line headed "IN."); or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEARS \_\_\_\_-\_\_\_\_, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "FOR WATER YEARS \_\_\_\_-\_\_\_\_," will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (See line headings below.), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments that follow clarify information presented under the various line headings of the summary statistics table.

ANNUAL TOTAL.--The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

## Data Presentation--Continued

HIGHEST ANNUAL MEAN.--The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily mean discharge occurring for the designated period.

LOWEST DAILY MEAN.--The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1 - March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day, 10-year low-flow statistic.)

INSTANTANEOUS PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period. Note that secondary instantaneous peak discharges above a selected base discharge are stored in district computer files for stations meeting certain criteria. Those discharge values can be obtained by writing to the District office. (See address on back of title page of this report.)

INSTANTANEOUS PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.--The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF (AC-FT).--Indicates the depth, in acre-feet, to which the drainage area would be covered if all of the runoff for the year were uniformly distributed on it.

ANNUAL RUNOFF (CFSM).--Indicates the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area for the year.

ANNUAL RUNOFF (INCHES).--Indicates the depth to which the drainage area would be covered if all the runoff for the year were uniformly distributed on it.

10 PERCENT EXCEEDS.--The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first table presents annual maximum stage and discharge at crest-stage stations, and the second table presents discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

## Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter "e" and noting in a table footnote, "e Estimated," and/or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

## Accuracy of the Records

The accuracy of streamflow records depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned are rated "poor." Different accuracies may be attributed to different parts of a given record.

### Accuracy of the Records--Continued

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second ( $\text{ft}^3/\text{s}$ ) for values less than  $1 \text{ ft}^3/\text{s}$ ; to the nearest tenth, between  $1.0$  and  $10 \text{ ft}^3/\text{s}$ ; to whole numbers, between  $10$  and  $1,000 \text{ ft}^3/\text{s}$ ; and to three significant figures for values more than  $1,000 \text{ ft}^3/\text{s}$ . The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation as a result of artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes affected by use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison to the observed discharge.

### Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables, are on file in the North Carolina District office. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of unpublished information or on the results of statistical analyses of published records can be obtained from the District office.

### Records of Discharge Collected by Agencies Other Than the U.S. Geological Survey

Records of stream stage not published by the USGS were collected in North Carolina during the 1999 water year by the National Weather Service, NOAA, U.S. Department of Commerce, and other Federal agencies. The USGS National Water Data Exchange (NAWDEX), National Center, Reston, Virginia 22092, maintains an index of such sites. Information on records available at specific sites can be obtained upon request.

## Records of Precipitation

### Data Collection and Computation

Rainfall data were generally collected by electronic data loggers in 0.01-in. increments every 15 minutes using either tipping-bucket rain gages or collection well gages. Twenty-four hour rainfall totals are tabulated and presented. A 24-hour period extends from just past midnight the previous day to midnight the current day. Snowfall-affected data can result during cold weather when snow fills the rain-gage funnel and then melts as temperatures rise. Snowfall-affected data are subject to errors. Missing values are indicated by a "---" in the table.

### Data Presentation

Precipitation records collected at surface-water gaging stations are identified by the same station number and name as the gaging station. Where a surface-water, daily-record station is not available, the precipitation record is published with its own name and latitude-longitude identification number.

Information pertinent to the history of a precipitation station is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, period of record, and general remarks.

The following information, as appropriate, is provided with each precipitation station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge", same comments apply.

PERIOD OF RECORD.--See Data Presentation under "Records of Stage and Water Discharge", same comments apply.

INSTRUMENTATION. -- Information on the type of rainfall collection system is given.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of records.

## Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.



### Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A *continuing-record station* is a site where data are collected on a regularly scheduled basis. Frequency can be one or more times daily, weekly, monthly, or quarterly. A *partial-record station* is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A *miscellaneous sampling site* is a location other than a continuing- or partial-record station, where random samples are collected to give better areal coverage to define water-quality conditions in a stream basin.

A careful distinction needs to be made between *continuing records* as used in this report and *continuous recordings* which refers to a continuous graph or a series of discrete values recorded at short intervals. Some records of water quality, such as temperature and specific conductance, can be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figures 14 and 15.

### Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

### On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern is assuring that the data obtained represent the naturally occurring quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made on site when the samples are taken. To assure that measurements made in the laboratory also represent the naturally occurring water, carefully prescribed procedures must be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on site measurements and for collecting, treating, and shipping samples are given in TWRI's Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chaps. A1, A3, and A4. All of these references are listed on pages 32 through 35 of this report. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS North Carolina District office.

It is possible for one sample to adequately define the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section can vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample for use in determining an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several vertical depends on flow conditions and other factors which must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) can be obtained from the USGS North Carolina District office at the address given on the back of the title page of this report.

NOTICE: Values of dissolved and total selenium exceeding 5 mg/L in samples collected prior to 1975 are probably incorrect and should only be used with caution. Values of dissolved selenium greater than 1 mg/L collected prior to 1975 should also be considered questionable, although a fair percentage of them may, in fact, be correct.

### Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at the time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.



At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

#### Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

#### Laboratory Measurements

Sediment samples, and samples for biochemical oxygen demand (BOD), and indicator bacteria are analyzed locally. All other samples are analyzed in the USGS laboratory in Arvada, Colorado, unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the USGS laboratories are given in the TWRI's, Book 1, Chap. D2; Book 3, Chap. C2; and Book 5, Chaps. A1, A3, and A4.

The U.S. Geological Survey National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method detection levels (LT-MDL's) and laboratory reporting levels (LRL's). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

This reporting procedure limits the occurrence of false positive error. The chance of falsely reporting a concentration greater than the LT-MDL for a sample in which the analyte is not present is 1 percent or less. Application of the LRL limits the occurrence of false negative error. The chance of falsely reporting a non-detection for a sample in which the analyte is present at a concentration equal to or greater than the LRL is 1 percent or less.

Accordingly, concentrations are reported as <LRL for samples in which the analyte was either not detected or did not pass identification. Analytes that are detected at concentrations between the LT-MDL and LRL and that pass identification criteria are estimated. Estimated concentrations will be noted with a remark code of "E". These data should be used with the understanding that their uncertainty is greater than that of data reported without the "E" remark code.

In March 1990 the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1990.

MBAS determinations made from January 1, 1970 through August 29, 1993, at the National Water Quality Laboratory in Denver (Analyzing Agency Code 80020) are positively biased. These data can be corrected on the basis of the following equation, if concentrations of dissolved nitrate plus nitrate, as nitrogen, and dissolved chloride, determined concurrently with the MBAS data, are applied:

$$\text{MBASCOR} = M - 0.0088N - 0.00019C$$

where:

MBASCOR = corrected MBAS concentration, in mg/L;

M = reported MBAS concentration, in mg/L;

N = dissolved nitrate plus nitrite, as nitrogen concentration, in mg/L; and

C = dissolved chloride concentration, in mg/L.

The detection limit of the new method is 0.02 mg/L, whereas the detection limit for the old method was 0.01 mg/L. A detection limit of 0.02 mg/L should be used with corrected MBAS data from January 1, 1970 through August 29, 1993.

#### Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the water-quality file in the USGS computer data system, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document these changes in the State data-report series or elsewhere, potential users of USGS water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

The surface-water quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

## Remarks Codes

The following remarks codes may appear with the water-quality data in this report:

PRINTED OUTPUT	REMARK
E	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptance range (nonideal colony count).
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
V	Analyte was detected in both the environmental sample and the associated blanks.
&	Biological organism estimated as dominant.

## Dissolved Trace-Element Concentrations

NOTE.--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (ug/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the ug/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994.

## Change in National Trends Network Procedures

NOTE.--Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).

## Water Quality-Control Data

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this district are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

## Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this district are:

Field blank - a blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank - a blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank - a blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank - a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank - a blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank - a blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank - a blank solution that is treated with the sampler preservatives used for an environmental sample.

#### Reference Samples

Reference material is a solution or material prepared by a laboratory whose composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

#### Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are:

Sequential samples - a type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample - a type of replicate sample in which a sample is split into subsamples contemporaneous in time and space.

#### Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

#### ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

<http://water.usgs.gov>

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (See address on the back of the title page.)



## DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units on the inside of the back cover.

**Acid neutralizing capacity (ANC)** is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an "unfiltered" sample (formerly reported as alkalinity).

**Acre-foot (AC-FT, acre-ft)** is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters.

**Adenosine triphosphate (ATP)** is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

**Algae** are mostly aquatic single-celled, colonial, or multicelled plants containing chlorophyll and lacking roots, stems, and leaves.

**Algal growth potential (AGP)** is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

**Alkalinity** is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a "filtered" sample.

**Annual runoff** is the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

**Acre-foot (AC-FT, acre-ft)** is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters

**Cubic foot per second per square mile [CFSM, (ft<sup>3</sup>/s)/mi<sup>2</sup>]** is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

**Inch (IN., in.)** as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were uniformly distributed on it.

**Aroclor** is the registered trademark for a group of polychlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type and the last two digits represent the weight percent of the hydrogen substituted chlorine.

**Bacteria** are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

**Total coliform bacteria** are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warm-blooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

**Fecal coliform bacteria** are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory, they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5 °C plus or minus 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

**Fecal streptococcal bacteria** are bacteria found in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

**Enterococcus bacteria** are commonly found in the feces of humans and other warm-blooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible pres-

ence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar and subsequent transfer to EIA medium. Enterococci include *Streptococcus fecalis*, *Streptococcus faecium*, *Streptococcus avium*, and their variants.

*Escherichia coli* (*E. coli*) are bacteria present in the intestine and feces of warm-blooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium. Their concentrations are expressed as number of colonies per 100 mL of sample.

**Base flow** is flow in a channel sustained by ground-water discharge in the absence of direct runoff.

**Bed material** is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

**Benthic organisms** (invertebrates) are the group of animals inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

**Biochemical oxygen demand** (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

**Biomass** is the amount of living matter present at any given time, expressed as mass per unit area or volume of habitat.

**Ash mass** is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (g/m<sup>3</sup>), and periphyton and benthic organisms in grams per square meter (g/m<sup>2</sup>).

**Dry mass** refers to the mass of residue present after drying in an oven at 105 °C for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash, and sediment in the sample. Dry mass is expressed in the same units as ash mass.

**Organic mass** or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass.

**Wet mass** is the mass of living matter plus contained water.

**Biomass pigment ratio** is an indicator of the total proportion of periphyton which are autotrophic (plants). This is also called the Autotrophic Index.

**Bottom material:** See "Bed material."

**Cells/volume** refers to the number of plankton cells or natural units counted using a microscope and grid or counting cell. Results are generally reported as cells or units per milliliter.

**Cells volume (biovolume)** determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm<sup>3</sup>) is determined by obtaining critical cell measurements on cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

sphere  $\frac{4}{3} \pi r^3$  cone  $\frac{1}{3} \pi r^2 h$  cylinder  $\pi r^2 h$ .

From cell volume, total algal biomass expressed as biovolume (μm<sup>3</sup>/mL) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes over all species.

**Chemical oxygen demand** (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes.

**Chlorophyll** refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

**Colloid** is any substance with particles in such a fine state of subdivision dispersed in a medium (for example, water) that they do not settle out; but not in so fine a state of subdivision that they can be said to be truly dissolved.

**Color unit** is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

**Confined aquifer** is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases the water level can rise above the ground surface, yielding a flowing well.

**Contents** is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

**Continuous-record station** is a site that meets either of the following conditions:

1. Stage or streamflow are recorded at some interval on a continuous basis. The recording interval is usually 15 minutes, but may be less or more frequent.
2. Water-quality, sediment, or other hydrologic measurements are recorded at least daily.

**Control** designates a feature in the channel downstream from a gaging station that physically influences the water-surface elevation and thereby determines the stage-discharge relation at the station. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

**Control structure** as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of saltwater.

**Cubic foot per second** (CFS, ft<sup>3</sup>/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second, 448.8 gallons per minute, or 0.02832 cubic meters per second.

**Cubic foot per second-day** (CFS-DAY, Cfs-day, [(ft<sup>3</sup>/s)/d]) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.9835 acre-feet, 646,317 gallons, or 2,447 cubic meters.

**Daily record** is a summary of streamflow, sediment, or water-quality values computed from data collected with sufficient frequency to obtain reliable estimates of daily mean values.

**Daily record station** is a site for which daily records of streamflow, sediment, or water-quality values are computed.

**Datum**, as used in this report, is an elevation above mean sea level to which all gage height readings are referenced.

**Diel** is of or pertaining to a 24-hour period of time; a regular daily cycle.

**Discharge**, or flow, is the volume of water (or more broadly, volume of fluid including solid- and dissolved-phase material), that passes a given point in a given period of time.

**Annual 7-day minimum** is the lowest mean discharge for 7 consecutive days in a year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

**Instantaneous discharge** is the discharge at a particular instant of time.

**Mean discharge** (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

**Dissolved** refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

**Dissolved oxygen** (DO) content of water in equilibrium with air is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved solids, with small temperature changes having the more significant offset. Photosynthesis and respiration may cause diurnal variations in dissolved-oxygen concentration in water from some streams.

**Dissolved-solids concentration** of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During that analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to reflect the change. Alternatively, alkalinity concentration (as mg/L CaCO<sub>3</sub>) can be converted to carbonate concentration by multiplying by 0.60.

**Diversity index** is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$' = - \sum_{i=1}^s \frac{n_i}{n} \log_2 \frac{n_i}{n}$$



where  $n_i$  is the number of individuals per taxon,  $n$  is the total number of individuals, and  $s$  is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

**Drainage area** of a site on a stream is that area, measured in a horizontal plane, that has a common outlet at the site for its surface runoff. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

**Drainage basin** is a part of the Earth's surface that is occupied by a drainage system with a common outlet for its surface runoff (see "Drainage area").

**Dry weight** refers to the weight of animal tissue after it has been dried in an oven at 65 °C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue.

**Flow-duration percentiles** are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

**Gage datum** is the elevation of the zero point of the reference gage from which gage height is determined as compared to sea level (see "Datum"). This elevation is established by a system of levels from known benchmarks, by approximation from topographic maps, or by geographical positioning system.

**Gage height** (G.H.) is the water-surface elevation referenced to the gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

**Gaging station** is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

**Gas chromatography/flame ionization detector** (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

**Ground-water level** is the elevation of the water table or another potentiometric surface at a particular location.

**Hardness** of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate ( $\text{CaCO}_3$ ).

**High tide** is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. *See NOAA web site:*  
<http://www.co-ops.nos.noaa.gov/tideglos.html>

**Hydrologic benchmark station** is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a benchmark station may be used to separate effects of natural from human-induced changes in other basins that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped benchmark basin.

**Hydrologic unit** is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the U.S. Geological Survey. Each hydrologic unit is identified by an 8-digit number.

**Land-surface datum** (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

**Light-attenuation coefficient**, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation

$$I = I_0 e^{-\lambda L},$$

where  $I_0$  is the source light intensity,  $I$  is the light intensity at length  $L$  (in meters) from the source,  $\lambda$  is the light-attenuation coefficient, and  $e$  is the base of the natural logarithm. The light attenuation coefficient is defined as

$$\lambda = -\frac{1}{L} \log_e \frac{I}{I_0}.$$

**Lipid** is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells.



Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

**Low tide** is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. *See NOAA web site:*  
<http://www.co-ops.nos.noaa.gov/tideglos.html>

**Macrophytes** are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that are usually arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

**Measuring point (MP)** is an arbitrary permanent reference point from which the distance to water surface in a well is measured to obtain water level.

**Membrane filter** is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

**Metamorphic stage** refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

**Methylene blue active substances (MBAS)** are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

**Micrograms per gram (UG/G,  $\mu\text{g/g}$ )** is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

**Micrograms per kilogram (UG/KG,  $\mu\text{g/kg}$ )** is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

**Micrograms per liter (UG/L,  $\mu\text{g/L}$ )** is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter.

**Microsiemens per centimeter (US/CM,  $\mu\text{S/cm}$ )** is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

**Milligrams per liter (MG/L,  $\text{mg/L}$ )** is a unit for expressing the concentration of chemical constituents in water as the mass (milligrams) of constituent per unit volume (liter) of water. Concentration of suspended sediment also is expressed in  $\text{mg/L}$  and is based on the mass of dry sediment per liter of water-sediment mixture.

**Miscellaneous site**, or miscellaneous station, is a site where streamflow, sediment, and/or water-quality data are collected once, or more often on a random or discontinuous basis.

**Most probable number (MPN)** is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

**Multiple-plate samplers** are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

**Nanograms per liter (NG/L,  $\text{ng/L}$ )** is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

**National Geodetic Vertical Datum of 1929 (NGVD of 1929)** is a geodetic datum derived from a general adjustment of the first order level nets of the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place. *See NOAA web site:*  
<http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88>

**Nekton** are the consumers in the aquatic environment and consist of large free-swimming organisms that are capable of sustained, directed mobility.

**Nephelometric turbidity unit (NTU)** is the measurement for reporting turbidity that is based on use of a standard suspension of

Formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

**Open or screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

**Organic carbon** (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediments. May be reported as dissolved organic carbon (DOC), suspended organic carbon (SOC), or total organic carbon (TOC).

**Organism** is any living entity.

**Organism count/area** refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m<sup>2</sup>), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

**Organism count/volume** refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

**Total organism count** is the total number of organisms collected and enumerated in any particular sample.

**Organochlorine compounds** are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

**Parameter Code** is a 5-digit number used in the U.S. Geological Survey computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

**Partial-record station** is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

**Particle size** is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method utilizes the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, Sedigraph) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

**Particle-size classification** used in this report agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	0.00024 - 0.004	Sedimentation
Silt	0.004 - 0.062	Sedimentation
Sand	0.062 - 2.0	Sedimentation/sieve
Gravel	2.0 - 64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

**Percent composition or percent of total** is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, weight, or volume.

**Periodic station** is a site where stage, discharge, sediment, chemical, or other hydrologic measurements are made one or more times during a year, but at a frequency insufficient to develop a daily record.

**Periphyton** is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

**Pesticides** are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

**pH** of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7 are termed "acidic," and solutions with a pH greater than 7 are termed "basic." Solutions with a pH of 7 are neutral. The presence and concentration of many dissolved chemical

constituents found in water are, in part, influenced by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms are also influenced, in part, by the hydrogen-ion activity of water.

**Picocurie** (PC, pCi) is one trillionth ( $1 \times 10^{-12}$ ) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields  $3.7 \times 10^{10}$  radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

**Plankton** is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL of sample).

**Phytoplankton** is the plant part of the plankton. They are usually microscopic, and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

**Blue-green algae** (*Cyanophyta*) are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

**Diatoms** are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

**Euglenoids** (*Euglenophyta*) are a group of algae that are usually free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark.

**Fire algae** (*Pyrrhophyta*) are a group of algae that are free-swimming unicells characterized by a red pigment spot.

**Green algae** have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

**Zooplankton** is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

**Polychlorinated biphenyls** (PCB's) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

**Polychlorinated naphthalenes** (PCN's) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCB's) and have been identified in commercial PCB preparations.

**Primary productivity** is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated (carbon method) by the plants.

**Primary productivity (carbon method)** is expressed as milligrams of carbon per area per unit time [ $\text{mg C}/(\text{m}^2/\text{time})$ ] for periphyton and macrophytes or per volume [ $\text{mg C}/(\text{m}^3/\text{time})$ ] for phytoplankton. Carbon method defines the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

**Primary productivity (oxygen method)** is expressed as milligrams of oxygen per area per unit time [ $\text{mg O}/(\text{m}^2/\text{time})$ ] for periphyton and macrophytes or per volume [ $\text{mg O}/(\text{m}^3/\text{time})$ ] for phytoplankton. Oxygen method defines production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

**Radioisotopes** are isotopic forms of an element that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight, but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.



**Recoverable from bottom material** is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

**Recurrence interval**, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or non-exceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day 10-year low flow ( $7Q_{10}$ ) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the non-exceedances of the  $7Q_{10}$  occur less than 10 years after the previous non-exceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous non-exceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the  $7Q_{10}$ .

**Replicate samples** are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

**River mile** is the distance of a point on a river measured in miles from the river's mouth along the low-water channel.

**River mileage** is the linear distance along the meandering path of a stream channel determined in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council.

**Runoff in inches** (IN., in.) is the depth, in inches, to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

**Sea level** refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929. *See:* [http://www.co-ops.nos.noaa.gov/glossary/gloss\\_n.html#NGVD](http://www.co-ops.nos.noaa.gov/glossary/gloss_n.html#NGVD)

**Sediment** is solid material that is transported by, suspended in, or deposited from water. It originates mostly from disintegrated rocks; it also includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

**Bed load** is the sediment that is transported in a stream by rolling, sliding, or skipping along or very close to the bed. In this report, bed load is considered to consist of particles in transit from the bed to an elevation equal to the top of the bed-load sampler nozzle (usually within 0.25 ft of the streambed).

**Bed-load discharge** (tons per day) is the quantity of sediment moving as bed load, reported as dry weight, that passes a cross section in a given time.

**Suspended sediment** is the sediment that is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

**Suspended-sediment concentration** is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The entire sample is used for the analysis.

**Mean concentration of suspended sediment** is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

**Suspended-sediment discharge** (tons/day) is the quantity of sediment moving in suspension, reported as dry weight, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge ( $\text{ft}^3/\text{s}$ ) x 0.0027.



**Suspended-sediment load** is a term that refers to material in suspension. The term needs to be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It is not synonymous with either suspended-sediment discharge or concentration.

**Total sediment discharge** (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, reported as dry weight, that passes a cross section in a given time.

**Total sediment load** or total load is a term that refers to the total sediment (bed load plus suspended-sediment load) that is in transport. The term needs to be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It is not synonymous with total sediment discharge.

**Seven-day 10-year low flow** ( $7Q_{10}$ ,  $7Q_{10}$ ) is the minimum flow averaged over 7 consecutive days that is expected to occur on average, once in any 10-year period. The  $7Q_{10}$  has a 10-percent chance of occurring in any given year.

**Sodium adsorption ratio** (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

**Solute** is any substance that is dissolved in water.

**Specific conductance** is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

**Stable isotope ratio** (per MILL/MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific waters, to evaluate mixing of different waters, as an aid in determining reaction rates, and other chemical or hydrologic processes.

**Stage:** See "Gage height."

**Stage-discharge relation** is the relation between the water-surface elevation, termed stage (gage height), and the volume of water flowing in a channel per unit time.

**Streamflow** is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

**Substrate** is the physical surface upon which an organism lives.

**Artificial substrate** is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

**Natural substrate** refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

**Surface area** of a lake or impoundment is that area encompassed by the boundary of the lake or impoundment as shown on USGS topographic maps, or on other available maps or photographs. The computed surface areas reflect the water levels of the lakes or impoundments at the times when the information for the maps or photographs was obtained.

**Surficial bed material** is the top 0.1 to 0.2 ft of the bed material that is sampled using U.S. Series Bed-Material Samplers.

**Suspended** (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45-micrometer filter.

**Suspended, recoverable** is the amount of a given constituent that is in solution after the part of a representative suspended-sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of “suspended, recoverable” constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

**Suspended, total** is the total amount of a given constituent in the part of a representative suspended-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as “suspended, total.”

Determinations of “suspended, total” constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

**Synoptic Studies** are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

**Taxonomy** is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata*, is the following:

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	<i>Hexagenia</i>
Species	<i>Hexagenia limbata</i>

**Time-weighted average** is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

**Tons per acre-foot** is the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

**Tons per day** (T/DAY, tons/d) is the rate representing a mass of 1 ton of a constituent in streamflow passing a cross section in 1 day. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

**Total** is the total amount of a given constituent in a representative suspended-sediment sample, regardless of the constituent’s physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as “total.” (Note that the word “total” does double duty here, indicating both that the sample consists of a suspended-sediment mixture and that the analytical method determined all of the constituent in the sample.)

**Total discharge** is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as “total sediment discharge,” “total chloride discharge,” and so on.

**Total in bottom material** is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as “total in bottom material.”

**Total length** (fish) is the straight-line distance from the anterior point of a fish specimen’s snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

**Total load** refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

**Total recoverable** is the amount of a given constituent that is in solution after a representative suspended-sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the “total” amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of

analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

**Turbidity** is a measurement of the collective optical properties of a water sample that cause light to be scattered and absorbed rather than transmitted in straight lines; the higher the intensity of scattered light, the higher the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU) or Formazin turbidity units (FTU) depending on the method and equipment used.

**Volatile organic compounds** (VOC's) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many VOC's are manmade chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens (U.S. Environmental Protection Agency, 1996).

**Water level** is the water-surface elevation or stage of the free surface of a body of water above or below any datum (see "Gage height"), or the surface of water standing in a well, usually indicative of the position of the water table or other potentiometric surface.

**Water table** is the surface of a ground-water body at which the water is at atmospheric pressure.

**Water-table aquifer** is an unconfined aquifer within which is found the water table.

**Water year** in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1999, is called the "1999 water year."

**WDR** is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports. (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976.)

**Weighted average** is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

**Well** is an excavation (pit, hole, tunnel), generally cylindrical in form and often walled in, drilled, dug, driven, bored, or jetted into the ground to such a depth as to penetrate water-yielding geologic material and allow the water to flow or to be pumped to the surface.

**Wet weight** refers to the weight of animal tissue or other substance including its contained water.

**WSP** is used as an abbreviation for "Water-Supply Paper" in reference to previously published reports



## PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

**Book 1. Collection of Water Data by Direct Measurement*****Section D. Water Quality***

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

**Book 2. Collection of Environmental Data*****Section D. Surface Geophysical Methods***

- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.

***Section E. Subsurface Geophysical Methods***

- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L.M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W. S. Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.

***Section F. Drilling and Sampling Methods***

- 2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W. E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.

**Book 3. Applications of Hydraulics*****Section A. Surface-Water Techniques***

- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.



- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurement at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F. A. Kilpatrick and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.
- 3-A10. *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. *Measurement of discharge by the moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. *Fluorometric procedures for dye tracing*, Revised, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 34 pages.
- 3-A13. *Computation of continuous records of streamflow*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. *Use of flumes in measuring discharge*, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. *Measurement of discharge using tracers*, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F. A. Kilpatrick, R. E. Rathbun, Nobuhiro Yotsukura, G. W. Parker, and L. L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 pages.
- 3-A19. *Levels at streamflow gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 31 pages.
- 3-A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A20. 1993. 38 pages.
- 3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS--TWRI Book 3, Chapter A21. 1995. 56 pages.

#### **Section B. Ground-water techniques**

- 3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-B4. *Regression modeling of ground-water flow*, by R. L. Cooley and R. L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 pages.
- 3-B4. *Supplement 1. Regression modeling of ground-water flow - Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems*, by R. L. Cooley: USGS--TWRI Book 3, Chapter B4. 1993. 8 pages.
- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction*, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.
- 3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.
- 3-B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow*, by E. J. Wexler: USGS--TWRI Book 3, Chapter B7. 1992. 190 pages.
- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by Thomas K. Edwards and G. Douglass Glysson: USGS--TWRI Book 3, Chapter C2, 1988, 80 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

#### **Book 4. Hydrologic Analysis and Interpretation**

##### ***Section A. Statistical Analysis***

- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

##### ***Section B. Surface Water***

- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

##### ***Section D. Interrelated Phases of the Hydrologic Cycle***

- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

#### **Book 5. Laboratory Analysis**

##### ***Section A. Water Analysis***

- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L. C. Friedman, editors: USGS--TWRI Book 5, Chapter A1. 1989. 545 pages.

- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R. L. Wershaw, M. J. Fishman, R. R. Grabbe, and L. E. Lowe: USGS--TWRI Book 5, Chapter A3. 1987. 80 pages.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L. J. Britton and P. E. Greeson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 pages.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.

### **Section C. Sediment Analysis**

- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

## **Book 6. Modeling Techniques**

### **Section A. Ground Water**

- 6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.
- 6-A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S. A. Leake and D. E. Prudic: USGS--TWRI Book 6, Chapter A2. 1991. 68 pages.
- 6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L. J. Torak: USGS--TWRI Book 6, Chapter A3. 1993. 136 pages.
- 6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R. L. Cooley: USGS--TWRI Book 6, Chapter A4. 1992. 108 pages.
- 6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details*, by L. J. Torak: USGS--TWRI Book 6, Chapter A5, 1993. 243 pages.
- 6-A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler. 1995. 125 pages.

## **Book 7. Automated Data Processing and Computations**

### **Section C. Computer Programs**

- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. *A model for simulation of flow in singular and interconnected channels*, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.

## **Book 8. Instrumentation**

### **Section A. Instruments for Measurement of Water Level**

- 8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.

***Section B. Instruments for Measurement of Discharge***

- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

**Book 9. Handbooks for Water-Resources Investigations**

***Section A. National Field Manual for the Collection of Water-Quality Data***

- 9-A1. *National Field Manual for the Collection of Water-Quality Data: Preparations for Water Sampling*, by F. D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS--TWRI Book 9, chap. A1. 1998. 47 p.
- 9-A2. *National Field Manual for the Collection of Water-Quality Data: Selection of Equipment for Water Sampling*, edited by F. D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS--TWRI Book 9, chap. A2. 1998. 94 p.
- 9-A3. *National Field Manual for the Collection of Water-Quality Data: Cleaning of Equipment for Water Sampling*, edited by F. D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS--TWRI Book 9, chap. A3. 1998. 75 p.
- 9-A4. *National Field Manual for the Collection of Water-Quality Data: Collection of Water Samples*, edited by F. D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A4. 1999. 156 p.
- 9-A5. *National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples*, edited by F. D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A5. 1999. 149 p.
- 9-A6. *National Field Manual for the Collection of Water-Quality Data: Field Measurements*, edited by F. D. Wilde and D.B. Radtke: USGS--TWRI Book 9, Chapter A6. 1998. Variously paginated.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, by D. N. Myers and F. D. Wilde: USGS--TWRI Book 9, Chapter A7. 1997 and 1999. Variously paginated.
- 9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-Material Samples*, by D.B. Radtke: USGS--TWRI Book 9, Chapter A8. 1998. 48 pages.
- 9-A9. *National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities*, by S.L. Lane and R.G. Fay: USGS--TWRI Book 9, Chapter A9, 1998. 60 pages.



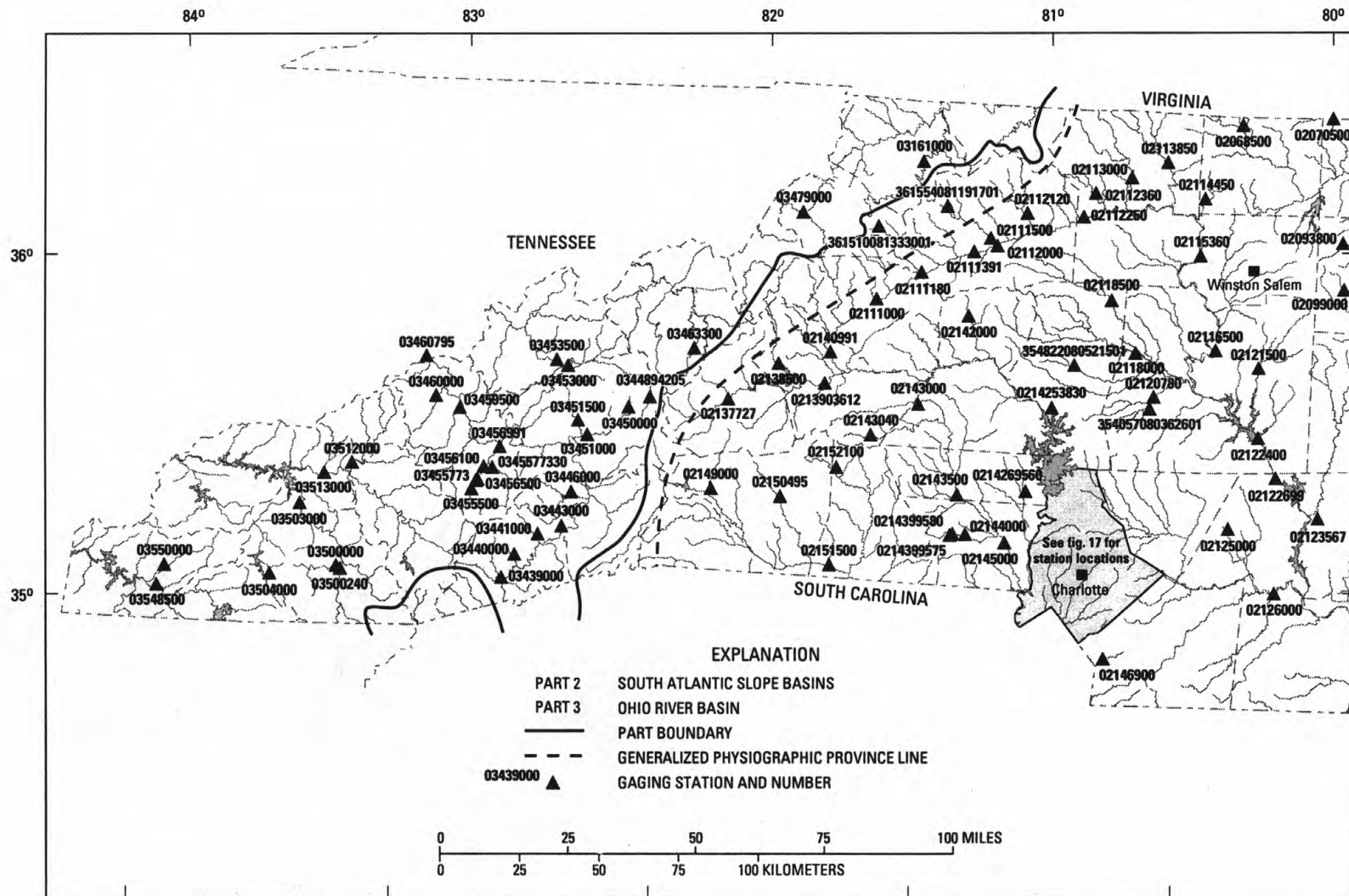


Figure 11.--Locations of gaging stations in western North Carolina.

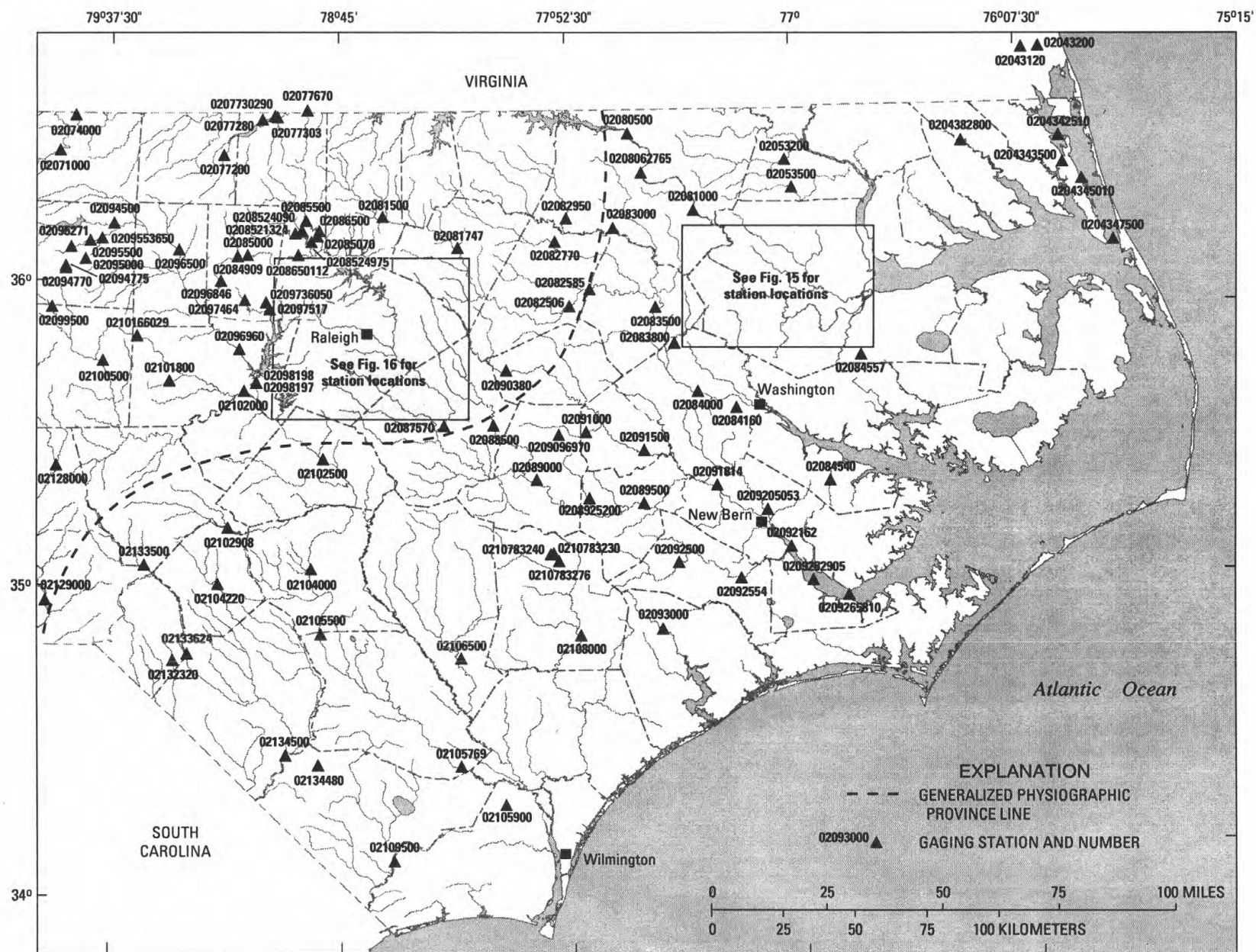


Figure 12.--Locations of gaging stations in eastern North Carolina.

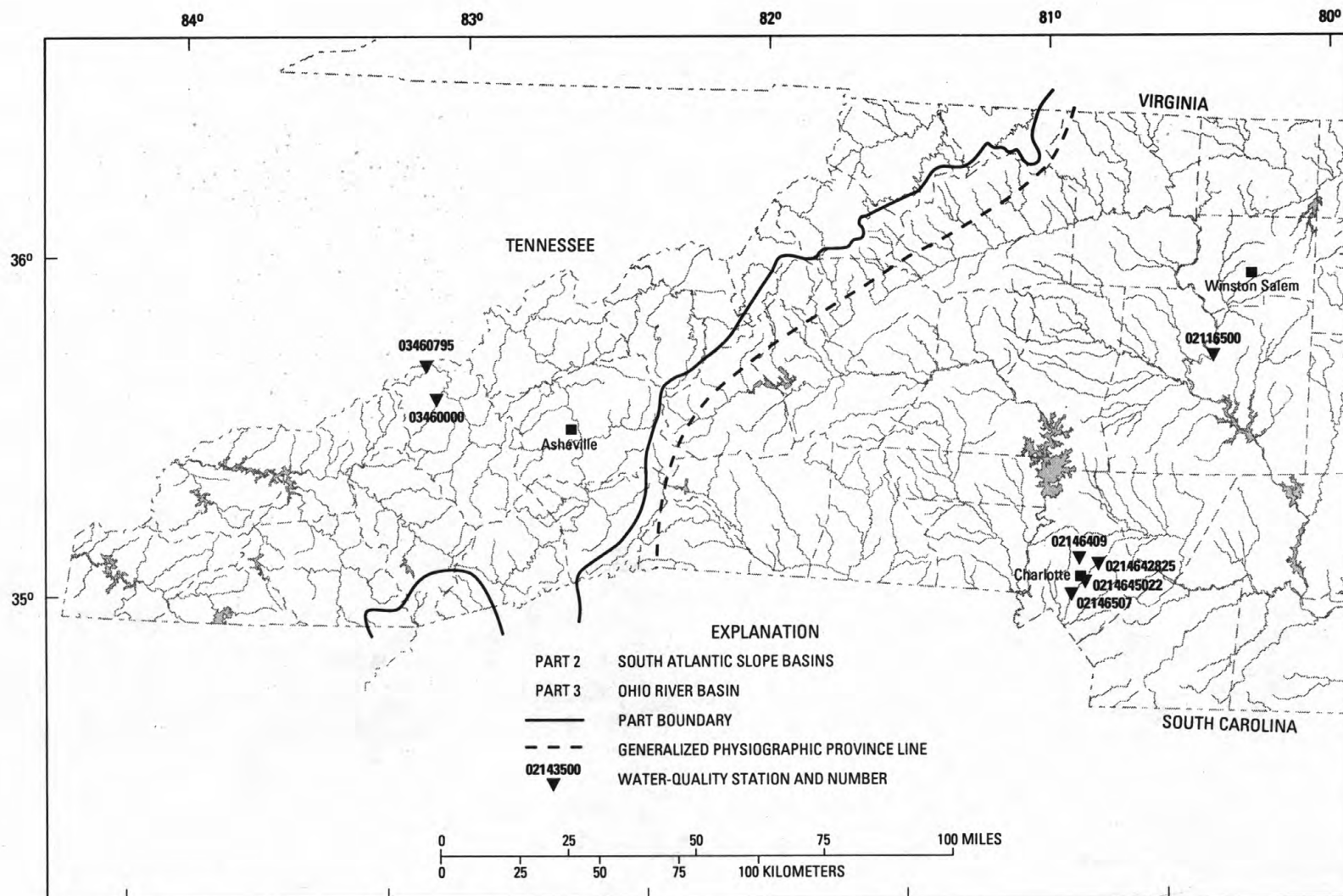


Figure 13.--Locations of water-quality stations in western North Carolina.

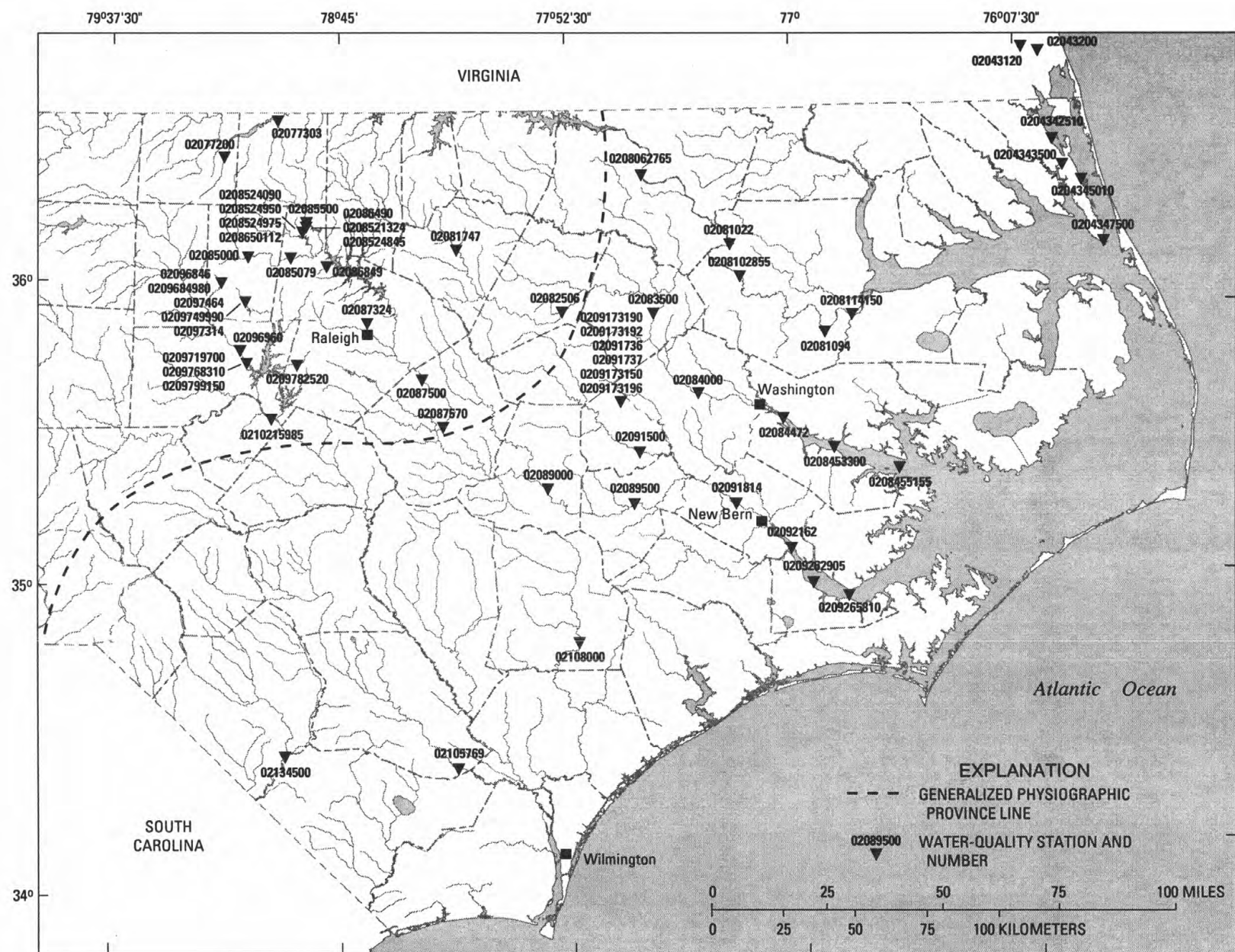


Figure 14.--Locations of water-quality stations in eastern North Carolina.





LOCATION OF SITES IN BERTIE AND MARTIN COUNTIES, NORTH CAROLINA

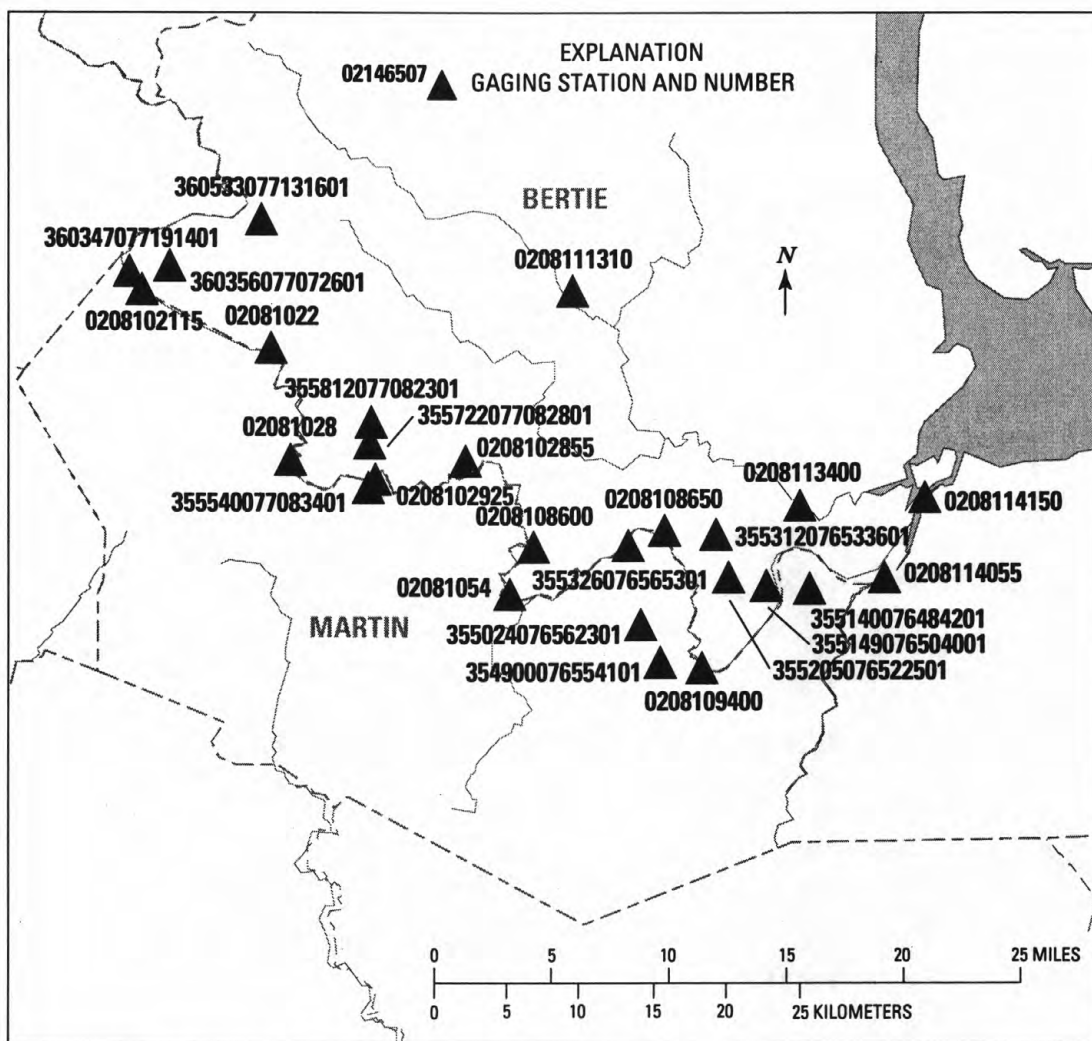


Figure 15.--Locations of gaging stations in Bertie and Martin Counties, North Carolina.



LOCATION OF SITES IN AND AROUND WAKE COUNTY, NORTH CAROLINA

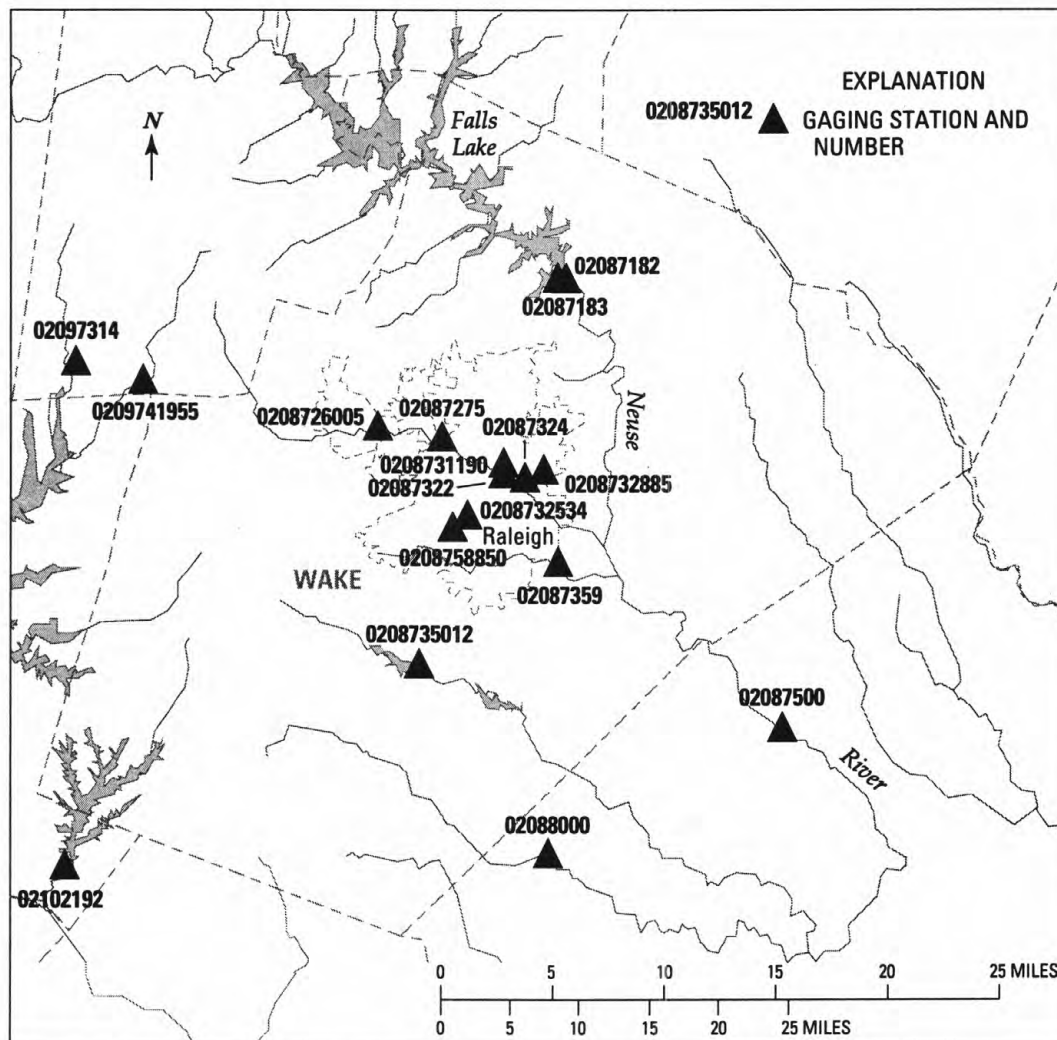


Figure 16.--Locations of gaging stations in and around Wake County, North Carolina.

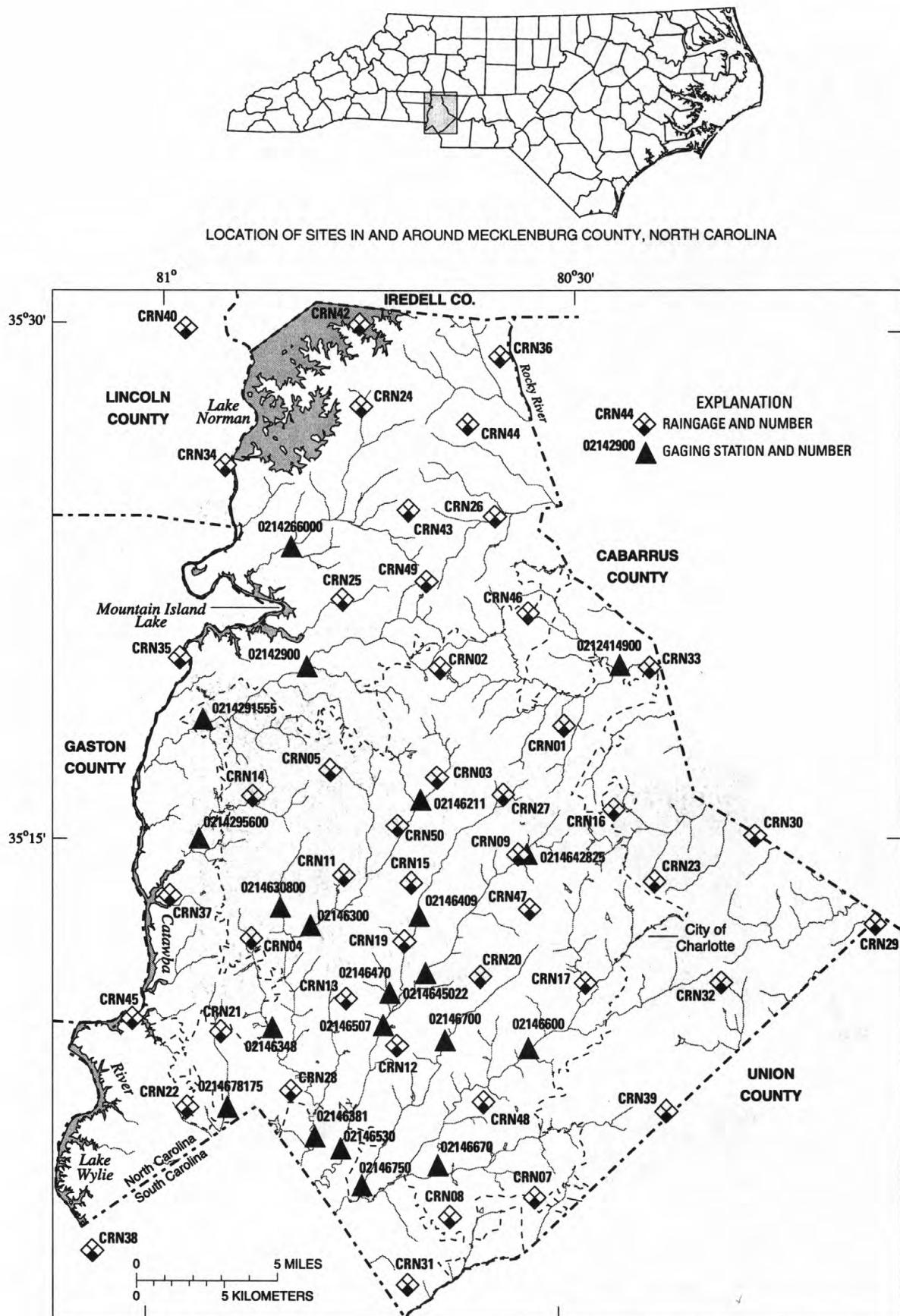


Figure 17.--Locations of gaging stations in and around Mecklenburg County, North Carolina.



President Clinton's helicopter flying over the flooded area near Princeville, N.C., September 1999.



## CAPE FEAR RIVER BASIN

02093800 REEDY FORK NEAR OAK RIDGE, NC

LOCATION.--Lat 36°10'22", long 79°57'12", Guilford County, Hydrologic Unit 03030002, on left bank at downstream side of bridge on Secondary Road 2128, 0.8 mi downstream of Beaver Creek, and 2 mi east of Oak Ridge.

DRAINAGE AREA.--20.6 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1955 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 771.30 ft above sea level. Prior to Dec. 13, 1955, nonrecording gage at same site and datum. Satellite telemetry at station.

REMARKS.--Records good except those for estimated discharges, which are poor. Some diurnal fluctuation at medium and low flows caused by upstream mill. Maximum discharge for period of record, from rating curve extended above 1,500 ft<sup>3</sup>/s on basis of contracted-opening measurement; gage height: 10.94 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	5.7	6.7	14	23	16	21	63	7.5	24	6.6	9.8
2	5.2	5.9	6.6	14	32	14	20	34	7.2	30	6.1	8.7
3	5.0	7.1	6.9	134	26	15	16	25	6.7	13	5.9	7.9
4	5.4	7.8	7.2	71	23	17	15	20	6.5	9.3	4.9	7.5
5	6.3	6.6	7.1	35	20	14	14	18	6.2	7.7	4.9	76
6	6.5	6.5	6.9	27	20	14	13	16	6.1	6.8	4.4	56
7	6.5	6.5	7.1	24	19	14	13	15	6.1	15	4.2	29
8	7.6	6.8	e6.2	23	18	13	12	16	5.6	23	3.9	21
9	14	7.0	e5.6	21	17	14	13	13	5.5	12	4.7	18
10	7.5	7.0	e13	18	17	15	12	13	7.1	9.9	4.4	17
11	6.4	10	e11	17	16	14	14	12	15	15	4.0	13
12	6.1	11	8.4	16	17	13	13	11	8.1	12	3.6	11
13	6.0	7.9	90	14	18	13	11	11	6.8	29	3.4	11
14	5.5	7.9	39	13	16	16	11	75	6.1	18	4.4	10
15	5.3	9.6	21	20	16	24	16	35	8.9	15	18	17
16	5.3	8.5	35	18	15	20	24	22	12	11	6.3	76
17	5.3	11	22	16	15	17	16	16	18	11	4.6	26
18	5.1	8.4	16	47	22	16	15	15	9.6	8.9	4.2	18
19	5.1	7.5	14	41	20	15	14	14	8.0	10	3.7	15
20	5.0	7.5	14	26	24	14	13	12	10	9.3	7.9	13
21	5.0	6.6	13	21	20	28	12	11	12	13	7.6	15
22	4.9	6.7	12	19	18	26	12	11	9.1	26	4.4	19
23	4.9	6.7	13	32	17	21	10	10	7.7	12	4.1	13
24	5.3	6.7	40	226	17	18	9.6	9.9	7.4	11	4.2	11
25	5.5	6.8	38	108	16	18	9.2	9.5	7.4	9.6	106	10
26	5.6	7.9	24	49	16	16	9.5	9.8	8.2	8.4	57	9.5
27	5.6	8.3	21	43	15	15	11	9.8	8.4	7.4	189	12
28	5.7	7.2	20	34	17	14	23	8.9	9.1	7.1	38	57
29	6.6	6.7	18	28	---	13	31	8.8	6.9	14	22	61
30	5.8	6.7	17	24	---	13	256	8.2	11	13	16	138
31	5.8	---	15	22	---	12	---	7.9	---	7.8	12	---
TOTAL	185.8	226.5	574.7	1215	530	502	679.3	560.8	254.2	419.2	570.4	806.4
MEAN	5.99	7.55	18.5	39.2	18.9	16.2	22.6	18.1	8.47	13.5	18.4	26.9
MAX	14	11	90	226	32	28	256	75	18	30	189	138
MIN	4.9	5.7	5.6	13	15	12	9.2	7.9	5.5	6.8	3.4	7.5
IN.	.29	.37	.90	1.90	.92	.79	1.10	.88	.41	.66	.89	1.30
CFSM	.34	.41	1.04	2.19	.96	.91	1.23	1.01	.46	.76	1.03	1.40

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1999, BY WATER YEAR (WY)

MEAN	18.5	17.5	23.5	31.0	35.4	37.4	29.9	23.5	19.1	19.3	16.9	18.1
MAX	80.2	40.4	48.7	82.0	78.7	102	75.8	58.9	74.4	152	62.0	100
(WY)	1991	1986	1963	1978	1979	1975	1987	1991	1982	1984	1978	1996
MIN	5.90	7.21	8.67	8.52	13.5	12.4	9.79	8.19	5.03	3.64	5.88	3.39
(WY)	1968	1968	1956	1956	1968	1967	1967	1986	1986	1977	1977	1968

### SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

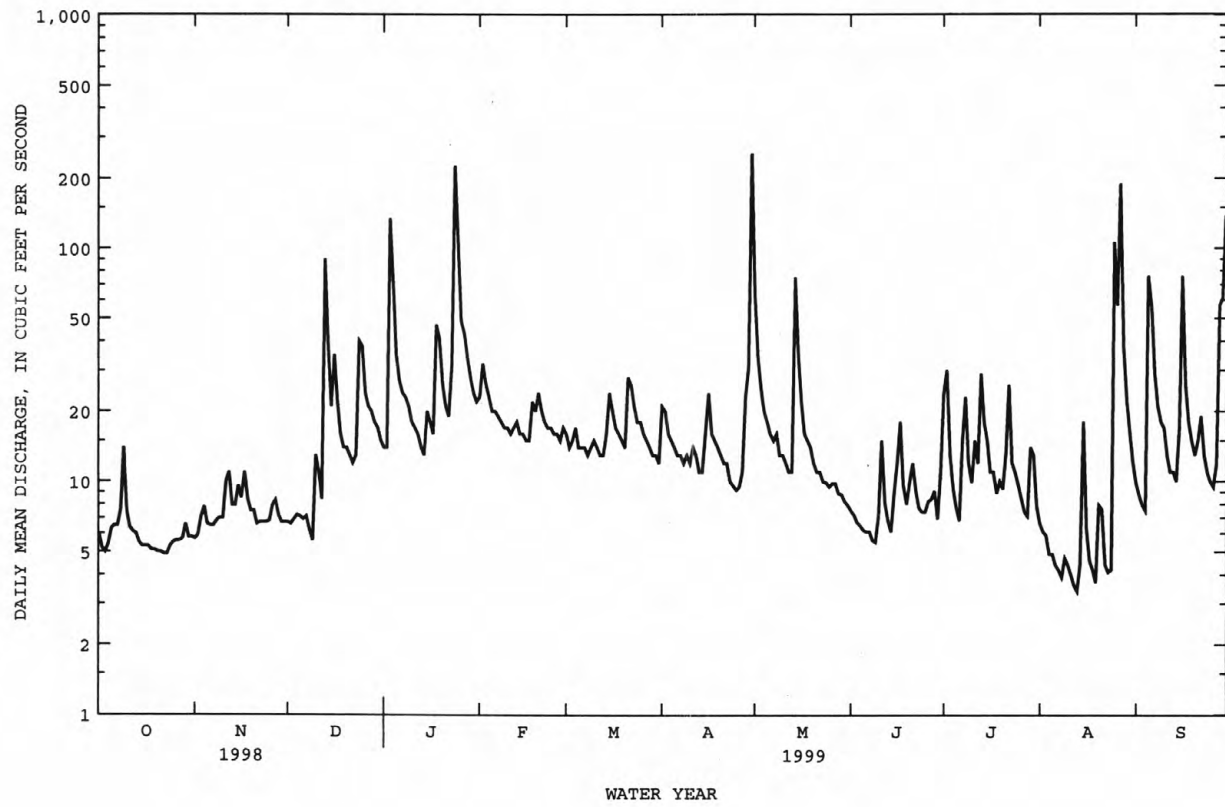
## WATER YEARS 1956 - 1999

ANNUAL TOTAL	8715.7			6524.3				
ANNUAL MEAN	23.9			17.9			24.1	
HIGHEST ANNUAL MEAN							42.7	1984
LOWEST ANNUAL MEAN							11.7	1967
HIGHEST DAILY MEAN	349	May	8	256	Apr	30	1250	Jul 28 1984
LOWEST DAILY MEAN	3.7	Aug	6	3.4	Aug	13	1.7	Aug 7 1977
ANNUAL SEVEN-DAY MINIMUM	4.8	Aug	1	4.0	Aug	7	2.3	Sep 29 1968
INSTANTANEOUS PEAK FLOW				412	Apr	30	3950*	Oct 10 1959
INSTANTANEOUS PEAK STAGE				8.35	Apr	30	12.41	Sep 22 1979
INSTANTANEOUS LOW FLOW				3.0	Aug	13	1.2	Aug 7 1977
ANNUAL RUNOFF (CFSM)	1.16			.87			1.17	
ANNUAL RUNOFF (INCHES)	15.74			11.78			15.91	
10 PERCENT EXCEEDS	46			28			39	
50 PERCENT EXCEEDS	15			13			15	
90 PERCENT EXCEEDS	5.4			5.6			7.0	

e Estimated.

\* See REMARKS.

02093800 REEDY FORK NEAR OAK RIDGE, NC--Continued



## 02094500 REEDY FORK NEAR GIBSONVILLE, NC

LOCATION.--Lat 36°10'31", long 79°37'01", Guilford County, Hydrologic Unit 03030002, on right bank 0.2 mi downstream of Huffines Mill on Secondary Road 2719, 1.2 mi upstream from Buffalo Creek, and 6 mi northwest of Gibsonville.

DRAINAGE AREA.--131 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1928 to current year.

REVISED RECORDS.--WSP 1303: 1929-40 (monthly and yearly runoff). WSP 1383: 1929-30, 1933(M), 1934, 1937(M), 1939-42(M), 1948. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder and rock-masonry control. Datum of gage is 626.88 ft above sea level. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since 1923 by Lake Brandt (station 02094117), 14 mi upstream; since 1957 by Lake Higgins (station 02093981) on Brush Creek, a tributary to Lake Brandt; since 1943 by Richland Lake 12 mi. upstream from station; and since 1968 by Lake Townsend (station 02094305), 9 mi upstream from station. City of Greensboro diverted an average of 22.1 ft<sup>3</sup>/s from Lake Brandt and an average of 35.6 ft<sup>3</sup>/s from Lake Townsend for municipal water supply. Prior to regulation, maximum discharge: 11,600 ft<sup>3</sup>/s, Sept. 25, 1947; gage height: 20.77 ft; minimum discharge not determined. Minimum discharge for regulated period also occurred July 30, Aug. 6, 7, 1977. Minimum for current water year also occurred on Oct. 26, 27.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1916 reached a stage of 17.90 ft, from information by local resident; discharge, 8,640 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	5.6	5.6	11	211	27	96	684	10	10	4.2	4.7
2	4.6	5.6	5.9	10	63	15	304	97	8.8	14	3.8	6.7
3	3.8	6.3	5.3	352	35	14	52	63	8.6	10	3.5	8.6
4	3.1	6.2	e4.4	73	96	64	29	259	9.3	7.0	3.4	6.5
5	4.0	6.6	e3.7	33	26	104	23	51	7.8	5.8	4.3	192
6	5.5	11	e3.1	20	19	19	21	23	7.4	5.6	6.4	216
7	4.5	9.8	e2.7	17	18	15	26	18	8.1	59	7.1	46
8	5.9	8.0	3.0	16	19	13	20	19	8.7	80	5.6	22
9	8.8	7.2	13	16	16	13	19	16	8.1	19	5.4	27
10	6.5	7.6	5.8	14	17	14	17	15	7.3	9.7	5.0	21
11	4.4	8.6	3.2	12	17	14	15	12	8.0	7.5	4.7	12
12	3.4	12	2.7	11	17	13	17	12	7.4	7.2	4.4	9.8
13	3.1	15	77	12	18	12	14	14	7.7	17	4.1	7.7
14	3.9	16	e43	12	17	19	14	150	7.4	19	4.1	6.8
15	3.1	14	17	30	17	58	17	70	8.2	16	3.8	976
16	2.7	13	38	27	17	34	19	34	13	11	5.1	887
17	3.1	12	23	20	17	24	15	24	20	9.0	5.6	62
18	3.0	11	13	51	24	19	14	17	10	7.7	5.2	27
19	3.1	10	11	29	23	17	14	15	7.2	6.7	5.1	16
20	3.2	9.1	9.4	26	27	15	13	14	7.7	6.0	4.8	12
21	3.4	9.1	9.0	24	21	64	13	12	12	8.4	4.3	15
22	3.2	8.3	8.5	19	e17	211	13	11	9.5	65	3.9	25
23	3.1	7.6	9.4	31	16	40	13	10	8.1	21	4.1	13
24	2.8	7.7	e20	509	16	28	13	9.3	6.7	11	4.1	10
25	2.6	8.5	9.9	112	16	25	12	8.8	6.7	7.6	e4.3	9.0
26	2.6	11	4.6	47	18	23	12	9.3	7.7	5.9	59	8.2
27	2.8	11	6.4	33	15	59	14	9.8	7.2	5.2	358	8.6
28	3.0	7.0	11	26	104	20	34	12	6.7	4.7	30	458
29	3.4	5.7	14	20	---	17	62	11	6.2	4.2	13	889
30	5.1	5.0	12	17	---	15	1610	11	14	4.2	7.8	877
31	5.4	---	12	15	---	16	---	11	---	4.5	5.5	---
TOTAL	122.0	275.5	406.6	1645	937	1041	2555	1722.2	265.5	468.9	589.6	4879.6
MEAN	3.94	9.18	13.1	53.1	33.5	33.6	85.2	55.6	8.85	15.1	19.0	163
MAX	8.8	16	77	509	211	211	1610	684	20	80	358	976
MIN	2.6	5.0	2.7	10	15	12	12	8.8	6.2	4.2	3.4	4.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1999,\* BY WATER YEAR (WY)

	MEAN	54.0	45.0	89.8	184	159	175	144	97.9	64.3	63.0	42.0	68.3
MAX	432	165	221	644	456	613	613	365	477	596	216	518	
(WY)	1991	1993	1973	1978	1979	1993	1987	1978	1982	1984	1978	1996	
MIN	2.85	6.70	5.97	11.1	19.9	16.4	11.2	7.43	6.08	2.83	2.82	3.31	
(WY)	1969	1970	1969	1981	1977	1976	1976	1986	1986	1986	1977	1983	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

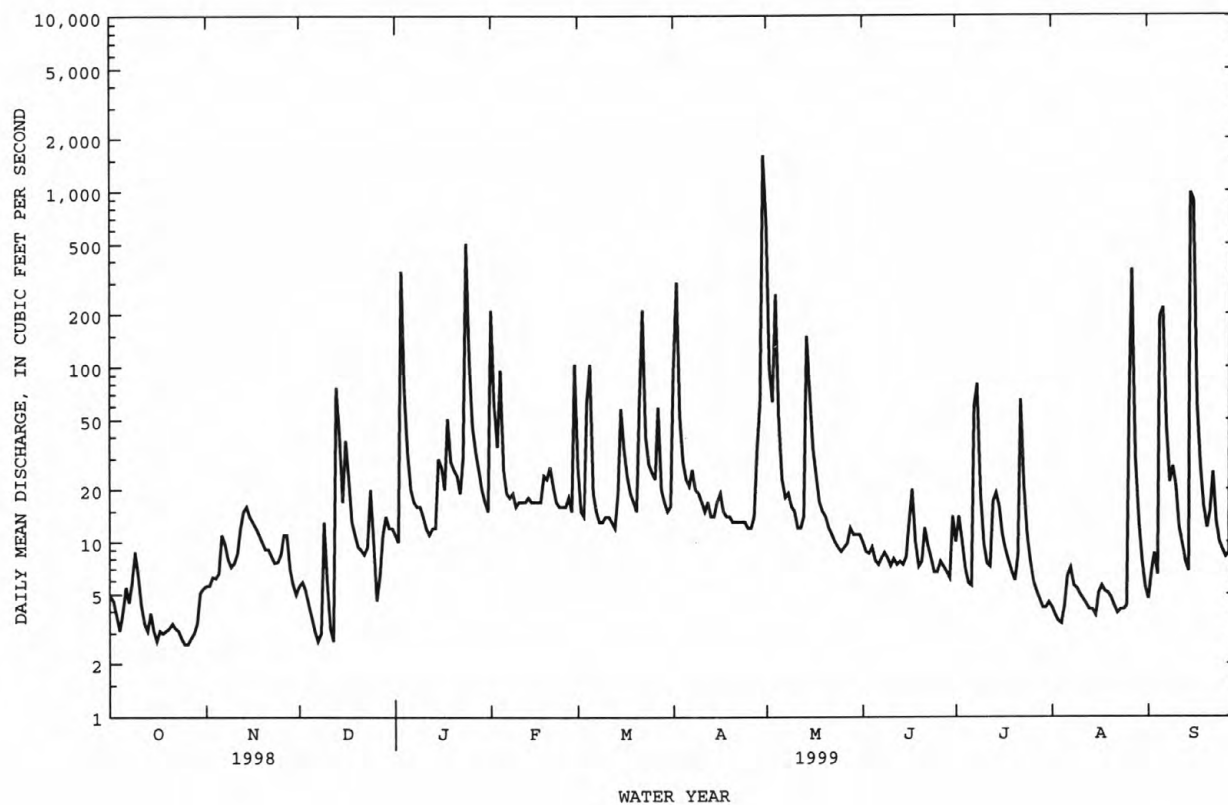
WATER YEARS 1969 - 1999\*

ANNUAL TOTAL	41654.6	14907.9	
ANNUAL MEAN	114	40.8	98.6
HIGHEST ANNUAL MEAN			188
LOWEST ANNUAL MEAN			20.8
HIGHEST DAILY MEAN	2080	Feb 17	5230
LOWEST DAILY MEAN	1.8	Sep 2	1.2
ANNUAL SEVEN-DAY MINIMUM	2.4	Aug 28	1.4
INSTANTANEOUS PEAK FLOW			6330
INSTANTANEOUS PEAK STAGE			15.65
INSTANTANEOUS LOW FLOW			1.4*
10 PERCENT EXCEEDS	424	59	279
50 PERCENT EXCEEDS	13	12	22
90 PERCENT EXCEEDS	3.6	4.2	5.6

e Estimated.

\* Regulated period only (1969-1999). See REMARKS.

02094500 REEDY FORK NEAR GIBSONVILLE, NC--Continued





## CAPE FEAR RIVER BASIN

02094770 SOUTH BUFFALO CREEK AT US 220 AT GREENSBORO, NC

LOCATION.--Lat 36°02'16", long 79°48'01", Guilford County, Hydrologic Unit 03030002, on left bank at downstream side of bridge on US 220, and 0.8 mi upstream from Ryan Creek in Greensboro.

DRAINAGE AREA.--15.4 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1998 to October 1999.

GAGE.--Water-stage recorder. Datum of gage is 730 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records fair below 10 ft<sup>3</sup>/s and poor above including estimated discharges. Minimum discharge for period Aug. to Sept. 1998 also occurred on Aug. 27, 28. Minimum discharge for current water year and period of record also occurred Aug. 12, 13, 1999.

DISCHARGE, CUBIC FEET PER SECOND, PERIOD AUGUST 1998 TO SEPTEMBER 1998  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	7.0	2.0
2	---	---	---	---	---	---	---	---	---	---	2.8	1.6
3	---	---	---	---	---	---	---	---	---	---	2.3	e68
4	---	---	---	---	---	---	---	---	---	---	2.0	80
5	---	---	---	---	---	---	---	---	---	---	1.9	3.6
6	---	---	---	---	---	---	---	---	---	---	1.7	3.0
7	---	---	---	---	---	---	---	---	---	---	1.7	2.6
8	---	---	---	---	---	---	---	---	---	---	183	76
9	---	---	---	---	---	---	---	---	---	---	53	5.3
10	---	---	---	---	---	---	---	---	---	---	82	2.8
11	---	---	---	---	---	---	---	---	---	---	7.0	2.6
12	---	---	---	---	---	---	---	---	---	---	3.4	2.3
13	---	---	---	---	---	---	---	---	---	---	2.8	2.3
14	---	---	---	---	---	---	---	---	---	---	e2.5	2.0
15	---	---	---	---	---	---	---	---	---	---	e2.4	1.9
16	---	---	---	---	---	---	---	---	---	---	2.5	1.9
17	---	---	---	---	---	---	---	---	---	---	29	1.8
18	---	---	---	---	---	---	---	---	---	---	e2.7	1.8
19	---	---	---	---	---	---	---	---	---	---	e2.1	1.8
20	---	---	---	---	---	---	---	---	---	---	1.9	1.7
21	---	---	---	---	---	---	---	---	---	---	1.8	6.3
22	---	---	---	---	---	---	---	---	---	---	e1.9	4.7
23	---	---	---	---	---	---	---	---	---	---	1.8	2.9
24	---	---	---	---	---	---	---	---	---	---	1.7	2.2
25	---	---	---	---	---	---	---	---	---	---	1.8	1.8
26	---	---	---	---	---	---	---	---	---	---	1.5	1.8
27	---	---	---	---	---	---	---	---	---	---	1.4	1.8
28	---	---	---	---	---	---	---	---	---	---	1.5	1.7
29	---	---	---	---	---	---	---	---	---	---	1.4	2.0
30	---	---	---	---	---	---	---	---	---	---	28	1.7
31	---	---	---	---	---	---	---	---	---	---	2.2	---
TOTAL	---	---	---	---	---	---	---	---	---	---	438.7	291.9
MEAN	---	---	---	---	---	---	---	---	---	---	14.2	9.73
MAX	---	---	---	---	---	---	---	---	---	---	183	80
MIN	---	---	---	---	---	---	---	---	---	---	1.4	1.6
CFSM	---	---	---	---	---	---	---	---	---	---	.92	.63
IN.	---	---	---	---	---	---	---	---	---	---	1.06	.71

## STATISTICS OF MONTHLY MEAN DATA FOR PERIOD AUGUST TO SEPTEMBER 1998

MEAN	---	---	---	---	---	---	---	---	---	---	14.2	9.73
MAX	---	---	---	---	---	---	---	---	---	---	14.2	9.73
(WY)	---	---	---	---	---	---	---	---	---	---	1998	1998
MIN	---	---	---	---	---	---	---	---	---	---	14.2	9.73
(WY)	---	---	---	---	---	---	---	---	---	---	1998	1998

## SUMMARY STATISTICS

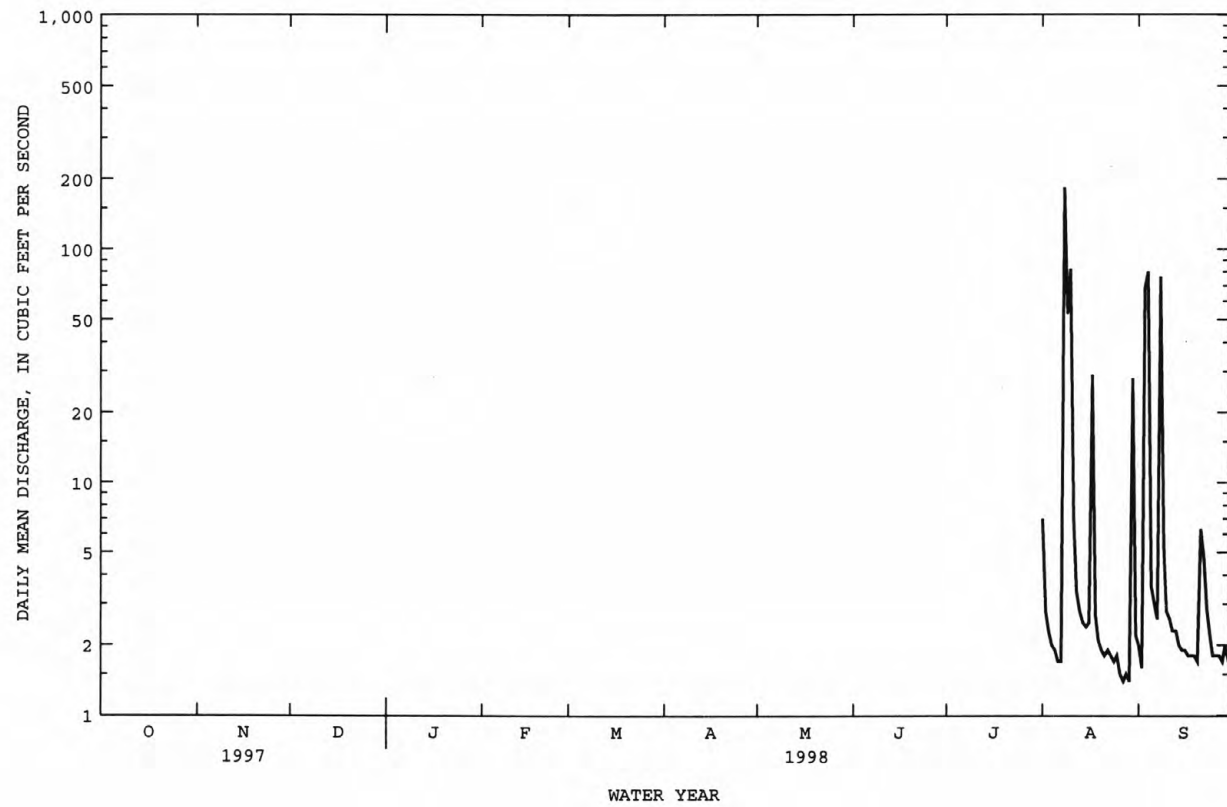
## FOR PERIOD AUGUST TO SEPTEMBER

INSTANTANEOUS PEAK FLOW 1640 Aug 8  
 INSTANTANEOUS PEAK STAGE 8.44 Aug 8  
 INSTANTANEOUS LOW FLOW 1.3\* Aug 26

e Estimated.

\* See REMARKS.

02094770 SOUTH BUFFALO CREEK AT US 220 AT GREENSBORO, NC--Continued



## CAPE FEAR RIVER BASIN

02094770 SOUTH BUFFALO CREEK AT US 220 AT GREENSBORO, NC--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	.79	1.9	4.6	39	4.3	e135	14	2.2	e164	1.2	2.0
2	1.5	.84	1.3	23	60	4.0	11	6.2	2.0	31	1.0	1.9
3	1.4	3.9	1.3	1020	9.7	23	6.2	4.6	2.0	2.7	.90	1.8
4	1.9	1.4	1.4	19	7.1	16	5.4	4.6	1.9	1.9	.84	1.9
5	2.1	1.1	1.3	8.7	5.6	4.7	4.8	4.5	1.9	1.6	.82	e436
6	1.8	.88	1.4	e8.9	5.3	4.5	4.4	4.3	2.2	1.4	.80	86
7	1.8	.81	1.4	e7.9	5.1	4.2	4.5	3.7	2.3	28	.78	19
8	73	.87	5.6	12	4.6	3.7	4.3	3.4	2.2	6.1	.77	4.3
9	7.8	1.0	94	6.0	4.1	7.2	4.3	3.1	1.8	2.1	1.2	6.9
10	1.6	1.1	5.7	4.3	4.0	7.6	4.0	3.3	2.0	1.6	.99	9.4
11	1.4	16	4.5	3.9	4.0	4.2	28	3.3	3.0	3.8	.75	3.6
12	.92	2.0	6.7	4.2	8.0	3.8	5.1	3.0	2.0	15	.68	2.8
13	.83	1.6	232	3.9	6.7	4.1	3.9	3.1	1.8	27	.66	2.4
14	.84	3.0	12	4.4	3.9	48	3.8	e173	1.8	5.2	e88	2.4
15	.76	8.8	9.3	99	3.9	36	11	5.6	11	2.2	49	e390
16	.77	6.8	162	8.0	3.9	9.9	6.0	3.6	69	1.6	3.3	e344
17	.77	7.9	8.8	31	4.0	7.0	3.8	3.1	15	1.4	2.5	7.3
18	.79	2.0	6.2	135	40	5.6	3.5	3.2	2.3	1.4	2.0	4.2
19	.79	1.7	5.7	16	20	5.2	3.3	3.3	1.7	1.4	1.6	3.5
20	.80	2.0	6.2	8.6	24	5.4	3.5	3.0	45	29	65	3.1
21	.69	1.9	4.9	6.2	6.0	e283	3.3	3.1	4.7	3.5	11	33
22	.65	1.6	4.6	5.4	5.0	20	3.3	2.7	2.4	15	2.7	9.6
23	.73	1.4	e27	e215	5.0	11	3.2	2.8	1.8	1.7	2.2	2.9
24	.68	1.7	e176	e835	4.7	14	3.2	2.8	1.6	3.3	1.8	2.6
25	.80	1.6	e21	32	4.4	22	3.4	2.6	2.1	3.0	69	2.4
26	.86	11	e8.9	11	4.0	10	4.3	2.6	2.3	1.3	e185	2.4
27	.70	2.0	8.0	7.6	4.1	8.0	6.2	2.7	1.7	1.1	e462	80
28	.78	1.5	7.3	6.3	4.6	7.7	99	2.6	1.5	1.0	4.6	202
29	.69	1.4	6.6	5.6	---	7.4	e461	2.4	1.4	15	3.3	e244
30	.68	1.4	5.4	4.9	---	5.8	e663	2.4	29	3.5	2.5	70
31	.71	---	4.8	4.5	---	4.3	---	2.3	---	1.5	2.1	---
TOTAL	111.24	89.99	843.2	2561.9	300.7	601.6	1505.7	284.9	221.6	378.3	968.99	1981.4
MEAN	3.59	3.00	27.2	82.6	10.7	19.4	50.2	9.19	7.39	12.2	31.3	66.0
MAX	73	16	232	1020	60	283	663	173	69	164	462	436
MIN	.65	.79	1.3	3.9	3.9	3.7	2.3	2.3	1.4	1.0	.66	1.8
CFSM	.23	.19	1.77	5.37	.70	1.26	3.26	.60	.48	.79	2.03	4.29
IN.	.27	.22	2.04	6.19	.73	1.45	3.64	.69	.54	.91	2.34	4.79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

MEAN	3.59	3.00	27.2	82.6	10.7	19.4	50.2	9.19	7.39	12.2	22.7	37.9
MAX	3.59	3.00	27.2	82.6	10.7	19.4	50.2	9.19	7.39	12.2	31.3	66.0
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	3.59	3.00	27.2	82.6	10.7	19.4	50.2	9.19	7.39	12.2	14.2	9.73
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1998	1998

## SUMMARY STATISTICS

## FOR 1999 WATER YEAR

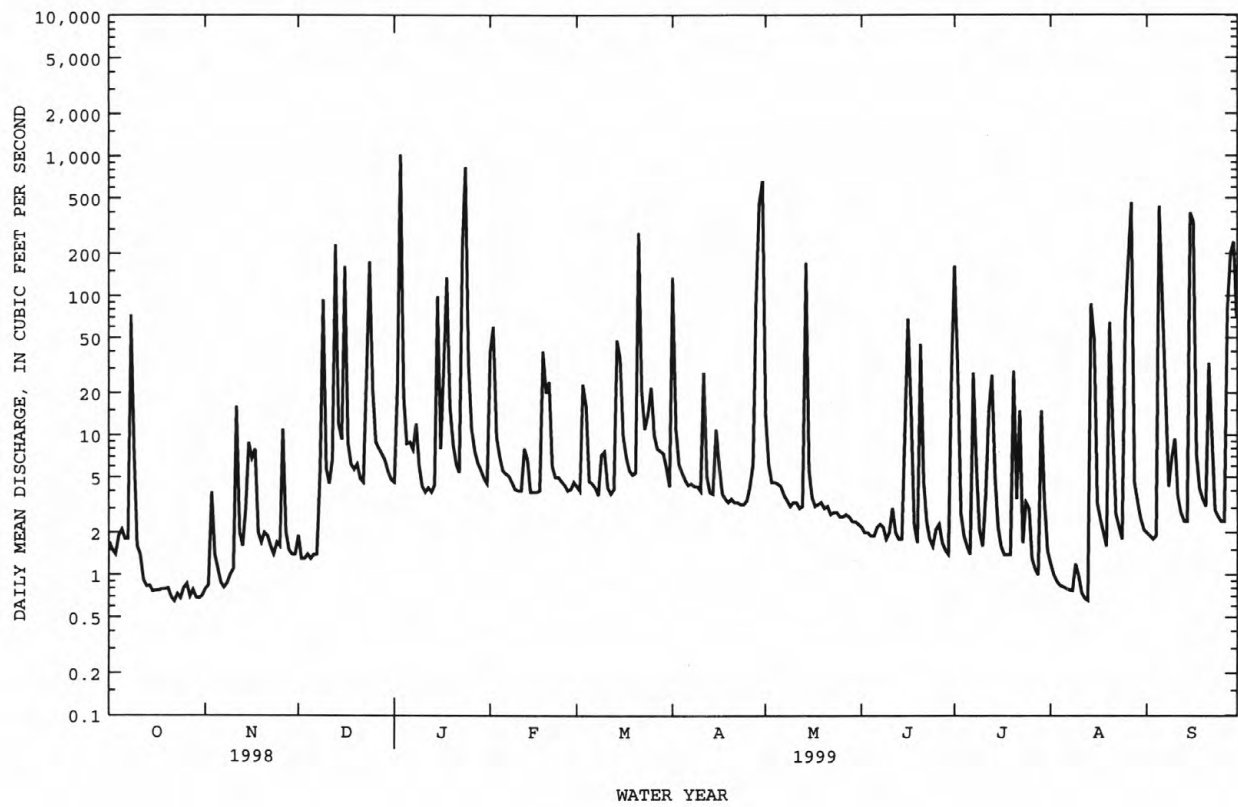
## WATER YEARS 1998 - 1999

ANNUAL TOTAL	9849.52											
ANNUAL MEAN	27.0									27.0		
HIGHEST ANNUAL MEAN										27.0		1999
LOWEST ANNUAL MEAN										27.0		1999
HIGHEST DAILY MEAN	1020	Jan 3								1020	Jan 3	1999
LOWEST DAILY MEAN	.65	Oct 22								.65	Oct 22	1998
ANNUAL SEVEN-DAY MINIMUM	.73	Oct 21								.73	Oct 21	1998
INSTANTANEOUS PEAK FLOW	4090	Jan 3								4090	Jan 3	1999
INSTANTANEOUS PEAK STAGE	11.42	Jan 3								11.42	Jan 3	1999
INSTANTANEOUS LOW FLOW	.44*	Dec 3								.44*	Dec 3	1998
ANNUAL RUNOFF (CFSM)	1.75									1.75		
ANNUAL RUNOFF (INCHES)	23.79									23.81		
10 PERCENT EXCEEDS	39									39		
50 PERCENT EXCEEDS	3.9									3.5		
90 PERCENT EXCEEDS	1.0									1.3		

e Estimated.

\* See REMARKS.

02094770 SOUTH BUFFALO CREEK AT US 220 AT GREENSBORO, NC--Continued





## CAPE FEAR RIVER BASIN

02094775 RYAN CREEK BELOW US 220 AT GREENSBORO, NC

LOCATION.--Lat 36°01'51", long 79°47'56", Guilford County, Hydrologic Unit 03030002, on left bank 0.6 mi. upstream of South Buffalo Creek, and .2 mi below US 220 in Greensboro.

DRAINAGE AREA.--4.12 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1998 to October 1999.

GAGE.--Water-stage recorder. Datum of gage is 730 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records poor. Minimum discharge for period Aug. to Sept. 1998 also occurred on Aug. 7. Minimum discharge for period of record and current water year also occurred Aug. 11, 12, 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, FOR PERIOD AUGUST TO SEPTEMBER 1998  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	1.2	.41
2	---	---	---	---	---	---	---	---	---	---	.40	.28
3	---	---	---	---	---	---	---	---	---	---	.21	5.6
4	---	---	---	---	---	---	---	---	---	---	.19	12
5	---	---	---	---	---	---	---	---	---	---	.18	1.0
6	---	---	---	---	---	---	---	---	---	---	.16	.60
7	---	---	---	---	---	---	---	---	---	---	.15	.45
8	---	---	---	---	---	---	---	---	---	---	11	5.9
9	---	---	---	---	---	---	---	---	---	---	4.0	1.0
10	---	---	---	---	---	---	---	---	---	---	11	.51
11	---	---	---	---	---	---	---	---	---	---	1.8	.40
12	---	---	---	---	---	---	---	---	---	---	.80	.32
13	---	---	---	---	---	---	---	---	---	---	.52	.33
14	---	---	---	---	---	---	---	---	---	---	.43	.36
15	---	---	---	---	---	---	---	---	---	---	.31	.36
16	---	---	---	---	---	---	---	---	---	---	.35	.34
17	---	---	---	---	---	---	---	---	---	---	9.9	.29
18	---	---	---	---	---	---	---	---	---	---	.84	.33
19	---	---	---	---	---	---	---	---	---	---	.46	.32
20	---	---	---	---	---	---	---	---	---	---	.35	.34
21	---	---	---	---	---	---	---	---	---	---	.31	.48
22	---	---	---	---	---	---	---	---	---	---	.29	.74
23	---	---	---	---	---	---	---	---	---	---	.28	.40
24	---	---	---	---	---	---	---	---	---	---	.25	.23
25	---	---	---	---	---	---	---	---	---	---	.21	.21
26	---	---	---	---	---	---	---	---	---	---	.19	.21
27	---	---	---	---	---	---	---	---	---	---	.25	.19
28	---	---	---	---	---	---	---	---	---	---	.26	.18
29	---	---	---	---	---	---	---	---	---	---	.21	.19
30	---	---	---	---	---	---	---	---	---	---	4.2	.18
31	---	---	---	---	---	---	---	---	---	---	.72	---
TOTAL	---	---	---	---	---	---	---	---	---	---	51.42	34.15
MEAN	---	---	---	---	---	---	---	---	---	---	1.66	1.14
MAX	---	---	---	---	---	---	---	---	---	---	11	12
MIN	---	---	---	---	---	---	---	---	---	---	.15	.18
CFSM	---	---	---	---	---	---	---	---	---	---	.40	.28
IN.	---	---	---	---	---	---	---	---	---	---	.46	.31

## STATISTICS OF MONTHLY MEAN DATA FOR PERIOD AUGUST TO SEPTEMBER 1998

MEAN	---	---	---	---	---	---	---	---	---	---	1.66	1.14
MAX	---	---	---	---	---	---	---	---	---	---	1.66	1.14
(WY)	---	---	---	---	---	---	---	---	---	---	1998	1998
MIN	---	---	---	---	---	---	---	---	---	---	1.66	1.14
(WY)	---	---	---	---	---	---	---	---	---	---	1998	1998

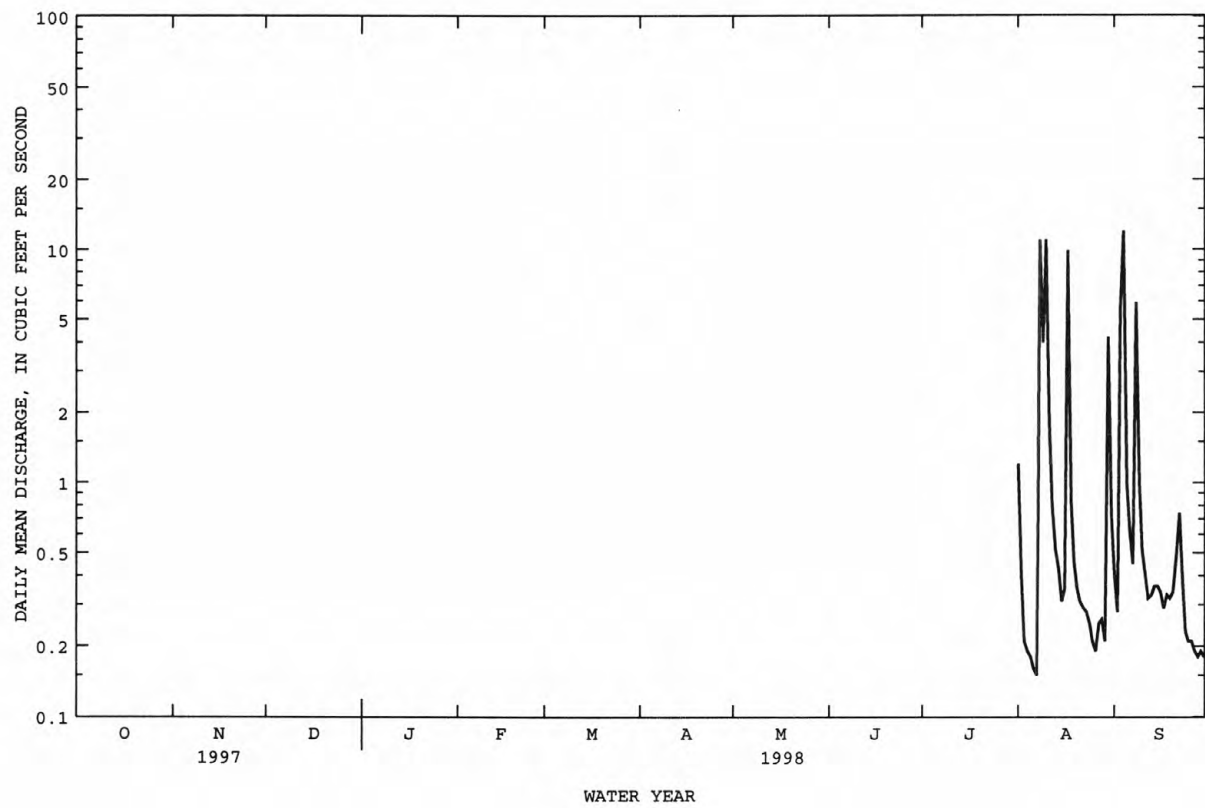
## SUMMARY STATISTICS

## FOR PERIOD AUGUST TO SEPTEMBER

INSTANTANEOUS PEAK FLOW 61 Aug 10  
 INSTANTANEOUS PEAK STAGE 1.70 Aug 10  
 INSTANTANEOUS LOW FLOW .13\* Aug 6

\* See REMARKS.

02094775 RYAN CREEK BELOW US 220 AT GREENSBORO, NC--Continued



## CAPE FEAR RIVER BASIN

02094775 RYAN CREEK BELOW US 220 AT GREENSBORO, NC--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.19	.09	.25	.62	7.1	.94	7.2	3.0	.19	8.7	.15	.29
2	.15	.10	.24	e8.5	12	.82	2.1	1.8	.16	3.8	.14	.28
3	.08	.57	.23	e104	2.6	3.7	1.5	1.4	.15	.46	.12	.28
4	.15	.26	.24	3.0	1.8	2.6	1.3	1.2	.13	.28	.12	.37
5	.28	.17	.24	1.6	1.3	1.2	1.3	1.0	.15	.20	.11	e33
6	.23	.14	.26	1.2	1.2	1.1	1.1	.84	.14	.17	.07	e33
7	.27	.16	.26	1.0	1.2	1.0	1.1	.91	.14	.39	.03	5.2
8	2.5	.17	1.3	1.2	1.1	.99	.98	.80	.13	.17	.02	2.1
9	1.5	.18	12	1.0	1.1	1.5	.97	.76	.12	.14	.04	1.9
10	.47	.19	1.2	.79	1.0	1.5	.88	.67	.11	.23	.02	1.6
11	.37	1.4	.89	.63	1.0	1.1	1.9	.64	.09	.29	.01	.54
12	.31	.35	1.3	.59	1.4	1.0	.95	.56	.10	1.3	.01	.40
13	.25	.17	28	.60	1.3	1.0	.67	.55	.14	2.9	.01	.33
14	.24	.33	2.9	.67	.93	9.6	.83	11	.13	1.3	5.9	.30
15	.17	1.5	2.3	13	1.1	6.6	1.6	1.2	.63	.48	4.7	e33
16	.15	1.1	18	1.7	1.0	1.9	1.1	.74	6.3	.31	.30	e41
17	.15	1.4	1.3	4.9	.99	1.4	.76	.61	2.1	.22	.17	1.9
18	.15	.30	.76	24	7.0	1.3	.74	.51	.42	.17	.14	1.2
19	.18	.25	.64	4.0	2.7	1.2	.77	.45	.27	.15	.13	.79
20	.15	.26	.80	2.0	3.1	1.1	.71	.35	5.7	1.5	12	.61
21	.16	.36	.99	1.5	1.4	e24	.66	.44	.94	.64	.85	e25
22	.17	.37	.76	1.3	1.2	3.7	.52	.55	.45	1.7	.22	5.4
23	.17	.41	3.4	e19	1.1	2.1	.51	.43	.33	.29	.17	1.3
24	.17	.23	e25	e86	1.0	3.2	.53	.34	.25	.18	.29	.85
25	.14	.24	3.5	6.7	1.0	3.3	.47	.36	.37	.15	5.2	.63
26	.12	.87	1.5	3.0	.92	1.6	.62	.31	.31	.12	e30	.54
27	.13	.35	1.3	2.3	.95	1.3	.97	.30	.24	.10	e31	12
28	.11	.27	1.2	2.6	1.1	1.2	12	.25	.18	.15	.93	e34
29	.12	.26	1.0	1.6	---	---	e37	.22	.18	.55	.51	e36
30	.11	.24	.79	1.3	---	.96	e33	.20	2.2	.40	.42	21
31	.13	---	.66	1.1	---	.93	---	.21	---	.17	.28	---
TOTAL	9.47	12.69	113.21	301.40	59.59	84.94	114.74	32.60	22.75	27.61	94.06	294.81
MEAN	.31	.42	3.65	9.72	2.13	2.74	3.82	1.05	.76	.89	2.35	5.48
MAX	2.5	1.5	28	104	12	2.4	37	11	6.3	8.7	31	41
MIN	.08	.09	.23	.59	.92	.82	.47	.20	.09	.10	.01	.28
CFSM	.07	.10	.89	2.36	.52	.67	.93	.26	.18	.22	.74	2.39
IN.	.09	.11	1.02	2.72	.54	.77	1.04	.29	.21	.25	.85	2.66

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

MEAN	.31	.42	3.65	9.72	2.13	2.74	3.82	1.05	.76	.89	2.35	5.48
MAX	.31	.42	3.65	9.72	2.13	2.74	3.82	1.05	.76	.89	3.03	9.83
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	.31	.42	3.65	9.72	2.13	2.74	3.82	1.05	.76	.89	1.66	1.14
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1998	1998

## SUMMARY STATISTICS

## FOR 1999 WATER YEAR

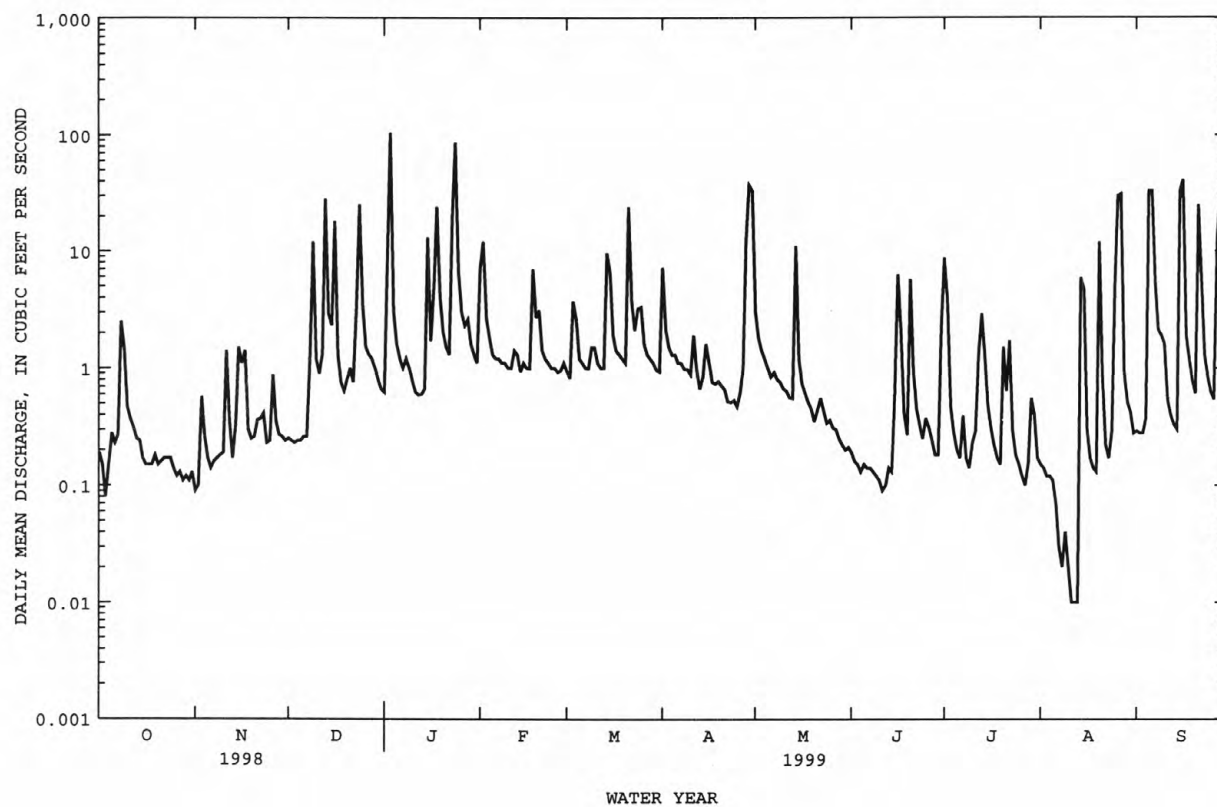
## WATER YEARS 1998 - 1999

ANNUAL TOTAL	1167.87	
ANNUAL MEAN	3.20	
HIGHEST ANNUAL MEAN	3.20	1999
LOWEST ANNUAL MEAN	3.20	1999
HIGHEST DAILY MEAN	104	Jan 3 1999
LOWEST DAILY MEAN	.01	Aug 11 1999
ANNUAL SEVEN-DAY MINIMUM	.02	Aug 7 1999
INSTANTANEOUS PEAK STAGE	4.65	Aug 26 1999
INSTANTANEOUS LOW FLOW	.01*	Aug 10 1999
ANNUAL RUNOFF (CFSM)	.78	
ANNUAL RUNOFF (INCHES)	10.54	
10 PERCENT EXCEEDS	6.1	
50 PERCENT EXCEEDS	.76	
90 PERCENT EXCEEDS	.14	

e Estimated.

\* See REMARKS.

02094775 RYAN CREEK BELOW US 220 AT GREENSBORO, NC--Continued





## CAPE FEAR RIVER BASIN

02094775 RYAN CREEK BELOW US 220 AT GREENSBORO, NC--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.--August 1998 to September 1999.

INSTRUMENTATION.--Tipping bucket raingage and data collection platform records rainfall at fifteen-minute intervals.

PRECIPITATION, TOTAL, INCHES, PERIOD AUGUST 1998 TO SEPTEMBER 1998  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	.00	.00
2	---	---	---	---	---	---	---	---	---	---	.00	.00
3	---	---	---	---	---	---	---	---	---	---	.00	1.28
4	---	---	---	---	---	---	---	---	---	---	.00	.32
5	---	---	---	---	---	---	---	---	---	---	.00	.00
6	---	---	---	---	---	---	---	---	---	---	.00	.00
7	---	---	---	---	---	---	---	---	---	---	.00	.00
8	---	---	---	---	---	---	---	---	---	---	.81	.76
9	---	---	---	---	---	---	---	---	---	---	.35	.00
10	---	---	---	---	---	---	---	---	---	---	.53	.00
11	---	---	---	---	---	---	---	---	---	---	.00	.00
12	---	---	---	---	---	---	---	---	---	---	.00	.00
13	---	---	---	---	---	---	---	---	---	---	.00	.00
14	---	---	---	---	---	---	---	---	---	---	.00	.00
15	---	---	---	---	---	---	---	---	---	---	.00	.00
16	---	---	---	---	---	---	---	---	---	---	.00	.00
17	---	---	---	---	---	---	---	---	---	---	1.00	.00
18	---	---	---	---	---	---	---	---	---	---	.00	.00
19	---	---	---	---	---	---	---	---	---	---	.00	.00
20	---	---	---	---	---	---	---	---	---	---	.00	.00
21	---	---	---	---	---	---	---	---	---	---	.00	.04
22	---	---	---	---	---	---	---	---	---	---	.00	.01
23	---	---	---	---	---	---	---	---	---	---	.00	.00
24	---	---	---	---	---	---	---	---	---	---	.00	.00
25	---	---	---	---	---	---	---	---	---	---	.00	.00
26	---	---	---	---	---	---	---	---	---	---	.00	.00
27	---	---	---	---	---	---	---	---	---	---	.00	.00
28	---	---	---	---	---	---	---	---	---	---	.00	.00
29	---	---	---	---	---	---	---	---	---	---	.00	.00
30	---	---	---	---	---	---	---	---	---	---	.38	.02
31	---	---	---	---	---	---	---	---	---	---	.00	---
TOTAL	---	---	---	---	---	---	---	---	---	---	3.07	2.43

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.80	.00	.52	.00	.00	1.07	.00	---
2	.00	.01	.00	.05	.07	.00	.00	.00	.00	.01	.00	---
3	.00	.38	.00	1.43	.00	.45	.00	.00	.00	.00	.00	---
4	.01	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	---
5	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	---
6	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	---
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.31	.00	---
8	.66	.00	.83	.10	.00	.00	.00	.00	.00	.00	.03	---
9	.00	.00	.29	.01	.00	.14	.01	.00	.00	.00	.05	---
10	.00	.01	.00	.00	.00	.02	.00	.00	.00	.12	.00	---
11	.00	.31	.00	.00	.00	.00	.28	.00	.00	.05	.00	---
12	.00	.00	.47	.00	.14	.00	.01	.00	.00	.64	.00	---
13	.00	.01	1.26	.00	.00	.00	.00	.00	.02	.21	.00	---
14	.00	.24	.00	.17	.00	.94	.00	1.38	.00	.07	1.14	---
15	.00	.00	.59	.54	.00	.07	.15	.00	.24	.00	.02	---
16	.00	.28	.53	.01	.00	.00	.00	.00	.97	.00	.00	---
17	.00	.00	.01	.53	.02	.00	.00	.00	.02	.00	.00	---
18	.00	.00	.00	.39	.52	.00	.00	.00	.00	.00	.00	---
19	.00	.00	.07	.00	.27	.00	.00	.00	.00	.00	.00	---
20	.00	.00	.03	.00	.00	.00	.00	1.05	.70	.53	1.24	---
21	.00	.00	.00	.00	.00	1.00	.00	.00	.04	.29	.01	---
22	.00	.00	.00	.00	.00	.00	.00	.01	.00	.02	.00	---
23	.00	.00	.04	.90	.00	.00	.00	.00	.00	.02	.00	---
24	.00	.00	.05	1.54	.00	.21	.00	.00	.02	.03	.00	---
25	.00	.05	.01	.00	.01	.03	.00	.00	.09	.00	.62	---
26	.00	.14	.01	.00	.00	.01	.10	.04	.02	.00	---	---
27	.00	.00	.32	.00	.00	.00	.39	.00	.00	.00	---	---
28	.00	.00	.21	.00	.03	.00	.88	.00	.00	.14	---	---
29	.00	.00	.04	.00	---	.00	1.99	.00	.00	.09	---	---
30	.00	.00	.00	.00	---	.00	.36	.00	1.02	.00	---	---
31	.00	---	.00	.00	---	.00	---	.00	---	.00	---	---
TOTAL	0.67	1.43	4.76	5.67	1.87	2.88	4.69	2.49	3.14	3.60	---	---



Floodwaters from the Neuse River inundate highways N.C. 17 and N.C. 55 at Kinston, September 1999.

## CAPE FEAR RIVER BASIN

02095000 SOUTH BUFFALO CREEK NEAR GREENSBORO, NC

LOCATION.--Lat 36°02'36", long 79°43'33", Guilford County, Hydrologic Unit 03030002, on left bank at upstream side of bridge on Secondary Road 3000, 3.8 mi east of Greensboro, 4.0 mi downstream from Run Creek.

DRAINAGE AREA.--34.0 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to September 1958. August 1998 to September 1999. Prior to October 1952, published as Buffalo Creek near Greensboro.

REVISIONS.--WSP 972: 1928-30, 1932-33, 1934(M), 1935-37, 1939, 1940(M). WSP 1303: 1934, 1938, 1940-42, monthly and yearly runoff. WSP 1383: Drainage area, 1931, 1941(M).

GAGE.--Water-stage recorder. Datum of gage is 700 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records good except those for estimated discharges, which are poor. Maximum discharge and gage height from datum then in use, 10,000 ft<sup>3</sup>/s July 15, 1949, gage-height 11.54 ft, from rating curve extended above 2,000 ft<sup>3</sup>/s based on contracted-opening measurement site and datum then in use. Minimum discharge for current water year also occurred Aug 8.

DISCHARGE, CUBIC FEET PER SECOND, PERIOD AUGUST 1998 TO SEPTEMBER 1998  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	18	3.0
2	---	---	---	---	---	---	---	---	---	---	5.1	4.1
3	---	---	---	---	---	---	---	---	---	---	3.6	34
4	---	---	---	---	---	---	---	---	---	---	2.9	183
5	---	---	---	---	---	---	---	---	---	---	2.6	7.5
6	---	---	---	---	---	---	---	---	---	---	2.4	4.2
7	---	---	---	---	---	---	---	---	---	---	2.3	3.4
8	---	---	---	---	---	---	---	---	---	---	122	107
9	---	---	---	---	---	---	---	---	---	---	68	13
10	---	---	---	---	---	---	---	---	---	---	145	4.5
11	---	---	---	---	---	---	---	---	---	---	19	3.3
12	---	---	---	---	---	---	---	---	---	---	7.0	3.8
13	---	---	---	---	---	---	---	---	---	---	4.8	2.6
14	---	---	---	---	---	---	---	---	---	---	4.3	2.2
15	---	---	---	---	---	---	---	---	---	---	3.8	2.1
16	---	---	---	---	---	---	---	---	---	---	4.5	1.9
17	---	---	---	---	---	---	---	---	---	---	81	1.8
18	---	---	---	---	---	---	---	---	---	---	6.7	1.6
19	---	---	---	---	---	---	---	---	---	---	3.8	1.6
20	---	---	---	---	---	---	---	---	---	---	2.8	1.7
21	---	---	---	---	---	---	---	---	---	---	2.4	4.6
22	---	---	---	---	---	---	---	---	---	---	2.4	13
23	---	---	---	---	---	---	---	---	---	---	2.4	5.5
24	---	---	---	---	---	---	---	---	---	---	2.1	e3.9
25	---	---	---	---	---	---	---	---	---	---	e1.9	e3.4
26	---	---	---	---	---	---	---	---	---	---	e1.6	e3.2
27	---	---	---	---	---	---	---	---	---	---	e2.0	e3.0
28	---	---	---	---	---	---	---	---	---	---	e2.4	e3.1
29	---	---	---	---	---	---	---	---	---	---	e2.3	e2.9
30	---	---	---	---	---	---	---	---	---	---	e59	e2.8
31	---	---	---	---	---	---	---	---	---	---	5.4	---
TOTAL	---	---	---	---	---	---	---	---	---	---	593.5	431.7
MEAN	---	---	---	---	---	---	---	---	---	---	19.1	14.4
MAX	---	---	---	---	---	---	---	---	---	---	145	183
MIN	---	---	---	---	---	---	---	---	---	---	1.6	1.6
CFSM	---	---	---	---	---	---	---	---	---	---	.57	.43
IN.	---	---	---	---	---	---	---	---	---	---	.66	.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1998,<sup>g</sup> BY WATER YEAR (WY)

	23.9	30.4	38.9	57.6	67.8	59.7	49.2	26.5	25.0	33.2	20.9	31.4
MEAN	23.9	30.4	38.9	57.6	67.8	59.7	49.2	26.5	25.0	33.2	20.9	31.4
MAX	109	109	108	179	135	182	127	71.4	98.3	307	79.5	162
(WY)	1930	1949	1933	1937	1953	1952	1936	1946	1934	1949	1939	1928
MIN	1.82	3.53	6.86	7.87	14.0	22.5	11.9	6.53	4.40	2.64	2.33	2.26
(WY)	1931	1932	1934	1942	1931	1930	1942	1936	1933	1932	1932	1930

## SUMMARY STATISTICS

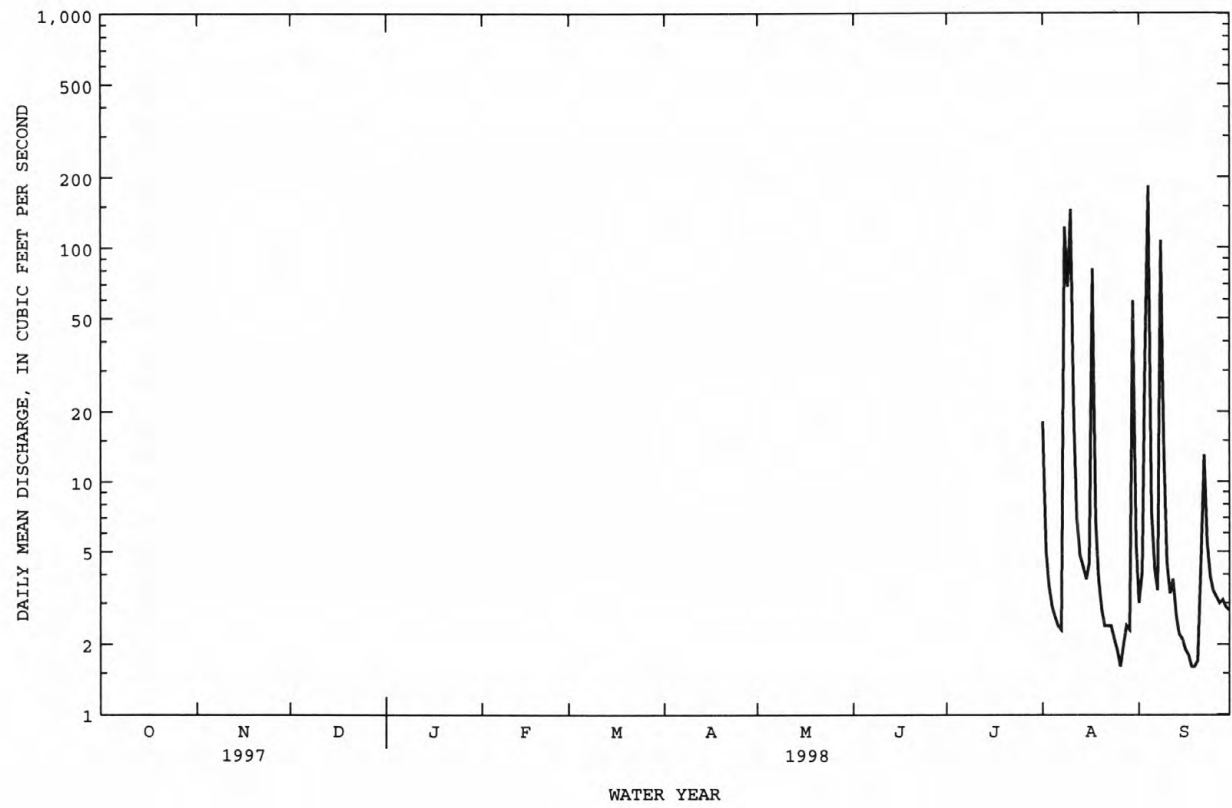
FOR PERIOD AUGUST TO SEPTEMBER<sup>g</sup>

INSTANTANEOUS PEAK FLOW	727	Aug 8
INSTANTANEOUS PEAK STAGE	6.78	Aug 8
INSTANTANEOUS LOW FLOW	1.4	Sep 18

e Estimated.

<sup>g</sup> See PERIOD OF RECORD.

02095000 SOUTH BUFFALO CREEK NEAR GREENSBORO, NC--Continued





## CAPE FEAR RIVER BASIN

02095000 SOUTH BUFFALO CREEK NEAR GREENSBORO, NC--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.5	e1.4	e1.7	19	54	9.5	139	41	2.8	107	2.1	2.2
2	e2.2	e1.0	e1.8	36	142	8.4	28	19	2.6	112	2.1	2.0
3	e1.8	e3.9	e1.7	1140	29	33	15	13	2.4	7.9	1.4	1.9
4	e2.0	e2.0	e1.7	47	19	38	13	11	2.2	4.6	.92	1.7
5	e3.4	e1.4	e1.8	24	14	10	12	10	2.3	3.3	.82	558
6	e2.1	e1.2	e1.9	17	13	9.2	11	10	2.5	2.5	.71	154
7	e1.9	e1.0	e2.1	14	14	8.8	9.9	9.0	2.8	54	.63	67
8	e29	e1.0	e11	21	12	7.9	9.4	8.0	3.2	23	.63	11
9	e7.7	e1.1	174	20	10	11	8.8	6.9	2.3	5.0	1.5	21
10	e3.2	e1.3	12	13	9.9	17	8.2	6.5	2.3	3.2	1.7	23
11	e2.0	e18	27	12	9.6	9.1	49	6.7	4.3	8.3	.97	6.9
12	e1.9	e7.1	47	13	17	7.9	12	6.0	3.2	16	.70	3.9
13	e1.8	e4.2	373	12	19	8.2	7.7	6.1	2.9	58	.62	2.9
14	e2.0	e3.7	34	14	9.3	94	7.4	236	2.1	18	77	2.7
15	e1.8	e17	20	163	9.0	85	17	17	19	6.8	128	422
16	e1.7	e13	e246	29	9.3	20	13	8.9	99	4.1	6.7	724
17	e1.5	e16	e31	e25	9.0	14	7.2	7.2	45	3.2	4.0	22
18	e1.4	e5.8	e14	e257	80	12	6.5	6.3	5.8	7.3	2.7	11
19	e2.5	e3.5	18	e59	26	10	7.2	6.3	3.0	8.9	1.9	7.3
20	e2.0	e2.6	27	e29	54	9.3	6.0	5.5	77	42	111	5.8
21	e1.9	e2.9	28	22	15	325	6.0	5.6	15	16	20	109
22	e1.8	e3.0	31	18	11	43	5.7	5.0	5.9	48	5.3	43
23	e1.8	e2.9	72	207	11	20	5.4	5.4	3.5	6.7	3.0	8.5
24	e1.7	e3.1	344	1260	10	22	5.4	4.6	2.5	18	2.3	5.4
25	e1.6	e3.3	e51	88	9.5	38	5.5	4.1	4.0	11	75	4.3
26	e1.5	e16	e16	34	9.2	17	6.8	4.3	5.8	3.1	46	3.9
27	e1.3	e4.5	14	23	8.8	13	10	4.5	3.5	1.9	512	147
28	e1.8	e2.9	13	19	11	11	156	4.0	2.9	1.7	11	463
29	e1.7	e2.3	12	12	---	11	343	3.6	3.0	15	5.9	379
30	e1.6	e1.9	9.8	9.1	---	10	982	3.3	25	13	3.5	244
31	e1.8	---	16	7.8	---	9.8	---	3.0	---	3.3	2.4	---
TOTAL	92.9	149.0	1653.5	3663.9	644.6	942.1	1913.1	487.8	357.8	632.8	1032.50	3457.4
MEAN	3.00	4.97	53.3	118	23.0	30.4	63.8	15.7	11.9	20.4	33.3	115
MAX	29	18	373	1260	142	325	982	236	99	112	512	724
MIN	1.3	1.0	1.7	7.8	8.8	7.9	5.4	3.0	2.1	1.7	.62	1.7
CFSM	.09	.15	1.59	3.52	.69	.90	1.90	.47	.35	.61	.99	3.43
IN.	.10	.16	1.83	4.06	.71	1.04	2.12	.54	.40	.70	1.14	3.83

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1999,<sup>6</sup> BY WATER YEAR (WY)

MEAN	23.3	29.5	39.4	59.6	66.4	58.7	49.7	26.2	24.5	32.8	21.3	33.9
MAX	109	109	108	179	135	182	127	71.4	98.3	307	79.5	162
(WY)	1930	1949	1933	1937	1953	1952	1936	1946	1934	1949	1939	1928
MIN	1.82	3.53	6.86	7.87	14.0	22.5	11.9	6.53	4.40	2.64	2.33	2.26
(WY)	1931	1932	1934	1942	1931	1930	1942	1936	1933	1932	1932	1930

## SUMMARY STATISTICS

FOR 1999 WATER YEAR

WATER YEARS 1928 - 1999<sup>6</sup>

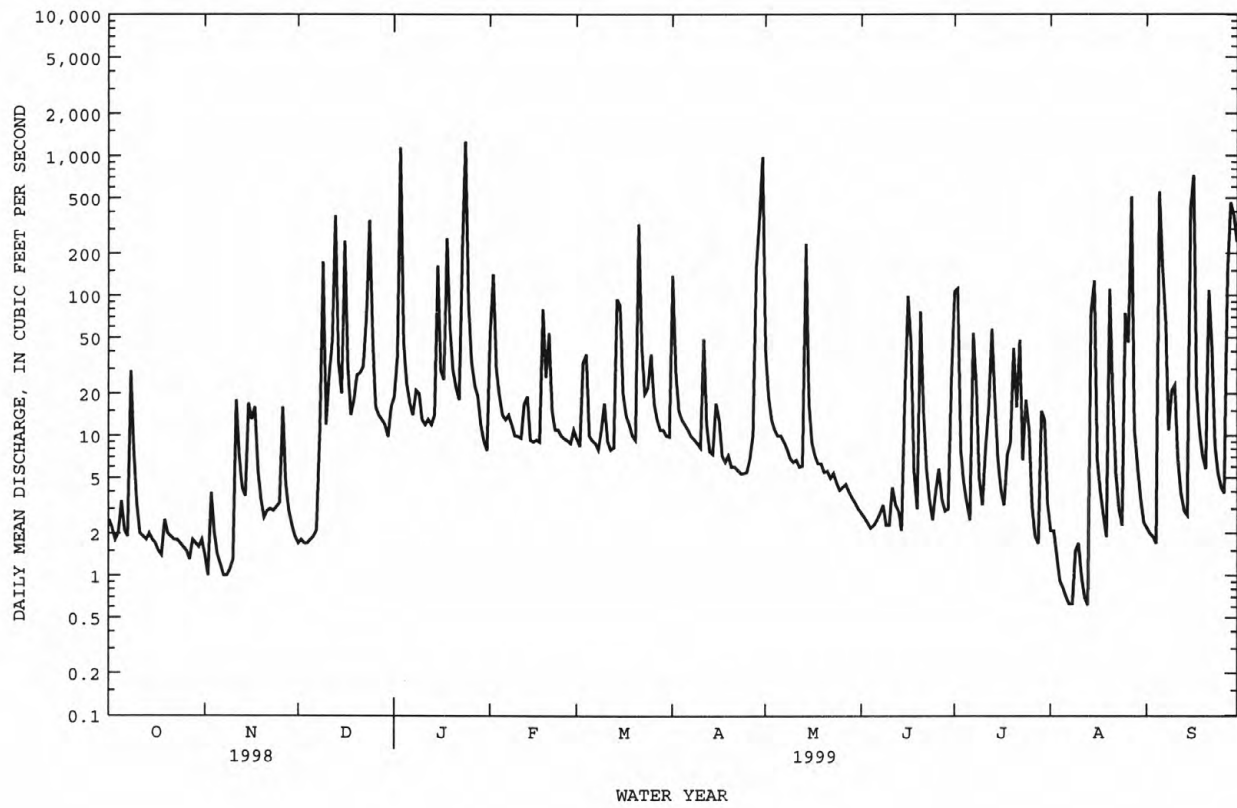
ANNUAL TOTAL	15027.40	
ANNUAL MEAN	41.2	38.3
HIGHEST ANNUAL MEAN		73.2
LOWEST ANNUAL MEAN		21.0
HIGHEST DAILY MEAN	1260	5460
LOWEST DAILY MEAN	.62	.50
ANNUAL SEVEN-DAY MINIMUM	.94	.80
INSTANTANEOUS PEAK FLOW	2790*	10000*
INSTANTANEOUS PEAK STAGE	11.63	11.63
INSTANTANEOUS LOW FLOW	.57	.57
ANNUAL RUNOFF (CFSM)	1.23	1.14
ANNUAL RUNOFF (INCHES)	16.64	15.50
10 PERCENT EXCEEDS	77	71
50 PERCENT EXCEEDS	8.9	14
90 PERCENT EXCEEDS	1.8	4.5

e Estimated.

6 See PERIOD OF RECORD.

\* See REMARKS.

02095000 SOUTH BUFFALO CREEK NEAR GREENSBORO, NC--Continued



## CAPE FEAR RIVER BASIN

02095000 SOUTH BUFFALO CREEK NEAR GREENSBORO, NC--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.--August 1998 to September 1999.

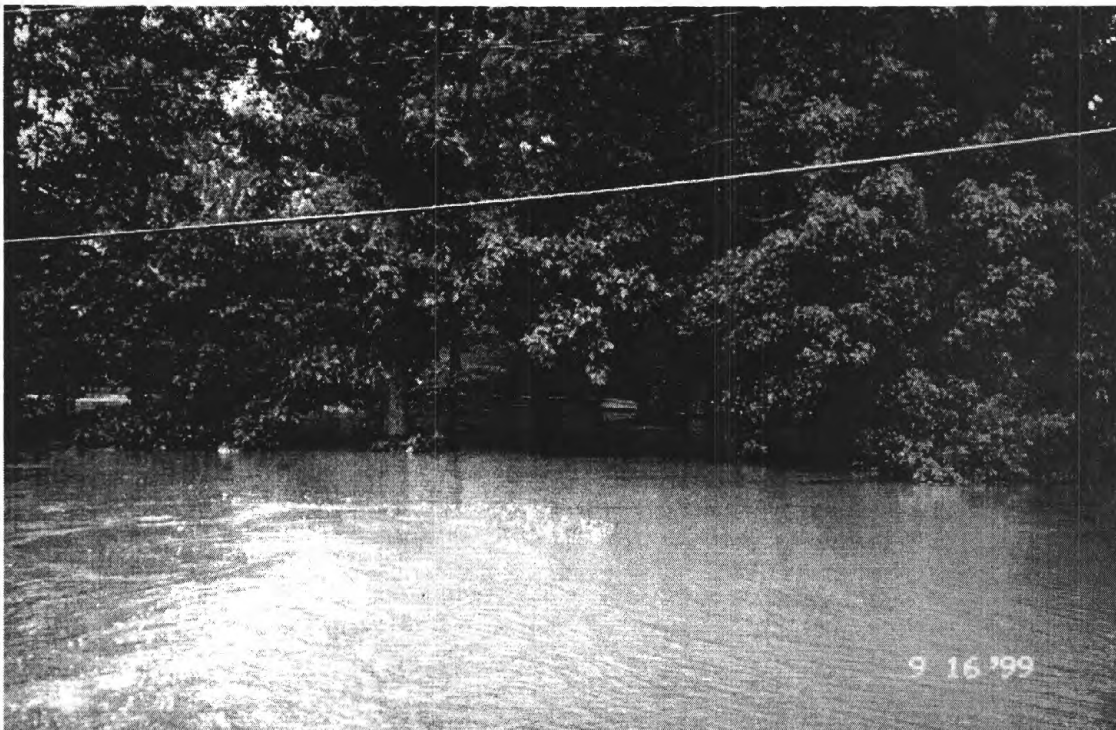
INSTRUMENTATION.--Tipping bucket raingage and data collection platform records rainfall at fifteen-minute intervals.

PRECIPITATION, TOTAL, INCHES, PERIOD AUGUST 1998 TO SEPTEMBER 1998  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	.00	.00
2	---	---	---	---	---	---	---	---	---	---	.00	.00
3	---	---	---	---	---	---	---	---	---	---	.00	1.37
4	---	---	---	---	---	---	---	---	---	---	.00	.39
5	---	---	---	---	---	---	---	---	---	---	.00	.00
6	---	---	---	---	---	---	---	---	---	---	.00	.00
7	---	---	---	---	---	---	---	---	---	---	.00	.00
8	---	---	---	---	---	---	---	---	---	---	.03	1.03
9	---	---	---	---	---	---	---	---	---	---	.69	.00
10	---	---	---	---	---	---	---	---	---	---	1.02	.00
11	---	---	---	---	---	---	---	---	---	---	.00	.00
12	---	---	---	---	---	---	---	---	---	---	.00	.00
13	---	---	---	---	---	---	---	---	---	---	.00	.00
14	---	---	---	---	---	---	---	---	---	---	.00	.00
15	---	---	---	---	---	---	---	---	---	---	.00	.00
16	---	---	---	---	---	---	---	---	---	---	.88	.00
17	---	---	---	---	---	---	---	---	---	---	.65	.00
18	---	---	---	---	---	---	---	---	---	---	.05	.00
19	---	---	---	---	---	---	---	---	---	---	.00	.00
20	---	---	---	---	---	---	---	---	---	---	.00	.00
21	---	---	---	---	---	---	---	---	---	---	.00	.14
22	---	---	---	---	---	---	---	---	---	---	.00	.01
23	---	---	---	---	---	---	---	---	---	---	.00	.00
24	---	---	---	---	---	---	---	---	---	---	.00	.00
25	---	---	---	---	---	---	---	---	---	---	.00	.00
26	---	---	---	---	---	---	---	---	---	---	.00	.00
27	---	---	---	---	---	---	---	---	---	---	.01	.00
28	---	---	---	---	---	---	---	---	---	---	.00	.00
29	---	---	---	---	---	---	---	---	---	---	.00	.00
30	---	---	---	---	---	---	---	---	---	---	.30	.02
31	---	---	---	---	---	---	---	---	---	---	.00	---
TOTAL	---	---	---	---	---	---	---	---	---	---	3.63	2.96

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.72	.00	.92	.00	.00	.87	.00	.00
2	.00	.00	.00	.04	.08	.00	.00	.00	.00	.01	.00	.00
3	.00	.47	.00	1.99	.00	.40	.00	.00	.00	.00	.00	.00
4	.11	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.52
5	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	3.46
6	.00	.01	.00	.00	.00	.02	.00	.00	.00	.00	.00	.22
7	.00	.00	.00	.00	.00	.00	.00	.04	.00	.72	.00	.02
8	.86	.00	.77	.09	.00	.00	.00	.00	.00	.00	.05	.00
9	.00	.00	.29	.01	.00	.14	.01	.00	.00	.00	.18	.64
10	.00	.01	.00	.00	.00	.02	.00	.00	.05	.28	.00	.01
11	.00	.27	.00	.00	.00	.00	.43	.00	.00	.05	.00	.00
12	.00	.00	.53	.00	.27	.00	.01	.00	.00	.65	.00	.00
13	.00	.01	1.36	.00	.00	.00	.00	.00	.00	.28	.00	.01
14	.00	.29	.00	.23	.00	.98	.00	.95	.00	.13	1.69	.00
15	.00	.00	.53	.63	.00	.07	.13	.00	.27	.00	.00	2.75
16	.00	.24	.51	.00	.00	.00	.00	.00	.88	.00	.00	.76
17	.00	.01	---	.45	.02	.00	.00	.00	.02	.00	.00	.00
18	.00	.00	.00	.29	.56	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.06	.00	.28	.00	.00	.00	.00	.00	.00	.01
20	.00	.00	.03	.00	.00	.00	.00	.00	.67	.82	1.21	.00
21	.00	.00	.00	.00	.00	.89	.00	.00	.01	1.02	.00	1.10
22	.00	.00	.00	.00	.00	.00	.00	.06	.00	.03	.00	.01
23	.00	.00	.02	1.09	.00	.02	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	1.47	.00	.28	.00	.00	.01	.39	.00	.00
25	.00	.03	.00	.00	.00	.04	.00	.00	.11	.00	.49	.00
26	.00	.12	.01	.00	.00	.01	.07	.04	.08	.00	1.57	.01
27	.00	.00	.27	.00	.00	.00	.28	.00	.02	.00	.03	1.30
28	.00	.00	.75	.00	.04	.00	.88	.00	.00	.23	.00	.74
29	.00	.00	.08	.00	---	.00	1.44	.00	.00	.15	.00	1.18
30	.00	.00	.00	.00	---	.00	.24	.00	.02	.00	.00	.01
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.97	1.46	---	6.29	1.98	2.87	4.41	1.11	2.14	5.63	5.22	12.75



Floodwaters from the Tar River reach the roof of this home near the USGS gage below the reservoir.



## CAPE FEAR RIVER BASIN

02095271 NORTH BUFFALO CREEK AT CHURCH ST AT GREENSBORO, NC

LOCATION.--Lat 36°05'32", long 79°46'58", Guilford County, Hydrologic Unit 03030002, on right bank at upstream side of Church St, and .1 mi upstream of Southern Railroad bridge in Greensboro.

DRAINAGE AREA.--14.2 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1998 to September 1999.

GAGE.--Water-stage recorder. Datum of gage is 720 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records fair below 10 ft<sup>3</sup>/s and poor above including estimated discharges. Minimum for period Aug. to Sept. 1998 also occurred Aug. 28.

DISCHARGE, CUBIC FEET PER SECOND, PERIOD AUGUST 1998 TO SEPTEMBER 1998  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	10	2.6
2	---	---	---	---	---	---	---	---	---	---	3.6	2.9
3	---	---	---	---	---	---	---	---	---	---	3.5	32
4	---	---	---	---	---	---	---	---	---	---	3.6	63
5	---	---	---	---	---	---	---	---	---	---	3.3	4.8
6	---	---	---	---	---	---	---	---	---	---	3.3	3.6
7	---	---	---	---	---	---	---	---	---	---	4.0	2.5
8	---	---	---	---	---	---	---	---	---	---	54	46
9	---	---	---	---	---	---	---	---	---	---	65	5.3
10	---	---	---	---	---	---	---	---	---	---	63	3.1
11	---	---	---	---	---	---	---	---	---	---	11	2.9
12	---	---	---	---	---	---	---	---	---	---	4.5	3.3
13	---	---	---	---	---	---	---	---	---	---	3.7	3.1
14	---	---	---	---	---	---	---	---	---	---	3.5	3.0
15	---	---	---	---	---	---	---	---	---	---	3.2	3.1
16	---	---	---	---	---	---	---	---	---	---	3.6	2.9
17	---	---	---	---	---	---	---	---	---	---	37	2.9
18	---	---	---	---	---	---	---	---	---	---	4.6	4.3
19	---	---	---	---	---	---	---	---	---	---	3.9	2.3
20	---	---	---	---	---	---	---	---	---	---	3.0	2.8
21	---	---	---	---	---	---	---	---	---	---	2.6	34
22	---	---	---	---	---	---	---	---	---	---	2.5	8.3
23	---	---	---	---	---	---	---	---	---	---	2.4	3.3
24	---	---	---	---	---	---	---	---	---	---	2.4	2.6
25	---	---	---	---	---	---	---	---	---	---	2.2	3.0
26	---	---	---	---	---	---	---	---	---	---	3.1	3.1
27	---	---	---	---	---	---	---	---	---	---	2.8	2.5
28	---	---	---	---	---	---	---	---	---	---	3.6	2.8
29	---	---	---	---	---	---	---	---	---	---	3.1	3.4
30	---	---	---	---	---	---	---	---	---	---	33	2.1
31	---	---	---	---	---	---	---	---	---	---	3.5	---
TOTAL	---	---	---	---	---	---	---	---	---	---	352.5	261.5
MEAN	---	---	---	---	---	---	---	---	---	---	11.4	8.72
MAX	---	---	---	---	---	---	---	---	---	---	65	63
MIN	---	---	---	---	---	---	---	---	---	---	2.2	2.1
CFSM	---	---	---	---	---	---	---	---	---	---	.80	.61
IN.	---	---	---	---	---	---	---	---	---	---	.92	.69

## STATISTICS OF MONTHLY MEAN DATA FOR PERIOD AUGUST TO SEPTEMBER 1998

MEAN	---	---	---	---	---	---	---	---	---	---	11.4	8.72
MAX	---	---	---	---	---	---	---	---	---	---	11.4	8.72
(WY)	---	---	---	---	---	---	---	---	---	---	1998	1998
MIN	---	---	---	---	---	---	---	---	---	---	11.4	8.72
(WY)	---	---	---	---	---	---	---	---	---	---	1998	1998

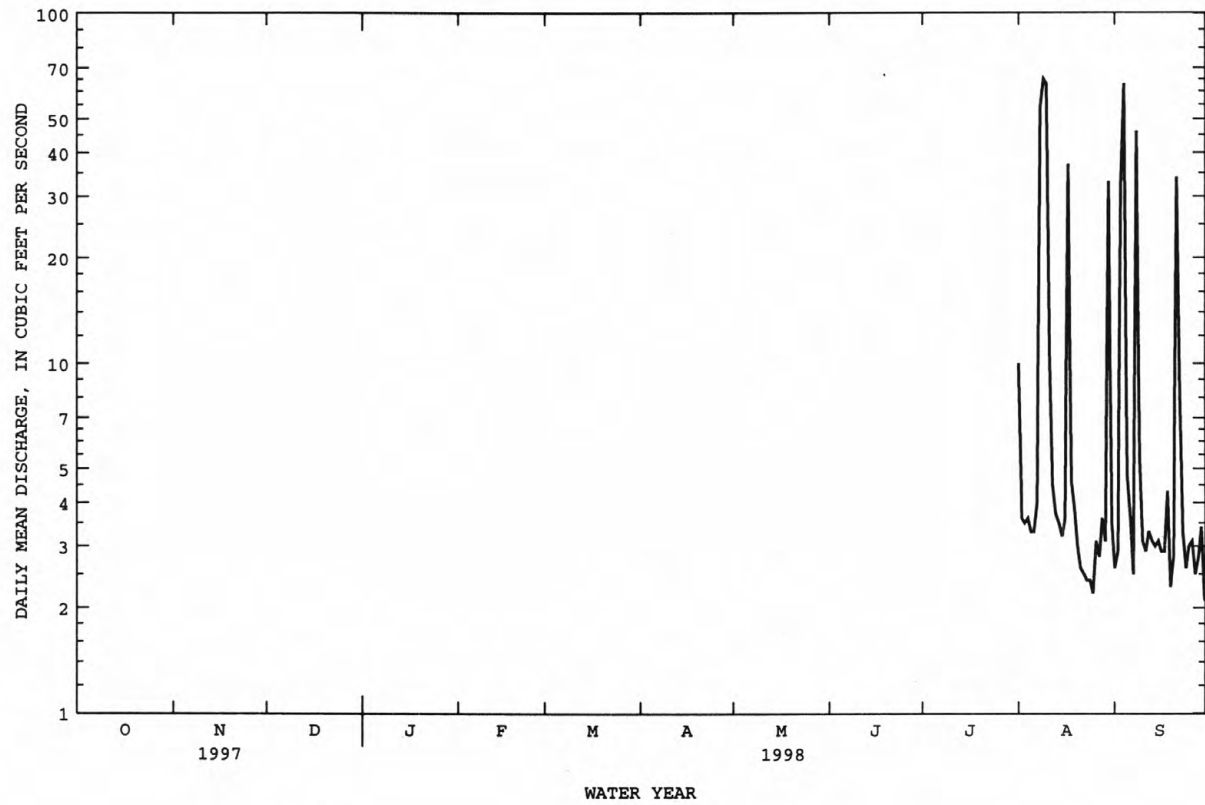
## SUMMARY STATISTICS

## FOR PERIOD AUGUST TO SEPTEMBER

INSTANTANEOUS PEAK FLOW	290	Aug 8
INSTANTANEOUS PEAK STAGE	6.98	Aug 8
INSTANTANEOUS LOW FLOW	1.8	Aug 27*

\* See REMARKS.

02095271 NORTH BUFFALO CREEK AT CHURCH ST AT GREENSBORO, NC--Continued



## CAPE FEAR RIVER BASIN

02095271 NORTH BUFFALO CREEK AT CHURCH ST AT GREENSBORO, NC--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	1.7	2.5	5.0	48	6.1	81	22	3.8	56	2.6	2.3
2	2.2	2.2	2.7	21	57	4.5	18	12	3.9	29	2.1	2.3
3	2.1	14	2.2	192	15	29	10	9.7	4.0	4.7	1.9	2.1
4	9.0	3.5	2.0	15	13	16	9.0	9.6	4.2	3.4	2.1	3.0
5	3.4	3.3	2.2	5.3	12	6.4	7.4	8.9	5.6	3.1	1.9	202
6	2.3	3.0	4.1	4.4	9.7	6.9	6.5	8.7	6.5	3.5	2.2	98
7	2.4	4.6	3.2	4.7	13	7.4	6.8	7.4	6.1	67	2.8	25
8	54	3.6	15	15	9.7	5.4	5.8	6.9	6.2	e41	2.7	5.6
9	15	3.7	70	13	8.1	9.6	6.1	7.5	6.1	e4.7	4.9	e6.2
10	2.3	3.3	3.9	5.6	7.5	7.1	6.4	5.6	28	14	2.6	e11
11	2.1	33	2.8	5.0	7.4	4.6	40	7.8	24	17	1.9	e5.1
12	2.8	3.2	19	4.5	15	4.7	6.7	5.8	4.7	29	1.9	e3.4
13	2.6	2.1	157	3.0	11	6.1	5.8	5.6	4.5	41	2.7	3.0
14	2.5	9.1	11	2.7	7.3	50	5.0	117	4.9	13	63	3.3
15	3.0	19	8.4	75	6.1	32	19	13	27	5.0	50	153
16	3.2	15	80	8.4	5.9	6.9	7.3	6.9	60	4.2	4.1	139
17	1.7	12	5.1	23	7.8	6.6	5.4	5.6	22	3.7	3.2	11
18	2.8	3.4	3.9	101	47	6.0	5.1	5.5	4.7	4.6	3.1	4.9
19	2.1	2.8	4.3	15	23	5.0	5.0	6.3	4.2	3.0	2.8	4.1
20	2.7	2.8	4.5	6.1	26	5.0	5.3	4.9	60	44	50	3.5
21	2.5	2.9	3.1	5.5	9.2	96	5.0	4.8	9.3	11	7.2	12
22	2.4	5.0	3.0	4.2	6.3	16	4.8	5.0	5.5	39	3.8	9.9
23	2.5	3.0	32	69	6.8	8.9	4.6	4.7	4.0	4.1	1.9	3.1
24	2.4	2.9	117	205	7.0	16	4.8	4.3	3.4	35	1.9	2.9
25	2.8	1.6	27	33	5.7	18	4.8	4.8	4.7	6.9	59	3.0
26	e2.6	20	13	15	5.1	8.7	5.4	4.7	6.4	3.7	45	3.7
27	e1.8	4.0	9.2	14	5.7	6.9	10	4.3	3.6	3.2	89	74
28	1.5	2.8	6.3	11	8.1	7.7	112	4.3	3.2	2.8	4.4	137
29	1.8	2.9	5.6	9.8	---	6.2	135	4.1	3.0	14	3.2	e120
30	3.0	2.1	5.3	9.4	---	6.1	163	4.3	34	4.0	2.0	e25
31	2.1	---	4.7	9.7	---	5.9	---	3.8	---	2.8	2.3	---
TOTAL	146.0	192.5	630.0	910.3	403.4	421.7	711.0	325.8	367.5	517.4	428.2	1078.4
MEAN	4.71	6.42	20.3	29.4	14.4	13.6	23.7	10.5	12.2	16.7	13.8	35.9
MAX	54	33	157	205	57	96	163	117	60	67	89	202
MIN	1.5	1.6	2.0	2.7	5.1	4.5	4.6	3.8	3.0	2.8	1.9	2.1
CFSM	.33	.45	1.43	2.07	1.01	.96	1.67	.74	.86	1.18	.97	2.53
IN.	.38	.50	1.65	2.38	1.06	1.10	1.86	.85	.96	1.36	1.12	2.83

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

MEAN	4.71	6.42	20.3	29.4	14.4	13.6	23.7	10.5	12.2	16.7	12.6	22.3
MAX	4.71	6.42	20.3	29.4	14.4	13.6	23.7	10.5	12.2	16.7	13.8	35.9
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	4.71	6.42	20.3	29.4	14.4	13.6	23.7	10.5	12.2	16.7	11.4	8.72
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1998	1998

## SUMMARY STATISTICS

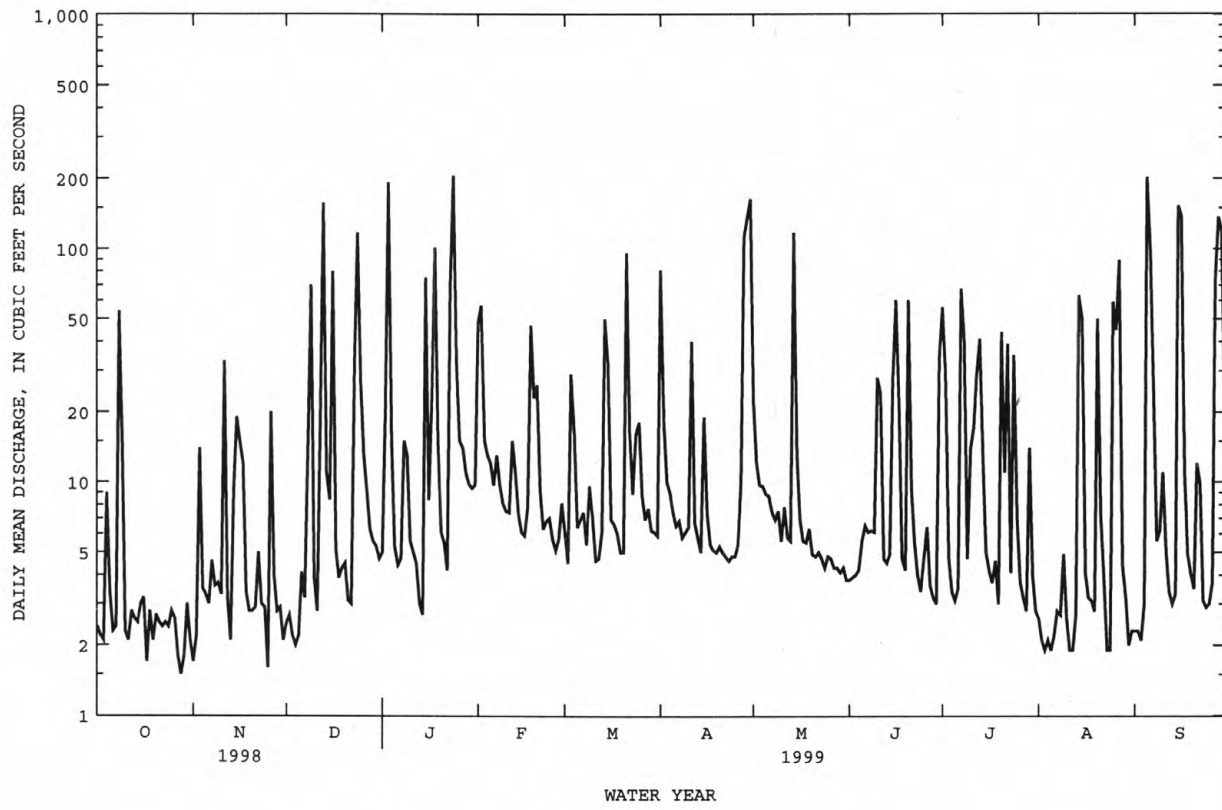
## FOR 1999 WATER YEAR

## WATER YEARS 1998 - 1999

ANNUAL TOTAL	6132.2	
ANNUAL MEAN	16.8	16.8
HIGHEST ANNUAL MEAN		16.8
LOWEST ANNUAL MEAN		16.8
HIGHEST DAILY MEAN	205	205
LOWEST DAILY MEAN	1.5	1.5
ANNUAL SEVEN-DAY MINIMUM	2.0	2.0
INSTANTANEOUS PEAK FLOW	590	590
INSTANTANEOUS PEAK STAGE	11.49	11.49
INSTANTANEOUS LOW FLOW	1.2	1.2
ANNUAL RUNOFF (CFSM)	1.18	1.18
ANNUAL RUNOFF (INCHES)	16.06	16.08
10 PERCENT EXCEEDS	46	42
50 PERCENT EXCEEDS	5.6	5.0
90 PERCENT EXCEEDS	2.4	2.5

e Estimated.

02095271 NORTH BUFFALO CREEK AT CHURCH ST AT GREENSBORO, NC--Continued





## CAPE FEAR RIVER BASIN

02095271 NORTH BUFFALO CREEK AT CHURCH ST AT GREENSBORO, NC--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.--August 1998 to September 1999.

INSTRUMENTATION.--Tipping bucket raingage and data collection platform records rainfall at fifteen-minute intervals.

PRECIPITATION, TOTAL, INCHES, PERIOD AUGUST 1998 TO SEPTEMBER 1998  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	.00	.00
2	---	---	---	---	---	---	---	---	---	---	.00	.00
3	---	---	---	---	---	---	---	---	---	---	.00	1.06
4	---	---	---	---	---	---	---	---	---	---	.00	.25
5	---	---	---	---	---	---	---	---	---	---	.00	.00
6	---	---	---	---	---	---	---	---	---	---	.00	.00
7	---	---	---	---	---	---	---	---	---	---	.00	.00
8	---	---	---	---	---	---	---	---	---	---	.84	.61
9	---	---	---	---	---	---	---	---	---	---	.16	.00
10	---	---	---	---	---	---	---	---	---	---	.55	.00
11	---	---	---	---	---	---	---	---	---	---	.00	.00
12	---	---	---	---	---	---	---	---	---	---	.00	.00
13	---	---	---	---	---	---	---	---	---	---	.00	.00
14	---	---	---	---	---	---	---	---	---	---	.00	.00
15	---	---	---	---	---	---	---	---	---	---	.00	.00
16	---	---	---	---	---	---	---	---	---	---	.00	.00
17	---	---	---	---	---	---	---	---	---	---	.29	.00
18	---	---	---	---	---	---	---	---	---	---	.00	.00
19	---	---	---	---	---	---	---	---	---	---	.00	.00
20	---	---	---	---	---	---	---	---	---	---	.00	.00
21	---	---	---	---	---	---	---	---	---	---	.00	.95
22	---	---	---	---	---	---	---	---	---	---	.00	.02
23	---	---	---	---	---	---	---	---	---	---	.00	.00
24	---	---	---	---	---	---	---	---	---	---	.00	.00
25	---	---	---	---	---	---	---	---	---	---	.00	.00
26	---	---	---	---	---	---	---	---	---	---	.00	.00
27	---	---	---	---	---	---	---	---	---	---	.00	.00
28	---	---	---	---	---	---	---	---	---	---	.00	.00
29	---	---	---	---	---	---	---	---	---	---	.00	.00
30	---	---	---	---	---	---	---	---	---	---	.31	.04
31	---	---	---	---	---	---	---	---	---	---	.00	---
TOTAL	---	---	---	---	---	---	---	---	---	---	2.15	2.93

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.77	.00	1.01	.00	.00	.74	.00	.00
2	.00	.00	.00	.03	.04	.00	.00	.00	.00	.00	.00	.00
3	.00	.22	.00	1.36	.00	.40	.00	.00	.00	.00	.00	.00
4	.17	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.30
5	.00	.00	.00	.00	.00	.00	.01	.02	.00	.00	.00	2.73
6	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.62
7	.01	.00	.00	.00	.00	.00	.00	.00	.00	1.85	.00	.00
8	.79	.00	.86	.12	.00	.00	.00	.00	.00	.00	.06	.00
9	.00	.00	.32	.01	.00	.10	.01	.00	.00	.00	.07	.20
10	.00	.01	.00	.00	.00	.01	.00	.00	.71	.26	.00	.01
11	.00	.38	.00	.00	.00	.00	.33	.00	.00	.04	.00	.00
12	.00	.00	.69	.00	.14	.00	.05	.00	.00	.68	.00	.00
13	.00	.01	1.38	.00	.01	.00	.00	.00	.00	.18	.00	.00
14	.00	.33	.00	.15	.00	.70	.00	1.61	.00	.04	1.40	.00
15	.00	.00	.50	.46	.00	.06	.19	.00	.34	.00	.01	2.34
16	.00	.24	.37	.00	.00	.01	.01	.00	.98	.00	.00	.52
17	.00	.00	.01	.56	.03	.00	.00	.00	.01	.00	.00	.00
18	.00	.00	.00	.32	.46	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.03	.00	.27	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.01	.00	.00	.00	.00	.94	.61	1.05	.53	.00
21	.00	.00	.00	.00	.00	1.05	.00	.00	.05	1.05	.00	.08
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.01
23	.00	.00	.01	1.05	.00	.02	.00	.00	.00	.01	.00	.00
24	.00	.00	.00	1.30	.00	.24	.00	.00	.00	.92	.00	.00
25	.00	.07	.01	.00	.00	.03	.00	.00	.05	.00	.87	.00
26	.00	.11	.00	.00	.03	.00	.05	.03	.02	.00	1.38	.00
27	.00	.00	.22	.00	.00	.00	.37	.00	.00	.00	.12	1.82
28	.00	.00	.15	.00	.03	.00	1.25	.00	.00	.26	.00	.72
29	.00	.00	.02	.00	---	.00	2.20	.00	.00	.02	.00	---
30	.02	.00	.00	.00	---	.00	.39	.00	.10	.00	.00	---
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.99	1.37	4.58	5.36	1.80	2.63	5.87	2.60	2.90	7.12	4.44	---



Floodwaters of the Tar River near downtown Rocky Mount, N.C., September 1999.

## CAPE FEAR RIVER BASIN

02095500 NORTH BUFFALO CREEK NEAR GREENSBORO, NC

LOCATION.--Lat 36°07'13", long 79°42'30", Guilford County, Hydrologic Unit 03030002, on left bank at downstream of bridge on Secondary Road 2832, 4.2 mi upstream from mouth, 5.8 mi northeast of post office in Greensboro.

DRAINAGE AREA.--37.1 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to October 1990, August 1998 to current year.

REVISED RECORDS.--WSP 1303: 1929, 1931-42, monthly and yearly runoff. WSP 1383: 1928(M), 1929, 1933-34(M), 1936(M), 1941(M), 1943(M), 1945(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 678.02 ft above sea level (levels by U. S. Corps of Engineers). Satellite telemetry at station.

REMARKS.--Records poor. Diurnal fluctuation at low flow caused by mills upstream from station. Diversions into basin from Greensboro and Proximity Mills enter upstream from the station. Maximum discharge for period of record, 9,140 ft<sup>3</sup>/s, gage height, 20.12 ft, Sept. 22, 1979, from floodmarks, from rating curve extended above 2,900 ft<sup>3</sup>/s on basis of contracted-opening measurements at gage heights 14.15 ft, 15.96 ft and 16.63 ft.

DISCHARGE, CUBIC FEET PER SECOND, PERIOD AUGUST 1998 TO SEPTEMBER 1998  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	39	28
2	---	---	---	---	---	---	---	---	---	---	28	28
3	---	---	---	---	---	---	---	---	---	---	27	43
4	---	---	---	---	---	---	---	---	---	---	28	186
5	---	---	---	---	---	---	---	---	---	---	28	28
6	---	---	---	---	---	---	---	---	---	---	27	26
7	---	---	---	---	---	---	---	---	---	---	30	25
8	---	---	---	---	---	---	---	---	---	---	65	126
9	---	---	---	---	---	---	---	---	---	---	148	38
10	---	---	---	---	---	---	---	---	---	---	166	27
11	---	---	---	---	---	---	---	---	---	---	45	27
12	---	---	---	---	---	---	---	---	---	---	32	27
13	---	---	---	---	---	---	---	---	---	---	30	27
14	---	---	---	---	---	---	---	---	---	---	31	28
15	---	---	---	---	---	---	---	---	---	---	30	27
16	---	---	---	---	---	---	---	---	---	---	29	27
17	---	---	---	---	---	---	---	---	---	---	96	28
18	---	---	---	---	---	---	---	---	---	---	32	29
19	---	---	---	---	---	---	---	---	---	---	30	27
20	---	---	---	---	---	---	---	---	---	---	30	28
21	---	---	---	---	---	---	---	---	---	---	29	102
22	---	---	---	---	---	---	---	---	---	---	28	42
23	---	---	---	---	---	---	---	---	---	---	28	28
24	---	---	---	---	---	---	---	---	---	---	27	28
25	---	---	---	---	---	---	---	---	---	---	28	27
26	---	---	---	---	---	---	---	---	---	---	28	26
27	---	---	---	---	---	---	---	---	---	---	28	27
28	---	---	---	---	---	---	---	---	---	---	27	27
29	---	---	---	---	---	---	---	---	---	---	28	27
30	---	---	---	---	---	---	---	---	---	---	83	28
31	---	---	---	---	---	---	---	---	---	---	31	---
TOTAL	---	---	---	---	---	---	---	---	---	---	1336	1192
MEAN	---	---	---	---	---	---	---	---	---	---	43.1	39.7
MAX	---	---	---	---	---	---	---	---	---	---	166	186
MIN	---	---	---	---	---	---	---	---	---	---	27	25
CFSM	---	---	---	---	---	---	---	---	---	---	1.16	1.07
IN.	---	---	---	---	---	---	---	---	---	---	1.34	1.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1998,<sup>g</sup> BY WATER YEAR (WY)

	43.0	43.1	56.2	71.0	84.2	79.7	65.9	53.2	49.9	50.7	42.8	46.7
MEAN	154	120	129	205	185	231	206	177	192	231	112	247
MAX	1960	1986	1973	1978	1979	1975	1987	1978	1982	1984	1984	1979
(WY)	7.71	8.73	13.1	17.3	22.0	31.4	20.3	16.2	10.2	11.2	7.82	8.63
MIN	1931	1932	1934	1934	1931	1931	1942	1938	1933	1932	1932	1930
(WY)												

## SUMMARY STATISTICS

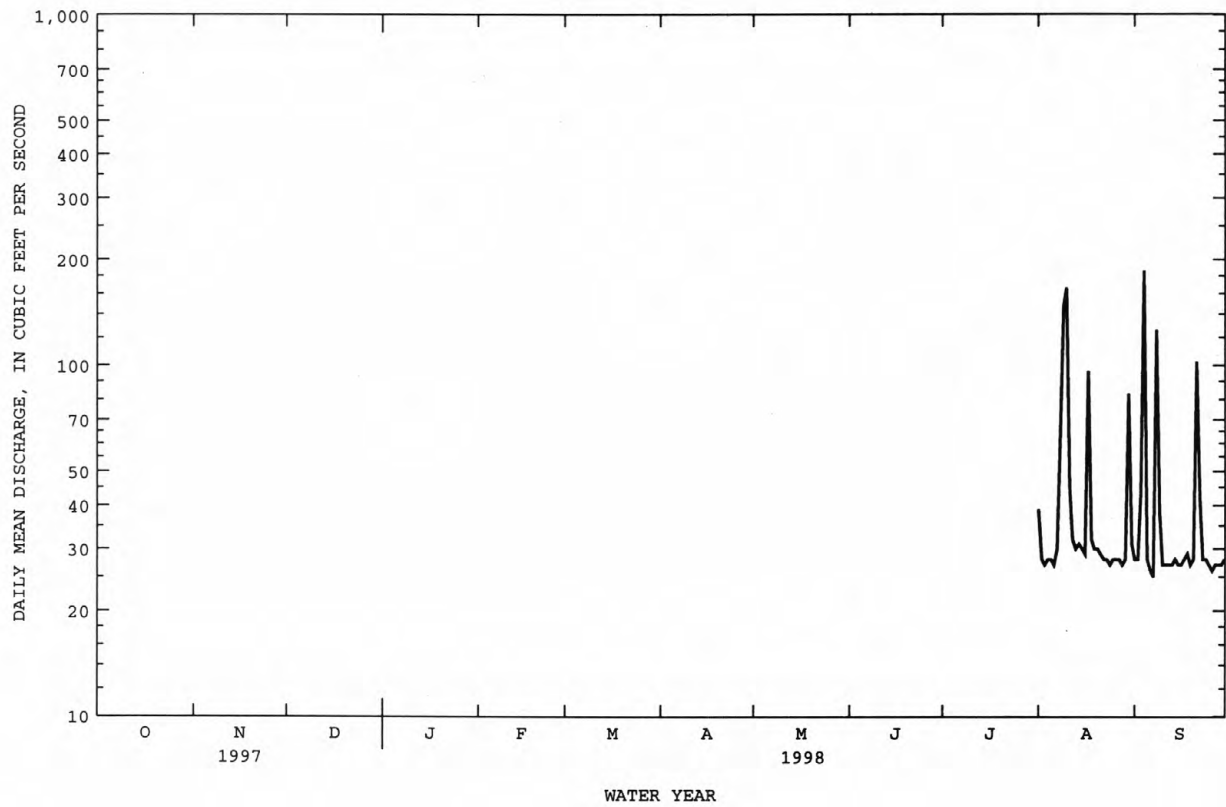
FOR PERIOD AUGUST TO SEPTEMBER<sup>g</sup>

INSTANTANEOUS PEAK FLOW 604 Aug 10  
 INSTANTANEOUS PEAK STAGE 5.11 Aug 10  
 INSTANTANEOUS LOW FLOW 18\* Sep 26

\* See REMARKS.

<sup>g</sup> See PERIOD OF RECORD.

02095500 NORTH BUFFALO CREEK NEAR GREENSBORO, NC--Continued





## CAPE FEAR RIVER BASIN

02095500 NORTH BUFFALO CREEK NEAR GREENSBORO, NC--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	24	26	28	78	31	212	80	30	131	25	28
2	26	26	25	28	150	28	63	45	29	119	23	24
3	24	34	25	658	46	51	37	38	24	31	24	22
4	32	28	26	e110	38	52	31	39	26	26	23	23
5	28	26	25	e45	32	29	30	34	29	24	24	513
6	26	27	26	e38	31	29	30	36	28	24	24	264
7	25	26	26	e40	33	29	29	34	28	236	25	84
8	88	24	25	e43	33	30	27	34	28	e81	25	36
9	74	26	183	38	e31	30	30	34	28	32	29	42
10	27	26	30	e35	29	36	30	34	35	30	27	54
11	25	56	24	32	e30	28	88	30	79	51	25	34
12	26	29	31	34	35	28	30	32	30	48	24	31
13	19	25	e400	34	e29	29	27	32	29	118	25	27
14	21	30	e71	34	e27	101	27	279	28	49	63	28
15	24	42	e35	160	e26	92	40	51	57	32	168	337
16	26	30	222	e50	e26	37	33	33	138	31	28	506
17	24	45	44	40	28	29	27	29	74	30	26	51
18	28	25	34	294	e155	28	25	28	35	31	29	32
19	26	26	32	74	e50	27	26	28	32	26	30	29
20	25	27	32	46	e80	27	26	26	117	162	98	29
21	27	26	30	40	e41	268	25	27	44	52	33	58
22	24	26	30	38	e34	75	24	28	36	250	29	45
23	28	26	55	152	e33	39	23	29	34	34	27	30
24	25	26	298	677	32	36	25	26	30	111	25	27
25	25	26	82	116	e31	54	23	27	32	44	114	26
26	e26	40	42	53	30	33	23	26	35	28	73	26
27	e26	25	37	42	30	29	30	25	31	25	334	125
28	25	23	34	39	31	30	230	27	30	28	39	414
29	25	23	33	37	---	30	262	25	30	44	33	414
30	28	26	32	34	---	28	754	25	43	31	31	260
31	26	---	29	32	---	29	---	29	---	27	28	---
TOTAL	907	869	2044	3121	1249	1422	2287	1270	1249	1986	1531	3619
MEAN	29.3	29.0	65.9	101	44.6	45.9	76.2	41.0	41.6	64.1	49.4	121
MAX	88	56	400	677	155	268	754	279	138	250	334	513
MIN	19	23	24	28	26	27	23	25	24	24	23	22
CFSM	.79	.78	1.78	2.71	1.20	1.24	2.05	1.10	1.12	1.73	1.33	3.25
IN.	.91	.87	2.05	3.13	1.25	1.43	2.29	1.27	1.25	1.99	1.54	3.63

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1999,<sup>®</sup> BY WATER YEAR (WY)

	MEAN	42.8	42.9	56.4	71.5	83.6	79.1	66.1	53.1	49.8	50.9	42.9	47.9
MAX	154	120	129	205	185	231	206	177	192	231	112	247	
(WY)	1960	1986	1973	1978	1979	1975	1987	1978	1982	1984	1984	1979	
MIN	7.71	8.73	13.1	17.3	22.0	31.4	20.3	16.2	10.2	11.2	7.82	8.63	
(WY)	1931	1932	1934	1934	1931	1931	1942	1938	1933	1932	1932	1930	

## SUMMARY STATISTICS

FOR 1999 WATER YEAR

WATER YEARS 1928 - 1999<sup>®</sup>

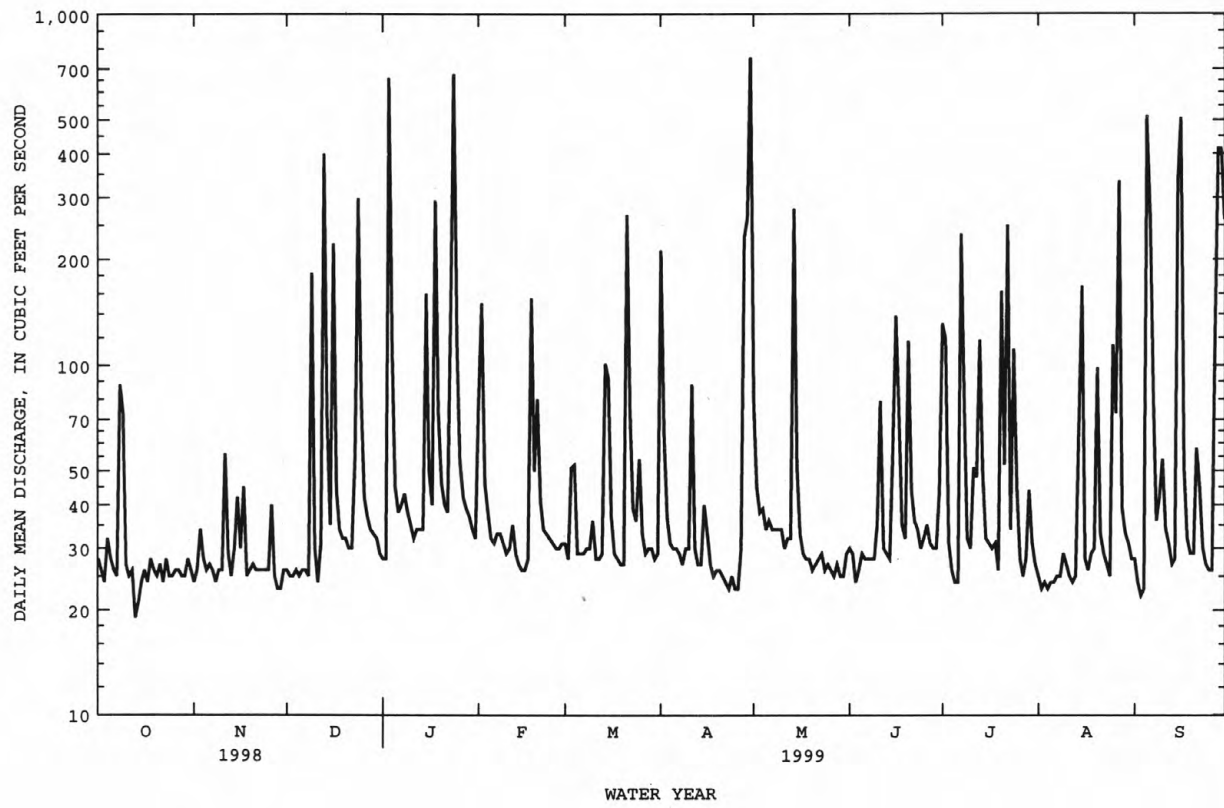
ANNUAL TOTAL	21554		
ANNUAL MEAN	59.1	57.0	
HIGHEST ANNUAL MEAN		106	1984
LOWEST ANNUAL MEAN		30.6	1938
HIGHEST DAILY MEAN	754	4400	Sep 22 1979
LOWEST DAILY MEAN	19	3.4	Aug 28 1932
ANNUAL SEVEN-DAY MINIMUM	24	6.2	Aug 28 1930
INSTANTANEOUS PEAK FLOW	1790	9140*	Sep 22 1979
INSTANTANEOUS PEAK STAGE	10.34	20.12*	Sep 22 1979
INSTANTANEOUS LOW FLOW	11	1.6	Aug 28 1932
ANNUAL RUNOFF (INCHES)	21.61	20.87	
10 PERCENT EXCEEDS	115	99	
50 PERCENT EXCEEDS	30	31	
90 PERCENT EXCEEDS	25	16	

e Estimated.

® See PERIOD OF RECORD.

\* See REMARKS.

02095500 NORTH BUFFALO CREEK NEAR GREENSBORO, NC--Continued



## CAPE FEAR RIVER BASIN

0209553650 BUFFALO CREEK AT SECONDARY ROAD 2819 NEAR McLEANSVILLE, NC

LOCATION.--Lat 36°07'40", long 79°39'443", Guilford County, Hydrologic Unit 03030002, on left bank of upstream side of bridge on Secondary Road 2819, 300 ft below the confluence of North Buffalo Creek and South Buffalo Creek, and 1.3 mi north of McLeansville.

DRAINAGE AREA.--88.5 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1998 to September 1999.

GAGE.--Water-stage recorder. Datum of gage is 650 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records fair except for estimated discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, PERIOD AUGUST 1998 TO SEPTEMBER 1998  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	115	54
2	---	---	---	---	---	---	---	---	---	---	54	52
3	---	---	---	---	---	---	---	---	---	---	51	55
4	---	---	---	---	---	---	---	---	---	---	54	420
5	---	---	---	---	---	---	---	---	---	---	55	76
6	---	---	---	---	---	---	---	---	---	---	54	56
7	---	---	---	---	---	---	---	---	---	---	58	49
8	---	---	---	---	---	---	---	---	---	---	171	218
9	---	---	---	---	---	---	---	---	---	---	214	105
10	---	---	---	---	---	---	---	---	---	---	328	58
11	---	---	---	---	---	---	---	---	---	---	140	56
12	---	---	---	---	---	---	---	---	---	---	69	52
13	---	---	---	---	---	---	---	---	---	---	59	51
14	---	---	---	---	---	---	---	---	---	---	59	53
15	---	---	---	---	---	---	---	---	---	---	56	53
16	---	---	---	---	---	---	---	---	---	---	52	53
17	---	---	---	---	---	---	---	---	---	---	196	55
18	---	---	---	---	---	---	---	---	---	---	69	55
19	---	---	---	---	---	---	---	---	---	---	61	54
20	---	---	---	---	---	---	---	---	---	---	58	50
21	---	---	---	---	---	---	---	---	---	---	55	104
22	---	---	---	---	---	---	---	---	---	---	54	95
23	---	---	---	---	---	---	---	---	---	---	51	58
24	---	---	---	---	---	---	---	---	---	---	52	55
25	---	---	---	---	---	---	---	---	---	---	55	53
26	---	---	---	---	---	---	---	---	---	---	57	50
27	---	---	---	---	---	---	---	---	---	---	56	49
28	---	---	---	---	---	---	---	---	---	---	55	50
29	---	---	---	---	---	---	---	---	---	---	54	54
30	---	---	---	---	---	---	---	---	---	---	141	55
31	---	---	---	---	---	---	---	---	---	---	61	---
TOTAL	---	---	---	---	---	---	---	---	---	---	2664	2298
MEAN	---	---	---	---	---	---	---	---	---	---	85.9	76.6
MAX	---	---	---	---	---	---	---	---	---	---	328	420
MIN	---	---	---	---	---	---	---	---	---	---	51	49
CFSM	---	---	---	---	---	---	---	---	---	---	.97	.87
IN.	---	---	---	---	---	---	---	---	---	---	1.12	.97

## STATISTICS OF MONTHLY MEAN DATA FOR PERIOD AUGUST TO SEPTEMBER 1998

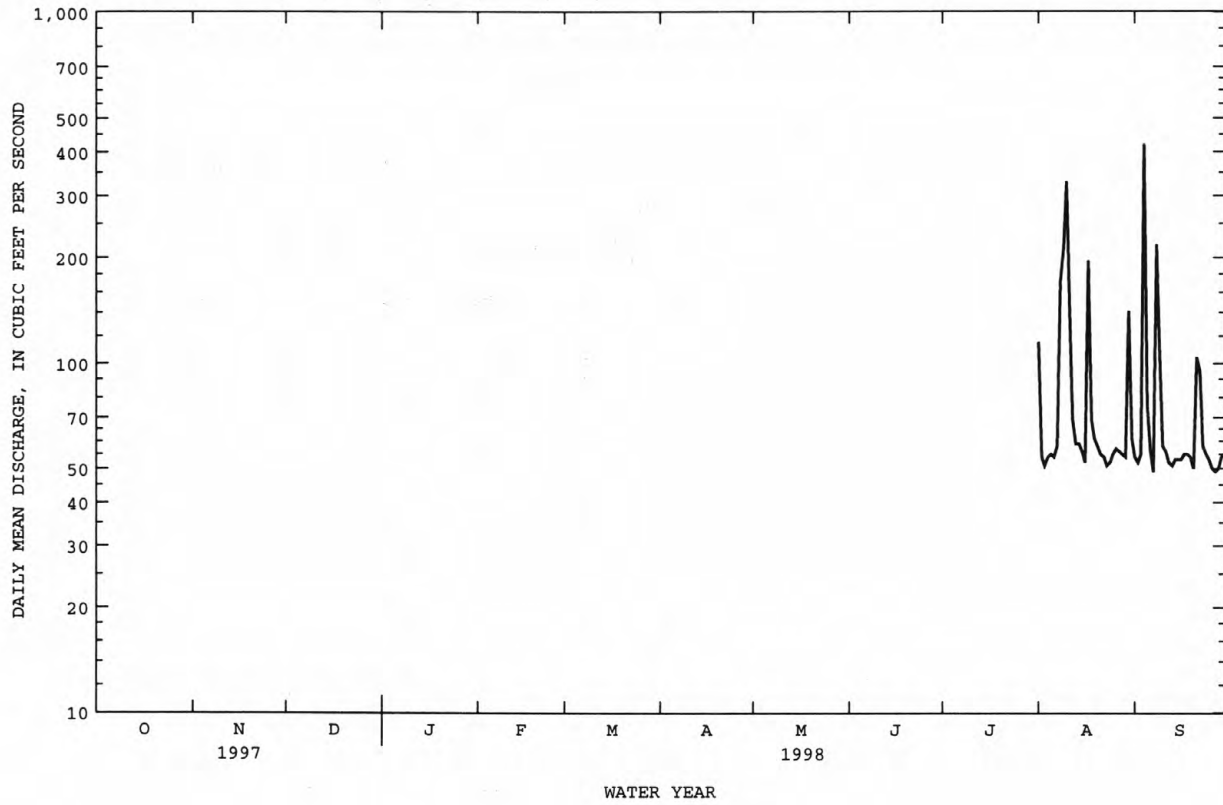
MEAN	---	---	---	---	---	---	---	---	---	---	85.9	76.6
MAX	---	---	---	---	---	---	---	---	---	---	85.9	76.6
(WY)	---	---	---	---	---	---	---	---	---	---	1998	1998
MIN	---	---	---	---	---	---	---	---	---	---	85.9	76.6
(WY)	---	---	---	---	---	---	---	---	---	---	1998	1998

## SUMMARY STATISTICS

## FOR AUGUST TO SEPTEMBER

INSTANTANEOUS PEAK FLOW	1010	Sep 4
INSTANTANEOUS PEAK STAGE	6.49	Sep 4
INSTANTANEOUS LOW FLOW	37	Sep 7

0209553650 BUFFALO CREEK AT SECONDARY ROAD 2819 NEAR MCLEANSVILLE, NC--Continued



## CAPE FEAR RIVER BASIN

0209553650 BUFFALO CREEK AT SECONDARY ROAD 2819 NEAR McLEANSVILLE, NC--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	45	47	50	e190	77	400	233	60	182	55	62
2	51	47	49	49	e340	71	175	113	65	332	56	61
3	49	62	47	2100	e107	82	93	84	67	68	55	62
4	54	62	48	213	e90	156	80	75	61	53	53	55
5	56	50	47	98	e77	76	75	75	62	50	55	1210
6	56	50	45	79	e72	73	72	73	59	50	57	651
7	55	47	47	75	e77	69	73	69	60	301	54	306
8	81	43	48	76	e75	71	70	65	64	e276	53	94
9	221	47	346	82	e64	71	72	60	62	e70	59	83
10	57	50	67	65	e70	94	66	62	65	64	59	146
11	50	92	52	66	e64	76	157	63	110	88	55	77
12	51	67	50	63	e83	72	85	62	61	75	53	66
13	51	49	798	65	e47	70	69	63	54	232	58	61
14	52	49	152	66	e46	140	66	822	55	113	55	62
15	51	77	67	333	e49	317	77	158	88	78	462	618
16	51	53	475	104	e54	107	89	87	162	69	72	2070
17	49	88	89	73	e65	86	65	71	222	62	66	174
18	48	52	65	569	e350	80	59	68	75	59	59	87
19	50	47	57	197	96	75	62	72	61	57	62	74
20	53	48	58	104	174	74	62	74	184	199	209	73
21	52	46	54	86	90	611	62	67	107	151	117	87
22	50	42	54	79	80	212	62	69	71	448	66	239
23	52	44	62	229	78	98	60	64	63	85	64	73
24	48	44	591	2630	77	83	61	63	61	132	61	68
25	45	46	206	e280	77	134	59	66	60	130	203	60
26	48	69	78	e125	75	85	59	65	65	67	120	57
27	51	48	68	e98	72	71	73	67	58	56	966	136
28	49	42	56	e92	72	62	383	64	55	56	112	1330
29	50	42	57	e89	---	66	427	61	55	85	71	966
30	53	46	57	e81	---	63	2920	56	64	89	65	993
31	49	---	49	e75	---	64	---	56	---	62	61	---
TOTAL	1787	1594	3986	8391	2811	3486	6133	3147	2356	3839	3613	10101
MEAN	57.6	53.1	129	271	100	112	204	102	78.5	124	117	337
MAX	221	92	798	2630	350	611	2920	822	222	448	966	2070
MIN	45	42	45	49	46	62	59	56	54	50	53	55
CFSM	.65	.60	1.45	3.06	1.13	1.27	2.31	1.15	.89	1.40	1.32	3.80
IN.	.75	.67	1.68	3.53	1.18	1.47	2.58	1.32	.99	1.61	1.52	4.25

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

	1998	1999	1998	1999	1998	1999	1998	1999	1998	1999	1998	1999
MEAN	57.6	53.1	129	271	100	112	204	102	78.5	124	101	207
MAX	57.6	53.1	129	271	100	112	204	102	78.5	124	117	337
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	57.6	53.1	129	271	100	112	204	102	78.5	124	85.9	76.6
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1998	1998

## SUMMARY STATISTICS

## FOR 1999 WATER YEAR

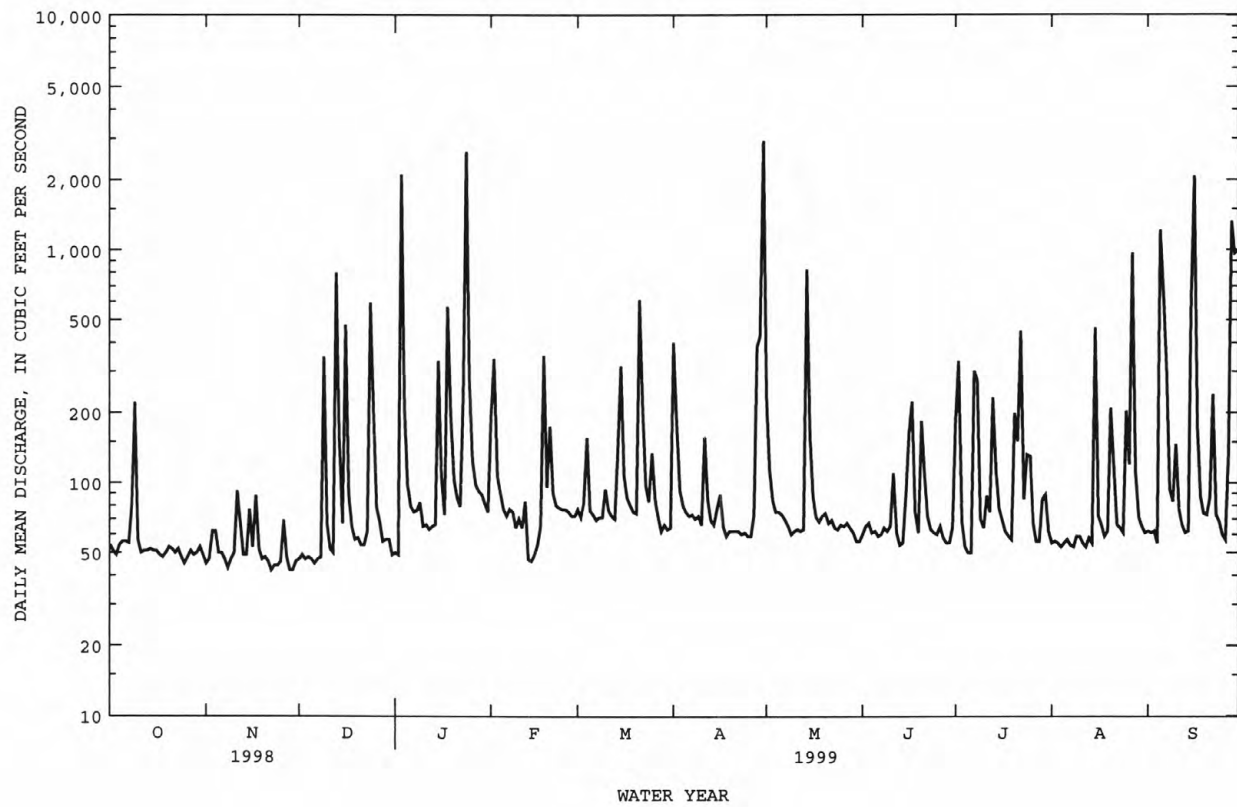
## WATER YEARS 1998 - 1999

ANNUAL TOTAL	51244			
ANNUAL MEAN	140			
HIGHEST ANNUAL MEAN		140		1999
LOWEST ANNUAL MEAN		140		1999
HIGHEST DAILY MEAN	2920	Apr 30	2920	Apr 30 1999
LOWEST DAILY MEAN	42	Nov 22	42	Nov 22 1998
ANNUAL SEVEN-DAY MINIMUM	45	Nov 19	45	Nov 19 1998
INSTANTANEOUS PEAK FLOW	5280	Apr 30	5280	Apr 30 1999
INSTANTANEOUS PEAK STAGE	14.36	Apr 30	14.36	Apr 30 1999
INSTANTANEOUS LOW FLOW	28	Nov 8	28	Nov 8 1998
ANNUAL RUNOFF (CFSM)	1.59		1.59	
ANNUAL RUNOFF (INCHES)	21.54		21.55	
10 PERCENT EXCEEDS	225		213	
50 PERCENT EXCEEDS	67		65	
90 PERCENT EXCEEDS	49		50	

e Estimated.



0209553650 BUFFALO CREEK AT SECONDARY ROAD 2819 NEAR McLEANSVILLE, NC--Continued



## CAPE FEAR RIVER BASIN

0209553650 BUFFALO CREEK AT SECONDARY ROAD 2819 NEAR McLEANSVILLE, NC--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.--August 1998 to September 1999.

INSTRUMENTATION.--Tipping bucket raingage and data collection platform records rainfall at fifteen-minute intervals.

PRECIPITATION, TOTAL, INCHES, PERIOD AUGUST 1998 TO SEPTEMBER 1998  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	.00	.00
2	---	---	---	---	---	---	---	---	---	---	.00	.00
3	---	---	---	---	---	---	---	---	---	---	.00	1.11
4	---	---	---	---	---	---	---	---	---	---	.00	.32
5	---	---	---	---	---	---	---	---	---	---	.00	.00
6	---	---	---	---	---	---	---	---	---	---	.00	.00
7	---	---	---	---	---	---	---	---	---	---	.00	.00
8	---	---	---	---	---	---	---	---	---	---	.84	1.02
9	---	---	---	---	---	---	---	---	---	---	.09	.00
10	---	---	---	---	---	---	---	---	---	---	1.23	.00
11	---	---	---	---	---	---	---	---	---	---	.00	.00
12	---	---	---	---	---	---	---	---	---	---	.00	.00
13	---	---	---	---	---	---	---	---	---	---	.00	.00
14	---	---	---	---	---	---	---	---	---	---	.00	.00
15	---	---	---	---	---	---	---	---	---	---	.00	.00
16	---	---	---	---	---	---	---	---	---	---	.07	.00
17	---	---	---	---	---	---	---	---	---	---	.61	.00
18	---	---	---	---	---	---	---	---	---	---	.00	.00
19	---	---	---	---	---	---	---	---	---	---	.00	.00
20	---	---	---	---	---	---	---	---	---	---	.00	.00
21	---	---	---	---	---	---	---	---	---	---	.00	.42
22	---	---	---	---	---	---	---	---	---	---	.00	.00
23	---	---	---	---	---	---	---	---	---	---	.00	.00
24	---	---	---	---	---	---	---	---	---	---	.00	.00
25	---	---	---	---	---	---	---	---	---	---	.00	.00
26	---	---	---	---	---	---	---	---	---	---	.01	.00
27	---	---	---	---	---	---	---	---	---	---	.02	.00
28	---	---	---	---	---	---	---	---	---	---	.00	.00
29	---	---	---	---	---	---	---	---	---	---	.00	.00
30	---	---	---	---	---	---	---	---	---	---	.44	.04
31	---	---	---	---	---	---	---	---	---	---	.00	---
TOTAL	---	---	---	---	---	---	---	---	---	---	3.31	2.91

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.64	.00	1.21	.00	.00	.53	.00	.00
2	.00	.01	.00	.09	.08	.00	.00	.00	.00	.01	.00	.00
3	.00	.34	.00	1.50	.00	.29	.00	.00	.00	.00	.00	.00
4	.15	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.94
5	.04	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	4.31
6	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.30
7	.00	.00	.00	.00	.00	.00	.00	.13	.00	1.98	.00	.01
8	.87	.00	.86	.11	.00	.00	.00	.00	.00	.01	.16	.00
9	.01	.00	.30	.02	.00	.10	.01	.00	.00	.00	.23	.48
10	.00	.00	.00	.00	.00	.03	.00	.00	.01	.14	.00	.00
11	.00	.33	.00	.00	.00	.00	.55	.00	.00	.05	.00	.00
12	.00	.00	.75	.00	.17	.00	.00	.00	.00	.70	.00	.00
13	.00	.00	1.22	.00	.00	.00	.00	.00	.00	.38	.00	.01
14	.00	.33	.01	.20	.00	.98	.00	2.27	.00	.21	.18	.00
15	.00	.00	.41	.67	.00	.08	.24	.01	.35	.01	.00	3.21
16	.00	.20	.44	.01	.01	.00	.00	.00	1.12	.00	.00	.78
17	.00	.00	.02	.47	.01	.00	.00	.00	.06	.00	.00	.00
18	.00	.00	.00	.37	.51	.00	.00	.00	.02	.00	.00	.00
19	.00	.00	.04	.00	.28	.00	.00	1.10	.01	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.02	.81	.93	.37	.00
21	.00	.00	.00	.00	.00	.89	.00	.00	.01	1.60	.01	.74
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00
23	.00	.00	.04	1.10	.00	.03	.00	.00	.00	.00	.00	.01
24	.00	.00	.00	1.33	.00	.28	.00	.00	.00	.09	.00	.00
25	.00	.08	.02	.00	.00	.03	.00	.00	.08	.00	.44	.00
26	.00	.09	.01	.00	.00	.01	.04	.05	.00	.00	3.05	.03
27	.00	.00	.14	.02	.00	.00	.35	.00	.01	.00	.19	2.28
28	.00	.00	.21	.00	.04	.00	1.01	.00	.00	.21	.00	.84
29	.00	.00	.02	.00	---	.00	2.12	.00	.00	.52	.00	1.36
30	.00	.00	.00	.00	---	.00	.35	.00	.27	.01	.00	.01
31	.00	---	.01	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	1.07	1.38	4.56	5.89	1.75	2.73	5.88	3.58	2.75	7.41	4.63	15.31



Vehicles stranded by impassable floodwaters at U.S. Highway 64 near Princeville and Tarboro, N.C., September 1999.

## CAPE FEAR RIVER BASIN

02096500 HAW RIVER AT HAW RIVER, NC

LOCATION.--Lat 36°05'13", long 79°22'02", Alamance County, Hydrologic unit 03030002, on left bank at Haw River, 650 ft downstream of Southern Railway bridge, 800 ft downstream of bridge on U.S. Highway 70 and State Highway 49, and 3 mi downstream of Stony Creek.

RAINAGE AREA.--606 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 757: 1929 (M). WSP 782: 1934. WSP 1383: 1930,1932(M), 1933(m), 1936, 1943, 1944 (M), 1947(m). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 471.69 ft above sea level. U.S. Army Corps of Engineers satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diurnal fluctuations and occasional regulation at low flows. City of Burlington diverted an average of 1.1 ft<sup>3</sup>/s from two Stony Creek Reservoirs (stations 02096003 and 02096432) for municipal water supply, about half of which was returned upstream of station as treated effluent, the remainder was returned downstream of station. Maximum discharge for period of record from rating curve extended above 38,000 ft<sup>3</sup>/s, by logarithmic plotting; maximum gage height, 32.83 ft, from flood mark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	64	88	199	529	334	611	3730	104	334	102	155
2	88	65	93	193	1240	256	1760	1780	105	437	92	128
3	80	70	91	3570	935	248	799	1200	106	246	89	111
4	82	86	88	2290	703	334	502	1030	107	152	87	106
5	85	95	85	967	501	461	409	671	97	127	85	2290
6	103	74	85	768	395	266	342	374	93	108	82	5510
7	101	73	90	580	347	244	316	315	94	120	83	2090
8	161	69	94	432	333	221	303	284	95	1190	81	1110
9	267	71	373	368	314	217	278	253	99	318	e83	688
10	158	71	376	317	296	232	271	230	103	249	87	764
11	84	85	177	280	280	251	303	214	106	208	91	354
12	76	134	146	261	272	226	426	190	138	184	88	237
13	73	109	818	241	283	210	277	187	106	292	79	189
14	76	88	1290	228	272	319	243	1050	103	387	101	161
15	74	94	390	955	240	1530	234	1470	110	326	358	1200
16	71	131	861	848	236	896	298	554	e180	243	221	8420
17	67	107	660	437	237	559	297	425	e525	193	126	2530
18	65	136	275	840	320	433	265	316	250	155	116	1140
19	66	97	207	1290	520	358	235	258	168	139	102	752
20	68	86	182	643	494	308	223	232	141	122	99	425
21	71	84	150	520	454	807	210	206	284	286	241	308
22	67	82	153	429	342	1890	202	180	181	476	132	581
23	66	82	154	530	293	816	187	167	153	292	98	358
24	62	83	e520	7350	274	566	178	153	132	237	95	329
25	62	83	1370	4610	266	509	165	139	120	270	98	268
26	64	86	443	1860	259	454	155	130	113	174	380	206
27	64	108	332	1380	250	404	165	133	120	129	2640	379
28	69	90	294	1000	294	323	368	132	117	109	927	2370
29	69	81	259	685	---	285	896	124	109	106	480	3980
30	69	83	239	474	---	274	6590	117	119	126	386	5460
31	66	---	222	380	---	258	---	107	---	127	244	---
TOTAL	2669	2667	10605	34925	11179	14489	17508	16351	4278	7862	7973	42599
MEAN	86.1	88.9	342	1127	399	467	584	527	143	254	257	1420
MAX	267	136	1370	7350	1240	1890	6590	3730	525	1190	2640	8420
MIN	62	64	85	193	236	210	155	107	93	106	79	106
CFSM	.14	.15	.56	1.86	.66	.77	.96	.87	.24	.42	.42	2.34
IN.	.16	.16	.65	2.14	.69	.89	1.07	1.00	.26	.48	.49	2.61

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1999, BY WATER YEAR (WY)

	MEAN	393	406	573	916	1016	1021	824	493	419	394	353	421
MAX	2480	1286	1487	2977	2492	3276	2771	1948	2145	2348	1662	4373	
(WY)	1960	1948	1946	1937	1998	1993	1987	1978	1982	1984	1939	1996	
MIN	48.9	61.1	118	172	272	289	184	139	101	70.9	57.2	33.4	
(WY)	1942	1954	1934	1956	1931	1967	1967	1986	1986	1932	1953	1954	

## CAPE FEAR RIVER BASIN

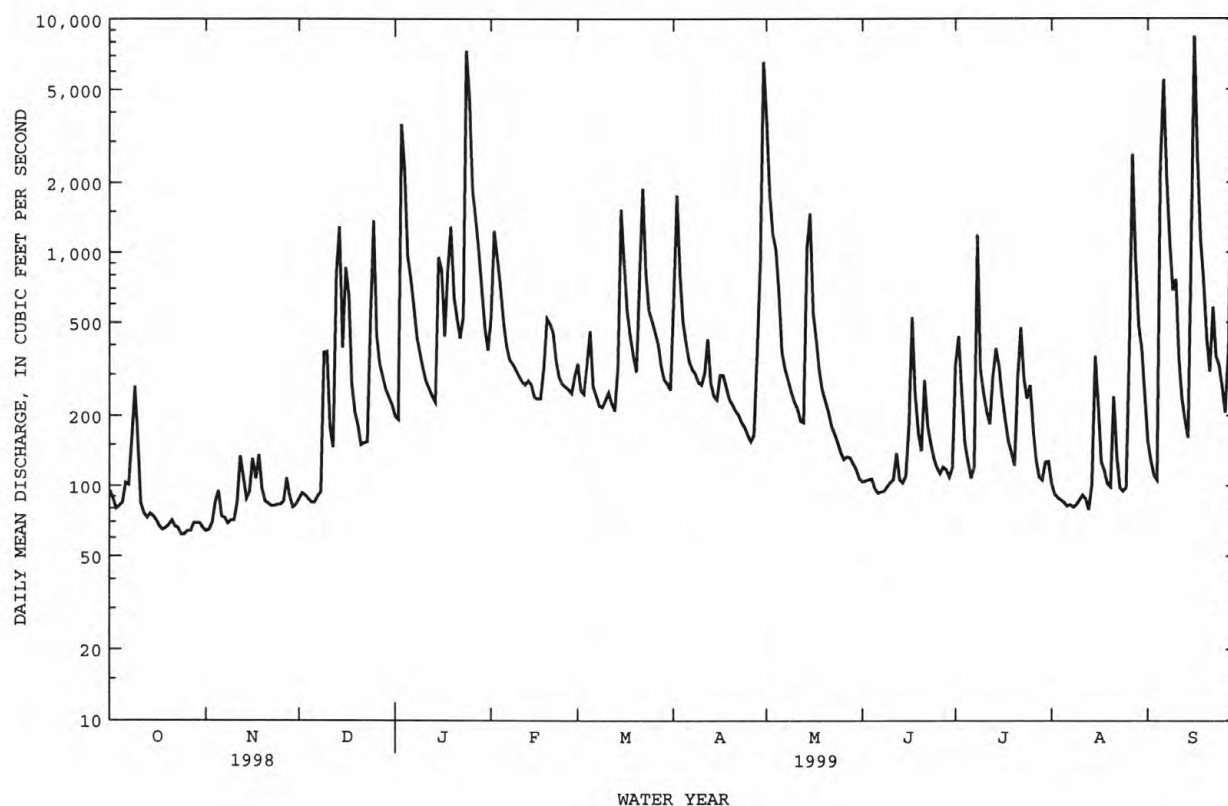
91

02096500 HAW RIVER AT HAW RIVER, NC--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1929 - 1999	
ANNUAL TOTAL	293605		173105		600	
ANNUAL MEAN	804		474		1082	
HIGHEST ANNUAL MEAN					229	
LOWEST ANNUAL MEAN					42000	
HIGHEST DAILY MEAN	10600	Feb 17	8420	Sep 16	5.0	Sep 7 1996
LOWEST DAILY MEAN	62	Oct 24	62	Oct 24	16	Sep 6 1930
ANNUAL SEVEN-DAY MINIMUM	65	Oct 22	65	Oct 22	51400*	Sep 6 1996
INSTANTANEOUS PEAK FLOW			10600	Jan 24	32.83*	Sep 6 1996
INSTANTANEOUS PEAK STAGE			18.74	Jan 24	3.0	Sep 5 1930
INSTANTANEOUS LOW FLOW			55	Oct 25	.99	
ANNUAL RUNOFF (CFSM)	1.33		.78		13.46	
ANNUAL RUNOFF (INCHES)	18.02		10.63		1250	
10 PERCENT EXCEEDS	2020		943		297	
50 PERCENT EXCEEDS	294		235		101	
90 PERCENT EXCEEDS	84		83			

e Estimated.

\* See REMARKS.





## CAPE FEAR RIVER BASIN

02096500 HAW RIVER AT HAW RIVER, NC--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.--October 1998 to September 1999.

INSTRUMENTATION.--Tipping bucket raingage and data collection platform records rainfall at fifteen-minute intervals.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.55	.00	.82	.00	.00	.45	.00	.00
2	.00	.00	.00	.68	.08	.00	.00	.00	.00	.09	.00	.00
3	.00	.09	.00	.85	.00	.17	.00	.00	.00	.01	.00	.00
4	.05	.01	.00	.00	.03	.00	.00	.00	.00	.00	.00	.68
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.78
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.06
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.17	.00	.67	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.33	.00	.00	.06	.00	.00	.00	.00	.04	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.12	.00	.00	.00	.27	.27	.00	.00	.00	.00	.00
12	.00	.00	.40	.00	.07	.00	.00	.00	.00	.37	.00	.00
13	.00	.00	1.48	.00	.00	.00	.00	.09	.00	.62	.00	.00
14	.00	.22	.00	.00	.00	1.14	.00	1.29	.00	.18	.78	.00
15	.00	.01	.32	.40	.00	.06	.03	.00	.04	.01	.01	2.52
16	.00	.21	.38	.00	.00	.00	.00	.00	---	.00	.00	1.06
17	.00	.01	.00	.30	.00	.00	.00	.00	---	.24	.00	.00
18	.00	.00	.00	.10	.47	.00	.00	.00	.13	.00	.00	.00
19	.00	.00	.02	.00	.28	.00	.00	.00	.08	.00	.00	.00
20	.00	.00	.00	.00	.01	.00	.00	.00	.04	.00	.10	.00
21	.00	.00	.00	.00	.00	.68	.00	.00	.03	.05	.00	.21
22	.00	.00	.00	.00	.00	.00	.00	.03	.00	.06	.00	.00
23	.00	.00	.01	.61	.00	.00	.00	.00	.00	.00	1.04	.00
24	.00	.00	.00	.82	.00	.09	.00	.00	.00	1.06	.00	.00
25	.00	.00	.01	.00	.00	.09	.00	.00	.01	.00	.61	.00
26	.00	.03	.00	.00	.00	.00	.00	.00	.01	.00	.59	.00
27	.00	.00	.01	.00	.00	.00	.01	.00	.00	.00	.13	1.13
28	.00	.00	.00	.00	.00	.00	.24	.00	.00	.14	.00	2.07
29	.00	.00	.04	.00	---	.00	1.37	.00	.00	.02	.00	.48
30	.00	.00	.00	.00	---	.00	.21	.00	.00	.00	.00	.01
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.22	0.70	3.67	3.76	1.49	2.56	2.95	1.41	---	3.30	3.30	13.00



A country church surrounded by the floodwaters of the Black River near Tomahawk, N.C., September 1999.

## CAPE FEAR RIVER BASIN

02096846 CANE CREEK NEAR ORANGE GROVE, NC

LOCATION.--Lat 35°59'13", long 79°12'23", Orange County, Hydrologic Unit 03030002, on right bank at downstream side of bridge on Secondary Road 1114, and 1.0 mi northwest of Orange Grove.

DRAINAGE AREA.--7.54 mi<sup>2</sup>

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 510 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum discharge for period of record from rating curve extended above 500 ft<sup>3</sup>/s, based on contracted-opening measurement of peak flow; maximum gage-height, 7.90 ft, from flood mark. No flow occurs at times most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	e.01	.43	2.3	2.0	37	7.5	.18	.30	.01	.11
2	.00	.00	e.01	.39	14	1.3	15	3.6	.15	.33	.01	.08
3	.00	.02	e.01	111	8.9	.94	6.3	2.2	.12	.30	.00	.05
4	.00	.01	e.02	12	5.6	1.3	4.3	1.7	.11	.23	.00	.06
5	.00	.00	e.02	4.7	4.2	1.1	3.2	1.5	.10	.21	.00	59
6	.00	.00	e.02	2.6	3.2	1.1	2.5	1.4	.09	.19	.00	85
7	.00	.00	.04	1.9	2.9	.97	2.4	1.1	.08	.16	.00	8.2
8	.12	.00	.04	1.6	2.4	.82	2.2	1.0	.08	.14	.00	2.9
9	.03	.00	.12	1.4	1.9	.80	2.2	.89	.09	.12	.01	1.7
10	.01	.00	.05	1.1	1.8	.92	2.0	.83	.10	.11	.02	1.2
11	.00	.01	.03	.93	1.6	.90	13	.73	.08	.09	.02	.90
12	.00	.01	.02	.90	1.7	.87	7.8	.62	.07	.14	.01	.74
13	.00	.01	.53	.81	1.9	.78	3.7	.61	.07	.17	.01	.66
14	.00	.01	.74	.73	1.6	1.2	2.6	1.0	.06	.41	.04	.59
15	.00	.03	.34	3.1	1.5	9.1	2.4	1.5	.83	.50	.19	7.7
16	.00	.01	1.2	4.2	1.4	4.0	2.4	.93	3.1	.32	.13	245
17	.00	.02	e1.2	2.5	1.4	2.4	1.9	.69	3.9	.24	.12	11
18	.00	.01	e.73	6.1	7.0	1.8	1.6	.61	.96	.22	.09	4.4
19	.00	.01	.48	5.3	8.4	1.4	1.5	.57	.50	.18	.07	2.8
20	.00	.01	.38	3.1	12	1.2	1.4	.55	.36	.10	.06	2.1
21	.00	.01	.32	2.2	6.6	20	1.3	.46	.35	.10	.11	3.9
22	.00	.01	.26	1.8	4.1	11	1.2	.41	.33	.10	.11	10
23	.00	.01	e.29	16	2.9	4.3	1.1	.40	.30	.06	.08	3.7
24	.00	.01	e13	192	2.6	2.9	1.0	.37	.27	.06	.06	2.4
25	.00	.01	7.6	29	2.3	2.8	.97	.36	.23	.05	.10	1.9
26	.00	.01	2.3	10	2.1	3.0	.94	.28	.27	.03	.15	1.6
27	.00	.01	1.3	6.2	1.8	2.4	1.0	.32	.43	.03	.43	5.8
28	.00	.01	.92	4.6	1.9	1.9	2.1	.36	.74	.02	e.31	47
29	.00	.01	e.81	3.5	---	1.7	7.5	.32	.49	.02	e.24	25
30	.00	.01	.72	3.0	---	1.5	38	.28	.35	.01	e.19	18
31	.00	---	e.53	2.4	---	1.3	---	.23	---	.01	.14	---
TOTAL	0.16	0.26	34.04	435.49	110.0	87.70	170.51	33.32	14.79	4.95	2.71	553.49
MEAN	.005	.009	1.10	14.0	3.93	2.83	5.68	1.07	.49	.16	.087	18.4
MAX	.12	.03	13	192	14	20	38	7.5	3.9	.50	.43	245
MIN	.00	.00	.01	.39	1.4	.78	.94	.23	.06	.01	.00	.05
CFSM	.00	.00	.15	1.86	.52	.38	.75	.14	.07	.02	.01	2.45
IN.	.00	.00	.17	2.15	.54	.43	.84	.16	.07	.02	.01	2.73

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1999, BY WATER YEAR (WY)

MEAN	2.52	3.54	5.19	14.8	13.7	20.1	9.39	6.01	4.12	1.86	.96	4.99
MAX	8.72	15.5	11.2	28.3	34.3	46.3	16.7	18.7	16.4	10.2	4.47	25.9
(WY)	1996	1996	1997	1998	1998	1998	1993	1989	1995	1989	1995	1996
MIN	.005	.009	.75	3.89	3.93	2.83	1.47	1.07	.49	.16	.044	.018
(WY)	1999	1999	1992	1989	1999	1999	1995	1999	1999	1999	1997	1990

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

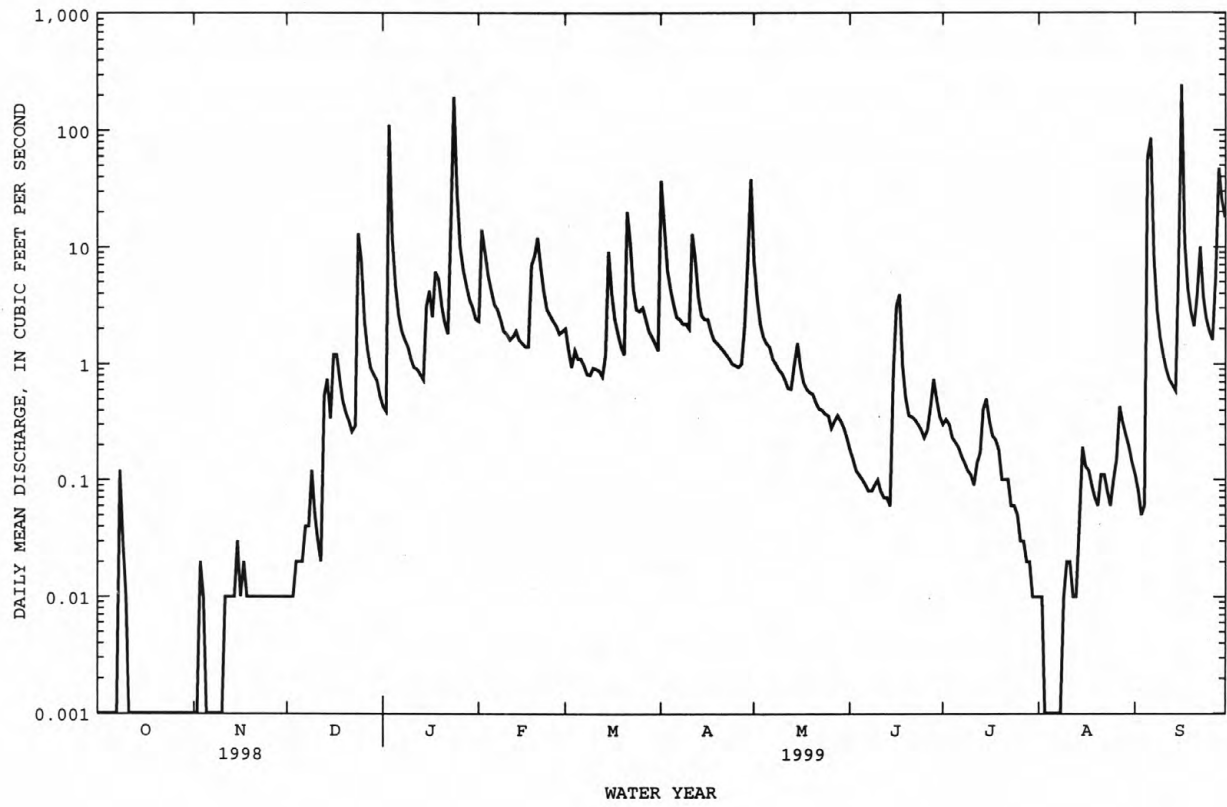
## WATER YEARS 1989 - 1999

ANNUAL TOTAL	3859.38	1447.42	
ANNUAL MEAN	10.6	3.97	
HIGHEST ANNUAL MEAN			7.06
LOWEST ANNUAL MEAN			10.8
HIGHEST DAILY MEAN	457	245	516
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00
INSTANTANEOUS PEAK FLOW		689	2060*
INSTANTANEOUS PEAK STAGE		5.20	7.90*
INSTANTANEOUS LOW FLOW		.00*	.00*
ANNUAL RUNOFF (CFSM)	1.40	.53	.94
ANNUAL RUNOFF (INCHES)	19.04	7.14	12.72
10 PERCENT EXCEEDS	13	6.1	13
50 PERCENT EXCEEDS	.73	.50	2.1
90 PERCENT EXCEEDS	.00	.00	.09

e Estimated.

\* See REMARKS.

02096846 CANE CREEK NEAR ORANGE GROVE, NC--Continued



## CAPE FEAR RIVER BASIN

02096846 CANE CREEK NEAR ORANGE GROVE, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1989 to current year.

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L AS CACO3) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L AS CACO3) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
DEC 10...	1015	.05	132	6.5	7.0	40	761	4.9	41	42	9.6
FEB 19...	1315	7.2	70	6.8	8.5	70	750	12.2	106	17	4.1
APR 08...	1245	2.1	69	7.2	18.3	40	751	10.5	113	21	5.0
JUN 24...	1330	.17	87	7.0	20.2	55	754	8.4	94	29	7.2
SEP 05...	1505	55	61	6.5	21.6	160	745	7.2	84	16	3.7

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE IT-FLD AS CACO3 (99440)	ANC WATER UNFLTRD IT FIELD MG/L AS CACO3 (00419)	BICAR- BONATE WATER DIS IT FIELD MG/L AS CACO3 (00453)	ALKA- LINITY WAT DIS TOT IT MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
DEC 10...	4.3	5.3	20	.4	4.2	56	46	--	--	1.3
FEB 19...	1.6	4.4	34	.5	.95	--	--	--	--	6.0
APR 08...	2.0	4.8	32	.5	.99	--	--	--	--	4.1
JUN 24...	2.6	5.0	25	.4	2.4	--	--	32	26	3.3
SEP 05...	1.8	2.6	19	.3	6.1	--	--	--	--	4.7

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)
DEC 10...	6.9	<.10	13	85	.001	<.005	<.002	--	.32	--
FEB 19...	5.3	<.10	12	54	.002	.250	.003	.29	.29	.55
APR 08...	5.6	<.10	9.9	57	.002	.368	.004	.33	.34	.70
JUN 24...	6.4	<.10	12	69	.003	.580	.009	.36	.37	.95
SEP 05...	3.9	<.10	5.2	70	.023	.749	.073	1.8	1.9	2.7

DATE	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)
DEC 10...	E.037	.023	--	--	--	--	--	--	--	--
FEB 19...	<.050	.006	--	--	--	--	--	--	--	--
APR 08...	<.050	.008	160	<1	<1	<1	<1	<1	510	<1
JUN 24...	.104	.040	--	--	--	--	--	--	--	--
SEP 05...	.824	.746	4100	3	<1	5	4	9	6500	5



## CAPE FEAR RIVER BASIN

97

02096846 CANE CREEK NEAR ORANGE GROVE, NC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)
DEC 10...	--	--	--	--	--	--	--	6.4	--	--
FEB 19...	--	--	--	--	--	--	--	6.1	7	.14
APR 08...	24	<.10	<1	<1	<1	<1	<40	6.1	7	.04
JUN 24...	--	--	--	--	--	--	--	6.6	4	.00
SEP 05...	680	<.10	<1	2	<1	<1	E30	31	--	--

## CAPE FEAR RIVER BASIN

0209684980 CANE CREEK RESERVOIR AT DAM NEAR WHITE CROSS, NC

LOCATION.--Lat 35°56'59", long 79°14'29", Orange County, Hydrologic Unit 03030002, at Orange Water and Sewage Authority intakes, 0.7 mi above State Highway 54, and 3.6 mi northwest of White Cross.

DRAINAGE AREA.--31.4 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1989 to current year.

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment. Samples for nutrient and chlorophyll a and b analyses were collected through a sampling zone equal to double the secchi disk depth using the depth-integration sampling technique.

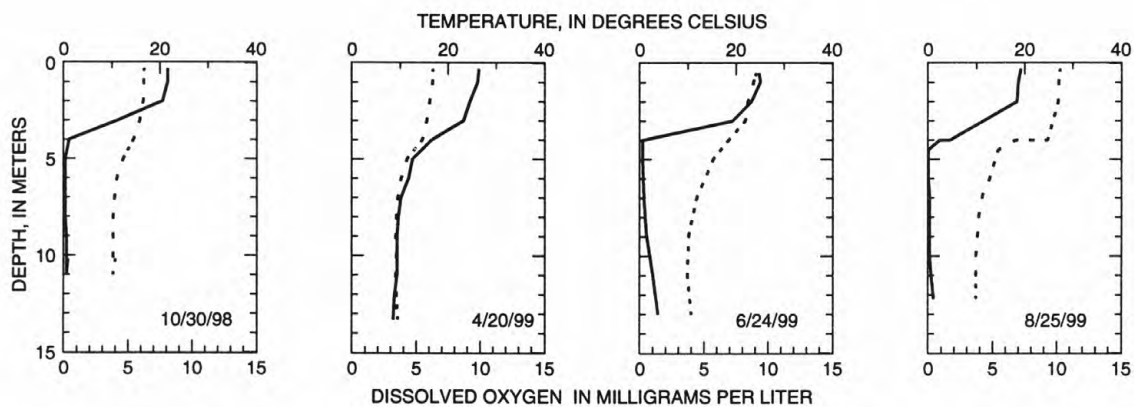
## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

		PH				BARO-		OXYGEN,		HARD-	
		SAM-	SPE-	WATER		COLOR	METRIC	TRANS-	DIS-	HARD-	
		PLING	CIFIC	WHOLE	TEMPER-	(PLAT-	PRES-	PAR-	SOLVED	NESS	
		DEPTH	DUCT-	FIELD	ATURE	(PLAT-	SURE	ENCY	OXYGEN,	(PER-	
DATE	TIME	(FEET)	ANCE	(STAND-	WATER	INUM-	(MM	(SECCHI	DIS-	CENT	
		(00003)	(US/CM)	ARD	(DEG C)	COBALT	OF	(DISK)	SOLVED	SATUR-	
			(00095)	UNITS)		UNITS)	HG)	(M)	(MG/L)	ATION)	
				(00400)	(00010)	(00080)	(00025)	(00078)	(00300)	(00301)	
OCT											
30...	0930	1.00	62	7.0	16.7	25	753	.55	8.4	85	20
APR											
20...	1100	1.00	76	7.3	16.9	50	751	.85	9.9	104	21
JUN											
24...	1135	1.00	72	9.1	24.2	40	754	1.10	9.3	112	22
AUG											
25...	1330	1.00	76	8.0	27.4	20	751	1.05	7.2	91	24
		CALCIUM	MAGNE-	SODIUM,	SODIUM	POTAS-	BICAR-	ANC	BICAR-	ALKA-	
		DIS-	SIUM,	DIS-	AD-	SIUM,	BONATE	WATER	BONATE	LINITY	
		SOLVED	DIS-	SOLVED	SORP-	DIS-	IT-FLD	UNFLTRD	WATER	WAT DIS	SULFATE
		(MG/L	SOLVED	(MG/L	TION	SOLVED	AS	IT	DIS IT	TOT IT	DIS-
		AS CA)	(MG/L	(MG/L	RATIO	(MG/L	(MG/L	FIELD	FIELD	FIELD	SOLVED
DATE		(00915)	AS MG)	AS NA)	SODIUM	AS K)	AS	MG/L AS	MG/L AS	MG/L AS	(MG/L
			(00925)	(00930)	PERCENT	(00935)	HCO3)	CACO3	HCO3	CACO3	AS SO4)
					(00932)	(00931)	(99440)	(00419)	(00453)	(39086)	(00945)
OCT											
30...	4.9	2.0	3.0	22	.3	1.7	--	20	--	--	2.4
APR											
20...	4.9	2.1	3.7	26	.4	2.0	--	--	--	--	5.3
JUN											
24...	5.4	2.2	3.9	25	.4	2.1	--	--	32	26	4.0
AUG											
25...	5.5	2.4	3.9	24	.3	1.9	28	23	--	--	4.2
		CHLO-	FLUO-	SILICA,	SOLIDS,	NITRO-	NITRO-	NITRO-	NITRO-	NITRO-	
		RIDE,	RIDE,	DIS-	RESIDUE	GEN,	GEN,	GEN,	GEN,	GEN, AM-	
		DIS-	DIS-	SOLVED	AT 180	NITRITE	NO2+NO3	AMMONIA	ORGANIC	MONIA +	NITRO-
		SOLVED	SOLVED	(MG/L	DEG. C	DIS-	DIS-	DIS-	TOTAL	ORGANIC	GEN,
		(MG/L	(MG/L	AS	DIS-	SOLVED	SOLVED	SOLVED	(MG/L	(MG/L	TOTAL
DATE		AS CL)	AS F)	SiO2)	SOLVED	(MG/L	(MG/L	(MG/L	AS N)	AS N)	(MG/L
		(00940)	(00950)	(00955)	(MG/L)	AS N)	AS N)	AS N)	AS N)	AS N)	AS N)
					(70300)	(00613)	(00631)	(00608)	(00605)	(00625)	(00600)
OCT											
30...	3.7	<.10	6.9	44	.001	<.005	.008	.67	.67	--	
APR											
20...	4.9	<.10	7.1	54	.011	.397	.005	.68	.69	1.1	
JUN											
24...	5.5	<.10	5.6	60	<.001	.005	.011	.52	.53	.53	
AUG											
25...	5.3	.11	5.7	41	<.001	<.005	.033	.49	.52	--	
		PHOS-	PHOS-	CHLOR-A	CHLOR-B	ALUM-		CHRO-	COBALT,	COPPER,	
		PHORUS	PHORUS	PHYTO-	PHYTO-	INUM,		MIUM,	TOTAL	TOTAL	
		TOTAL	ORTH-	PLANK-	PLANK-	TOTAL		WATER	RECOV-	RECOV-	
		(MG/L	DIS-	TON	TON	RECOV-	ARSENIC	UNFLTRD	ERABLE	ERABLE	
DATE		AS P)	SOLVED	CHROMO	CHROMO	ERABLE	TOTAL	(UG/L	(UG/L	(UG/L	
		(00665)	(MG/L	FLUOROM	FLUOROM	(UG/L	(UG/L	AS CD)	AS CR)	AS CO)	AS CU)
			(00671)	(70953)	(70954)	(01105)	(01002)	(01027)	(01034)	(01037)	(01042)
OCT											
30...	E.032	.003	22.0	<.100	20	<1	<1	8	<1	<1	
APR											
20...	E.042	.002	12.5	E.200	80	<1	<1	<1	<1	<1	2
JUN											
24...	E.039	.002	7.10	1.40	--	--	--	--	--	--	--
AUG											
25...	<.050	.001	5.10	E.370	--	--	--	--	--	--	--

## 0209684980 CANE CREEK RESERVOIR AT DAM NEAR WHITE CROSS, NC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 30...	170	<1	370	<.10	<1	12	<1	<1	<10	7.1
APR 20...	680	<1	39	<.10	<1	<1	<1	<1	<0	6.9
JUN 24...	--	--	--	--	--	--	--	--	--	7.3
AUG 25...	--	--	--	--	--	--	--	--	--	7.8



## EXPLANATION

..... Water Temperature

——— Dissolved Oxygen

## CAPE FEAR RIVER BASIN

02096960 HAW RIVER NEAR BYNUM, NC

LOCATION.--Lat 35°45'48", long 79°08'02", Chatham County, Hydrologic Unit 03030002, on right bank 500 ft upstream from Pokeberry Creek, 0.9 mi south of Bynum, and 1.1 mi downstream of U.S. Highways 15 and 501.

DRAINAGE AREA.--1,275 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1973 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 283.31 ft above sea level. U.S. Army Corps of Engineers satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Considerable regulation for short periods at low flow caused by power plant above station. Maximum discharge for period of record, from rating curve extended above 36,000 ft<sup>3</sup>/s, on basis of slope-conveyance measurement of peak flow; maximum gage height, 21.76 ft, from floodmarks. Minimum discharge for period of record also occurred Sept. 27, 1983. Minimum discharge for each year affected by regulation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	107	137	325	699	538	1580	6070	202	173	171	225
2	119	105	142	277	1630	517	3470	2650	173	450	137	195
3	111	153	144	5060	2070	456	1980	1730	181	551	112	157
4	109	139	151	4190	1350	517	1240	1260	180	366	113	144
5	104	130	150	1610	1110	610	974	1170	174	194	112	2010
6	102	190	146	1120	836	652	812	835	169	161	103	13600
7	107	131	139	893	694	509	655	463	160	163	104	5310
8	163	108	152	700	687	324	649	585	151	467	111	2340
9	333	116	189	577	620	405	615	462	151	876	101	1330
10	263	117	552	554	559	391	536	421	153	267	100	1010
11	268	119	374	426	497	422	505	407	157	314	100	849
12	178	133	201	412	485	412	708	324	167	253	104	300
13	125	147	385	389	490	382	659	310	189	261	106	363
14	92	200	1750	355	503	376	530	781	164	497	118	245
15	123	174	894	634	464	2220	448	3270	164	499	172	303
16	118	163	647	1750	432	2270	446	1310	177	415	419	17500
17	117	187	1240	996	431	1320	509	799	325	339	261	7850
18	115	206	588	932	485	950	478	647	684	248	142	2320
19	112	175	354	e2000	995	773	425	525	205	194	142	1460
20	112	189	269	e1250	1210	634	389	405	174	194	137	971
21	110	151	267	922	1120	1260	382	382	220	171	119	621
22	93	139	242	774	861	3180	361	337	356	303	235	1860
23	109	134	224	725	629	2000	351	323	254	524	183	1210
24	107	134	431	12300	603	1250	309	277	201	359	127	676
25	108	137	1960	12400	565	1010	310	272	203	423	147	459
26	104	144	1140	3580	533	998	285	260	190	348	150	443
27	102	145	556	2320	486	840	274	236	177	243	1620	907
28	103	142	477	1700	470	758	343	239	178	147	2050	4740
29	107	160	438	1300	---	612	888	234	178	153	729	11200
30	110	148	398	993	---	581	6770	225	168	145	444	10800
31	110	---	324	738	---	552	---	208	---	152	444	---
TOTAL	4054	4423	15061	62202	21514	27719	27881	27417	6225	9850	9113	91398
MEAN	131	147	486	2007	768	894	929	884	208	318	294	3047
MAX	333	206	1960	12400	2070	3180	6770	6070	684	876	2050	17500
MIN	92	105	137	277	431	324	274	208	151	145	100	144
CFSM	.10	.12	.38	1.57	.60	.70	.73	.69	.16	.25	.23	2.39
IN.	.12	.13	.44	1.81	.63	.81	.81	.80	.18	.29	.27	2.67

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1999, BY WATER YEAR (WY)

	MEAN	736	1143	2326	2223	1707	1168	893	795	572	891
MAX	2906	2888	2681	5895	5465	6110	4044	3936	4632	4477	4904
(WY)	1991	1986	1984	1978	1979	1975	1987	1978	1982	1975	1996
MIN	131	147	275	262	627	648	412	256	155	135	111
(WY)	1999	1999	1981	1981	1977	1988	1995	1986	1986	1986	1983

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

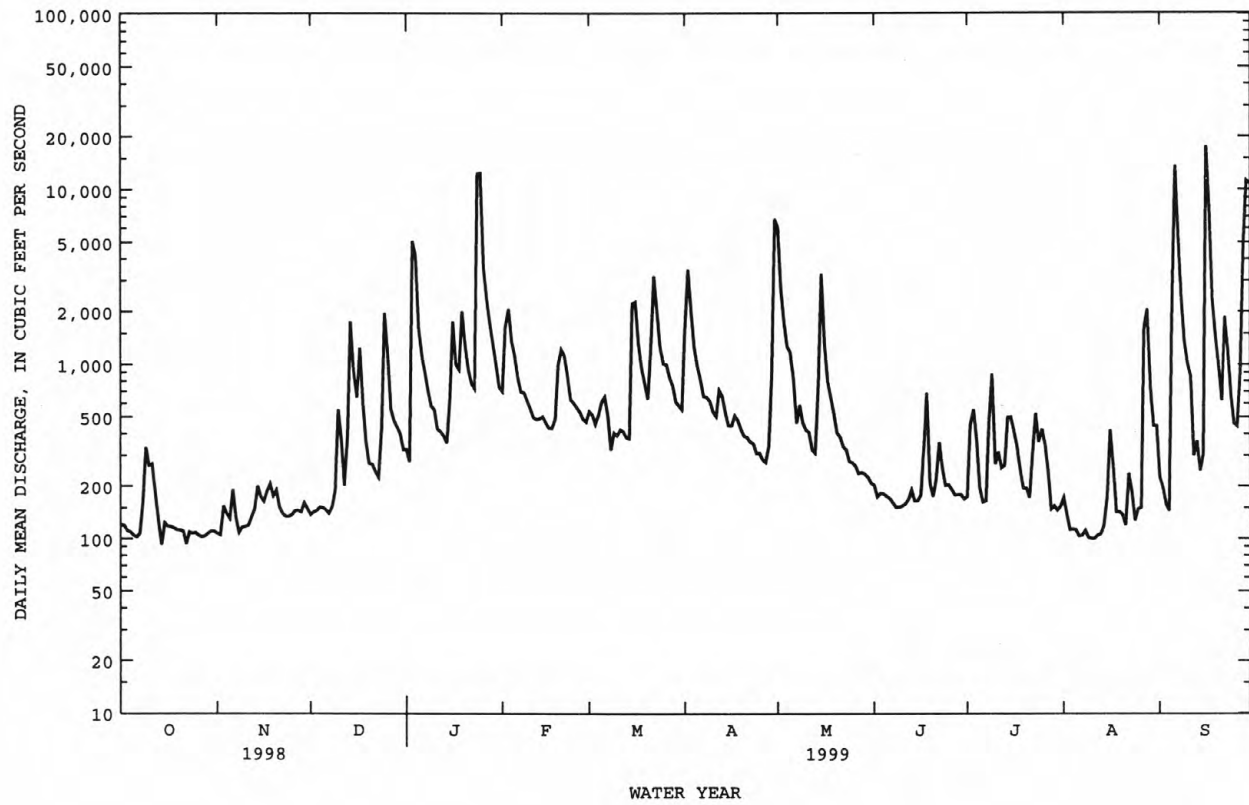
WATER YEARS 1973 - 1999

ANNUAL TOTAL	578179	306857	
ANNUAL MEAN	1584	841	1307
HIGHEST ANNUAL MEAN			2181
LOWEST ANNUAL MEAN			164
HIGHEST DAILY MEAN	39300	Mar 19	58000
LOWEST DAILY MEAN	92	Oct 14	18
ANNUAL SEVEN-DAY MINIMUM	104	Oct 22	46
INSTANTANEOUS PEAK FLOW			76700*
INSTANTANEOUS PEAK STAGE			21.76*
INSTANTANEOUS LOW FLOW			.18*
ANNUAL RUNOFF (CFSM)	1.24	.66	1.03
ANNUAL RUNOFF (INCHES)	16.87	8.95	13.93
10 PERCENT EXCEEDS	3600	1620	2810
50 PERCENT EXCEEDS	471	363	580
90 PERCENT EXCEEDS	117	117	163

e Estimated.

\* See REMARKS.

02096960 HAW RIVER NEAR BYNUM, NC--Continued





## CAPE FEAR RIVER BASIN

0209719700 JORDAN LAKE, HAW RIVER ARM, ABOVE B. EVERETT JORDAN DAM, NC

LOCATION.--Lat 35°39'39", long 79°04'23", Chatham County, Hydrologic Unit 03030002, 0.5 mi above B. Everett Jordan Dam, and 1.4 mi southwest of Merry Oaks.

PERIOD OF RECORD.--Water years 1989 to current year. Prior to October 1993, published as Haw River at U.S. Highway 64 near Pittsboro (station 0209699980).

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment. Samples for nutrient and chlorophyll *a* and *b* analyses were collected through a sampling zone equal to double the secchi disk depth using the depth-integration sampling technique.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	SAMPLING DEPTH (FEET) (000003)	SPECIFIC CONDUCTANCE (US/CM) (000095)	PH WATER WHOLE FIELD (STANDARD UNITS) (000400)	TEMPERATURE WATER (DEG C) (000010)	COLOR (PLATINUM-COBALT UNITS) (000080)	BAROMETRIC PRESSURE (MM HG) (000025)	TRANSPARANCY (SECCHI DISK) (000078)	OXYGEN, DIS-SOLVED (MG/L) (000300)	OXYGEN, SATURATION (%) (000301)	HARDNESS TOTAL (MG/L AS CaCO3) (000900)
OCT 29...	1100	1.00	207	7.0	18.8	25	756	.70	7.0	76	29
APR 21...	1200	1.00	163	8.0	18.7	30	755	.75	10.3	111	30
JUN 23...	1205	1.00	202	7.6	23.9	30	755	.70	8.0	96	30
AUG 24...	1130	1.00	269	8.0	28.4	55	758	.80	6.9	89	34

DATE	CALCIUM DIS-SOLVED (MG/L AS Ca) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS-SOLVED (MG/L AS Na) (00930)	SODIUM AD-SORPTION RATIO (00932)	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	BICARBONATE IT-FLD (MG/L AS HCO3) (99440)	ANC WATER UNFLTRD IT FIELD (MG/L AS CaCO3) (00419)	BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKALINITY TOT IT FIELD (MG/L AS CaCO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT 29...	7.1	2.8	25	61	2	3.7	41	34	--	--	23
APR 21...	7.2	3.0	17	52	1	3.1	30	33	--	--	18
JUN 23...	7.0	3.0	25	61	2	4.0	--	--	44	36	24
AUG 24...	8.0	3.4	38	67	3	5.0	52	43	--	--	31

DATE	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG C DIS-SOLVED (MG/L) (70300)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)
OCT 29...	19	.25	4.1	117	.006	.228	.023	.70	.72	.95
APR 21...	13	.15	6.4	104	.008	.447	.007	.74	.74	1.2
JUN 23...	19	.25	4.2	124	.006	.111	.052	.84	.89	1.0
AUG 24...	27	.28	4.1	153	<.001	<.005	.004	.98	.99	--

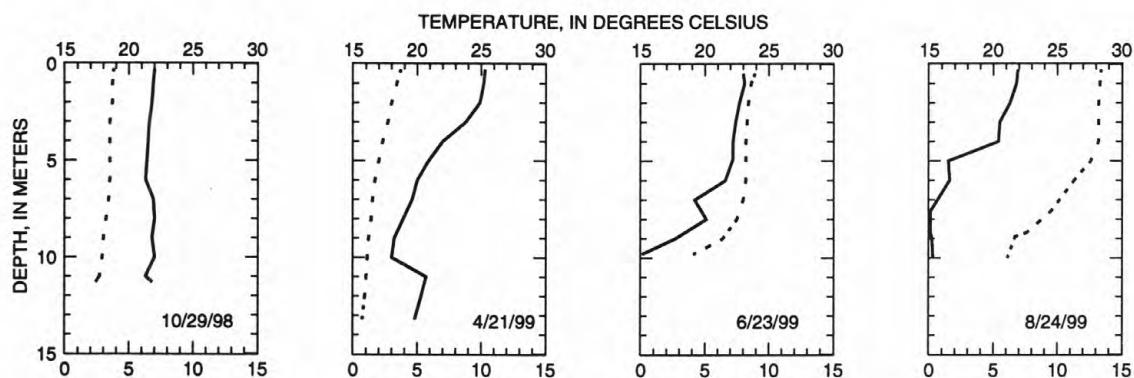
  

DATE	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	CHLOROPHYLL-A PHYTONAN CHROMO FLUOROM (UG/L) (70953)	CHLOROPHYLL-B PHYTONAN CHROMO FLUOROM (UG/L) (70954)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT 29...	E.048	.005	10.0	.540	80	<1	<1	<1	<1	3
APR 21...	.077	.016	10.5	E.310	70	<1	<1	<1	<1	2
JUN 23...	.053	.003	10.2	<.100	--	--	--	--	--	--
AUG 24...	.081	.013	20.9	.900	--	--	--	--	--	--

0209719700 JORDAN LAKE, HAW RIVER ARM, ABOVE B. EVERETT JORDAN DAM, NC--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 29...	160	<1	56	<.10	4	2	<1	<1	<10	7.9
APR 21...	260	<1	39	<.10	2	1	<1	<1	<40	6.6
JUN 23...	--	--	--	--	--	--	--	--	--	7.5
AUG 24...	--	--	--	--	--	--	--	--	--	--



## EXPLANATION

..... Water Temperature

———— Dissolved Oxygen

## CAPE FEAR RIVER BASIN

02097314 NEW HOPE CREEK NEAR BLANDS, NC

LOCATION.--Lat 35°53'05", long 78°57'58", Durham County, Hydrologic Unit 03030002, on right bank 15 ft downstream of bridge on Secondary Road 1107, 0.5 mi southwest of Blands, and 2 mi downstream of Third Fork Creek.

DRAINAGE AREA.--75.9 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 230 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records poor. Considerable diurnal fluctuation at low flow. An average of 49.0 ft<sup>3</sup>/s was diverted from the Neuse River Basin for Durham municipal water supply; 22.5 ft<sup>3</sup>/s was returned to the Cape Fear River Basin, and about 13.7 ft<sup>3</sup>/s was returned to the Neuse River Basin. Maximum discharge for period of record 12,700 ft<sup>3</sup>/s, from rating curve extended above 3,500 ft<sup>3</sup>/s, by logarithmic plotting. Maximum gage height for period of record and current water year, occurred as a result of backwater from B. Everett Jordan Lake; maximum gage height unaffected by backwater, 14.05 ft, Sept. 6, 1996. Minimum discharge for period of record not determined due to regulation. Minimum discharge unregulated, 4.2 ft<sup>3</sup>/s, Apr. 28, 29, May 1, 2, and July 10, 1985. Minimum discharge for current water year also occurred Nov. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	12	14	15	69	37	73	389	12	13	9.7	12
2	18	12	14	16	102	33	408	e100	12	15	9.9	11
3	15	17	13	385	247	29	565	60	12	15	9.8	12
4	16	54	13	1020	146	33	e100	41	12	13	9.3	11
5	20	38	13	394	108	31	e70	33	11	13	10	407
6	19	26	13	146	87	27	e60	29	10	12	9.7	3670
7	17	20	13	98	72	26	53	26	11	11	9.3	e1000
8	24	17	13	74	57	25	48	24	11	11	9.7	e300
9	98	15	14	57	48	23	44	22	11	10	10	e100
10	30	14	14	46	42	27	39	20	12	9.6	11	e60
11	19	15	8.3	39	84	28	86	19	11	9.4	11	e40
12	17	15	10	34	156	24	255	18	11	10	11	29
13	17	16	24	30	109	23	116	17	9.6	17	10	24
14	17	16	104	27	38	30	58	19	11	69	13	21
15	17	18	114	34	29	360	46	37	34	54	153	56
16	16	24	92	63	28	454	61	25	60	22	116	3110
17	15	28	107	61	26	e100	53	21	143	15	25	e1000
18	15	32	78	98	49	e60	40	19	83	12	17	e400
19	12	24	52	331	97	50	36	18	27	12	13	e200
20	5.6	20	36	152	115	39	33	17	19	11	12	e150
21	9.2	18	29	102	127	121	30	16	16	11	14	e100
22	11	16	24	78	88	711	28	15	15	11	13	233
23	13	16	21	64	48	651	26	18	14	13	12	460
24	14	16	47	582	39	e150	24	18	13	11	11	e100
25	13	11	142	1360	36	100	23	15	14	12	12	50
26	13	5.0	153	e400	33	90	23	13	21	12	114	35
27	13	11	96	e250	31	73	23	14	15	12	203	123
28	15	14	64	e180	31	58	27	13	47	12	103	512
29	14	14	26	e140	---	50	66	12	20	11	23	1510
30	13	14	8.8	e100	---	43	231	11	14	11	17	1470
31	13	---	13	e80	---	39	---	11	---	10	13	---
TOTAL	570.8	568.0	1383.1	6456	2142	3545	2745	1110	711.6	480.0	1014.4	15206
MEAN	18.4	18.9	44.6	208	76.5	114	91.5	35.8	23.7	15.5	32.7	507
MAX	98	54	153	1360	247	711	565	389	143	69	203	3670
MIN	5.6	5.0	8.3	15	26	23	23	11	9.6	9.4	9.3	11
CFSM	.24	.25	.59	2.74	1.01	1.51	1.21	.47	.31	.20	.43	6.68
IN.	.28	.28	.68	3.16	1.05	1.74	1.35	.54	.35	.24	.50	7.45

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1999, BY WATER YEAR (WY)

	MEAN	45.2	77.4	82.2	174	209	216	143	98.3	45.5	43.8	39.5	72.0
MAX	122	371	264	509	463	493	618	411	154	156	97.8	507	
(WY)	1990	1986	1984	1991	1998	1998	1987	1997	1995	1995	1986	1999	
MIN	12.8	16.1	17.0	38.6	62.3	42.0	13.5	29.4	14.3	12.9	14.5	10.8	
(WY)	1987	1985	1989	1986	1986	1985	1985	1994	1985	1993	1997	1984	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

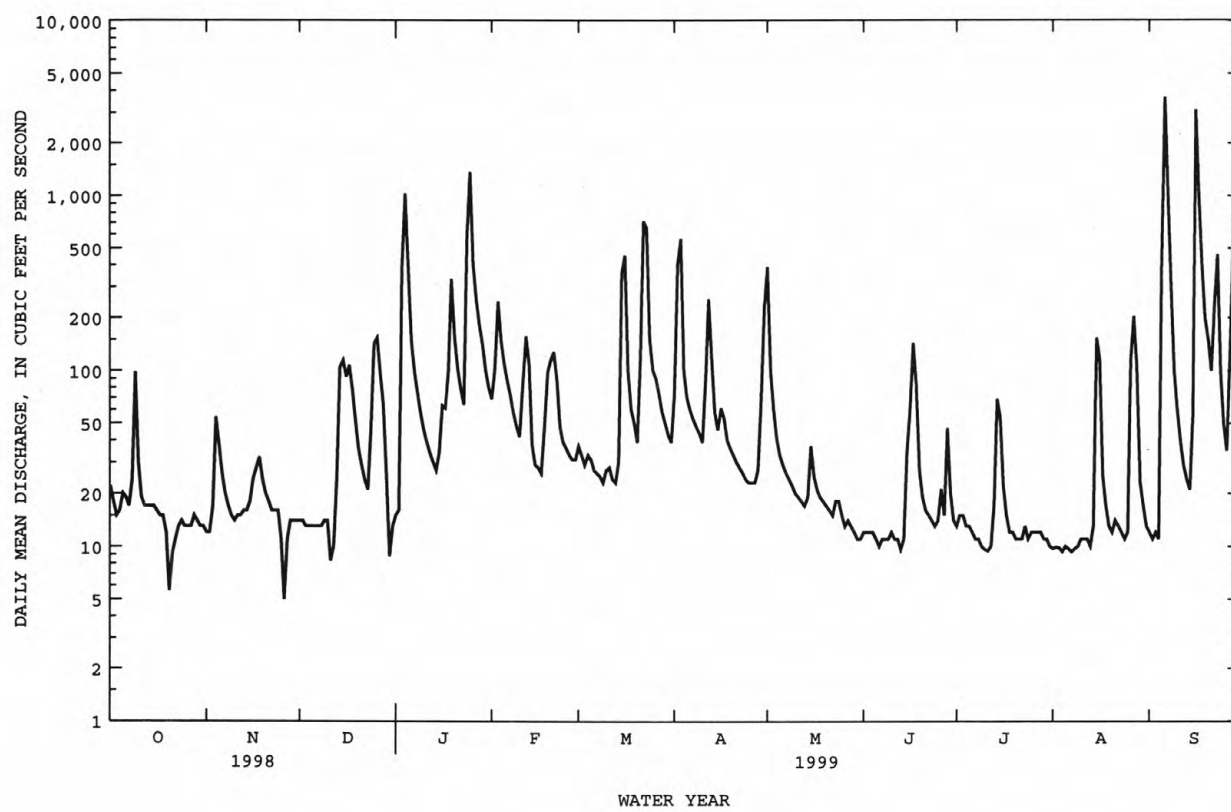
## WATER YEARS 1983 - 1999

ANNUAL TOTAL	45544.9	35931.9	
ANNUAL MEAN	125	98.4	103
HIGHEST ANNUAL MEAN			156
LOWEST ANNUAL MEAN			48.3
HIGHEST DAILY MEAN	4930	Mar 19	3670
LOWEST DAILY MEAN	5.0	Nov 26	5.0
ANNUAL SEVEN-DAY MINIMUM	11	Oct 19	9.7
INSTANTANEOUS PEAK FLOW			6970
INSTANTANEOUS PEAK STAGE			11.93
INSTANTANEOUS LOW FLOW			3.7*
ANNUAL RUNOFF (CFSM)	1.64		1.30
ANNUAL RUNOFF (INCHES)	22.32		17.61
10 PERCENT EXCEEDS	230		152
50 PERCENT EXCEEDS	30		24
90 PERCENT EXCEEDS	15		11
			13
			18.48
			221
			34
			13

e Estimated.

\* See REMARKS.

02097314 NEW HOPE CREEK NEAR BLANDS, NC--Continued



## CAPE FEAR RIVER BASIN

02097314 NEW HOPE CREEK NEAR BLANDS, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983-86, 1989 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1982 to September 1985.

WATER TEMPERATURE: December 1982 to September 1985.

INSTRUMENTATION.--Water-quality monitor from October 1982 to September 1985.

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 535 microsiemens, Sept. 30, 1984; minimum, 38 microsiemens. Mar. 6, 7, 1984.

WATER TEMPERATURE: Maximum, 27.5°C, Aug. 23, 1983; minimum, 0.0°C, Jan. 21, 22, 1985.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	
SEP 07...	1150	1900	57	6.1	22.1	100	754	5.7	67	17	4.7	1.4	
DATE		SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	
SEP 07...	2.7	23	.3	2.0	5.9	2.5	<.10	6.7	95	.008	.118	.009	
DATE		NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
SEP 07...	.79	.80	.92	.114	.051	690	1	<1	2	<1	11	680	
DATE		LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	
SEP 07...	2	20	<.10	<1	2	<1	<1	<1	90	14	20	105	





USGS field crew making an acoustic doppler current profiler streamflow measurement in floodwaters of the Tar River below the reservoir near Rocky Mount, N.C., September 1999.

## 0209736050 BATTLE BRANCH NEAR CHAPEL HILL, NC

LOCATION.--Lat 35°55'02", long 79°01'57", Orange County, Hydrologic Unit 03030002, 0.8 mi upstream from mouth, and 1.2 mi east of Chapel Hill.

DRAINAGE AREA.--0.42 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1996 to current year. Prior to October 1994, published as Little Creek Tributary near Chapel Hill, NC. Records for February 1987 to September 1996 are unreliable and should not be used.

GAGE.--Water-stage recorder. Datum of gage is 376 ft above sea level, from topographic map. Water stage recorder was at present site, at datum of 377 ft, Feb. 1987 to Sept. 1996. Satellite telemetry at station.

REMARKS.--Records poor. Minimum discharge for period of record and the current water year also occurred July 28, 30, 31, Aug. 1-13, 1999.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.15	.10	.09	.63	.17	4.2	.13	.03	.03	.00	.14
2	.07	.16	.10	2.1	2.5	.15	.64	.10	.03	.03	.00	.13
3	.08	3.6	.10	13	.63	.27	.40	.08	.03	.02	.00	.13
4	.11	.27	.10	.29	.60	.19	.43	.08	.03	.02	.00	5.1
5	.10	.22	.10	.19	.50	.17	.33	.07	.03	.02	.00	e70
6	.10	.15	.11	.22	.43	.17	.28	.07	.03	.01	.00	e50
7	.09	.08	.11	.14	.45	.17	.27	.06	.03	.01	.02	e9.0
8	2.3	.08	.11	.13	.44	.17	.24	.06	.03	.01	.04	.96
9	.24	.08	.27	.11	.43	.21	.23	.06	.02	.01	.02	.50
10	.15	.08	.11	.09	.28	.21	.21	.06	.02	.03	.01	.42
11	.15	.19	.10	.08	.18	.18	1.1	.06	.02	.03	.00	.32
12	.16	.15	.11	.08	.25	.18	.35	.07	.02	.15	.00	.28
13	.14	.13	7.4	.09	.18	.18	.18	.06	.03	.32	.00	.29
14	.11	.21	.30	.09	.17	2.2	.17	.36	.02	2.1	8.3	.33
15	.11	.30	.14	.99	.16	.77	.19	.08	.29	.05	.93	14
16	.11	.37	1.4	.12	.17	.34	.17	.05	1.1	.03	.18	40
17	.12	.21	.11	.10	.17	.28	.16	.05	.09	.03	.34	6.9
18	.12	.07	.08	4.1	.65	.25	.15	.05	.04	.02	.22	1.9
19	.13	.06	.08	.18	1.1	.23	.15	e.16	.03	.02	.20	.90
20	.21	.07	.08	.13	1.2	.22	.15	.04	.04	.02	.42	.95
21	.13	.08	.06	.11	.59	11	.15	.03	.04	.03	.19	5.6
22	.13	.08	.07	.10	.35	1.2	.15	.14	.04	.06	.17	6.8
23	.13	.08	.27	6.2	.20	.63	.15	.09	.04	.02	.16	4.5
24	.15	.10	4.0	22	.18	.52	.15	1.1	.04	2.6	.16	1.9
25	.15	.09	.23	1.5	.17	.54	.15	.03	.06	.11	.54	.21
26	.15	.21	.12	.79	.17	.48	.15	.09	.06	.01	5.0	.20
27	.15	.09	.10	.45	.17	.41	.16	.03	.10	.00	3.3	5.8
28	.15	.09	.10	.29	.22	.39	.52	.03	.07	.00	.32	22
29	.15	.09	.09	.26	---	.37	2.5	.03	.04	.01	.33	22
30	.15	.10	.10	.23	---	.36	1.3	.03	.03	.00	.21	21
31	.15	---	.09	.21	---	.36	---	.03	---	.00	.13	---
TOTAL	6.28	7.64	16.24	54.46	13.17	22.97	15.38	3.38	2.48	5.80	21.19	292.26
MEAN	.20	.25	.52	1.76	.47	.74	.51	.11	.083	.19	.68	9.74
MAX	2.3	3.6	7.4	22	2.5	11	4.2	1.1	1.1	2.6	8.3	70
MIN	.07	.06	.06	.08	.16	.15	.15	.03	.02	.00	.00	.13
CFSM	.48	.61	1.25	4.18	1.12	1.76	1.22	.26	.20	.45	1.63	23.2
IN.	.56	.68	1.44	4.82	1.17	2.03	1.36	.30	.22	.51	1.88	25.89

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1999,<sup>g</sup> BY WATER YEAR (WY)

	1997	1998	1999	1997	1998	1999	1997	1998	1999	1997	1998	1999
MEAN	.48	.42	.36	1.22	.94	1.14	.46	.20	.35	.28	.34	3.70
MAX	.69	.52	.52	1.76	1.92	2.34	.51	.26	.84	.55	.68	9.74
(WY)	1997	1997	1999	1999	1998	1998	1999	1997	1997	1997	1999	1999
MIN	.20	.25	.27	.26	.42	.34	.37	.11	.083	.098	.13	.36
(WY)	1999	1999	1997	1997	1997	1997	1998	1999	1999	1998	1997	1998

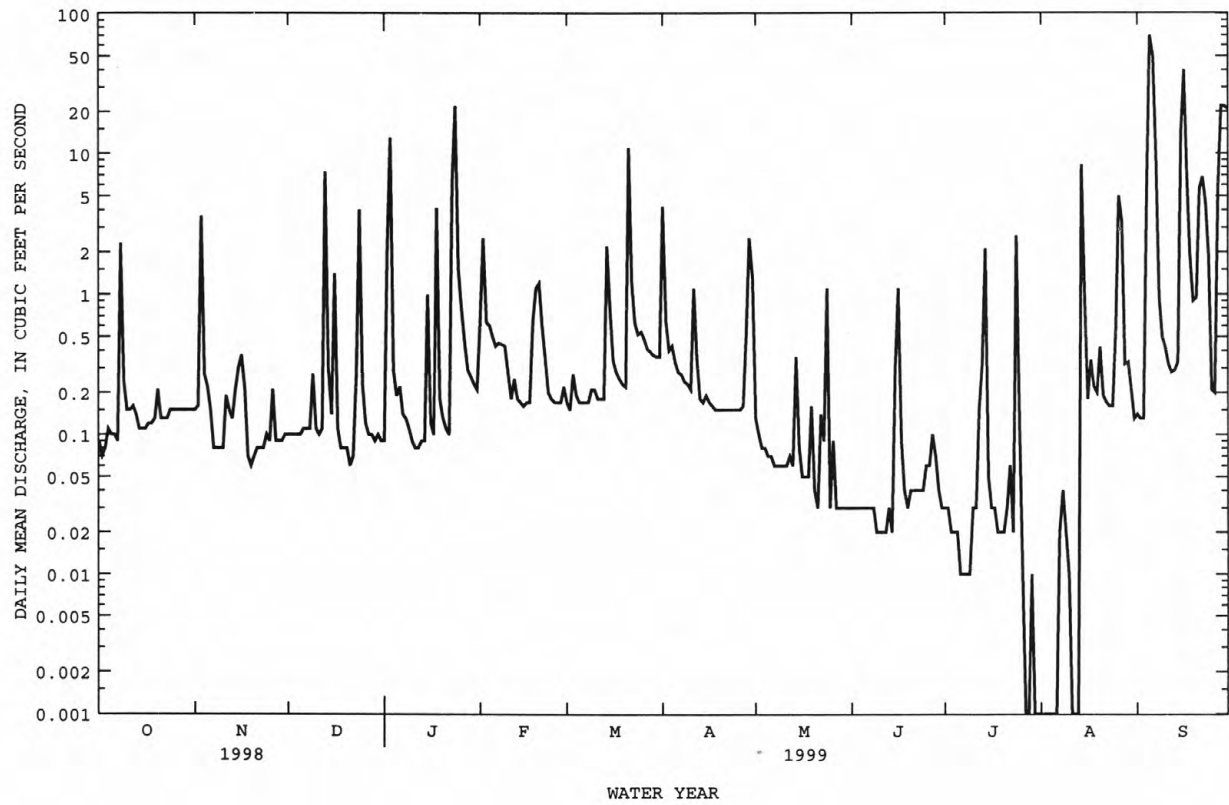
SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1997 - 1999 <sup>g</sup>
ANNUAL TOTAL	249.68	461.25	
ANNUAL MEAN	.68	1.26	.82
HIGHEST ANNUAL MEAN			1.26
LOWEST ANNUAL MEAN			.48
HIGHEST DAILY MEAN	24 Mar 19	70 Sep 5	70 Sep 5 1999
LOWEST DAILY MEAN	.02 Aug 6	.00 Jul 27	.00 Jul 27 1999
ANNUAL SEVEN-DAY MINIMUM	.03 Aug 2	.00 Jul 30	.00 Jul 30 1999
INSTANTANEOUS PEAK FLOW		NOT DETERMINED	NOT DETERMINED
INSTANTANEOUS PEAK STAGE		5.42 Sep 6	5.42 Sep 6 1999
INSTANTANEOUS LOW FLOW		.00* Jul 27	.00* Jul 27 1999
ANNUAL RUNOFF (CFSM)	1.63	3.01	1.95
ANNUAL RUNOFF (INCHES)	22.11	40.85	26.46
10 PERCENT EXCEEDS	.98	1.4	1.1
50 PERCENT EXCEEDS	.13	.15	.16
90 PERCENT EXCEEDS	.05	.03	.04

e Estimated.

\* See REMARKS.

<sup>g</sup> See PERIOD OF RECORD.

0209736050 BATTLE BRANCH NEAR CHAPEL HILL, NC--Continued



## CAPE FEAR RIVER BASIN

0209741955 NORTHEAST CREEK AT SECONDARY ROAD 1100 NEAR GENLEE, NC

LOCATION.--Lat 35°52'20", long 78°54'49", Durham County, Hydrologic Unit 03030002, on left bank at downstream side of bridge on Secondary Road 1100, 1.3 mi west of Genlee, and 1.6 mi downstream of Burdens Creek.

DRAINAGE AREA.--21.1 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to January 1994, August 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 235 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records fair except those discharges below 5 ft<sup>3</sup>/s, which are poor. An average of 47.0 ft<sup>3</sup>/s was diverted from the Neuse River basin for municipal water supply; 22.5 ft<sup>3</sup>/s was returned to the Cape Fear River basin, of which 6.5 ft<sup>3</sup>/s entered upstream from station as treated effluent. About 13.7 ft<sup>3</sup>/s was returned to Neuse River basin as treated effluent. Maximum discharge for period of record and current water year from rating curve extended above 2,000 ft<sup>3</sup>/s, by logarithmic plotting. Minimum discharge for current water year also occurred Sept. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	6.1	5.1	3.9	12	10	53	92	3.5	4.7	3.0	2.8
2	4.4	6.9	4.9	3.6	102	9.3	174	7.5	3.9	5.0	3.2	2.7
3	3.6	37	5.0	518	66	8.5	30	5.1	3.9	4.3	3.4	2.7
4	3.7	22	4.6	303	23	8.9	16	4.0	3.8	3.7	3.4	3.1
5	4.6	10	4.2	36	19	8.3	14	3.7	3.2	3.5	3.9	627
6	4.5	7.3	4.0	18	13	7.1	11	3.8	3.0	4.0	3.2	1270
7	4.4	5.9	4.5	14	12	6.5	10	4.1	3.7	4.1	2.6	685
8	42	5.7	5.0	12	11	7.4	9.5	3.8	3.9	4.1	3.1	147
9	116	6.2	5.1	11	9.9	7.8	9.3	3.4	4.2	4.1	3.6	19
10	15	6.5	4.9	10	9.1	9.7	7.9	3.8	4.5	4.2	3.5	77
11	7.0	6.8	4.7	9.6	8.7	9.4	37	3.7	4.8	4.7	3.6	18
12	5.8	7.3	4.1	9.2	8.5	8.6	69	4.0	4.1	5.3	3.4	8.8
13	5.4	7.0	41	9.1	8.1	7.6	15	4.0	4.3	8.0	3.6	7.3
14	5.2	6.7	62	8.3	7.4	20	10	4.2	5.7	25	8.5	7.0
15	5.1	12	9.5	25	7.6	400	9.0	5.3	9.1	9.1	15	45
16	5.0	9.9	65	20	7.8	144	8.7	4.0	9.3	5.4	5.0	1940
17	4.3	19	25	11	7.8	27	7.5	4.0	32	3.7	4.0	337
18	4.3	12	7.5	178	29	17	7.0	4.3	5.8	3.2	4.0	35
19	5.3	6.7	5.0	194	28	13	7.6	4.3	3.8	3.6	3.4	15
20	6.1	5.6	3.9	29	100	10	7.9	4.4	3.2	3.8	3.2	11
21	5.8	4.8	3.7	17	31	123	7.8	4.3	3.4	3.8	2.8	10
22	6.0	4.3	3.5	13	16	349	7.7	4.7	3.8	3.9	2.4	124
23	6.4	4.7	4.7	14	12	61	7.8	5.9	3.9	3.7	2.7	37
24	6.1	4.9	87	548	10	21	6.9	4.3	3.9	3.2	3.0	12
25	6.0	4.7	229	394	9.6	16	6.4	4.0	4.1	3.2	4.7	8.6
26	6.6	4.9	30	66	9.1	20	7.1	3.9	4.0	3.3	41	7.3
27	6.8	4.5	8.2	23	8.2	14	7.7	3.8	4.5	3.4	33	83
28	6.8	4.0	6.0	17	8.2	11	10	3.5	4.7	3.5	6.0	528
29	7.0	4.3	5.0	14	---	10	23	3.0	4.9	3.6	3.3	734
30	7.0	5.0	4.7	11	---	9.9	185	2.6	4.6	3.6	3.0	619
31	6.2	---	4.4	9.4	---	9.0	---	3.0	---	3.1	3.0	---
TOTAL	327.4	252.7	661.2	2549.1	594.0	1384.0	782.8	216.4	161.5	151.8	191.5	7423.3
MEAN	10.6	8.42	21.3	82.2	21.2	44.6	26.1	6.98	5.38	4.90	6.18	247
MAX	116	37	229	548	102	400	185	92	32	25	41	1940
MIN	3.6	4.0	3.5	3.6	7.4	6.5	6.4	2.6	3.0	3.1	2.4	2.7
CFSM	.50	.40	1.01	3.90	1.01	2.12	1.24	.33	.26	.23	.29	11.7
IN.	.58	.45	1.17	4.49	1.05	2.44	1.38	.38	.28	.27	.34	13.09

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1999, @ BY WATER YEAR (WY)

	MEAN	19.3	27.3	31.6	59.0	59.1	64.0	36.3	20.4	12.4	15.1	16.3	37.1
MAX	60.2	82.7	86.3	134	111	128	84.5	59.1	44.4	48.6	66.7	247	
(WY)	1996	1993	1984	1998	1998	1998	1993	1990	1992	1989	1986	1999	
MIN	3.27	3.89	4.32	12.6	10.8	8.18	4.00	6.98	4.55	3.33	3.50	2.49	
(WY)	1986	1985	1989	1986	1991	1985	1985	1999	1987	1983	1983	1983	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

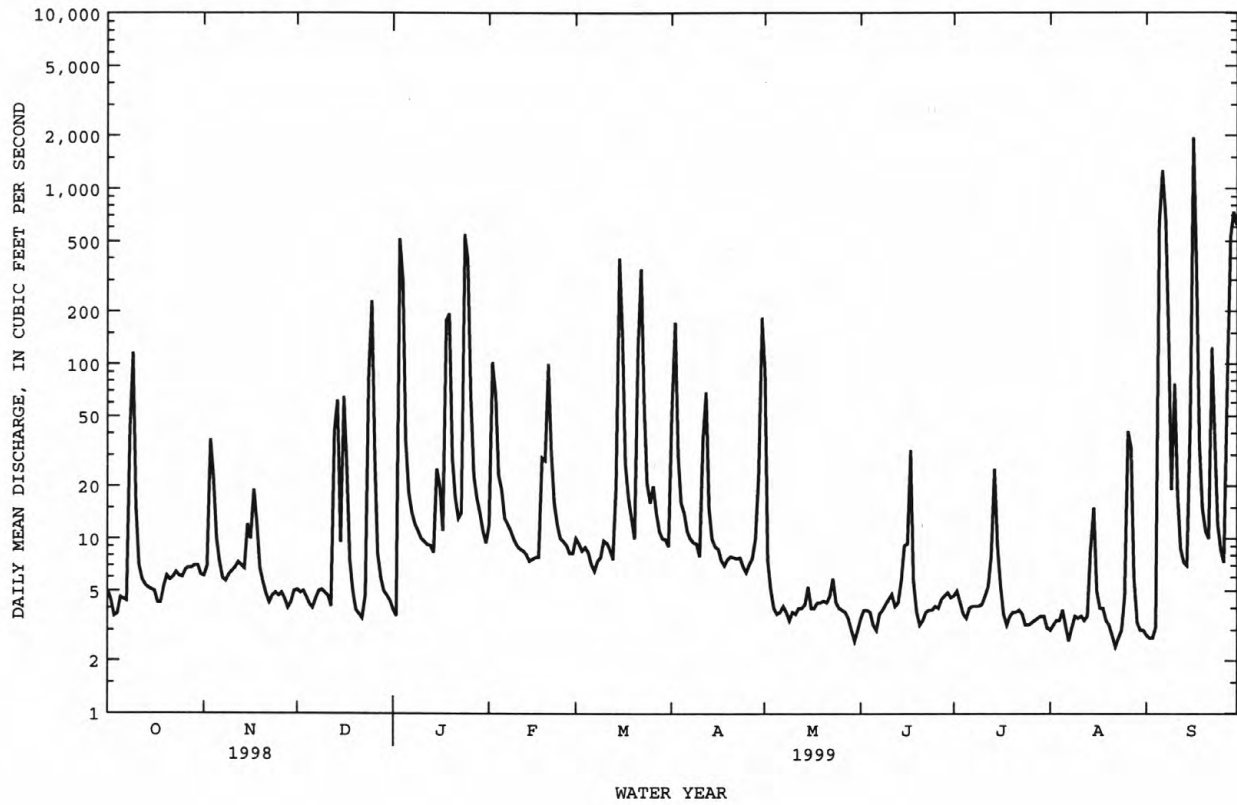
## WATER YEARS 1983 - 1999@

ANNUAL TOTAL	14603.1	14695.7	
ANNUAL MEAN	40.0	40.3	33.5
HIGHEST ANNUAL MEAN			49.1
LOWEST ANNUAL MEAN			14.7
HIGHEST DAILY MEAN	1720	Mar 19	3350
LOWEST DAILY MEAN	3.4	Sep 27	.74
ANNUAL SEVEN-DAY MINIMUM	3.9	Sep 23	1.5
INSTANTANEOUS PEAK FLOW			5140*
INSTANTANEOUS PEAK STAGE			12.49
INSTANTANEOUS LOW FLOW			1.7*
ANNUAL RUNOFF (CFSM)	1.90		1.91
ANNUAL RUNOFF (INCHES)	25.75		25.91
10 PERCENT EXCEEDS	71		56
50 PERCENT EXCEEDS	7.4		6.8
90 PERCENT EXCEEDS	4.5		3.5

@ See PERIOD OF RECORD.

\* See REMARKS.

0209741955 NORTHEAST CREEK AT SECONDARY ROAD 1100 NEAR GENLEE, NC--Continued





0209741955 NORTHEAST CREEK AT SECONDARY ROAD 1100 NEAR GENLEE, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983-86, December 1988 to April 1995, September 1999.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1982 to September 1985.

WATER TEMPERATURE: October 1982 to September 1985.

INSTRUMENTATION.--Water-quality monitor from October 1982 to September 1985.

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment.

COOPERATION.--Sample for October 1994 and April 1995 were collected by the North Carolina Department of Environment, Health, and Natural Resources. A GC/FID scan for trace organic compounds was performed on these samples by the U.S. Geological Survey Water Quality Lab. Results may be obtained from the District Office in Raleigh, NC. Instantaneous discharge is not available for April and August 1994.

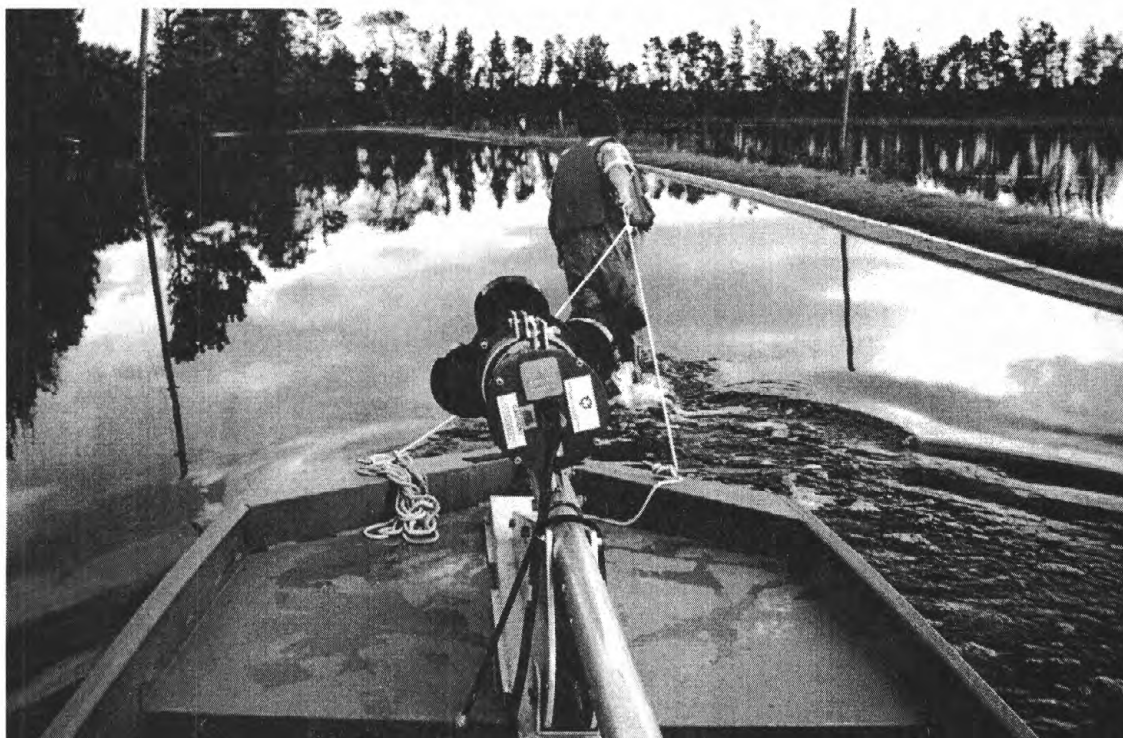
EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 872 microsiemens, Oct. 15, 1984; minimum, 29 microsiemens, Jan. 11, Apr. 5, 1984.

WATER TEMPERATURE: Maximum, 29.0°C, Aug. 23, 1983; minimum, 0.0°C, Dec. 28, 1983, Jan. 2, 22, 23, 1984.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, SATUR-ATION (MG/L) (00301)	HARD-NESS TOTAL (MG/L AS CAC03) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
SEP 07...	1345	727	56	6.2	22.6	150	754	4.9	58	18	4.7	1.5
DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
SEP 07...	3.3	26	.3	1.9	5.1	2.9	<.10	5.7	103	.007	.071	.019
DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER TOTAL UNFLTRD (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
SEP 07...	.79	.81	.88	.115	.043	1200	1	<1	2	<1	13	950
DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL RECOV-ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	
SEP 07...	1	22	<.10	<1	2	<1	<1	<40	13	39	77	



USGS field crew making their way through floodwaters of the Northeast Cape Fear River to make an acoustic doppler current profiler measurement at Chinquapin, N.C., September 1999.

## CAPE FEAR RIVER BASIN

02097464 MORGAN CREEK NEAR WHITE CROSS, NC

LOCATION.--Lat 35°55'25", long 79°06'56", Orange County, Hydrologic Unit 03020201, at downstream side of culvert on State Highway 54, 2 mi upstream from University Lake, and 3.5 mi east of White Cross.

DRAINAGE AREA.--8.35 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 420 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum discharge for period of record from rating curve extended above 2,700 ft<sup>3</sup>/s, by logarithmic plotting. Minimum discharge for current water year and period of record also occurred Aug. 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	.02	.10	.10	2.8	2.2	91	4.4	.40	.48	.12	.04
2	.38	.02	.10	.11	17	1.8	38	2.2	.40	1.0	.09	.04
3	.33	.24	.10	96	8.0	1.9	16	1.7	.37	.50	.05	.03
4	.35	.16	.09	12	5.1	2.5	11	1.4	.36	.39	.04	.05
5	.39	.11	.09	4.3	3.6	2.2	9.2	1.2	.32	.34	.03	103
6	.46	.10	.09	3.0	3.0	2.2	6.9	1.2	.32	.32	.02	153
7	.48	.10	.10	2.0	2.7	2.1	6.0	1.1	.35	.31	.02	26
8	.78	.10	.10	1.7	2.4	1.9	5.4	1.0	.21	.31	.03	5.7
9	.79	.10	.14	1.6	2.1	2.0	4.9	.85	.19	.29	.03	3.2
10	.63	.10	.15	1.4	2.0	2.4	4.2	.76	.18	.32	.05	2.1
11	.48	.11	.13	1.3	1.8	2.2	7.4	.72	.16	.32	.05	1.3
12	.39	.11	.11	1.3	1.9	2.0	5.8	.66	.14	.36	.03	.99
13	.32	.12	3.2	1.2	2.1	1.9	4.2	.65	.13	.77	.02	.86
14	.28	.14	.92	1.3	1.7	3.2	3.8	.84	.12	2.0	.29	.84
15	.23	.18	.17	4.6	1.9	18	3.8	1.0	.86	.83	.34	12
16	.20	.18	.62	3.1	2.0	5.8	3.9	.71	2.2	.48	.13	345
17	.17	.22	.32	2.1	2.0	3.8	3.2	.64	3.1	.38	.10	25
18	.15	.19	.16	14	4.7	3.1	3.0	.62	.71	.34	.07	7.9
19	.13	.18	.12	5.2	4.6	2.6	2.8	.61	.47	.30	.06	3.9
20	.13	.16	.11	3.0	9.6	2.3	2.9	.57	.43	.25	.07	2.7
21	.10	.14	.10	2.3	5.0	39	2.6	.51	.47	.23	.09	5.1
22	.09	.13	.09	2.0	3.4	20	2.4	.52	.48	.25	.09	4.6
23	.07	.13	.10	13	2.8	7.6	2.2	.75	.45	.24	.07	2.0
24	.06	.12	4.7	158	2.4	4.9	2.0	.61	.39	.21	.06	1.8
25	.06	.11	2.6	33	2.2	4.4	1.8	.51	.40	.35	.12	1.7
26	.05	.15	.39	12	2.1	4.1	1.8	e.55	.60	.26	.21	1.7
27	.04	.13	.23	7.1	2.0	3.3	2.0	e.60	.51	.20	.16	19
28	.03	.12	.18	4.6	2.2	2.9	3.9	.51	.55	.18	.13	197
29	.03	.11	.16	3.5	---	2.6	8.7	.49	.49	.17	.11	99
30	.02	.11	.14	2.8	---	2.3	31	.44	.42	.17	.08	187
31	.02	---	.12	2.4	---	2.2	---	.42	---	.14	.06	---
TOTAL	8.04	3.89	15.73	400.01	103.1	159.4	291.8	28.74	16.18	12.69	2.82	1212.55
MEAN	.26	.13	.51	12.9	3.68	5.14	9.73	.93	.54	.41	.091	40.4
MAX	.79	.24	4.7	158	17	39	91	4.4	3.1	2.0	.34	345
MIN	.02	.02	.09	.10	1.7	1.8	1.8	.42	.12	.14	.02	.03
CFSM	.03	.02	.06	1.55	.44	.62	1.16	.11	.06	.05	.01	4.84
IN.	.04	.02	.07	1.78	.46	.71	1.30	.13	.07	.06	.01	5.40

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1999, BY WATER YEAR (WY)

	MEAN	3.92	4.79	5.11	14.2	15.2	21.2	10.3	7.64	5.26	2.44	3.01	7.86
MAX	13.1	15.3	13.2	33.4	39.7	53.0	18.2	30.1	19.9	7.37	18.7	40.4	
(WY)	1990	1996	1990	1998	1998	1998	1993	1989	1995	1991	1995	1999	
MIN	.26	.13	.51	2.54	3.68	5.14	2.33	.93	.54	.41	.091	.075	
(WY)	1999	1999	1999	1989	1999	1999	1995	1999	1999	1999	1999	1990	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

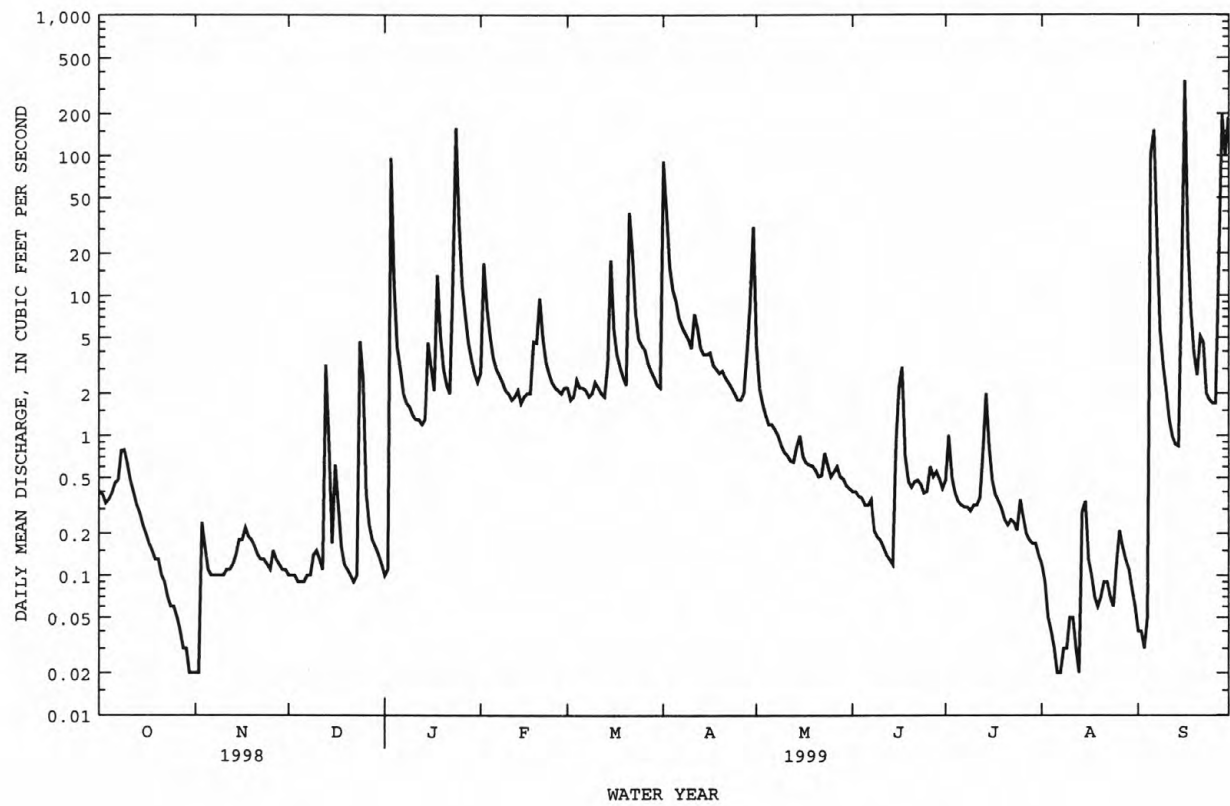
## WATER YEARS 1989 - 1999

ANNUAL TOTAL	4311.40	2254.95	
ANNUAL MEAN	11.8	6.18	
HIGHEST ANNUAL MEAN			8.20
LOWEST ANNUAL MEAN			12.5
HIGHEST DAILY MEAN	640	345	737
LOWEST DAILY MEAN	.02	.02	.02
ANNUAL SEVEN-DAY MINIMUM	.03	.03	.02
INSTANTANEOUS PEAK FLOW		909	3100
INSTANTANEOUS PEAK STAGE		8.20	11.20
INSTANTANEOUS LOW FLOW		.01*	.01*
ANNUAL RUNOFF (CFSM)	1.41	.74	.98
ANNUAL RUNOFF (INCHES)	19.21	10.05	13.34
10 PERCENT EXCEEDS	18	5.9	16
50 PERCENT EXCEEDS	.76	.60	3.0
90 PERCENT EXCEEDS	.11	.09	.33

e Estimated.

\* See REMARKS.

02097464 MORGAN CREEK NEAR WHITE CROSS, NC--Continued



## CAPE FEAR RIVER BASIN

02097464 MORGAN CREEK NEAR WHITE CROSS, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1989 to current year.

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD) (UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT) (UNITS) (00080)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED SATUR-ATION (00301)	HARD-NESS TOTAL (MG/L AS CAC03) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT 27...	1045	.05	137	6.9	11.6	20	765	6.3	58	46	11
DEC 10...	1130	.18	152	7.2	10.1	50	761	6.3	56	48	11
FEB 19...	1430	3.8	86	7.0	8.7	50	750	12.9	112	25	6.1
MAR 15...	1000	18	76	7.1	6.3	30	748	12.1	100	22	5.4
APR 08...	1400	5.4	80	7.5	19.1	40	757	10.2	111	25	6.1
JUN 22...	1545	1.1	110	7.2	18.1	40	756	7.9	85	37	9.4
AUG 23...	1430	.06	123	6.8	22.9	60	758	4.4	51	46	12
SEP 05...	1700	220	54	6.4	21.4	100	745	7.3	84	16	3.8

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE IT-FLD (MG/L AS HCO3) (99440)	ANC WATER UNFLTRD IT FIELD (MG/L AS CAC03) (00419)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CAC03) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT 27...	4.3	6.0	21	.4	3.2	62	25	--	3.2
DEC 10...	4.7	5.9	18	.4	7.9	--	59	--	3.0
FEB 19...	2.2	4.6	28	.4	1.3	--	--	--	6.2
MAR 15...	2.0	4.1	28	.4	1.3	--	--	20	5.8
APR 08...	2.3	4.7	28	.4	1.3	26	22	--	4.2
JUN 22...	3.3	5.5	22	.4	3.6	--	--	41	3.4
AUG 23...	3.9	5.6	20	.4	3.2	56	46	--	2.5
SEP 05...	1.5	2.0	18	.2	3.6	--	--	--	4.7

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)
OCT 27...	6.5	.17	17	90	.001	.020	.005	.47	.48	.50
DEC 10...	8.2	.11	16	101	.001	.008	.011	.29	.31	.31
FEB 19...	5.9	<.10	11	57	.007	.454	.003	.27	.27	.73
MAR 15...	4.9	<.10	8.0	36	.008	.528	.034	.62	.65	1.2
APR 08...	5.5	<.10	9.4	61	.005	.273	.006	.36	.36	.64
JUN 22...	6.2	<.10	15	86	<.001	.795	.040	.33	.37	1.2
AUG 23...	4.9	<.10	19	86	.003	.097	.054	.33	.39	.48
SEP 05...	2.8	<.10	5.3	58	.009	.433	.090	2.0	2.1	2.5



## 02097464 MORGAN CREEK NEAR WHITE CROSS, NC--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)
OCT 27...	<.050	.029	180	<1	<1	<1	1	1	1400	<1
DEC 10...	.050	.031	--	--	--	--	--	--	--	--
FEB 19...	.062	.046	--	--	--	--	--	--	--	--
MAR 15...	.081	.024	230	<1	<1	<1	<1	1	640	<1
APR 08...	.072	.042	160	<1	<1	<1	<1	<1	590	<1
JUN 22...	.218	.145	--	--	--	--	--	--	--	--
AUG 23...	.154	.043	--	--	--	--	--	--	--	--
SEP 05...	.793	.165	2900	2	<1	5	4	9	6200	6
DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
OCT 27...	700	<.10	<1	<1	<1	<1	<10	4.5	--	--
DEC 10...	--	--	--	--	--	--	--	5.4	--	--
FEB 19...	--	--	--	--	--	--	--	4.9	5	.05
MAR 15...	37	<.10	<1	<1	<1	<1	<40	6.1	26	1.2
APR 08...	26	<.10	<1	<1	<1	<1	<40	6.6	8	.12
JUN 22...	--	--	--	--	--	--	--	5.4	5	.02
AUG 23...	--	--	--	--	--	--	--	5.5	10	.00
SEP 05...	630	<.10	<1	3	<1	<1	E20	44	--	--

## CAPE FEAR RIVER BASIN

0209749990 UNIVERSITY LAKE AT INTAKES NEAR CHAPEL HILL, NC

LOCATION.--Lat 35°53'48", long 79°05'33", Orange County, Hydrologic Unit 03030002, at Orange Water and Sewage Authority intakes, and 1.8 mi southwest of Chapel Hill.

DRAINAGE AREA.--30 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1989 to current year.

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment. Samples for nutrient and chlorophyll a and b analyses were collected through a sampling zone equal to double the secchi disk depth using the depth-integration sampling technique.

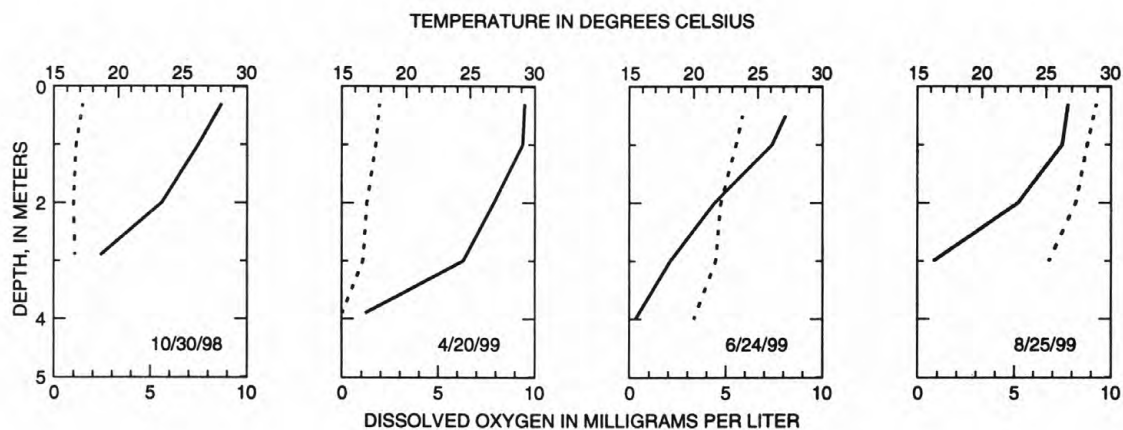
## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	SAMPLING DEPTH (FEET) (000003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH	TEMPERATURE WATER (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)	BAROMETRIC PRESSURE (MM OF HG) (00025)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PERCENT SATURATION) (00301)	
				WATER WHOLE FIELD (STANDARD UNITS) (00400)							
OCT 30...	1200	1.00	97	7.1	17.2	30	753	.45	8.7	92	
APR 20...	1300	1.00	89	7.2	17.9	40	751	.95	9.5	101	
JUN 24...	1000	1.00	93	7.4	23.8	40	754	.70	8.1	97	
AUG 25...	1500	1.00	100	8.4	28.9	39	751	.55	7.8	101	
DATE		HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	BICARBONATE IT-FLD (MG/L AS HCO3) (99440)	ANION WATER UNFILTERED FIELD MG/L AS CACO3 (00419)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT 30...	31	8.0	2.7	6.2	29	.5	.5	2.0	43	35	2.6
APR 20...	23	5.8	2.2	4.8	29	.4	.4	2.0	--	--	6.6
JUN 24...	30	7.6	2.7	6.1	29	.5	.5	2.2	41	33	4.0
AUG 25...	30	7.5	2.8	6.1	29	.5	.5	2.2	43	35	4.2
DATE		CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)
OCT 30...	4.6	<.10	18	73	.002	.012	.012	.088	.77	.86	.87
APR 20...	5.4	<.10	11	65	.001	<.005	<.005	.005	.61	.62	--
JUN 24...	6.2	<.10	13	71	<.001	.005	.005	.009	.53	.54	.55
AUG 25...	6.2	.17	16	64	<.001	<.005	<.005	.005	.49	.50	--
DATE		PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	CHLOR-A PHYTOPLANKTON CHROMOFLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMOFLUOROM (UG/L) (70954)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFILTERED TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT 30...	E.043	.004	5.80	<.100	10	<1	<1	<1	<1	<1	<1
APR 20...	E.048	.002	11.0	E.370	E20	<1	<1	<1	<1	<1	1
JUN 24...	E.040	.001	10.5	.570	--	--	--	--	--	--	--
AUG 25...	<.050	.002	34.8	1.90	--	--	--	--	--	--	--

0209749990 UNIVERSITY LAKE AT INTAKES NEAR CHAPEL HILL, NC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 30...	280	<1	240	<.10	<1	<1	<1	<1	<10	6.8
APR 20...	420	<1	110	<.10	<1	<1	<1	<1	<0	7.3
JUN 24...	--	--	--	--	--	--	--	--	--	5.9
AUG 25...	--	--	--	--	--	--	--	--	--	9.6



## EXPLANATION

..... Water Temperature  
 ——— Dissolved Oxygen

## CAPE FEAR RIVER BASIN

02097517 MORGAN CREEK NEAR CHAPEL HILL, NC

LOCATION.--Lat 35°53'36", long 79°01'10", Orange County, Hydrologic Unit 03030002, on left bank 2.5 mi southeast of Chapel Hill, and 3.8 mi downstream of U.S. Highway 501.

DRAINAGE AREA.--41.0 mi<sup>2</sup>

PERIOD OF RECORD.--November 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 245 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. The City of Chapel Hill diverted an average of 14.1 ft<sup>3</sup>/s for water supply upstream of station, and an average of 13.2 ft<sup>3</sup>/s was returned as treated effluent upstream of station. Considerable diurnal fluctuation and occasional slight regulation caused by small reservoir and treated effluent outfall upstream from station. Maximum discharge for period of record from rating curve extended above 1,700 ft<sup>3</sup>/s, by logarithmic plotting; maximum gage height, 16.18 ft, from floodmark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	13	13	42	28	268	41	17	15	12	12
2	12	12	13	17	104	25	192	28	18	14	12	12
3	12	53	12	287	73	28	79	23	18	14	12	12
4	12	15	13	91	55	29	70	21	18	13	12	22
5	12	13	13	47	44	24	64	21	17	13	12	557
6	12	12	13	29	38	23	52	21	18	14	12	1090
7	12	12	13	24	35	23	46	20	16	14	12	563
8	44	12	13	23	33	20	42	20	16	14	12	80
9	20	12	14	24	30	22	39	21	16	13	13	46
10	12	12	13	22	29	24	35	22	19	14	13	31
11	11	14	13	21	27	23	49	21	15	15	12	24
12	11	14	13	20	30	21	39	20	15	20	13	21
13	12	13	61	19	28	20	25	20	14	27	13	19
14	11	13	20	18	24	45	24	28	15	37	50	19
15	11	16	15	48	25	84	29	27	24	17	38	95
16	11	15	36	35	25	54	31	22	34	14	14	1650
17	11	18	16	24	26	40	27	21	23	14	15	181
18	11	13	14	96	44	35	25	20	16	14	12	69
19	12	13	13	57	48	30	24	19	15	14	12	46
20	12	13	13	36	71	27	20	20	15	14	17	36
21	12	13	13	29	49	303	19	19	15	14	13	101
22	11	13	12	25	37	147	19	21	15	15	12	200
23	12	13	15	78	34	77	19	21	14	14	12	50
24	11	13	e63	944	30	60	18	19	14	16	12	33
25	11	13	25	236	29	53	18	19	16	17	19	27
26	11	12	15	88	28	50	18	19	19	13	56	25
27	12	12	14	66	26	39	19	19	18	12	31	92
28	12	12	14	52	28	36	29	20	18	13	14	797
29	12	12	14	42	---	32	43	17	16	13	13	1110
30	12	13	13	37	---	23	56	15	15	13	13	1140
31	12	---	13	32	---	20	---	16	---	12	12	---
TOTAL	401	433	555	2580	1092	1465	1438	661	519	476	525	8160
MEAN	12.9	14.4	17.9	83.2	39.0	47.3	47.9	21.3	17.3	15.4	16.9	272
MAX	44	53	63	944	104	303	268	41	34	37	56	1650
MIN	11	12	12	13	24	20	18	15	14	12	12	12
CFSM	.32	.35	.44	2.03	.95	1.15	1.17	.52	.42	.37	.41	6.63
IN.	.36	.39	.50	2.34	.99	1.33	1.30	.60	.47	.43	.48	7.40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1999, BY WATER YEAR (WY)

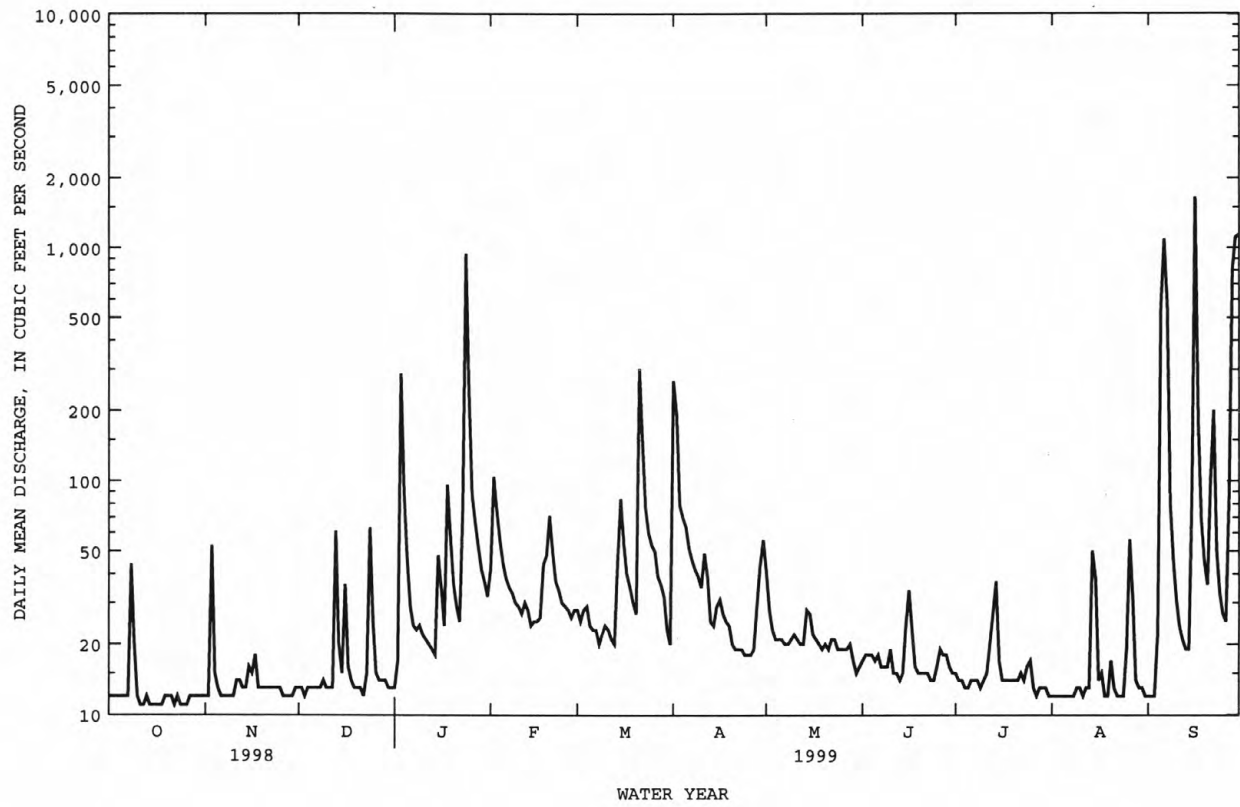
	MEAN	22.7	36.5	36.9	73.1	80.9	101	56.2	33.7	24.5	19.1	21.2	36.2
MAX	47.8	141	105	184	206	226	131	91.2	84.9	51.5	65.0	272	272
(WY)	1991	1986	1984	1998	1998	1993	1984	1990	1992	1984	1985	1999	1999
MIN	12.9	10.5	12.9	15.2	17.2	18.0	17.5	14.5	11.1	8.93	12.1	8.77	8.77
(WY)	1999	1983	1989	1989	1991	1988	1986	1986	1986	1988	1988	1983	1983

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1983 - 1999
ANNUAL TOTAL	23701	18305	
ANNUAL MEAN	64.9	50.2	44.2
HIGHEST ANNUAL MEAN			75.6
LOWEST ANNUAL MEAN			21.7
HIGHEST DAILY MEAN	2230	1650	2600
LOWEST DAILY MEAN	11	11	.60
ANNUAL SEVEN-DAY MINIMUM	11	11	2.1
INSTANTANEOUS PEAK FLOW		2860	4210*
INSTANTANEOUS PEAK STAGE		14.01	16.18*
INSTANTANEOUS LOW FLOW		7.8	NOT DETERMINED
ANNUAL RUNOFF (CFSM)	1.58	1.22	1.08
ANNUAL RUNOFF (INCHES)	21.50	16.61	14.64
10 PERCENT EXCEEDS	99	60	87
50 PERCENT EXCEEDS	16	19	18
90 PERCENT EXCEEDS	12	12	12

e Estimated.

\* See REMARKS.

02097517 MORGAN CREEK NEAR CHAPEL HILL, NC--Continued





## CAPE FEAR RIVER BASIN

0209768310 JORDAN LAKE AT BUOY 12 AT FARRINGTON, NC

LOCATION.--Lat 35°47'55", long 79°00'22", Chatham County, Hydrologic Unit 03030002, .02 mi above Secondary Road 1008, and 0.2 mi east of Farrington.

PERIOD OF RECORD.--Water years 1992 to current year.

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment. Samples for nutrient and chlorophyll a and b analyses were collected through a sampling zone equal to double the secchi disk depth using the depth-integration sampling technique.

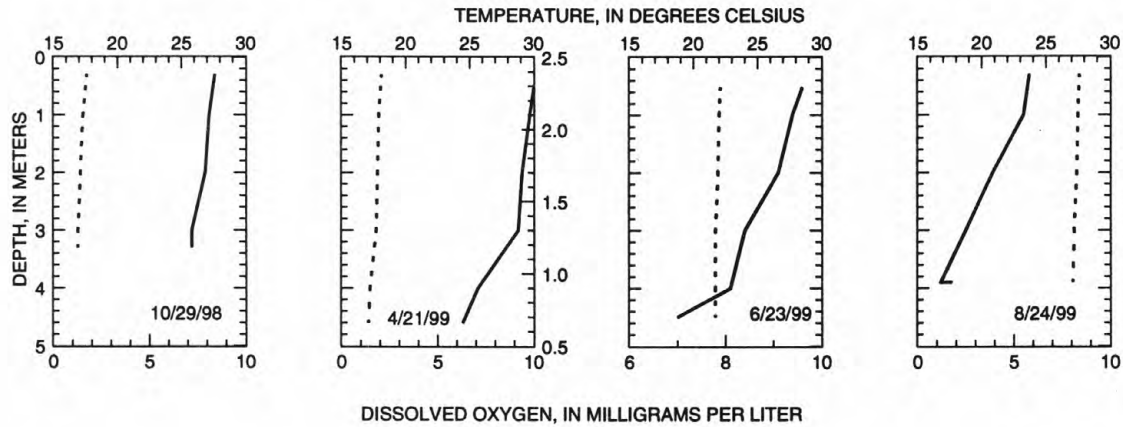
## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	SAMPLING DEPTH (FEET) (000003)	SPECIFIC CONDUCTANCE (US/CM) (000095)	PH WATER WHOLE FIELD (STANDARD UNITS) (004000)	TEMPERATURE WATER (DEG C) (000010)	COLOR (PLATINUM-COBALT UNITS) (000080)	BAROMETRIC PRESSURE (MM HG) (000025)	TRANSPAR-ENCY (SECCHI DISK) (000078)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION) (003000)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION) (003011)
OCT 29...	1200	1.00	178	7.0	17.6	50	756	.35	8.4	89
APR 21...	1000	1.00	131	7.8	18.1	50	755	.45	10.1	108
JUN 23...	1045	1.00	166	8.0	22.1	50	755	.30	9.6	111
AUG 24...	0915	1.00	202	7.4	27.6	70	758	.35	5.8	74
DATE	HARDNESS TOTAL (MG/L AS CACO3) (009000)	CALCIUM DIS-SOLVED (MG/L AS CA) (009115)	MAGNESIUM DIS-SOLVED (MG/L AS MG) (009255)	SODIUM, DIS-SOLVED (MG/L AS NA) (009300)	SODIUM PERCENT (00932)	SODIUM AD-SORPTION RATIO (009311)	POTASSIUM, DIS-SOLVED (MG/L AS K) (009355)	BICARBONATE, DIS-SOLVED (MG/L AS HCO3) (99440)	ANC WATER UNFLTRD IT FIELD CACO3 (00419)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT 29...	32	8.4	2.7	18	52	1	3.3	20	16	16
APR 21...	28	7.2	2.3	12	45	1	2.8	32	27	13
JUN 23...	32	8.4	2.8	18	52	1	3.4	40	33	16
AUG 24...	37	9.6	3.1	23	55	2	4.0	47	39	18
DATE	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)
OCT 29...	17	.29	4.3	105	.006	.006	.019	.89	.91	.92
APR 21...	11	.17	3.0	81	.004	.044	.006	.85	.85	.89
JUN 23...	16	.23	.85	97	.001	<.005	.007	.95	.95	--
AUG 24...	20	.27	5.3	121	<.001	<.005	<.002	--	1.2	--
DATE	PHOSPHORUS, PHOS-ORTHOPHOSPHATE, DIS-SOLVED (MG/L AS P) (00665)	PHOSPHORUS, PHOS-ORTHOPHOSPHATE, DIS-SOLVED (MG/L AS P) (00671)	CHLOROPHYLL-A, PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOROPHYLL-B, PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ARSENIC, TOTAL RECOVERABLE (UG/L AS AS) (01002)	CADMIUM, WATER UNFLTRD TOTAL RECOVERABLE (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT 29...	.060	.022	20.0	.980	210	<1	<1	<1	<1	<1
APR 21...	.062	.003	22.1	.760	200	1	<1	<1	<1	2
JUN 23...	.078	.003	26.2	2.00	--	--	--	--	--	--
AUG 24...	.086	.001	51.5	2.20	--	--	--	--	--	--

0209768310 JORDAN LAKE AT BUOY 12 AT FARRINGTON, NC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 29...	390	<1	300	<.10	3	1	<1	<1	<10	8.9
APR 21...	470	<1	120	<.10	1	<1	<1	<1	<40	11
JUN 23...	--	--	--	--	--	--	--	--	--	11
AUG 24...	--	--	--	--	--	--	--	--	--	--



## EXPLANATION

— Dissolved Oxygen

..... Water Temperature

0209782520 WHITE OAK CREEK AT GREEN LEVEL, NC

LOCATION.--Lat 35°46'32", long 78°54'11", Wake County, Hydrologic unit 03030002, at bridge on Wimberly Road, 1.5 mi southwest of Green Level.

DRAINAGE AREA.--6.97 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1999.

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT (MG/L SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (PER- CENT (MG/L SATUR- ATION) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
SEP 05...	1830	--	52	5.6	21.8	100	745	5.9	69	12	2.7	1.2
17...	1130	62	45	5.9	18.0	--	764	7.2	76	--	--	--
DATE		SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L AS SIO2) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
SEP 05...	3.1	30	.4	3.4	7.3	3.8	<.10	4.1	57	.004	.130	.004
17...	--	--	--	--	--	--	--	--	--	--	--	--
DATE		NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS TOTAL (MG/L AS P) (00671)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)
SEP 05...	.84	.85	.98	.109	.131	1000	<1	<1	1	<1	3	1200
17...	--	--	--	--	--	--	--	--	--	--	--	--
DATE		LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)
SEP 05...	3	110	<.10	<1	1	<1	<1	E20	17	--	--	--
17...	--	--	--	--	--	--	--	--	--	30	5.0	--

0209799150 JORDAN LAKE ABOVE U.S. HIGHWAY 64 NEAR WILSONVILLE, NC

LOCATION.--Lat 35°44'29", long 79°01'10", Chatham County, Hydrologic Unit 03030002, 0.2 mi above bridge on U.S. Highway 64, and 1.1 mi west of Wilsonville.

PERIOD OF RECORD.--Water years 1991 to current year.

REMARKS.-- Station operated to define water quality as part of a six-county regional surface-water quality assessment. Samples for nutrient and chlorophyll a and b analyses were collected through a sampling zone equal to double the secchi disk depth using the depth-integration sampling technique.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

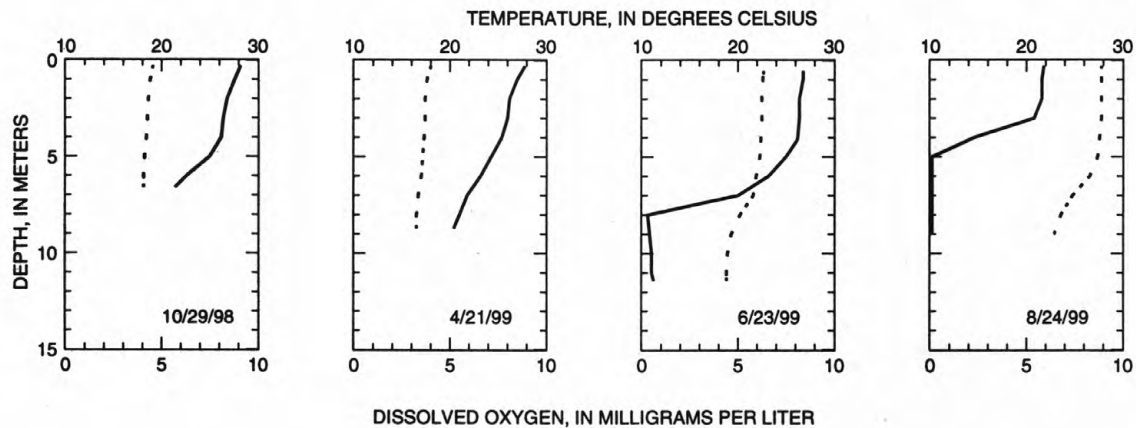
			SPE- CIFIC CON- DUCT- ANCE	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	
DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	(US/CM) (00095)	(00400)	(00010)	(00080)	(00025)	(00078)	(00300)	(00301)	
OCT 29...	1300	1.00	130	7.3	19.1	30	756	.50	9.1	61	
APR 21...	1100	1.00	136	7.2	18.0	30	755	.55	8.9	95	
JUN 23...	1000	1.00	145	7.6	22.7	40	755	.60	8.4	99	
AUG 24...	1030	1.00	164	7.3	27.8	65	758	.80	5.9	76	
DATE		HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE IT-FLD (MG/L AS HCO3) (99440)	ANC WATER UNFLTRD IT FIELD MG/L AS CACO3 (00419)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
OCT 29...	26	6.7	2.3	12	47	1	2.6	35	29	11	
APR 21...	26	6.6	2.3	13	49	1	2.9	30	25	14	
JUN 23...	30	7.5	2.7	15	49	1	3.0	34	28	14	
AUG 24...	33	8.2	3.0	18	52	1	3.4	41	33	14	
DATE		CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)
OCT 29...	11	.22	4.9	71	.005	.011	.033	.74	.77	.79	
APR 21...	12	.17	2.3	83	.006	.124	.103	.73	.83	.95	
JUN 23...	12	.18	2.0	88	.002	.005	.005	.73	.73	.74	
AUG 24...	15	.19	3.3	96	.001	<.005	.003	.89	.89	--	
DATE		PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70954)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)
OCT 29...	E.040	.002	19.0	.980	50	<1	<1	<1	1	<1	
APR 21...	E.045	.001	11.2	.630	100	<1	<1	<1	<1	1	
JUN 23...	E.040	.003	36.9	E3.00	--	--	--	--	--	--	
AUG 24...	E.042	<.001	25.1	.860	--	--	--	--	--	--	

## CAPE FEAR RIVER BASIN

0209799150 JORDAN LAKE ABOVE U.S. HIGHWAY 64 NEAR WILSONVILLE, NC--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 29...	160	<1	150	<.10	2	<1	<1	<1	<10	7.9
APR 21...	210	<1	120	<.10	1	<1	<1	<1	<0	8.6
JUN 23...	--	--	--	--	--	--	--	--	--	8.9
AUG 24...	--	--	--	--	--	--	--	--	--	--



## EXPLANATION

— Dissolved Oxygen  
 . . . . . Water Temperature



0209801100 JORDAN LAKE AT BELLS LANDING NEAR GRIFFINS CROSSROADS, NC

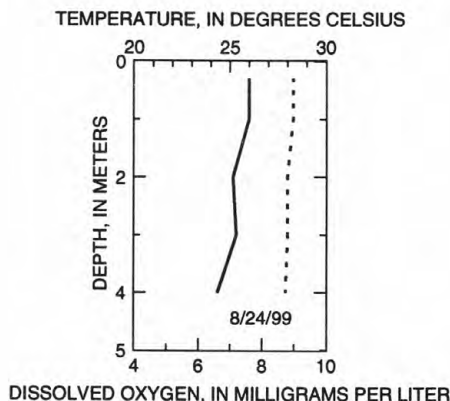
LOCATION.--Lat 35°43'38", long 79°02'35", Chatham County, Hydrologic Unit 03030002, at Bells Landing and 2.0 mi southeast of Griffins Crossroads.

PERIOD OF RECORD.--Water years 1991-1995, August 1999.

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment. A GC/FID scan for trace organic compounds was performed on samples collected in November 1994 and May 1995. Results may be obtained from the District office in Raleigh. Samples for nutrient and chlorophyll a and b analyses were collected through a sampling zone equal to double the secchi disk depth using the depth-integration sampling technique.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

		PH				BARO-		OXYGEN,		HARD-
		SPE-	WATER		COLOR	METRIC	TRANS-		DIS-	HARD-
		CIFIC	WHOLE		(PLAT-	PRES-	PAR-		SOLVED	NESS
		CON-	FIELD	TEMPER-	(PLAT-	SURE	ENCY	OXYGEN,	(PER-	TOTAL
		DUCT-	(STAND-	ATURE	INUM-	(MM	(SECCHI	DIS-	CENT	(MG/L
		ANCE	ARD	WATER	COBALT	OF	DISK)	SOLVED	SATUR-	AS
		(FEET)	(US/CM)	(UNITS)	(DEG C)	(UNITS)	(MM	(MG/L)	ATION)	CAC03)
		(000003)	(000095)	(00400)	(00010)	(00080)	(00025)	(00078)	(00300)	(00301)
										</



## EXPLANATION

- ..... Water Temperature  
 ——— Dissolved Oxygen

02098197 B. EVERETT JORDAN LAKE AT DAM NEAR MONCURE, NC

LOCATION.--Lat 35°39'16", long 79°04'06", Chatham County, Hydrologic Unit 03030002, at B. Everett Jordan Dam on Haw River, 0.3 mi downstream of mouth of New Hope River, 2.5 mi north of Moncure, 4.2 mi upstream from mouth of Haw River, and 202.2 mi upstream from mouth of Cape Fear River.

DRAINAGE AREA.--1,689 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level. U.S. Army Corps of Engineers satellite telemetry at station.

REMARKS.--Lake elevations controlled by reservoir operations at B. Everett Jordan Dam. Lake is used for flood control, water supply, low-flow augmentation, and recreation. Some storage was affected during construction and then operated temporarily as a "dry reservoir" January 1975 to August 1981. Reservoir began filling September 1981 and reached normal pool elevation, 216 ft, Feb. 4, 1982. Total capacity is 32,825,074,000 ft<sup>3</sup> at 240.0 ft, of which 23,454,011,000 ft<sup>3</sup> is controlled flood storage. (See station 02098198.)

EXTREMES FOR PERIOD OF RECORD.--Maximum, 233.59 ft, Sept. 8, 1996; minimum, 207.85 ft, Nov. 12, 1986.

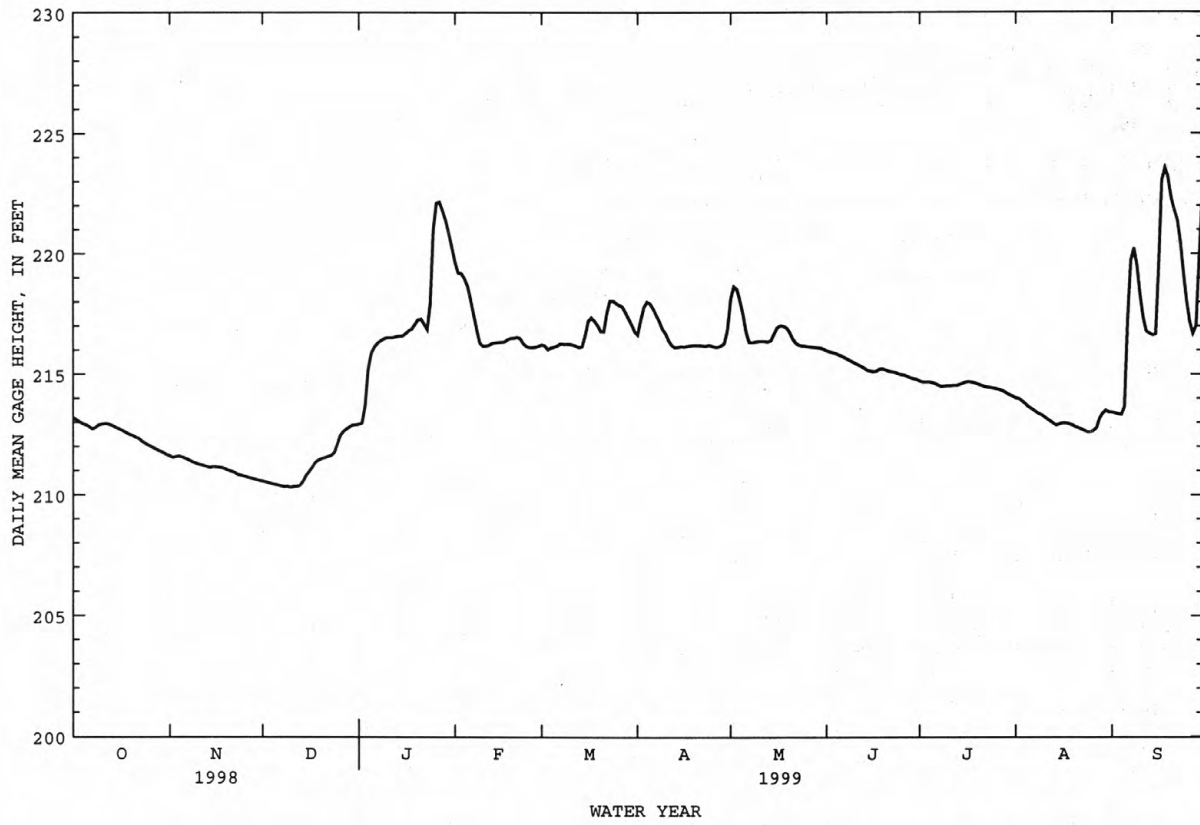
EXTREMES FOR CURRENT YEAR.--Maximum, 233.62 ft, Sept. 18; minimum, 210.30 ft, Dec. 8, 10.

COOPERATION.--Some records furnished by U.S. Army Corps of Engineers.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	213.18	211.62	210.57	212.93	219.64	216.22	216.64	218.13	215.99	214.72	214.02	213.42
2	213.11	211.55	210.53	212.97	219.20	216.19	217.23	218.64	215.93	214.68	213.98	213.39
3	213.01	211.59	210.49	213.68	219.19	216.03	217.79	218.54	215.89	214.68	213.89	213.35
4	212.95	211.60	210.46	215.19	218.99	216.10	218.00	218.06	215.87	214.68	213.78	213.32
5	212.90	211.56	210.43	215.86	218.66	216.14	217.94	217.49	215.80	214.65	213.66	213.64
6	212.82	211.51	210.40	216.12	218.09	216.18	217.72	216.76	215.75	214.61	213.58	217.15
7	212.73	211.46	210.36	216.28	217.46	216.27	217.46	216.33	215.68	214.55	213.48	219.72
8	212.78	211.39	210.34	216.39	216.85	216.26	217.20	216.32	215.60	214.49	213.39	220.23
9	212.88	211.34	210.35	216.47	216.29	216.26	216.89	216.35	215.54	214.51	213.33	219.51
10	212.93	211.28	210.31	216.52	216.16	216.26	216.70	216.37	215.47	214.52	213.24	218.31
11	212.95	211.24	210.35	216.52	216.17	216.22	216.40	216.37	215.40	214.52	213.15	217.35
12	212.95	211.22	210.35	216.52	216.20	216.18	216.20	216.37	215.34	214.53	213.07	216.79
13	212.89	211.17	210.39	216.56	216.29	216.12	216.12	216.35	215.26	214.53	212.96	216.70
14	212.83	211.14	210.56	216.59	216.31	216.15	216.13	216.40	215.17	214.58	212.89	216.63
15	212.77	211.17	210.81	216.59	216.32	216.61	216.16	216.69	215.14	214.63	212.94	216.66
16	212.71	211.16	210.97	216.68	216.33	217.20	216.15	216.95	215.10	214.68	212.97	219.53
17	212.64	211.15	211.16	216.80	216.35	217.35	216.17	217.01	215.12	214.69	212.97	223.05
18	212.57	211.12	211.36	216.87	216.44	217.22	216.19	217.00	215.21	214.67	212.95	223.56
19	212.50	211.07	211.44	217.06	216.50	217.03	216.20	216.94	215.23	214.63	212.91	223.18
20	212.46	211.02	211.50	217.25	216.51	216.79	216.20	216.78	215.18	214.58	212.83	222.33
21	212.38	210.98	211.54	217.28	216.55	216.78	216.20	216.50	215.12	214.53	212.79	221.81
22	212.33	210.92	211.59	217.08	216.50	217.55	216.19	216.31	215.09	214.48	212.72	221.39
23	212.21	210.84	211.63	216.86	216.29	218.05	216.17	216.21	215.08	214.46	212.67	220.46
24	212.14	210.81	211.75	217.95	216.16	218.06	216.21	216.18	215.03	214.44	212.60	219.17
25	212.06	210.77	212.09	221.00	216.12	217.95	216.17	216.17	214.99	214.41	212.60	218.05
26	212.00	210.74	212.45	222.11	216.12	217.87	216.14	216.15	214.96	214.39	212.66	217.17
27	211.93	210.70	212.62	222.15	216.13	217.80	216.14	216.14	214.91	214.35	212.77	216.69
28	211.86	210.67	212.72	221.77	216.17	217.56	216.19	216.12	214.86	214.29	213.17	217.01
29	211.80	210.63	212.81	221.36	---	217.31	216.28	216.11	214.81	214.21	213.38	219.80
30	211.74	210.59	212.88	220.83	---	217.06	216.84	216.09	214.79	214.14	213.50	222.35
31	211.67	---	212.90	220.25	---	216.78	---	216.04	---	214.08	213.43	---
MEAN	212.54	211.13	211.23	217.37	216.93	216.82	216.60	216.71	215.31	214.51	213.17	218.39
MAX	213.18	211.62	212.90	222.15	219.64	218.06	218.00	218.64	215.99	214.72	214.02	223.56
MIN	211.67	210.59	210.31	212.93	216.12	216.03	216.12	216.04	214.79	214.08	212.60	213.32

02098197 B. EVERETT JORDAN LAKE AT DAM NEAR MONCURE, NC--Continued



## CAPE FEAR RIVER BASIN

02098198 HAW RIVER BELOW B. EVERETT JORDAN DAM NEAR MONCURE, NC

LOCATION.--Lat 35°39'11", long 79°04'03", Chatham County, Hydrologic Unit 0303002, on right bank 300 ft downstream from B. Everett Jordan Dam, 2.5 mi north of Moncure, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--1,689 mi<sup>2</sup>.

## GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--October 1965 to current year. Discharge records, October 1965 to September 1992. Gage height records only, October 1992 to current year. October 1965 to September 1978, published as "Haw River nr Haywood, NC" (02098200).

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 155.00 ft above National Geodetic Vertical Datum of 1929 (U.S. Corps of Engineers bench mark). Prior to Oct. 1, 1978, water-stage recorder at site 0.3 mi. downstream at same datum. U.S. Army Corps of Engineers satellite telemetry at station..

EXTREMES FOR PERIOD OF RECORD.--Maximum, 22.41 ft, Oct. 25, 1971 at site 0.3 mi downstream; minimum not determined.

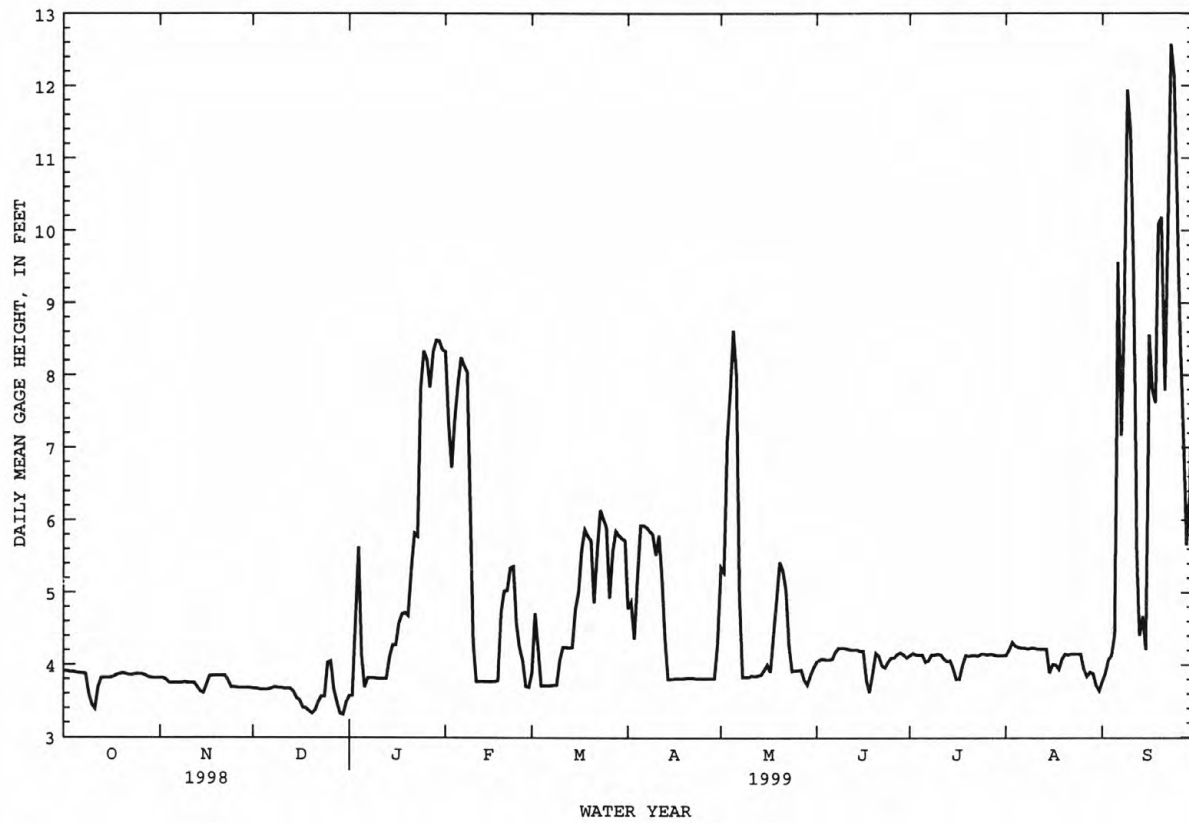
EXTREMES FOR CURRENT YEAR.--Maximum, 13.30 ft, Sept. 23; minimum, 3.25 ft, Dec. 30.

REMARKS.--Stage regulated by B. Everett Jordan Lake Dam (Station 02098197).

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.91	3.82	3.67	3.57	8.32	3.89	4.78	5.35	4.04	4.13	4.13	3.77
2	3.91	3.82	3.67	3.57	7.35	4.71	4.87	5.28	4.07	4.16	4.21	3.88
3	3.90	3.79	3.66	4.58	6.72	4.23	4.36	7.08	4.08	4.14	4.31	4.07
4	3.90	3.75	3.66	5.63	7.38	3.71	5.20	7.77	4.07	4.14	4.26	4.13
5	3.89	3.75	3.66	4.14	7.88	3.71	5.93	8.62	4.07	4.14	4.24	4.41
6	3.88	3.75	3.66	3.69	8.24	3.71	5.93	7.99	4.08	4.04	4.23	9.56
7	3.88	3.75	3.67	3.82	8.13	3.71	5.90	5.00	4.18	4.06	4.23	7.17
8	3.87	3.75	3.69	3.82	8.04	3.72	5.85	3.83	4.23	4.14	4.22	8.90
9	3.60	3.76	3.68	3.82	6.19	3.72	5.81	3.83	4.23	4.14	4.23	11.94
10	3.45	3.75	3.68	3.81	4.32	4.06	5.52	3.83	4.23	4.15	4.23	11.36
11	3.39	3.75	3.67	3.81	3.77	4.24	5.79	3.85	4.22	4.14	4.22	9.44
12	3.68	3.75	3.67	3.81	3.77	4.24	5.20	3.84	4.21	4.08	4.22	5.63
13	3.82	3.69	3.67	3.81	3.77	4.23	4.36	3.85	4.21	4.05	4.22	4.41
14	3.82	3.63	3.63	4.11	3.77	4.24	3.80	3.86	4.21	4.06	4.22	4.67
15	3.82	3.61	3.54	4.27	3.77	4.77	3.80	3.93	4.19	3.95	3.89	4.21
16	3.82	3.72	3.51	4.27	3.77	5.00	3.81	4.00	4.19	3.80	4.01	8.56
17	3.83	3.84	3.41	4.57	3.77	5.58	3.81	3.90	3.79	3.80	4.00	7.78
18	3.86	3.85	3.40	4.70	3.78	5.87	3.81	4.41	3.62	3.99	3.94	7.62
19	3.87	3.85	3.36	4.72	4.73	5.78	3.81	4.90	3.87	4.13	4.08	10.09
20	3.88	3.85	3.33	4.68	5.02	5.72	3.82	5.42	4.16	4.12	4.15	10.18
21	3.87	3.85	3.37	5.33	5.03	4.86	3.82	5.31	4.12	4.13	4.14	7.79
22	3.86	3.85	3.48	5.82	5.34	5.57	3.82	5.04	3.99	4.13	4.15	9.93
23	3.86	3.78	3.56	5.78	5.36	6.14	3.81	4.25	3.96	4.12	4.15	12.57
24	3.87	3.69	3.56	7.81	4.57	6.02	3.81	3.91	4.04	4.15	4.15	12.14
25	3.87	3.69	4.03	8.33	4.24	5.90	3.81	3.92	4.10	4.15	4.15	10.44
26	3.87	3.68	4.05	8.22	4.06	4.93	3.81	3.92	4.10	4.14	3.94	8.48
27	3.86	3.68	3.66	7.83	3.70	5.57	3.81	3.93	4.15	4.15	3.84	7.13
28	3.83	3.68	3.48	8.32	3.69	5.85	3.81	3.79	4.17	4.14	3.90	5.66
29	3.82	3.68	3.33	8.48	---	5.79	3.81	3.72	4.14	4.13	3.88	6.36
30	3.82	3.68	3.31	8.47	---	5.75	4.30	3.86	4.10	4.13	3.72	8.88
31	3.82	---	3.48	8.35	---	5.72	---	3.96	---	4.13	3.64	---
MEAN	3.82	3.75	3.59	5.35	5.30	4.87	4.49	4.71	4.09	4.09	4.09	7.71
MAX	3.91	3.85	4.05	8.48	8.32	6.14	5.93	8.62	4.23	4.16	4.31	12.57
MIN	3.39	3.61	3.31	3.57	3.69	3.71	3.80	3.72	3.62	3.80	3.64	3.77

02098198 HAW RIVER BELOW B. EVERETT JORDAN DAM NEAR MONCURE, NC--Continued





## CAPE FEAR RIVER BASIN

02098198 HAW RIVER BELOW B. EVERETT JORDAN DAM NEAR MONCURE, NC--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.--October 1998 to September 1999.

INSTRUMENTATION.--Tipping bucket raingage and data collection platform records rainfall at fifteen-minute intervals.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.00	.00	.00	.60	.00	.59	.00	.00	.00	.00	.00
2	.00	.20	.00	.81	.17	.00	.00	.00	.00	.00	.00	.00
3	.00	.42	.00	1.26	.00	.20	.00	.00	.00	.00	.00	.00
4	.13	.13	.00	.00	.04	.00	.20	.00	.00	.00	.00	.80
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.12
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.43
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00
8	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.04	.00	.12	.01	.00	.00	.00	.43	.00
10	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
11	.00	.05	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
12	.00	.01	.01	.00	.02	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.88	.00	.00	.01	.00	.05	.01	.00	.00	.00
14	.00	.51	.00	.00	.00	1.87	.00	.25	.00	.00	.69	.00
15	.00	.02	.13	.46	.00	.01	.05	.07	.03	.00	.05	1.56
16	.00	.26	.24	.00	.00	.00	.00	.00	1.08	.00	.00	1.30
17	.00	.14	.00	.08	.00	.00	.00	.00	.06	.00	.13	.00
18	.00	.00	.00	.45	.55	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.02	.00	.42	.00	.00	.00	.00	.00	1.50	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.05	.00
21	.00	.00	.00	.00	.00	1.06	.00	.00	.05	.01	.82	.17
22	.01	.00	.02	.02	.00	.00	.00	.33	.00	.05	.00	.00
23	.00	.00	.04	.99	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.01	1.42	.00	.06	.00	.00	.00	.04	.00	.00
25	.00	.01	.00	.00	.00	.29	.00	.00	.39	.00	.31	.00
26	.00	.15	.00	.00	.00	.00	.02	.10	.03	.00	1.07	.00
27	.00	.00	.00	.00	.00	.00	.04	.00	.06	.00	.01	.92
28	.01	.00	.02	.01	.19	.00	.67	.00	.02	.00	.00	.89
29	.00	.00	.00	.00	---	.00	.94	.00	.00	.01	.00	.00
30	.01	.00	.00	.00	---	.00	.13	.00	.00	.00	.00	.04
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.18	1.90	1.37	5.59	1.99	3.63	2.66	0.80	1.75	0.11	5.11	10.23



An island home surrounded by floodwaters of the Tar River in Rocky Mount, N.C., September 1999.

## CAPE FEAR RIVER BASIN

02099000 EAST FORK DEEP RIVER NEAR HIGH POINT, NC

LOCATION.--Lat 36°02'15", long 79°56'46", Guilford County, Hydrologic Unit 03030003, on right bank 5 ft upstream from bridge on Secondary Road 1541, 3.3 mi upstream from High Point Dam, and 5.2 mi northeast of High Point College, High Point.

DRAINAGE AREA.--14.8 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1928 to March 1994, October 1997 to current year.

REVISED RECORDS.--WSP 1723: 1929(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 764.02 ft above sea level. Satellite telemetry at station.

REMARKS.--Records poor. Maximum discharge, 6,300 ft<sup>3</sup>/s, gage height, 10.87 ft, from floodmark, from rating curve extended above 1,600 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow. Minimum discharge for current water year also occurred on Oct. 23, 28, 30, Aug. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	2.7	2.8	3.5	10	6.8	65	23	5.3	215	5.3	7.3
2	3.2	2.7	2.8	5.4	22	6.6	15	13	5.8	44	4.5	6.7
3	3.0	4.2	2.9	598	11	8.1	8.9	11	5.5	9.1	3.8	6.3
4	3.5	3.8	2.8	25	9.4	11	7.0	9.9	5.3	6.8	3.2	5.9
5	3.6	2.8	2.9	12	7.9	8.5	6.1	8.9	4.8	5.8	2.9	210
6	3.6	2.8	2.9	8.8	7.6	7.7	5.3	8.4	4.5	5.0	2.8	149
7	3.6	2.9	2.9	7.9	7.5	7.5	5.0	7.9	4.6	8.6	2.6	32
8	7.8	3.4	3.2	8.7	7.3	7.3	4.7	7.6	6.2	9.4	2.6	14
9	8.6	3.5	19	8.3	6.9	7.9	4.7	e7.1	5.7	6.1	2.8	18
10	4.7	3.5	5.9	7.0	6.8	9.7	4.4	6.7	4.6	6.7	2.8	15
11	3.8	7.5	3.7	6.5	6.7	8.2	7.3	6.5	4.9	9.5	2.7	11
12	3.3	5.2	3.4	6.4	7.0	7.9	5.8	6.5	4.7	10	2.9	9.6
13	3.0	3.6	174	6.4	7.5	7.3	4.6	6.4	4.4	19	2.6	8.8
14	3.0	3.8	17	6.6	6.8	13	4.3	74	4.3	8.2	30	8.0
15	2.9	6.2	6.7	17	6.6	20	5.8	15	6.9	6.7	36	127
16	2.7	5.4	76	9.3	6.6	10	6.8	10	11	5.7	7.3	184
17	2.7	7.4	10	8.9	6.7	8.1	5.1	8.5	13	4.9	5.8	15
18	2.6	4.8	6.0	55	13	7.0	4.4	7.5	8.8	4.4	4.7	12
19	2.8	4.1	5.0	18	12	6.4	4.1	11	7.4	3.8	3.8	10
20	3.0	4.5	4.7	9.8	19	6.2	4.1	8.1	22	3.6	13	9.3
21	2.8	3.5	4.3	8.3	11	44	3.8	7.1	12	4.1	8.8	8.6
22	2.8	3.3	4.1	7.3	8.7	14	3.6	6.5	10	9.5	6.0	7.9
23	2.5	3.0	e6.0	198	7.7	9.8	3.5	6.4	8.1	6.0	5.1	7.2
24	2.7	2.9	e78	629	7.4	8.6	3.6	6.4	6.9	9.4	4.4	6.8
25	2.7	2.9	22	35	7.1	10	3.5	6.0	6.8	7.7	41	6.7
26	2.6	4.4	8.5	15	6.9	8.4	3.5	5.9	6.6	4.5	129	6.6
27	2.7	3.7	7.0	11	6.8	7.0	4.1	5.7	6.3	3.7	229	9.9
28	2.6	3.4	6.3	9.2	7.0	6.3	20	5.5	7.0	3.3	13	122
29	2.5	3.1	5.6	8.2	---	6.0	231	5.4	6.3	27	10	164
30	2.5	3.0	4.4	7.7	---	5.8	531	5.5	109	10	9.0	89
31	2.7	---	3.6	7.1	---	5.7	---	5.4	---	6.6	8.0	---
TOTAL	103.9	118.0	504.4	1764.3	250.9	300.8	986.0	322.8	318.7	484.1	605.4	1287.6
MEAN	3.35	3.93	16.3	56.9	8.96	9.70	32.9	10.4	10.6	15.6	19.5	42.9
MAX	8.6	7.5	174	629	22	44	531	74	109	215	229	210
MIN	2.5	2.7	2.8	3.5	6.6	5.7	3.5	5.4	4.3	3.3	2.6	5.9
CFSM	.23	.27	1.10	3.85	.61	.66	2.22	.70	.72	1.06	1.32	2.90
IN.	.26	.30	1.27	4.43	.63	.76	2.48	.81	.80	1.22	1.52	3.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1999,<sup>e</sup> BY WATER YEAR (WY)

	MEAN	11.9	11.7	16.3	24.7	27.7	26.4	20.9	15.7	12.4	12.7	12.5	12.8
MAX	79.5	39.2	48.6	82.9	83.0	106	71.6	58.8	61.5	97.5	55.9	88.9	
(WY)	1960	1980	1933	1978	1979	1975	1987	1978	1969	1975	1949	1979	
MIN	1.88	2.35	3.53	4.32	6.48	6.76	5.52	4.57	3.41	2.93	2.87	1.74	
(WY)	1942	1942	1942	1942	1931	1967	1942	1941	1986	1977	1941	1954	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

WATER YEARS 1929 - 1999<sup>e</sup>

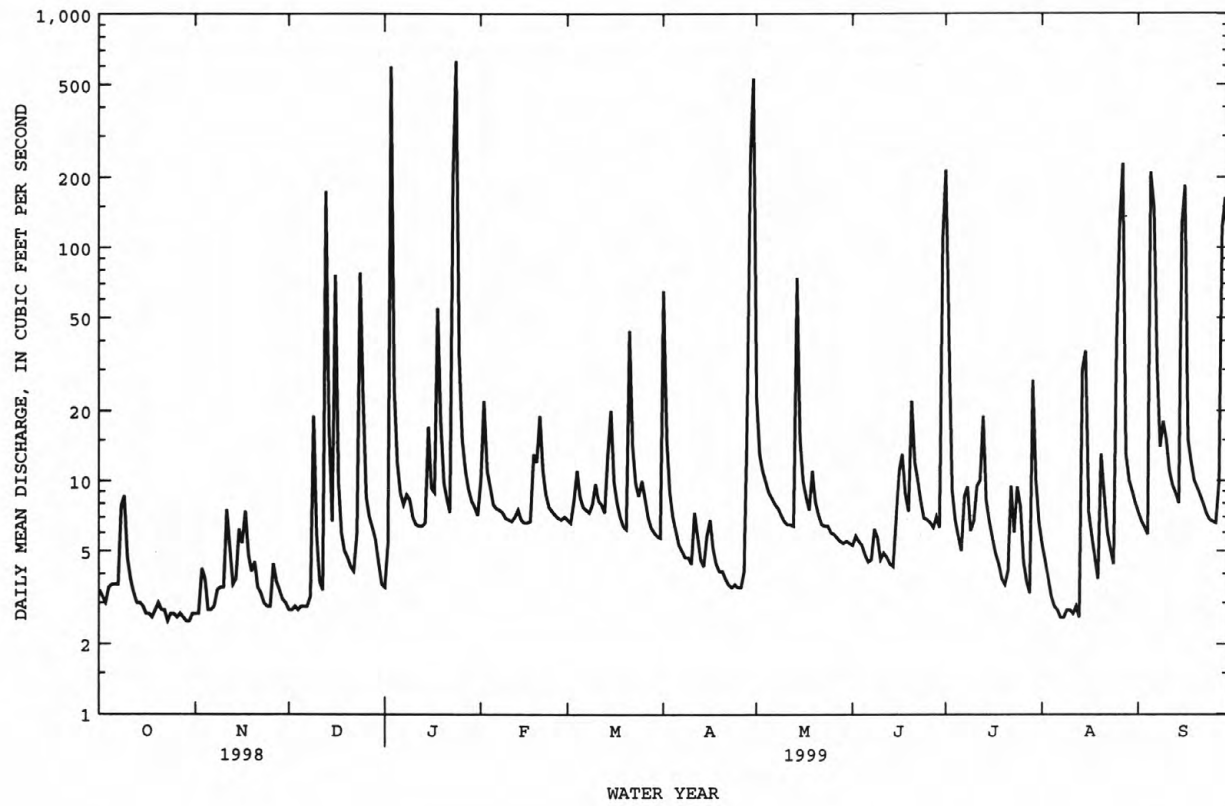
ANNUAL TOTAL	10679.7	7046.9	
ANNUAL MEAN	29.3	19.3	17.1
HIGHEST ANNUAL MEAN			34.1
LOWEST ANNUAL MEAN			7.28
HIGHEST DAILY MEAN	807	May 7	1670
LOWEST DAILY MEAN	2.5	Oct 23	1.1
ANNUAL SEVEN-DAY MINIMUM	2.6	Oct 23	1.2
INSTANTANEOUS PEAK FLOW		2700	6300*
INSTANTANEOUS PEAK STAGE		9.27	10.88
INSTANTANEOUS LOW FLOW		2.4*	.60
ANNUAL RUNOFF (CFSM)	1.98	1.30	1.16
ANNUAL RUNOFF (INCHES)	26.84	17.71	15.71
10 PERCENT EXCEEDS	32	20	26
50 PERCENT EXCEEDS	8.2	6.7	7.1
90 PERCENT EXCEEDS	3.0	2.9	3.6

e Estimated.

\* See PERIOD OF RECORD.

\* See REMARKS.

02099000 EAST FORK DEEP RIVER NEAR HIGH POINT, NC--Continued



## CAPE FEAR RIVER BASIN

02099500 DEEP RIVER NEAR RANDLEMAN, NC

LOCATION.--Lat 35°54'06", long 79°51'05", Randolph County, Hydrologic Unit 03030003, on left bank 500 ft downstream of bridge on Secondary Road 1929, 0.2 mi downstream of Coltrane's Mill, 0.5 mi south of Guilford County line, 4.8 mi upstream from Muddy Creek, and 7 mi north of Randleman.

DRAINAGE AREA.--125 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 782: 1929-30. WSP 1383: 1934-35, 1941. WSP 1723: 1929(M). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 638.11 ft above sea level (levels by U.S. Army Corps of Engineers). Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diurnal fluctuation at times during periods of low flow caused by Coltrane's Mill. Some regulation by Oak Hollow Reservoir (station 02098495) and High Point Lake (station 02099096). City of High Point diverted an average of 21.2 ft<sup>3</sup>/s for municipal water supply, 19.1 ft<sup>3</sup>/s was discharged as treated effluent into Richland Creek upstream from station and 5.1 ft<sup>3</sup>/s into Rich Fork Creek in Pee Dee River basin. Maximum discharge for period of record from rating curve extended above 7,100 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow at bridge 1.5 mi upstream; maximum gage height for period of record from floodmarks. Minimum discharge for current water year occurred several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	17	20	31	72	47	156	467	22	31	29	34
2	17	17	22	36	324	43	237	161	22	459	25	32
3	17	18	21	e800	158	42	114	93	22	106	21	29
4	16	19	21	e204	106	72	81	69	21	52	19	25
5	17	20	20	e135	86	54	65	61	21	38	21	437
6	16	19	20	e91	65	44	54	52	21	34	19	323
7	17	19	20	e67	64	43	47	46	20	31	19	429
8	18	19	20	e51	63	41	44	42	20	29	18	114
9	23	18	76	44	53	39	43	38	20	28	17	72
10	24	19	38	38	50	46	40	35	19	27	18	102
11	22	19	29	35	46	44	39	33	19	25	18	47
12	20	24	26	33	46	41	43	31	19	25	18	36
13	20	28	163	32	54	38	41	30	19	31	18	31
14	e20	24	91	31	48	47	37	392	19	41	19	28
15	e19	28	53	97	44	191	35	e140	19	39	106	86
16	19	26	115	69	42	107	38	e77	22	35	34	891
17	18	32	99	35	40	77	36	e56	59	32	31	162
18	18	26	51	307	86	57	35	44	33	30	27	69
19	18	22	39	e260	84	49	33	39	27	28	25	49
20	18	22	34	e125	151	46	31	36	29	26	37	42
21	18	20	31	e82	101	320	29	31	38	32	51	52
22	18	19	29	e60	73	234	29	28	30	72	31	92
23	17	18	28	e52	60	119	28	28	28	38	26	38
24	17	19	e81	e1050	54	93	28	25	26	33	26	31
25	17	21	97	e850	52	108	28	24	25	32	183	28
26	16	27	79	e240	49	83	27	24	25	33	104	27
27	e17	26	55	e140	45	68	29	24	24	32	748	35
28	17	21	46	e110	45	57	106	24	23	31	134	465
29	17	20	41	91	---	52	190	23	22	29	71	660
30	17	19	37	73	---	49	1640	22	22	33	55	939
31	17	---	33	62	---	44	---	22	---	31	42	---
TOTAL	562	646	1535	5331	2161	2395	3383	2217	736	1543	2010	5405
MEAN	18.1	21.5	49.5	172	77.2	77.3	113	71.5	24.5	49.8	64.8	180
MAX	24	32	163	1050	324	320	1640	467	59	459	748	939
MIN	16	17	20	31	40	38	27	22	19	25	17	25
CFSM	.15	.17	.40	1.38	.62	.62	.90	.57	.20	.40	.52	1.44
IN.	.17	.19	.46	1.59	.64	.71	1.01	.66	.22	.46	.60	1.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1999, BY WATER YEAR (WY)

MEAN	78.2	81.6	126	202	231	228	176	107	77.9	80.7	75.2	84.9
MAX	474	354	389	645	584	697	529	445	351	465	311	831
(WY)	1991	1986	1933	1937	1960	1975	1936	1978	1982	1975	1949	1996
MIN	5.78	9.56	16.8	15.8	38.7	54.4	27.6	23.5	16.7	17.2	17.1	10.6
(WY)	1931	1932	1934	1942	1986	1967	1985	1977	1933	1947	1945	1941

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1929 - 1999

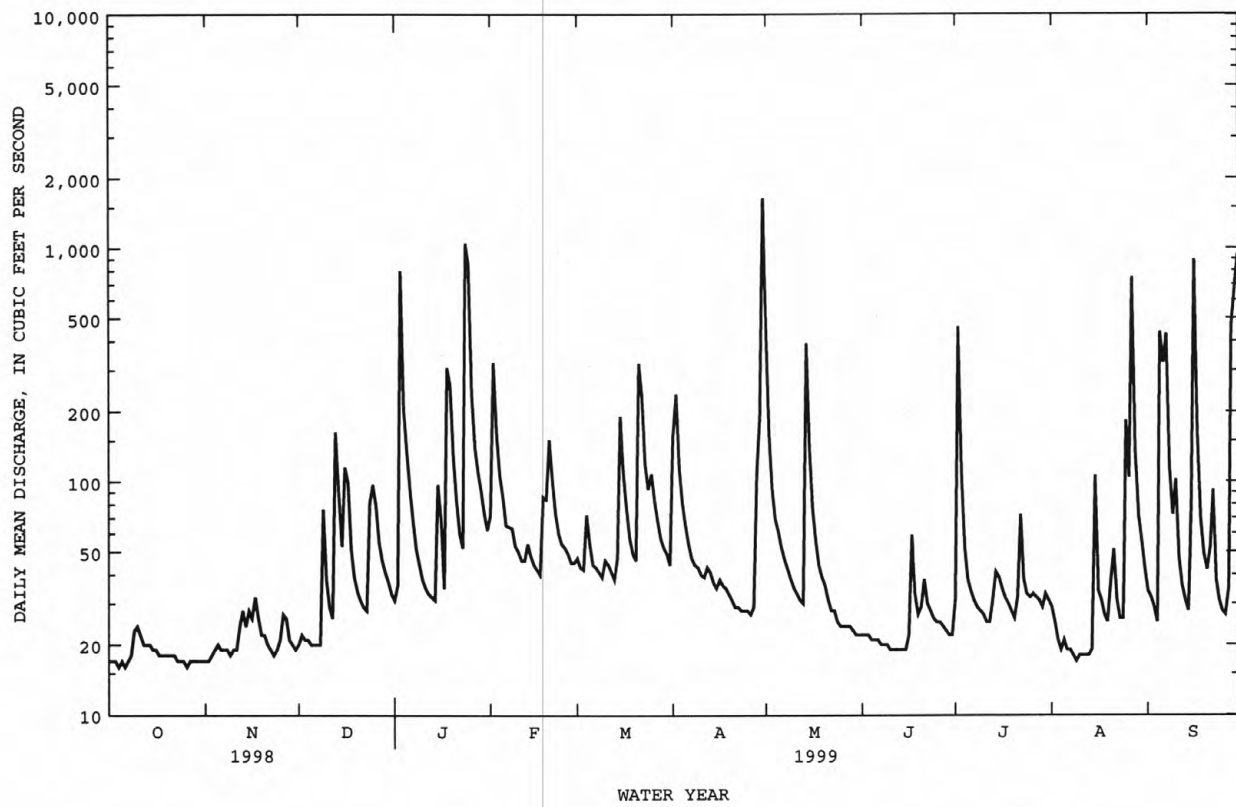
ANNUAL TOTAL	63870	27924	
ANNUAL MEAN	175	76.5	
HIGHEST ANNUAL MEAN			129
LOWEST ANNUAL MEAN			230
HIGHEST DAILY MEAN	2770	May 8	12000
LOWEST DAILY MEAN	16	Oct 4	1.2
ANNUAL SEVEN-DAY MINIMUM	17	Oct 1	3.9
INSTANTANEOUS PEAK FLOW			20000*
INSTANTANEOUS PEAK STAGE			32.20*
INSTANTANEOUS LOW FLOW			.50
ANNUAL RUNOFF (CFSM)	1.40	.61	1.03
ANNUAL RUNOFF (INCHES)	19.01	8.31	13.97
10 PERCENT EXCEEDS	418	129	242
50 PERCENT EXCEEDS	58	34	52
90 PERCENT EXCEEDS	19	19	16

e Estimated.

\* See REMARKS.



02099500 DEEP RIVER NEAR RANDLEMAN, NC--Continued



## CAPE FEAR RIVER BASIN

02100500 DEEP RIVER AT RAMSEUR, NC

LOCATION.--Lat 35°43'34", long 79°39'20", Randolph County, Hydrologic Unit 03030003, on right bank 0.2 mi downstream of Main Street bridge in Ramseur, 0.5 mi downstream of mill dam, and 1.5 mi downstream of Sandy Creek.

DRAINAGE AREA.--349 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1922 to current year.

REVISED RECORDS.--WSP 1032: 1923-24, 1925(M), 1926, 1927-28(M), 1929, 1930(M), 1932-33, 1934(M), 1935, 1936-37(M), 1944(M). WSP 1383: 1923(m), 1925, 1927, 1930, 1936. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 419.50 ft above sea level. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow slightly regulated by Oak Hollow Reservoir (station 02098495), High Point Municipal Lake (station 02099096), and small power plant reservoirs. Prior to January 1963, diurnal fluctuation caused by power plant immediately upstream from station. Town of Asheboro diverted an average of 7.7 ft<sup>3</sup>/s from Yadkin River Basin for water supply and discharged an average of 6.7 ft<sup>3</sup>/s of treated effluent upstream from the station into Deep River. Maximum discharge for period of record from rating curve extended above 18,000 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow; gage height: 34.04 ft. Minimum discharge for period of record occurred frequently in 1941. Minimum discharge for the current water year also occurred Oct. 22, Nov. 6, 22, 23, 24, due to regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1901 reached a stage of 28.75 ft, from floodmarks 0.2 mi upstream; discharge, 30,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	27	35	122	166	157	385	1060	51	42	42	57
2	39	26	36	58	549	139	733	443	40	247	41	61
3	31	67	39	2530	544	111	410	249	47	311	40	44
4	18	90	41	982	363	89	266	197	44	168	40	32
5	22	18	42	320	201	163	236	127	43	88	38	590
6	29	13	42	217	208	145	190	142	30	28	34	1810
7	31	25	41	158	171	145	180	129	33	28	21	829
8	51	30	38	118	163	89	135	130	35	39	21	395
9	81	31	43	90	155	87	163	109	36	41	23	203
10	54	32	99	149	146	116	110	95	35	38	26	296
11	47	37	111	120	113	122	83	84	34	38	28	180
12	35	37	47	53	142	113	119	82	33	43	28	125
13	17	38	99	33	149	102	119	77	34	70	28	52
14	28	46	367	130	147	132	107	559	34	94	29	21
15	32	114	142	442	104	707	104	829	36	126	137	175
16	33	23	384	466	71	456	119	347	42	62	153	1770
17	42	34	410	238	107	259	109	170	128	27	91	756
18	46	47	141	453	163	241	99	156	108	29	34	287
19	76	53	132	721	299	139	93	91	133	41	21	149
20	17	84	117	369	353	152	91	75	55	42	31	122
21	11	60	60	243	339	687	89	91	21	44	102	63
22	13	14	15	178	212	1110	84	128	28	145	94	e33
23	17	11	14	192	184	475	84	59	62	185	68	e29
24	21	12	237	5610	159	312	83	34	57	94	46	e125
25	23	23	775	2910	112	263	67	60	43	60	50	e31
26	23	40	299	781	158	278	73	63	48	53	292	e27
27	23	41	148	477	144	233	93	62	45	48	936	31
28	24	38	133	311	89	188	136	58	47	47	474	918
29	24	40	122	235	---	123	295	60	49	47	207	1210
30	26	40	86	187	---	149	2500	54	41	66	135	1940
31	27	---	34	235	---	155	---	38	---	54	25	---
TOTAL	1001	1191	4329	19128	5711	7637	7355	5858	1472	2445	3335	12361
MEAN	32.3	39.7	140	617	204	246	245	189	49.1	78.9	108	412
MAX	81	114	775	5610	549	1110	2500	1060	133	311	936	1940
MIN	11	11	14	33	71	87	67	34	21	27	21	21
CFSM	.09	.11	.40	1.77	.58	.71	.70	.54	.14	.23	.31	1.18
IN.	.11	.13	.46	2.04	.61	.81	.78	.62	.16	.26	.36	1.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1999, BY WATER YEAR (WY)

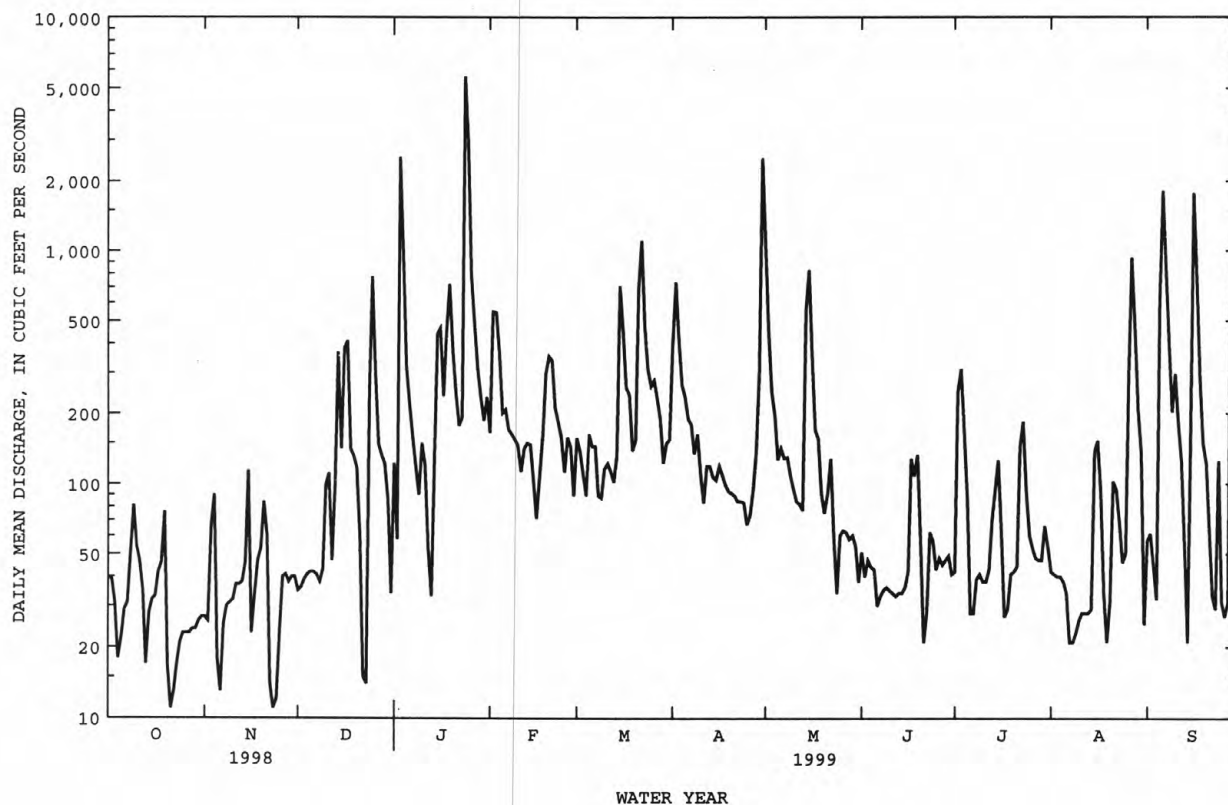
	209	216	345	562	661	651	497	294	214	221	206	240
MEAN	209	216	345	562	661	651	497	294	214	221	206	240
MAX	1193	1237	1050	1660	1642	1842	1440	944	978	1434	896	1934
(WY)	1991	1986	1933	1937	1979	1975	1936	1978	1982	1975	1939	1928
MIN	8.69	14.1	39.1	40.8	131	144	116	71.3	48.1	36.5	32.4	17.7
(WY)	1942	1942	1934	1942	1931	1967	1967	1986	1933	1986	1956	1954

## 02100500 DEEP RIVER AT RAMSEUR, NC--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1923 - 1999	
ANNUAL TOTAL	176106		71823		358	
ANNUAL MEAN	482		197		665	1975
HIGHEST ANNUAL MEAN					155	1967
LOWEST ANNUAL MEAN					27800	Sep 18 1945
HIGHEST DAILY MEAN	10900	Feb 17	5610	Jan 24	.70	Nov 29 1941
LOWEST DAILY MEAN	11	Oct 21	11	Oct 21	3.6	Oct 19 1941
ANNUAL SEVEN-DAY MINIMUM	18	Oct 20	18	Oct 20	43000*	Sep 18 1945
INSTANTANEOUS PEAK FLOW			7950	Jan 24	34.04*	Sep 18 1945
INSTANTANEOUS PEAK STAGE			13.21	Jan 24	.40*	May 27 1941
INSTANTANEOUS LOW FLOW			11*	Oct 21	1.03	
ANNUAL RUNOFF (CFSM)	1.38		.56		13.94	
ANNUAL RUNOFF (INCHES)	18.77		7.66		688	
10 PERCENT EXCEEDS	1030		401		152	
50 PERCENT EXCEEDS	141		89		37	
90 PERCENT EXCEEDS	27		27			

e Estimated.

\* See REMARKS.



## 0210166029 ROCKY RIVER NEAR CRUTCHFIELD CROSSROADS, NC

LOCATION.--Lat 35°48'25", long 79°31'41", Chatham County, Hydrologic Unit 03030003, on right bank at downstream side of culvert on Secondary Road 1300, and 5.5 mi west of Crutchfield Crossroads.

DRAINAGE AREA.--7.42 mi<sup>2</sup>.

REVISIONS.--WDR NC-98-1(M).

PERIOD OF RECORD.--May 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 620 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records fair. No flow occurred several days in Aug. 1988. Minimum discharge for current water year also occurred Aug. 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.36	.20	1.1	3.7	2.7	31	5.4	.52	.26	.11	.10
2	.15	.41	.20	1.0	21	2.4	12	3.6	.48	.27	.07	.10
3	.15	2.4	.18	96	7.1	2.6	6.0	2.4	.50	.23	.07	.08
4	.15	1.5	.17	10	4.9	3.3	4.7	1.8	.52	.21	.06	.08
5	.18	.53	.20	5.0	3.9	2.4	4.1	1.6	.41	.17	.06	81
6	.19	.37	.20	4.0	3.3	2.5	3.3	1.5	.40	.15	.06	88
7	.21	.33	.20	2.8	3.0	2.4	3.1	1.4	.40	.16	.06	12
8	1.5	.31	.20	2.3	2.9	2.1	2.7	1.7	.39	.15	.08	3.5
9	.99	.28	.23	2.2	2.5	2.3	2.4	1.3	.30	.14	.06	2.9
10	.24	.28	.31	1.7	2.5	2.8	2.1	1.1	.30	.13	.06	1.9
11	.16	.29	.26	1.5	2.4	2.5	2.0	.91	.27	.13	.06	1.2
12	.16	.29	.23	1.3	2.6	3.3	1.9	.87	.29	.47	.05	.88
13	.20	.27	14	1.2	3.4	2.7	1.7	.95	.30	2.3	.05	.90
14	.20	.25	3.9	1.2	2.5	10	1.7	48	.28	3.2	.09	1.3
15	.17	.53	1.4	13	2.3	19	1.8	15	.39	1.0	1.0	5.7
16	.16	.47	15	4.7	2.3	6.1	2.0	4.8	1.6	.46	.26	85
17	.16	.74	2.8	3.1	2.2	4.4	1.6	3.3	2.8	.38	.13	9.1
18	.16	.45	1.4	9.6	11	3.4	1.5	2.2	.72	.33	.12	4.0
19	.20	.29	1.0	4.7	6.6	2.6	1.4	1.8	.46	.22	.08	2.7
20	.28	.25	.89	3.2	13	2.4	1.4	1.5	.49	.20	.07	1.7
21	.26	.23	.69	2.6	5.4	21	1.4	1.2	.74	.26	1.4	1.2
22	.24	.20	.62	2.4	4.0	15	1.3	.97	.56	2.9	.33	1.1
23	.25	.19	.72	11	3.2	5.9	1.2	1.1	.51	.67	.12	e.90
24	.25	.17	28	199	3.0	4.2	1.2	.90	.38	.30	.08	e.70
25	.26	.17	9.0	31	2.7	3.6	1.1	.78	.37	.20	.11	.69
26	.26	.20	3.6	8.9	2.7	4.2	.98	.79	.44	.17	.30	.64
27	.26	.21	2.6	5.7	2.7	3.3	1.2	1.1	.45	.14	4.9	1.0
28	.26	.21	2.0	5.2	2.8	2.9	3.0	.80	.47	.13	.65	133
29	.26	.20	1.8	4.1	---	3.3	6.0	.72	.41	.13	.22	55
30	.27	.20	1.5	3.2	---	3.0	26	.63	.32	.17	.15	46
31	.32	---	1.2	2.8	---	2.5	---	.58	---	.14	.13	---
TOTAL	8.65	12.58	94.70	445.5	129.6	150.8	131.78	110.70	16.47	15.77	10.99	542.37
MEAN	.28	.42	3.05	14.4	4.63	4.86	4.39	3.57	.55	.51	.35	18.1
MAX	1.5	2.4	28	199	21	21	31	48	2.8	3.2	4.9	133
MIN	.15	.17	.17	1.0	2.2	2.1	.98	.58	.27	.13	.05	.08
CFSM	.04	.06	.41	1.94	.62	.66	.59	.48	.07	.07	.05	2.44
IN.	.04	.06	.47	2.23	.65	.76	.66	.55	.08	.08	.06	2.72

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1999, BY WATER YEAR (WY)

	6.01	5.46	5.28	15.0	14.1	17.9	9.89	5.79	4.10	3.60	1.79	5.17
MEAN	6.01	5.46	5.28	15.0	14.1	17.9	9.89	5.79	4.10	3.60	1.79	5.17
MAX	17.1	18.2	10.6	37.3	32.9	42.4	22.0	19.2	20.5	14.8	8.61	23.7
(WY)	1990	1996	1990	1998	1998	1998	1997	1990	1995	1989	1994	1996
MIN	.28	.42	1.29	2.33	4.63	4.86	1.94	1.58	.44	.45	.33	.26
(WY)	1999	1999	1995	1989	1999	1999	1995	1988	1988	1998	1998	1990

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

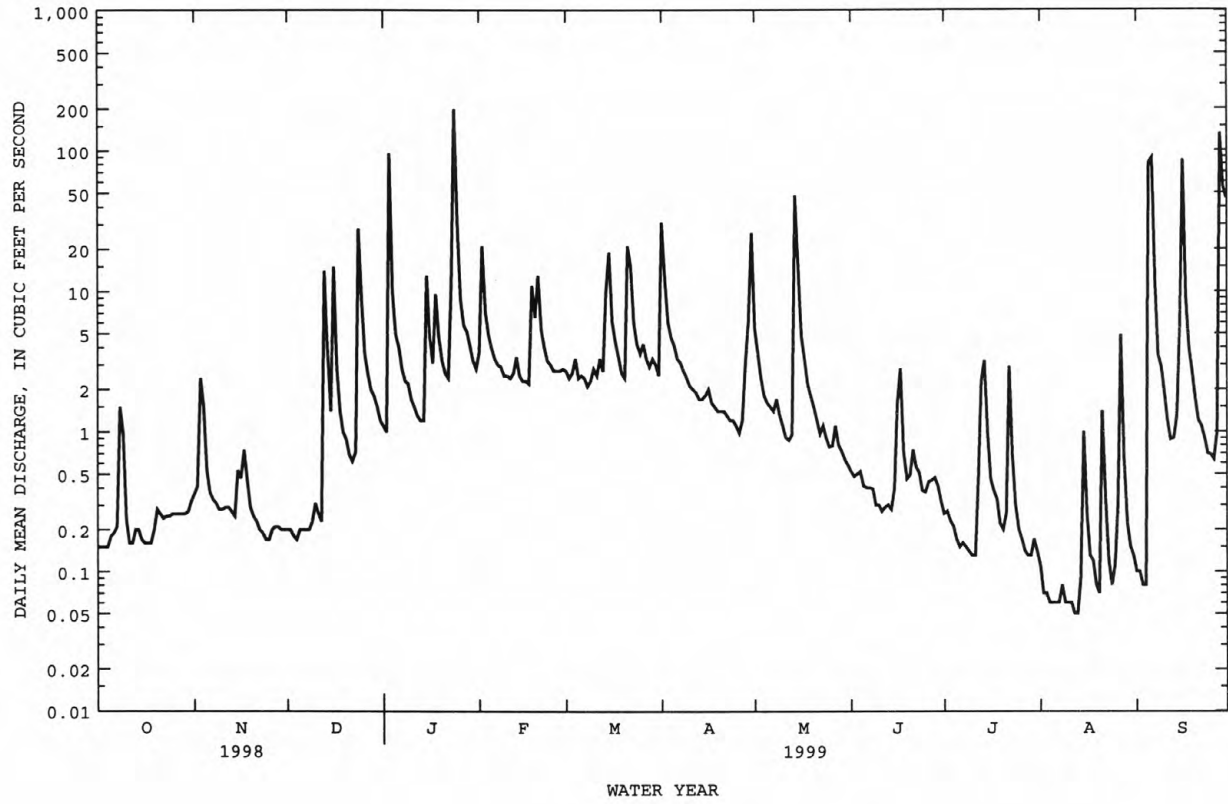
## WATER YEARS 1988 - 1999

ANNUAL TOTAL	4270.20	1669.91	
ANNUAL MEAN	11.7	4.58	
HIGHEST ANNUAL MEAN			7.91
LOWEST ANNUAL MEAN			12.8
HIGHEST DAILY MEAN	386	Mar 19	4.26
LOWEST DAILY MEAN	.09	Sep 2	531
ANNUAL SEVEN-DAY MINIMUM	.13	Sep 20	.05
INSTANTANEOUS PEAK FLOW			.06
INSTANTANEOUS PEAK FLOW			427
INSTANTANEOUS LOW FLOW			6.64
ANNUAL RUNOFF (CFSM)	1.58		.04*
ANNUAL RUNOFF (INCHES)	21.41		.62
10 PERCENT EXCEEDS	22		8.37
50 PERCENT EXCEEDS	1.5		6.0
90 PERCENT EXCEEDS	.17		1.0
			.15
			.33

e Estimated.

\* See REMARKS.

0210166029 ROCKY RIVER NEAR CRUTCHFIELD CROSSROADS, NC--Continued





02101800 TICK CREEK NEAR MOUNT VERNON SPRINGS, NC

LOCATION.--Lat 35°39'37", long 79°24'08", Chatham County, Hydrologic Unit 03030003, on right bank 200 ft upstream from bridge on U.S. Highway 421, 1.5 mi east of Mount Vernon Springs, and 4 mi upstream from mouth.

DRAINAGE AREA.--15.5 mi<sup>2</sup>

PERIOD OF RECORD.--June 1958 to September 1981, January 1994 to current year.

GAGE.--Water-stage recorder and v-notch sharp-crested weir. Elevation of gage is 455 ft above sea level, by barometer. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, and those below 1 ft<sup>3</sup>/s, which are poor. Maximum discharge for period of record from rating curve extended above 2,200 ft<sup>3</sup>/s, on basis of contracted-opening measurement of peak flow. No flow occurs at times most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.02	e.07	1.8	7.4	5.7	66	14	.47	.09	.02	.07
2	.02	.03	e.08	1.6	42	4.7	37	6.4	.40	.10	.02	.06
3	.02	1.2	e.09	135	17	4.6	16	4.2	.36	e.09	.01	.05
4	.01	e.70	e.10	18	11	5.7	11	3.5	.28	e.08	.01	.03
5	.01	e.30	e.10	8.0	8.6	4.3	10	2.5	.24	e.07	.01	225
6	.02	e.20	e.10	5.3	7.6	4.0	7.3	2.7	.21	e.06	.01	430
7	.02	e.18	e.10	4.5	6.9	3.8	6.3	2.7	.19	.47	.00	16
8	2.5	e.15	e.09	3.9	6.3	3.4	5.5	1.8	.16	.11	.00	6.3
9	1.9	.13	e.09	3.8	5.3	3.5	4.8	1.6	.13	.10	.01	4.2
10	.52	.12	e.20	3.1	5.0	4.3	4.1	2.0	.10	.07	.01	3.1
11	.19	e.12	e.10	2.8	4.5	4.0	3.7	2.0	.08	.05	.00	2.4
12	.10	e.11	e.09	3.0	4.4	3.5	3.7	1.1	.07	e.20	.00	1.7
13	.07	e.10	e5.0	3.8	4.6	3.2	3.2	1.0	.07	1.3	.00	1.3
14	.06	e.09	e2.8	4.1	4.3	6.9	3.1	45	.07	7.6	.01	1.2
15	.06	1.1	1.3	13	4.0	35	3.0	24	.07	2.7	.09	14
16	.06	1.2	6.8	9.1	4.0	13	3.2	6.5	.08	1.3	.08	311
17	.05	2.9	3.0	4.5	3.8	8.5	2.9	4.1	.17	.73	.06	23
18	.05	e.80	1.7	17	7.0	6.9	2.7	3.4	.13	.49	.04	9.2
19	.05	e.50	1.2	10	9.5	5.6	2.4	2.9	.09	.44	.03	6.2
20	.03	.45	1.1	6.4	24	4.7	2.3	2.5	.09	.28	.03	4.7
21	.02	.33	1.1	4.9	12	60	2.2	2.0	.10	.16	.04	4.1
22	.02	.25	1.3	4.2	7.8	36	1.9	1.8	.10	.14	.02	3.7
23	.02	.25	1.9	102	6.1	15	1.9	1.6	.09	.10	.01	2.9
24	.02	.25	e87	410	5.5	10	1.5	1.5	.07	.07	.01	2.5
25	.02	.19	25	55	5.1	9.5	1.3	1.2	e.08	.05	21	2.1
26	.03	.21	7.3	20	4.9	13	1.3	1.2	.09	.04	9.2	1.8
27	.03	.19	4.5	13	4.5	9.2	1.4	1.3	e.35	.04	3.3	3.1
28	.04	e.15	3.5	10	5.0	7.5	3.4	1.4	.19	.03	1.2	50
29	.03	e.10	2.9	8.3	---	6.2	e8.0	.99	.13	.03	.60	174
30	.03	e.09	2.4	6.7	---	5.4	67	.87	.11	.03	.26	433
31	.03	---	2.0	5.6	---	4.9	---	.66	---	.02	.13	---
TOTAL	6.07	12.41	163.01	898.4	238.1	312.0	288.1	148.42	4.77	17.04	36.21	1736.71
MEAN	.20	.41	5.26	29.0	8.50	10.1	9.60	4.79	.16	.55	1.17	57.9
MAX	2.5	2.9	.87	410	42	60	67	45	.47	7.6	21	433
MIN	.01	.02	.07	1.6	3.8	3.2	1.3	.66	.07	.02	.00	.03
CFSM	.01	.03	.34	1.87	.55	.65	.62	.31	.01	.04	.08	3.73
IN.	.01	.03	.39	2.16	.57	.75	.69	.36	.01	.04	.09	4.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1999,<sup>6</sup> BY WATER YEAR (WY)

	MEAN	7.76	6.96	11.5	27.5	33.6	31.1	18.1	9.43	7.83	8.43	7.47	7.83
MAX	56.6	33.0	53.4	80.4	81.0	74.8	48.3	39.1	48.0	66.6	55.3	75.2	
(WY)	1972	1980	1973	1978	1960	1998	1960	1978	1973	1975	1964	1996	
MIN	.003	.16	.79	1.27	5.18	4.80	2.45	1.59	.16	.098	.003	.000	
(WY)	1964	1974	1961	1981	1968	1981	1981	1981	1999	1966	1977	1980	

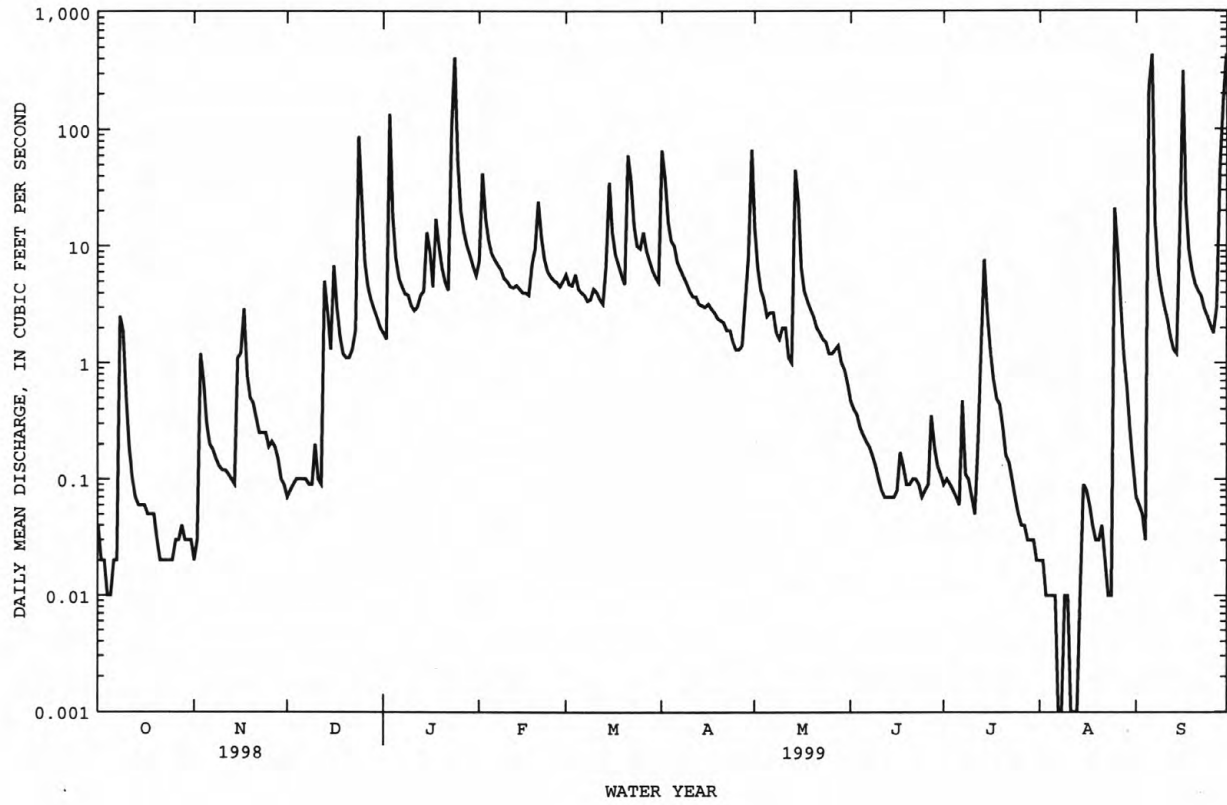
SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1958 - 1999 <sup>6</sup>
ANNUAL TOTAL	7490.92	3861.24	
ANNUAL MEAN	20.5	10.6	14.9
HIGHEST ANNUAL MEAN			26.5
LOWEST ANNUAL MEAN			3.84
HIGHEST DAILY MEAN	859	Mar 19	1570
LOWEST DAILY MEAN	.01	Sep 1	.00*
ANNUAL SEVEN-DAY MINIMUM	.01	Sep 23	.00*
INSTANTANEOUS PEAK FLOW			4010*
INSTANTANEOUS PEAK STAGE			7.27
INSTANTANEOUS LOW FLOW			.00*
ANNUAL RUNOFF (CFSM)	1.32		.68
ANNUAL RUNOFF (INCHES)	17.98		9.27
10 PERCENT EXCEEDS	32		13
50 PERCENT EXCEEDS	1.9		1.6
90 PERCENT EXCEEDS	.03		.03

e Estimated.

<sup>6</sup> See PERIOD OF RECORD.

\* See REMARKS.

02101800 TICK CREEK NEAR MOUNT VERNON SPRINGS, NC--Continued



## CAPE FEAR RIVER BASIN

02102000 DEEP RIVER AT MONCURE, NC

LOCATION.--Lat 35°37'38", long 79°06'58", Lee County, Hydrologic Unit 03030003, on right bank 1.0 mi upstream from Lockville Dam, 1.2 mi upstream from bridge on U.S. Highway 1, 1.5 mi northwest of Moncure, 2.2 mi downstream of Rocky River, and 4.5 mi upstream from confluence with Haw River.

DRAINAGE AREA.--1,434 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1930 to current year. Records for May 1898 to December 1899 published in 21st Annual Report, Part 4, and in Bulletins 34 and 39 of North Carolina Department of Conservation and Development have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1082: (1930-46 not previously published). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 185.06 ft above sea level. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diurnal fluctuation and some regulation at low flow caused by small power plants upstream from station. Minimum discharge for current water year also occurred Nov. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146	68	105	409	749	467	980	7310	172	141	101	201
2	180	67	118	248	2660	586	5970	3300	171	141	103	215
3	140	78	147	4920	3920	541	3770	1550	161	143	109	113
4	105	93	144	8260	2460	510	2040	994	151	155	104	84
5	99	111	140	3500	1570	541	1480	755	150	419	92	2310
6	98	90	137	1420	1140	481	1370	577	149	357	81	18300
7	94	152	132	884	881	500	1080	544	144	185	78	9200
8	202	171	123	693	800	545	917	522	141	172	81	2700
9	1110	135	117	635	732	431	821	430	143	169	93	1250
10	1100	127	113	375	672	473	646	433	139	172	110	764
11	528	115	106	488	580	383	749	449	133	170	101	533
12	305	105	103	431	524	488	572	341	131	188	86	320
13	159	99	143	420	479	446	508	309	130	202	78	434
14	239	99	228	362	615	567	475	406	125	247	77	282
15	123	108	300	331	413	3760	516	1860	122	496	315	257
16	204	115	570	1030	523	3890	485	2190	124	688	301	14300
17	126	119	689	1530	427	2120	487	1170	144	397	293	11800
18	107	241	1120	1460	439	1340	347	774	143	251	130	4390
19	105	224	738	2170	579	987	457	487	161	245	121	1420
20	105	250	376	1910	1390	840	359	483	161	166	217	861
21	97	173	301	1230	1910	3090	400	418	228	121	176	652
22	87	167	219	863	1400	6520	377	382	335	112	171	913
23	81	220	e330	848	975	4210	395	278	150	113	107	1350
24	78	192	e340	13200	767	2160	323	210	127	114	206	741
25	75	154	3350	15100	679	1430	293	342	126	229	130	484
26	75	139	3170	13400	599	1320	349	197	125	228	369	468
27	74	117	1480	4690	494	1410	258	255	132	170	567	305
28	74	110	930	1780	623	1180	306	234	144	127	1630	1390
29	72	107	624	1290	---	943	585	189	212	112	1250	9840
30	71	105	484	1030	---	809	3860	173	157	102	645	16600
31	69	---	467	828	---	718	---	266	---	99	409	---
TOTAL	6128	4051	17344	85735	29000	43686	31175	27828	4631	6631	8331	102477
MEAN	198	135	559	2766	1036	1409	1039	898	154	214	269	3416
MAX	1110	250	3350	15100	3920	6520	5970	7310	335	688	1630	18300
MIN	69	67	103	248	413	383	258	173	122	99	77	84
CFSM	.14	.09	.39	1.93	.72	.98	.72	.63	.11	.15	.19	2.38
IN.	.16	.11	.45	2.22	.75	1.13	.81	.72	.12	.17	.22	2.66

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1999, BY WATER YEAR (WY)

	MEAN	726	845	1317	2447	2896	2899	2066	1131	790	855	823	820
MAX	3590	4789	4765	7182	7945	7582	6455	3590	4147	5528	3861	10580	
(WY)	1965	1986	1973	1978	1960	1998	1936	1989	1982	1975	1931	1945	
MIN	28.2	14.1	34.6	130	424	566	393	193	135	79.7	75.2	24.1	
(WY)	1931	1942	1934	1934	1931	1981	1981	1981	1977	1986	1980	1968	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

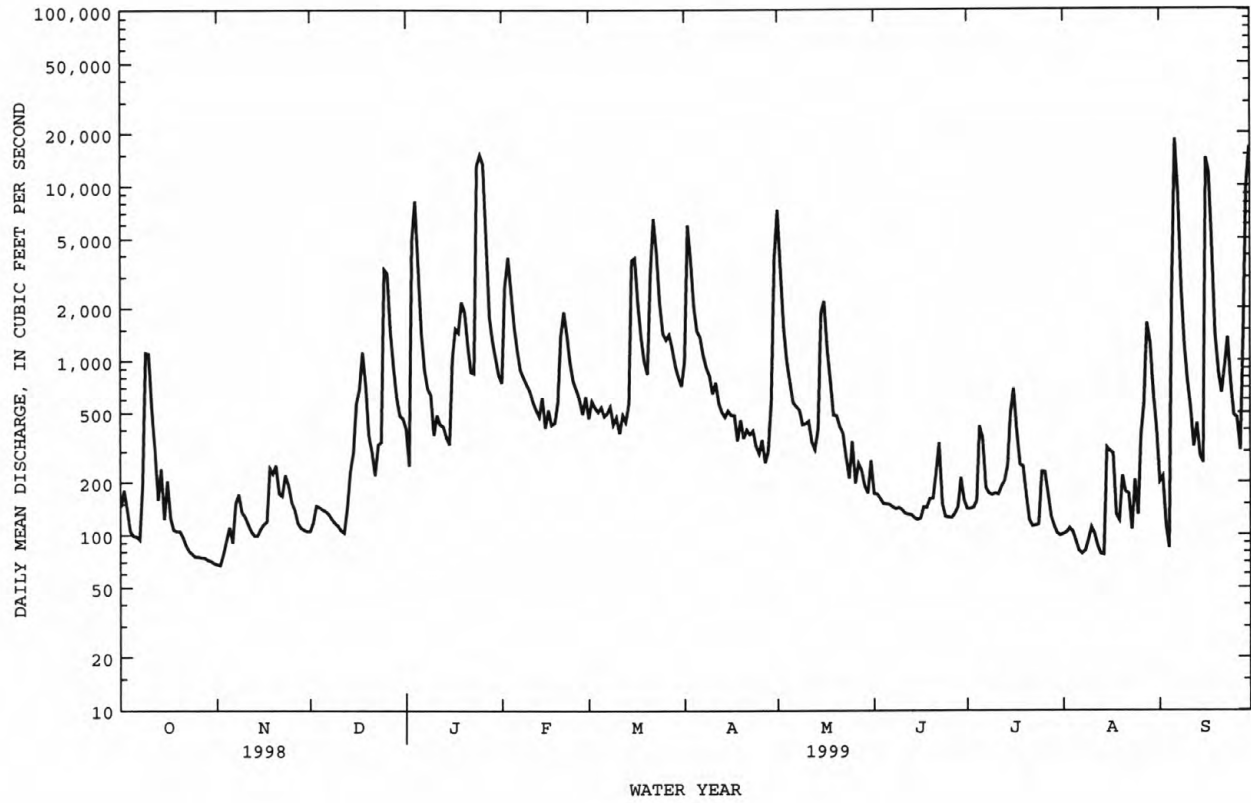
## WATER YEARS 1930 - 1999

ANNUAL TOTAL	824223						367017						
ANNUAL MEAN	2258						1006				1463		
HIGHEST ANNUAL MEAN											2711		1984
LOWEST ANNUAL MEAN											606		1988
HIGHEST DAILY MEAN	36800				Mar 19		18300		Sep 6		66400		Sep 18 1945
LOWEST DAILY MEAN	67				Nov 2		67		Nov 2		6.0		Oct 9 1954
ANNUAL SEVEN-DAY MINIMUM	71				Oct 27		71		Oct 27		6.6		Oct 8 1954
INSTANTANEOUS PEAK FLOW							23000		Sep 6		80300		Sep 18 1945
INSTANTANEOUS PEAK STAGE							9.15		Sep 6		17.20		Sep 18 1945
INSTANTANEOUS LOW FLOW							67*		Nov 1		5.5		Oct 10 1954
ANNUAL RUNOFF (CFSM)	1.57						.70				1.02		
ANNUAL RUNOFF (INCHES)	21.38						9.52				13.86		
10 PERCENT EXCEEDS	4920						1960				3340		
50 PERCENT EXCEEDS	510						342				539		
90 PERCENT EXCEEDS	99						104				100		

e Estimated.

\* See REMARKS.

02102000 DEEP RIVER AT MONCURE, NC--Continued



## 0210215985 CAPE FEAR RIVER AT STATE HIGHWAY 42 NEAR BRICKHAVEN, NC

LOCATION.--Lat 35°32'54", long 79°01'34", Chatham County, Hydrologic Unit 03030004, at bridge on State Highway 42, and 1.8 mi south of Brickhaven.

DRAINAGE AREA.--3,160 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1989 to current year.

REMARKS.--Station operated to define water quality as part of a six-county regional surface-water quality assessment. Daily mean discharge values were obtained from the U.S. Army Corps of Engineers reservoir releases from the B. Everett Jordan Lake at the 2400 hour and the daily mean discharge value from Deep River near Moncure (station 02102000). The values from these two sites were added together and entered as a daily mean discharge for each date and time that a water-quality sample was collected.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
OCT 28...	0845	601	231	7.3	17.7	30	762	6.1	64	31
DEC 14...	1030	518	266	7.2	12.4	30	764	7.1	66	34
FEB 23...	0945	3060	131	6.9	--	60	772	--	--	26
APR 09...	1400	3560	132	7.1	15.9	50	751	10.1	104	27
JUN 25...	0945	613	187	8.3	24.9	40	763	8.6	104	30
AUG 26...	0900	750	214	7.3	27.8	42	759	7.7	98	33

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE IT-FLD (MG/L AS HCO3) (99440)	ANC WATER UNFLTRD IT FIELD (MG/L AS CACO3) (00419)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 28...	7.4	3.1	30	64	2	4.5	44	18	27	22
DEC 14...	8.2	3.2	33	64	2	5.3	48	40	28	30
FEB 23...	6.3	2.6	13	48	1	2.9	--	--	14	13
APR 09...	6.6	2.6	14	50	1	2.7	30	25	13	11
JUN 25...	6.8	3.2	21	57	2	4.0	41	34	18	15
AUG 26...	7.5	3.4	26	59	2	4.9	50	41	20	21

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
OCT 28...	.24	3.8	137	.017	.344	.084	.68	.77	1.1	.067
DEC 14...	.27	3.4	182	.013	.558	.022	.68	.70	1.3	.075
FEB 23...	.13	9.6	94	.008	.709	.029	.61	.63	1.3	.096
APR 09...	.13	5.7	88	.007	.402	.123	.60	.72	1.1	.094
JUN 25...	.23	3.2	105	.001	.007	.004	.86	.86	.87	.118
AUG 26...	.25	3.9	121	.006	.073	.034	.88	.91	.99	.122



WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
8...	<.10	5	3	<1	<1	<10	7.4	6	9.7
4...	--	--	--	--	--	--	.80	5	7.0
3...	--	--	--	--	--	--	7.1	18	152
9...	<.10	1	<1	<1	<1	<40	10	14	136
5...	--	--	--	--	--	--	7.7	--	--
6...	--	--	--	--	--	--	9.8	5	11

02102192 BUCKHORN CREEK NEAR CORINTH, NC

LOCATION.--Lat 35°33'34", long 78°58'25", Chatham County, Hydrologic Unit 03030004, on left bank at upstream side of bridge on State Highway 42, 0.2 mi downstream of White Oak Creek, 1.2 mi downstream of Harris Lake, and 2 mi east of Corinth.

DRAINAGE AREA.--76.3 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1972 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 154.63 ft above sea level. Satellite telemetry at station.

REMARKS.--Records poor. Since Dec. 1, 1980, considerable regulation by Harris Lake (station 02102190). Maximum discharge prior to regulation: 6,920 ft<sup>3</sup>/s, Feb. 2, 1973; gage height: 20.02 ft. Minimum discharge prior to regulation: 0.01 ft<sup>3</sup>/s, Sept. 2, 1976.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	.75	1.7	1.8	6.2	6.3	25	17	.94	1.0	.16	.73
2	2.3	.73	1.5	1.9	22	5.6	32	13	.84	1.4	.13	.72
3	1.7	4.8	1.4	71	12	5.2	29	8.2	.80	.93	.10	.82
4	3.3	3.6	1.4	8.2	13	6.0	27	6.2	.79	.77	.09	1.3
5	4.6	2.1	.81	4.7	14	4.6	31	5.3	.73	.37	.09	47
6	3.0	2.2	.76	3.5	13	3.9	27	4.4	.60	.27	.09	136
7	2.7	2.1	.81	3.3	13	7.3	25	3.9	.55	.22	.08	8.4
8	22	2.8	.86	3.0	14	3.7	22	3.5	.55	.23	.12	4.4
9	4.7	3.2	.90	3.5	11	3.4	18	3.0	.50	.22	.77	3.3
10	2.0	3.3	.87	4.3	11	4.7	19	2.8	.47	.19	.49	3.2
11	1.5	4.6	.87	3.0	10	4.2	16	2.2	.49	.33	.24	2.4
12	1.3	6.0	.91	2.6	11	3.9	15	2.0	.52	2.5	.21	2.1
13	1.3	6.0	2.0	2.6	15	2.6	12	2.4	.76	2.3	.22	2.0
14	1.5	6.1	2.7	2.7	11	8.9	9.6	5.4	.77	6.8	1.6	2.4
15	1.5	6.8	1.7	6.4	8.3	42	8.7	7.9	.75	2.9	4.2	62
16	1.3	3.5	2.5	4.8	7.4	32	7.9	5.2	1.5	1.5	1.4	911
17	1.2	3.7	2.6	4.0	6.7	26	6.5	2.7	3.8	1.0	.67	551
18	1.2	2.8	1.9	8.1	12	20	5.9	2.0	2.1	.89	.49	e300
19	1.6	2.1	1.7	6.2	16	14	5.2	2.0	1.3	1.2	.38	e200
20	1.9	1.9	1.7	4.8	19	8.4	4.6	1.8	1.4	.85	.49	e70
21	2.1	1.6	1.7	4.2	21	21	4.3	1.6	1.6	1.1	4.3	e150
22	2.1	1.3	1.3	3.9	19	63	3.9	1.5	1.8	1.2	1.2	238
23	1.9	1.2	1.1	5.1	15	56	3.3	1.6	1.7	1.2	.51	178
24	1.8	1.3	11	103	14	49	4.3	1.4	1.4	1.0	.33	137
25	1.8	2.2	11	17	9.0	45	3.2	1.3	1.3	1.0	.71	106
26	1.7	3.5	5.0	7.7	6.4	50	2.5	1.4	1.7	.83	3.8	82
27	1.5	3.1	3.2	5.7	5.8	50	3.0	1.6	1.8	.70	3.1	279
28	1.4	2.2	2.6	4.8	6.0	42	6.6	1.4	.97	.57	1.2	557
29	1.2	1.8	2.3	12	---	35	13	1.5	1.0	.34	.67	710
30	.90	2.0	2.3	4.1	---	29	20	1.3	.79	.30	.97	913
31	.90	---	2.2	5.1	---	23	---	.96	---	.20	.76	---
TOTAL	81.50	89.28	73.29	323.0	341.8	675.7	410.5	116.46	34.22	34.31	29.57	5658.77
MEAN	2.63	2.98	2.36	10.4	12.2	21.8	13.7	3.76	1.14	1.11	.95	189
MAX	22	6.8	11	103	22	63	32	17	3.8	6.8	4.3	913
MIN	.90	.73	.76	1.8	5.8	2.6	2.5	.96	.47	.19	.08	.72
CFSM	.03	.04	.03	.14	.16	.29	.18	.05	.01	.01	.01	2.47
IN.	.04	.04	.04	.16	.17	.33	.20	.06	.02	.02	.01	2.76

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1999, \* BY WATER YEAR (WY)

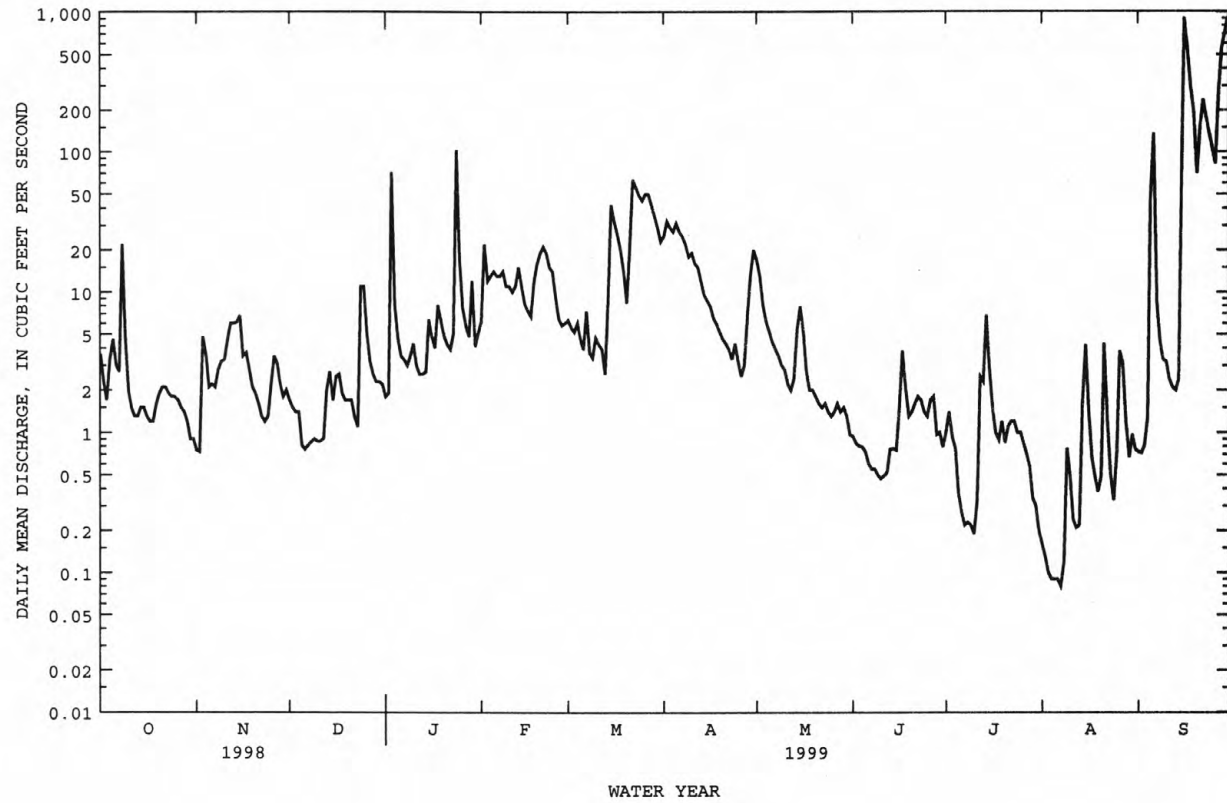
	MEAN	16.5	24.1	33.0	67.2	102	138	89.7	44.2	25.2	20.3	17.8	31.6
MAX	128	146	143	241	348	421	312	184	138	102	199	335	
(WY)	1996	1996	1984	1984	1998	1998	1993	1989	1984	1989	1986	1996	
MIN	.70	.81	1.40	2.48	1.37	1.66	1.13	1.56	.67	.34	.65	.88	
(WY)	1982	1992	1992	1992	1992	1992	1992	1992	1981	1981	1998	1981	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1981 - 1999*
ANNUAL TOTAL	35575.63	7868.40	
ANNUAL MEAN	97.5	21.6	50.5
HIGHEST ANNUAL MEAN			126
LOWEST ANNUAL MEAN			2.47
HIGHEST DAILY MEAN	1190	913	1940
LOWEST DAILY MEAN	.28	.08	.08
ANNUAL SEVEN-DAY MINIMUM	.34	.10	.10
INSTANTANEOUS PEAK FLOW		1480	4300
INSTANTANEOUS PEAK STAGE		9.51	16.79
INSTANTANEOUS LOW FLOW		.08	.05
ANNUAL RUNOFF (CFSM)	1.28	.28	.66
ANNUAL RUNOFF (INCHES)	17.34	3.84	8.98
10 PERCENT EXCEEDS	287	26	153
50 PERCENT EXCEEDS	4.2	2.7	7.6
90 PERCENT EXCEEDS	.61	.67	.69

e Estimated.

\* Regulated period only (1981-1999). See REMARKS.

02102192 BUCKHORN CREEK NEAR CORINTH, NC--Continued



## CAPE FEAR RIVER BASIN

02102500 CAPE FEAR RIVER AT LILLINGTON, NC

LOCATION.--Lat 35°24'22", long 78°48'48", Harnett County, Hydrologic Unit 03030004, on right bank 60 ft downstream of downstream bridge on U.S. Highway 401, 1,860 ft downstream of Southern Railway bridge, 0.5 mi north of Lillington, 1 mile downstream of Neal Creek, and at mile 178.

DRAINAGE AREA.--3,464 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1923 to current year.

REVISED RECORDS.--WSP 1002: 1930(M). WSP 1032: 1942(m). WSP 1303: 1944(M). WSP 1333: 1945. WSP 1383:

GAGE.--Water-stage recorder. Datum of gage is 104.62 ft above sea level. Dec. 6, 1923, to Oct. 7, 1927, nonrecording gage and Oct. 8, 1927, to Dec. 2, 1975, water-stage recorder at site 60 ft upstream in bridge pier at same datum. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation at high flows, December 1972 to August 1981, caused by temporary storage in B. Everett Jordan Lake. Flow regulated since Sept. 1981 by B. Everett Jordan Lake (station 02098197). Diurnal fluctuation and slight regulation at low flow caused by power plants upstream from station. Fluctuation and regulation by Buckhorn Reservoir, 13 mi upstream from station, ended in December 1962. Prior to regulation, maximum discharge: 150,000 ft<sup>3</sup>/s, Sept. 19, 1945, from rating curve extended above 76,000 ft<sup>3</sup>/s; gage height: 33.19 ft, from floodmark; minimum discharge: 11 ft<sup>3</sup>/s, Oct. 14, 15, 1954; gage height: -0.17 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	624	471	441	735	6440	964	2870	e8000	505	554	503	506
2	640	480	424	672	7070	1400	4770	e5000	565	621	488	398
3	628	550	427	3440	7100	1800	5350	e6000	551	576	596	467
4	595	536	453	9210	7240	926	3370	6040	534	560	634	e570
5	578	499	444	5430	6270	907	4220	6110	459	631	559	e900
6	574	489	443	2150	6700	867	3980	6500	482	756	560	e16000
7	553	471	403	1580	6290	838	3760	3530	480	580	555	e14000
8	726	521	441	1280	6080	858	3480	883	586	560	581	8250
9	1220	531	454	1260	5000	884	3370	774	569	555	603	11200
10	1380	509	437	1090	2140	884	2920	712	600	549	594	11300
11	919	506	432	1080	1140	1160	3140	720	633	563	572	8200
12	564	504	416	1130	1010	1150	2850	678	635	653	559	4240
13	661	487	463	1230	1050	1180	1860	661	623	571	562	1130
14	591	423	528	900	950	1190	946	710	553	817	584	1140
15	606	431	522	1400	1010	4430	885	1580	536	745	696	e1800
16	555	424	624	1420	865	5560	897	2370	614	889	538	e25000
17	577	590	821	2420	932	4510	810	1710	686	742	686	18100
18	549	605	986	2540	933	4020	860	1300	390	502	571	10100
19	533	676	1060	3170	1340	3560	764	1580	304	624	451	8540
20	519	665	740	3130	2600	3230	780	1930	498	619	533	10300
21	536	675	442	2810	3390	3210	787	2380	607	592	703	5970
22	532	605	517	3500	3170	8050	759	1660	658	560	599	7070
23	517	617	473	3290	3190	7280	732	1480	569	520	574	11900
24	517	568	702	11700	2250	5390	697	617	460	507	568	12400
25	515	506	2230	18000	1470	4240	660	543	498	527	633	9470
26	517	495	3990	15100	1390	3480	613	590	541	608	761	7100
27	518	472	2220	10900	1010	3340	668	533	553	603	800	5910
28	519	447	1360	7780	896	3940	620	521	594	584	1290	5540
29	508	439	948	7160	---	3590	937	426	618	552	1710	9940
30	505	467	745	6990	---	3320	e2500	371	617	517	e1200	18000
31	477	---	577	6620	---	3170	---	460	---	501	e602	---
TOTAL	19253	15659	25163	139117	88926	89328	60855	66369	16518	18738	20865	245441
MEAN	621	522	812	4488	3176	2882	2028	2141	551	604	673	8181
MAX	1380	676	3990	18000	7240	8050	5350	8000	686	889	1710	25000
MIN	477	423	403	672	865	838	613	371	304	501	451	398

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1999\*, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	1843	2036	2753	5680	6652	7777	5016	2767	2318	1771	1639	1987						
MAX	6442	7919	8595	11750	16440	15710	11670	7784	12510	5694	5448	13920						
(WY)	1990	1986	1984	1998	1998	1993	1993	1989	1982	1995	1985	1996						
MIN	621	522	723	1373	1860	1628	969	824	551	604	634	596						
(WY)	1999	1999	1995	1986	1986	1988	1985	1986	1999	1999	1983	1990						

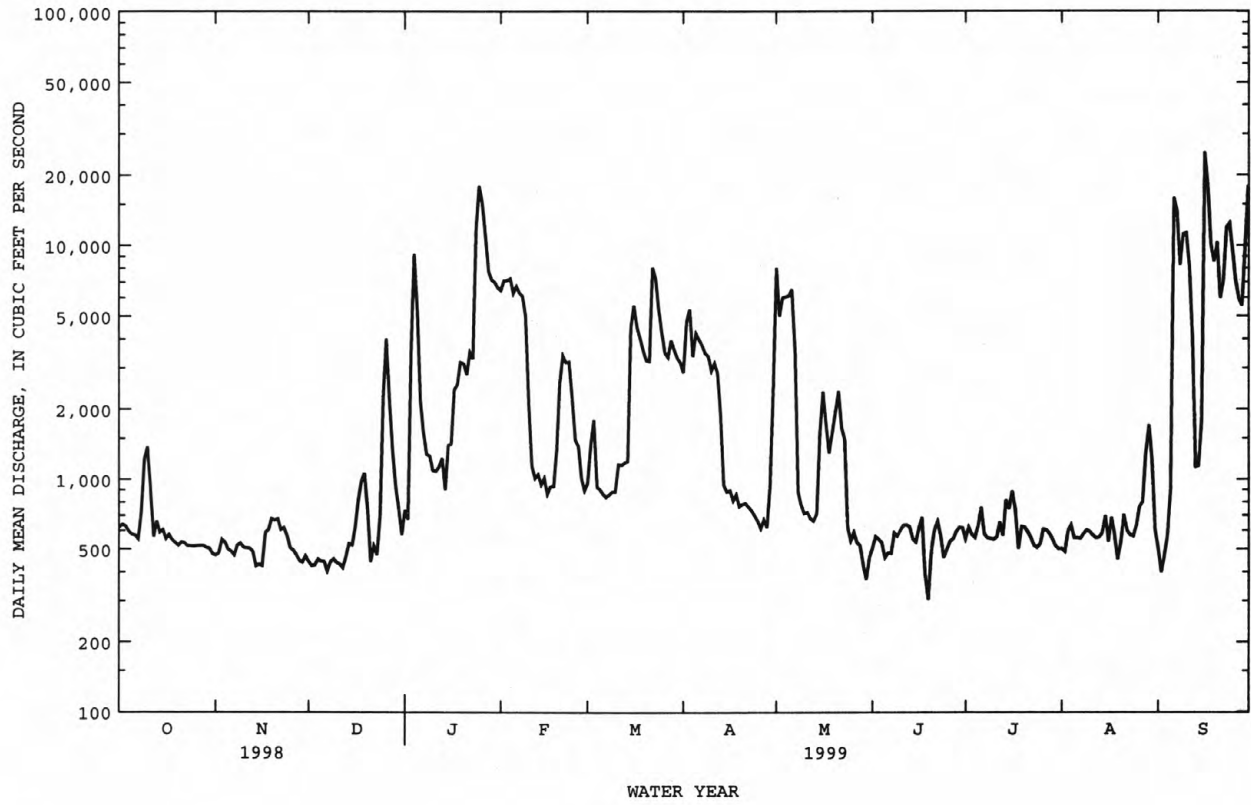
SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1982 - 1999*
ANNUAL TOTAL	1730120	806232	
ANNUAL MEAN	4740	2209	3504
HIGHEST ANNUAL MEAN			6167
LOWEST ANNUAL MEAN			1488
HIGHEST DAILY MEAN	38000	25000	41400
LOWEST DAILY MEAN	297	304	210
ANNUAL SEVEN-DAY MINIMUM	432	432	223
INSTANTANEOUS PEAK FLOW		29800	51800
INSTANTANEOUS PEAK STAGE		14.46	18.97
INSTANTANEOUS LOW FLOW		285	190
10 PERCENT EXCEEDS	16000	6350	10400
50 PERCENT EXCEEDS	861	720	1270
90 PERCENT EXCEEDS	497	480	605

e Estimated.

\* Regulated period only (1982-1999). See REMARKS.

02102500 CAPE FEAR RIVER AT LILLINGTON, NC--Continued





## CAPE FEAR RIVER BASIN

02102908 FLAT CREEK NEAR INVERNESS, NC

LOCATION.--Lat 35°10'54", long 79°10'40", Hoke County, Hydrologic Unit 03030004, on left bank 15 ft downstream of culvert on Manchester Road, Fort Bragg military reservation, 0.4 mi upstream from mouth, and 3.6 mi east of Inverness.

DRAINAGE AREA.--7.63 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1968 to current year.

REVISED RECORDS.--WDR NC-72-1: 1968-70 (M). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 191.18 ft above sea level. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Some diurnal fluctuation at low flow during growing season. Minimum discharge some years affected by regulation from unknown source. Minimum discharge for period of record also occurred June 8, 25, 1988. Minimum discharge for the current water year also occurred July 10, 11, Aug. 8, 9, 12, 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	5.8	6.7	7.4	14	9.0	11	13	4.8	6.4	3.7	3.9
2	6.8	5.9	6.6	8.1	31	8.7	12	9.6	4.6	5.5	3.4	3.6
3	6.2	12	6.6	39	16	8.7	9.0	7.8	4.6	4.5	3.3	3.5
4	6.5	12	6.5	21	14	9.3	8.4	6.9	4.7	3.9	3.3	3.7
5	7.0	8.1	6.4	11	12	8.4	7.9	6.6	4.4	3.7	3.3	9.7
6	6.9	7.1	6.6	10	11	8.4	7.8	6.8	4.3	3.5	3.4	40
7	6.4	6.8	6.4	10	11	8.1	7.9	6.6	4.3	3.5	3.4	15
8	9.4	6.8	6.4	9.6	10	8.0	7.6	6.3	4.1	3.4	3.3	8.0
9	9.6	6.9	6.4	9.6	9.8	9.6	7.4	5.7	4.0	3.4	3.7	6.6
10	7.5	6.9	6.3	9.2	9.9	11	7.0	5.5	4.0	3.1	4.0	6.2
11	7.1	6.8	6.3	8.7	9.8	9.1	7.2	5.5	4.9	4.0	3.4	5.2
12	6.9	6.8	6.3	8.7	10	8.4	8.6	5.9	4.9	13	3.1	4.7
13	6.8	6.7	8.3	8.4	12	8.2	7.1	12	4.2	9.2	3.1	4.5
14	6.7	6.8	9.0	8.2	10	14	6.9	28	3.9	17	3.6	4.8
15	6.4	11	7.3	23	9.8	23	7.0	62	4.1	9.0	15	12
16	6.4	8.4	14	14	9.7	12	7.2	14	5.4	6.3	7.0	106
17	6.4	11	8.7	10	9.5	9.8	6.6	11	9.4	5.2	4.8	26
18	6.5	8.1	7.3	15	9.9	9.0	6.6	9.6	6.1	4.8	4.0	12
19	6.5	7.4	7.1	12	10	8.4	6.7	8.7	4.4	4.4	3.6	10
20	6.5	7.5	7.1	9.9	12	8.3	6.6	8.3	4.9	4.0	4.5	9.6
21	6.3	7.3	7.1	9.4	10	13	6.5	7.3	6.5	3.8	5.9	16
22	6.3	7.1	7.6	9.3	9.4	13	6.4	6.9	5.9	3.7	4.6	36
23	6.2	7.0	7.6	11	9.4	9.3	6.0	7.0	5.3	3.5	4.1	16
24	6.3	7.1	20	43	9.4	8.7	6.0	6.4	4.4	9.8	3.9	11
25	5.9	6.9	27	30	9.4	8.5	6.4	6.0	4.3	28	4.8	9.7
26	5.7	11	12	14	9.4	14	6.1	6.3	4.8	8.3	8.1	9.4
27	5.7	8.2	9.4	12	9.1	14	6.8	6.6	4.8	5.3	8.0	16
28	5.7	7.1	8.7	12	9.3	9.6	8.3	5.6	4.9	4.6	8.3	40
29	5.5	7.0	8.4	11	---	8.6	21	5.2	7.4	4.4	5.6	52
30	5.6	6.8	8.1	11	---	8.0	28	5.1	11	4.7	4.6	46
31	5.8	---	7.6	10	---	7.8	---	5.1	---	4.1	4.0	---
TOTAL	206.9	234.3	269.8	425.5	316.8	313.9	258.0	307.3	155.3	198.0	148.8	547.1
MEAN	6.67	7.81	8.70	13.7	11.3	10.1	8.60	9.91	5.18	6.39	4.80	18.2
MAX	9.6	12	27	43	31	23	28	62	11	28	15	106
MIN	5.5	5.8	6.3	7.4	9.1	7.8	6.0	5.1	3.9	3.1	3.1	3.5
CFSM	.87	1.02	1.14	1.80	1.48	1.33	1.13	1.30	.68	.84	.63	2.39
IN.	1.01	1.14	1.32	2.07	1.54	1.53	1.26	1.50	.76	.97	.73	2.67

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

	MEAN	10.5	11.3	12.1	14.4	15.5	17.5	16.7	11.3	10.9	11.0	9.86	10.3
MAX	19.9	20.5	19.5	20.2	32.0	73.6	106	18.9	25.3	24.5	16.4	22.3	
(WY)	1972	1980	1973	1975	1973	1974	1974	1973	1995	1989	1974	1996	
MIN	5.73	6.10	7.64	8.69	9.76	8.77	6.50	6.59	4.85	4.70	4.80	4.35	
(WY)	1987	1982	1971	1969	1989	1981	1981	1988	1981	1986	1999	1968	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

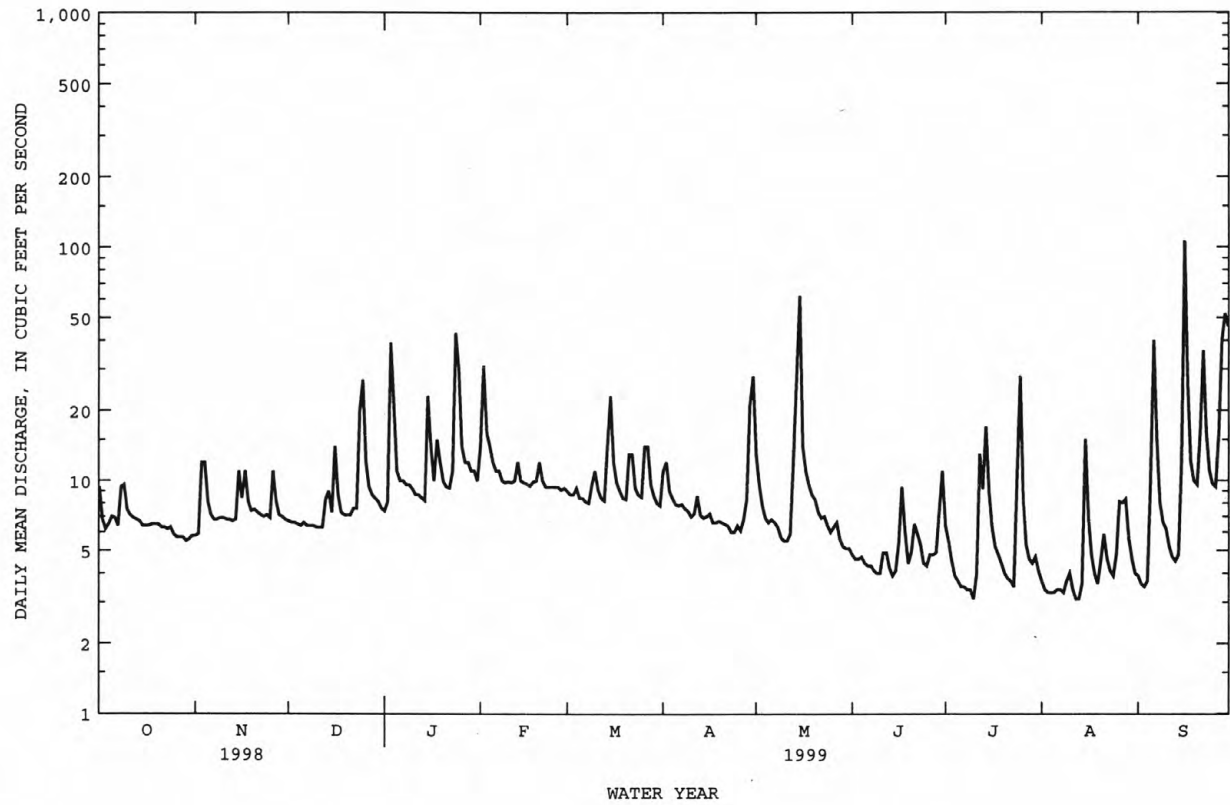
FOR 1999 WATER YEAR

WATER YEARS 1968 - 1999

ANNUAL TOTAL	5297.4	3381.7	
ANNUAL MEAN	14.5	9.26	12.6
HIGHEST ANNUAL MEAN			26.3
LOWEST ANNUAL MEAN			8.12
HIGHEST DAILY MEAN	97	Apr 9	314
LOWEST DAILY MEAN	5.4	Sep 27	2.2
ANNUAL SEVEN-DAY MINIMUM	5.7	Sep 23	3.2
INSTANTANEOUS PEAK FLOW			394
INSTANTANEOUS PEAK STAGE			7.30
INSTANTANEOUS LOW FLOW			1.9*
ANNUAL RUNOFF (CFSM)	1.90	1.21	1.65
ANNUAL RUNOFF (INCHES)	25.83	16.49	22.47
10 PERCENT EXCEEDS	25	14	20
50 PERCENT EXCEEDS	10	7.2	9.9
90 PERCENT EXCEEDS	6.2	4.0	5.7

\* See REMARKS.

02102908 FLAT CREEK NEAR INVERNESS, NC--Continued



## CAPE FEAR RIVER BASIN

02104000 CAPE FEAR RIVER AT FAYETTEVILLE, NC

LOCATION.--Lat 35°02'49", long 78°51'36", Cumberland County, Hydrologic Unit 03030004, at NC Highway 24 bridge at Fayetteville, 700 ft upstream of Atlantic Coast Railroad bridge, 0.3 mi downstream of Cross Creek.

DRAINAGE AREA.--4,395 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year. Discharge records January 1889 to September 1917, and October 1928 to September 1940.

GAGE.--Water-stage recorder. Datum of gage is 20.52 ft above sea level. Satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum, 48.3 ft, Sept. 24, 1945.

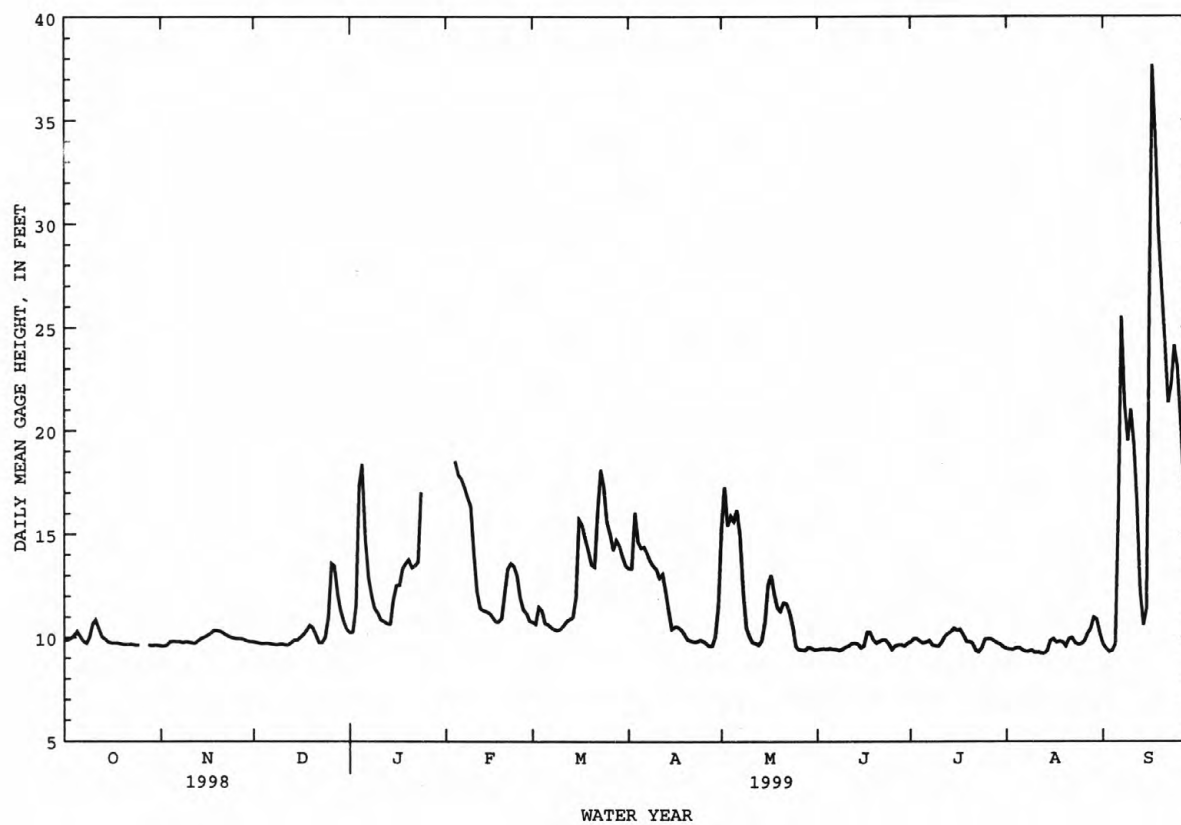
EXTREMES FOR PERIOD OF RECORD.--Maximum, 46.17 ft, Sept. 7, 1996; minimum not determined

EXTREMES FOR CURRENT YEAR.--Maximum, 38.38 ft, Sept. 17; minimum, 9.23 ft, Aug. 13, 14.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.86	9.59	9.79	10.22	---	10.75	13.36	15.28	9.41	9.79	9.47	9.68
2	9.88	9.60	9.75	10.26	---	10.65	13.34	17.27	9.45	9.94	9.44	9.47
3	9.97	9.63	9.71	11.55	---	11.47	16.06	15.41	9.47	9.95	9.42	9.31
4	10.11	9.80	9.70	17.34	18.52	11.31	14.63	15.89	9.44	9.82	9.50	9.36
5	10.30	9.83	9.71	18.37	17.84	10.68	14.34	15.63	9.48	9.73	9.51	9.68
6	10.04	9.80	9.70	14.79	17.66	10.63	14.39	16.17	9.43	9.78	9.40	16.00
7	9.81	9.80	9.69	12.89	17.25	10.47	14.08	14.99	9.43	9.86	9.33	25.51
8	9.71	9.75	9.65	12.00	16.76	10.40	13.71	12.16	9.37	9.64	9.33	21.23
9	10.01	9.79	9.66	11.40	16.36	10.35	13.47	10.46	9.43	9.60	9.38	19.48
10	10.67	9.77	9.68	11.18	14.14	10.41	13.30	10.04	9.53	9.58	9.27	21.00
11	10.86	9.74	9.65	10.85	12.26	10.57	12.89	9.76	9.59	9.76	9.30	19.29
12	10.41	9.71	9.63	10.78	11.41	10.80	13.07	9.73	9.71	10.04	9.25	16.46
13	10.03	9.84	9.75	10.66	11.31	10.88	12.23	9.64	9.73	10.18	9.23	12.28
14	9.91	9.95	9.87	10.65	11.25	10.98	11.27	9.85	9.69	10.28	9.34	10.59
15	9.79	10.02	9.87	11.79	11.18	11.97	10.42	10.77	9.50	10.45	9.84	11.37
16	9.74	10.08	9.99	12.52	11.00	15.71	10.53	12.55	9.61	10.36	9.93	26.03
17	9.73	10.19	10.16	12.53	10.78	15.46	10.51	13.02	10.26	10.40	9.77	37.66
18	9.74	10.33	10.35	13.30	10.76	14.79	10.38	12.13	10.25	10.13	9.82	34.15
19	9.70	10.33	10.59	13.57	10.93	14.18	10.17	11.44	9.89	9.81	9.78	29.62
20	9.67	10.31	10.47	13.76	12.16	13.53	9.91	11.28	9.73	9.81	9.58	27.05
21	9.66	10.23	10.12	13.38	13.32	13.41	9.86	11.70	9.83	9.72	9.93	24.18
22	9.66	10.14	9.75	13.46	13.58	16.08	9.80	11.64	9.89	9.37	9.99	21.33
23	9.66	10.04	9.75	13.65	13.44	18.11	9.79	11.18	9.88	9.31	9.74	22.22
24	9.64	10.00	9.99	17.01	12.99	17.29	9.89	10.50	9.69	9.50	9.65	24.12
25	9.64	9.95	10.99	---	11.96	15.61	9.84	9.56	9.42	9.91	9.69	23.07
26	---	9.94	13.57	---	11.34	15.01	9.73	9.42	9.59	9.94	9.82	20.45
27	---	9.93	13.45	---	11.17	14.23	9.60	9.40	9.65	9.92	10.18	17.56
28	9.63	9.89	12.08	---	10.81	14.71	9.59	9.38	9.66	9.83	10.42	17.94
29	9.62	9.83	11.30	---	---	14.45	10.04	9.53	9.59	9.73	10.97	22.79
30	9.64	9.80	10.75	---	---	13.93	11.47	9.49	9.72	9.67	10.88	28.55
31	9.63	---	10.38	---	---	13.48	---	9.40	---	9.53	10.18	---
MEAN	---	9.92	10.31	---	---	12.98	11.72	11.76	9.64	9.85	9.72	19.91
MAX	---	10.33	13.57	---	---	18.11	16.06	17.27	10.26	10.45	10.97	37.66
MIN	---	9.59	9.63	---	---	10.35	9.59	9.38	9.37	9.31	9.23	9.31

02104000 CAPE FEAR RIVER AT FAYETTEVILLE, NC--Continued



## CAPE FEAR RIVER BASIN

02104220 ROCKFISH CREEK AT RAEFORD, NC

LOCATION.--Lat 34°59'55", long 79°12'55", Hoke County, Hydrologic Unit 03030004, at upstream side of bridge on U.S. Highway 401, 1.0 mi downstream of Nicholson's Creek, and 1.0 mile north of Raeford.

DRAINAGE AREA.--93.1 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 178 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189	70	81	98	119	100	96	226	50	83	47	59
2	165	71	81	97	184	96	125	222	49	68	41	57
3	100	84	80	176	218	93	117	151	48	58	38	55
4	85	116	80	246	199	98	101	96	50	51	37	54
5	94	109	79	256	163	97	94	85	48	46	36	65
6	91	92	80	206	128	93	90	83	46	44	36	161
7	84	85	80	131	119	93	90	81	45	43	36	244
8	81	82	79	115	115	89	88	79	44	41	35	294
9	104	82	79	113	110	92	87	79	43	41	35	175
10	98	83	78	110	108	113	85	71	43	39	38	96
11	82	83	78	105	106	106	87	69	53	54	37	84
12	77	83	78	102	106	98	114	68	50	93	36	72
13	74	82	84	100	114	94	96	76	46	110	34	67
14	72	82	101	99	109	104	86	99	45	125	35	64
15	70	104	93	130	103	151	84	282	44	120	62	88
16	68	109	122	162	100	154	85	529	60	85	81	480
17	67	136	127	151	99	133	81	276	150	67	67	760
18	68	128	103	148	102	106	78	166	111	59	59	415
19	68	99	90	147	106	97	77	95	69	55	63	261
20	69	92	88	123	122	93	76	85	60	51	59	147
21	69	90	87	110	117	110	75	75	65	50	102	135
22	70	86	87	105	105	148	73	68	68	49	85	160
23	69	84	89	112	100	138	71	65	62	47	68	169
24	69	84	e130	217	99	108	70	62	54	48	61	137
25	70	83	e180	321	98	98	72	60	50	132	59	107
26	70	91	e200	346	98	129	69	58	51	170	82	98
27	69	98	e180	263	97	136	73	60	53	150	84	106
28	69	88	e140	176	97	118	76	57	55	63	93	166
29	69	84	112	131	---	104	124	54	55	53	102	289
30	69	82	106	121	---	97	181	57	88	82	77	432
31	69	---	100	116	---	92	---	52	---	61	64	---
TOTAL	2568	2742	3172	4833	3341	3378	2721	3586	1755	2238	1789	5497
MEAN	82.8	91.4	102	156	119	109	90.7	116	58.5	72.2	57.7	183
MAX	189	136	200	346	218	154	181	529	150	170	102	760
MIN	67	70	78	97	97	89	69	52	43	39	34	54
CFSM	.89	.98	1.10	1.67	1.28	1.17	.97	1.24	.63	.78	.62	1.97
IN.	1.03	1.10	1.27	1.93	1.33	1.35	1.09	1.43	.70	.89	.71	2.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1999, BY WATER YEAR (WY)

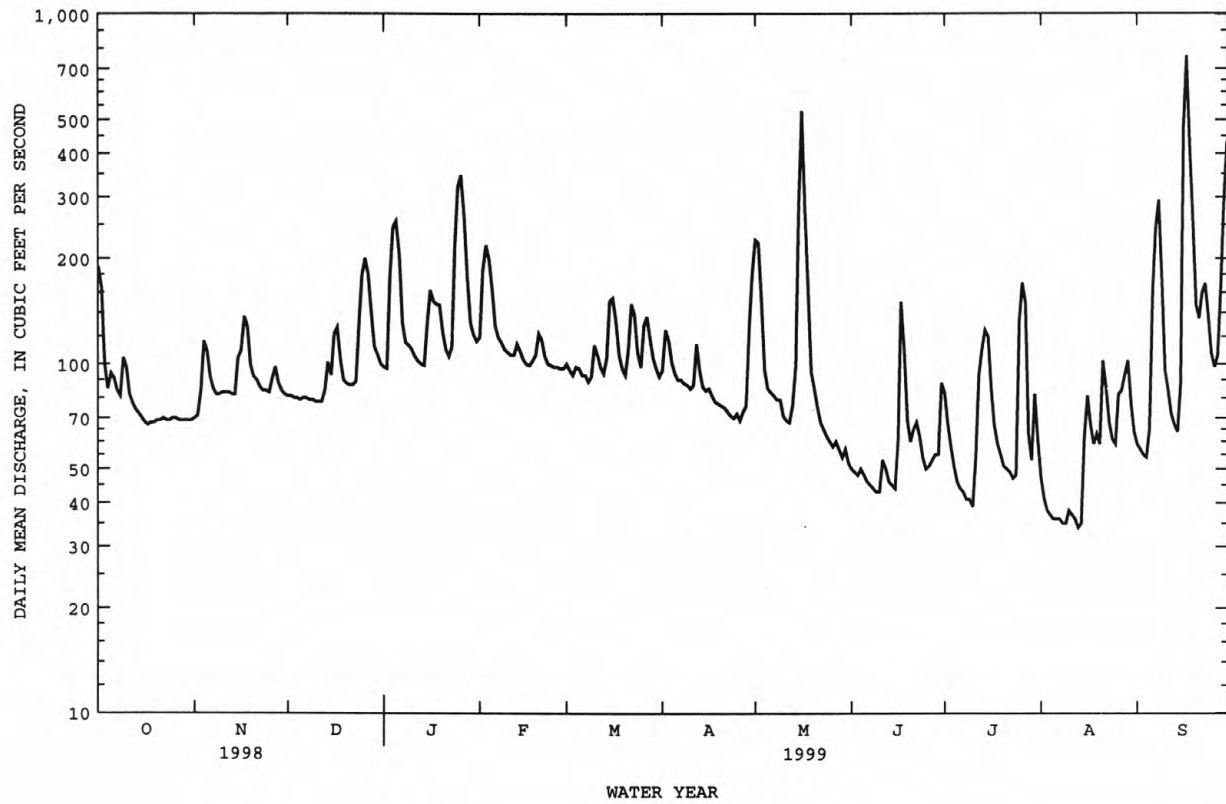
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	116	120	117	146	144	162	144	113	95.4	96.8	101	111
MAX	201	169	186	209	291	289	305	182	175	224	176	247
(WY)	1990	1990	1990	1998	1998	1998	1998	1989	1989	1989	1989	1996
MIN	72.0	87.7	84.0	95.7	94.7	97.0	88.3	72.5	58.5	54.4	57.7	59.9
(WY)	1993	1991	1989	1992	1992	1992	1992	1994	1999	1992	1999	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1988 - 1999
ANNUAL TOTAL	57870	37620	
ANNUAL MEAN	159	103	123
HIGHEST ANNUAL MEAN			167
LOWEST ANNUAL MEAN			88.8
HIGHEST DAILY MEAN	753	Apr 10	760
LOWEST DAILY MEAN	49	Jul 14	34
ANNUAL SEVEN-DAY MINIMUM	50	Jul 10	36
INSTANTANEOUS PEAK FLOW			866
INSTANTANEOUS PEAK STAGE			8.02
INSTANTANEOUS LOW FLOW			34
ANNUAL RUNOFF (CFSM)	1.70	1.11	1.32
ANNUAL RUNOFF (INCHES)	23.12	15.03	17.88
10 PERCENT EXCEEDS	302	164	203
50 PERCENT EXCEEDS	116	87	101
90 PERCENT EXCEEDS	69	50	59

e Estimated.



02104220 ROCKFISH CREEK AT RAEFORD, NC--Continued



## CAPE FEAR RIVER BASIN

02105500 CAPE FEAR RIVER AT WILLIAM O. HUSKE LOCK NEAR TARHEEL, NC

LOCATION.--Lat 34°50'05", long 78°49'27", Bladen County, Hydrologic Unit 03030005, on right bank 100 ft upstream from William O. Huske Lock, 1 mi downstream of Cumberland-Bladen County line, 7 mi north of Tar Heel, 9 mi upstream from Phillips Creek, and at mile 123.

DRAINAGE AREA.--4,852 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1937 to current year. Prior to October 1964, published as "Cape Fear River at Lock 3 near Tarheel".

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder and concrete lock and dam control. Datum of gage is 28.97 ft above sea level. Prior to Jan. 8, 1939, nonrecording gage on upper lock wall 100 ft downstream at same datum. Auxiliary water-stage recorder 1.8 mi downstream of base gage; prior to Jan. 14, 1943, auxiliary nonrecording gage 400 ft downstream on lower end of lock wall; Jan. 14, 1943, to Sept. 30, 1953, auxiliary water-stage recorder at site 600 ft downstream. U.S. Army Corps of Engineers satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Slight regulation at high flow, December 1972 to August 1981, caused by temporary storage in B. Everett Jordan Lake. Flow regulated since September 1981 by B. Everett Jordan Lake (station 02098197). Slight diurnal fluctuation and some regulation for short periods at low flow caused by power plants above station. Prior to regulation, maximum discharge not determined; minimum discharge, 170 ft<sup>3</sup>/s, Sep. 20, 1950. Minimum discharge during regulation from unknown source.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1090	867	1050	1420	8590	1810	4360	6640	673	987	768	963
2	1100	878	998	1470	9480	1680	4340	9470	700	1170	752	780
3	1180	905	960	2530	10600	2310	7470	7190	730	1210	729	639
4	1310	1040	957	9050	10600	2380	6180	7270	732	1070	785	684
5	1520	1090	959	11000	9870	1800	5480	7040	783	1000	770	873
6	1280	1060	949	6430	9400	1740	5630	7480	734	1020	692	6300
7	1020	1050	938	4070	8960	1650	5210	6450	724	1080	601	23000
8	931	996	905	3090	8340	1530	4760	3510	643	904	615	13200
9	1170	1030	938	2450	7920	1440	4490	1650	723	856	633	11400
10	1760	1000	942	2250	5580	1510	4530	1210	811	840	435	13200
11	2010	975	916	1930	3320	1620	4010	930	870	1000	483	11100
12	1610	974	900	1820	2410	1870	4220	897	980	1250	235	8390
13	1250	1060	1010	1720	2360	1980	3300	825	987	1410	154	3790
14	1120	1160	1130	1710	2320	2050	2280	992	931	1490	567	1720
15	1020	1230	1110	2730	2220	2850	1440	1890	766	1660	1050	2460
16	979	1290	1220	3680	2070	7030	1610	3760	867	1560	1160	22000
17	976	1370	1340	3570	1820	6940	1630	4400	1520	1580	998	35600
18	983	1500	1530	4500	1830	6100	1570	3280	1550	1350	1060	25500
19	955	1510	1720	4820	1980	5410	1320	2440	1190	1050	1030	18500
20	930	1480	1660	5020	3100	4700	1020	2240	1030	1070	848	17600
21	914	1420	1340	4570	4390	4480	1010	2600	1090	969	1190	12300
22	932	1340	988	4520	4750	7110	923	2770	1160	500	1240	7770
23	921	1240	980	4830	4460	10000	959	2270	1150	359	997	13600
24	899	1210	1280	8350	4070	9270	1090	1610	955	739	918	16000
25	904	1170	2060	23200	3000	7270	1060	747	690	1170	940	14400
26	901	1160	4790	21200	2370	6440	919	615	872	1210	1050	11100
27	894	1160	4980	19400	2240	5600	792	595	909	1180	1360	8100
28	888	1120	3350	13600	1910	6010	752	602	902	1100	1590	9960
29	900	1070	2500	10300	---	5800	1120	805	810	1010	2060	16700
30	906	1040	1960	9920	---	5140	2410	780	938	935	2100	22800
31	906	---	1590	9230	---	4520	---	639	---	823	1410	---
TOTAL	34159	34395	47950	204380	139960	130040	85885	93597	27420	33552	29220	350429
MEAN	1102	1146	1547	6593	4999	4195	2863	3019	914	1082	943	11680
MAX	2010	1510	4980	23200	10600	10000	7470	9470	1550	1660	2100	35600
MIN	888	867	900	1420	1820	1440	752	595	643	359	154	639

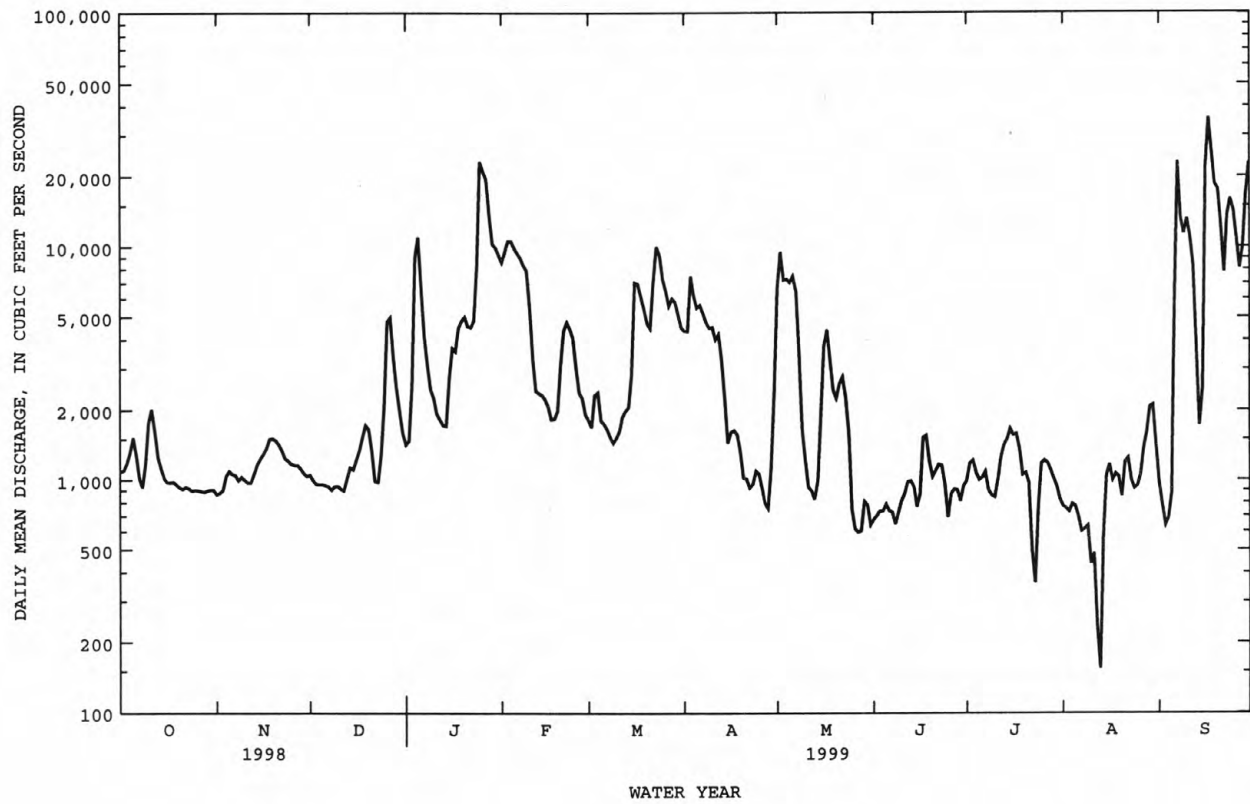
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1999,\* BY WATER YEAR (WY)

	MEAN	2763	3128	4151	7999	9063	10510	6867	3932	3372	2942	2603	3117
MAX	8666	10190	11360	17240	24770	21520	15410	11770	14200	9262	7358	18950	
(WY)	1990	1996	1984	1998	1998	1998	1993	1989	1982	1995	1984	1996	
MIN	979	1146	1547	2197	2799	3078	1508	1184	914	958	943	935	
(WY)	1987	1999	1999	1986	1986	1988	1986	1986	1999	1986	1999	1990	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1982 - 1999*
ANNUAL TOTAL	2651471	1210987	
ANNUAL MEAN	7264	3318	
HIGHEST ANNUAL MEAN			5016
LOWEST ANNUAL MEAN			8328
HIGHEST DAILY MEAN	45600	Mar 22	2426
LOWEST DAILY MEAN	627	Jul 2	1988
ANNUAL SEVEN-DAY MINIMUM	780	Sep 24	60000
INSTANTANEOUS PEAK FLOW			154
INSTANTANEOUS PEAK STAGE			Aug 13
INSTANTANEOUS LOW FLOW			446
10 PERCENT EXCEEDS	22900	8740	13600
50 PERCENT EXCEEDS	1670	1370	2380
90 PERCENT EXCEEDS	888	782	999

\* Regulated period only (1982-1999). See REMARKS.

02105500 CAPE FEAR RIVER AT WILLIAM O. HUSKE LOCK NEAR TARHEEL, NC--Continued



## 02105769 CAPE FEAR RIVER AT LOCK 1 NEAR KELLY, NC

LOCATION.--Lat 34°24'15", long 78°17'38", Bladen County, Hydrologic Unit 03030005, on right bank near upstream end of lock No. 1, 1.3 mi upstream from Natmore Creek, 2.0 mi upstream from bridge on State Highway 11, 4.6 mi southeast of Kelly, and at mile 67.

DRAINAGE AREA.--5,255 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1969 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder with concrete lock and dam control. Datum of gage is 2.90 ft below sea level (U.S. Army Corps of Engineers bench mark). Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good except those daily discharges for period Oct. 20 to Nov. 4, which are fair. Slight regulation at high flow December 1972 to August 1981, caused by storage in B. Everett Jordan Lake. Flow regulated since September 1981 by B. Everett Jordan Lake (station 02098197). Slight diurnal fluctuation and some regulation for short periods at low flow caused by power plants upstream from station. The City of Wilmington diverted an average of 18.0 ft<sup>3</sup>/s for municipal water supply, most of which was returned downstream of station as treated effluent. Prior to regulation, maximum discharge: 57,000 ft<sup>3</sup>/s, March 3, 1979; gage height: 24.92 ft, from floodmarks. Minimum discharge prior to regulation, 406 ft<sup>3</sup>/s, July 1, 1981.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	788	676	1150	1930	12400	2410	5360	5580	801	1240	908	1420
2	927	689	1040	1800	11600	2180	5280	11200	667	1310	871	918
3	1170	716	935	2340	12100	2190	6360	11900	734	1320	749	674
4	1280	763	966	5700	12600	2850	8410	10200	765	1280	503	747
5	1360	1020	992	11000	12700	2640	6960	9810	846	1160	506	797
6	1290	1060	1000	11200	12100	2260	6590	9300	859	1020	700	1520
7	1130	1080	938	7820	11700	2140	6450	9530	774	893	715	10400
8	986	1070	971	5280	10900	1950	6040	7920	757	826	718	15400
9	1070	1070	926	3930	10100	1730	5530	4340	719	719	686	14900
10	1380	1020	915	3240	9290	1670	5200	2500	713	871	674	14000
11	1920	854	897	2700	6450	1680	5050	1830	815	915	520	14200
12	1880	832	901	2250	4030	1900	4780	1620	940	1060	592	13000
13	1440	868	1040	2110	3170	2290	4500	1810	818	1230	556	9510
14	1210	1050	1230	2070	2970	2430	3510	1720	830	1420	496	4170
15	1060	1250	1380	2840	2820	2690	2470	2020	1030	1630	772	4200
16	936	1250	1800	4570	2660	4650	2000	3210	1230	1840	1080	22700
17	881	1220	1950	4950	2410	7840	2130	5070	1840	1920	1000	29200
18	967	1320	1900	5360	2510	7860	2000	5220	2280	1830	891	32200
19	997	1500	1970	6120	2520	7030	1800	4070	1980	1430	883	37700
20	1000	1640	2120	6400	2950	6300	1560	3320	1570	986	793	39600
21	888	1620	1920	6390	4380	5600	1380	3130	1250	927	970	37700
22	750	1530	1540	5790	5550	5780	1280	3530	1110	996	1420	33600
23	731	1330	1150	6090	5680	9060	1230	3160	1100	853	1320	28500
24	706	1180	1090	8220	5210	10700	1280	2640	1040	618	941	24200
25	725	1090	1500	14000	4380	10300	1340	1870	1040	1030	869	22000
26	730	1090	3050	17800	3300	8730	1260	1220	1000	1270	1020	20600
27	747	1140	5850	19500	2950	7710	1150	1040	1010	1160	1420	18800
28	743	1230	5310	20400	2680	7060	1200	966	929	1020	1840	16600
29	695	1200	3780	19600	---	7190	1220	986	874	951	2110	15700
30	668	1190	2830	16900	---	6660	2170	981	1010	1000	2860	17100
31	664	---	2240	14300	---	5910	---	941	---	986	2370	---
TOTAL	31719	33548	55281	242600	182110	151390	105490	132634	31331	35711	31753	502056
MEAN	1023	1118	1783	7826	6504	4884	3516	4279	1044	1152	1024	16740
MAX	1920	1640	5850	20400	12700	10700	8410	11900	2280	1920	2860	39600
MIN	664	676	897	1800	2410	1670	1150	941	667	618	496	674

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1999\*, BY WATER YEAR (WY)

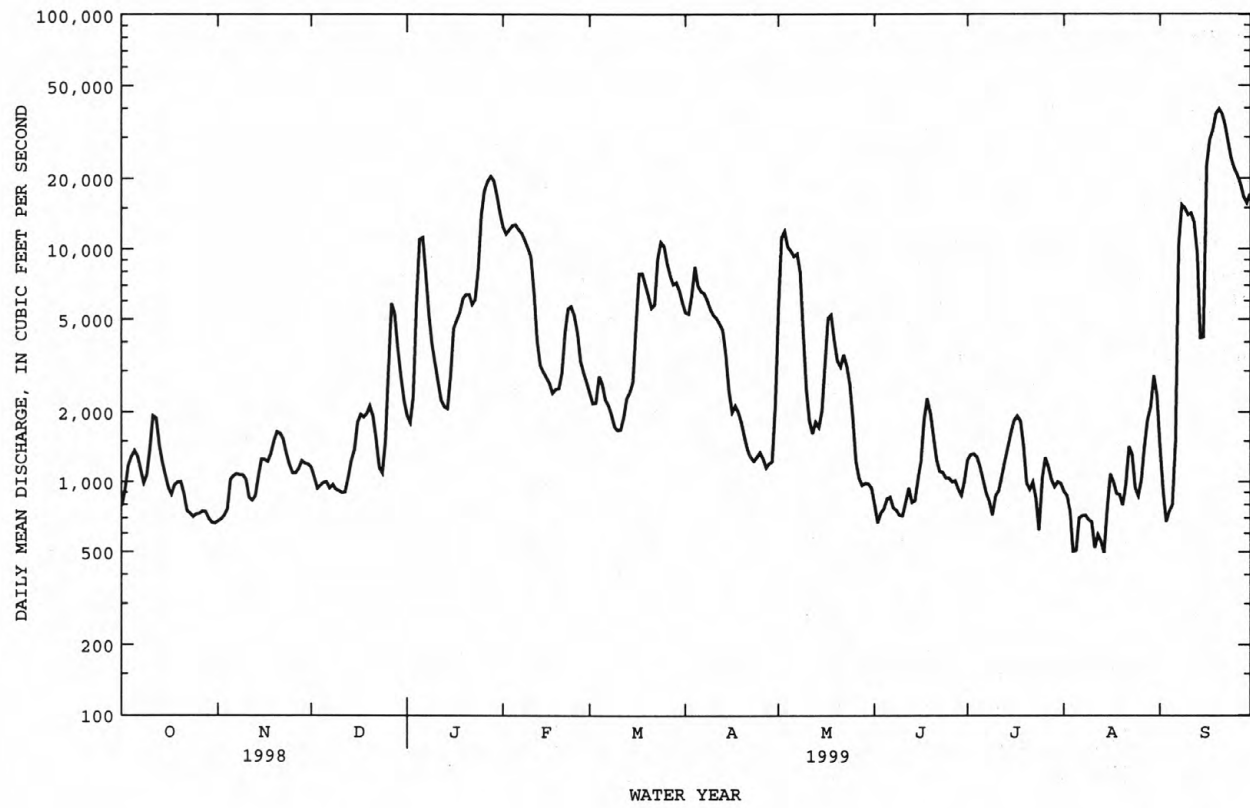
	MEAN	3074	3431	4756	8842	10070	11590	8075	4375	3845	3172	2980	3920
MAX	9751	11390	11060	17180	27780	23830	17730	12110	15070	10860	7883	22580	
(WY)	1990	1996	1984	1998	1998	1998	1993	1989	1982	1995	1984	1996	
MIN	1023	1118	1783	2265	3025	3629	1667	1272	1044	1039	1024	985	
(WY)	1999	1999	1999	1986	1986	1988	1986	1986	1999	1998	1999	1990	

## SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1982 - 1999*
ANNUAL TOTAL	2931580	1535623	
ANNUAL MEAN	8032	4207	5654
HIGHEST ANNUAL MEAN			8530
LOWEST ANNUAL MEAN			2865
HIGHEST DAILY MEAN	46100	Mar 25	47600
LOWEST DAILY MEAN	653	Sep 24	445
ANNUAL SEVEN-DAY MINIMUM	693	Oct 28	463
INSTANTANEOUS PEAK FLOW			40000
INSTANTANEOUS PEAK STAGE			23.30
INSTANTANEOUS LOW FLOW			412
10 PERCENT EXCEEDS	25400	11200	15300
50 PERCENT EXCEEDS	1970	1640	2830
90 PERCENT EXCEEDS	799	769	1080

\* Regulated period only (1982-1999). See REMARKS.

02105769 CAPE FEAR RIVER AT LOCK 1 NEAR KELLY, NC--Continued





## CAPE FEAR RIVER BASIN

02105769 CAPE FEAR RIVER AT LOCK 1 NEAR KELLY, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956 to 1996, September 1999.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1973 to September 1984.

WATER TEMPERATURE: January 1973 to September 1984.

INSTRUMENTATION.--Water-quality monitor from May 1973 to September 1984.

REMARKS.--Station operated as part of NASQAN network from January 1973 to 1995. Daily records of specific conductance for period October 1956 to September 1961 are available in the files of the District office in Raleigh. During period 1956-73, data were collected at bridge on State Highway 11 located 2 mi downstream and published as Cape Fear River near Acme (station 02105771). Samples for current year collected during flooding from Hurricane Floyd.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 317 microsiemens, Oct. 19, 20, 1976; minimum, 40 microsiemens, June 26, 1973.

WATER TEMPERATURE: Maximum, 32.0°C, July 9, 19, 20, 21, 1977, Aug. 10, 1979; minimum, 0.5°C, Jan. 24, 1976.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD) (MG/L) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	NITRO-GEN, AMMONIA SOLVED (MG/L) (00608)	NITRO-GEN, AMONIA + DIS-ORGANIC TOTAL (MG/L) (00625)	NITRO-GEN, NO2+NO3 SOLVED (MG/L) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L) (00613)
SEP												
23...	1100	28600	754	50	4.5	5.8	64	20.2	.155	.67	.161	.001
30...	1330	17200	--	--	6.0	6.2	90	22.4	.046	.67	.333	.006

DATE	NITRO-GEN, TOTAL (MG/L) AS N) (00600)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L) AS P) (00671)	PHOS-PHORUS TOTAL (MG/L) AS P) (00665)	CLOS-TRIDIUM PERFRIGENS, MF-MCP, (COL/100 ML) (90915)	E. COLI WATER WHOLE TOTAL (COL /100 ML) (31633)	ARSENIC DIS-SOLVED (UG/L) AS AS) (01000)	BERYL-LIUM, DIS-SOLVED (UG/L) AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L) AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L) AS CR) (01030)	COPPER, DIS-SOLVED (UG/L) AS CU) (01040)	IRON, DIS-SOLVED (UG/L) AS FE) (01046)
SEP											
23...	.83	.048	.094	--	5900	<1	<1.6	<8.0	9.9	<10	370
30...	1.0	.056	.138	K51	1500	<2	<1.6	<8.0	<.80	<10	380

DATE	LEAD, DIS-SOLVED (UG/L) AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L) AS MN) (01056)	MERCURY DIS-SOLVED (UG/L) AS HG) (71890)	NICKEL, DIS-SOLVED (UG/L) AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L) AS SE) (01145)	ZINC, DIS-SOLVED (UG/L) AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L) AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L) AS C) (00689)	2,6-DI-ETHYL ANILINE WAT FLT GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)
SEP											
23...	<100	59	<.1	<40	<1	<20	15	.70	<.0030	<.0020	<.002
30...	<100	57	<.1	<40	<2	<20	11	.70	<.0030	<.0020	<.002

DATE	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-THION, WAT FLT GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, WATER, DISS, SOLVED (UG/L) (39572)
SEP											
23...	.016	<.0010	<.0020	<.0020	E.0060	<.0030	<.0040	<.0040	<.0020	E.0049	.004
30...	.034	<.0100	<.0020	<.0020	E.0067	<.0030	<.0040	.0043	<.0020	E.0065	.008

DATE	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD GF, REC (UG/L) (82677)	EPTC WATER FLTRD GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)
SEP											
23...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	.011	.038	<.004
30...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	E.004	.029	<.004

## 02105769 CAPE FEAR RIVER AT LOCK 1 NEAR KELLY, NC--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROP- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)
SEP											
23...	<.0040	<.0030	<.004	<.0060	<.0040	<.0040	<.0020	E.0080	<.0070	<.0040	<.0130
30...	<.0040	<.0030	<.004	<.0060	<.0040	<.0040	<.0020	E.0159	<.0070	<.0040	<.0130
DATE	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	P,P' DDE DISSOLV (UG/L) (34653)
SEP											
23...	<.0030	.0160	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	<.0020	<.0050	<.0060
30...	<.0030	.0420	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	<.0020	<.0050	<.0060
DATE	BENZENE TOTAL (UG/L) (34030)	DI-ISO- PROPYL- ETHER, WATER, UNFLTRD RECOVER (UG/L) (81577)	ETHYL- BENZENE TOTAL (UG/L) (34371)	ETHER TERT- BUTYL ETHYL RECOVER (UG/L) (50004)	ETHER TERT- PENTYL METHYL RECOVER (UG/L) (50005)	METHYL TERT- BUTYL ETHER WAT UNF REC (UG/L) (78032)	TOLUENE TOTAL (UG/L) (34010)	META/ PARA- XYLENE WATER UNFLTRD REC (UG/L) (85795)	O- XYLENE WATER WHOLE TOTAL (UG/L) (77135)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
SEP											
23...	--	--	--	--	--	--	--	--	--	15	1160
30...	<.035	<.100	<.030	<.054	<.110	E.036	<.050	<.060	<.038	--	--

## CAPE FEAR RIVER BASIN

02105900 HOOD CREEK NEAR LELAND, NC

LOCATION.--Lat 34°16'43", long 78°07'34", Hydrologic Unit 03030005, Brunswick County, on right bank 150 ft downstream from bridge on U.S. Highway 74 and 76, 0.4 mile downstream from Pasture Pond Branch, 1 mile southeast of Maco, and 4.8 miles northwest of Leland.

DRAINAGE AREA.--21.6 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements water years 1950-56, and annual maximum, water years 1953-56. October 1956 to September 1973. October 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 12.22 ft above sea level. Prior to Nov. 28, 1956, crest-stage gage at site 150 ft upstream at datum 9.60 ft lower. Nov. 29, 1956 to Apr. 24, 1969, water-stage recorder 150 ft upstream at datum 0.19 ft higher. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum discharge for current water year and period of record from rating curve extended above 2,400 ft<sup>3</sup>/s on basis of step-backwater computations. Maximum gage height for current water year and period of record from floodmark. Low flows possibly affected by tide. Minimum discharge for period of record, no flow, also occurred Sept. 10,11, 1997.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	2.2	4.2	33	49	18	42	785	5.1	18	3.0	77
2	7.5	2.0	4.0	28	e62	19	67	1210	4.5	45	2.5	43
3	7.0	2.2	3.8	38	e80	17	e64	528	4.4	30	2.2	27
4	6.1	2.1	3.8	58	e74	15	e56	240	4.5	19	1.9	20
5	5.5	1.8	3.7	56	65	14	e54	162	5.1	14	1.8	16
6	5.2	1.6	3.8	42	58	14	e42	123	5.0	10	1.6	15
7	4.8	1.7	3.7	35	48	13	e36	107	4.1	8.8	1.5	16
8	7.9	1.6	3.7	31	40	12	32	94	3.6	15	2.8	16
9	15	1.7	3.8	44	35	12	29	73	3.1	31	4.1	16
10	17	2.0	3.3	74	31	13	25	54	2.6	25	3.3	27
11	14	2.5	3.3	73	27	e14	22	40	2.1	17	3.2	32
12	11	2.5	3.4	59	26	e13	20	34	1.8	e160	11	20
13	9.0	2.3	e10	48	26	e12	18	32	1.6	e580	18	14
14	7.8	2.2	e16	41	23	e14	16	43	e1.4	e660	10	12
15	6.6	e3.2	e25	45	21	e42	16	e180	e7.6	296	6.5	e1000
16	5.7	e3.4	e40	51	20	e50	15	e150	e16	185	5.0	e3000
17	5.2	e4.0	e44	47	19	42	14	e100	e36	112	4.1	e2600
18	4.7	e5.0	24	52	21	31	13	e66	e30	75	3.4	e1600
19	4.4	e8.0	15	67	27	25	12	48	e26	51	11	e1200
20	3.9	15	12	59	32	20	12	36	e30	34	14	e900
21	3.4	13	11	48	31	26	11	28	e40	24	30	e850
22	3.1	9.8	10	40	26	38	11	22	30	17	25	e750
23	3.0	7.7	8.8	35	22	e35	9.7	18	21	14	15	e650
24	2.8	7.0	8.2	136	20	e25	8.4	16	16	11	9.9	e580
25	2.8	e6.0	16	323	19	e22	7.8	13	12	11	8.3	e540
26	2.7	8.0	65	e200	17	e46	7.6	11	9.9	9.0	7.2	e520
27	2.6	5.3	109	e118	16	e42	7.6	9.6	8.2	7.6	6.6	e480
28	2.6	4.3	77	98	16	e26	14	8.6	6.9	6.3	8.7	e400
29	2.6	4.0	69	81	---	e60	38	7.7	6.1	5.3	13	e350
30	2.4	4.2	57	e66	---	48	142	6.6	5.8	4.2	79	e250
31	2.3	---	42	55	---	39	---	5.7	---	3.5	148	---
TOTAL	186.5	136.3	703.5	2181	951	817	862.1	4251.2	350.4	2498.7	461.6	16021
MEAN	6.02	4.54	22.7	70.4	34.0	26.4	28.7	137	11.7	80.6	14.9	534
MAX	17	15	109	323	80	60	142	1210	40	660	148	3000
MIN	2.3	1.6	3.3	28	16	12	7.6	5.7	1.4	3.5	1.5	12
CFSM	.28	.21	1.05	3.26	1.57	1.22	1.33	6.35	.54	3.73	.69	24.7
IN.	.32	.23	1.21	3.76	1.64	1.41	1.48	7.32	.60	4.30	.79	27.59

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1999,<sup>e</sup> BY WATER YEAR (WY)

	MEAN	28.3	19.6	28.8	47.9	57.2	55.1	32.4	20.1	24.3	40.0	50.7	58.1
MAX	91.8	52.6	74.5	93.8	177	111	115	137	143	133	153	153	534
(WY)	1972	1960	1973	1964	1998	1959	1961	1999	1961	1996	1969	1999	
MIN	1.48	3.51	3.39	9.95	11.5	12.4	3.69	1.67	.32	.73	.15	.51	
(WY)	1968	1966	1966	1957	1957	1967	1967	1995	1960	1957	1957	1963	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1957 - 1999<sup>e</sup>

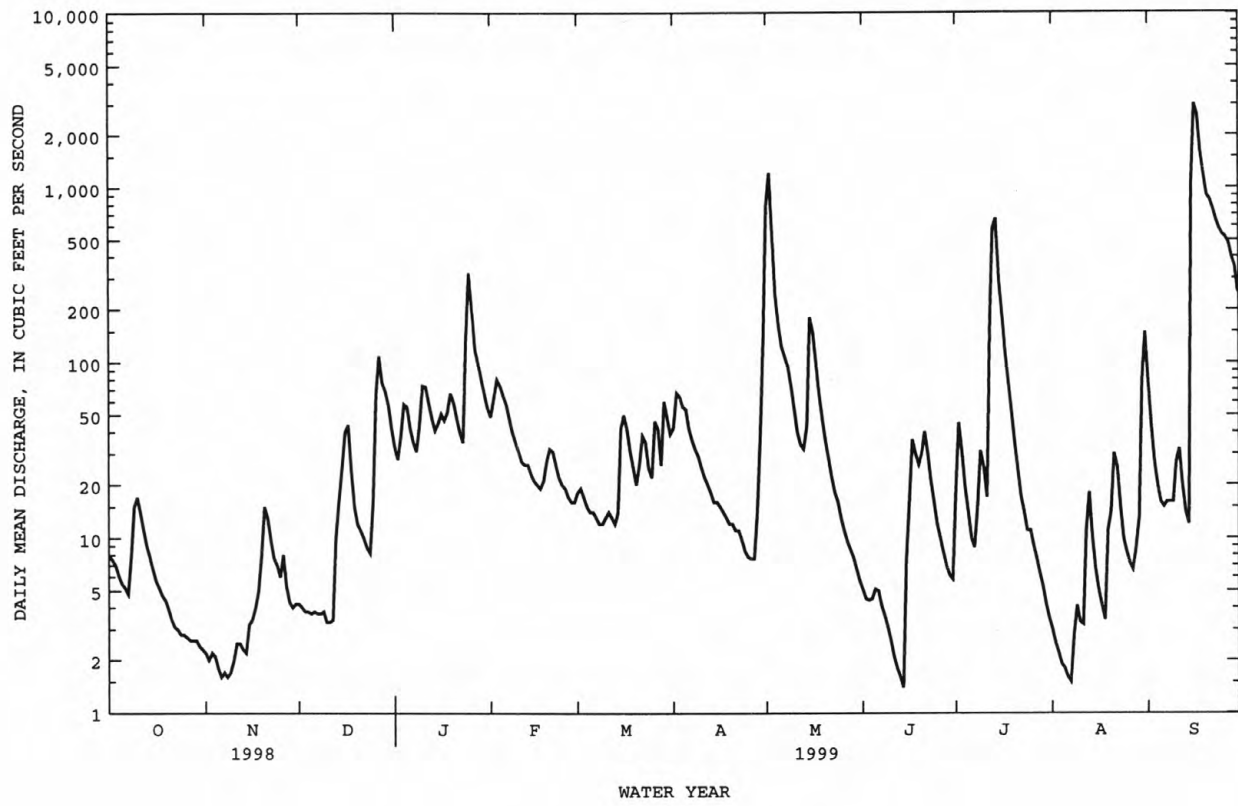
ANNUAL TOTAL	18801.22	29420.3	
ANNUAL MEAN	51.5	80.6	38.4
HIGHEST ANNUAL MEAN			80.6
LOWEST ANNUAL MEAN			15.6
HIGHEST DAILY MEAN	1560	3000	3000
LOWEST DAILY MEAN	.82	1.4	.00
ANNUAL SEVEN-DAY MINIMUM	1.1	1.8	.02
INSTANTANEOUS PEAK FLOW		4800*	4800*
INSTANTANEOUS PEAK STAGE		13.89*	13.89*
INSTANTANEOUS LOW FLOW		NOT DETERMINED	.00*
ANNUAL RUNOFF (CFSM)	2.38	3.73	1.78
ANNUAL RUNOFF (INCHES)	32.38	50.67	24.18
10 PERCENT EXCEEDS	116	110	86
50 PERCENT EXCEEDS	12	16	15
90 PERCENT EXCEEDS	2.6	3.1	1.5

<sup>e</sup> Estimated.

<sup>g</sup> See PERIOD OF RECORD.

\* See REMARKS.

02105900 HOOD CREEK NEAR LELAND, NC--Continued



## CAPE FEAR RIVER BASIN

02106500 BLACK RIVER NEAR TOMAHAWK, NC

LOCATION.--Lat 34°45'17", long 78°17'21", Sampson County, Hydrologic Unit 03030006, on left bank 30 ft upstream from bridge on State Highway 411, 0.2 mi downstream of Clear Run Swamp, and 3.8 mi northeast of Tomahawk.

DRAINAGE AREA.--676 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 1723: 1955(M). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 24.61 ft above sea level. Nonrecording gage on downstream side of bridge Oct. 1, 1951 to June 29, 1961. Water-stage recorder was at present site at datum of 24.26 ft June 30, 1961 to Sept. 30, 1964. Satellite telemetry at station

REMARKS.--Records good except those for estimated daily discharges, which are poor. Maximum gage height for current water year and period of record, from floodmarks. Minimum discharge for current water year also occurred on Aug. 12, 13.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1928 reached a stage of 22.0 ft, present datum; discharge, 14,500 ft<sup>3</sup>/s and floods in 1945 and 1948 reached a stage of 17.6 ft, present datum; discharge, 5,420 ft<sup>3</sup>/s, from information furnished by North Carolina State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	126	61	191	643	2810	681	492	916	124	e238	76	338
2	137	61	181	592	2410	697	510	1210	115	e216	62	258
3	133	60	170	658	2150	656	526	1310	108	e191	52	199
4	122	61	160	954	1970	617	506	1290	100	166	44	163
5	126	64	155	1140	1830	612	480	1160	90	145	38	204
6	170	66	149	1210	1660	602	452	939	82	125	35	380
7	181	65	146	1210	1500	602	427	797	74	109	34	528
8	176	63	147	1060	1370	586	411	711	68	96	32	682
9	173	66	152	893	1270	567	399	623	59	113	28	832
10	171	69	152	917	1180	590	379	542	53	153	28	952
11	165	71	151	955	1100	615	356	477	49	118	26	1010
12	159	75	150	921	1030	596	371	427	42	220	25	982
13	156	78	169	845	1020	562	355	431	38	326	48	865
14	156	76	249	739	993	548	332	533	34	427	76	808
15	153	87	332	832	910	656	313	775	96	505	65	1490
16	143	114	438	1190	841	797	348	830	492	601	150	7510
17	129	156	622	1430	794	780	644	780	777	551	203	20500
18	114	179	631	1630	772	719	723	735	981	412	189	27300
19	101	194	582	1770	782	647	656	640	1040	283	143	23500
20	90	234	521	1850	841	587	552	527	1030	227	128	18100
21	83	267	464	1890	879	560	467	445	777	186	377	13800
22	81	232	411	1910	840	617	402	377	563	161	600	10500
23	77	200	371	1900	793	624	356	323	436	146	426	8360
24	76	182	346	2080	760	581	314	280	353	131	274	6920
25	75	174	360	2640	736	543	279	247	289	131	208	5860
26	73	180	510	3340	713	601	254	221	253	145	186	5080
27	71	232	706	4510	690	707	237	199	250	152	195	4550
28	68	233	756	5020	662	689	235	180	261	141	265	4250
29	65	211	777	4600	---	623	273	161	244	126	395	4200
30	64	196	770	4030	---	566	527	146	233	107	452	4230
31	64	---	705	3390	---	525	---	134	---	90	432	---
TOTAL	3678	4007	11624	56749	33306	19353	12576	18366	9111	6738	5292	174351
MEAN	119	134	375	1831	1190	624	419	592	304	217	171	5812
MAX	181	267	777	5020	2810	797	723	1310	1040	601	600	27300
MIN	64	60	146	592	662	525	235	134	34	90	25	163
CFSM	.18	.20	.55	2.71	1.76	.92	.62	.88	.45	.32	.25	8.60
IN.	.20	.22	.64	3.12	1.83	1.06	.69	1.01	.50	.37	.29	9.59

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1999, BY WATER YEAR (WY)

	MEAN	466	489	718	1168	1343	1446	1069	545	473	489	695	730
MAX	2613	1412	2164	2903	4212	3410	3070	1687	3089	2088	2810	5812	
(WY)	1965	1963	1993	1993	1998	1983	1973	1978	1995	1965	1974	1999	
MIN	29.6	57.1	238	287	448	460	225	141	113	68.0	25.2	13.4	
(WY)	1955	1974	1989	1986	1989	1981	1981	1986	1985	1998	1954	1954	

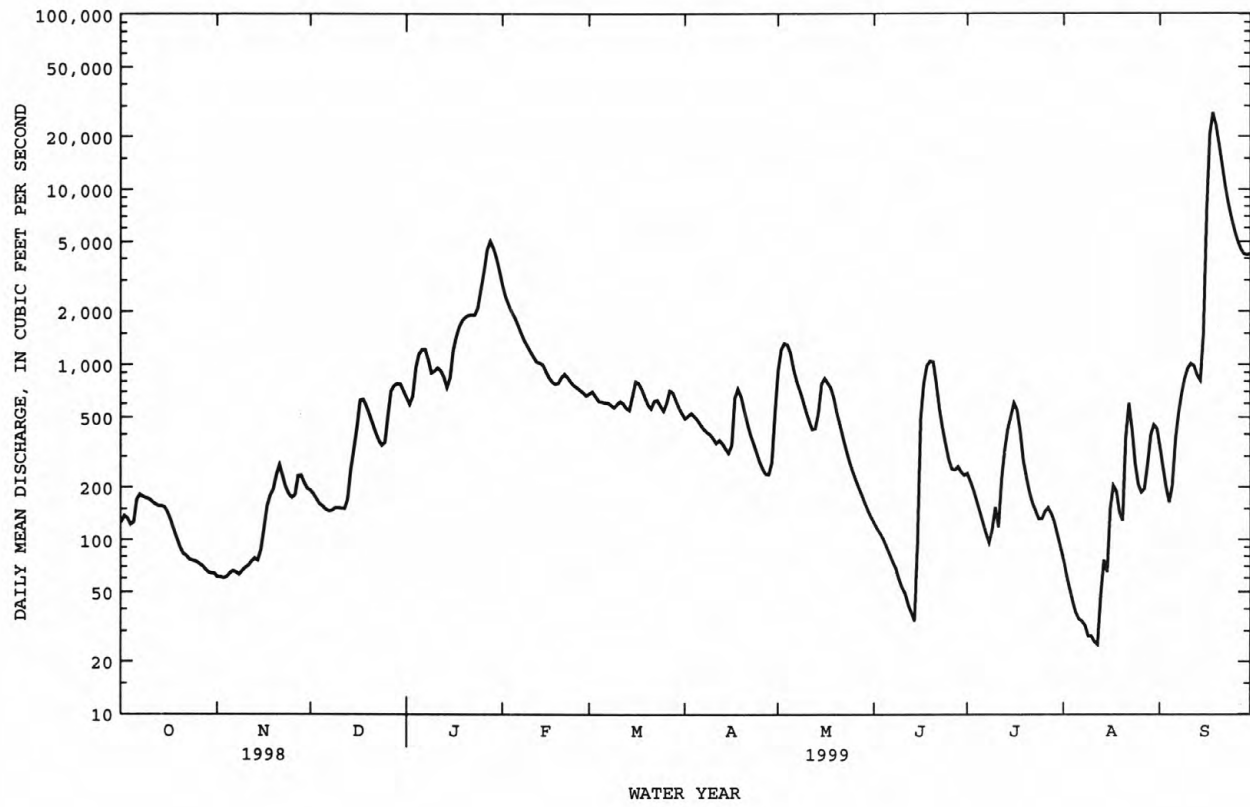
SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1952 - 1999	
ANNUAL TOTAL	432748		355151		800	
ANNUAL MEAN	1186		973		1300	
HIGHEST ANNUAL MEAN					327	
LOWEST ANNUAL MEAN					1986	
HIGHEST DAILY MEAN	6640	Mar 13	27300	Sep 18	27300	Sep 18 1999
LOWEST DAILY MEAN	19	Jul 25	25	Aug 12	8.9	Sep 13 1954
ANNUAL SEVEN-DAY MINIMUM	26	Jul 20	30	Aug 6	9.9	Oct 9 1954
INSTANTANEOUS PEAK FLOW			28500	Sep 18	28500	Sep 18 1999
INSTANTANEOUS PEAK STAGE			27.14*	Sep 18	27.14*	Sep 18 1999
INSTANTANEOUS LOW FLOW			25*	Aug 11	8.5	Oct 13 1954
ANNUAL RUNOFF (CFSM)	1.75		1.44		1.18	
ANNUAL RUNOFF (INCHES)	23.81		19.54		16.07	
10 PERCENT EXCEEDS	3200		1490		1790	
50 PERCENT EXCEEDS	604		380		518	
90 PERCENT EXCEEDS	71		72		105	

e Estimated.

\* See REMARKS.



02106500 BLACK RIVER NEAR TOMAHAWK, NC--Continued



## CAPE FEAR RIVER BASIN

0210783230 HERRINGS MARSH RUN NEAR SUMMERLINS CROSSROADS, NC

LOCATION.--Lat 35°05'37", long 77°56'35", Duplin County, Hydrologic Unit 03030007, on right bank 150 ft downstream of Secondary Road 1508, and 1.1 mi northeast of Summerlins Crossroads.

DRAINAGE AREA.--2.25 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1991 to October 1999 (discontinued).

GAGE.--Water stage recorder. Elevation of gage is 102 ft above sea level, from topographic map.

REMARKS.--Records fair except those for period Oct. 20 to Dec. 5, which are poor. Maximum discharge for period of record from rating curve extended above 110 ft<sup>3</sup>/s by logarithmic plotting. No flow Aug. 20-25, 1998, Nov. 8, 15, 16, 1999.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.02	.07	1.4	2.4	2.5	1.7	4.8	.29	.48	.10	1.1
2	.20	.01	.24	1.2	3.8	1.3	2.2	3.7	.24	.32	.07	.91
3	.12	e2.5	.06	7.4	2.9	1.3	1.5	2.1	.25	.19	.06	.81
4	.29	e1.8	2.1	3.4	2.6	1.4	1.4	1.5	.26	.14	.06	2.5
5	.85	e.40	.73	2.3	2.3	1.1	1.5	.80	.24	.10	.07	19
6	.49	e.20	.23	1.9	2.0	1.0	1.4	1.1	.21	.09	.06	5.6
7	.40	e.00	.27	1.7	2.0	1.1	1.4	1.3	.21	.09	.06	4.5
8	.28	e.00	.29	1.5	1.7	1.0	1.4	1.0	.20	.05	.05	3.1
9	.40	e3.0	.32	3.4	1.5	1.1	1.2	1.1	.16	.04	.16	2.6
10	.31	e1.5	.31	3.2	1.4	1.9	1.2	.96	.43	.01	.15	3.0
11	.26	e.80	.27	2.4	1.2	1.6	1.4	.82	.84	.10	.11	2.3
12	.19	e.50	.28	1.9	1.9	1.3	4.2	.86	.22	2.6	.12	1.7
13	.20	e.10	.86	1.5	2.7	1.1	1.9	1.2	.17	2.2	.11	1.3
14	.23	e.05	1.1	1.5	1.8	1.6	1.5	7.6	.26	1.2	.13	3.2
15	.25	e.00	.44	21	1.4	3.3	2.2	3.6	.97	1.6	.24	113
16	.22	e.00	7.2	4.0	1.5	2.0	7.3	2.8	.94	1.1	.16	336
17	.26	e.35	1.8	2.3	1.1	1.7	2.5	4.6	1.9	.41	.14	43
18	.23	e3.5	1.0	5.1	1.6	1.6	1.9	2.7	1.7	.22	.12	28
19	.29	.06	.60	3.0	2.1	1.3	1.6	.97	.55	.20	.78	22
20	.31	.38	.76	2.3	3.6	1.2	1.4	3.8	.71	.12	.47	19
21	3.4	2.4	.58	1.8	1.5	2.0	1.3	1.4	1.4	.10	.70	57
22	.03	.01	.70	1.7	1.6	2.4	1.2	1.2	.91	.08	.53	43
23	.10	.01	.65	1.6	1.2	1.6	1.2	.92	.71	.11	.43	24
24	1.4	.11	.95	63	1.2	1.3	1.2	.78	.44	.42	.38	19
25	1.3	.05	2.8	11	1.2	1.3	1.0	.78	.32	1.3	.36	17
26	.02	.14	5.0	4.7	1.1	2.3	.94	.61	.34	.58	1.1	15
27	.02	2.8	3.3	3.6	.98	2.2	1.2	.54	.30	.34	2.1	50
28	.02	.95	4.2	3.2	1.7	1.6	3.5	.48	.24	.24	2.1	69
29	.99	.01	2.9	2.8	---	1.5	6.8	.39	.16	.20	1.6	35
30	1.0	.01	2.0	2.5	---	1.2	3.8	.32	.27	.15	2.6	26
31	.55	---	1.5	2.3	---	1.1	---	.28	---	.13	1.8	---
TOTAL	14.81	21.66	43.51	170.6	51.98	48.9	62.94	55.01	15.84	14.91	16.92	967.62
MEAN	.48	.72	1.40	5.50	1.86	1.58	2.10	1.77	.53	.48	.55	32.3
MAX	3.4	3.5	7.2	63	3.8	3.3	7.3	7.6	1.9	2.6	2.6	336
MIN	.02	.00	.06	1.2	.98	1.0	.94	.28	.16	.01	.05	.81
CFSM	.21	.32	.62	2.45	.83	.70	.93	.79	.23	.21	.24	14.3
IN.	.24	.36	.72	2.82	.86	.81	1.04	.91	.26	.25	.28	16.00

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1999, BY WATER YEAR (WY)

	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	1.34	1.54	2.24	4.06	3.41	3.14	2.07	.83	1.44
MAX	5.45	3.23	4.47	8.75	10.6	5.39	4.24	2.07	7.44
(WY)	1997	1993	1993	1993	1998	1993	1993	1998	1995
MIN	.28	.55	1.02	1.50	1.62	1.47	.57	.20	.11
(WY)	1994	1994	1996	1996	1992	1992	1995	1995	1994

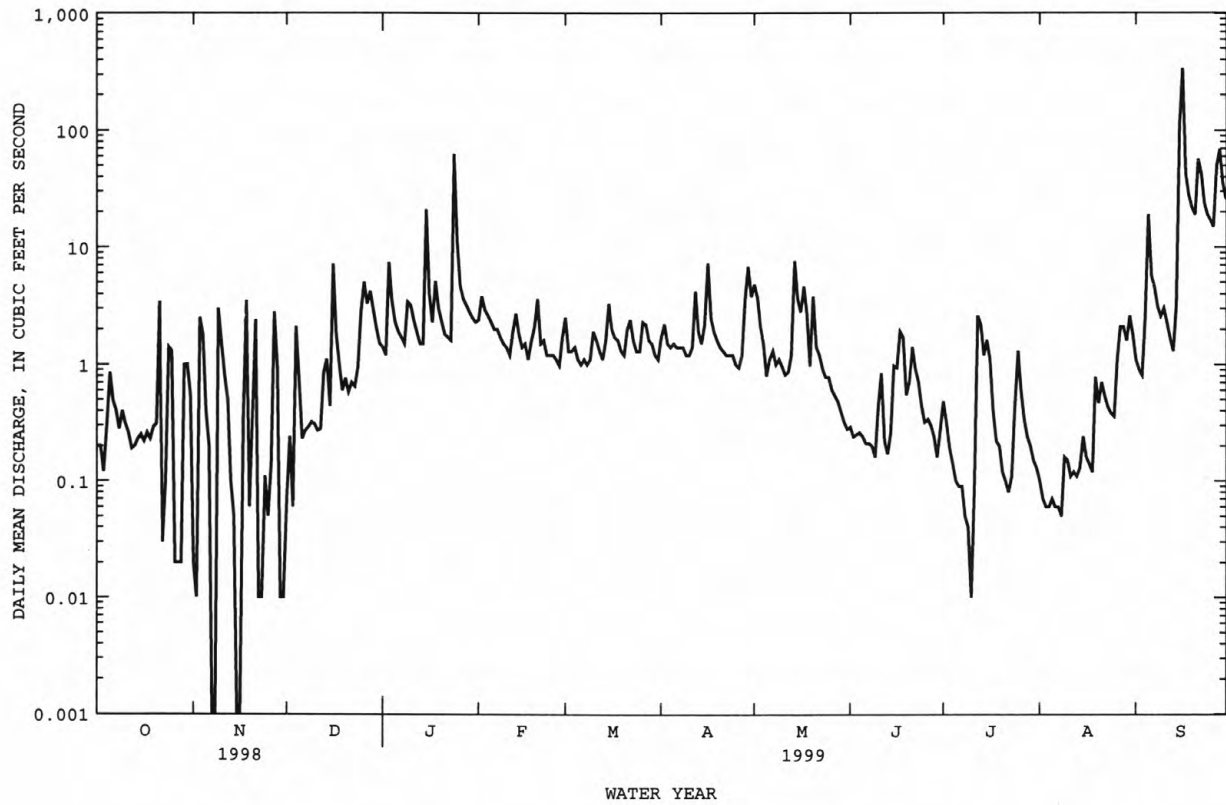
## SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1991 - 1999
ANNUAL TOTAL	994.00	1484.70	
ANNUAL MEAN	2.72	4.07	2.28
HIGHEST ANNUAL MEAN			4.07
LOWEST ANNUAL MEAN			1.13
HIGHEST DAILY MEAN	81	336	336
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.06	.00
INSTANTANEOUS PEAK FLOW		997*	997*
INSTANTANEOUS PEAK STAGE		6.76	6.76
INSTANTANEOUS LOW FLOW		.00*	.00*
ANNUAL RUNOFF (CFSM)	1.21	1.81	1.01
ANNUAL RUNOFF (INCHES)	16.43	24.55	13.78
10 PERCENT EXCEEDS	5.5	3.8	4.5
50 PERCENT EXCEEDS	1.0	1.1	1.0
90 PERCENT EXCEEDS	.05	.10	.12

e Estimated.

\* See REMARKS.

0210783230 HERRINGS MARSH RUN NEAR SUMMERLINS CROSSROADS, NC--Continued



## CAPE FEAR RIVER BASIN

0210783240 HERRINGS MARSH RUN TRIBUTARY NEAR SUMMERLINS CROSSROADS, NC

LOCATION.--Lat 35°05'49", long 77°56'01", Duplin County, Hydrologic Unit 03030007, at upstream side of culvert on Secondary Road 1508, and 1.6 mi northeast of Summerlins Crossroads.

DRAINAGE AREA.--1.49 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1991 to current year.

GAGE.--Water stage recorder. Elevation of gage is 95 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records fair, except those for estimated daily discharges, which are poor. Maximum discharge for period of record and current water year, from rating curve extended above 50 ft<sup>3</sup>/s on basis of type III, flow through culvert measurement at gage height 7.34 ft. Minimum discharge for period of record and current water year also occurred Aug. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	.57	.45	1.1	1.4	2.6	1.9	e1.4	.32	1.3	.01	2.5
2	.99	.53	.44	.97	2.1	1.7	1.9	e1.4	.27	1.0	.00	2.3
3	.85	.60	.42	3.5	2.7	1.7	1.6	e1.3	.26	.87	.00	2.7
4	1.2	.66	.44	2.1	2.4	1.6	1.5	e1.2	.27	.65	.00	3.6
5	3.3	.64	.44	1.9	2.2	1.6	1.5	e1.1	.28	.36	.04	8.2
6	1.7	.57	.45	1.7	2.1	1.7	1.4	e1.4	.27	.35	.08	4.5
7	1.3	.55	.43	1.5	2.1	1.4	1.4	e1.2	.24	.30	.08	5.0
8	1.2	.55	.42	1.6	1.9	1.3	1.3	e1.0	.19	.20	.10	5.5
9	1.2	.56	.44	2.2	1.9	1.6	1.3	e.95	.14	.17	.20	5.6
10	1.1	.60	.41	2.1	1.8	1.8	1.3	.92	.12	.12	.47	5.6
11	.98	.58	.38	1.6	1.6	1.6	1.4	.90	.13	.17	.23	5.3
12	.88	.53	.33	1.4	2.1	1.5	1.7	.93	.14	1.4	.10	5.0
13	.84	.49	.76	1.4	2.1	1.4	1.5	1.2	.15	1.5	.08	5.3
14	.87	.52	.78	1.4	1.6	2.0	1.5	1.9	.17	1.7	.08	6.5
15	.78	.89	.40	8.3	1.5	2.6	1.7	1.4	.21	2.3	.20	65
16	.73	.73	4.1	3.8	1.5	2.0	3.4	1.2	.44	1.9	.11	e250
17	.70	.78	1.6	3.0	1.4	1.7	1.4	1.0	.62	1.5	.08	20
18	.72	.63	1.2	4.4	2.3	1.7	1.2	1.2	.50	1.8	.08	16
19	.71	.73	1.0	3.0	2.1	1.6	1.3	1.2	.35	2.1	.46	19
20	.77	1.3	1.0	3.1	2.5	1.7	1.2	1.1	.51	1.8	.16	17
21	.77	.76	.96	2.8	2.4	2.2	1.2	.84	.61	1.8	.48	34
22	.72	.59	.89	2.6	2.1	2.2	1.1	.80	1.1	1.6	.45	27
23	.67	.57	.72	3.5	1.9	1.9	1.0	.69	.78	1.4	.39	20
24	.66	.56	.93	31	1.8	1.9	.99	.69	.93	1.5	.25	17
25	.64	.42	1.6	5.4	1.8	1.8	.99	.60	1.0	2.7	.19	16
26	.60	.56	2.6	2.7	1.8	2.1	.96	.52	1.0	1.3	.46	16
27	.59	.49	1.8	2.2	1.7	2.1	1.0	.54	1.1	.82	1.2	23
28	.66	.43	2.2	1.9	2.4	2.1	1.1	.44	.92	.35	1.8	29
29	.65	.42	1.7	1.7	---	2.0	1.8	.40	.84	.14	2.0	22
30	.60	.44	1.3	1.5	---	1.8	1.5	.35	.88	.08	2.6	19
31	.59	---	1.1	1.3	---	1.7	---	.33	---	.02	2.1	---
TOTAL	29.37	18.25	31.69	106.67	55.2	56.6	43.04	30.10	14.74	33.20	14.48	677.6
MEAN	.95	.61	1.02	3.44	1.97	1.83	1.43	.97	.49	1.07	.47	22.6
MAX	3.3	1.3	4.1	31	2.7	2.6	3.4	1.9	1.1	2.7	2.6	250
MIN	.59	.42	.33	.97	1.4	1.3	.96	.33	.12	.02	.00	2.3
CFSM	.64	.41	.69	2.31	1.32	1.23	.96	.65	.33	.72	.31	15.2
IN.	.73	.46	.79	2.66	1.38	1.41	1.07	.75	.37	.83	.36	16.92

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1999, BY WATER YEAR (WY)

	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	1.27	1.31	1.60	2.62	3.09	2.70	1.81	1.05	1.58
MAX	4.18	2.49	3.12	4.63	7.06	3.75	3.31	1.85	4.59
(WY)	1997	1993	1993	1993	1998	1993	1993	1998	1995
MIN	.096	.61	.77	1.25	1.19	1.60	.78	.46	.23
(WY)	1995	1999	1996	1994	1994	1996	1995	1994	1994

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

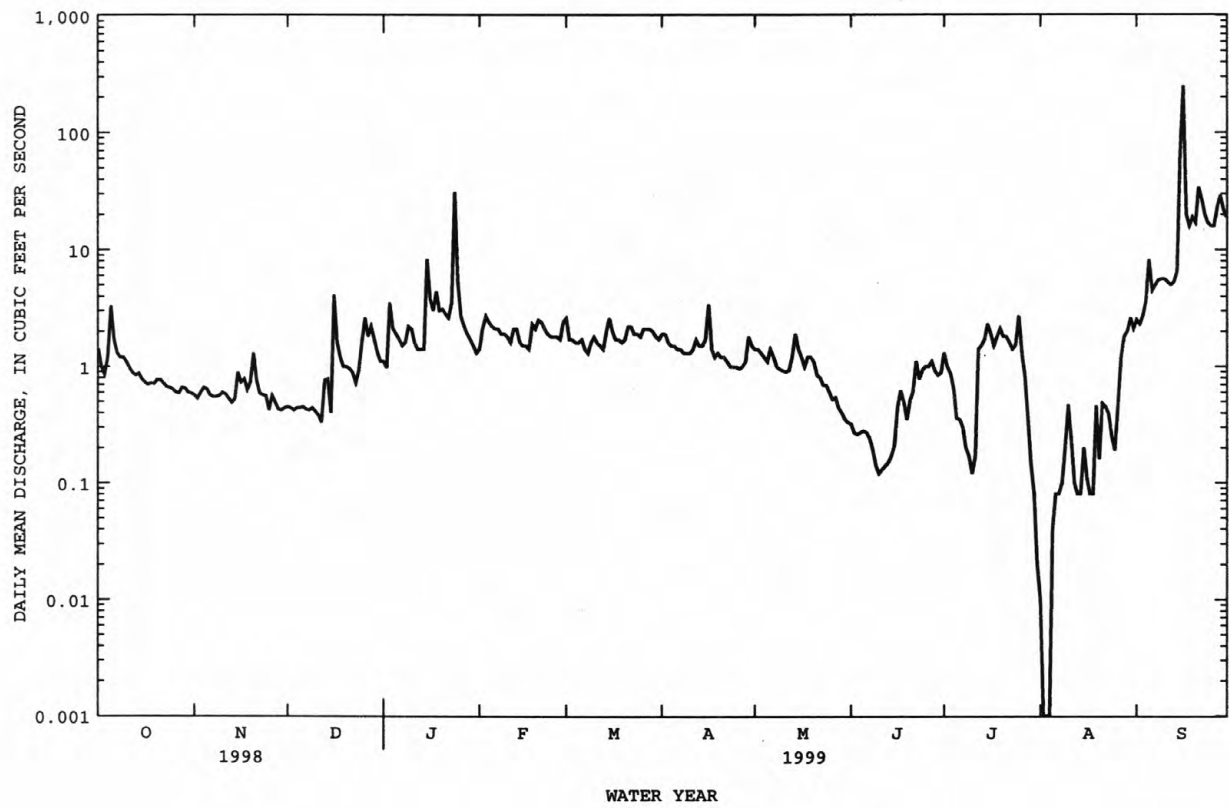
## WATER YEARS 1991 - 1999

ANNUAL TOTAL	799.86	1110.94	
ANNUAL MEAN	2.19	3.04	1.99
HIGHEST ANNUAL MEAN			3.04
LOWEST ANNUAL MEAN			1.07
HIGHEST DAILY MEAN	54	250	250
LOWEST DAILY MEAN	.25	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.37	.02	.02
INSTANTANEOUS PEAK FLOW		933*	933*
INSTANTANEOUS PEAK STAGE		7.34	7.34
INSTANTANEOUS LOW FLOW		.00*	.00*
ANNUAL RUNOFF (CFSM)	1.47	2.04	1.33
ANNUAL RUNOFF (INCHES)	19.97	27.74	18.11
10 PERCENT EXCEEDS	4.0	3.3	3.6
50 PERCENT EXCEEDS	1.4	1.2	1.3
90 PERCENT EXCEEDS	.42	.26	.25

e Estimated.

\* See REMARKS.

0210783240 HERRINGS MARSH RUN TRIBUTARY NEAR SUMMERLINS CROSSROADS, NC--Continued





## 0210783276 HERRINGS MARSH RUN BELOW SECONDARY ROAD 1306 AT RED HILL, NC

LOCATION.--Lat 35°04'25", long 77°54'50", Duplin County, Hydrologic Unit 03030007, on left bank, 200 ft downstream of Secondary Road 1306, and 0.1 mi southwest of Red Hill.

DRAINAGE AREA.--9.11 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1991 to September 1999 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 75 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum discharge for current water year and period of record from rating curve extended above 400 ft<sup>3</sup>/s by logarithmic plotting; maximum gage height 13.35 ft, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	1.4	1.0	7.9	13	17	5.1	16	1.0	2.2	.87	14
2	2.1	1.1	.67	7.5	18	12	7.3	15	1.1	2.1	.62	11
3	1.5	1.0	.69	23	17	11	6.0	11	1.1	1.8	.36	9.5
4	2.0	.91	.75	19	15	12	4.6	8.0	1.2	1.4	.32	17
5	3.6	.99	2.3	12	14	10	5.0	6.4	1.5	.99	.19	75
6	4.6	.83	1.5	9.7	13	9.3	4.9	5.6	1.3	.84	.11	37
7	2.6	1.0	1.1	8.8	12	8.8	5.0	4.8	1.3	.53	.07	25
8	4.0	1.3	.81	8.3	12	7.7	4.8	4.3	.69	.55	.03	19
9	3.0	1.1	1.1	12	11	8.5	4.5	3.5	.44	.46	.49	15
10	2.7	1.1	.57	15	11	11	4.1	2.6	.22	.37	.25	14
11	3.0	1.2	.65	11	10	10	4.4	2.3	.16	.62	.24	13
12	2.8	.88	.68	9.1	13	8.6	13	2.5	.31	8.2	.19	11
13	2.5	1.3	4.6	8.2	17	7.7	8.6	4.4	.34	23	.18	8.5
14	2.2	1.5	8.3	8.0	13	10	5.8	19	.34	15	.32	16
15	1.9	3.1	4.7	45	11	17	8.7	15	1.4	17	1.2	e100
16	1.7	2.8	27	26	11	12	32	10	3.5	13	1.4	e500
17	1.6	2.9	18	15	10	9.7	13	8.4	8.8	8.3	1.3	e150
18	1.5	2.0	8.8	21	14	8.5	8.3	9.0	7.9	5.1	1.3	e80
19	1.2	4.5	6.1	18	16	7.7	6.5	7.2	5.8	3.0	12	e40
20	1.4	8.7	5.2	13	18	6.6	5.6	4.9	4.9	2.0	8.5	e30
21	1.4	5.4	4.4	11	14	8.8	4.9	6.0	6.3	1.8	8.9	e100
22	3.5	5.3	5.3	11	11	11	4.2	4.1	6.2	1.2	7.7	e60
23	3.2	2.8	4.6	10	10	8.2	3.4	3.1	4.3	.93	6.6	e40
24	1.5	1.7	4.8	113	11	6.5	3.3	2.5	3.0	3.3	5.3	e30
25	1.1	1.0	12	64	8.9	6.3	2.5	2.2	2.6	10	5.0	e25
26	1.6	3.0	21	27	9.3	11	2.3	1.9	3.1	8.2	15	e20
27	1.8	1.9	18	21	8.8	9.8	4.0	2.0	2.0	4.1	25	e60
28	1.2	4.2	17	18	11	7.8	5.4	1.4	1.7	2.5	24	e90
29	.93	2.2	17	16	---	6.3	15	1.3	1.5	1.9	16	e60
30	.74	1.7	12	15	---	5.3	18	1.1	1.4	1.5	23	e40
31	1.1	---	9.1	13	---	4.3	---	1.1	---	1.2	20	---
TOTAL	66.37	68.81	219.72	616.5	353.0	290.4	220.2	186.6	75.40	143.09	186.44	1710.0
MEAN	2.14	2.29	7.09	19.9	12.6	9.37	7.34	6.02	2.51	4.62	6.01	57.0
MAX	4.6	8.7	27	113	18	17	32	19	8.8	23	25	500
MIN	.74	.83	.57	7.5	8.8	4.3	2.3	1.1	.16	.37	.03	8.5
CFSM	.24	.25	.78	2.18	1.38	1.03	.81	.66	.28	.51	.66	6.26
IN.	.27	.28	.90	2.52	1.44	1.19	.90	.76	.31	.58	.76	6.98

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1999, BY WATER YEAR (WY)

	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	6.77	7.04	9.65	15.6	15.4	14.9	8.83	3.99	6.46
MAX	23.9	12.5	16.9	28.2	34.8	22.6	17.3	8.00	32.0
(WY)	1997	1993	1993	1993	1998	1993	1993	1998	1995
MIN	2.14	2.29	5.09	8.06	7.13	7.85	3.59	1.57	.75
(WY)	1999	1999	1996	1996	1992	1992	1994	1994	1994

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

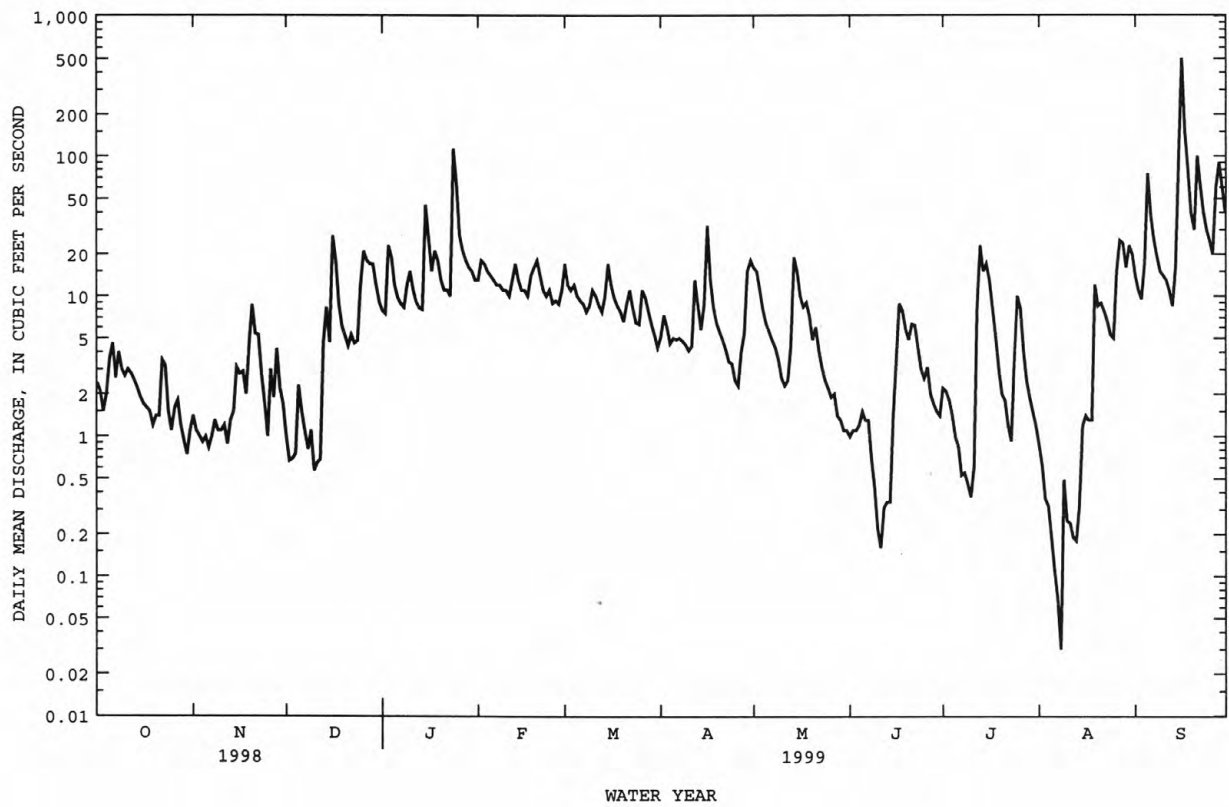
## WATER YEARS 1991 - 1999

ANNUAL TOTAL	4200.70	4136.53	
ANNUAL MEAN	11.5	11.3	9.58
HIGHEST ANNUAL MEAN			12.8
LOWEST ANNUAL MEAN			5.56
HIGHEST DAILY MEAN	173	500	500
LOWEST DAILY MEAN	.57	.03	.03
ANNUAL SEVEN-DAY MINIMUM	.73	.20	.20
INSTANTANEOUS PEAK FLOW		1400*	1400*
INSTANTANEOUS PEAK STAGE		13.35*	13.35*
INSTANTANEOUS LOW FLOW		NOT DETERMINED	NOT DETERMINED
ANNUAL RUNOFF (CFSM)	1.26	1.24	1.05
ANNUAL RUNOFF (INCHES)	17.15	16.89	14.29
10 PERCENT EXCEEDS	25	19	20
50 PERCENT EXCEEDS	6.1	5.4	5.4
90 PERCENT EXCEEDS	1.0	.88	1.1

e Estimated.

\* See REMARKS.

0210783276 HERRINGS MARSH RUN BELOW SECONDARY ROAD 1306 AT RED HILL, NC--Continued



## CAPE FEAR RIVER BASIN

02108000 NORTHEAST CAPE FEAR RIVER NEAR CHINQUAPIN, NC

LOCATION.--Lat 34°49'40", long 77°50'00", Duplin County, Hydrologic Unit 03030007, on right bank 540 ft downstream of bridge on State Highway 41, 0.5 mi downstream of Muddy Creek, and 1.2 mi west of Chinquapin.

DRAINAGE AREA.--599 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1940 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 17.28 ft above sea level (levels by U.S. Army Corps of Engineers). Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period of record also occurred Oct. 11, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage of 22.6 ft at old bridge site 1,000 ft upstream from gage. Flood in 1928 reached a stage 0.8 ft lower than the flood in 1908, from information by North Carolina State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	29	184	1040	2950	597	618	577	65	217	57	906
2	79	28	166	926	2170	609	634	897	55	242	45	776
3	66	27	150	1030	1910	611	609	1020	48	210	36	641
4	57	26	133	1290	1870	625	569	1030	43	166	29	529
5	53	25	122	1370	1790	641	524	945	37	128	26	1040
6	53	25	113	1260	1600	635	483	795	33	96	24	1850
7	70	29	110	1140	1370	605	451	664	30	73	23	2440
8	98	31	104	1020	1180	558	424	575	27	56	23	2410
9	138	31	99	967	1040	520	399	496	26	46	23	2310
10	167	30	95	1010	947	508	373	429	25	58	21	2250
11	161	30	91	1060	866	498	349	370	24	58	20	2040
12	134	31	90	1050	799	487	334	322	24	56	23	1790
13	109	31	125	979	764	473	344	296	22	214	23	1540
14	90	33	231	896	745	469	352	465	23	485	22	1420
15	80	35	284	975	723	655	347	810	23	854	24	2470
16	73	37	379	1320	700	785	369	869	39	1210	32	11500
17	65	47	594	1590	672	795	508	840	246	1360	58	28100
18	58	63	689	1710	657	744	612	732	377	1250	74	29900
19	51	73	691	1750	693	689	629	608	389	946	181	26000
20	48	185	655	1720	744	636	594	498	376	620	308	21400
21	46	286	614	1680	779	622	520	419	393	406	300	17400
22	41	305	571	1620	785	728	440	362	447	300	315	13600
23	47	291	522	1470	762	741	382	313	506	236	277	10700
24	40	271	471	1790	720	693	343	276	484	174	241	8440
25	37	242	476	3120	672	633	311	244	395	220	200	6820
26	36	224	601	4650	630	702	283	203	308	265	183	5560
27	34	246	864	5100	594	847	258	167	289	248	289	4660
28	32	238	1000	5140	571	906	239	138	287	210	488	4070
29	32	221	1120	5090	---	870	254	113	268	155	694	3700
30	32	203	1160	4690	---	784	327	93	231	106	815	3600
31	31	---	1120	3910	---	688	---	77	---	75	964	---
TOTAL	2125	3373	13624	62363	29703	20354	12879	15643	5540	10740	5838	219862
MEAN	68.5	112	439	2012	1061	657	429	505	185	346	188	7329
MAX	167	305	1160	5140	2950	906	634	1030	506	1360	964	29900
MIN	31	25	90	896	571	469	239	77	22	46	20	529
CFSM	.11	.19	.73	3.36	1.77	1.10	.72	.84	.31	.58	.31	12.2
IN.	.13	.21	.85	3.87	1.84	1.26	.80	.97	.34	.67	.36	13.65

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

	MEAN	421	419	666	1081	1223	1227	838	471	394	549	675	692
MAX	2486	1852	2225	2548	4399	3506	2958	1901	1953	3922	2681	7329	
(WY)	1997	1948	1949	1993	1998	1983	1973	1969	1961	1962	1955	1999	
MIN	7.59	15.6	59.6	158	249	261	145	64.9	17.3	25.9	13.8	11.0	
(WY)	1955	1955	1955	1955	1955	1955	1955	1986	1995	1994	1954	1954	1954

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

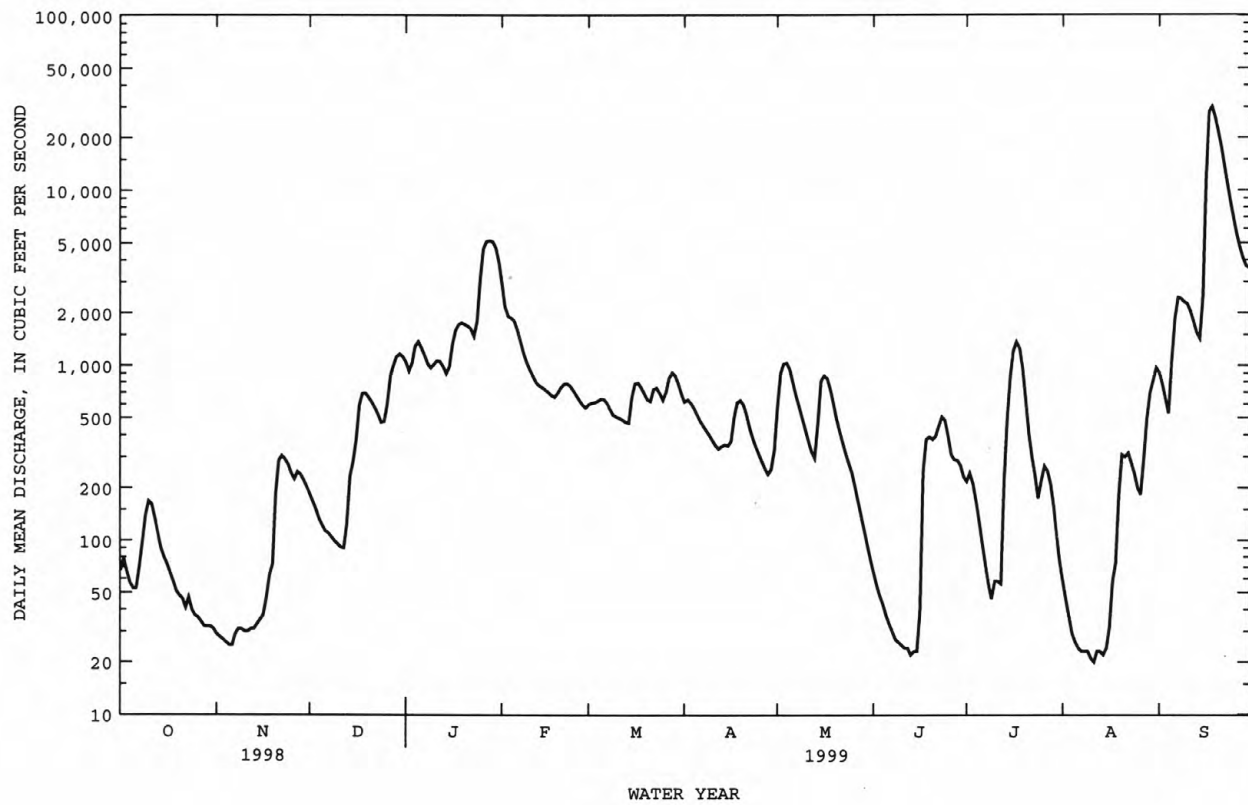
## FOR 1999 WATER YEAR

## WATER YEARS 1940 - 1999

ANNUAL TOTAL	412604	402044	
ANNUAL MEAN	1130	1101	720
HIGHEST ANNUAL MEAN			1243
LOWEST ANNUAL MEAN			279
HIGHEST DAILY MEAN	8130	29900	29900
LOWEST DAILY MEAN	16	20	5.3
ANNUAL SEVEN-DAY MINIMUM	18	22	5.5
INSTANTANEOUS PEAK FLOW		30700	30700
INSTANTANEOUS PEAK STAGE		23.51	23.51
INSTANTANEOUS LOW FLOW		19	5.3*
ANNUAL RUNOFF (CFSM)	1.89	1.84	1.20
ANNUAL RUNOFF (INCHES)	25.62	24.97	16.34
10 PERCENT EXCEEDS	3340	1770	1700
50 PERCENT EXCEEDS	471	399	400
90 PERCENT EXCEEDS	32	32	58

\* See REMARKS.

02108000 NORTHEAST CAPE FEAR RIVER NEAR CHINQUAPIN, NC--Continued



02108000 NORTHEAST CAPE FEAR RIVER NEAR CHINOUPIN, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955, 1958 to 1962, 1975 to 1979, 1982, 1984, September 1999.

REMARKS.--Samples from current year collected during flooding from Hurricane Floyd.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	NITRO- GEN, AM- MONIA DIS- SOLVED MG/L AS N (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
SEP												
21...	1545	16800	758	33	2.9	5.5	49	21.7	.075	.77	.086	.001
24...	1100	8500	765	37	3.5	6.0	55	18.7	.246	1.1	.041	.003
30...	1200	3580	--	--	2.6	5.9	91	22.4	--	--	--	--

DATE	PHOS- PHORUS	CLOS- TRIDIUM	E. COLI WATER	BERYL- LIUM,	CADMIUM	CHRO- MIUM,	COPPER,	IRON,	LEAD,				
	NITRO- GEN, TOTAL (MG/L AS N) (00600)	ORTH, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PERFRI- GENS, MF-MCP, (COL / 100 ML) (90915)	ARSENIC TOTAL DIS- SOLVED (UG/L AS AS) (01000)	DIS- SOLVED (UG/L AS BE) (01010)	DIS- SOLVED (UG/L AS CD) (01025)	DIS- SOLVED (UG/L AS CR) (01030)	DIS- SOLVED (UG/L AS CU) (01040)	DIS- SOLVED (UG/L AS FE) (01046)	DIS- SOLVED (UG/L AS PB) (01049)		
	SEP												
	21...	.86	.136	.177	K5	420	1	<1.6	<8.0	<1.0	<10	430	<100
	24...	1.1	.199	--	--	--	2	<1.6	<8.0	<1.0	<10	670	<100
30...	--	--	--	K16	2300	--	--	--	--	--	--	--	

[illegible][illegible][illegible]



WATER-QUALITY DATA. WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

[illegible]

## WACCAMAW RIVER BASIN

02109500 WACCAMAW RIVER AT FREELAND, NC

LOCATION.--Lat 34°05'43", long 78°32'55", Brunswick County, Hydrologic Unit 03040206, on left bank 150 ft downstream of New Britton bridge on State Highway 130, 1 mi southwest of Freeland, 7 mi downstream of Juniper Creek, and 117 mi upstream from mouth in Winyah Bay.

DRAINAGE AREA.--680 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1939 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 15.52 ft above sea level. Prior to July 15, 1943, nonrecording gage 150 ft upstream at same datum. Auxiliary nonrecording gage 3.3 mi downstream of base gage Oct. 7, 1949, to July 14, 1952. Since July 15, 1952, auxiliary water-stage recorder at same site and datum. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Minimum discharge for period of record also occurred Sept. 9, 19, 28, and Oct. 4-14, 1954. Minimum discharge for current water year also occurred Nov. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	640	80	81	658	4710	730	1370	1060	e400	447	225	284
2	576	75	79	668	4420	699	1420	3040	e380	398	205	274
3	522	71	76	692	4060	661	1470	5590	e340	355	180	259
4	471	67	73	721	3740	634	1510	7530	e310	315	157	241
5	428	63	70	756	3420	596	1520	8240	292	280	137	221
6	392	60	68	792	3100	570	1480	8030	270	266	121	199
7	363	57	66	813	2860	547	1420	7510	238	320	107	216
8	341	55	63	818	2700	508	1350	6830	208	345	94	280
9	331	54	60	853	2560	470	1210	6110	179	327	85	281
10	351	53	57	974	2420	457	1060	5410	154	287	77	307
11	368	51	55	1180	2260	447	986	4790	132	246	69	335
12	364	48	53	1400	2130	430	902	4350	114	246	62	330
13	345	46	56	1480	2030	413	806	3990	101	329	63	306
14	321	45	64	1500	1920	405	715	3670	90	447	56	282
15	294	46	68	1540	1800	422	631	3550	83	549	51	684
16	268	51	105	1580	1680	450	560	3450	113	602	51	4640
17	243	52	163	1640	1570	476	495	3420	198	638	50	10200
18	223	52	194	1710	1470	486	433	3280	346	644	49	18000
19	204	53	220	1740	1380	482	375	3030	481	625	56	26000
20	188	63	245	1760	1310	470	327	2750	575	595	112	30000
21	179	75	257	1780	1110	461	286	2510	649	561	143	30600
22	170	82	255	1800	1060	502	251	2260	753	527	145	27900
23	155	86	234	1790	1000	578	221	2050	821	477	137	23600
24	143	92	e214	2180	952	629	193	1840	841	439	134	19000
25	132	96	216	2870	899	667	169	1640	812	411	139	14700
26	122	97	258	3700	846	780	148	e1440	753	379	152	11500
27	114	96	358	4450	798	936	130	e1200	684	340	164	9540
28	105	92	433	5210	761	1070	133	e800	616	307	209	8400
29	98	88	510	5570	---	1290	206	e700	553	281	232	7710
30	91	85	576	5460	---	1360	368	e600	497	262	258	7170
31	84	---	629	5120	---	1370	---	e500	---	246	288	---
TOTAL	8626	2031	5856	63205	58966	19996	22145	111170	11983	12491	4008	253459
MEAN	278	67.7	189	2039	2106	645	738	3586	399	403	129	8449
MAX	640	97	629	5570	4710	1370	1520	8240	841	644	288	30600
MIN	84	45	53	658	761	405	130	500	83	246	49	199
CFSM	.41	.10	.28	3.00	3.10	.95	1.09	5.27	.59	.59	.19	12.4
IN.	.47	.11	.32	3.46	3.23	1.09	1.21	6.08	.66	.68	.22	13.87

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1999, BY WATER YEAR (WY)

	MEAN	437	334	489	1063	1393	1440	972	386	313	523	653	835
MAX	2851	2332	3080	3722	5574	5319	2895	3586	1474	3040	2740	8449	
(WY)	1997	1978	1949	1993	1998	1983	1973	1999	1969	1961	1981	1999	
MIN	1.14	.54	3.53	20.6	44.6	219	120	17.5	5.51	5.72	7.59	.31	
(WY)	1941	1955	1955	1955	1941	1955	1967	1995	1952	1952	1954	1954	

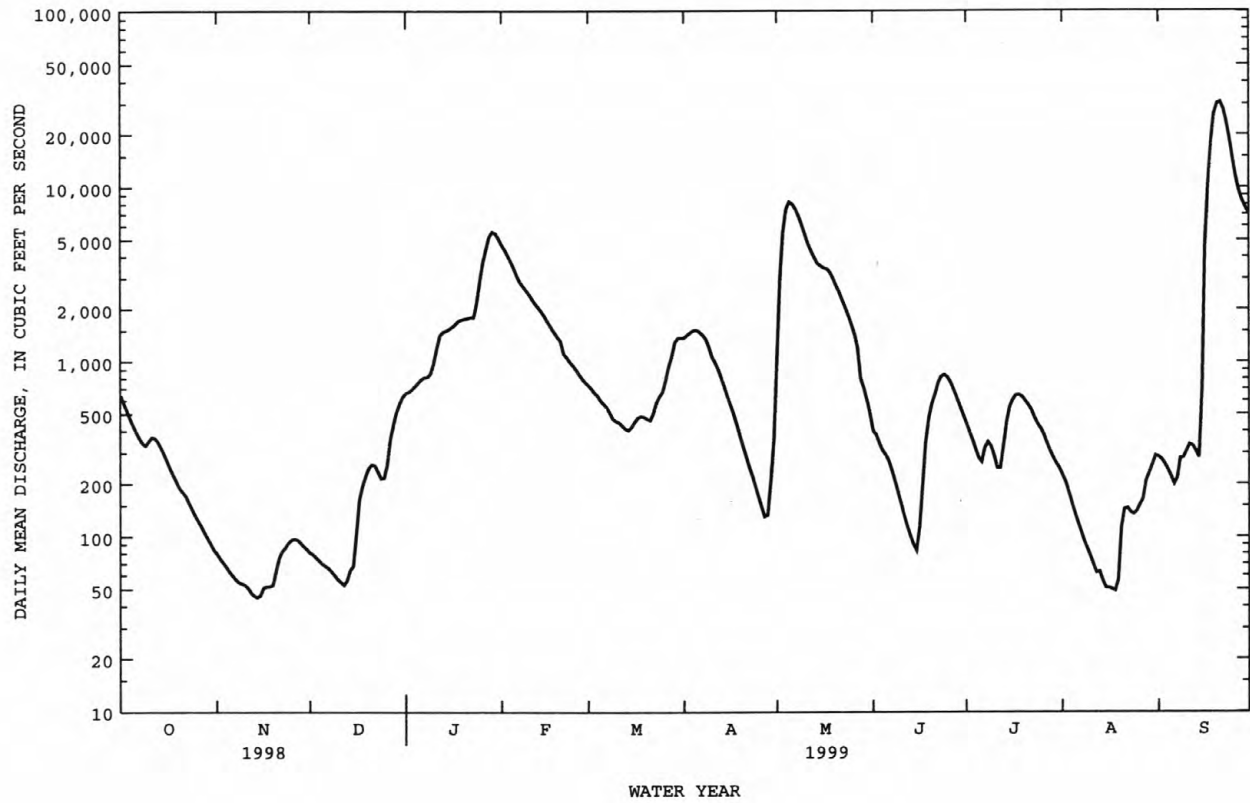
SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1939 - 1999

ANNUAL TOTAL	470593	573936	
ANNUAL MEAN	1289	1572	734
HIGHEST ANNUAL MEAN			1572
LOWEST ANNUAL MEAN			230
HIGHEST DAILY MEAN	7750	Feb 8	30600
LOWEST DAILY MEAN	14	Jul 13	45
ANNUAL SEVEN-DAY MINIMUM	15	Jul 10	48
INSTANTANEOUS PEAK FLOW			31200
INSTANTANEOUS PEAK STAGE			19.30
INSTANTANEOUS LOW FLOW			44*
ANNUAL RUNOFF (CFSM)	1.90		2.31
ANNUAL RUNOFF (INCHES)	25.74		31.40
10 PERCENT EXCEEDS	3600		3680
50 PERCENT EXCEEDS	441		433
90 PERCENT EXCEEDS	54		70

e Estimated.

\* See REMARKS.

02109500 WACCAMAW RIVER AT FREELAND, NC--Continued



## 02111000 YADKIN RIVER AT PATTERSON, NC

LOCATION.--Lat 35°59'29", long 81°33'30", Caldwell County, Hydrologic Unit 03040101, on left bank 200 ft upstream from bridge on State Highway 268, 0.4 mi upstream from Warrior Creek, 0.5 mi south of Patterson, 2.0 mi downstream of Walnut Branch, and at mile 416.

DRAINAGE AREA.--28.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1303: 1940(M), 1947-48(M). WSP 1553: 1948(P). WDR NC-80-1: 1975(P), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,211.47 ft above sea level. Prior to Feb. 9, 1940, nonrecording gage at present site, at datum 1,212.47 ft. Feb. 9, 1940, to Oct. 20, 1970, recording gage at present site, at datum 1,212.47 ft. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge, for period of record, from rating curve extended above 1,400 ft<sup>3</sup>/s on basis of computation of peak flow over dam 1 mi upstream at gage heights 4.58, 6.60, 7.70, and 12.70 ft. Minimum discharge for current water year also occurred Sept. 20, 26, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	13	14	18	42	32	70	63	21	46	20	13
2	12	13	13	18	58	31	50	47	20	69	18	12
3	11	14	13	41	45	54	42	40	24	57	17	12
4	11	14	14	31	40	54	38	36	19	70	16	11
5	15	14	14	24	36	44	35	34	18	54	15	11
6	14	14	14	26	34	41	33	53	21	43	15	13
7	23	14	14	22	33	37	32	60	18	68	14	13
8	58	14	15	25	31	35	31	61	17	76	14	12
9	22	14	21	32	29	36	30	46	17	54	16	11
10	16	14	15	31	28	35	28	40	16	53	18	11
11	15	29	14	26	27	33	27	36	24	65	15	10
12	14	17	17	24	27	32	26	33	20	113	14	9.9
13	14	15	126	24	26	33	26	40	18	110	12	9.5
14	13	15	37	28	25	54	25	40	17	75	12	9.3
15	13	17	24	122	24	63	32	33	19	59	11	9.3
16	13	15	21	53	24	52	30	30	24	54	10	9.2
17	13	14	19	39	25	46	26	29	29	45	10	8.8
18	13	14	18	55	41	42	25	35	20	41	10	8.6
19	13	14	17	45	48	38	25	57	18	37	9.5	8.5
20	13	14	19	37	54	36	25	36	18	34	23	8.5
21	13	14	17	33	48	42	24	31	19	34	20	8.6
22	13	13	17	30	40	36	24	30	18	30	15	14
23	12	13	17	119	36	36	23	29	18	28	16	12
24	13	13	45	214	33	35	23	28	18	28	22	10
25	13	13	32	104	32	33	22	26	35	34	70	8.8
26	13	14	24	65	31	32	22	26	29	26	54	8.3
27	13	14	23	50	29	30	26	25	90	24	24	16
28	13	13	21	42	36	29	35	24	60	24	20	60
29	13	13	20	37	---	29	36	23	62	24	17	35
30	13	13	19	35	---	28	110	22	36	22	15	29
31	13	---	18	31	---	27	---	21	---	22	14	---
TOTAL	471	435	712	1481	982	1185	1001	1134	783	1519	576.5	412.3
MEAN	15.2	14.5	23.0	47.8	35.1	38.2	33.4	36.6	26.1	49.0	18.6	13.7
MAX	58	29	126	214	58	63	110	63	90	113	70	60
MIN	11	13	13	18	24	27	22	21	16	22	9.5	8.3
CFSM	.53	.50	.80	1.66	1.22	1.33	1.16	1.27	.91	1.70	.65	.48
IN.	.61	.56	.92	1.91	1.27	1.53	1.29	1.46	1.01	1.96	.74	.53

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

	MEAN	36.8	41.4	45.5	52.1	62.3	73.9	69.9	55.0	48.6	39.6	44.6	35.8
MAX	149	140	98.8	132	143	160	164	125	122	98.9	194	136	
(WY)	1991	1978	1974	1946	1960	1993	1980	1973	1992	1941	1940	1979	
MIN	8.45	9.07	11.8	11.4	27.0	23.7	26.5	20.5	13.0	9.04	9.05	6.95	
(WY)	1955	1982	1956	1956	1988	1988	1981	1940	1956	1988	1988	1954	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

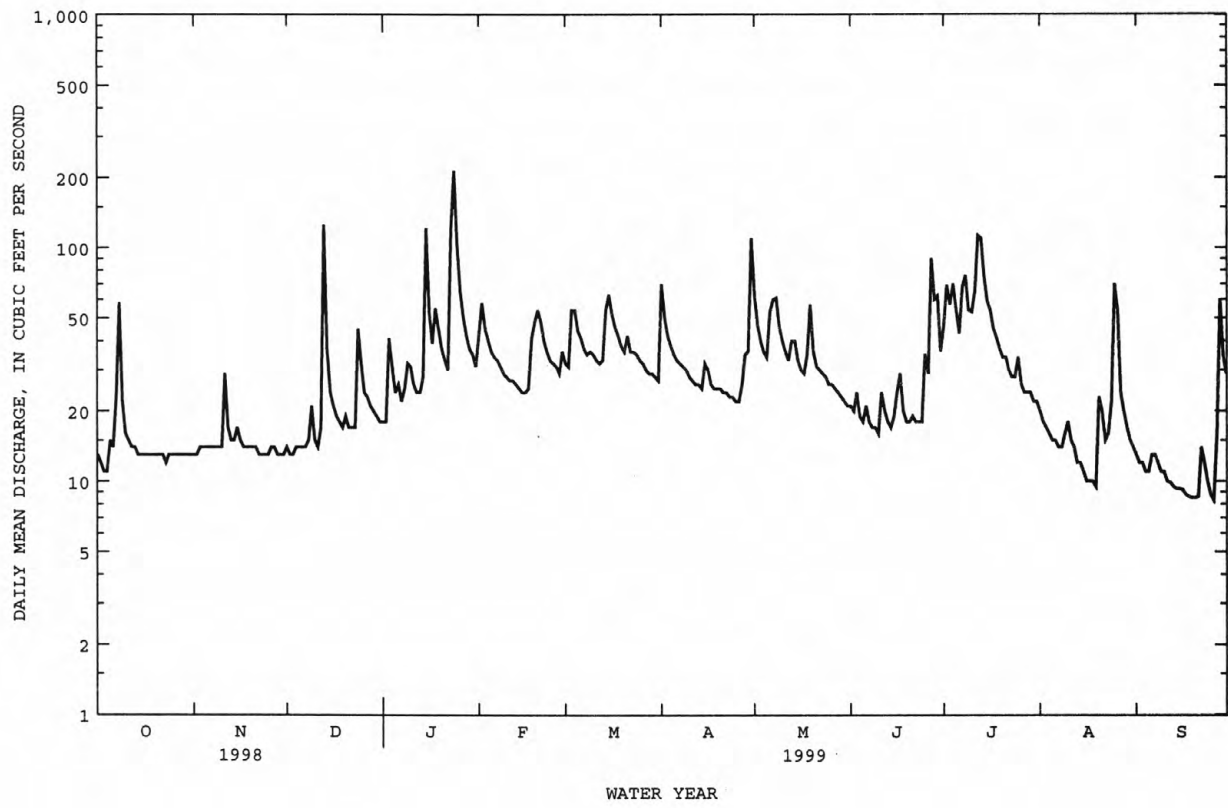
## FOR 1999 WATER YEAR

## WATER YEARS 1940 - 1999

ANNUAL TOTAL	19542	10691.8	
ANNUAL MEAN	53.5	29.3	50.4
HIGHEST ANNUAL MEAN			78.3
LOWEST ANNUAL MEAN			21.5
HIGHEST DAILY MEAN	515	Apr 17	2130
LOWEST DAILY MEAN	11	Sep 14	8.3
ANNUAL SEVEN-DAY MINIMUM	11	Sep 14	8.8
INSTANTANEOUS PEAK FLOW			321
INSTANTANEOUS PEAK STAGE			2.60
INSTANTANEOUS LOW FLOW			8.2*
ANNUAL RUNOFF (CFSM)	1.86	1.02	1.75
ANNUAL RUNOFF (INCHES)	25.24	13.81	23.77
10 PERCENT EXCEEDS	117	54	88
50 PERCENT EXCEEDS	32	24	37
90 PERCENT EXCEEDS	13	13	17

\* See REMARKS.

02111000 YADKIN RIVER AT PATTERSON, NC--Continued





## PEE DEE RIVER BASIN

361210081333001 TRIPLETT RAINGAGE

LOCATION.--Lat 36°12'10", long 81°33'30", Watauga County, Hydrologic Unit 03040101, 60 ft west of Secondary Road 1570, 0.3 mi north of Triplett, and 1.7 mi south of Blue Ridge Parkway.

PERIOD OF RECORD.--October 1998 to September 1999.

GAGE.--Tipping bucket raingage and electronic datalogger. Satellite telemetry at site.

REMARKS.--Gage is operated in cooperation with USCOE Wilmington District.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.04	.76	.00	.75	.00	.00	.74	.22	.00
2	.00	.01	.00	.00	.03	.00	.00	.00	.11	.25	.01	.00
3	.00	.05	.00	.01	.00	.74	.00	.00	.00	.00	.00	.00
4	.13	.02	.00	.00	.02	.04	.00	.00	.00	.00	.00	.00
5	.13	.03	.01	.00	.00	.03	.00	.08	.00	.00	.00	.56
6	.13	.01	.00	.00	.00	.06	.00	.27	.00	.67	.00	.01
7	1.54	.00	.00	.00	.03	.00	.00	.17	.00	.14	.00	.00
8	.49	.00	.23	.00	.00	.00	.02	.01	.05	.01	.30	.00
9	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
10	.00	.77	.00	.00	.01	.22	.00	.00	.93	.29	.00	.00
11	.00	.44	.00	.00	.00	.02	.06	.00	.19	.27	.00	.00
12	.00	.00	1.49	.00	.06	.00	.00	.00	.00	1.43	.00	.00
13	.00	.01	.84	.00	.00	.25	.00	.51	.00	.02	.43	.00
14	.00	.12	.00	.74	.00	.32	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.24	.00	.12	.56	.00	.05	.19	.00	.01
16	.00	.01	.00	.00	.00	.00	.00	.00	.96	.00	.00	.00
17	.00	.00	.00	.35	.53	.00	.00	.00	.07	.00	.00	.00
18	.00	.05	.00	.26	.28	.00	.00	.29	.00	.00	.00	.00
19	.00	.00	.13	.00	.34	.00	.00	.04	.00	.00	.05	.00
20	.00	.02	.01	.00	.03	.00	.00	.00	.02	.00	.54	.00
21	.00	.00	.00	.00	.00	.41	.00	.00	.01	.01	.00	.07
22	.00	.00	.01	.02	.00	.00	.00	.01	.01	.00	.00	.00
23	.00	.01	.00	2.24	.00	.08	.02	.00	.00	.00	.54	.00
24	.00	.00	---	.44	.06	.13	.01	.04	.17	.39	1.20	.00
25	.00	.16	.00	.00	.07	.00	.00	.00	.78	.00	.46	.00
26	.00	.02	.03	.00	.00	.01	.08	.03	.65	.00	.00	.00
27	.00	.00	.00	.00	.05	.00	.77	.00	.27	.00	.00	1.56
28	.00	.00	.03	.00	.35	.00	.16	.00	.02	.01	.00	1.98
29	.00	.00	.02	.03	---	.00	.53	.00	.02	.00	.00	.48
30	.00	.00	.01	.00	---	.00	.62	.00	.00	.06	.00	.00
31	.00	---	.00	.00	---	.32	---	.00	---	.03	.00	---
TOTAL	2.42	1.73	---	4.37	2.63	2.75	3.58	1.45	4.31	4.51	3.75	4.67



Floodwaters of the Neuse River surround this gas station along N.C. 117 in Goldsboro north of the main river channel, September 1999.

## PEE DEE RIVER BASIN

02111180 ELK CREEK AT ELKVILLE, NC

LOCATION.--Lat 36°04'16", long 81°24'13", Wilkes County, Hydrologic Unit 03040101, on left bank 700 ft upstream from bridge on State Highway 268 in Elkville, and 3,400 ft upstream from mouth.

DRAINAGE AREA.--48.1 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1965 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,082.40 ft above sea level. Satellite telemetry at station.

REMARKS --Records fair except those for estimated daily discharges, which are poor. Maximum discharge for period of record, from rating curve extended above 3,200 ft<sup>3</sup>/s on basis of contracted-opening computation. Minimum discharge for period of record, result of freezeup. Minimum discharge for current water year also occurred Aug. 20.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Aug. 13, 1940, reached a stage of about 22 ft; discharge, about 70,000 ft<sup>3</sup>/s, on basis of several contracted-opening and slope-area measurements. A discharge of 6.0 ft<sup>3</sup>/s was measured Sept. 19, 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	24	21	27	74	73	128	142	31	40	25	21
2	20	24	21	26	121	69	113	104	30	74	26	21
3	19	24	21	e80	97	105	95	86	33	69	26	20
4	21	24	21	e60	83	127	87	76	31	67	24	19
5	25	24	21	e30	73	105	81	70	30	50	23	23
6	26	24	22	e32	67	98	73	89	29	42	22	32
7	51	23	22	e34	63	91	70	91	28	47	21	24
8	102	23	24	37	60	84	69	97	28	51	21	21
9	37	23	33	48	56	83	68	75	27	58	24	20
10	27	24	24	56	55	80	64	67	27	64	23	22
11	25	58	22	44	54	75	62	62	51	72	21	19
12	25	31	26	39	54	71	60	57	38	150	20	18
13	24	24	186	40	52	69	58	58	31	173	19	18
14	24	24	66	46	49	95	57	70	28	100	22	19
15	23	25	41	236	47	126	71	59	31	75	21	19
16	23	23	33	108	47	116	70	54	42	62	19	19
17	23	22	29	74	48	103	60	52	57	53	19	18
18	23	22	27	95	75	93	59	62	36	49	18	18
19	23	22	26	83	79	86	60	80	30	44	17	18
20	23	22	27	68	106	81	60	52	29	41	22	19
21	23	22	26	59	96	91	58	48	31	40	25	21
22	22	21	25	53	82	81	56	47	30	37	19	24
23	22	21	25	199	74	75	52	46	30	34	21	20
24	23	21	56	499	68	74	49	43	29	38	36	19
25	23	21	50	226	65	72	48	42	53	57	84	19
26	23	23	37	138	62	70	47	37	50	34	52	19
27	23	23	35	101	59	66	50	37	114	30	30	53
28	23	21	32	83	74	64	84	35	77	30	25	146
29	23	21	31	73	---	62	77	34	53	28	23	84
30	23	21	29	67	---	61	198	34	42	27	22	70
31	23	---	28	60	---	59	---	32	---	27	22	---
TOTAL	836	725	1087	2821	1940	2605	2184	1938	1176	1763	792	883
MEAN	27.0	24.2	35.1	91.0	69.3	84.0	72.8	62.5	39.2	56.9	25.5	29.4
MAX	102	58	186	499	121	127	198	142	114	173	84	146
MIN	19	21	21	26	47	59	47	32	27	27	17	18
CFSM	.56	.50	.73	1.89	1.44	1.75	1.51	1.30	.81	1.18	.53	.61
IN.	.65	.56	.84	2.18	1.50	2.01	1.69	1.50	.91	1.36	.61	.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

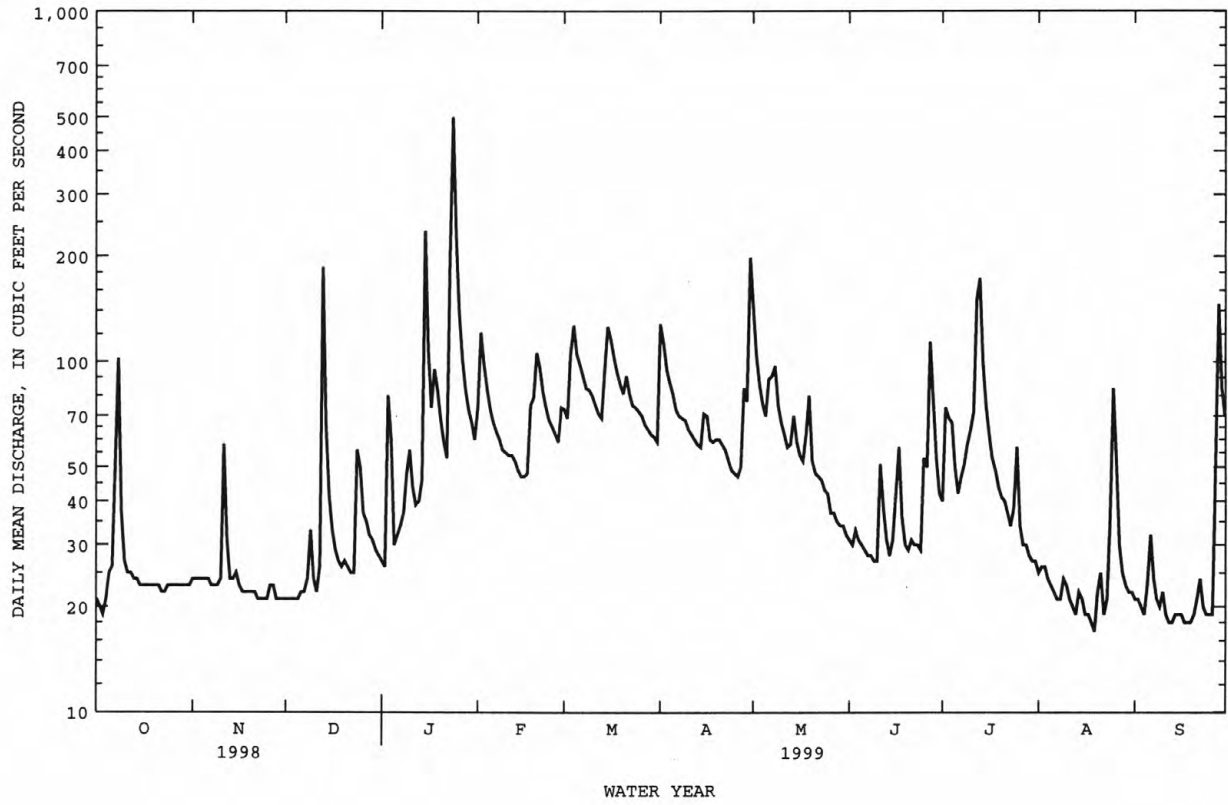
	MEAN	77.8	91.4	88.8	108	125	153	145	115	103	70.2	81.7	64.7
MAX	298	365	193	323	250	317	379	291	226	185	384	257	
(WY)	1991	1978	1974	1995	1966	1993	1980	1973	1992	1989	1994	1979	
MIN	19.8	19.8	24.7	22.5	48.2	47.9	51.5	37.3	21.7	17.6	18.9	22.8	
(WY)	1982	1982	1989	1981	1989	1988	1986	1988	1988	1988	1988	1998	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1966 - 1999
ANNUAL TOTAL	39065	18750	
ANNUAL MEAN	107	51.4	102
HIGHEST ANNUAL MEAN			154
LOWEST ANNUAL MEAN			43.7
HIGHEST DAILY MEAN	1330	499	5890
LOWEST DAILY MEAN	19	17	12
ANNUAL SEVEN-DAY MINIMUM	19	18	14
INSTANTANEOUS PEAK FLOW		757	18700*
INSTANTANEOUS PEAK STAGE		2.58	12.02
INSTANTANEOUS LOW FLOW		16*	11*
ANNUAL RUNOFF (CFSM)	2.23	1.07	2.12
ANNUAL RUNOFF (INCHES)	30.21	14.50	28.74
10 PERCENT EXCEEDS	221	91	174
50 PERCENT EXCEEDS	61	40	70
90 PERCENT EXCEEDS	22	21	30

e Estimated.

\* See REMARKS.

02111180 ELK CREEK AT ELKVILLE, NC--Continued



02111391 W. KERR SCOTT AT DAM NEAR WILKESBORO, NC

LOCATION.--Lat 36°08'04", long 80°13'30", Wilkes County, Hydrologic Unit 03040101, at W. Kerr Scott Dam on Yadkin River, 0.1 mi upstream from Fish Trap Creek, 2.0 mi upstream from Millers Creek, and 4.0 mi west of Wilkesboro.

DRAINAGE AREA.--367 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1962 to current year.

GAGE.--Water-stage recorder and staff gage at dam. Datum of gage is 1,000 ft above sea level. U.S. Army Corps of Engineers telephone and satellite telemetry at station.

REMARKS.--Records good except those for estimated daily gage-heights, which are fair. Lake is used for flood control, low-flow augmentation, recreation, and water supply. Some storage was affected during construction in July 1962, but gates were closed Aug. 22, 1962. Reservoir reached normal pool elevation on Jan. 19, 1963. Total capacity at elevation 1,075.0 ft is 6,664,680,000 ft<sup>3</sup> of which 4,878,720,000 ft<sup>3</sup> is controlled flood storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum, 61.20 ft, Nov. 7, 1977; minimum, 19.85 ft, Nov. 26, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum, 33.81 ft, Jan. 25; minimum, 26.33 ft, Sept. 27.

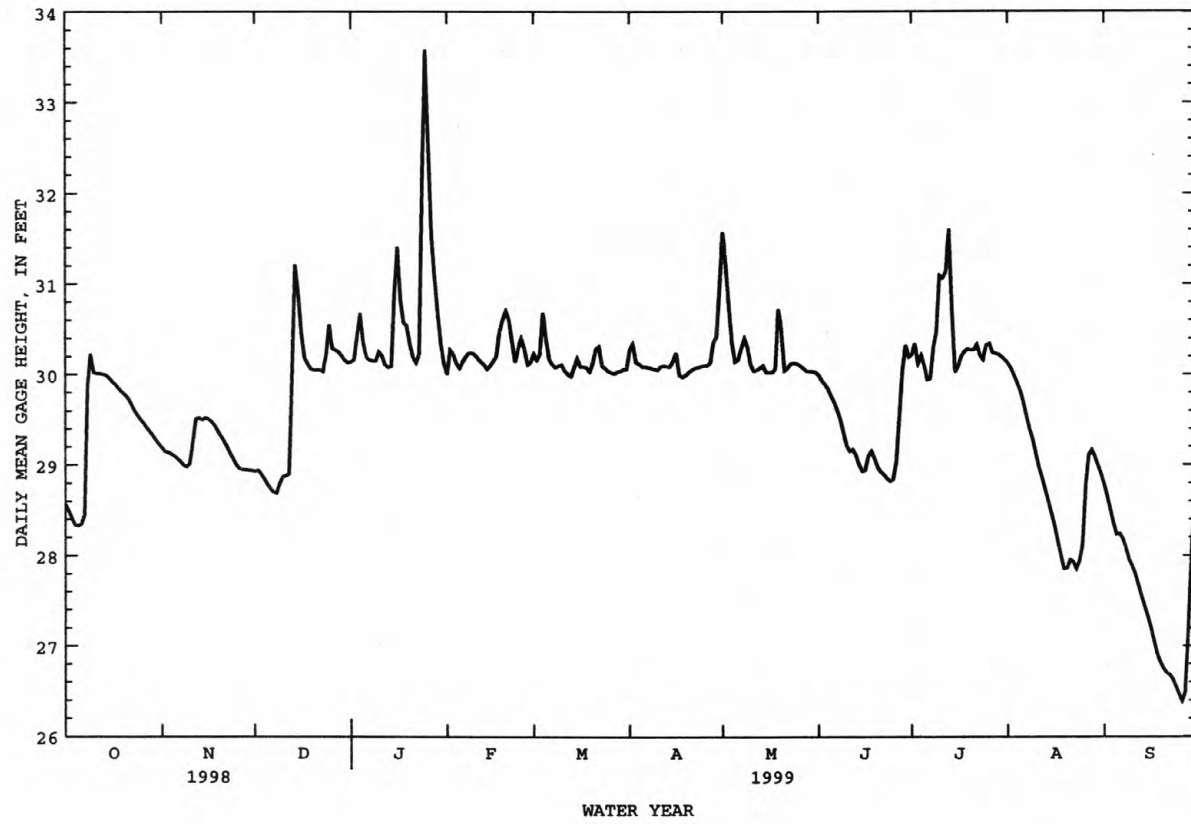
GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.56	29.19	28.93	30.14	30.00	30.23	30.27	31.57	29.99	30.22	30.12	28.78
2	28.49	29.15	28.94	30.16	30.27	30.16	30.34	31.21	29.93	30.34	30.06	28.64
3	28.41	29.14	28.90	30.42	30.23	30.23	30.14	30.75	29.89	30.12	29.98	28.50
4	28.34	29.12	28.85	30.67	30.13	30.68	30.12	30.35	29.84	30.21	29.90	28.35
5	28.33	29.10	28.79	30.35	30.07	30.38	30.09	30.14	29.76	30.10	29.81	28.23
6	28.35	29.07	28.74	30.19	30.14	30.17	30.09	30.16	29.69	29.94	29.68	28.24
7	28.45	29.04	28.70	30.16	30.20	30.11	30.08	30.28	29.60	29.95	29.53	28.18
8	29.86	29.00	28.69	30.15	30.24	30.08	30.07	30.40	29.50	30.29	29.39	28.07
9	30.23	28.98	28.80	30.15	30.24	30.10	30.06	30.30	29.35	30.47	29.27	27.95
10	30.02	29.01	28.87	30.25	30.22	30.11	30.05	30.11	29.21	31.09	29.11	27.88
11	30.01	29.26	28.88	30.21	30.18	30.04	30.09	30.04	29.15	31.06	28.96	27.79
12	30.01	29.51	28.90	30.11	30.14	30.00	30.10	30.05	29.17	31.13	28.85	27.67
13	30.00	29.52	30.02	30.08	30.11	29.98	30.09	30.07	29.10	31.60	28.72	27.55
14	29.99	29.50	31.21	30.09	30.06	30.08	30.09	30.10	29.00	30.71	28.59	27.43
15	29.96	29.52	30.91	30.88	30.10	30.18	30.15	30.02	28.93	30.02	28.46	27.32
16	29.92	29.51	30.46	31.41	30.15	30.09	30.24	30.02	28.94	30.09	28.32	27.20
17	29.89	29.48	30.18	30.82	30.21	30.09	29.99	30.02	29.10	30.20	e28.15	27.05
18	29.85	29.44	30.12	30.57	30.48	30.08	29.97	30.06	29.15	30.25	e28.00	26.91
19	29.81	29.38	30.06	30.54	30.61	30.03	29.99	30.72	29.07	30.28	27.85	26.82
20	29.78	29.32	30.05	30.34	30.70	30.13	30.02	30.49	28.97	30.27	27.86	26.75
21	29.74	29.27	30.05	30.19	30.60	30.28	30.05	30.04	28.92	30.27	27.95	26.70
22	29.68	29.20	30.05	30.13	30.37	30.31	30.07	30.07	28.89	30.33	27.93	26.68
23	29.61	29.13	30.03	30.23	30.14	30.10	30.08	30.12	28.85	30.21	27.85	26.63
24	29.56	29.07	30.23	32.15	30.29	30.07	30.09	30.13	28.82	30.16	27.94	26.55
25	29.51	29.00	30.55	33.58	30.40	30.04	30.10	30.12	28.84	30.32	28.12	26.47
26	29.47	28.96	30.29	32.54	30.28	30.02	30.10	30.10	29.03	30.34	28.76	26.39
27	29.42	28.95	30.27	31.54	30.11	30.01	30.13	30.07	29.56	30.24	29.11	26.49
28	29.37	28.95	30.25	31.06	30.14	30.03	30.35	30.04	30.06	30.23	29.16	27.21
29	29.33	28.94	30.21	30.67	---	30.04	30.41	30.03	30.32	30.22	29.09	28.04
30	29.28	28.94	30.16	30.34	---	30.06	30.93	30.03	30.19	30.19	28.99	28.63
31	29.23	---	30.13	30.12	---	30.06	---	30.02	---	30.16	28.89	---
MEAN	29.43	29.19	29.72	30.65	30.24	30.13	30.14	30.25	29.36	30.36	28.85	27.50
MAX	30.23	29.52	31.21	33.58	30.70	30.68	30.93	31.57	30.32	31.60	30.12	28.78
MIN	28.33	28.94	28.69	30.08	30.00	29.98	29.97	30.02	28.82	29.94	27.85	26.39

e Estimated.



02111391 W. KERR SCOTT AT DAM NEAR WILKESBORO, NC--Continued



## PEE DEE RIVER BASIN

361554081191701 WILBAR RAINGAGE

LOCATION.--Lat 36°15'54", long 81°19'17", Wilkes County, Hydrologic Unit 03040101, 300 ft northeast of NC Hwy 16, 2.0 mi northwest of Wilbar, and 4.0 mi southwest of Horse Gap.

PERIOD OF RECORD.--October 1998 to September 1999.

GAGE.--Tipping bucket raingage and electronic datalogger. Satellite telemetry at site.

REMARKS.--Gage is operated in cooperation with USCOE Wilmington District.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.03	.24	.00	.04	.00	.00	.72	.03	.00
2	.00	.01	.00	.00	.00	.00	.00	.00	.11	.42	.01	.00
3	.00	.09	.00	.25	.00	.39	.00	.00	.01	.00	.00	.00
4	.23	.01	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
5	.07	.06	.00	.00	.00	.01	.00	.02	.00	.00	.00	.36
6	.12	.00	.00	.00	.00	.03	.00	.13	.00	.00	.00	.00
7	.00	.00	.01	.11	.05	.00	.00	.84	.00	.94	.00	.00
8	.00	.02	.41	.00	.00	.00	.00	.00	.00	.00	.03	.00
9	.00	.00	.00	.08	.07	.00	.00	.00	.00	.00	.00	1.28
10	.00	.54	.00	.00	.00	.02	.00	.00	.15	.28	.00	.00
11	.00	.08	.00	.00	.00	.03	.11	.00	.25	.15	.00	.00
12	.00	.00	1.25	.00	.25	.00	.00	.00	.00	.83	.00	.00
13	.00	.00	.34	.00	.00	.03	.00	.25	.00	.00	.00	.00
14	.00	.07	.00	.25	.00	.14	.01	.02	.00	.00	.07	.00
15	.00	.00	.00	.08	.00	.00	.22	.00	.09	.25	.00	.04
16	.00	.00	.00	.00	.00	.00	.00	.00	.87	.00	.00	.00
17	.00	.00	.00	.15	.30	.00	.00	.00	.01	.29	.00	.00
18	.00	.00	.00	.01	.07	.00	.00	2.22	.00	.00	.00	.00
19	.00	.00	.09	.00	.05	.00	.00	.00	.00	.00	.00	.00
20	.00	.01	.00	.00	.01	.00	.00	.00	.05	.00	1.06	.00
21	.00	.00	.00	.00	.00	.29	.00	.00	.02	.24	.00	.03
22	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00
23	.00	.00	.00	.48	.00	.00	.00	.00	.00	.00	1.02	.00
24	.00	.00	.00	.25	.00	.05	.00	.02	.06	.15	.30	.00
25	.00	.09	.00	.00	.00	.00	.00	.00	.64	.00	.99	.00
26	.00	.03	.01	.00	.01	.00	.10	.02	.27	.00	.28	.00
27	.00	.00	.00	.00	.02	.00	.27	.00	1.01	.00	.00	1.59
28	.01	.00	.00	.00	.09	.00	.00	.00	.00	.06	.00	1.04
29	.00	.00	.00	.01	---	.00	.03	.00	.01	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.03	.13	.00	.00
31	.00	---	.00	.00	---	.05	---	.00	---	.00	.00	---
TOTAL	0.43	1.01	2.11	1.70	1.16	1.05	0.78	3.52	3.64	4.46	3.79	4.34



USGS crew using an acoustic doppler current profiler to measure streamflow at Potecasi Creek, September 1999.

02111500 REDDIES RIVER AT NORTH WILKESBORO, NC

LOCATION.--Lat 36°10'29", long 81°10'09", Wilkes County, Hydrologic Unit 03040101, on left bank 550 ft upstream from bridge on Secondary Road 1517, 1.4 mi upstream from North Wilkesboro municipal dam, 1.2 mi northwest of North Wilkesboro, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--89.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1433: 1944. WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 978.62 ft above sea level. Satellite telemetry at station.

REMARKS.--Records good except those those for estimated daily discharges, which are fair. Slight diurnal fluctuation at low flow during growing season. Maximum discharge for period of record, from rating curve extended above 5,600 ft<sup>3</sup>/s on basis of computation of peak flow over dam; gage height: 22.02 ft. Minimum discharge for current water year also occurred Sept. 17, 26, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	60	57	60	110	87	142	150	55	176	52	45
2	56	60	56	61	177	80	116	111	55	113	51	44
3	55	60	56	131	133	138	98	94	56	136	48	43
4	56	60	57	125	113	164	91	86	53	88	47	41
5	91	60	57	94	99	122	85	81	51	73	47	49
6	66	60	57	117	93	111	81	96	51	64	46	61
7	111	59	57	75	90	100	80	91	49	86	44	48
8	507	59	60	81	85	91	77	145	49	158	43	44
9	109	59	79	98	80	94	77	98	47	83	45	42
10	83	59	60	100	82	91	74	85	57	73	43	51
11	76	116	58	81	77	88	74	78	101	79	42	41
12	71	e74	62	77	78	83	73	73	59	158	41	40
13	69	e66	451	79	80	81	68	73	52	193	40	39
14	68	e65	147	89	72	113	68	81	50	125	42	39
15	65	e66	91	285	71	154	88	73	52	108	42	40
16	65	e63	77	151	70	129	85	68	68	99	39	39
17	65	e62	69	113	72	113	71	65	84	85	40	35
18	65	e61	64	142	125	104	69	67	57	79	38	37
19	65	e62	63	124	112	95	68	326	51	76	35	38
20	65	e62	65	104	135	90	68	127	51	67	69	38
21	65	e59	61	93	114	118	66	97	55	72	54	42
22	64	e58	59	85	98	104	65	85	54	96	43	44
23	63	e59	58	185	91	95	63	80	53	66	55	36
24	62	e58	125	429	87	94	63	74	51	94	92	35
25	61	58	102	215	84	89	63	69	65	98	122	36
26	61	60	80	148	82	85	63	69	72	68	138	35
27	61	57	77	123	80	82	70	66	188	61	85	46
28	60	57	72	108	96	79	105	62	98	58	60	146
29	60	57	70	97	---	78	99	60	71	57	54	138
30	60	57	65	90	---	76	248	58	62	55	50	127
31	60	---	63	83	---	75	---	57	---	57	46	---
TOTAL	2558	1873	2575	3843	2686	3103	2558	2845	1917	2901	1693	1539
MEAN	82.5	62.4	83.1	124	95.9	100	85.3	91.8	63.9	93.6	54.6	51.3
MAX	507	116	451	429	177	164	248	326	188	193	138	146
MIN	55	57	56	60	70	75	63	57	47	55	35	35
CFSM	.93	.70	.93	1.39	1.08	1.12	.96	1.03	.72	1.05	.61	.58
IN.	1.07	.78	1.07	1.60	1.12	1.29	1.07	1.19	.80	1.21	.71	.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

	MEAN	111	119	130	145	166	195	195	161	148	122	124	114
MAX	309	379	273	374	386	405	536	353	412	335	587	479	
(WY)	1977	1978	1974	1996	1960	1975	1980	1973	1976	1941	1940	1945	
MIN	34.5	46.7	49.5	44.5	71.5	77.3	78.3	68.6	47.6	43.0	31.0	30.8	
(WY)	1955	1982	1956	1956	1989	1940	1986	1941	1956	1986	1956	1954	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

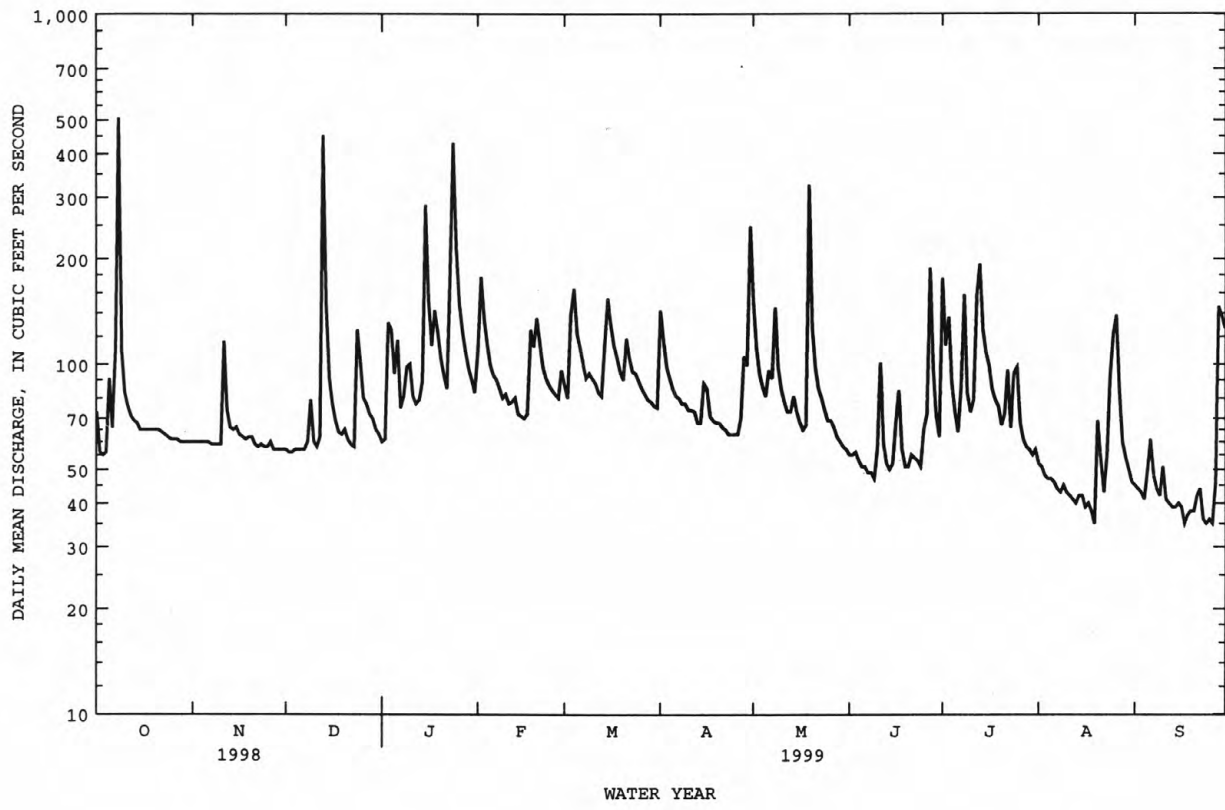
WATER YEARS 1940 - 1999

ANNUAL TOTAL	56932	30091	
ANNUAL MEAN	156	82.4	
HIGHEST ANNUAL MEAN			144
LOWEST ANNUAL MEAN			218
HIGHEST DAILY MEAN	1380	Jan 8	7600
LOWEST DAILY MEAN	54	Sep 17	23
ANNUAL SEVEN-DAY MINIMUM	55	Sep 14	25
INSTANTANEOUS PEAK FLOW			27000*
INSTANTANEOUS PEAK STAGE			22.02
INSTANTANEOUS LOW FLOW			22
ANNUAL RUNOFF (CFSM)	1.75	.92	1.61
ANNUAL RUNOFF (INCHES)	23.74	12.55	21.94
10 PERCENT EXCEEDS	280	125	231
50 PERCENT EXCEEDS	108	70	112
90 PERCENT EXCEEDS	59	46	61

e Estimated.

\* See REMARKS.

02111500 REDDIES RIVER AT NORTH WILKESBORO, NC--Continued





## 02112000 YADKIN RIVER AT WILKESBORO, NC

LOCATION.--Lat 36°09'09", long 81°08'45", Wilkes County, Hydrologic Unit 03040101, on right bank 150 ft upstream from bridge on State Highways 18 and 268 between North Wilkesboro and Wilkesboro, 150 ft downstream of Reddies River, 0.5 mi northeast of Wilkesboro, and 382 mi upstream from mouth of Pee Dee River in Winyah Bay.

DRAINAGE AREA.--504 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1903 to June 1909, October 1920 to current year. Prior to October 1928, published as "Yadkin River at North Wilkesboro".

REVISED RECORDS.--WSP 1433: 1903-09, 1922, 1925-26(M), 1930, 1932, 1934, 1946-48(M), drainage area at former site. WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 942.35 ft above sea level. Apr. 10, 1903, to June 30, 1909, and Oct. 17, 1920, to Apr. 10, 1929, nonrecording gage at site 1.2 mi downstream at different datum. Apr. 11, 1929, to Jan. 9, 1930, nonrecording gage at present site and datum. U.S. Army Corps of Engineers telephone and satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1962 by W. Kerr Scott Reservoir (station 02111391) 5.5 mi upstream. Prior to regulation maximum discharge: 160,000 ft<sup>3</sup>/s, Aug. 14, 1940, from rating curve extended above 20,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; gage height: 37.6 ft, from floodmarks. Minimum discharge for current water year also occurred Sept. 24, 25, 26.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1916 reached a stage of 34.5 ft present site and datum, from floodmark; discharge, 116,000 ft<sup>3</sup>/s, from rating curve extended as explained above.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	368	360	308	360	731	572	695	1020	324	1170	306	281
2	346	350	304	365	919	573	987	1070	329	808	315	284
3	349	351	344	492	972	690	753	935	325	793	303	282
4	355	350	341	639	767	923	630	805	321	649	301	281
5	403	346	344	624	639	1040	601	622	321	612	308	318
6	365	342	347	507	551	793	533	591	322	480	325	319
7	459	345	331	487	547	689	528	626	314	431	324	289
8	1160	349	322	544	535	607	521	744	329	479	307	281
9	774	324	349	611	525	591	498	757	334	436	309	268
10	542	304	317	624	527	621	459	643	334	774	330	255
11	399	411	312	621	517	605	435	506	391	833	289	242
12	387	360	336	568	523	561	429	436	315	924	261	243
13	381	380	983	524	522	529	415	464	326	1380	270	235
14	381	383	738	523	452	747	399	522	312	1700	276	234
15	378	385	882	1010	387	1090	437	489	292	950	279	239
16	375	371	770	1080	387	924	588	403	318	500	266	239
17	377	375	541	1270	393	753	550	374	338	477	265	230
18	377	378	426	996	547	704	392	363	313	477	261	218
19	373	375	418	932	722	622	380	945	314	466	228	198
20	370	375	407	823	877	503	378	977	301	453	278	192
21	369	376	376	718	915	613	373	605	290	470	242	204
22	365	376	364	589	888	742	369	401	288	533	232	203
23	362	371	516	827	645	687	365	398	288	496	262	188
24	368	367	651	1200	452	603	366	385	273	415	311	187
25	371	363	780	1500	546	583	368	375	285	394	333	191
26	363	351	499	1950	648	549	364	375	280	414	443	194
27	357	320	504	1400	622	521	378	370	408	389	306	224
28	360	321	462	970	554	481	479	340	326	316	293	359
29	360	322	463	934	---	469	684	320	446	314	316	365
30	358	317	425	816	---	463	1070	318	542	311	299	354
31	364	---	383	728	---	460	---	309	---	320	262	---
TOTAL	12916	10698	14543	25232	17310	20308	15424	17488	9899	19164	9100	7597
MEAN	417	357	469	814	618	655	514	564	330	618	294	253
MAX	1160	411	983	1950	972	1090	1070	1070	542	1700	443	365
MIN	346	304	304	360	387	460	364	309	273	311	228	187
†	+12	-5	+22	-4	+7	-3	+40	-41	+5	-1	-24	-1

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, \* BY WATER YEAR (WY)

	MEAN	692	735	771	912	1002	1209	1160	969	888	677	721	604
MAX	1834	2571	1619	1965	1832	2346	2868	1954	1963	1191	2239	1948	
(WY)	1991	1978	1974	1995	1990	1993	1980	1973	1975	1989	1994	1979	
MIN	191	258	268	349	446	441	435	410	293	234	194	209	
(WY)	1989	1982	1982	1989	1989	1988	1986	1988	1988	1988	1988	1988	

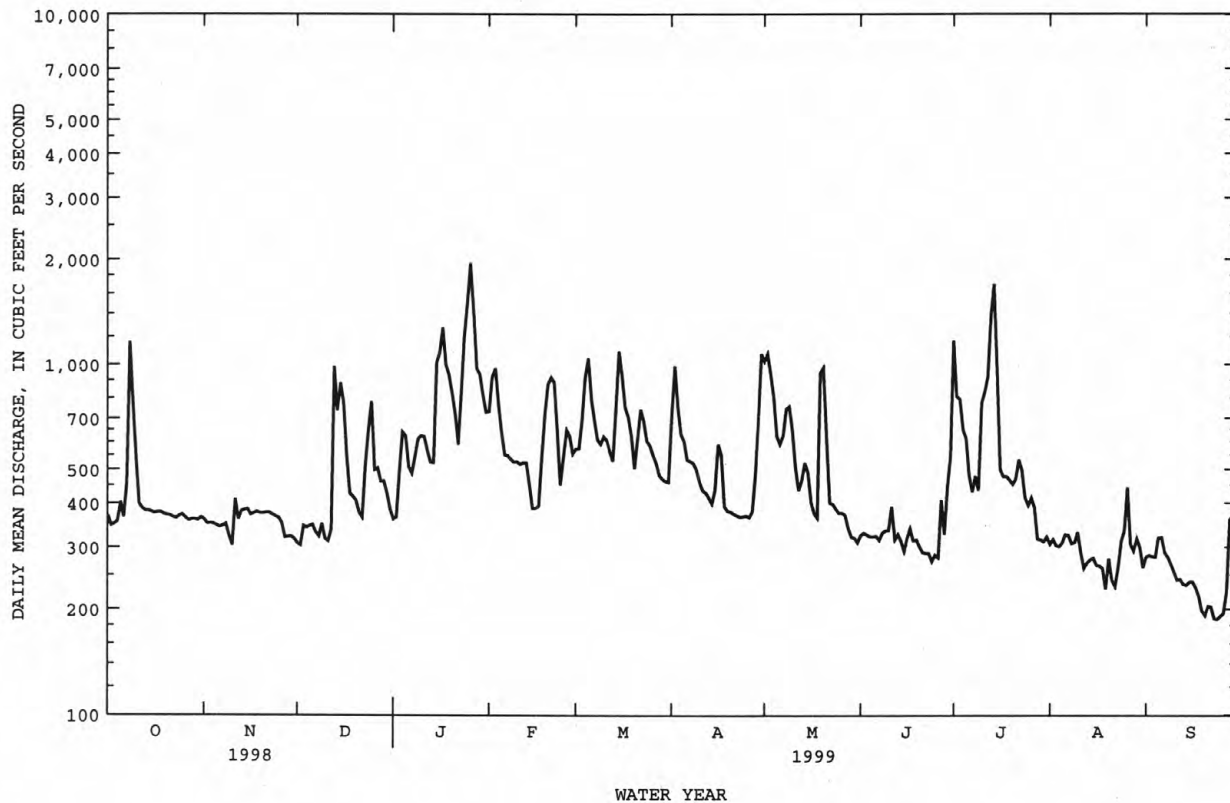
02112000 YADKIN RIVER AT WILKESBORO, NC--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1963 - 1999*	
ANNUAL TOTAL	351177		179679		861	(UNADJUSTED)
ANNUAL MEAN	962		492		1220	1973
HIGHEST ANNUAL MEAN					393	1988
LOWEST ANNUAL MEAN					7990	Aug 10 1970
HIGHEST DAILY MEAN	5590	Apr 21	1950	Jan 26	114	Dec 8 1970
LOWEST DAILY MEAN	304	Nov 10	187	Sep 24	166	Aug 17 1988
ANNUAL SEVEN-DAY MINIMUM	319	Nov 27	194	Sep 20	12800	Apr 10 1983
INSTANTANEOUS PEAK FLOW			4020	Jul 1	16.22	Apr 10 1983
INSTANTANEOUS PEAK STAGE			6.32	Jul 1	54	Oct 21 1997
INSTANTANEOUS LOW FLOW			184*	Sep 23	1450	
10 PERCENT EXCEEDS	2140		829		661	
50 PERCENT EXCEEDS	722		389		371	
90 PERCENT EXCEEDS	356		281			

† Change in contents, equivalent in cubic feet per second, in W. Kerr Scott Reservoir, provided by U.S. Army Corps of Engineers.

‡ Adjusted for change in W. Kerr Scott Reservoir.

\* For regulated period only (1963-1999). See REMARKS.



## 02112120 ROARING RIVER NEAR ROARING RIVER, NC

LOCATION.--Lat 36°14'59", long 81°02'39", Wilkes County, Hydrologic Unit 03040101, on left bank at downstream end of old bridge pier, 800 ft upstream from bridge on Secondary Road 1990, 3.8 mi northwest of Roaring River, and 4.1 mi upstream from mouth.

DRAINAGE AREA.--128 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements water years 1925, 1947, 1949-56, 1963. April 1964 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 964.85 ft above sea level. Prior to May 1, 1964, nonrecording gage on downstream side of bridge at same site and datum. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge for period of record, from rating curve extended above 2,400 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow at gage heights 22.54, 14.40, and 10.83 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1916 reached a stage of about 28 ft; estimated discharge, 45,000 ft<sup>3</sup>/s. The flood of August 1940 reached a stage of about 24 ft; estimated discharge, 31,000 ft<sup>3</sup>/s, from information by local residents and rating curve extended as explained above. A discharge of 24 ft<sup>3</sup>/s was measured Sept. 18, 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	75	70	91	183	128	194	220	67	135	57	50
2	68	76	68	88	276	118	160	159	66	97	56	49
3	67	77	69	269	206	234	139	132	66	98	54	47
4	70	78	69	203	179	269	132	120	63	87	53	45
5	128	77	69	154	161	187	125	113	61	68	52	58
6	83	75	69	158	152	172	121	128	61	61	51	89
7	120	74	68	120	145	154	119	120	59	106	49	60
8	1200	75	73	124	137	139	115	134	57	114	48	54
9	195	76	104	152	130	143	114	110	55	72	49	53
10	127	77	75	156	129	139	108	102	54	66	46	62
11	106	158	71	129	121	136	112	96	84	73	45	50
12	97	90	75	121	123	131	105	92	65	150	44	48
13	91	79	718	121	123	127	99	92	59	184	43	47
14	87	78	256	132	113	169	98	148	57	109	44	47
15	83	78	149	393	111	238	132	101	60	100	44	48
16	81	76	121	232	110	191	123	89	69	116	41	46
17	81	75	106	179	113	171	104	85	82	132	42	42
18	80	74	97	234	201	158	100	90	62	93	40	46
19	80	74	94	196	166	143	99	313	57	92	37	47
20	80	74	95	168	175	136	98	128	58	74	91	47
21	77	73	88	149	151	182	93	105	63	88	62	55
22	76	72	87	138	136	159	90	97	63	112	48	58
23	76	72	84	337	131	143	88	93	61	71	54	46
24	77	72	192	875	126	143	87	86	58	126	70	45
25	77	71	150	433	123	138	85	81	68	93	231	45
26	76	72	119	288	121	130	89	83	89	68	169	44
27	76	70	116	231	119	125	99	79	80	63	76	67
28	76	70	109	198	140	122	146	76	94	61	65	153
29	77	70	106	177	---	118	129	73	69	63	60	328
30	76	70	98	161	---	113	417	71	63	69	55	404
31	76	---	93	147	---	111	---	69	---	64	51	---
TOTAL	3845	2328	3758	6554	4101	4767	3720	3485	1970	2905	1927	2280
MEAN	124	77.6	121	211	146	154	124	112	65.7	93.7	62.2	76.0
MAX	1200	158	718	875	276	269	417	313	94	184	231	404
MIN	67	70	68	88	110	111	85	69	54	61	37	42
CFSM	.97	.61	.95	1.65	1.14	1.20	.97	.88	.51	.73	.49	.59
IN.	1.12	.68	1.09	1.90	1.19	1.39	1.08	1.01	.57	.84	.56	.66

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

MEAN	155	161	175	208	226	268	258	217	194	157	152	142
MAX	422	426	389	406	413	610	637	430	432	349	461	446
(WY)	1977	1978	1997	1996	1990	1993	1980	1991	1975	1989	1994	1971
MIN	56.9	63.3	72.1	83.8	99.5	97.4	100	90.7	62.2	50.8	47.3	57.9
(WY)	1989	1982	1989	1981	1989	1988	1986	1988	1988	1986	1988	1988

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

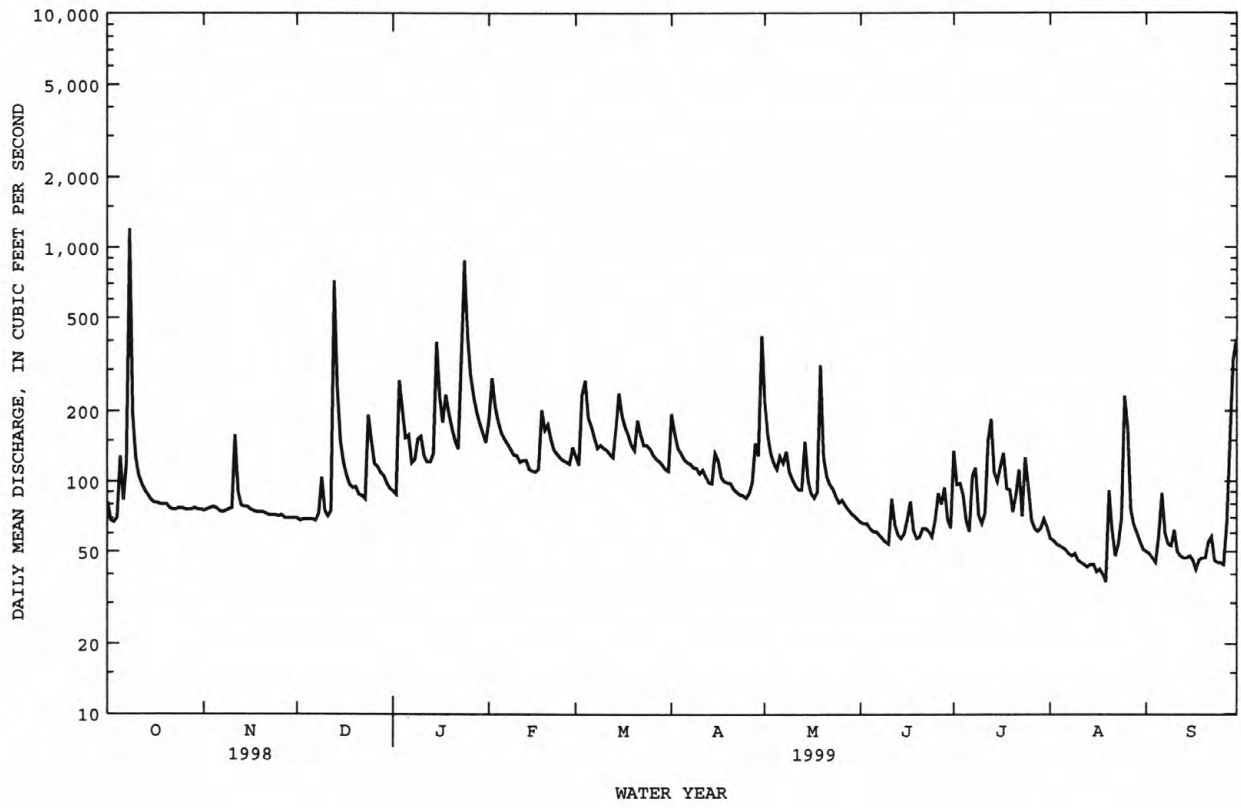
## FOR 1999 WATER YEAR

## WATER YEARS 1964 - 1999

	1998	1999	1964-1999
ANNUAL TOTAL	75959	41640	
ANNUAL MEAN	208	114	193
HIGHEST ANNUAL MEAN			269
LOWEST ANNUAL MEAN			98.5
HIGHEST DAILY MEAN	2870	Jan 8	7460
LOWEST DAILY MEAN	66	Sep 20	32
ANNUAL SEVEN-DAY MINIMUM	67	Sep 14	38
INSTANTANEOUS PEAK FLOW			3940
INSTANTANEOUS PEAK STAGE			7.61
INSTANTANEOUS LOW FLOW			36
ANNUAL RUNOFF (CFSM)	1.63	.89	1.51
ANNUAL RUNOFF (INCHES)	22.08	12.10	20.51
10 PERCENT EXCEEDS	387	179	312
50 PERCENT EXCEEDS	141	91	146
90 PERCENT EXCEEDS	72	53	81

\* See REMARKS.

02112120 ROARING RIVER NEAR ROARING RIVER, NC--Continued



## 02112250 YADKIN RIVER AT ELKIN, NC

LOCATION.--Lat 36°14'30", long 80°50'49", Yadkin County, Hydrologic Unit 03040101, on right bank at downstream side of bridge on U.S. Highway 21 at Elkin, 0.3 mi downstream of Elkin River, and 362 mi upstream from mouth of Pee Dee River in Winyah Bay.

DRAINAGE AREA.--869 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1964 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 866.03 ft above sea level. Prior to Aug. 28, 1964, nonrecording gage on upstream side of bridge at same datum. U.S. Army Corps of Engineers satellite and telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Considerable regulation by W. Kerr Scott Reservoir (station 02111391). Maximum gage height for period of record, from graph based on hourly gage-height readings and floodmark.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916 reached a stage of 36.0 ft, from information by North Carolina State Highway Commission. Flood of August 1940 reached a stage of 37.5 ft. A discharge of 172 ft<sup>3</sup>/s was measured on Sept. 19, 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	561	576	534	666	1150	969	1110	1640	631	1240	561	490
2	527	567	515	669	1660	971	1470	1580	652	1500	546	506
3	516	574	549	1000	1530	1130	1240	1380	647	1220	533	500
4	530	575	566	1090	1260	1650	1060	1230	638	1030	514	494
5	638	571	569	1020	1140	1600	1020	1050	629	921	520	576
6	595	564	570	837	1000	1290	944	1020	629	821	527	669
7	673	564	565	872	985	1150	924	1020	611	729	528	561
8	3140	572	543	894	962	1050	911	1130	604	1030	528	519
9	1200	570	668	993	930	1030	894	1120	624	740	497	520
10	922	533	570	1060	934	1030	873	1050	609	941	529	552
11	691	754	539	988	912	1050	838	900	792	1120	519	486
12	644	652	560	924	915	969	836	820	663	1180	455	472
13	620	618	2510	869	937	950	794	808	634	1710	470	460
14	609	615	1380	865	879	1100	779	1280	613	2050	477	453
15	599	634	1220	1560	798	1740	848	996	603	1470	486	459
16	592	608	1110	1560	796	1550	946	819	641	844	464	458
17	595	605	916	1700	770	1230	1010	780	755	834	456	436
18	595	601	727	1630	1120	1150	798	739	642	771	449	437
19	585	598	715	1430	1160	1090	763	1720	622	756	439	420
20	585	599	718	1250	1350	965	755	1410	617	721	540	411
21	575	599	670	1110	1360	1060	746	1190	618	770	559	408
22	570	590	652	966	1290	1160	741	819	611	950	459	471
23	562	590	640	1230	1190	1160	729	801	603	791	452	412
24	575	587	830	3350	910	1030	730	768	585	814	625	405
25	573	583	1090	2150	906	1020	724	741	608	860	935	406
26	569	595	1100	2690	1040	983	724	749	715	674	1190	404
27	558	547	838	2070	1030	943	755	746	735	676	763	446
28	557	541	820	1480	1000	906	931	715	710	591	571	655
29	571	547	786	1360	---	881	1050	669	676	579	576	901
30	575	540	761	1240	---	871	2310	657	842	582	553	1300
31	575	---	696	1120	---	861	---	643	---	586	497	---
TOTAL	21677	17669	24927	40643	29914	34539	28253	30990	19559	29501	17218	15687
MEAN	699	589	804	1311	1068	1114	942	1000	652	952	555	523
MAX	3140	754	2510	3350	1660	1740	2310	1720	842	2050	1190	1300
MIN	516	533	515	666	770	861	724	643	585	579	439	404

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

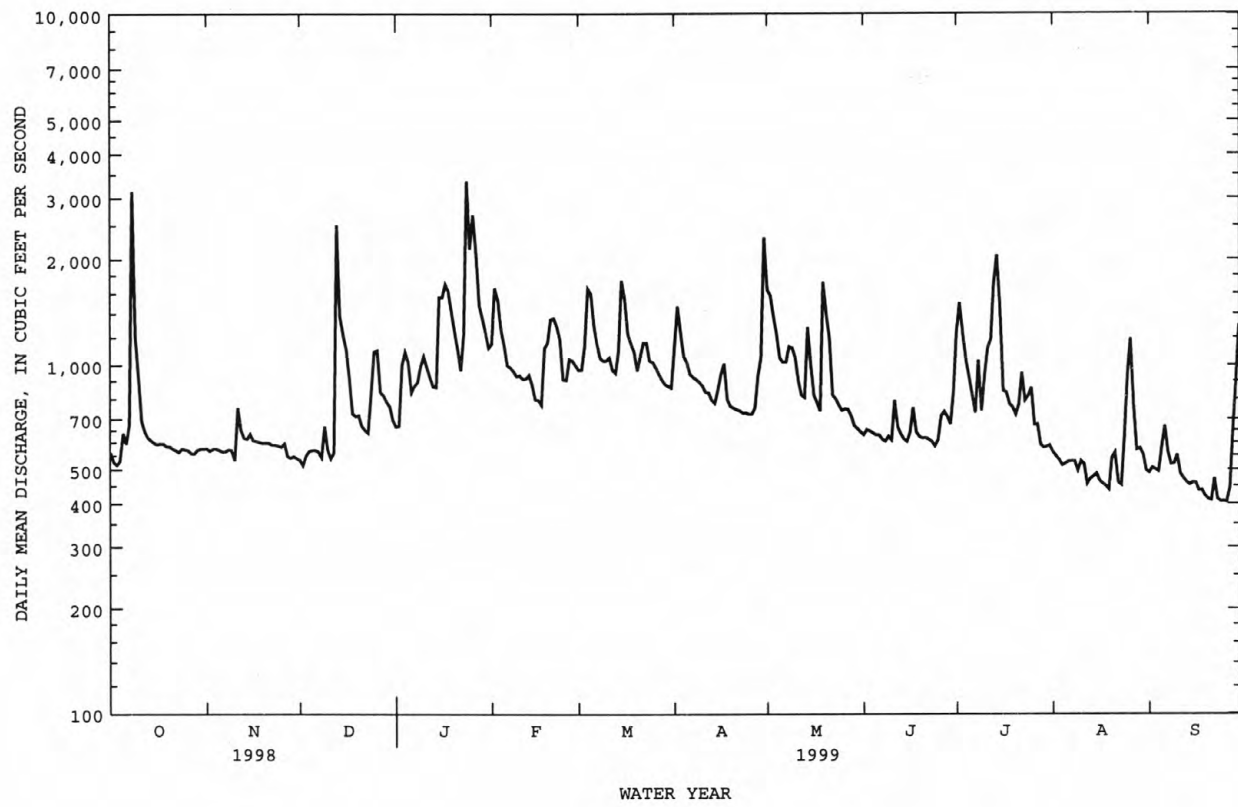
MEAN	1143	1160	1250	1511	1654	1940	1886	1567	1405	1097	1160	1005
MAX	2911	3871	2591	3129	2978	3885	4510	2887	2942	1922	3323	2910
(WY)	1991	1978	1974	1978	1990	1975	1980	1973	1975	1989	1994	1979
MIN	372	428	532	617	752	745	737	729	507	433	361	416
(WY)	1989	1982	1989	1966	1989	1988	1986	1988	1988	1988	1988	1988

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1964 - 1999
ANNUAL TOTAL	578623	310577	
ANNUAL MEAN	1585	851	1402
HIGHEST ANNUAL MEAN			1951
LOWEST ANNUAL MEAN			698
HIGHEST DAILY MEAN	16000	Jan 8	21500
LOWEST DAILY MEAN	508	Sep 18	246
ANNUAL SEVEN-DAY MINIMUM	525	Sep 14	257
INSTANTANEOUS PEAK FLOW		6910	29100
INSTANTANEOUS PEAK STAGE		9.32	24.88*
INSTANTANEOUS LOW FLOW		390	239
10 PERCENT EXCEEDS	3500	1280	2330
50 PERCENT EXCEEDS	1080	746	1070
90 PERCENT EXCEEDS	562	518	618

\* See REMARKS.



02112250 YADKIN RIVER AT ELKIN, NC--Continued



02112360 MITCHELL RIVER NEAR STATE ROAD, NC

LOCATION.--Lat 36°18'42", long 80°48'26", Surry County, Hydrologic Unit 03040101, on right bank 280 ft upstream from bridge on Secondary Road 1001, 1.8 mi upstream from Grass Creek, and 3.3 mi east of State Road.

DRAINAGE AREA.--78.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1952-58, 1963. April 1964 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 927.12 ft above sea level. Prior to Aug. 29, 1964, nonrecording gage at same site and datum. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1900, about 18 ft in August 1940, from information by local resident; estimated discharge, 9,000 ft<sup>3</sup>/s. A discharge of 16 ft<sup>3</sup>/s was measured on Sept. 19, 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	65	51	64	128	107	125	145	67	187	63	60
2	45	65	50	64	181	99	114	114	66	116	62	110
3	44	67	51	137	144	133	97	102	66	159	57	108
4	46	60	51	109	131	161	93	95	63	131	55	105
5	78	56	51	e87	123	121	90	90	61	94	55	103
6	60	55	52	e83	119	116	88	95	61	79	53	108
7	83	54	51	80	116	109	94	91	59	96	51	66
8	453	55	55	84	113	101	87	89	57	117	50	59
9	137	56	80	91	108	104	88	81	55	82	50	59
10	98	56	60	93	108	103	80	77	54	79	49	60
11	86	117	57	82	104	101	84	74	128	109	47	52
12	80	69	58	79	105	96	81	72	73	153	45	50
13	76	61	358	81	104	94	76	72	65	193	44	49
14	73	59	146	83	99	115	76	281	61	141	47	49
15	70	58	95	159	98	143	92	132	63	128	54	48
16	69	56	83	116	98	120	91	106	70	110	46	47
17	68	58	74	101	100	112	78	98	80	100	46	43
18	67	56	68	136	157	107	75	95	65	94	43	44
19	67	55	67	115	129	102	73	247	60	87	40	44
20	68	55	67	101	129	98	74	127	60	91	77	44
21	65	54	64	97	116	118	67	107	64	86	63	46
22	64	53	63	100	109	108	68	99	65	111	51	51
23	64	53	61	125	106	100	69	94	62	81	49	43
24	65	54	117	358	106	103	69	88	58	164	77	42
25	65	53	98	218	105	107	68	83	75	117	242	42
26	65	55	82	165	103	97	71	84	121	83	172	41
27	64	52	77	146	102	93	78	83	80	74	108	74
28	65	52	73	133	117	91	100	78	84	70	78	127
29	68	52	72	124	---	99	108	74	77	72	67	173
30	66	51	68	116	---	97	254	71	68	67	61	274
31	66	---	65	110	---	96	---	69	---	65	56	---
TOTAL	2535	1762	2465	3637	3258	3351	2708	3213	2088	3336	2053	2221
MEAN	81.8	58.7	79.5	117	116	108	90.3	104	69.6	108	66.4	74.0
MAX	453	117	358	358	181	161	254	281	128	193	242	274
MIN	44	51	50	64	98	91	67	69	54	65	40	41
CFSM	1.04	.75	1.01	1.49	1.48	1.37	1.15	1.32	.88	1.37	.84	.94
IN.	1.20	.83	1.16	1.72	1.54	1.58	1.28	1.52	.99	1.57	.97	1.05

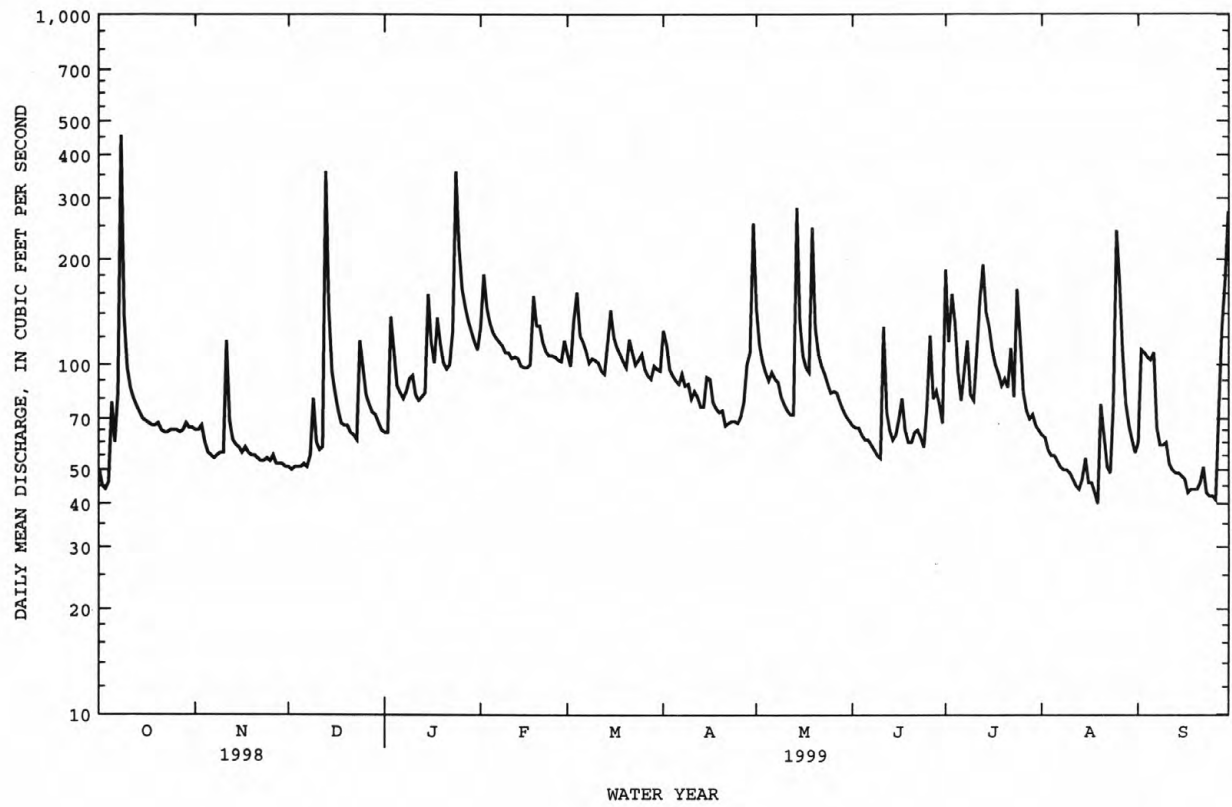
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

	110	107	117	134	149	176	173	150	129	109	108	105
MEAN	110	107	117	134	149	176	173	150	129	109	108	105
MAX	248	211	230	232	258	373	426	264	233	228	247	313
(WY)	1991	1980	1974	1998	1966	1993	1983	1973	1975	1989	1970	1979
MIN	40.1	48.7	47.0	48.3	64.9	72.8	69.1	69.4	50.0	35.9	32.1	51.9
(WY)	1989	1982	1989	1981	1989	1981	1981	1988	1988	1986	1981	1998

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1964 - 1999
ANNUAL TOTAL	49103	32632	
ANNUAL MEAN	135	89.4	130
HIGHEST ANNUAL MEAN			178
LOWEST ANNUAL MEAN			66.5
HIGHEST DAILY MEAN	1570	Jan 8	3260
LOWEST DAILY MEAN	42	Sep 17	23
ANNUAL SEVEN-DAY MINIMUM	44	Sep 14	25
INSTANTANEOUS PEAK FLOW			7470
INSTANTANEOUS PEAK STAGE		4.48	16.42
INSTANTANEOUS LOW FLOW		38	16
ANNUAL RUNOFF (CFSM)	1.71	1.13	1.66
ANNUAL RUNOFF (INCHES)	23.18	15.40	22.50
10 PERCENT EXCEEDS	236	129	204
50 PERCENT EXCEEDS	100	79	104
90 PERCENT EXCEEDS	53	51	58

e Estimated.

02112360 MITCHELL RIVER NEAR STATE ROAD, NC--Continued



## 02113000 FISHER RIVER NEAR COPELAND, NC

LOCATION.--Lat 36°21'26", long 80°41'10", Surry County, Hydrologic Unit 03040101, on left bank 500 ft upstream from bridge on State Highway 268, 1 mi upstream from Cody Creek, and 2 mi northwest of Copeland.

DRAINAGE AREA.--128 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1931 to current year.

REVISED RECORDS.--WSP 1303: 1933(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 913 ft above sea level, by barometer. Prior to Sept. 5, 1936, twice daily readings at same site and datum. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some irrigation diversions at times in the growing season. Maximum discharge for period of record, from rating curve extended above 6,200 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; gage height: 18.4 ft. Minimum discharge for current water year also occurred Aug. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	85	76	101	150	128	168	192	89	310	61	56
2	58	76	75	100	318	116	159	144	85	129	112	53
3	55	77	75	266	203	194	131	125	84	116	62	51
4	58	78	76	241	170	296	124	113	79	140	54	49
5	85	79	76	e166	152	169	117	108	76	96	52	116
6	88	78	78	e150	143	154	112	115	79	80	50	139
7	103	77	77	e135	140	146	111	110	75	97	47	81
8	788	78	78	140	133	132	109	110	71	89	47	66
9	190	78	121	148	125	132	108	98	68	73	46	117
10	124	78	94	158	124	131	106	92	65	74	44	111
11	106	159	82	137	120	126	107	91	102	108	42	68
12	96	114	82	125	120	118	109	86	84	138	40	61
13	90	91	812	122	119	115	96	84	74	215	38	57
14	86	87	287	123	111	137	101	989	69	130	39	55
15	81	87	164	239	109	233	114	232	69	118	46	56
16	80	83	136	192	109	173	134	159	74	107	39	56
17	80	82	120	159	110	150	109	137	93	94	36	49
18	79	80	110	222	208	140	101	125	77	89	35	49
19	82	80	106	193	167	130	98	488	67	81	31	50
20	77	81	108	161	161	125	96	196	67	82	55	51
21	74	80	101	149	140	154	94	153	76	92	72	53
22	72	88	98	140	127	151	98	138	74	137	49	58
23	71	80	95	222	122	130	92	132	71	85	44	48
24	73	80	193	923	123	129	91	120	64	93	50	45
25	76	78	182	338	121	126	90	111	71	100	577	45
26	74	81	137	220	118	119	92	112	158	74	304	46
27	73	76	126	184	116	114	102	109	102	65	147	52
28	74	77	117	166	134	112	113	101	93	62	89	116
29	77	77	114	151	---	111	135	98	83	66	75	180
30	74	76	108	141	---	109	351	95	74	63	66	559
31	75	---	101	133	---	106	---	92	---	58	58	---
TOTAL	3287	2521	4205	6045	3993	4406	3568	5055	2413	3261	2507	2593
MEAN	106	84.0	136	195	143	142	119	163	80.4	105	80.9	86.4
MAX	788	159	812	923	318	296	351	989	158	310	577	559
MIN	55	76	75	100	109	106	90	84	64	58	31	45
CFSM	.83	.66	1.06	1.52	1.11	1.11	.93	1.27	.63	.82	.63	.68
IN.	.96	.73	1.22	1.76	1.16	1.28	1.04	1.47	.70	.95	.73	.75

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1999, BY WATER YEAR (WY)

MEAN	148	150	169	204	219	251	246	199	177	149	153	142
MAX	580	344	365	526	539	667	746	387	491	397	510	735
(WY)	1938	1935	1974	1936	1960	1993	1983	1950	1947	1943	1940	1979
MIN	40.2	53.7	58.1	54.4	68.8	103	103	77.6	47.5	31.3	24.6	27.9
(WY)	1942	1932	1956	1956	1934	1981	1981	1941	1956	1986	1981	1954

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

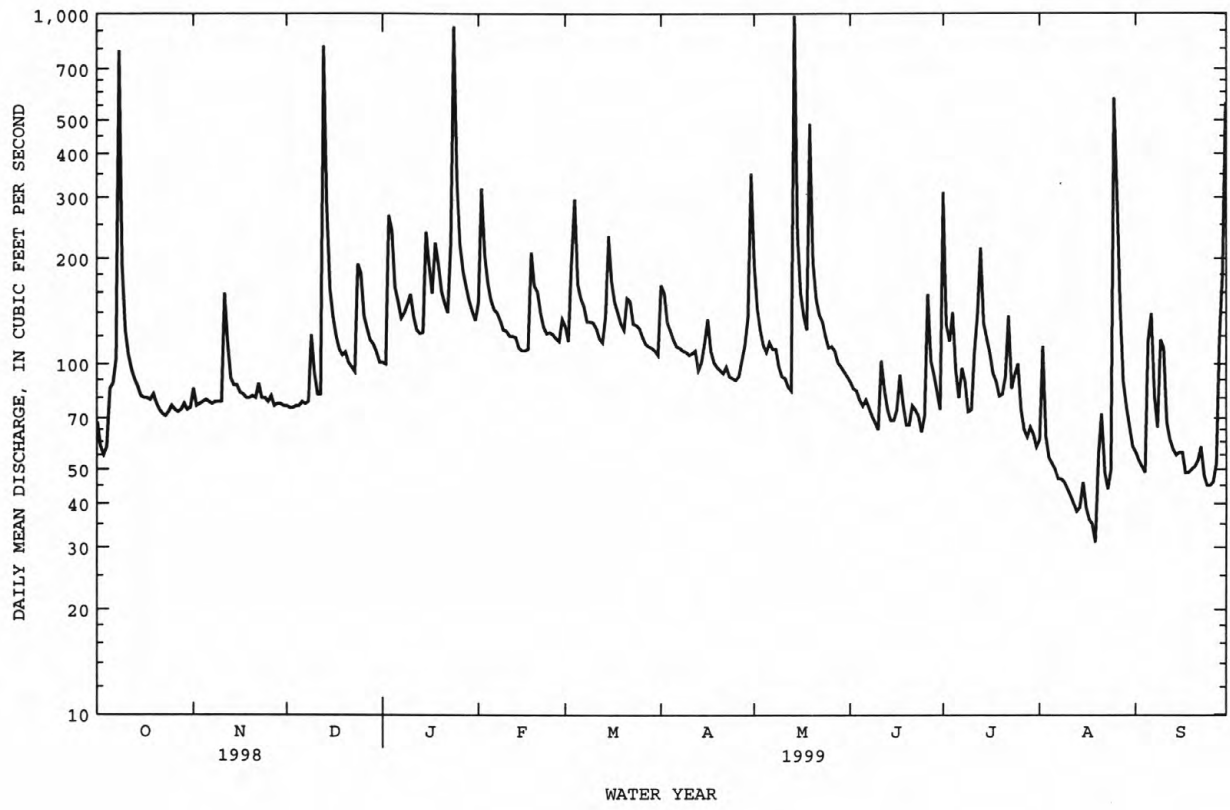
## WATER YEARS 1932 - 1999

ANNUAL TOTAL	73434	43854	184
ANNUAL MEAN	201	120	281
HIGHEST ANNUAL MEAN			87.6
LOWEST ANNUAL MEAN			1979
HIGHEST DAILY MEAN	3580	Jan 8	989
LOWEST DAILY MEAN	50	Aug 7	31
ANNUAL SEVEN-DAY MINIMUM	52	Sep 14	38
INSTANTANEOUS PEAK FLOW			3220
INSTANTANEOUS PEAK STAGE			7.19
INSTANTANEOUS LOW FLOW			29*
ANNUAL RUNOFF (CFSM)	1.57		.94
ANNUAL RUNOFF (INCHES)	21.34		12.75
10 PERCENT EXCEEDS	338		171
50 PERCENT EXCEEDS	132		101
90 PERCENT EXCEEDS	69		56
			68

e Estimated.

\* See REMARKS.

02113000 FISHER RIVER NEAR COPELAND, NC--Continued





## PEE DEE RIVER BASIN

02113850 ARARAT RIVER AT ARARAT, NC

LOCATION.--Lat 36°24'16", long 80°33'43", Surry County, Hydrologic Unit 03040101, on right bank 265 ft upstream from bridge on Secondary Road 2019 at Ararat, and 300 ft downstream of Flat Shoal Creek.

DRAINAGE AREA.--231 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 880.97 ft above sea level. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Minimum discharge for period of record and current water year also occurred Aug. 20.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 14, 1947, reached a stage of 21.4 ft, result of failure of dams upstream; discharge, 26,000 ft<sup>3</sup>/s, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	126	126	e156	261	238	343	269	130	268	62	72
2	105	127	130	e150	502	209	295	218	126	192	77	68
3	93	137	123	e500	342	347	240	197	125	209	59	61
4	98	138	126	e320	285	496	227	195	120	184	48	56
5	148	132	134	260	252	313	213	183	118	149	45	199
6	132	127	137	e250	240	278	206	187	119	119	44	211
7	169	126	126	215	230	253	204	187	113	130	41	130
8	1110	129	126	207	214	232	199	183	106	137	35	100
9	328	133	203	217	207	236	199	170	102	107	36	130
10	196	134	157	216	211	236	195	161	96	100	34	164
11	164	311	141	193	204	227	198	153	151	179	33	100
12	145	182	141	188	208	213	209	152	137	209	31	81
13	139	144	1150	182	206	209	179	147	111	267	32	75
14	137	136	453	183	188	256	178	696	104	174	31	70
15	128	133	260	351	185	376	212	365	108	157	30	76
16	128	126	222	285	182	295	234	234	110	153	21	80
17	128	125	189	235	187	261	191	201	143	166	19	70
18	127	122	173	368	408	244	180	187	121	139	16	65
19	126	123	168	309	310	229	176	482	100	125	13	68
20	128	125	172	253	279	220	172	273	97	111	87	71
21	127	124	167	228	239	288	170	212	120	125	107	75
22	124	122	164	217	219	272	171	196	119	123	59	98
23	119	122	156	357	214	234	170	189	114	93	45	82
24	118	116	e340	1230	219	234	169	174	101	89	66	69
25	122	122	279	563	214	228	170	170	116	96	672	66
26	126	128	213	375	209	215	166	172	249	86	534	64
27	121	125	e200	310	207	211	176	164	174	74	183	71
28	124	123	e190	276	251	208	204	152	155	70	125	201
29	137	126	178	253	---	202	252	144	177	83	105	383
30	126	126	170	236	---	196	482	141	153	79	93	939
31	129	---	163	221	---	192	---	137	---	67	80	---
TOTAL	5218	4070	6677	9304	6873	7848	6380	6691	3815	4260	2863	3995
MEAN	168	136	215	300	245	253	213	216	127	137	92.4	133
MAX	1110	311	1150	1230	502	496	482	696	249	268	672	939
MIN	93	116	123	150	182	192	166	137	96	67	13	56
CFSM	.73	.59	.93	1.30	1.06	1.10	.92	.93	.55	.59	.40	.58
IN.	.84	.66	1.08	1.50	1.11	1.26	1.03	1.08	.61	.69	.46	.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

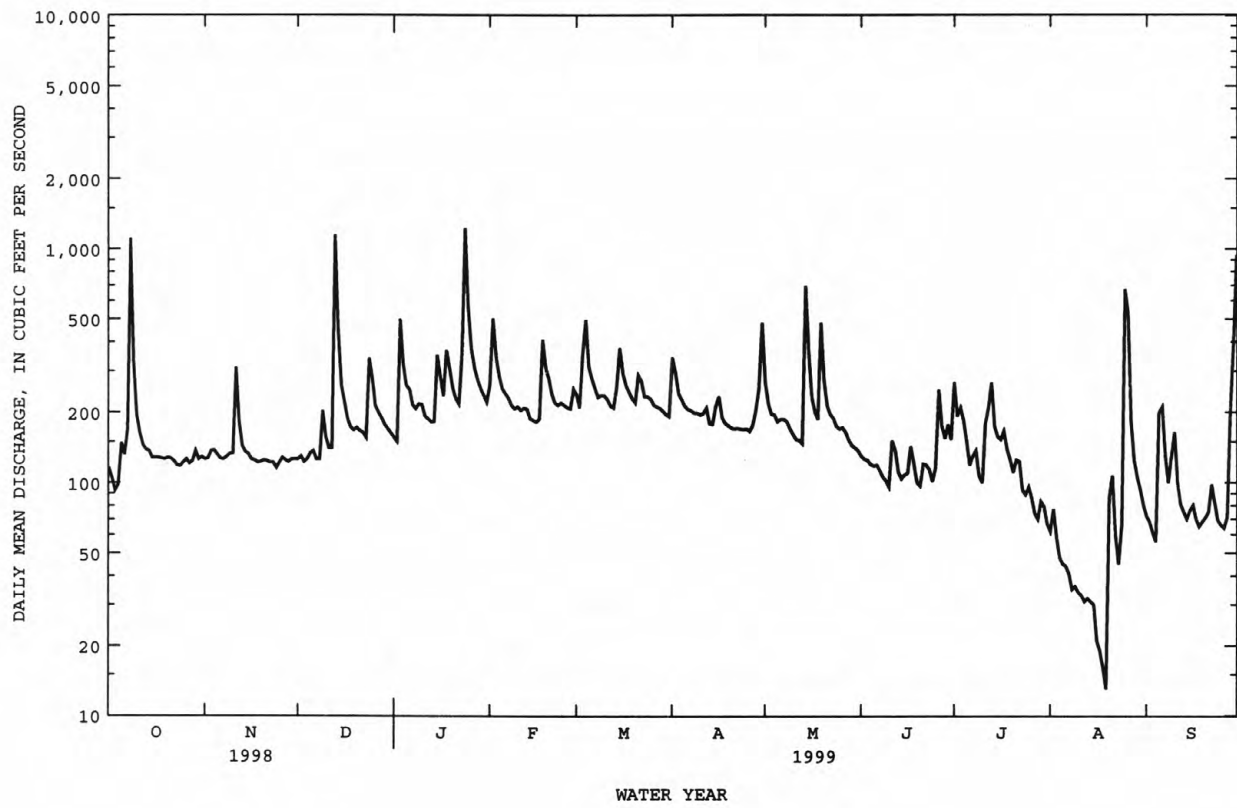
	MEAN	243	252	287	348	373	445	442	368	324	256	242	227
MAX	587	537	584	743	691	992	1048	591	736	554	536	879	
(WY)	1977	1993	1974	1978	1990	1993	1980	1973	1982	1989	1985	1979	
MIN	104	111	124	120	187	172	170	167	110	81.9	45.4	88.2	
(WY)	1987	1982	1989	1981	1989	1981	1967	1988	1988	1986	1981	1998	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR				FOR 1999 WATER YEAR				WATER YEARS 1964 - 1999			
ANNUAL TOTAL	114705				67994							
ANNUAL MEAN	314				186				317			
HIGHEST ANNUAL MEAN									462			
LOWEST ANNUAL MEAN									150			
HIGHEST DAILY MEAN	3610				Jan 8				13600			
LOWEST DAILY MEAN	58				Sep 15				13			
ANNUAL SEVEN-DAY MINIMUM	65				Sep 11				23			
INSTANTANEOUS PEAK FLOW									2350			
INSTANTANEOUS PEAK STAGE									5.01			
INSTANTANEOUS LOW FLOW									12*			
ANNUAL RUNOFF (CFSM)	1.36								.81			
ANNUAL RUNOFF (INCHES)	18.47								10.95			
10 PERCENT EXCEEDS	530								286			
50 PERCENT EXCEEDS	236								166			
90 PERCENT EXCEEDS	108								73			

e Estimated.

\* See REMARKS.

02113850 ARARAT RIVER AT ARARAT, NC--Continued



## 02114450 LITTLE YADKIN RIVER AT DALTON, NC

LOCATION.--Lat 36°17'56", long 80°25'53", Stokes County, Hydrologic Unit 03040101, on left bank 1,200 ft downstream of bridge on U.S. Highway 52, 1.0 mi southwest of Dalton, 1.3 mi downstream of Southern Railway bridge, and 2.0 mi downstream of Danbury Creek.

DRAINAGE AREA.--42.8 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1960 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 813.7 ft above sea level (North Carolina State Highway Commission bench mark). Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. A Natural Resources Conservation Service flood-control dam on upstream tributary, drainage area 4.7 mi<sup>2</sup> with flood storage of 695 acre-ft, was completed on June 21, 1977. Maximum discharge for period of record, from rating curve extended above 2,700 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 17.86 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	9.9	14	16	31	29	55	89	13	62	9.1	7.1
2	5.3	9.8	14	15	97	26	43	45	13	19	8.3	7.0
3	5.0	12	14	103	55	39	32	33	13	15	7.3	6.9
4	8.3	13	14	78	39	62	28	28	12	14	6.9	6.3
5	8.3	12	14	e32	34	38	26	25	11	11	6.6	192
6	7.6	12	15	e23	30	33	24	24	11	10	6.3	76
7	8.4	12	14	24	28	30	23	23	10	30	6.0	28
8	14	13	16	27	26	27	22	22	10	95	5.8	17
9	9.8	14	37	30	24	28	22	20	9.6	21	5.9	16
10	7.4	15	18	26	24	28	21	19	9.6	15	5.8	20
11	7.0	29	15	23	23	25	22	18	21	16	5.8	13
12	6.5	17	15	21	24	24	21	17	14	18	5.4	11
13	6.5	14	235	20	25	24	19	17	11	35	5.1	11
14	6.5	14	63	20	22	36	19	213	10	21	5.7	10
15	6.1	14	26	31	21	69	23	59	11	18	7.3	12
16	6.1	14	19	27	21	47	24	32	14	15	5.3	14
17	6.3	14	16	23	24	37	19	25	18	14	5.1	11
18	6.3	14	14	91	77	32	19	22	13	14	4.3	11
19	6.4	13	14	67	52	29	19	29	11	14	3.8	11
20	7.5	14	15	38	46	27	19	21	11	12	6.6	11
21	7.2	14	14	30	36	50	18	19	16	12	8.4	12
22	7.1	13	13	26	30	42	18	18	14	20	6.1	17
23	7.1	13	14	42	28	34	17	19	12	14	5.2	12
24	8.1	14	e150	231	28	32	16	22	11	22	6.0	11
25	8.7	14	51	91	27	30	16	17	14	18	95	10
26	8.4	15	28	49	25	27	17	18	17	13	98	10
27	8.3	14	24	37	24	26	19	17	14	11	21	14
28	8.6	14	21	32	31	25	25	15	17	10	12	23
29	8.3	14	20	28	---	24	50	15	59	14	10	223
30	9.0	14	18	26	---	24	339	14	18	11	8.8	252
31	9.3	---	16	24	---	23	---	14	---	9.5	7.4	---
TOTAL	236.0	418.7	971	1351	952	1027	1035	969	438.2	623.5	400.3	1075.3
MEAN	7.61	14.0	31.3	43.6	34.0	33.1	34.5	31.3	14.6	20.1	12.9	35.8
MAX	14	29	235	231	97	69	339	213	59	95	98	252
MIN	5.0	9.8	13	15	21	23	16	14	9.6	9.5	3.8	6.3
CFSM	.18	.33	.73	1.02	.79	.77	.81	.73	.34	.47	.30	.84
IN.	.21	.36	.84	1.17	.83	.89	.90	.84	.38	.54	.35	.93

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

	MEAN	37.2	32.8	47.1	60.9	66.7	82.4	60.9	46.2	40.2	32.7	30.4	27.3
MAX	171	102	113	136	163	250	217	154	155	128	120	172	
(WY)	1991	1993	1974	1978	1990	1975	1987	1984	1962	1978	1970	1979	
MIN	7.47	11.2	16.4	17.2	25.0	20.1	18.0	14.0	7.15	4.27	6.48	5.08	
(WY)	1987	1968	1966	1981	1977	1967	1967	1986	1986	1986	1986	1968	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

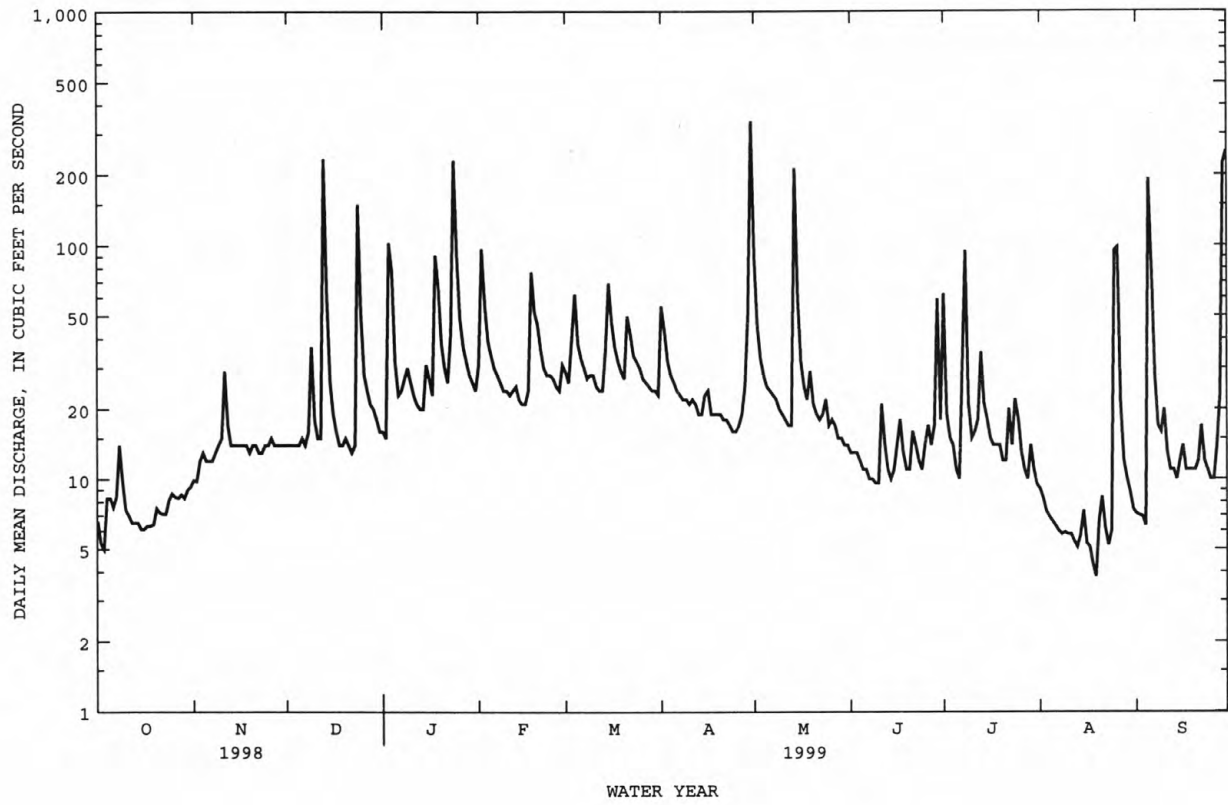
## WATER YEARS 1960 - 1999

ANNUAL TOTAL	16270.9	9497.0	
ANNUAL MEAN	44.6	26.0	46.9
HIGHEST ANNUAL MEAN			75.2
LOWEST ANNUAL MEAN			22.1
HIGHEST DAILY MEAN	1100	Apr 17	3350
LOWEST DAILY MEAN	4.6	Sep 19	1.6
ANNUAL SEVEN-DAY MINIMUM	4.9	Sep 14	2.3
INSTANTANEOUS PEAK FLOW			9400*
INSTANTANEOUS PEAK STAGE			20.29
INSTANTANEOUS LOW FLOW			1.3
ANNUAL RUNOFF (CFSM)	1.04	.61	1.10
ANNUAL RUNOFF (INCHES)	14.14	8.25	14.89
10 PERCENT EXCEEDS	81	44	74
50 PERCENT EXCEEDS	23	17	26
90 PERCENT EXCEEDS	7.2	7.1	12

e Estimated.

\* See REMARKS.

02114450 LITTLE YADKIN RIVER AT DALTON, NC--Continued



## 02115360 YADKIN RIVER AT ENON, NC

LOCATION.--Lat 36°07'55", long 80°26'39", Forsyth County, Hydrologic Unit 03040101, on left bank 50 ft upstream from bridge on Secondary Road 1525, 1.5 mi east of Enon, 4 mi upstream from Forbush Creek, and 324 mi upstream from mouth of Pee Dee River in Winyah Bay.

DRAINAGE AREA.--1,694 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1964 to current year.

REVISED RECORDS.--WDR NC-72-1: 1970 (M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 701.71 ft above sea level. Prior to Nov. 6, 1968, nonrecording gage on downstream side of bridge at same site and datum. U.S. Army Corps of Engineers satellite telemetry at station.

REMARKS.--Records good, except those for estimated daily discharges, which are fair. Some regulation by W. Kerr Scott Reservoir (station 02111391). Minimum discharge for period of record also occurred Sept. 1, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 15, 1940, reached a stage of 737.5 ft (35.8 ft above gage datum), from information by U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	857	921	910	1320	1830	1740	1970	3710	1140	2010	902	680
2	854	923	901	1290	2990	1580	2690	2680	1120	2750	928	682
3	788	938	886	1880	2900	1620	2440	2430	1120	1830	899	718
4	813	949	929	2980	2450	3430	2100	2170	1100	2040	818	700
5	843	941	942	2060	2050	2800	1920	1980	1070	1570	790	1130
6	1080	929	951	1780	1830	2570	1820	1780	1070	1380	789	1720
7	983	915	952	1720	1700	2250	1730	1820	1060	1490	786	1130
8	3970	920	949	1670	1660	2040	1720	1860	1020	1910	779	866
9	e1750	936	1190	1820	1570	1940	1690	1890	1010	1470	772	774
10	e1350	932	1200	1940	1550	1970	1660	1800	1000	1260	743	1170
11	e1100	1100	987	1840	1520	1940	1600	1640	1180	1960	765	896
12	e1050	1530	951	1730	1510	1860	1620	1480	1370	1810	737	724
13	e1010	1080	4020	1640	1540	1770	1520	1390	1090	2690	667	681
14	e1000	1040	4640	1580	1470	1840	1470	4000	1040	2700	685	653
15	e990	1040	2330	1900	1380	2900	1500	2980	1010	2580	720	653
16	e980	1030	2060	2960	1310	3010	1810	1940	1040	1850	706	681
17	956	1000	1810	2500	1320	2480	1750	1620	1220	1410	664	641
18	959	987	1530	2970	1910	2210	1650	1490	1230	1340	648	593
19	945	975	1360	3010	2390	2070	1460	2560	1050	1280	622	595
20	946	981	1360	2420	2330	1940	1430	2870	1020	1280	642	583
21	935	982	1340	2130	2260	1970	1410	2280	1080	1380	966	594
22	917	972	1270	1940	2110	2330	1390	1800	1080	1810	844	622
23	895	971	1240	1880	1970	2150	1380	1530	1040	1440	701	664
24	897	960	1580	6540	1730	2040	1340	1490	997	1230	719	563
25	912	963	2580	5170	1530	1960	1330	1380	988	1710	1740	546
26	925	978	2020	3800	1570	1880	1340	1360	1260	1270	4750	543
27	918	980	1800	3450	1640	1790	1390	1370	1380	1060	1740	562
28	912	913	1580	2770	1680	1740	1560	1300	1280	1020	1110	865
29	922	912	1530	2260	---	1680	1890	1240	1260	971	876	2080
30	932	921	1480	2110	---	1660	4860	1190	1220	972	822	4160
31	919	---	1390	1900	---	1630	---	1170	---	926	755	---
TOTAL	33308	29619	48668	74960	51700	64790	53440	60200	33545	50399	30085	27469
MEAN	1074	987	1570	2418	1846	2090	1781	1942	1118	1626	970	916
MAX	3970	1530	4640	6540	2990	3430	4860	4000	1380	2750	4750	4160
MIN	788	912	886	1290	1310	1580	1330	1170	988	926	622	543

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

	MEAN	2065	2076	2338	2868	3027	3609	3395	2873	2520	1954	2017	1776
MAX	5371	5128	4814	5725	5645	7862	7337	4989	5435	3485	5611	5810	
(WY)	1991	1978	1974	1978	1990	1993	1980	1973	1972	1989	1970	1979	
MIN	689	896	1107	1051	1560	1443	1390	1298	748	654	623	815	
(WY)	1989	1982	1966	1981	1989	1981	1985	1988	1988	1986	1988	1988	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

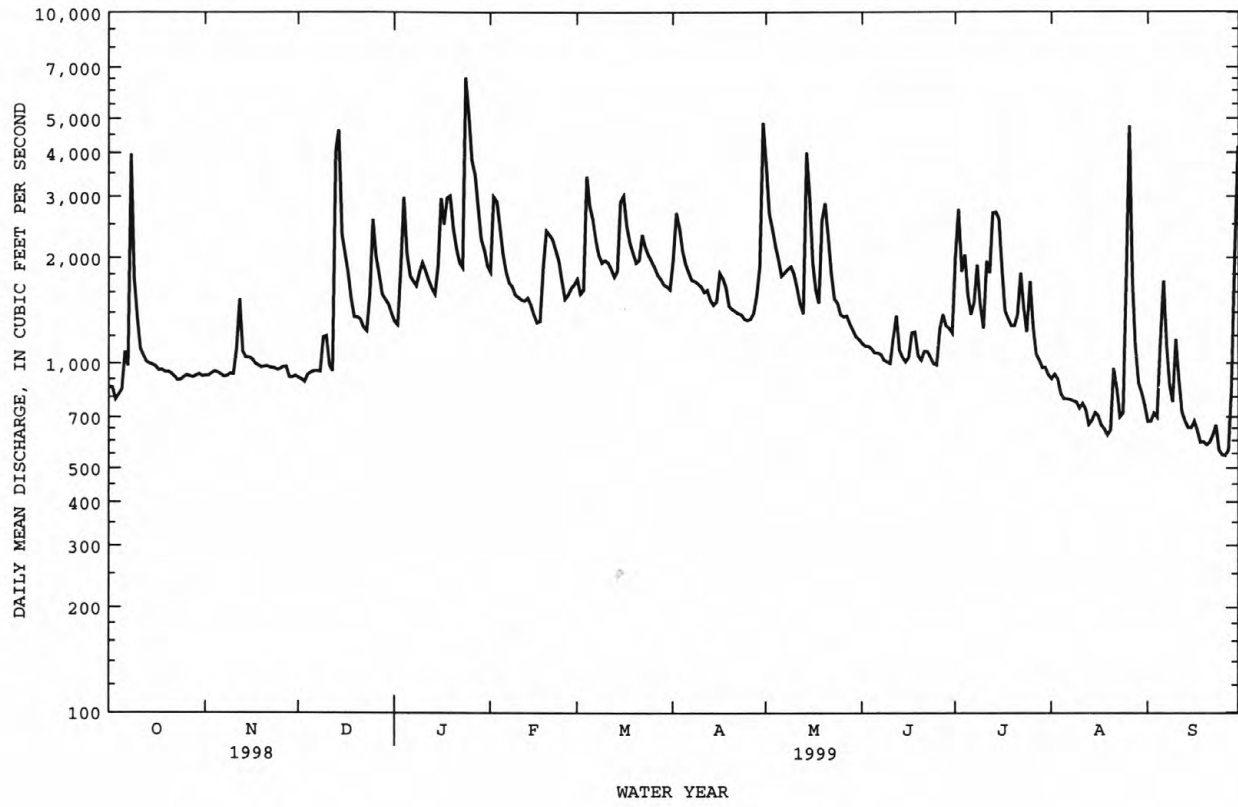
WATER YEARS 1964 - 1999

ANNUAL TOTAL	970753	558183	
ANNUAL MEAN	2660	1529	2538
HIGHEST ANNUAL MEAN			3605
LOWEST ANNUAL MEAN			1332
HIGHEST DAILY MEAN	22800	6540	48400
LOWEST DAILY MEAN	764	543	368
ANNUAL SEVEN-DAY MINIMUM	772	585	384
INSTANTANEOUS PEAK FLOW		9710	73300
INSTANTANEOUS PEAK STAGE		11.38	29.52
INSTANTANEOUS LOW FLOW		535	363*
10 PERCENT EXCEEDS	5150	2460	4250
50 PERCENT EXCEEDS	1830	1370	1940
90 PERCENT EXCEEDS	904	777	1080

e Estimated.

\* See REMARKS.

02115360 YADKIN RIVER AT ENON, NC--Continued





## 02116500 YADKIN RIVER AT YADKIN COLLEGE, NC

LOCATION.--Lat 35°51'23", long 80°23'14", Davie County, Hydrologic Unit 03040101, on right bank on downstream side of bridge on U.S. Highway 64, 1.5 mi south of Yadkin College, 6.2 mi downstream of Reedy Creek, and 295 mi upstream from mouth of Pee Dee River in Winyah Bay.

DRAINAGE AREA.--2,280 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1928 to current year.

REVISED RECORDS.--WSP 822: Drainage area. WSP 852: 1935-37(m).

GAGE.--Water-stage recorder. Datum of gage is 638.45 ft above sea level. Prior to July 26, 1957, at site on left bank 100 ft downstream at same datum. July 27, 1957, to Sept. 19, 1984, at site 20 ft downstream on bridge pier near left bank, at same datum. U.S. Army Corps of Engineers satellite telemetry and Yadkin, Inc. telephone telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diurnal fluctuation and occasional regulation during low flow caused by small hydroelectric plant 10 mi upstream with little storage capacity. Since August 1962, some regulation by W. Kerr Scott Reservoir (station 02111391). Prior to regulation, maximum discharge: 80,200 ft<sup>3</sup>/s, Aug. 15, 1940; gage height: 33.75 ft; minimum observed discharge: 177 ft<sup>3</sup>/s, Oct. 12, 1954; gage height: -0.42 ft. Minimum discharge for period of record, result of regulation. Minimum discharge for current water year also occurred Aug. 19.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916, reached a stage of 36.3 ft, from floodmarks; discharge, 94,300 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	866	1010	1100	1520	2250	2180	2320	7040	1320	2300	1040	932
2	874	1010	1090	1480	3070	2030	3250	3550	1290	4130	1030	854
3	816	1070	1090	2860	3820	2000	2930	2950	1280	2640	1040	867
4	770	1130	1090	3950	3090	3350	2530	2550	1270	2340	940	904
5	880	1090	1140	2800	2620	3460	2190	2290	1250	2100	875	2060
6	1020	1050	1160	2160	2360	2980	2050	2070	1200	1710	846	2630
7	1140	1030	1170	2070	2140	2580	1940	1980	1210	1540	828	1900
8	1480	1030	1170	2010	2080	2310	1900	1990	1190	2380	837	1330
9	5710	1070	1780	2120	1990	2140	1880	2050	1120	2000	868	1140
10	2190	1090	1720	2170	1940	2150	1850	1960	1110	1490	826	1300
11	1660	1280	1360	2180	1920	2110	1810	1850	1280	2110	805	1410
12	1300	1810	1210	2020	1890	2060	1790	1710	1570	2010	784	1060
13	1180	1500	3600	1910	1920	1930	1750	1620	1340	2570	710	938
14	1120	1280	7840	1840	1870	1990	1660	5630	1190	2960	650	903
15	1080	1340	3160	1980	1800	2950	1720	8360	1220	2910	869	903
16	1040	1290	2570	3010	1730	3570	2080	2920	1250	2330	812	1290
17	1030	1310	2200	2820	1720	2990	1960	2130	1510	1680	715	987
18	1030	1220	1860	3450	2210	2520	1900	1870	1480	1580	630	854
19	1030	1180	1580	4050	3120	2310	1700	2010	1290	1470	599	810
20	1020	1170	1560	3050	3190	2180	1620	3580	1180	1420	824	809
21	1010	1180	1540	2620	3010	2550	1590	2560	1290	1600	975	795
22	988	1160	1470	2320	2700	2860	1570	2220	1270	1690	1120	881
23	954	1150	e1460	2540	2480	2540	1560	1780	1220	1860	843	893
24	958	1150	e2000	8560	2350	2410	1540	1710	1150	1470	728	823
25	979	1140	3260	9800	2000	2250	1490	1610	1130	1660	1190	728
26	986	1210	2550	4790	1940	2140	1490	1540	1330	1660	4980	721
27	999	1210	2270	4350	2050	2030	1560	1580	1620	1280	3290	757
28	1000	1140	1900	3540	2070	1940	1970	1530	1430	1210	1700	1270
29	988	1100	1800	2860	---	1880	2220	1460	1430	1150	1240	2130
30	1020	1130	1720	2610	---	1850	9510	1400	1360	1140	1100	6000
31	1030	---	1630	2400	---	1830	---	1360	---	1100	1020	---
TOTAL	38148	35530	61050	95840	65330	74070	65330	78860	38780	59490	34714	38879
MEAN	1231	1184	1969	3092	2333	2389	2178	2544	1293	1919	1120	1296
MAX	5710	1810	7840	9800	3820	3570	9510	8360	1620	4130	4980	6000
MIN	770	1010	1090	1480	1720	1830	1490	1360	1110	1100	599	721

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999,\* BY WATER YEAR (WY)

	MEAN	2540	2538	2915	3653	3857	4681	4128	3485	3004	2360	2340	2116
MAX	7491	5844	5784	7580	7632	10380	9419	6277	7755	4622	7191	7314	
(WY)	1991	1993	1974	1978	1990	1975	1987	1984	1972	1984	1970	1979	
MIN	998	1091	1338	1354	2060	1798	1691	1565	1048	749	708	931	
(WY)	1987	1982	1966	1981	1981	1981	1985	1986	1988	1986	1981	1968	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

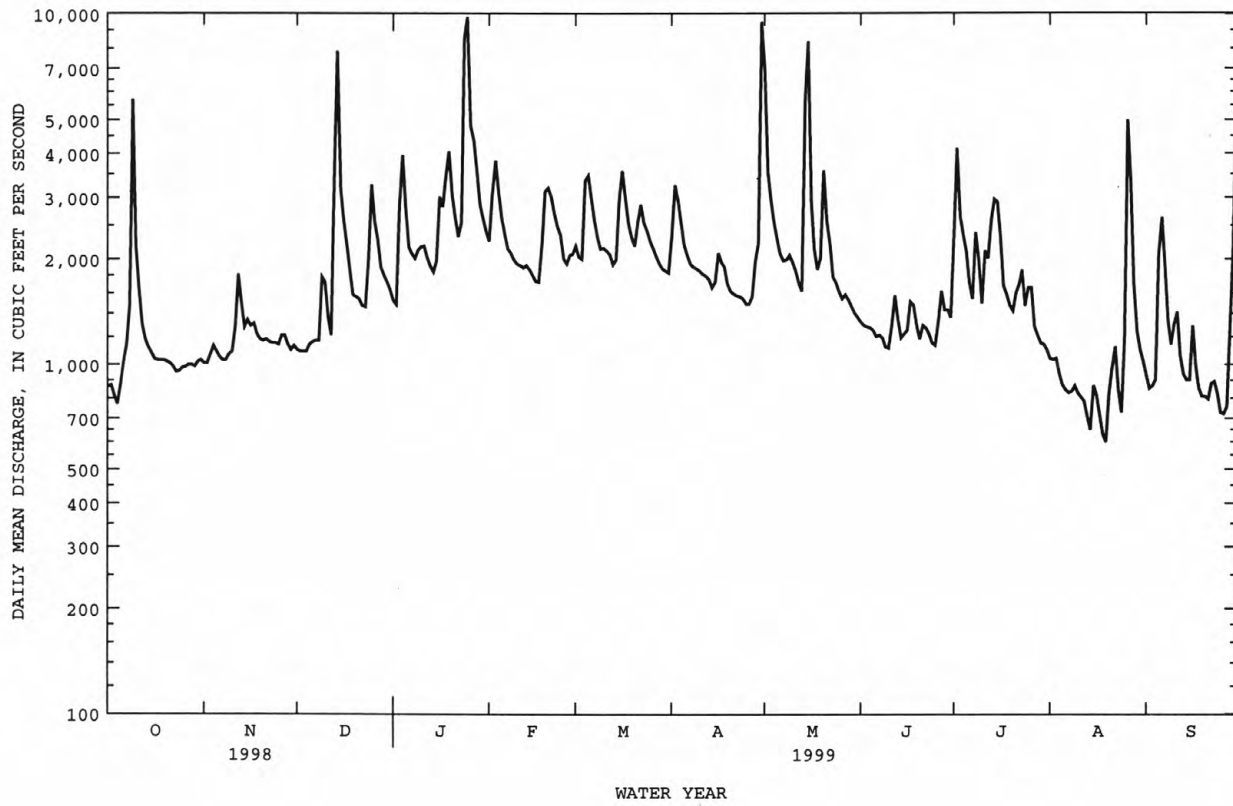
## WATER YEARS 1963 - 1999\*

ANNUAL TOTAL	1255525	686021	
ANNUAL MEAN	3440	1880	
HIGHEST ANNUAL MEAN			4524
LOWEST ANNUAL MEAN			1591
HIGHEST DAILY MEAN	30700	Apr 18	9800
LOWEST DAILY MEAN	741	Sep 19	599
ANNUAL SEVEN-DAY MINIMUM	763	Sep 15	712
INSTANTANEOUS PEAK FLOW			13200
INSTANTANEOUS PEAK STAGE			10.97
INSTANTANEOUS LOW FLOW			568*
10 PERCENT EXCEEDS	6710		2980
50 PERCENT EXCEEDS	2340		1620
90 PERCENT EXCEEDS	1010		903
			3132
			4524
			1591
			66000
			350
			414
			75200*
			32.81*
			110
			5360
			2330
			1280

e Estimated.

\* Regulated period only (1963-1999). See REMARKS.

02116500 YADKIN RIVER AT YADKIN COLLEGE, NC--Continued



02116500 YADKIN RIVER AT YADKIN COLLEGE, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1944, 1951 to 1995, 1997 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to September 1967, October 1970 to September 1978, February 1979 to September 1989.

WATER TEMPERATURE: October 1943 to September 1944, October 1950 to September 1951, October 1955 to September 1967, October 1970 to September 1989.

SUSPENDED-SEDIMENT DISCHARGE: January 1951 to June 1995.

INSTRUMENTATION.--Water-quality monitor from October 1970 to September 1975.

REMARKS.--Station operated as part of NASQAN network from March 1979 to September 1992. Miscellaneous water-quality data published for water years 1947-49, 1955. Daily records of specific conductance for water years 1956-64 and specific conductance and water temperature for water years 1990 through 1995 are available in files of District office in Raleigh.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 815 microsiemens, Aug. 26, 1971; minimum recorded, 20 microsiemens, Nov. 2, 16, 28, Dec. 1, 6, 7, 1971.

WATER TEMPERATURE: Maximum daily, 35.0°C, July 20, 1986; minimum daily, 0.0°C, on many days during most winter months.

SEDIMENT CONCENTRATION: Maximum daily mean, 2,970 mg/L, May 26, 1952; minimum daily mean, 1 mg/L, Dec. 3, 1953.

SEDIMENT LOAD: Maximum daily, 182,000 tons, June 22, 1972; minimum daily, 3 tons, Dec. 3, 1953.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
OCT				
03...	1515	790	24	51
11...	1315	1630	72	317
17...	1315	1020	45	124
24...	1330	981	13	34
29...	0650	1000	9	24
31...	1315	1020	10	28
NOV				
07...	1315	1040	10	28
14...	1545	1310	13	46
19...	1430	1190	13	42
20...	1610	1170	4	13
26...	1415	1240	4	13
DEC				
05...	1330	1170	6	19
12...	1515	1210	14	46
20...	1315	1560	11	46
26...	1545	2340	47	297
JAN				
02...	1345	1480	2	8.0
09...	1430	2140	13	75
14...	1315	1840	92	457
24...	1245	8570	784	18100
25...	1650	7900	416	8870
30...	1345	2640	60	428
FEB				
06...	1415	2390	30	197
14...	1545	1870	12	59
20...	1315	3170	80	688
27...	1430	2050	23	128
MAR				
02...	1640	1950	11	58
06...	1315	2950	93	744
13...	1345	1940	14	71
21...	1345	2400	42	273
27...	1315	1990	35	188
APR				
03...	1315	2910	57	448
10...	1315	1830	40	195
15...	1645	1730	24	111
18...	1415	1890	44	225
24...	1345	1510	32	132

02116500 YADKIN RIVER AT YADKIN COLLEGE, NC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
MAY				
01...	1345	6300	291	4950
08...	1345	1940	48	254
15...	1445	6880	526	9770
21...	1715	2450	56	370
28...	1135	1530	28	116
29...	1345	1450	38	149
JUN				
05...	1715	1250	31	105
12...	1715	1630	77	339
19...	1715	1220	40	132
23...	1420	1220	29	96
27...	1315	1720	38	176
JUL				
03...	1315	2350	183	1160
11...	1315	2780	143	1070
17...	1315	1590	46	197
24...	1315	1420	69	265
31...	1545	1110	43	129
AUG				
07...	1315	810	27	59
12...	1411	784	15	31
13...	1345	726	17	33
21...	1345	835	48	108
28...	1530	1590	139	597
SEP				
07...	1345	1840	37	184
11...	1345	1340	41	148
18...	1200	844	32	73
26...	1345	696	24	45

02118000 SOUTH YADKIN RIVER NEAR MOCKSVILLE, NC

LOCATION.--Lat 35°50'41", long 80°39'34", Rowan County, Hydrologic Unit 03040102, on right bank 90 ft downstream of bridge on Secondary Road 1972, 1 mi upstream from Little Creek, 4 mi downstream of Fifth Creek, 4.5 mi upstream from Hunting Creek, and 6.5 mi southwest of Mocksville.

DRAINAGE AREA.--306 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 663.62 ft above sea level. Yadkin Inc. satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. The City of Statesville diverted an average of 8.8 ft<sup>3</sup>/s for water supply and waste treatment dilution. The Alexander Water Corporation withdrew an average of 2.2 ft<sup>3</sup>/s for water supply. Maximum discharge for period of record also occurred Mar. 2, 1987. Minimum discharge for period of record also occurred July 24, 1986. Minimum discharge for current water year also occurred Aug. 20.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Oct. 3, 1929, reached a stage of 22.6 ft, from floodmark established by local resident (discharge, about 22,000 ft<sup>3</sup>/s).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	102	122	164	205	223	339	1660	138	121	73	61
2	86	102	122	162	306	213	537	669	133	203	66	59
3	83	108	121	331	345	206	362	431	130	149	60	52
4	78	118	125	470	280	379	296	348	133	142	55	49
5	84	118	126	320	243	380	272	302	125	152	56	63
6	141	114	122	211	222	293	247	280	121	131	55	168
7	108	110	122	262	212	262	233	270	119	112	52	102
8	178	110	124	226	204	237	224	271	115	180	46	80
9	281	115	168	238	195	229	215	260	107	164	56	69
10	165	119	278	250	187	235	207	228	100	124	60	108
11	123	127	176	236	181	225	201	213	97	122	53	132
12	112	162	146	215	182	212	198	202	99	155	54	78
13	111	161	263	203	179	205	187	196	106	213	49	66
14	114	135	588	194	171	223	180	280	101	215	46	62
15	103	148	297	213	167	357	190	285	98	177	61	62
16	102	151	219	248	165	377	217	217	108	155	54	67
17	102	158	183	231	166	307	201	192	165	133	50	65
18	102	149	163	283	245	269	181	185	170	130	44	62
19	102	133	157	351	362	244	175	241	126	118	42	56
20	101	129	160	301	473	232	171	279	111	103	43	57
21	102	127	156	254	451	301	166	212	118	100	64	56
22	97	123	151	233	351	337	162	184	127	99	73	55
23	94	121	156	280	290	280	158	177	119	101	63	51
24	97	123	206	1140	262	251	154	176	111	107	64	49
25	102	123	388	1220	244	246	151	163	114	108	104	53
26	104	128	313	554	232	230	148	161	153	116	110	48
27	104	130	232	362	220	214	153	165	174	89	177	51
28	103	131	204	294	218	213	301	160	143	82	131	66
29	101	126	194	256	---	212	393	150	162	82	85	137
30	101	121	191	232	---	201	1650	145	154	79	72	309
31	101	---	175	214	---	192	---	141	---	73	63	---
TOTAL	3466	3822	6148	10148	6958	7985	8269	8843	3777	4035	2081	2393
MEAN	112	127	198	327	248	258	276	285	126	130	67.1	79.8
MAX	281	162	588	1220	473	380	1650	1660	174	215	177	309
MIN	78	102	121	162	165	192	148	141	97	73	42	48
CFSM	.37	.42	.65	1.07	.81	.84	.90	.93	.41	.43	.22	.26
IN.	.42	.46	.75	1.23	.85	.97	1.01	1.08	.46	.49	.25	.29

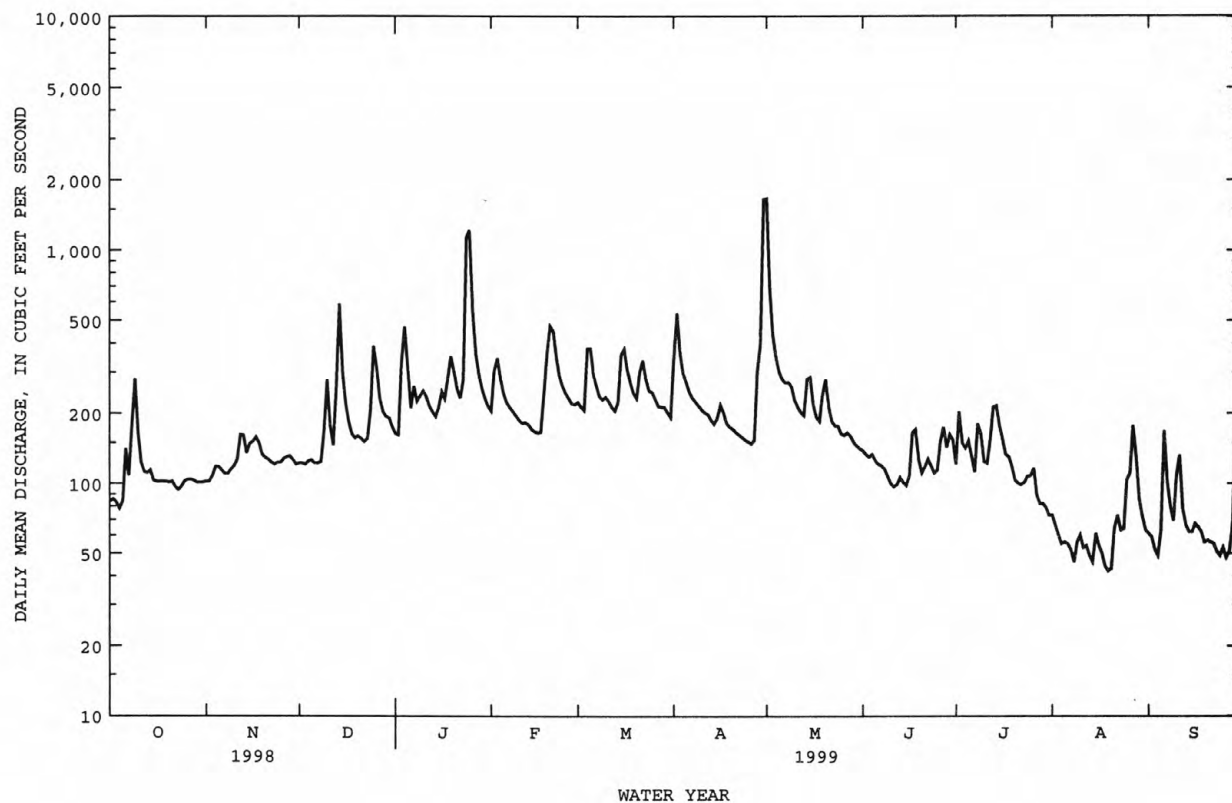
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1999, BY WATER YEAR (WY)

	MEAN	258	264	341	431	504	549	473	370	300	234	230	233
MAX	1246	791	738	1088	1458	1485	1110	885	774	628	706	880	
(WY)	1965	1958	1962	1978	1960	1975	1958	1984	1972	1941	1970	1979	
MIN	70.4	99.7	102	97.7	181	220	159	127	75.0	47.3	61.2	45.7	
(WY)	1955	1956	1956	1956	1941	1955	1986	1986	1986	1986	1956	1954	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR			FOR 1999 WATER YEAR			WATER YEARS 1939 - 1999		
ANNUAL TOTAL	145325			67925					
ANNUAL MEAN	398			186					
HIGHEST ANNUAL MEAN							348		
LOWEST ANNUAL MEAN							592		
HIGHEST DAILY MEAN	4140			1660			171		
LOWEST DAILY MEAN	75			42			9750		
ANNUAL SEVEN-DAY MINIMUM	82			49			22		
INSTANTANEOUS PEAK FLOW				2030			28		
INSTANTANEOUS PEAK STAGE				7.84			11800*		
INSTANTANEOUS LOW FLOW				40*			18.88		
ANNUAL RUNOFF (CFSM)	1.30			.61			21*		
ANNUAL RUNOFF (INCHES)	17.67			8.26			1.14		
10 PERCENT EXCEEDS	780			301			15.46		
50 PERCENT EXCEEDS	219			156			591		
90 PERCENT EXCEEDS	101			63			241		
							122		

\* See REMARKS.

02118000 SOUTH YADKIN RIVER NEAR MOCKSVILLE, NC--Continued





## 02118500 HUNTING CREEK NEAR HARMONY, NC

LOCATION.--Lat 36°00'00", long 80°44'44", Iredell County, Hydrologic Unit 03040102, on right bank 52 ft downstream of bridge on Secondary Road 2115, 0.8 mi downstream of Kennedy Creek, 1 mi east of Houstonville, 2 mi downstream of U.S. Highway 21, and 3.5 mi northeast of Harmony.

DRAINAGE AREA.--155 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1950 to current year. Monthly discharge only for some periods, published in WSP 1723.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 734.78 ft above sea level. Prior to Apr. 5, 1951, nonrecording gage on upstream side of bridge at same datum. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum gage height for period of record, from high-water mark in gage house. Minimum discharge for current water year also occurred Aug. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	66	66	108	121	140	260	382	79	155	e56	46
2	43	67	66	107	235	122	241	223	77	151	e52	45
3	42	76	67	197	197	175	179	172	77	96	e48	43
4	48	80	67	242	160	367	160	149	76	110	e44	41
5	66	76	67	154	137	229	148	137	74	80	e44	101
6	79	73	66	164	127	194	138	135	74	68	e44	161
7	84	73	67	147	121	173	133	131	73	79	e40	75
8	355	75	69	143	116	154	128	158	73	124	e38	59
9	169	77	288	160	108	153	126	123	69	78	e46	81
10	95	77	124	156	108	154	120	111	65	88	e44	146
11	82	200	90	141	103	145	117	105	87	90	e42	71
12	77	153	83	129	103	136	116	100	73	102	40	58
13	73	90	665	122	105	132	107	99	65	147	37	53
14	70	84	404	119	99	158	106	379	64	114	40	52
15	67	98	201	161	97	276	116	195	64	101	48	52
16	67	89	146	159	96	222	137	142	74	87	41	55
17	67	89	128	138	100	186	113	123	102	89	39	49
18	66	78	117	204	202	168	105	114	75	81	37	47
19	64	74	112	207	205	154	104	194	65	72	33	48
20	66	73	112	166	232	145	102	156	65	67	51	48
21	63	72	e110	148	201	178	99	123	74	67	77	48
22	63	70	e105	137	169	179	98	111	70	69	51	47
23	61	71	102	216	149	156	95	105	66	66	46	47
24	67	71	185	856	140	153	93	98	65	71	56	45
25	68	70	221	419	133	146	92	94	74	89	113	44
26	67	74	154	240	128	138	91	95	133	e66	200	43
27	66	71	138	183	121	131	99	96	97	e64	108	44
28	66	69	129	158	136	127	161	89	84	e64	71	87
29	65	67	125	139	---	125	165	86	71	e66	59	644
30	65	67	118	126	---	123	753	83	65	e60	53	384
31	64	---	111	116	---	119	---	81	---	e58	48	---
TOTAL	2444	2470	4503	5862	3949	5158	4502	4389	2270	2719	1746	2764
MEAN	78.8	82.3	145	189	141	166	150	142	75.7	87.7	56.3	92.1
MAX	355	200	665	856	235	367	753	382	133	155	200	644
MIN	42	66	66	107	96	119	91	81	64	58	33	41
CFSM	.51	.53	.94	1.22	.91	1.07	.97	.91	.49	.57	.36	.59
IN.	.59	.59	1.08	1.41	.95	1.24	1.08	1.05	.54	.65	.42	.66

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1999, BY WATER YEAR (WY)

	MEAN	155	157	197	237	275	325	301	228	193	143	141	141
MAX	654	508	373	585	752	959	713	527	636	355	383	615	
(WY)	1965	1978	1974	1978	1960	1975	1987	1990	1972	1987	1970	1979	
MIN	50.0	56.9	53.1	56.4	132	123	101	92.8	63.3	41.2	39.4	40.4	
(WY)	1955	1956	1956	1956	1977	1956	1995	1981	1956	1986	1997	1954	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

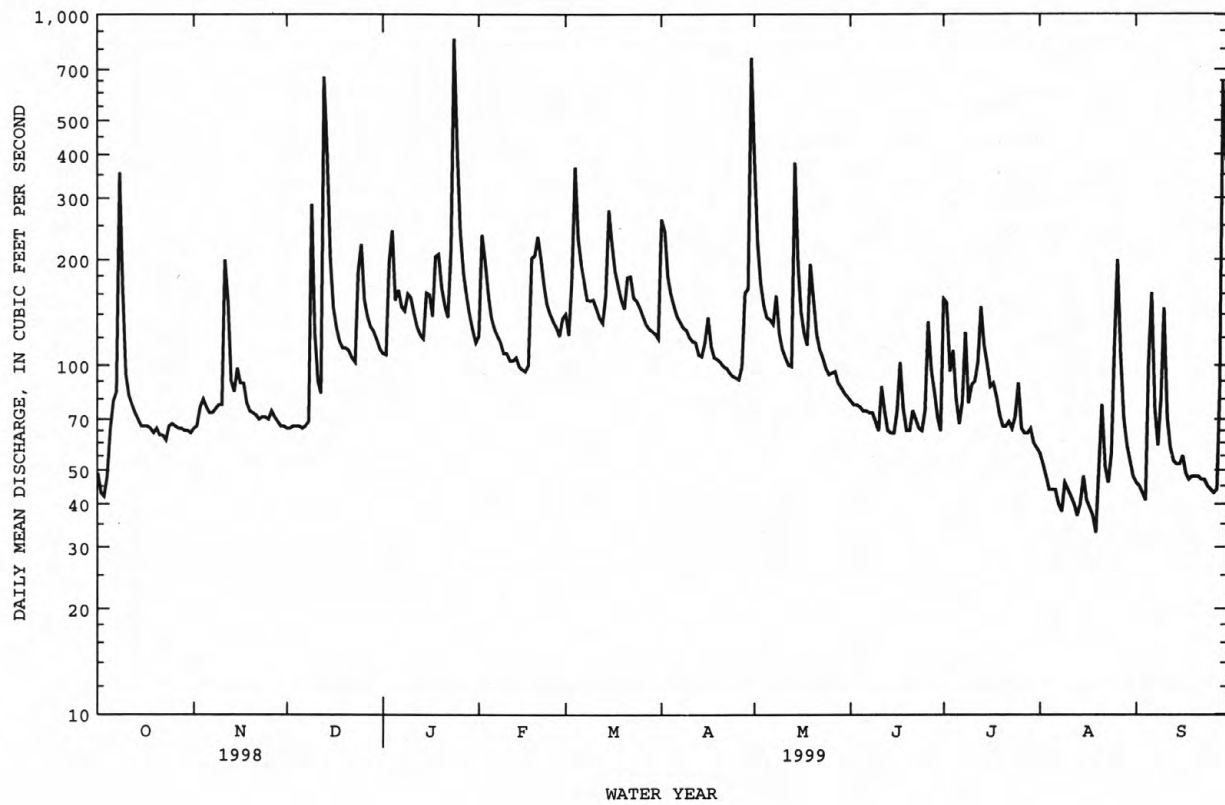
## WATER YEARS 1951 - 1999

ANNUAL TOTAL	90451	42776	
ANNUAL MEAN	248	117	
HIGHEST ANNUAL MEAN			207
LOWEST ANNUAL MEAN			346
HIGHEST DAILY MEAN	3770	Apr 17	101
LOWEST DAILY MEAN	42	Sep 28	1956
ANNUAL SEVEN-DAY MINIMUM	45	Sep 27	22
INSTANTANEOUS PEAK FLOW			23
INSTANTANEOUS PEAK STAGE			Sep 22 1979
INSTANTANEOUS LOW FLOW			Sep 16 1956
ANNUAL RUNOFF (CFSM)	1.60		22
ANNUAL RUNOFF (INCHES)	21.71		Sep 2 1997
10 PERCENT EXCEEDS	442		Sep 22 1979
50 PERCENT EXCEEDS	154		Sep 22 1979
90 PERCENT EXCEEDS	66		Sep 22 1979
			Oct 8 1954
			18
			1.34
			18.18
			340
			144
			72

e Estimated.

\* See REMARKS.

02118500 HUNTING CREEK NEAR HARMONY, NC--Continued



## PEE DEE RIVER BASIN

02120780 SECOND CREEK NEAR BARBER, NC

LOCATION.--Lat 35°43'05", long 80°35'45", Rowan County, Hydrologic Unit 03040102, on right bank 70 ft upstream from bridge on U.S. Highway 70, 1.3 mi downstream of Withrow Creek, and 2.7 mi east of Barber.

DRAINAGE AREA.--118 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1949-57, 1961-63. April 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 642.31 ft above sea level. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Some diurnal fluctuation caused by industry 0.7 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	21	26	31	69	61	66	235	20	21	11	16
2	18	21	25	32	151	57	61	129	20	648	9.6	16
3	18	27	26	280	99	57	54	96	20	118	12	14
4	20	27	27	122	80	65	52	79	19	50	14	13
5	22	23	27	62	69	54	50	69	17	35	13	37
6	25	23	27	52	64	54	48	67	17	30	13	84
7	25	22	27	52	62	52	48	62	16	27	11	23
8	32	24	27	48	59	50	47	58	16	30	11	15
9	40	25	32	46	56	54	47	53	14	24	14	66
10	26	25	28	40	56	57	44	46	17	21	13	50
11	21	29	28	39	53	52	43	39	21	21	14	16
12	16	24	28	39	53	50	43	37	18	29	13	12
13	15	23	69	43	52	49	40	37	16	34	11	10
14	15	25	48	43	48	57	40	35	15	28	14	10
15	14	38	30	54	48	68	50	35	16	27	16	16
16	14	28	51	45	48	62	52	33	28	23	13	30
17	15	34	35	42	49	59	41	31	44	20	12	12
18	14	26	29	80	70	55	38	30	21	19	10	10
19	14	24	28	77	79	52	38	53	17	17	9.6	9.8
20	16	25	29	57	153	52	37	34	18	15	12	9.3
21	14	23	28	52	117	112	34	30	25	15	30	9.3
22	14	23	28	49	90	92	33	29	22	15	14	9.3
23	14	24	27	177	78	73	31	28	19	14	13	8.1
24	17	25	84	731	74	68	32	27	18	15	15	10
25	17	24	99	283	70	75	33	25	22	50	139	14
26	16	27	50	135	67	61	31	26	44	16	35	14
27	16	26	40	96	65	57	32	28	21	13	42	16
28	16	25	36	82	65	55	81	25	19	13	20	53
29	16	25	35	71	---	54	69	24	51	12	21	61
30	16	25	32	65	---	52	764	23	21	11	18	58
31	18	---	31	59	---	52	---	22	---	12	16	---
TOTAL	575	761	1137	3084	2044	1868	2079	1545	652	1423	609.2	721.8
MEAN	18.5	25.4	36.7	99.5	73.0	60.3	69.3	49.8	21.7	45.9	19.7	24.1
MAX	40	38	99	731	153	112	764	235	51	648	139	84
MIN	14	21	25	31	48	49	31	22	14	11	9.6	8.1
CFSM	.16	.21	.31	.84	.62	.51	.59	.42	.18	.39	.17	.20
IN.	.18	.24	.36	.97	.64	.59	.66	.49	.21	.45	.19	.23

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1999, BY WATER YEAR (WY)

	MEAN	93.4	94.8	102	153	179	198	149	91.6	93.2	56.6	62.7	58.6
MAX	419	262	222	317	301	476	390	178	243	98.3	304	196	
(WY)	1991	1996	1984	1998	1990	1993	1987	1990	1992	1989	1995	1979	
MIN	15.8	25.4	36.7	38.9	70.7	60.3	45.5	29.6	13.0	13.2	16.7	11.7	
(WY)	1987	1999	1999	1981	1986	1999	1986	1986	1986	1986	1983	1986	

## SUMMARY STATISTICS

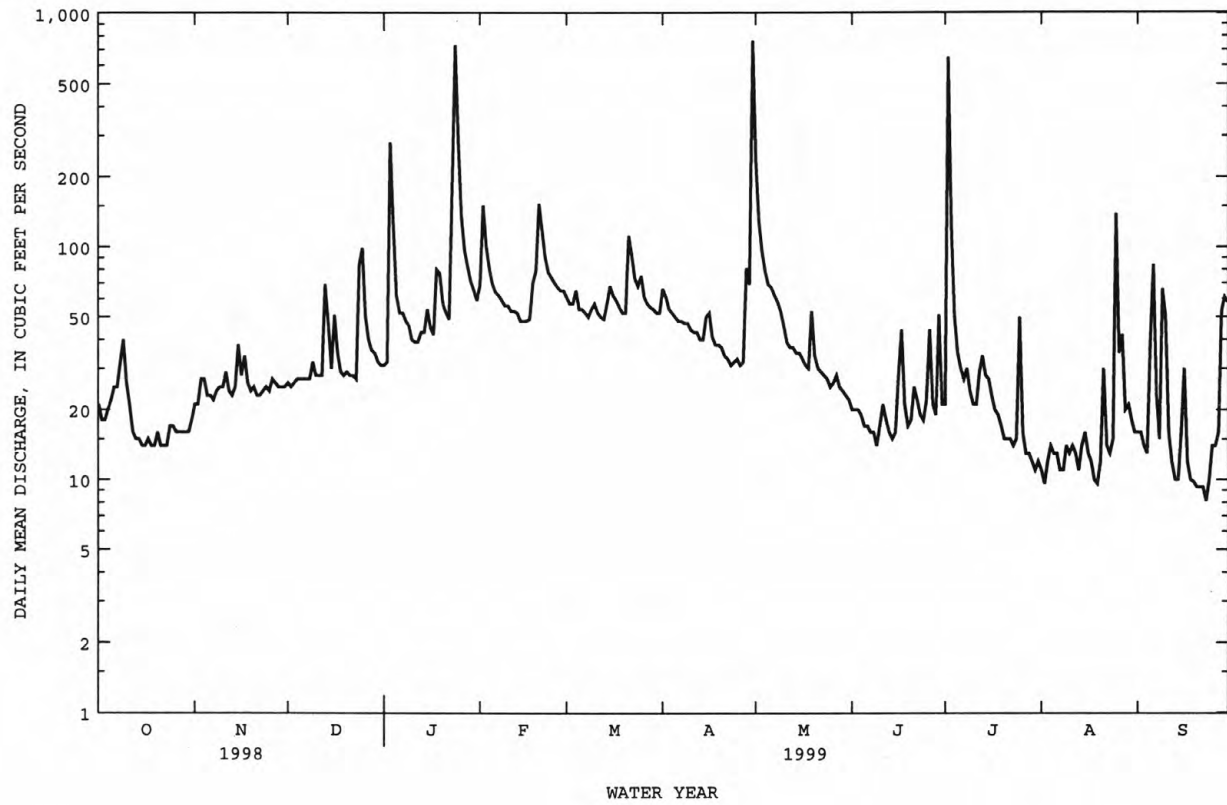
## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1979 - 1999

ANNUAL TOTAL	40396	16499.0	
ANNUAL MEAN	111	45.2	109
HIGHEST ANNUAL MEAN			171
LOWEST ANNUAL MEAN			45.2
HIGHEST DAILY MEAN	2650	Jan 28	764
LOWEST DAILY MEAN	14	Oct 15	8.1
ANNUAL SEVEN-DAY MINIMUM	14	Oct 13	9.4
INSTANTANEOUS PEAK FLOW			1230
INSTANTANEOUS PEAK STAGE			9.36
INSTANTANEOUS LOW FLOW			6.3
ANNUAL RUNOFF (CFSM)	.94	.38	.93
ANNUAL RUNOFF (INCHES)	12.74	5.20	12.61
10 PERCENT EXCEEDS	217	70	170
50 PERCENT EXCEEDS	50	29	66
90 PERCENT EXCEEDS	21	14	26

02120780 SECOND CREEK NEAR BARBER, NC--Continued



## PEE DEE RIVER BASIN

02121500 ABBOTT'S CREEK AT LEXINGTON, NC

LOCATION.--Lat 35°48'23", long 80°14'05", Davidson County, Hydrologic Unit 03040103, on right bank 150 ft upstream from bridge on Secondary Road 1243, 1.5 mi southeast of Lexington, and 4.5 mi downstream of Rich Fork Creek.

DRAINAGE AREA.--174 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1940 to December 1957. October 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 630 ft above sea level, from topographic map. March 1940 to December 1957 at site 100 ft upstream at different datum. Satellite telemetry and rain gage at station.

REMARKS.--Records good. The City of Lexington diverted an average of 5.8 ft<sup>3</sup>/s for water supply. The City of High Point diverted water from the Cape Fear River basin and discharged an average of 5.1 ft<sup>3</sup>/s of treated sewage effluent into Rich Fork Creek, upstream from station. Maximum discharge at former site, 14,800 ft<sup>3</sup>/s, from floodmark; minimum discharge at former site 0.4 ft<sup>3</sup>/s. Minimum discharge for period of record also occurred Sept. 5, 1990. Minimum discharge for current water year also occurred Oct. 20, 26, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	8.3	9.2	30	89	72	98	1260	19	284	12	20
2	12	7.3	9.9	32	293	62	285	372	18	1260	10	18
3	11	8.6	9.2	644	218	57	138	201	17	342	8.8	16
4	10	14	9.7	762	142	73	99	116	17	91	8.7	15
5	9.1	14	10	214	108	64	85	77	16	53	8.5	118
6	8.1	13	10	108	90	55	70	66	14	38	8.2	219
7	9.0	11	9.8	86	84	57	60	56	13	33	8.2	99
8	11	10	10	75	78	48	57	49	14	39	7.7	67
9	16	8.9	21	72	70	49	52	44	14	36	8.9	44
10	22	10	40	63	66	60	51	39	14	24	7.3	41
11	11	14	18	51	62	59	46	37	16	21	8.3	38
12	8.0	19	14	48	61	51	52	32	15	28	8.1	23
13	8.7	19	60	46	70	48	43	33	14	56	8.0	18
14	8.7	16	119	44	60	58	37	462	13	59	7.5	17
15	8.7	20	33	73	52	163	41	1590	14	40	208	20
16	8.2	27	163	94	51	137	55	379	27	29	58	158
17	8.2	19	162	65	51	94	48	139	59	24	24	134
18	7.0	24	60	277	98	78	39	86	34	19	18	54
19	6.3	14	39	392	131	75	37	74	18	19	15	38
20	7.0	12	33	180	210	62	35	69	22	17	26	29
21	8.6	12	29	119	184	140	34	52	70	19	61	23
22	8.4	11	27	91	122	258	32	44	29	62	44	20
23	8.0	9.2	29	158	94	136	29	40	20	38	69	18
24	7.3	9.8	138	1630	82	105	28	36	17	21	46	16
25	7.5	11	372	2180	75	109	26	31	16	16	412	14
26	6.3	13	129	516	72	98	24	27	17	13	201	13
27	6.6	16	71	229	68	77	28	28	17	13	729	16
28	8.2	14	54	159	67	69	109	26	22	12	288	102
29	7.9	11	47	126	---	64	162	23	23	12	73	127
30	8.2	9.1	42	102	---	61	1150	20	16	14	45	296
31	8.2	---	33	86	---	56	---	19	---	15	27	---
TOTAL	289.2	405.2	1810.8	8752	2848	2595	3050	5527	635	2747	2464.2	1831
MEAN	9.33	13.5	58.4	282	102	83.7	102	178	21.2	88.6	79.5	61.0
MAX	22	27	372	2180	293	258	1150	1590	70	1260	729	296
MIN	6.3	7.3	9.2	30	51	48	24	19	13	12	7.3	13
CFSM	.05	.08	.34	1.62	.58	.48	.58	1.02	.12	.51	.46	.35
IN.	.06	.09	.39	1.87	.61	.55	.65	1.18	.14	.59	.53	.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1999, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	186	122	139	307	313	383	280	194	88.1	57.5	57.7	83.0
MAX	731	282	319	554	753	781	506	515	182	115	102	397
(WY)	1990	1996	1990	1998	1990	1993	1993	1989	1989	1995	1989	1996
MIN	9.33	13.5	41.5	108	102	83.7	46.6	43.0	21.2	21.6	14.9	21.8
(WY)	1999	1999	1995	1989	1999	1999	1995	1995	1999	1996	1990	1998

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

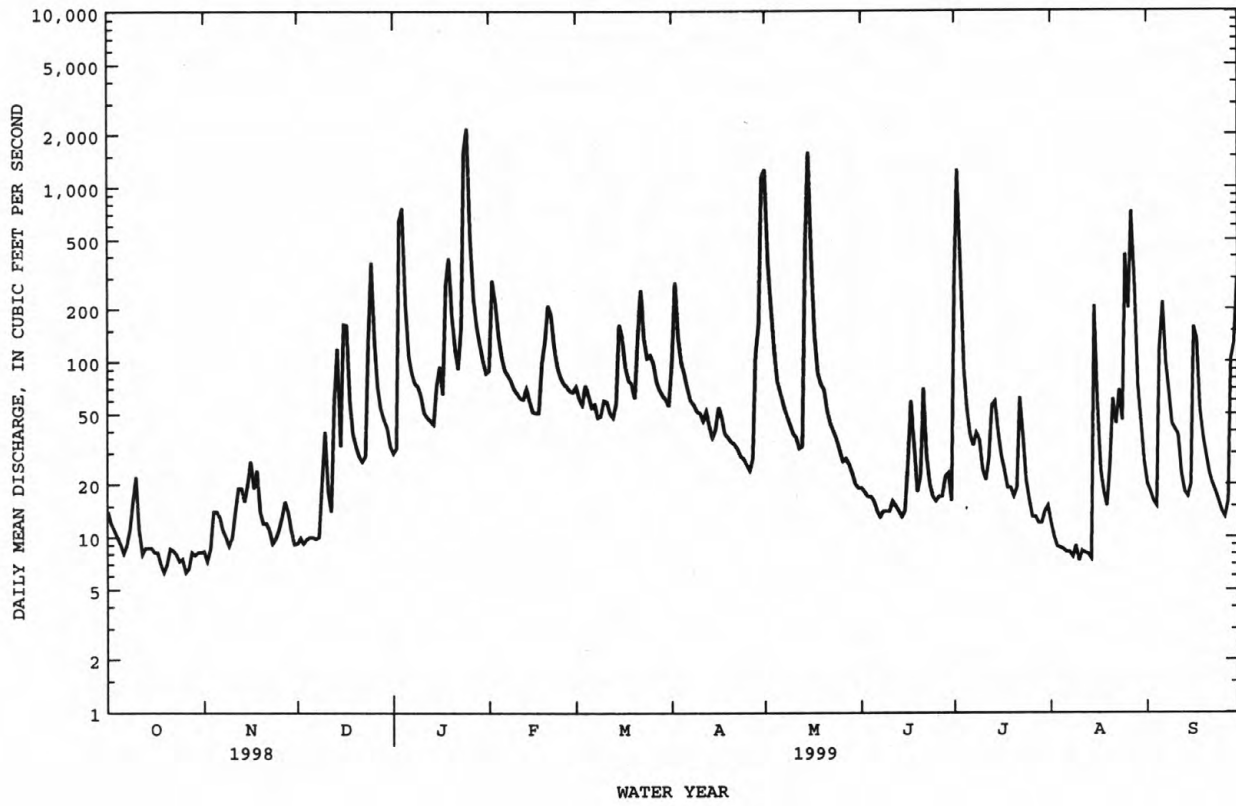
FOR 1999 WATER YEAR

WATER YEARS 1988 - 1999

ANNUAL TOTAL	70728.6	32954.4	
ANNUAL MEAN	194	90.3	
HIGHEST ANNUAL MEAN			184
LOWEST ANNUAL MEAN			281
HIGHEST DAILY MEAN	2900	2180	7120
LOWEST DAILY MEAN	6.3	6.3	2.7
ANNUAL SEVEN-DAY MINIMUM	7.1	7.4	3.9
INSTANTANEOUS PEAK FLOW		2710	8380
INSTANTANEOUS PEAK STAGE		13.56	20.30
INSTANTANEOUS LOW FLOW		6.0*	2.4
ANNUAL RUNOFF (CFSM)	1.11	.52	1.06
ANNUAL RUNOFF (INCHES)	15.12	7.05	14.34
10 PERCENT EXCEEDS	482	162	351
50 PERCENT EXCEEDS	60	37	79
90 PERCENT EXCEEDS	9.1	8.9	17

\* See REMARKS.

02121500 ABBOTTS CREEK AT LEXINGTON, NC--Continued





## PEE DEE RIVER BASIN

## 02122699 TUCKERTOWN RESERVOIR

LOCATION.--Lat 35°29'03", long 80°10'30", Montgomery County, Hydrologic Unit 03040102, Tuckertown Reservoir Dam.

PERIOD OF RECORD.-- October 1998 to September 1999.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Satellite telemetry at station.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.72	.00	.31	.00	.00	.00	.02	.00
2	.00	.39	.00	.22	.03	.00	.01	.01	.00	.00	.00	.00
3	.00	.48	.00	.55	.00	.09	.00	.00	.00	.00	.00	.00
4	.11	.00	.00	.00	.03	.00	.03	.00	.00	.00	.00	.01
5	.01	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	1.71
6	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.02
7	.08	.00	.00	.00	.00	.00	.00	.00	.00	.26	.00	.00
8	.86	.00	.04	.04	.00	.00	.00	.00	.00	.01	.00	.00
9	.00	.00	.01	.01	.00	.18	.00	.00	.00	.00	.01	.55
10	.00	.00	.00	.00	.00	.00	.00	.00	.32	.00	.00	.00
11	.00	.07	.00	.00	.00	.00	.00	.00	.00	.45	.00	.00
12	.00	.00	.08	.00	.11	.00	.00	.00	.00	.91	.00	.00
13	.00	.00	.68	.00	.00	.01	.00	.24	---	.42	.00	.00
14	.00	.42	.00	.04	.00	.54	.00	.00	---	.01	2.96	.00
15	.00	.02	.51	.30	.00	.01	.21	.00	---	.00	.00	2.06
16	.00	.34	.33	.00	.00	.00	.00	.00	---	.00	.00	.12
17	.00	.01	.00	.36	.02	.00	.00	.00	.01	.00	.00	.00
18	.00	.00	.00	.03	.62	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.04	.00	.28	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.42	.00	.12	.00
21	.00	.00	.00	.00	.00	.64	.00	.00	.01	.00	.00	.05
22	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	---	.07
23	.00	.00	.30	1.25	.00	.00	.00	.00	.00	.00	---	.00
24	.00	.00	.30	.59	.00	.00	.00	.00	.00	1.02	---	.00
25	.00	.04	.03	.00	.00	.18	.00	.00	.62	.01	.34	.00
26	.00	.04	.01	.00	.00	.02	.00	.07	.10	.00	.58	.40
27	.00	.00	.00	.00	.00	.00	.77	.00	.06	.00	.01	.77
28	.00	.00	.05	.00	.03	.00	.47	.00	.01	.00	.00	.48
29	.00	.00	.09	.00	---	.00	.74	.00	.00	.21	.00	1.44
30	.00	.00	.00	.02	---	.00	.58	.00	.00	.00	.00	.04
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	1.06	1.81	2.48	3.41	1.84	1.67	3.12	0.36	---	3.30	---	7.72



A flooded chicken farm near Chinquapin, N.C. along the Northeast Cape Fear River, September 1999.

02123567 DUTCHMANS CREEK NEAR UWHARRIE, NC

LOCATION.--Lat 35°22'05", long 80°01'49", Montgomery County, Hydrologic Unit 03040103, near midstream at upstream end of two 6-ft corrugated metal-pipe culverts on Secondary Road 1150, 1.0 mi upstream from mouth, and 3.0 mi southwest of Uwharrrie.

DRAINAGE AREA.--3.44 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1981 to September 1983, October 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 340 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Maximum gage height for period of record, from floodmark. Minimum discharge for period of record also occurred periodically in July and Oct. 1986. Minimum discharge for current water year also occurred Aug. 12-14.

## DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.83	.47	.79	.84	4.2	1.9	e9.0	4.1	.73	.95	.19	.16
2	.59	.66	.75	1.0	9.5	1.7	e10	2.7	.70	.73	.17	.16
3	.55	2.6	.77	41	4.3	2.0	e3.5	2.2	.70	.60	.14	.15
4	.65	1.6	.77	4.6	3.4	2.2	e2.5	2.0	.66	.52	.12	.14
5	.69	.75	.77	2.6	2.8	1.8	e3.8	1.9	.60	.48	.12	2.7
6	.66	.67	.73	2.1	2.6	1.8	e3.0	2.0	.56	.41	.12	1.7
7	.65	.69	.64	2.1	2.5	1.7	e2.5	1.8	.52	1.5	.10	.51
8	6.1	.81	.65	2.2	2.3	1.6	2.4	1.6	.49	1.8	.10	.33
9	2.0	.85	.65	2.1	2.1	1.9	2.3	1.4	.44	.63	.10	.28
10	.96	.86	.56	1.7	2.0	2.1	2.2	1.3	.75	.45	.09	.25
11	.75	.96	.56	1.6	1.9	1.9	2.1	1.3	1.7	.46	.09	.20
12	.68	.91	.55	1.5	2.0	1.8	1.9	1.3	.69	1.7	.07	.18
13	.65	.85	1.4	1.5	1.9	1.7	1.8	1.4	.59	1.6	.07	.18
14	.64	.98	1.1	1.6	1.8	5.0	1.8	1.4	.55	1.4	.41	.17
15	.56	2.1	.99	4.3	1.7	6.6	1.9	e2.3	.62	.94	6.5	1.2
16	.54	1.4	10	1.9	1.8	3.4	1.9	e2.0	2.0	.65	.44	8.0
17	.54	2.0	1.9	1.7	1.8	2.8	1.7	e1.7	2.2	.53	.28	.71
18	.56	1.2	1.0	4.5	2.9	2.5	1.6	1.3	.85	.48	.24	.45
19	.57	1.1	.85	2.4	2.7	2.1	1.6	1.2	.64	.41	.20	.36
20	.58	1.1	.80	1.9	3.1	2.0	1.6	1.1	1.2	.36	.22	.32
21	.52	1.0	.76	1.7	2.4	8.2	1.5	1.1	1.1	.35	.26	.32
22	.49	.91	.78	1.5	2.1	5.7	1.5	1.0	.84	.32	.22	.33
23	.48	.91	1.5	13	1.9	3.7	1.4	1.0	.74	.29	.20	.29
24	.67	.95	19	62	1.9	3.3	1.4	1.0	.64	.28	.20	.27
25	.47	.89	8.8	8.0	1.9	3.1	1.4	.90	.66	.28	.92	.26
26	.41	.97	2.7	4.2	1.9	3.6	1.3	1.1	.72	.25	1.2	.27
27	.37	.90	1.8	3.4	1.8	2.9	1.5	1.2	1.0	.21	.43	1.8
28	.41	.84	1.5	2.9	2.0	2.6	3.2	.93	.94	.20	.28	11
29	.44	.80	1.3	2.6	---	2.5	2.6	.85	3.4	.21	.23	45
30	.45	.79	1.1	2.3	---	2.3	15	.79	2.7	.29	.21	7.5
31	.45	---	.91	2.1	---	2.3	---	.76	---	.23	.16	---
TOTAL	24.91	31.52	66.38	186.84	73.2	88.7	89.9	46.63	29.93	19.51	14.08	85.19
MEAN	.80	1.05	2.14	6.03	2.61	2.86	3.00	1.50	1.00	.63	.45	2.84
MAX	6.1	2.6	19	62	9.5	8.2	15	4.1	3.4	1.8	6.5	45
MIN	.37	.47	.55	.84	1.7	1.6	1.3	.76	.44	.20	.07	.14
CFSM	.23	.31	.62	1.75	.76	.83	.87	.44	.29	.18	.13	.83
IN.	.27	.34	.72	2.02	.79	.96	.97	.50	.32	.21	.15	.92

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1999, BY WATER YEAR (WY)

	MEAN	3.04	2.84	2.84	5.90	6.30	7.90	5.43	3.00	1.90	1.63	1.90	1.67
MAX	11.9	8.69	4.81	17.5	15.9	22.5	10.2	6.49	5.28	8.80	11.2	7.81	
(WY)	1991	1986	1991	1998	1998	1998	1992	1990	1994	1997	1996	1996	
MIN	.19	.75	1.27	1.55	1.83	2.86	1.41	.82	.24	.26	.25	.20	
(WY)	1987	1994	1992	1992	1986	1999	1986	1986	1986	1986	1993	1986	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

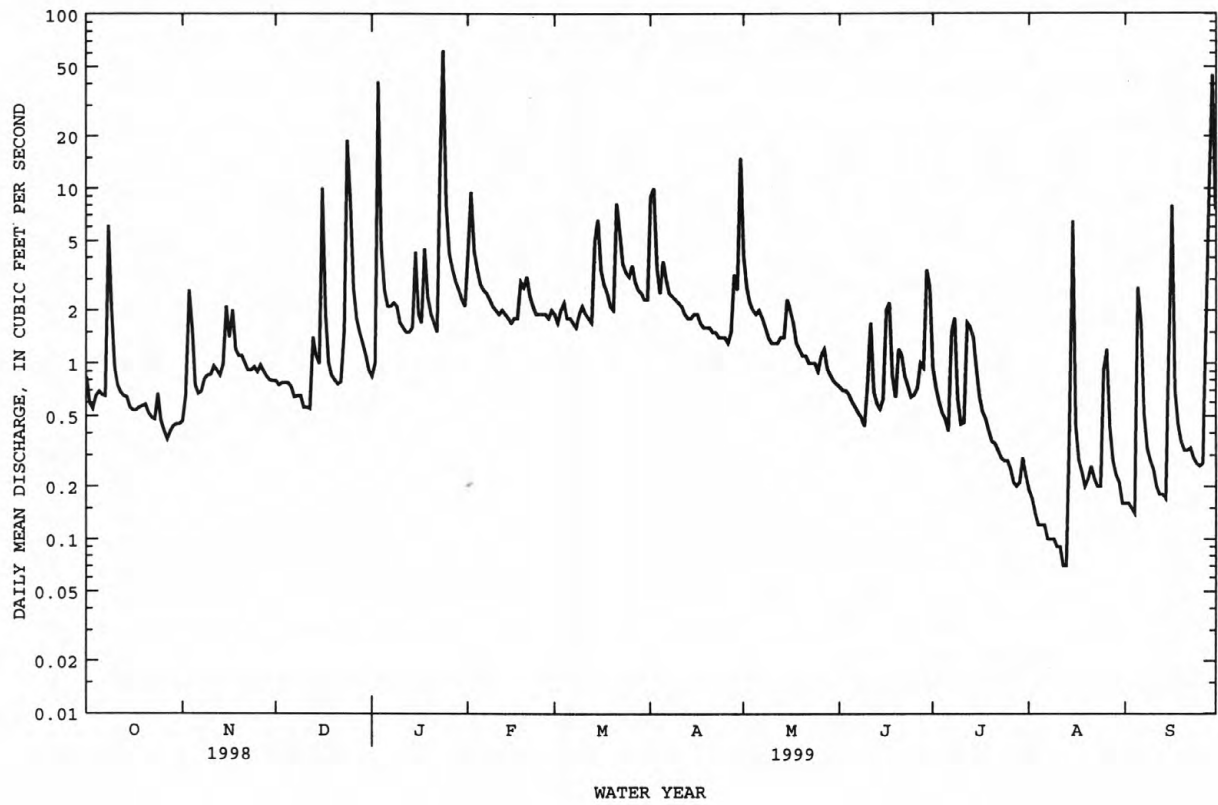
## WATER YEARS 1982 - 1999

ANNUAL TOTAL	2372.21	756.79	
ANNUAL MEAN	6.50	2.07	
HIGHEST ANNUAL MEAN			3.68
LOWEST ANNUAL MEAN			7.16
HIGHEST DAILY MEAN	164	Mar 18	1.60
LOWEST DAILY MEAN	.26	Aug 30	.01
ANNUAL SEVEN-DAY MINIMUM	.27	Aug 27	.03
INSTANTANEOUS PEAK FLOW			1560
INSTANTANEOUS PEAK STAGE			11.96
INSTANTANEOUS LOW FLOW			.01
ANNUAL RUNOFF (CFSM)	1.89		1.07
ANNUAL RUNOFF (INCHES)	25.65		14.55
10 PERCENT EXCEEDS	12		6.1
50 PERCENT EXCEEDS	1.7		1.8
90 PERCENT EXCEEDS	.49		.38

e Estimated.

\* See REMARKS.

02123567 DUTCHMANS CREEK NEAR UWHARRIE, NC--Continued



## 0212414900 MALLARD CREEK BELOW STONY CREEK NEAR HARRISBURG, NC

LOCATION.--Lat 35°19'57", long 80°42'58", Mecklenburg County, Hydrologic Unit 03040105, on left bank on upstream side of bridge at Blockbuster Blvd, 0.1 mi downstream of Stony Creek, and 3.8 mi northwest of Harrisburg.

DRAINAGE AREA.--34.6 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 568.4 ft (revised) above sea level, levels by City of Charlotte. Telephone telemetry at station.

REMARKS.--Records fair except discharges below 3 ft<sup>3</sup>/s, which are poor. Maximum discharge for period of record from contracted opening measurement of peak flow; maximum gage height for period of record from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	18	4.7	6.9	114	14	57	45	4.3	6.6	2.8	3.8
2	4.5	16	4.4	12	131	13	21	24	3.9	4.1	2.5	3.7
3	4.0	59	4.3	366	40	19	17	17	3.6	3.1	1.9	4.2
4	16	5.7	4.8	39	28	17	15	14	4.4	3.9	2.2	7.4
5	33	2.9	4.4	21	21	12	13	13	4.3	4.0	2.1	60
6	9.4	2.8	4.8	17	19	12	11	14	3.9	279	2.1	20
7	7.2	3.4	4.7	14	17	12	10	13	3.1	201	3.8	5.6
8	34	3.7	4.5	13	16	11	9.8	12	2.4	31	6.7	3.7
9	13	4.0	5.1	13	13	20	9.5	10	2.4	11	6.0	8.4
10	7.4	3.2	4.7	11	12	17	9.5	9.1	12	6.3	2.4	6.4
11	5.9	6.0	4.1	10	12	12	13	8.3	31	5.1	2.7	3.5
12	5.8	5.9	4.5	9.2	11	12	10	8.3	5.9	17	2.6	2.3
13	5.1	4.9	53	9.4	11	11	8.1	8.4	4.2	24	2.7	2.5
14	4.9	9.8	14	8.7	11	33	7.9	8.0	3.1	8.3	3.3	4.0
15	4.9	29	14	28	11	34	11	8.1	25	5.4	4.1	26
16	4.2	22	72	12	10	16	10	7.8	100	3.9	4.3	55
17	3.8	20	11	87	10	13	8.3	7.3	33	3.8	2.3	6.7
18	3.7	5.8	7.5	128	56	12	7.9	7.1	9.2	3.8	2.5	3.4
19	3.8	4.4	5.9	33	90	11	7.4	23	6.1	3.5	2.6	2.2
20	4.8	3.5	5.8	20	117	10	6.9	9.0	6.4	3.6	3.1	2.1
21	4.6	2.9	5.3	16	43	50	6.9	8.1	6.8	3.6	9.3	1.7
22	6.1	3.2	9.8	14	25	20	6.6	7.4	6.1	3.5	3.6	12
23	9.8	3.2	32	718	20	14	6.1	7.1	4.8	4.2	2.4	4.3
24	11	3.7	245	502	18	13	5.9	6.7	4.4	44	12	2.3
25	12	3.4	66	78	17	12	5.9	5.9	26	17	37	1.6
26	11	4.3	19	39	15	13	5.9	11	26	4.0	5.8	3.3
27	11	4.6	13	27	14	11	51	7.8	15	2.6	4.3	12
28	11	4.3	9.8	22	15	10	103	5.8	11	1.9	2.8	28
29	11	4.3	18	19	---	9.8	33	5.6	6.1	21	3.1	95
30	14	4.3	10	18	---	9.2	396	5.0	7.5	9.0	4.3	36
31	18	---	7.5	16	---	8.9	---	4.9	---	6.9	2.5	---
TOTAL	301.7	268.2	673.6	2327.2	917	481.9	883.6	341.7	381.9	746.1	149.8	427.1
MEAN	9.73	8.94	21.7	75.1	32.8	15.5	29.5	11.0	12.7	24.1	4.83	14.2
MAX	34	59	245	718	131	50	396	45	100	279	37	95
MIN	3.7	2.8	4.1	6.9	10	8.9	5.9	4.9	2.4	1.9	1.9	1.6
CFSM	.28	.26	.63	2.17	.95	.45	.85	.32	.37	.70	.14	.41
IN.	.32	.29	.72	2.50	.99	.52	.95	.37	.41	.80	.16	.46

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

	MEAN	33.3	41.2	32.6	76.0	68.7	48.6	50.2	21.2	18.6	35.1	35.9	18.4
MAX	53.7	90.4	64.3	147	95.0	68.2	77.0	27.5	35.9	92.9	105	21.3	
(WY)	1996	1996	1998	1998	1997	1998	1997	1998	1995	1997	1995	1995	
MIN	9.73	8.94	16.2	44.2	32.8	15.5	11.2	11.0	12.5	9.24	4.83	14.2	
(WY)	1999	1999	1995	1995	1999	1999	1995	1999	1997	1996	1999	1999	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

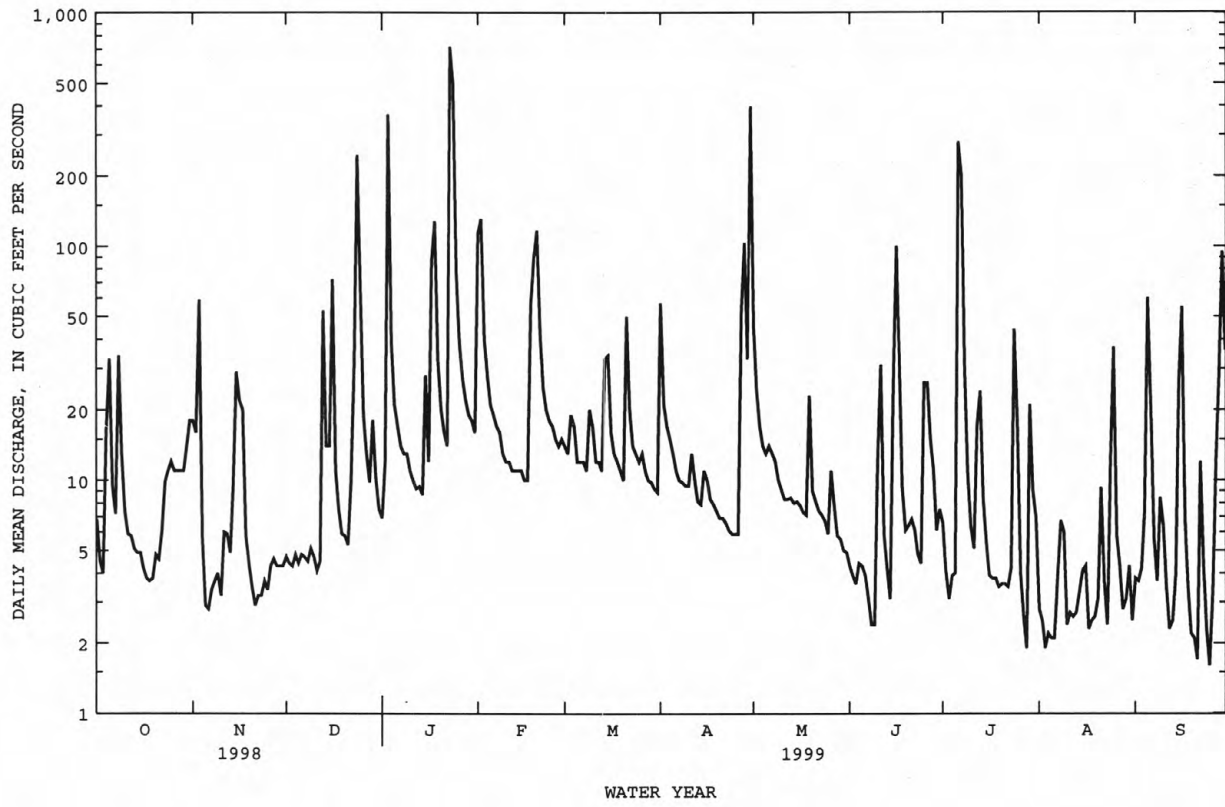
## WATER YEARS 1995 - 1999

ANNUAL TOTAL	15563.5	7899.8	
ANNUAL MEAN	42.6	21.6	39.8
HIGHEST ANNUAL MEAN			51.1
LOWEST ANNUAL MEAN			21.6
HIGHEST DAILY MEAN	924	Jan 27	718 Jan 23
LOWEST DAILY MEAN	2.8	Nov 6	1.6 Sep 25
ANNUAL SEVEN-DAY MINIMUM	3.5	Nov 20	2.5 Aug 1
INSTANTANEOUS PEAK FLOW			2130 Jan 23
INSTANTANEOUS PEAK STAGE			13.31 Jan 23
INSTANTANEOUS LOW FLOW			.65 Jul 29
ANNUAL RUNOFF (CFSM)	1.23		.63
ANNUAL RUNOFF (INCHES)	16.73		8.49
10 PERCENT EXCEEDS	74		34
50 PERCENT EXCEEDS	16		9.1
90 PERCENT EXCEEDS	4.2		3.2

e Estimated.

\* See REMARKS.

0212414900 MALLARD CREEK BELOW STONY CREEK NEAR HARRISBURG, NC--Continued





02125000 BIG BEAR CREEK NEAR RICHFIELD, NC

LOCATION.--Lat 35°20'02", long 80°20'09", Stanly County, Hydrologic Unit 03040105, on left bank 300 ft downstream of Little Creek, 400 ft upstream from bridge on Secondary Road 1134, and 10 mi southwest of Richfield.

DRAINAGE AREA.--55.6 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1954 to current year.

REVISED RECORDS.--WSP 1503: 1955, 1956(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 426.62 ft above sea level. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No flow occurs several days in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 1921 reached a stage of about 19 ft, information from State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.38	.12	.94	17	56	17	19	145	1.2	1.7	.21	.00
2	.31	.14	.91	16	371	14	26	e85	1.1	1.4	.14	.00
3	.27	.35	.90	609	131	13	19	e39	1.0	1.3	.10	.00
4	.28	.31	.96	115	77	14	17	20	.93	1.1	.10	.00
5	.40	.26	.92	54	52	12	14	15	.81	.90	.05	.28
6	.52	.23	.93	35	41	11	12	14	.67	.77	.04	.53
7	.44	.21	.94	28	35	11	11	12	.59	.45	.00	.28
8	1.5	.21	.93	23	29	9.3	9.9	9.5	.49	.36	.00	.14
9	.56	.22	.93	22	23	9.9	9.1	7.2	.35	.29	.00	.27
10	.34	.21	.87	18	20	13	8.0	6.0	.31	.16	.00	.55
11	.27	.21	.83	15	18	11	7.2	5.1	1.2	.22	.00	.24
12	.24	.21	.85	13	17	9.6	6.7	4.3	.87	1.3	.00	.14
13	.22	.19	1.2	12	15	8.6	5.9	3.9	.59	2.8	.00	.12
14	.21	.22	1.5	11	13	13	5.5	4.7	.41	2.6	.00	.10
15	.18	.33	2.0	22	13	46	5.8	4.5	1.5	1.8	.00	.24
16	.16	.34	31	23	12	29	6.1	3.9	2.1	1.4	.00	1.0
17	.16	1.5	20	30	12	20	5.3	3.4	4.0	1.1	.00	.61
18	.15	1.3	9.4	112	77	17	4.6	3.2	1.8	.89	.00	.29
19	.16	1.1	4.6	63	71	14	4.2	3.1	1.3	.60	.00	.16
20	.16	1.0	3.1	38	108	12	4.0	2.7	1.5	.33	.00	.12
21	.16	.97	3.0	28	63	52	3.9	2.6	2.2	.24	.00	.10
22	.15	.93	2.7	22	41	76	3.7	2.4	1.8	.25	.00	.10
23	.11	.96	6.9	299	30	43	3.4	2.3	1.5	.25	.00	.09
24	.12	.96	e300	1250	24	31	3.2	2.1	1.3	.26	.00	.08
25	.16	.96	226	304	21	24	2.9	1.8	1.4	.39	.00	.05
26	.18	1.0	68	112	19	26	2.8	1.9	5.9	.34	.07	.02
27	e.18	.98	39	70	17	21	3.1	2.1	3.4	.26	.12	.12
28	.16	.96	27	54	18	18	45	1.9	2.6	.19	.04	.19
29	.16	.96	27	41	---	16	33	1.7	2.2	.13	.00	126
30	.14	.95	24	34	---	e14	651	1.5	2.0	.33	.00	50
31	.12	---	19	27	---	12	---	1.4	---	.55	.00	---
TOTAL	8.55	18.29	826.31	3517	1424	637.4	952.3	413.2	47.02	24.66	0.87	181.82
MEAN	.28	.61	26.7	113	50.9	20.6	31.7	13.3	1.57	.80	.028	6.06
MAX	1.5	1.5	300	1250	371	76	651	145	5.9	2.8	.21	126
MIN	.11	.12	.83	11	12	8.6	2.8	1.4	.31	.13	.00	.00
CFSM	.00	.01	.48	2.04	.91	.37	.57	.24	.03	.01	.00	.11
IN.	.01	.01	.55	2.35	.95	.43	.64	.28	.03	.02	.00	.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1999, BY WATER YEAR (WY)

	MEAN	39.9	32.4	56.8	113	135	124	74.0	37.9	28.8	32.4	24.2	19.1
MAX	355	212	186	357	284	345	247	234	140	220	223	125	
(WY)	1991	1986	1977	1998	1984	1993	1958	1975	1957	1984	1967	1995	
MIN	.006	.34	2.12	4.38	16.2	13.2	6.87	1.32	.24	.31	.002	.000	
(WY)	1962	1962	1966	1981	1986	1981	1967	1986	1986	1986	1980	1993	

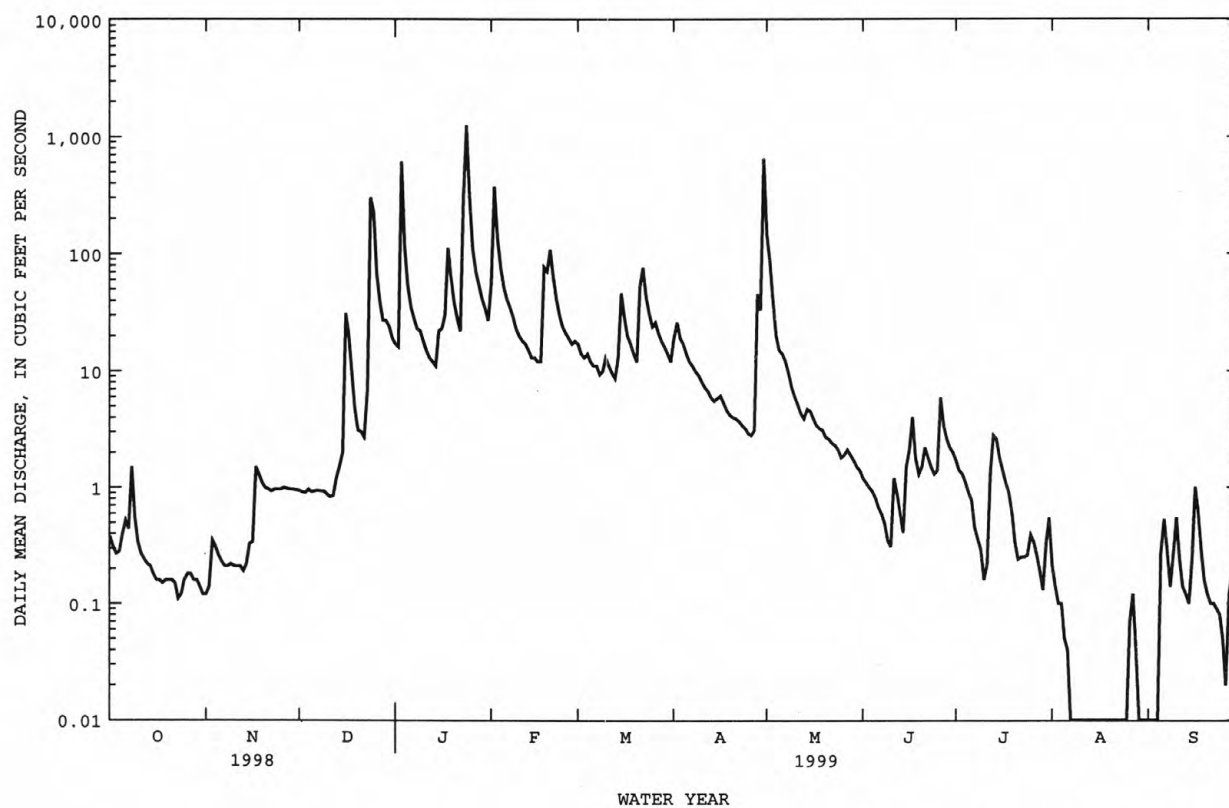
SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1954 - 1999

ANNUAL TOTAL	28486.60	8051.42	
ANNUAL MEAN	78.0	22.1	59.6
HIGHEST ANNUAL MEAN			112
LOWEST ANNUAL MEAN			22.1
HIGHEST DAILY MEAN	1640	Jan 27	5240
LOWEST DAILY MEAN	.00	Jul 12	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 26	.00
INSTANTANEOUS PEAK FLOW			11400
INSTANTANEOUS PEAK STAGE			16.54
INSTANTANEOUS LOW FLOW			.00*
ANNUAL RUNOFF (CFSM)	1.40	.40	1.07
ANNUAL RUNOFF (INCHES)	19.06	5.39	14.58
10 PERCENT EXCEEDS	201	40	120
50 PERCENT EXCEEDS	3.8	1.5	12
90 PERCENT EXCEEDS	.18	.10	.40

e Estimated.

\* See REMARKS.

02125000 BIG BEAR CREEK NEAR RICHFIELD, NC--Continued



## PEE DEE RIVER BASIN

02126000 ROCKY RIVER NEAR NORWOOD, NC

LOCATION.--Lat 35°08'54", long 80°10'33", Stanly County, Hydrologic Unit 03040105, on left bank 1,000 ft downstream of Lanes Creek, 1.5 mi upstream from bridge on Secondary Road 1935, 6 mi southwest of Norwood, and 11.2 mi upstream from mouth.

DRAINAGE AREA.--1,372 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1929 to current year.

REVISED RECORDS.--WSP 852: 1937. WSP 1052: 1936(M). WSP 1503: 1935, 1945. WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 212.91 ft above sea level (levels by U.S. Army Corps of Engineers). Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Maximum gage height for period of record, from floodmark. Minimum discharge for the current water year also occurred Sept. 4, 5.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1908 reached a stage of 35 ft, from information by local residents; discharge, 67,600 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	252	111	139	391	751	504	580	8400	115	190	123	80
2	287	110	144	347	7340	464	1690	2060	115	161	131	79
3	190	136	145	7750	3890	423	923	1000	115	135	104	77
4	146	316	150	4450	1940	421	630	678	113	123	91	76
5	132	284	148	1490	1340	446	506	527	109	111	87	98
6	206	189	149	884	1020	395	425	453	105	103	85	186
7	245	155	149	669	877	385	380	415	102	100	83	377
8	2550	140	148	593	801	357	356	372	100	465	81	186
9	4050	133	152	533	687	345	332	318	101	261	78	126
10	679	132	151	484	626	414	314	264	103	161	77	157
11	336	137	149	405	575	525	293	235	117	134	86	171
12	230	132	147	354	539	457	289	221	125	131	87	120
13	189	135	153	331	492	393	268	208	143	171	85	98
14	170	144	189	310	459	454	243	213	112	306	85	87
15	154	159	396	510	410	2400	234	1160	112	234	90	92
16	145	219	592	859	394	1410	239	404	141	168	93	222
17	137	294	972	611	393	841	243	254	357	143	92	431
18	132	315	496	2530	548	653	227	206	477	125	84	228
19	127	262	309	2600	1270	550	199	195	226	118	80	140
20	125	201	239	1180	2160	465	195	236	157	114	81	109
21	123	175	208	795	1800	947	193	224	147	129	85	96
22	124	163	196	633	1090	2350	189	177	173	115	89	100
23	117	150	194	1080	792	1200	182	159	153	109	112	135
24	113	146	2190	23000	659	772	172	146	135	106	92	123
25	112	148	6420	15000	581	630	168	141	127	106	100	105
26	114	150	2430	3240	541	612	160	142	1140	154	150	95
27	114	146	1100	1760	499	584	163	142	824	165	204	97
28	114	143	726	1290	475	498	692	143	463	115	136	136
29	115	139	604	1020	---	433	1240	142	252	102	107	8380
30	114	135	568	832	---	389	9240	128	205	190	92	6940
31	114	---	482	709	---	365	---	122	---	113	82	---
TOTAL	11756	5199	20235	76640	32949	21082	20965	19485	6664	4858	3052	19347
MEAN	379	173	653	2472	1177	680	699	629	222	157	98.5	645
MAX	4050	316	6420	23000	7340	2400	9240	8400	1140	465	204	8380
MIN	112	110	139	310	393	345	160	122	100	100	77	76
CFSM	.28	.13	.48	1.80	.86	.50	.51	.46	.16	.11	.07	.47
IN.	.32	.14	.55	2.08	.89	.57	.57	.53	.18	.13	.08	.52

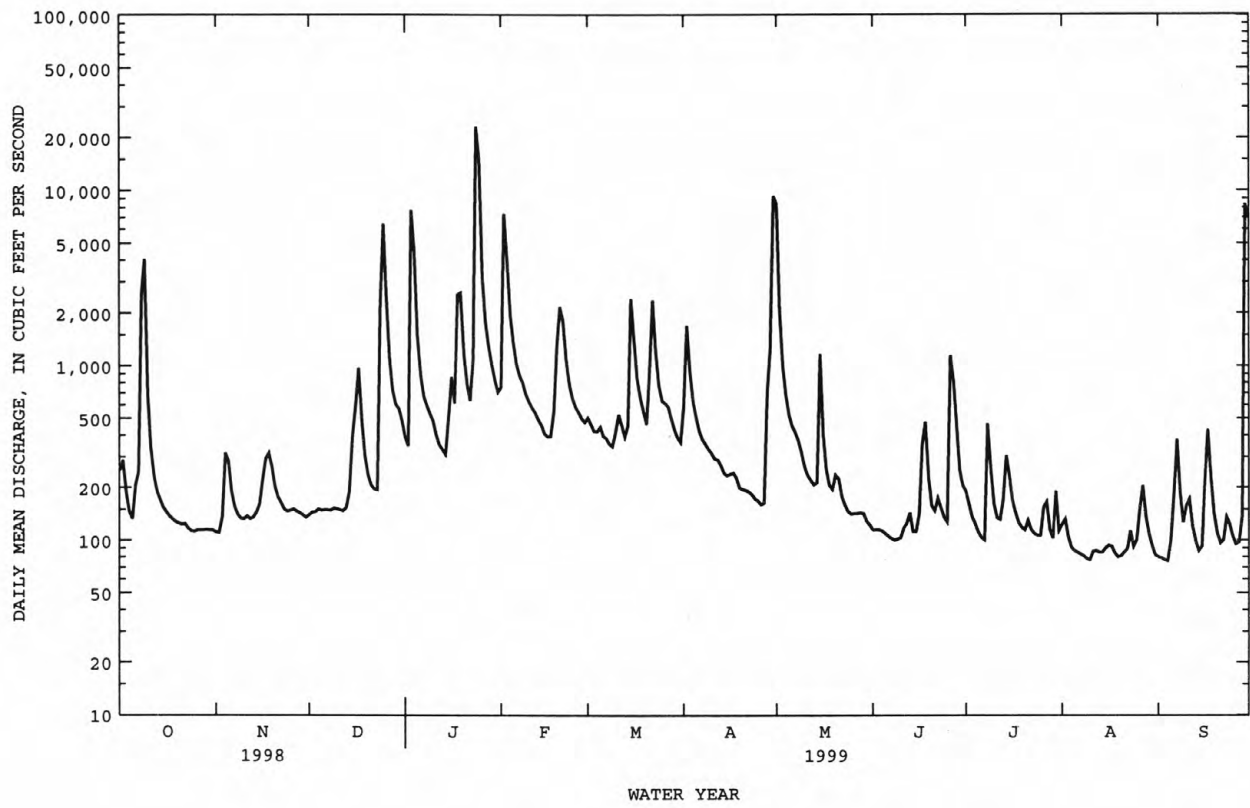
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1999, BY WATER YEAR (WY)

	MEAN	896	800	1304	2513	2785	2746	1758	834	681	775	747	666
MAX	6837	4763	4564	7458	7922	7674	7097	3998	3017	3479	2917	8262	
(WY)	1991	1949	1933	1998	1960	1993	1936	1975	1982	1997	1967	1945	
MIN	45.9	54.1	105	152	321	412	234	142	88.5	95.6	82.4	41.0	
(WY)	1931	1942	1934	1934	1938	1981	1967	1981	1986	1986	1957	1954	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1930 - 1999	
ANNUAL TOTAL	716520		242232			
ANNUAL MEAN	1963		664		1369	
HIGHEST ANNUAL MEAN					2492	
LOWEST ANNUAL MEAN					449	
HIGHEST DAILY MEAN	32800	Jan 28	23000	Jan 24	85600	Sep 18 1945
LOWEST DAILY MEAN	45	Jul 15	76	Sep 4	19	Oct 28 1931
ANNUAL SEVEN-DAY MINIMUM	58	Jul 9	82	Aug 5	26	Oct 7 1954
INSTANTANEOUS PEAK FLOW			31500	Jan 24	105000	Sep 18 1945
INSTANTANEOUS PEAK STAGE			20.90	Jan 24	46.37*	Sep 18 1945
INSTANTANEOUS LOW FLOW			74*	Sep 3	17	Oct 8 1954
ANNUAL RUNOFF (CFSM)	1.43		.48		1.00	
ANNUAL RUNOFF (INCHES)	19.43		6.57		13.56	
10 PERCENT EXCEEDS	4400		1120		2990	
50 PERCENT EXCEEDS	393		196		407	
90 PERCENT EXCEEDS	114		100		105	

\* See REMARKS.

02126000 ROCKY RIVER NEAR NORWOOD, NC--Continued



## PEE DEE RIVER BASIN

02128000 LITTLE RIVER NEAR STAR, NC

LOCATION.--Lat 35°23'11", long 79°49'56", Montgomery County, Hydrologic Unit 03040104, on left bank 9 ft downstream from bridge on Secondary Road 1340, 50 ft upstream from Black Rock Branch, 0.2 mi upstream from Norfolk Southern Railway bridge, 0.3 mi downstream from West Fork Little River, and 3 mi west of Star.

DRAINAGE AREA.--106 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1949-54. April 1954 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 409.00 ft above sea level. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Minimum discharge for period of record also occurred Oct. 5, 1968, as a result of upstream withdrawals for water supply. Minimum discharge for current water year also occurred Aug. 14.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1945 reached a stage of about 20 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	10	12	40	70	51	524	280	25	18	4.6	4.6
2	9.3	11	12	38	361	49	554	120	24	16	4.2	3.5
3	7.0	26	12	1260	188	46	177	84	23	14	3.3	2.9
4	6.6	58	12	298	103	52	115	70	22	12	2.7	2.2
5	6.5	25	13	105	79	60	208	64	21	11	2.1	20
6	6.5	15	13	67	67	49	120	62	21	9.9	2.2	610
7	7.0	11	13	55	63	46	91	61	19	8.4	1.6	92
8	53	9.2	13	48	60	43	80	59	18	9.2	1.5	36
9	120	8.4	13	45	55	43	73	57	16	7.6	1.5	20
10	50	7.9	13	41	51	49	68	49	16	8.4	1.9	14
11	21	9.6	13	38	49	50	62	46	17	8.6	1.5	10
12	14	10	13	35	49	46	63	44	15	11	1.0	8.4
13	11	9.9	16	33	51	43	60	43	14	18	.64	7.1
14	9.9	12	49	33	47	73	51	46	13	62	.83	6.1
15	8.6	20	38	115	44	555	53	59	13	45	23	8.8
16	8.3	28	209	141	44	170	54	49	20	29	29	756
17	8.1	39	132	65	43	95	52	44	53	22	18	141
18	7.9	39	54	130	60	76	48	42	43	18	9.9	45
19	7.8	26	34	128	99	65	46	41	27	16	6.3	27
20	8.1	18	28	70	124	67	46	40	27	13	5.3	19
21	7.8	15	25	56	100	169	45	38	28	12	4.2	16
22	7.5	13	24	48	66	468	44	37	26	10	3.2	13
23	7.6	12	25	62	55	138	42	36	24	9.2	13	12
24	8.0	12	359	2040	51	92	41	35	21	8.3	7.3	11
25	8.0	12	594	618	49	80	40	31	19	7.4	40	10
26	8.9	12	146	181	49	112	40	32	18	6.6	170	9.5
27	9.5	12	86	106	48	101	41	34	20	5.5	127	12
28	9.9	13	71	e90	49	76	111	33	22	4.7	50	168
29	9.4	13	59	e70	---	67	282	30	20	4.6	21	938
30	8.6	13	52	63	---	62	935	28	29	4.8	11	2000
31	9.3	---	46	59	---	59	---	26	---	5.4	6.3	---
TOTAL	484.1	520.0	2199	6178	2174	3152	4166	1720	674	435.6	574.07	5023.1
MEAN	15.6	17.3	70.9	199	77.6	102	139	55.5	22.5	14.1	18.5	167
MAX	120	58	594	2040	361	555	935	280	53	62	170	2000
MIN	6.5	7.9	12	33	43	43	40	26	13	4.6	.64	2.2
CFSM	.15	.16	.67	1.88	.73	.96	1.31	.52	.21	.13	.17	1.58
IN.	.17	.18	.77	2.17	.76	1.11	1.46	.60	.24	.15	.20	1.76

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1999, BY WATER YEAR (WY)

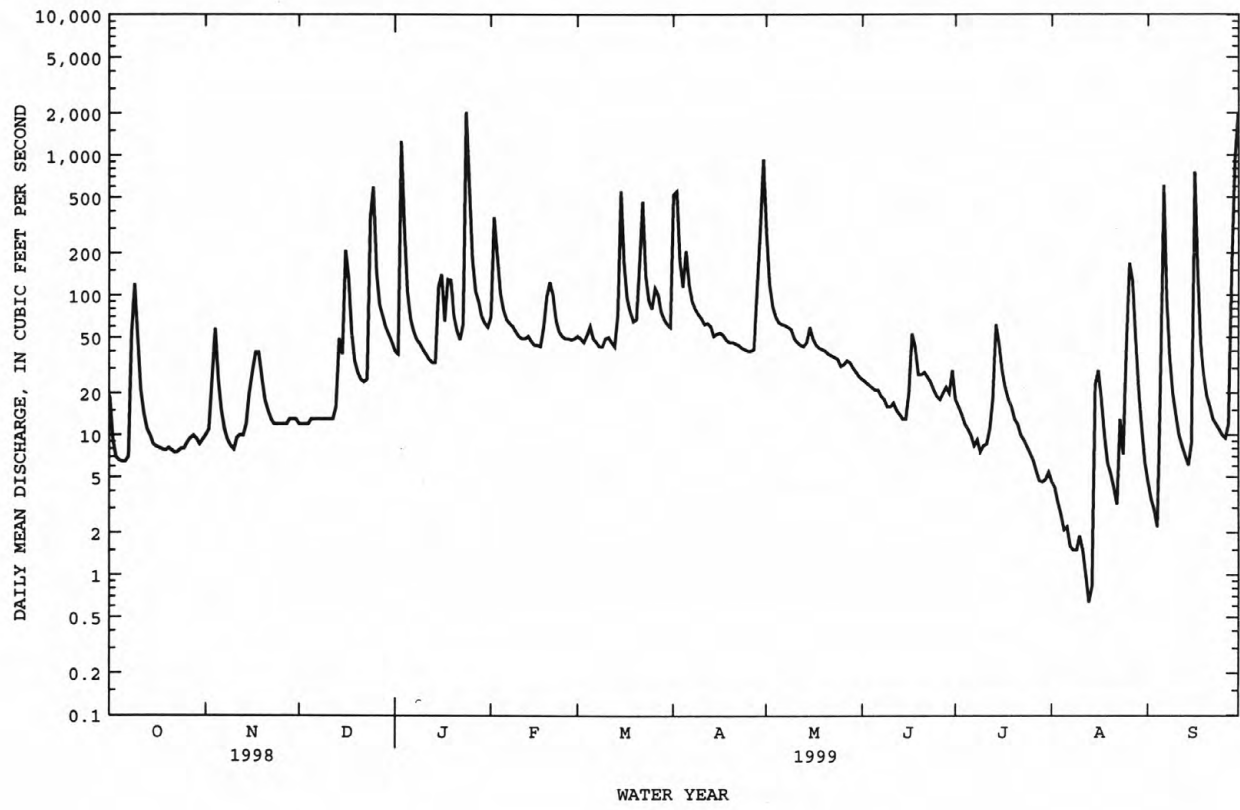
	MEAN	69.3	67.8	98.3	174	215	226	175	100	72.3	68.9	52.0	49.8
MAX	337	366	361	511	467	678	430	296	273	578	249	261	
(WY)	1991	1986	1973	1998	1960	1998	1958	1990	1972	1997	1985	1979	
MIN	4.03	10.7	18.7	26.7	56.1	47.0	38.0	30.3	12.8	6.37	4.80	.76	
(WY)	1987	1962	1966	1981	1986	1967	1967	1981	1967	1977	1983	1968	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1954 - 1999	
ANNUAL TOTAL	66029.9		27299.87		114	
ANNUAL MEAN	181		74.8		209	
HIGHEST ANNUAL MEAN					42.4	
LOWEST ANNUAL MEAN					1975	
HIGHEST DAILY MEAN	7810	Mar 19	2040	Jan 24	9800	Jul 23 1997
LOWEST DAILY MEAN	2.0	Aug 29	.64	Aug 13	.27	Oct 4 1968
ANNUAL SEVEN-DAY MINIMUM	2.2	Aug 27	1.3	Aug 8	.30	Sep 28 1968
INSTANTANEOUS PEAK FLOW			4810	Sep 30	15400	Jul 23 1997
INSTANTANEOUS PEAK STAGE			10.25	Sep 30	18.60	Jul 23 1997
INSTANTANEOUS LOW FLOW			.53*	Aug 13	.24*	Oct 4 1968
ANNUAL RUNOFF (CFSM)	1.71		.71		1.07	
ANNUAL RUNOFF (INCHES)	23.17		9.58		14.60	
10 PERCENT EXCEEDS	334		122		196	
50 PERCENT EXCEEDS	48		33		50	
90 PERCENT EXCEEDS	7.0		7.2		9.7	

e Estimated.

\* See REMARKS.

02128000 LITTLE RIVER NEAR STAR, NC--Continued





## 02129000 PEE DEE RIVER NEAR ROCKINGHAM, NC

LOCATION.--Lat 34°56'46", long 79°52'11", Richmond County, Hydrologic Unit 03040201, on left bank at bridge on U.S. Highway 74, 2.5 mi upstream from Falling Creek, 3.3 mi downstream of Blewett Falls hydroelectric plant, 6 mi west of Rockingham, and 192 mi upstream from mouth in Winyah Bay.

DRAINAGE AREA.--6,863 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1906 to January 1912, October 1927 to current year. August 1906 to January 1912 published as "Yadkin River near Pee Dee".

REVISED RECORDS.--WSP 1203: 1928-37. WSP 1303: 1928-42 (monthly and yearly runoff), 1943-46 (adjusted monthly runoff). WSP 1503: 1906-12, 1928-32(m). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 120.68 ft above sea level (levels by U.S. Army Corps of Engineers). August 1906 to January 1912 nonrecording gage at site 3.3 mi upstream at different datum. Sept. 1927 to Sept. 30, 1931, water-stage recorder at present site at 121.68 ft. Telephone and satellite telemetry at station.

REMARKS.--Records good except for estimated daily discharges and those below 1000 ft<sup>3</sup>/s, which are poor. Flow regulated since 1928 by Blewett Falls Lake and five other reservoirs upstream. Prior to regulation, maximum discharge: 276,000 ft<sup>3</sup>/s, Aug. 27, 1908; gage height: 31.28 ft, present site and datum, from records of State Highway Commission. Prior to regulation, minimum discharge: 2,210 ft<sup>3</sup>/s, Sept. 3, 1907. Minimum discharge for period of record also occurred Dec. 2, 3, 1951; minimum daily discharge for period of record: 58 ft<sup>3</sup>/s, Dec 2, 1951, a result of abnormally low flow during shutdown of Blewett Falls hydroelectric plant to produce steady flow for current-meter measurements at this gaging station. Minimum discharge from normal regulations: 96 ft<sup>3</sup>/s, Oct. 25, 1943; minimum daily discharge: 120 ft<sup>3</sup>/s, Oct. 8, 1961.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2980	552	1150	2920	8890	5480	6560	24300	4020	4270	1300	1300
2	1790	1620	1850	1940	12200	3920	10700	15700	3890	e2520	3580	2660
3	653	3980	2590	9670	18300	3820	8810	13400	3730	504	3420	1840
4	1070	3530	2980	17700	15600	5240	1990	10700	3280	418	2040	567
5	2290	2440	761	9740	14600	4140	5850	10100	790	1050	1430	1120
6	2390	1750	868	7950	11200	3670	6370	8930	407	3170	456	3740
7	2640	749	878	7750	5590	1440	6010	6140	3100	2780	393	2800
8	4760	854	1010	7430	1950	5530	3840	3720	3190	2700	385	3390
9	9540	777	1370	2030	5750	5920	1520	493	2460	2170	1810	2720
10	4420	1470	2580	1340	8560	8170	1100	5360	1290	537	2080	2460
11	487	947	2530	4100	9840	7190	996	5320	2140	456	2710	996
12	4180	2490	695	4690	9300	6790	3690	6510	473	3000	2570	514
13	3690	1660	736	5180	8180	2090	3540	3940	394	2850	994	2210
14	3110	868	1830	5980	1160	5000	3060	e5310	2900	4040	498	4530
15	3390	818	4020	6740	3940	6000	3450	4980	2340	5880	605	9430
16	3570	1850	6150	4200	5710	7890	2840	e5440	2650	7190	2700	5120
17	1250	2830	7510	1430	5350	8420	746	7180	2470	2080	2530	350
18	481	3320	8340	7240	6210	8280	637	e5100	3080	475	3490	581
19	2690	2660	6240	9620	6140	8070	3100	5900	639	3770	3490	384
20	3860	2340	2170	9900	6180	2280	3210	6260	430	4730	505	345
21	6870	679	3320	9190	3460	3020	4240	6730	3320	5210	428	1570
22	5010	589	5350	8360	7240	8410	3380	2760	e2840	3890	428	4320
23	1460	3030	6080	8530	6730	10600	3030	3460	3120	5710	2530	2480
24	505	3890	7710	26600	7060	10100	1380	3650	2700	1050	1900	2300
25	497	5220	14800	50900	6030	9110	365	3210	2540	431	2830	635
26	1250	3610	12100	24600	6230	9290	2570	4460	626	2530	2600	484
27	894	3010	7560	14600	5340	6420	3310	4060	1550	2390	1630	3280
28	849	1930	5210	12800	2070	1640	2990	3720	3390	2840	974	4010
29	2960	2320	6550	12000	---	6210	4160	973	3500	2570	469	16100
30	3270	2020	5300	10400	---	6580	12000	486	3030	2760	2960	39900
31	612	---	7850	9350	---	7380	---	1410	---	994	2710	---
TOTAL	83418	63803	138088	314880	208810	188100	115444	189702	70289	84965	56445	122136
MEAN	2691	2127	4454	10160	7458	6068	3848	6119	2343	2741	1821	4071
MAX	9540	5220	14800	50900	18300	10600	12000	24300	4020	7190	3580	39900
MIN	481	552	695	1340	1160	1440	365	486	394	418	385	345
†	-420	-438	-183	+1538	-807	-351	+1880	-410	-352	+140	-267	+27

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1999,\* BY WATER YEAR (WY)

	MEAN	6014	5619	7594	11230	12710	13620	10890	7344	5963	5340	5461	5434
MAX	25850	16120	20300	31270	36040	34480	31340	15630	15210	16790	19180	35690	
(WY)	1991	1958	1933	1937	1960	1993	1936	1958	1972	1975	1928	1928	
MIN	1293	1607	2640	2475	3704	4117	2692	2026	1853	1692	1456	1008	
(WY)	1954	1954	1940	1956	1934	1981	1981	1986	1986	1986	1954	1954	

## 02129000 PEE DEE RIVER NEAR ROCKINGHAM, NC--Continued

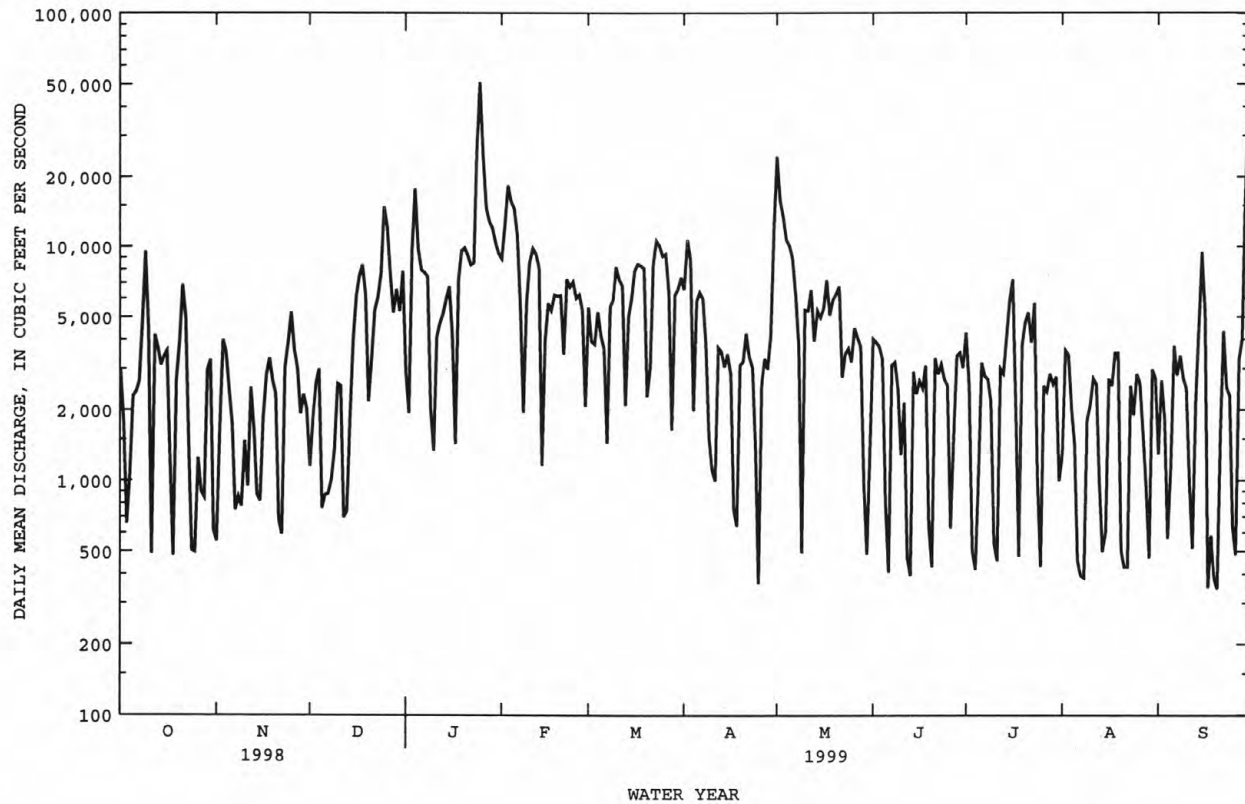
SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1928 - 1999*	
ANNUAL TOTAL	3700789		1636080		8078	(UNADJUSTED)
ANNUAL MEAN	10140		4482		13000	1975
HIGHEST ANNUAL MEAN			‡4516		3944	1981
LOWEST ANNUAL MEAN					242000	Sep 18 1945
HIGHEST DAILY MEAN	81300	Mar 19	50900	Jan 25	58*	Dec 2 1951
LOWEST DAILY MEAN	304	Sep 27	345	Sep 20	185	Sep 28 1985
ANNUAL SEVEN-DAY MINIMUM	1200	Oct 23	1200	Oct 23	270000*	Sep 18 1945
INSTANTANEOUS PEAK FLOW			60600	Jan 25	30.80*	Sep 18 1945
INSTANTANEOUS PEAK STAGE			11.05	Jan 25	50*	Dec 2 1951
INSTANTANEOUS LOW FLOW			187	Oct 24		
10 PERCENT EXCEEDS	25400		9230		14500	
50 PERCENT EXCEEDS	5260		3190		5670	
90 PERCENT EXCEEDS	773		620		1750	

e Estimated.

† Change in contents, equivalent in cubic feet per second, in W. Kerr Scott Reservoir, provided by U.S. Army Corps of Engineers; High Rock Lake, Tuckertown Reservoir, and Badin Lake, provided by Yadkin Inc.; Lake Tillery and Blewett Falls Lake, provided by Carolina Power and Light Co.

‡ Adjusted for change in contents.

\* Regulated period only (1928-1999). See REMARKS.



## PEE DEE RIVER BASIN

02132320 BIG SHOE HEEL CREEK NEAR LAURINBURG, NC

LOCATION.--Lat 34°45'01", long 79°23'12", Scotland County, Hydrologic Unit 03040204, at downstream side of bridge near center of span on U.S. Highway 74, 2.5 mi downstream of Jordan Creek, and 4.5 mi southeast of Laurinburg.

DRAINAGE AREA.-- 83.3 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional discharge measurements, water years 1949-54, 1959, 1962, 1968-69. June 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 170 ft above sea level. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum discharge for period of record from rating curve extended above 600 ft<sup>3</sup>/s by logarithmic plotting. Minimum discharge for current year also occurred Aug. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	38	58	79	141	88	90	e160	e23	64	26	35
2	75	38	57	76	164	87	92	e190	e22	63	22	30
3	80	39	56	129	186	85	95	e180	e21	57	22	27
4	82	43	57	161	216	86	92	e160	e21	52	19	25
5	88	47	56	204	228	88	86	e115	e20	39	18	26
6	95	45	55	227	213	85	82	e80	e19	30	17	69
7	95	43	55	213	182	81	79	e73	e19	29	18	100
8	82	43	55	159	153	78	78	e70	e19	25	17	126
9	71	42	55	114	136	79	e75	e67	e19	25	17	143
10	65	43	59	96	125	90	e72	e64	e19	24	16	125
11	61	44	55	89	116	95	e70	e59	e18	21	16	72
12	56	44	50	84	111	93	e75	e59	e23	26	15	53
13	52	44	54	85	108	86	e83	e60	e23	30	15	44
14	50	44	63	83	107	89	e70	e70	e22	35	15	40
15	48	53	74	98	105	111	e68	e140	e22	46	26	59
16	46	64	104	107	101	122	e67	e260	e30	42	35	206
17	44	78	118	120	97	131	e65	e400	e63	35	34	282
18	43	91	128	133	98	125	e64	e280	e80	30	26	420
19	42	102	120	132	100	106	e63	e150	e60	28	24	380
20	42	106	94	133	105	96	e62	e90	e41	24	43	311
21	41	97	81	123	111	98	e61	e70	e43	22	73	266
22	42	81	72	106	112	109	e60	e58	e44	20	85	209
23	41	71	66	103	106	119	e58	e50	e43	18	73	179
24	40	64	78	170	99	123	e57	e44	e42	20	51	197
25	40	58	105	214	94	110	e57	e40	e41	75	45	217
26	40	64	121	303	91	113	e56	e35	e41	100	47	215
27	39	67	136	387	89	119	e56	e35	e42	123	50	201
28	39	66	139	354	88	120	e55	e32	e43	88	51	186
29	39	63	122	272	---	112	e80	e27	e43	46	56	222
30	39	60	101	195	---	101	e125	e28	e50	36	67	357
31	38	---	87	157	---	93	---	e25	---	31	45	---
TOTAL	1715	1782	2531	4906	3582	3118	2193	3171	1016	1304	1084	4822
MEAN	55.3	59.4	81.6	158	128	101	73.1	102	33.9	42.1	35.0	161
MAX	95	106	139	387	228	131	125	400	80	123	85	420
MIN	38	38	50	76	88	78	55	25	18	18	15	25
CFSM	.66	.71	.98	1.90	1.54	1.21	.88	1.23	.41	.50	.42	1.93
IN.	.77	.80	1.13	2.19	1.60	1.39	.98	1.42	.45	.58	.48	2.15

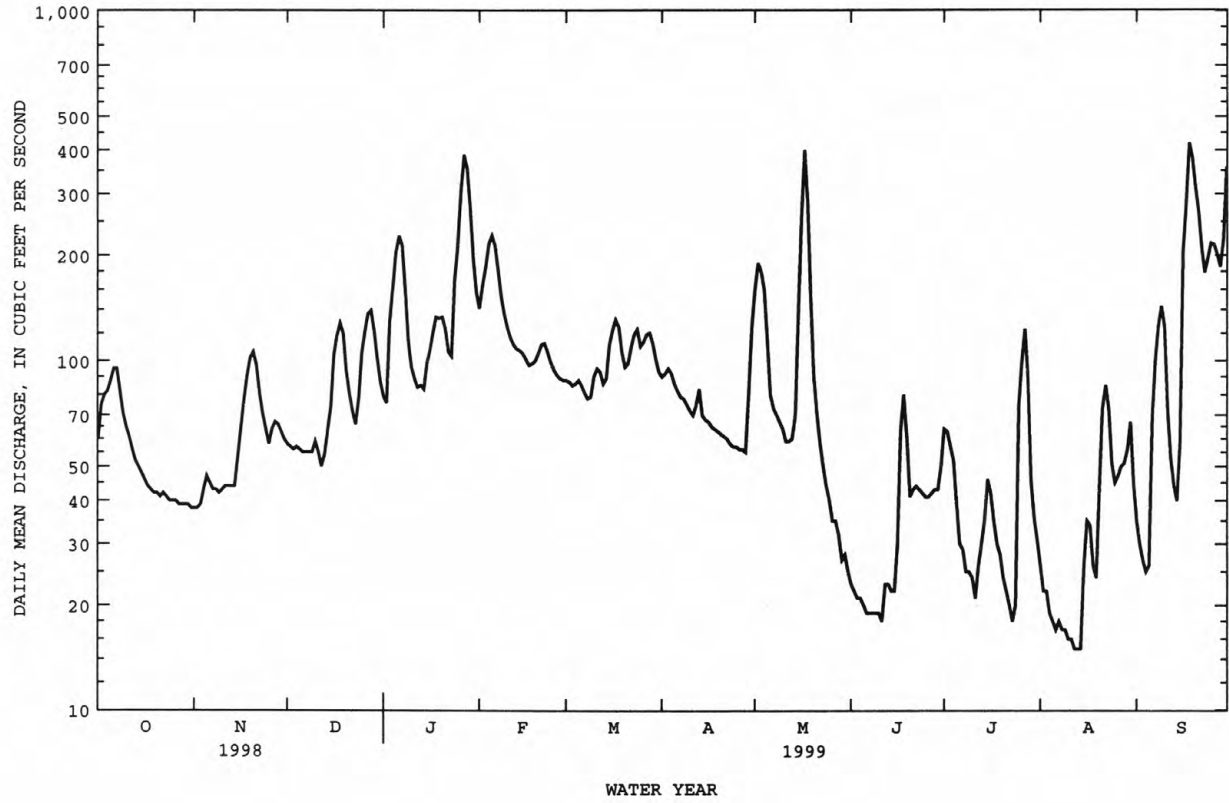
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

	MEAN	76.6	85.3	96.3	136	138	154	111	74.2	62.6	61.1	66.6	76.1
MAX	154	143	141	223	342	327	229	157	122	175	171	161	161
(WY)	1997	1996	1990	1993	1998	1998	1998	1989	1995	1989	1991	1999	1999
MIN	41.3	54.1	50.2	69.3	62.0	72.0	61.9	38.5	28.3	15.6	26.8	20.3	20.3
(WY)	1988	1995	1989	1989	1989	1988	1995	1995	1990	1990	1988	1990	1990

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1987 - 1999
ANNUAL TOTAL	48906	31224	
ANNUAL MEAN	134	85.5	94.7
HIGHEST ANNUAL MEAN			140
LOWEST ANNUAL MEAN			63.6
HIGHEST DAILY MEAN	909	Mar 11	909
LOWEST DAILY MEAN	18	Jul 9	4.7
ANNUAL SEVEN-DAY MINIMUM	18	Jul 8	5.9
INSTANTANEOUS PEAK FLOW			970*
INSTANTANEOUS PEAK STAGE			4.75
INSTANTANEOUS LOW FLOW			3.9
ANNUAL RUNOFF (CFSM)	1.61	1.03	1.14
ANNUAL RUNOFF (INCHES)	21.84	13.94	15.45
10 PERCENT EXCEEDS	274	162	177
50 PERCENT EXCEEDS	82	68	73
90 PERCENT EXCEEDS	35	25	30

e Estimated.  
\* See REMARKS.

02132320 BIG SHOE HEEL CREEK NEAR LAURINBURG, NC--Continued



02133500 DROWNING CREEK NEAR HOFFMAN, NC

LOCATION.--Lat 35°03'38", long 79°29'39", Richmond County, Hydrologic Unit 03040203, on right bank 10 ft downstream of bridge on U.S. Highway 1, 1 mi upstream from Seaboard Coast Line Railroad bridge, 0.8 mi downstream of Deep Creek, and 4 mi northeast of Hoffman.

DRAINAGE AREA.--183 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 972: 1941(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 270 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since 1984, the town of Southern Pines has withdrawn water for public supply 0.5 mi upstream from the gage. These withdrawals cause some diurnal fluctuation at low to medium flow and may affect yearly minimums. A daily average of 5.4 ft<sup>3</sup>/s was diverted during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	418	100	e150	207	349	232	230	485	63	99	33	46
2	321	102	145	199	419	231	284	512	57	103	e26	38
3	166	132	140	302	530	221	358	432	56	82	e20	30
4	122	205	138	486	587	237	372	275	54	64	e16	e27
5	151	244	131	559	506	254	353	193	51	54	e15	e34
6	156	196	131	487	417	228	273	172	47	48	e14	179
7	135	157	140	373	357	209	245	168	46	44	e13	334
8	218	147	139	287	328	202	232	157	45	40	e16	437
9	557	146	139	268	310	201	219	138	41	40	e15	320
10	571	176	138	265	293	244	203	125	42	35	e14	152
11	443	170	136	254	278	266	196	116	41	39	e13	106
12	286	162	129	236	274	242	246	106	52	57	e12	83
13	191	157	137	225	279	208	229	106	53	117	e12	70
14	166	148	187	214	267	224	181	140	49	164	e11	63
15	151	181	204	257	254	347	166	260	44	200	e40	77
16	139	232	244	332	247	456	165	449	59	210	91	317
17	126	236	303	372	243	446	155	375	131	141	76	587
18	119	219	310	350	245	368	142	203	159	89	45	632
19	123	204	235	387	272	274	143	155	102	78	43	487
20	122	176	186	434	322	238	142	142	79	64	48	302
21	119	164	180	361	353	263	137	125	108	54	70	198
22	115	155	174	283	332	354	132	104	122	48	60	237
23	110	154	178	266	283	448	125	97	100	43	49	345
24	105	e155	233	472	252	443	113	99	80	41	38	406
25	107	152	364	876	242	376	112	90	68	70	59	300
26	111	155	492	1030	237	312	117	85	68	53	163	179
27	e110	166	484	779	230	309	119	90	113	41	118	182
28	107	155	413	549	227	291	148	93	145	34	133	308
29	105	145	300	450	---	261	240	75	124	29	100	555
30	103	148	257	400	---	240	361	67	99	32	65	973
31	98	---	233	363	---	224	---	63	---	35	49	---
TOTAL	5871	5039	6770	12323	8933	8849	6138	5697	2298	2248	1477	8004
MEAN	189	168	218	398	319	285	205	184	76.6	72.5	47.6	267
MAX	571	244	492	1030	587	456	372	512	159	210	163	973
MIN	98	100	129	199	227	201	112	63	41	29	11	27
CFSM	1.03	.92	1.19	2.17	1.74	1.56	1.12	1.00	.42	.40	.26	1.46
IN.	1.19	1.02	1.38	2.51	1.82	1.80	1.25	1.16	.47	.46	.30	1.63

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

	197	231	263	328	360	383	325	229	172	195	185	183
MEAN	197	231	263	328	360	383	325	229	172	195	185	183
MAX	595	499	530	561	687	729	842	465	421	624	497	932
(WY)	1965	1980	1973	1998	1960	1998	1973	1958	1976	1944	1985	1945
MIN	48.5	93.4	135	151	147	173	111	84.5	34.5	32.9	43.4	28.8
(WY)	1941	1942	1989	1942	1992	1981	1986	1988	1988	1986	1968	1968

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

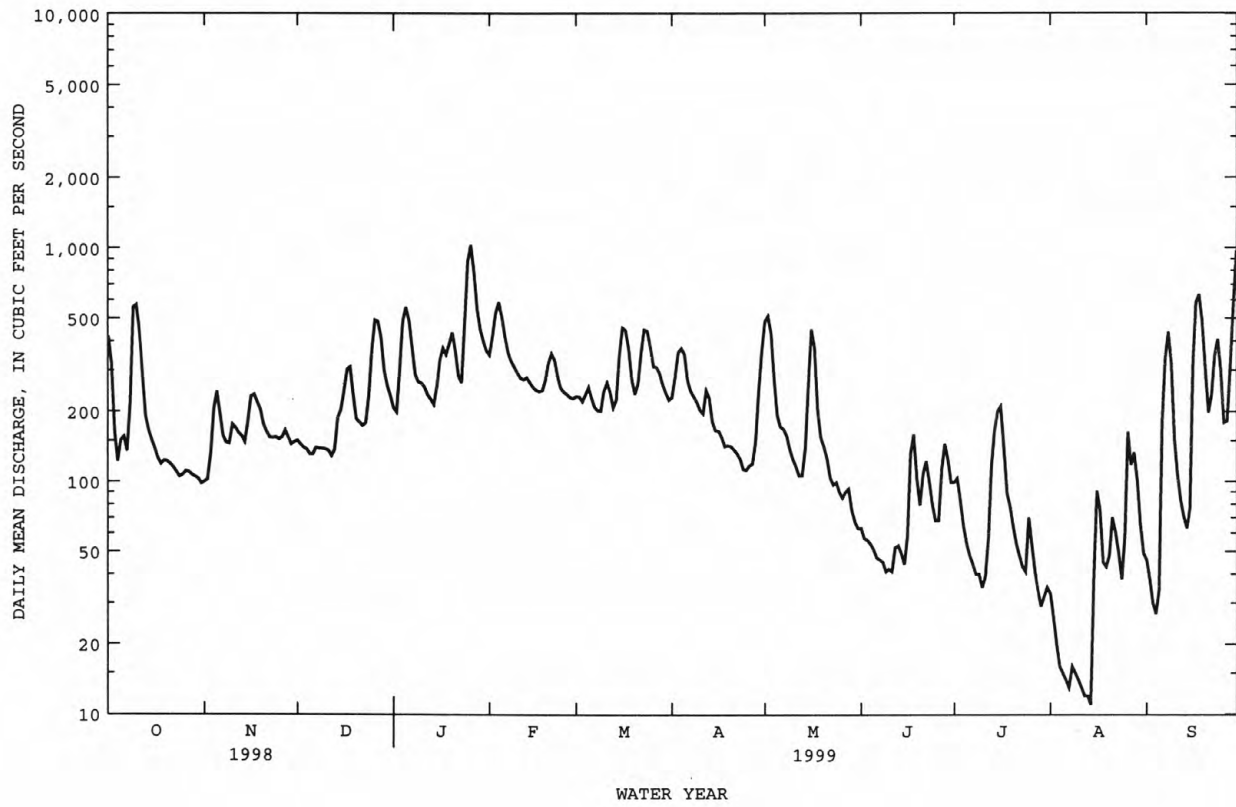
FOR 1999 WATER YEAR

WATER YEARS 1940 - 1999

ANNUAL TOTAL	123644	73647	254
ANNUAL MEAN	339	202	397
HIGHEST ANNUAL MEAN			129
LOWEST ANNUAL MEAN			1984
HIGHEST DAILY MEAN	2760	Mar 20	1030
LOWEST DAILY MEAN	57	Jul 15	11
ANNUAL SEVEN-DAY MINIMUM	63	Jul 10	13
INSTANTANEOUS PEAK FLOW			1400
INSTANTANEOUS PEAK STAGE			6.71
INSTANTANEOUS LOW FLOW			NOT DETERMINED
ANNUAL RUNOFF (CFSM)	1.85		1.10
ANNUAL RUNOFF (INCHES)	25.13		14.97
10 PERCENT EXCEEDS	687		409
50 PERCENT EXCEEDS	235		163
90 PERCENT EXCEEDS	85		44
			79

e Estimated.

02133500 DROWNING CREEK NEAR HOFFMAN, NC--Continued





02133624 LUMBER RIVER NEAR MAXTON, NC

LOCATION.--Lat 34°46'22", long 79°19'55", Robeson County, Hydrologic Unit 03040203, at downstream side of bridge, near right center of span, on State Highway 71, 2.6 mi north of Maxton, and 7.5 mi upstream from Gum Swamp.

DRAINAGE AREA.--365 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional discharge measurements, water years 1974, 1980-85. June 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 180 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	263	244	311	610	864	471	532	513	164	258	123	173
2	350	242	303	505	850	456	495	737	154	255	119	150
3	476	240	302	526	850	449	491	837	151	224	109	137
4	617	249	300	531	899	443	526	893	145	209	99	124
5	642	276	297	636	905	440	556	855	161	184	90	117
6	509	309	296	741	956	445	608	734	161	162	87	156
7	376	341	294	840	967	453	642	552	145	147	87	227
8	355	367	290	909	897	456	637	396	133	138	89	289
9	356	363	293	857	798	445	561	333	127	133	84	336
10	341	327	295	748	711	e430	483	299	122	124	77	373
11	370	304	294	623	649	e440	446	264	121	122	78	407
12	560	300	294	536	608	e450	427	241	123	129	78	434
13	785	307	304	498	581	475	428	227	121	152	75	335
14	717	308	310	479	556	496	447	226	127	186	76	207
15	576	315	315	490	547	e510	462	258	125	230	85	205
16	436	317	361	479	548	e550	483	323	133	263	96	390
17	351	343	388	518	532	e620	420	410	191	278	126	469
18	311	376	425	597	512	705	377	466	e232	277	155	705
19	291	423	455	630	503	794	356	551	e260	245	149	853
20	274	438	467	681	509	791	333	539	e270	191	137	933
21	269	408	477	673	529	736	320	398	e280	167	168	921
22	267	379	452	644	568	622	313	285	e290	150	180	842
23	264	353	395	684	607	579	304	248	e280	136	184	746
24	260	332	375	792	636	659	295	225	e280	135	166	633
25	258	316	403	813	624	710	290	208	e270	192	159	522
26	254	321	461	1010	578	801	276	201	e260	188	147	475
27	249	319	559	1230	523	808	269	193	e250	201	177	500
28	250	324	642	1420	490	780	280	187	e240	163	218	564
29	248	326	737	1380	---	709	308	182	e230	139	229	596
30	246	325	780	1180	---	629	376	182	e240	126	233	672
31	245	---	718	984	---	575	---	173	---	119	211	---
TOTAL	11766	9792	12593	23244	18797	17927	12741	12136	5786	5623	4091	13491
MEAN	380	326	406	750	671	578	425	391	193	181	132	450
MAX	785	438	780	1420	967	808	642	893	290	278	233	933
MIN	245	240	290	479	490	430	269	173	121	119	75	117
CFSM	1.04	.89	1.11	2.05	1.84	1.58	1.16	1.07	.53	.50	.36	1.23
IN.	1.20	1.00	1.28	2.37	1.92	1.83	1.30	1.24	.59	.57	.42	1.37

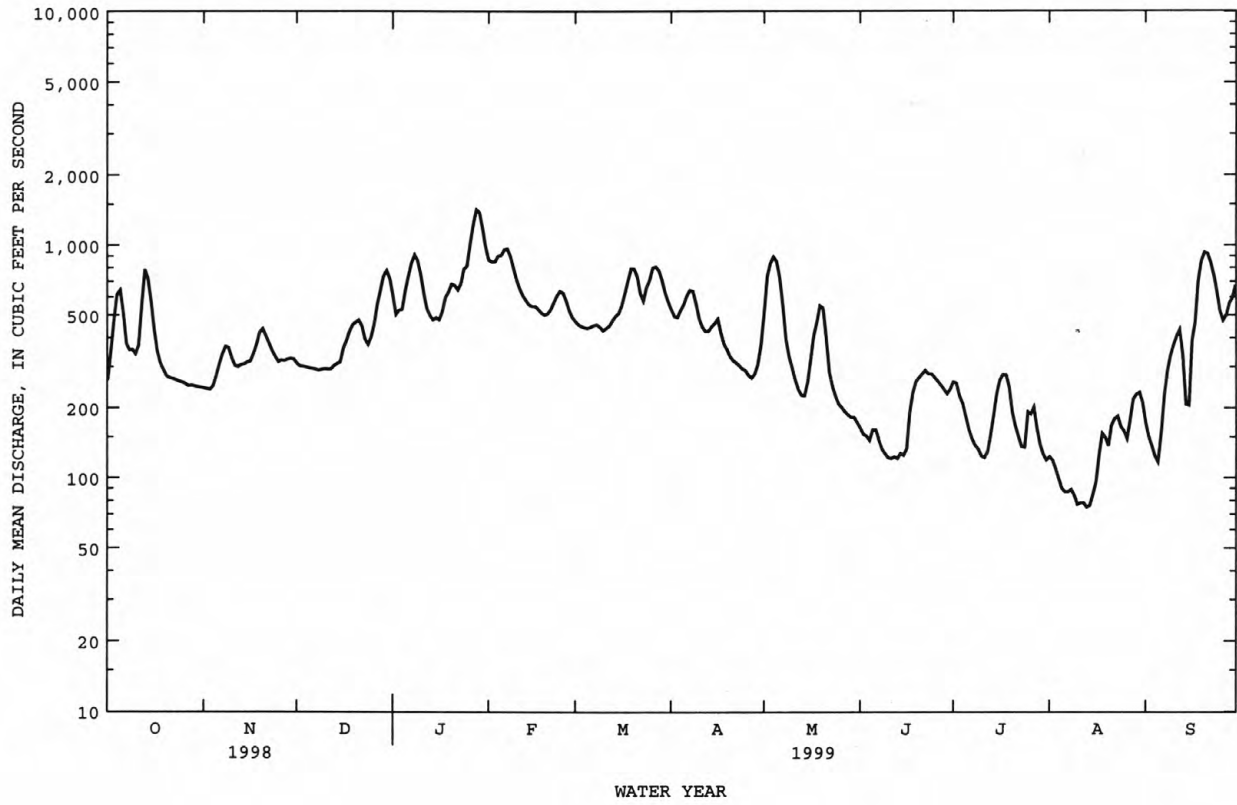
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

MEAN	379	427	453	621	623	692	582	390	298	306	293	347
MAX	696	661	650	926	1205	1267	1106	769	575	690	577	915
(WY)	1997	1996	1990	1998	1998	1998	1998	1989	1995	1995	1989	1996
MIN	184	267	282	364	300	363	303	202	135	147	132	130
(WY)	1988	1992	1992	1992	1992	1992	1992	1994	1988	1990	1999	1990

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	229335		147987			
ANNUAL MEAN	628		405		451	
HIGHEST ANNUAL MEAN					640	
LOWEST ANNUAL MEAN					283	
HIGHEST DAILY MEAN	3070		1420		3070	
LOWEST DAILY MEAN	153		75		75	
ANNUAL SEVEN-DAY MINIMUM	162		79		79	
INSTANTANEOUS PEAK FLOW			1470		3380	
INSTANTANEOUS PEAK STAGE			11.66		13.52	
INSTANTANEOUS LOW FLOW			73		73	
ANNUAL RUNOFF (CFSM)	1.72		1.11		1.24	
ANNUAL RUNOFF (INCHES)	23.37		15.08		16.78	
10 PERCENT EXCEEDS	1210		743		796	
50 PERCENT EXCEEDS	452		341		391	
90 PERCENT EXCEEDS	219		137		160	

e Estimated.

02133624 LUMBER RIVER NEAR MAXTON, NC--Continued



## 02134480 BIG SWAMP NEAR TARHEEL, NC

LOCATION.--Lat 34°42'37", long 78°50'14", Robeson County, Hydrologic Unit 03040203, on left bank at downstream side of bridge on Secondary Road 1004, and 2.8 mi southwest of Tarheel.

DRAINAGE AREA.--229 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1949-54, 1957-58, 1962-68. October 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 105 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records poor. Minimum discharge for current water year also occurred on Oct. 26, 28, 29, Nov. 2, 3. Minimum discharge for period of record, no flow, also occurred Sept. 1-4, 1993.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	2.0	30	74	567	221	e222	257	29	108	51	90
2	7.4	2.0	26	64	548	207	e222	522	22	113	37	58
3	6.5	1.4	23	114	533	198	250	766	19	119	25	42
4	5.8	1.5	21	152	552	196	241	770	15	131	16	34
5	5.7	1.8	19	170	597	195	242	685	13	143	10	30
6	5.7	1.9	18	194	619	190	249	e620	11	141	7.3	41
7	5.1	2.4	17	229	597	182	246	e590	8.7	98	5.8	68
8	4.8	2.6	15	250	548	174	230	e570	8.1	64	4.2	83
9	4.5	2.6	15	239	497	166	210	e520	5.7	53	2.7	86
10	4.1	1.8	15	205	447	161	190	e490	4.9	44	2.7	81
11	4.1	3.3	15	172	398	157	172	403	5.5	35	2.3	73
12	3.6	3.9	14	146	353	156	155	322	6.9	46	2.0	59
13	2.9	4.3	26	123	325	157	137	266	6.5	75	1.7	49
14	2.7	4.7	53	102	291	160	e111	240	3.8	98	2.1	45
15	2.8	7.5	73	124	265	165	110	270	7.3	115	7.7	105
16	2.6	12	109	151	243	166	115	347	28	125	19	e1500
17	2.6	21	119	172	223	171	129	460	73	129	28	e3300
18	2.6	33	127	234	210	176	147	513	112	110	22	2940
19	2.5	38	135	328	204	176	168	495	133	73	25	2340
20	2.6	36	134	411	213	172	189	436	160	53	32	1890
21	2.7	32	107	439	232	169	195	362	195	42	44	1660
22	2.4	28	78	428	262	173	175	306	219	33	88	1760
23	2.4	23	66	393	291	177	141	252	219	29	115	2270
24	1.6	20	57	514	303	186	106	201	199	24	108	1960
25	2.0	18	67	858	294	202	85	e160	166	57	87	1510
26	1.5	20	89	1100	275	237	72	e120	123	77	89	1200
27	1.7	29	108	1090	254	259	66	e80	87	88	94	1050
28	1.4	35	118	1010	234	264	65	62	75	77	99	1100
29	1.3	36	118	866	---	266	100	51	79	59	104	1170
30	1.5	33	106	740	---	270	156	43	94	50	112	1100
31	2.0	---	88	643	---	265	---	36	---	55	115	---
TOTAL	106.2	457.7	2006	11735	10375	6014	4896	11215	2128.4	2464	1358.5	27694
MEAN	3.43	15.3	64.7	379	371	194	163	362	70.9	79.5	43.8	923
MAX	7.4	38	135	1100	619	270	250	770	219	143	115	3300
MIN	1.3	1.4	14	64	204	156	65	36	3.8	24	1.7	30
CFSM	.01	.07	.28	1.65	1.62	.85	.71	1.58	.31	.35	.19	4.03
IN.	.02	.07	.33	1.91	1.69	.98	.80	1.82	.35	.40	.22	4.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	139	158	229	446	409	447	268	131	95.1	95.9	133	222		
MAX	741	382	396	1001	1418	1194	571	362	474	407	358	923		
(WY)	1997	1993	1990	1993	1998	1998	1993	1999	1995	1995	1991	1999		
MIN	3.43	15.3	64.7	92.9	127	138	66.8	17.1	15.0	8.31	17.6	6.98		
(WY)	1999	1999	1999	1986	1986	1988	1986	1986	1986	1998	1987	1997		

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

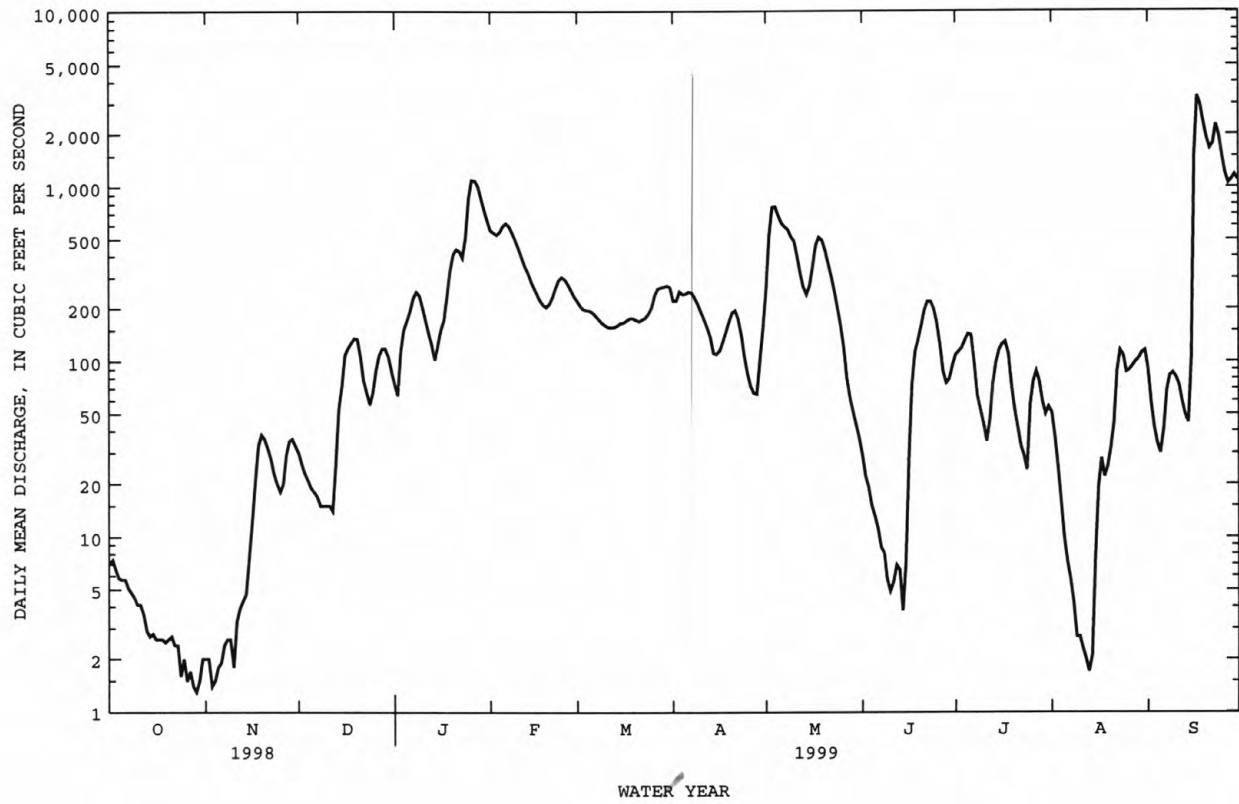
WATER YEARS 1986 - 1999

ANNUAL TOTAL	130485.7	80449.8	
ANNUAL MEAN	357	220	230
HIGHEST ANNUAL MEAN			395
LOWEST ANNUAL MEAN			101
HIGHEST DAILY MEAN	3900	Feb 6	3900
LOWEST DAILY MEAN	1.3	Oct 29	.00
ANNUAL SEVEN-DAY MINIMUM	1.6	Oct 24	.01
INSTANTANEOUS PEAK FLOW			3570
INSTANTANEOUS PEAK STAGE			14.34
INSTANTANEOUS LOW FLOW			1.2*
ANNUAL RUNOFF (CFSM)	1.56		.96
ANNUAL RUNOFF (INCHES)	21.20		13.07
10 PERCENT EXCEEDS	1090		513
50 PERCENT EXCEEDS	53		134
90 PERCENT EXCEEDS	3.2		13

e Estimated.

\* See REMARKS.

02134480 BIG SWAMP NEAR TARHEEL, NC--Continued



## 02134500 LUMBER RIVER AT BOARDMAN, NC

LOCATION.--Lat 34°26'32", long 78°57'38", Robeson County, Hydrologic Unit 03040203, on right bank 150 ft downstream of bridge on U.S. Highway 74, 1 mi downstream of Seaboard Coast Line Railroad bridge at Boardman, 1.5 mi downstream of Big Swamp, and 40.5 mi upstream from mouth.

DRAINAGE AREA.--1,228 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1929 to current year.

REVISED RECORDS.--WSP 1303: 1932(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 72.05 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Sept. 30, 1936, nonrecording gage at site 100 ft downstream at same datum. Sept. 30, 1936, to June 8, 1943, nonrecording gage at present site and datum. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Maximum discharge for period of record also occurred Sept. 19, 1999.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of September 1928 reached a stage of 11.8 ft, from floodmark witnessed by local resident; discharge, 25,000 ft<sup>3</sup>/s. Flood of July 22, 1901, the highest during the period 1896-1913, reached a stage of 10.8 ft, from observations by Butters Lumber Co.; discharge, 14,800 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	341	340	464	839	3870	1200	1480	926	520	431	386	418
2	347	334	454	865	3930	1180	1530	1390	447	410	353	409
3	337	332	447	1060	3840	1160	1500	2000	382	405	316	402
4	319	330	442	1250	3720	1130	1450	2550	356	414	284	395
5	317	328	438	1430	3550	1090	1410	2660	334	422	257	379
6	323	324	435	1560	3310	1060	1350	2640	314	424	238	375
7	341	319	430	1560	3050	1020	1290	2620	296	419	219	410
8	367	315	422	1500	2810	975	1220	2630	279	401	199	410
9	411	318	415	1470	2630	e951	1150	2560	268	387	181	407
10	466	331	408	1440	2490	943	1100	2470	256	373	161	406
11	524	345	401	1420	2390	927	1060	2310	253	348	145	412
12	558	357	397	1440	2300	914	1020	2150	260	317	135	427
13	550	369	411	1460	2140	904	983	2070	227	302	129	441
14	514	381	432	1460	2020	917	953	1880	203	311	123	451
15	475	396	457	1530	1850	939	915	1750	186	356	167	472
16	449	401	553	1560	1690	936	866	1640	216	434	238	1680
17	445	402	709	1590	1560	947	805	1570	254	425	234	8830
18	478	407	756	1730	1460	962	754	1460	334	419	189	11000
19	548	425	766	1820	1400	961	718	1300	433	421	189	13000
20	613	440	739	1900	1350	956	709	1160	464	422	232	12900
21	620	446	707	1960	1320	985	726	1060	468	424	317	12200
22	583	447	686	2000	1330	1040	742	1010	472	420	388	11300
23	529	450	675	2020	1350	1080	734	1010	482	408	421	10700
24	475	458	676	2320	1330	1180	708	1040	491	369	451	10200
25	427	471	726	2910	1300	1300	672	1060	495	479	457	9720
26	397	493	783	3810	1250	1410	631	1040	488	586	442	9030
27	380	506	834	4550	1210	1420	e607	975	478	664	450	8410
28	368	502	868	4740	1200	1410	e595	871	483	660	464	8080
29	360	489	876	4660	---	1420	622	759	468	588	463	7680
30	351	476	858	4380	---	1430	717	654	451	482	452	e6970
31	346	---	838	4060	---	1440	---	567	---	411	431	---
TOTAL	13559	11932	18503	66294	61680	34187	29017	49782	11058	13332	9111	147914
MEAN	437	398	597	2139	2203	1103	967	1606	369	430	294	4930
MAX	620	506	876	4740	3930	1440	1530	2660	520	664	464	13000
MIN	317	315	397	839	1200	904	595	567	186	302	123	375
CFSM	.36	.32	.49	1.74	1.79	.90	.79	1.31	.30	.35	.24	4.02
IN.	.41	.36	.56	2.01	1.87	1.04	.88	1.51	.33	.40	.28	4.48

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1999, BY WATER YEAR (WY)

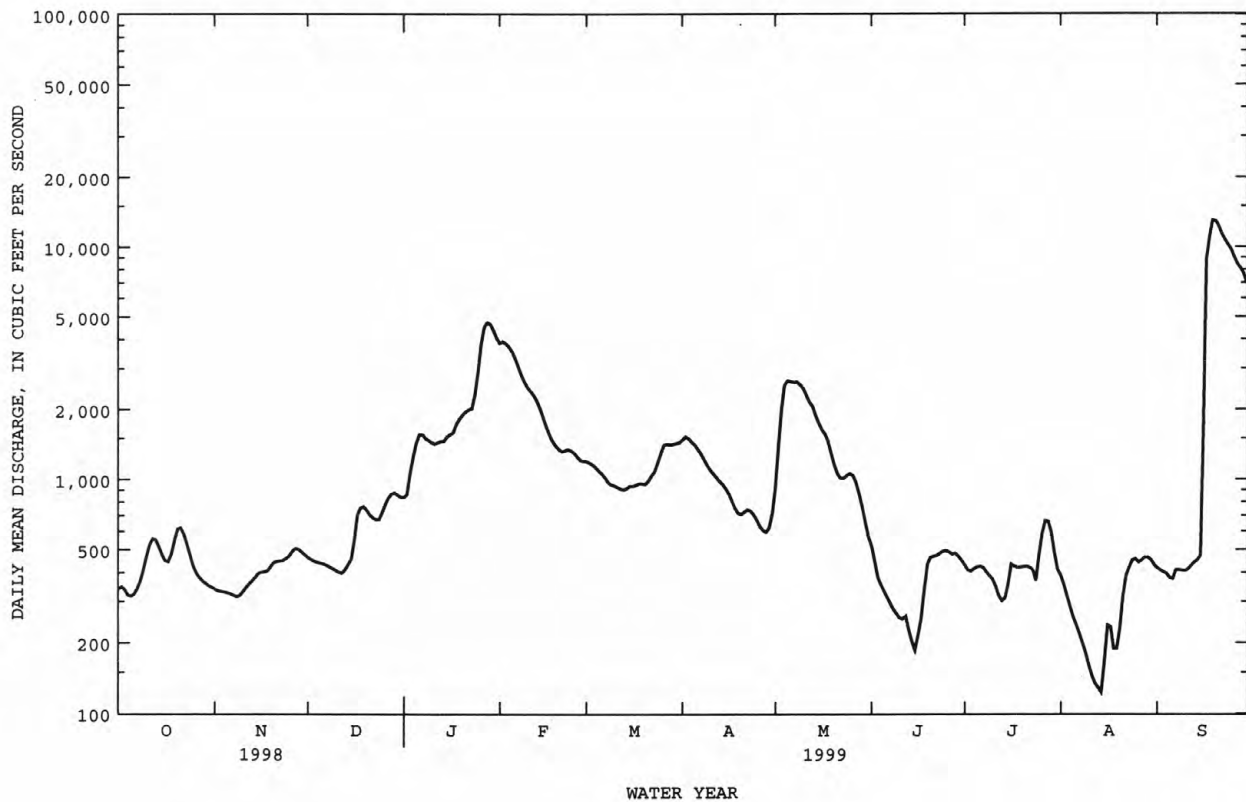
	MEAN	831	889	1311	1885	2241	2363	1867	1005	758	802	935	1066
MAX	4721	4142	3977	4575	5944	5259	5688	3430	2587	2808	3741	4930	
(WY)	1965	1948	1949	1993	1998	1983	1936	1978	1969	1943	1974	1999	
MIN	141	211	237	262	429	611	420	276	215	174	138	92.2	
(WY)	1941	1934	1934	1934	1934	1934	1981	1986	1941	1990	1954	1968	

## 02134500 LUMBER RIVER AT BOARDMAN, NC--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1930 - 1999	
ANNUAL TOTAL	681260		466369		1325	
ANNUAL MEAN	1866		1278		2391	
HIGHEST ANNUAL MEAN					524	
LOWEST ANNUAL MEAN					1965	
HIGHEST DAILY MEAN	8980	Feb 9	13000	Sep 19	13400	Sep 24 1945
LOWEST DAILY MEAN	181	Jul 15	123	Aug 14	68	Oct 1 1968
ANNUAL SEVEN-DAY MINIMUM	191	Jul 11	149	Aug 9	72	Oct 3 1968
INSTANTANEOUS PEAK FLOW			13400*	Sep 19	13400*	Sep 24 1945
INSTANTANEOUS PEAK STAGE			10.70	Sep 19	10.70	Sep 19 1999
INSTANTANEOUS LOW FLOW			110	Aug 14	66	Oct 9 1968
ANNUAL RUNOFF (CFSM)	1.52		1.04		1.08	
ANNUAL RUNOFF (INCHES)	20.64		14.13		14.65	
10 PERCENT EXCEEDS	5480		2510		2820	
50 PERCENT EXCEEDS	766		607		962	
90 PERCENT EXCEEDS	319		318		296	

e Estimated.

\* See REMARKS.





02134500 LUMBER RIVER AT BOARDMAN. NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955, 1957 to 1961, 1968 to 1978, September 1999.

REMARKS.--Samples from current year collected during flooding from Hurricane Floyd.

## WATER-QUALITY DATA. WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

[illegible]

## PEE DEE RIVER BASIN

351812080445545 CRN01

LOCATION.--Lat 35°18'20", long 80°44'55", Mecklenburg County, Hydrologic Unit 03040105, Fire Station 27, Ken Hoffman Drive, Charlotte, NC.

PERIOD OF RECORD.--September 1992 to current year. Records for period September 1992 to September 1998 published in USGS OFR 96-150, 98-67 and 99-273.

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.80	.00	.60	.00	.00	.00	.00	.00
2	.00	.30	.00	.22	.03	.00	.00	.00	.00	.00	.00	.00
3	.00	.48	.00	.68	.01	.14	.00	.00	.00	.00	.00	.00
4	.26	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
5	.25	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	1.02
6	.00	.00	.00	.00	.00	.00	.00	.02	.00	2.49	.00	.01
7	.07	.00	.00	.00	.00	.00	.00	.00	.00	.03	.02	.00
8	.35	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.00
9	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	.03	.22
10	.00	.00	.00	.00	.00	.06	.00	.00	.18	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.16	.00	.01	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.41	.00	.00
13	.00	.00	.41	.00	.00	.00	.00	.00	.00	.05	.00	.00
14	.00	.35	.00	.00	.00	.38	.00	.00	.00	.01	.00	.00
15	.00	.04	.48	.20	.00	.04	.07	.00	.43	.01	.00	.91
16	.00	.31	.22	.00	.00	.00	.01	.00	1.07	.00	.00	.06
17	.00	.01	.00	.92	.00	.00	.00	.00	.03	.00	.00	.00
18	.00	.00	.00	.05	.55	.00	.00	.04	.00	.00	.00	.00
19	.00	.00	.00	.01	.38	.00	.00	.13	.00	.00	.00	.00
20	.00	.00	.00	.00	.39	.00	.00	.00	.03	.00	.05	.00
21	.00	.00	.00	.00	.00	.37	.00	.00	.01	.00	.06	.11
22	.00	.00	.04	.00	.00	.00	.00	.00	.01	.00	.00	.01
23	.00	.00	.06	2.32	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.24	.45	.00	.00	.00	.00	.00	.57	---	.00
25	.00	.00	.10	.00	.00	.02	.00	.00	.38	.05	---	.00
26	.00	.00	.00	.00	.00	.01	.00	.15	.23	.00	---	.00
27	.00	.00	.00	.00	.00	.00	1.00	.00	.10	.00	---	.23
28	.00	.00	.07	.00	.00	.00	.31	.00	.01	.00	.00	.64
29	.00	.00	.05	.00	---	.00	.61	.00	.01	.26	.00	.72
30	.00	.00	.00	.00	---	.00	.89	.00	.01	.02	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.01	.00	---
TOTAL	0.93	1.49	2.67	4.86	2.16	1.14	3.65	0.35	2.51	3.92	---	3.93

351540080430045 CRN16

LOCATION.--Lat 35°15'40", long 80°43'00", Mecklenburg County, Hydrologic Unit 03040105, Reedy Creek Park Environmental Center, Rocky River Road, Charlotte, NC.

PERIOD OF RECORD.--March 1993 to current year. Records for period March 1993 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.93	.00	.64	.00	.00	.00	.00	.00
2	.00	.86	.00	.24	.02	.00	.00	.00	.00	.00	.00	.00
3	.00	.44	.00	.73	.01	.19	.00	.00	.00	.00	.00	.00
4	.35	.00	.00	.01	.03	.00	.00	.00	.00	.00	.00	.00
5	.85	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	1.28
6	.02	.00	.00	.00	.00	.01	.00	.04	.00	1.20	.00	.01
7	.06	.00	.00	.00	.01	.00	.00	.00	.00	.04	.00	.00
8	.42	.00	.00	.03	.00	.00	.00	.00	.00	.00	.05	.00
9	.00	.00	.00	.00	.00	.22	.00	.01	.00	.00	.00	.05
10	.00	.00	.00	.00	.00	.08	.00	.00	.19	.00	.00	.00
11	.00	.04	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
12	.00	.00	.08	.00	.00	.00	.00	.00	.00	.52	.00	.00
13	.00	.00	.55	.00	.00	.00	.00	.16	.00	.16	.00	.00
14	.00	.54	.00	.08	.00	.37	.00	.00	.00	.01	.00	.00
15	.00	.02	.53	.25	.00	.02	.12	.00	.37	.00	.00	1.13
16	.00	.25	.23	.00	.00	.00	.00	.00	.93	.00	.00	.07
17	.00	.01	.00	1.01	.10	.00	.00	.02	.00	.00	.00	.00
18	.00	.00	.00	.07	.77	.00	.00	.23	.00	.00	.00	.00
19	.00	.00	.01	.00	.49	.00	.00	.16	.00	.00	.00	.00
20	.00	.00	.03	.00	.32	.00	.00	.00	.19	.00	.72	.00
21	.00	.00	.00	.00	.01	.50	.00	.00	.03	.00	.01	.16
22	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.30	2.59	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.09	.73	.00	.00	.00	.00	.00	.56	.09	.00
25	.00	.03	.20	.00	.00	.15	.00	.00	.27	.01	.32	.00
26	.00	.06	.01	.00	.00	.00	.04	.29	.64	.00	.04	.00
27	.00	.00	.00	.00	.00	.00	1.50	.00	.05	.00	.01	.42
28	.00	.00	.11	.00	.05	.00	.28	.00	.01	.00	.00	.99
29	.00	.00	.07	.01	---	.00	.84	.00	.08	.80	.00	1.21
30	.00	.00	.01	.01	---	.00	1.02	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.43	.00	---
TOTAL	1.70	2.25	3.26	5.76	2.74	1.54	4.44	0.97	2.76	3.77	1.24	5.33

## PEE DEE RIVER BASIN

351302080412701 CRN23

LOCATION.--Lat 35°13'02", long 80°41'27", Mecklenburg County, Hydrologic Unit 03040105, Harrisburg Road Landfill, Harrisburg Road, Charlotte, NC.

PERIOD OF RECORD.--October 1988 to current year. Records for period October 1988 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.10	.00	.39	.01	.00	.00	.00	.00
2	.00	.38	.00	.29	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.45	.00	.59	.03	.17	.00	.00	.00	.00	.00	.00
4	.52	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00
5	.11	.01	.00	.01	.01	.00	.00	.03	.00	.00	.00	1.51
6	.00	.00	.00	.00	.00	.01	.00	.04	.00	1.00	.00	.02
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.47	.00	.00
8	.71	.00	.01	.05	.00	.00	.00	.00	.00	.00	.05	.00
9	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.01	.04
10	.00	.00	.00	.00	.00	.14	.00	.00	.73	.00	.00	.00
11	.00	.01	.00	.00	.00	.00	.03	.00	.00	.01	.00	.00
12	.00	.00	.02	.00	.00	.00	.00	.00	.00	.70	.00	.00
13	.00	.01	.38	.00	.00	.00	.00	.50	.00	.28	.00	.00
14	.00	.54	.00	.25	.00	.41	.00	.00	.01	.02	.00	.00
15	.00	.02	.60	.22	.00	.01	.02	.00	.46	.00	.00	.88
16	.00	.28	.22	.00	.00	.00	.01	.00	.85	.00	.00	.04
17	.00	.01	.00	.76	.03	.00	.00	.00	.01	.02	.00	.00
18	.00	.00	.00	.02	.75	.01	.00	.02	.00	.00	.00	.00
19	.00	.00	.00	.00	.52	.00	.00	.11	.00	.00	.00	.00
20	.00	.00	.00	.00	.01	.00	.00	.00	.10	.00	.24	.00
21	.00	.00	.01	.00	.00	.29	.00	.00	.01	.00	.01	.24
22	.00	.00	.03	.01	.00	.00	.00	.00	.01	.00	.00	.01
23	.00	.00	.32	1.67	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.20	.33	.03	.00	.00	.00	.00	.41	.00	.00
25	.00	.01	.16	.03	.00	.20	.00	.00	.37	.01	.46	.00
26	.00	.01	.03	.02	.00	.00	.03	.29	.09	.00	.53	.00
27	.00	.00	.00	.01	.00	.00	.99	.00	.00	.00	.01	.43
28	.00	.00	.07	.01	.01	.00	.16	.00	.02	.00	.00	.27
29	.00	.00	.10	.00	---	.00	.65	.00	.35	.32	.00	2.24
30	.00	.00	.00	.00	---	.00	.79	.00	.00	.00	.00	.01
31	.00	---	.00	.00	---	.01	---	.00	---	.64	.00	---
TOTAL	1.34	1.73	3.15	4.27	1.57	1.27	3.07	1.00	3.01	3.88	1.31	5.69

352432080473745 CRN26

LOCATION.--Lat 35°24'32", long 80°47'37", Mecklenburg County, Hydrologic Unit 03040105, Bradford Airfield, Huntersville-Concord Road, Huntersville, NC.

PERIOD OF RECORD.--June 1994 to current year. Records for period June 1994 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.93	.00	.42	.00	.00	.00	.03	.00
2	.00	.38	.00	.02	.02	.00	.00	.00	.00	.00	.00	.00
3	.00	.39	.00	.13	.00	.29	.00	.00	.00	.00	.00	.00
4	.18	.00	.00	.00	.01	.00	.05	.00	.00	.00	.00	.00
5	.87	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	1.02
6	.00	.00	.00	.00	.00	.02	.00	.02	.00	.08	.00	.00
7	.14	.00	.00	.00	.00	.00	.00	.00	.00	.06	.20	.00
8	.19	.00	.00	.09	.00	.00	.00	.00	.00	.00	.17	.00
9	.00	.01	.00	.01	.00	.21	.00	.00	.00	.00	.01	.00
10	.00	.04	.00	.00	.00	.06	.00	.00	.12	.00	.00	.00
11	.00	.08	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00
12	.00	.00	.13	.00	.03	.00	.00	.00	.00	.29	.00	.00
13	.00	.00	1.09	.00	.00	.01	.00	.00	.00	.01	.00	.00
14	.00	.46	.00	.08	.00	.38	.00	.00	.00	.01	.08	.00
15	.00	.02	.46	.20	.00	.04	.24	.00	.40	.00	.00	.73
16	.00	.39	.12	.00	.00	.00	.00	.00	1.03	.00	.00	.06
17	.00	.00	.00	.49	.07	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.15	.34	.00	.00	---	.00	.00	.00	.00
19	.00	.00	.01	.00	.51	.00	.00	---	.00	.00	.00	.00
20	.00	.00	.00	.00	.42	.00	.00	.00	.09	.00	.06	.00
21	.00	.00	.06	.00	.00	.41	.00	.00	.00	.00	.00	.05
22	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.09	1.35	.00	.00	.00	.00	.00	.00	.03	.00
24	.00	.00	.08	.36	.00	.00	.00	.00	.00	.60	.70	.00
25	.00	.09	.02	.00	.00	.05	.00	.00	.94	.03	.50	.00
26	.00	.03	.02	.00	.00	.00	.01	.10	.07	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.72	.00	.01	.00	.00	.23
28	.00	.00	.18	.00	.10	.00	.31	.00	.33	.00	.00	1.39
29	.00	.00	.03	.00	---	.00	.77	.00	.00	.19	.00	.43
30	.00	.00	.00	.02	---	.00	.82	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.00	.00	---
TOTAL	1.38	1.89	2.31	2.90	2.43	1.49	3.34	---	2.99	1.30	1.78	3.92



## PEE DEE RIVER BASIN

351218080331345 CRN29

LOCATION.--Lat 35°12'18", long 80°33'13", Mecklenburg County, Hydrologic Unit 03040105, Clear Creek Boy Scout Camp, Belt Road, Midland, NC.

PERIOD OF RECORD.--February 1996 to current year. Records for period February 1996 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.73	.00	.19	.00	.00	.00	.00	.00
2	.00	.57	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.45	.00	.18	.01	.15	.00	.00	.00	.00	.00	.00
4	.40	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
5	.42	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	1.88
6	.00	.00	.00	.00	.00	.00	.01	.12	.00	.00	.00	.01
7	.01	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00
8	.61	.00	.02	.06	.00	.00	.00	.00	.00	.00	.15	.00
9	.00	.00	.00	.00	.00	.01	.00	.00	.37	.00	.00	.90
10	.00	.00	.00	.00	.00	.00	.00	.00	.47	.00	.00	.00
11	.00	.02	.00	.00	.00	.00	.06	.00	.00	.09	.00	.00
12	.00	.00	.06	.00	.00	.01	.00	.00	.00	.62	.00	.00
13	.00	.00	.29	.00	.00	.00	.00	1.10	.00	.58	.00	.00
14	.00	.50	.00	.11	.00	.70	.00	.00	.00	.02	.03	.00
15	.00	.02	.68	.28	.00	.01	.06	.00	.76	.00	.00	1.32
16	.00	.37	.28	.00	.00	.00	.00	.00	1.12	.00	.00	.03
17	.00	.01	.00	.47	.08	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.07	.67	.00	.00	.04	.00	.00	.00	.00
19	.00	.00	.01	.00	.42	.00	.00	.02	.03	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.42	.00	.20	.00
21	.00	.00	.06	.00	.00	.57	.00	.00	.00	.00	.00	.15
22	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.51	1.15	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.05	.92	.00	.00	.00	.00	.02	.33	.06	.00
25	.00	.10	.00	.00	.00	.28	.00	.00	.35	.00	.61	.00
26	.00	.01	.00	.00	.00	.03	.07	.32	.65	.00	.31	.00
27	.00	.00	.00	.00	.00	.00	1.02	.00	.02	.00	.00	.89
28	.00	.00	.00	.00	.10	.00	.15	.00	.00	.00	.00	.40
29	.00	.00	.00	.00	---	.00	.70	.00	.25	.00	.00	2.39
30	.00	.00	.00	.02	---	.00	1.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.09	.00	---
TOTAL	1.44	2.05	2.00	3.29	2.05	1.77	3.26	1.64	4.46	1.78	1.36	7.97

PEE DEE RIVER BASIN

251

351455080374445 CRN30

LOCATION.--Lat 35°14'55", long 80°37'44", Mecklenburg County, Hydrologic Unit 03040105, private residence, Peach Orchard Road, Mint Hill, NC.

PERIOD OF RECORD.--February 1996 to current year. Records for period February 1996 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.00	.00	.00	.89	.00	.32	.00	.00	.00	.00	.00
2	.00	.42	.00	.01	.01	.00	.01	.00	.00	.00	.00	.00
3	.00	.50	.00	.01	.00	.20	.00	.00	.00	.00	.00	.00
4	.55	.01	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00
5	.17	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	1.76
6	.01	.00	.00	.00	.00	.01	.00	.06	.00	.19	.00	.00
7	.05	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00
8	.86	.00	.03	.08	.00	.00	.00	.00	.00	.00	.08	.00
9	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.08
10	.00	.00	.00	.00	.00	.09	.00	.00	.43	.00	.00	.00
11	.00	.02	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00
12	.00	.00	.08	.00	.00	.00	.00	.00	.00	.85	.00	.00
13	.00	.00	.36	.00	.00	.01	.00	1.83	.00	.32	.00	.00
14	.00	.51	.00	.34	.00	.47	.00	.00	.00	.01	.00	.00
15	.00	.02	.62	.17	.00	.02	.05	.00	.54	.00	.00	1.29
16	.00	.26	.21	.00	.00	.00	.00	.00	1.36	.00	.00	.02
17	.00	.00	.00	.70	.11	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.03	.84	.00	.00	.06	.00	.00	.00	.00
19	.00	.00	.01	.00	.51	.00	.00	.08	.02	.00	.00	.00
20	.00	.00	.01	.00	.16	.00	.00	.00	.48	.00	.24	.00
21	.00	.00	.06	.00	.00	.63	.00	.00	.01	.00	.00	.17
22	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.59	1.56	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.20	.90	.00	.00	.00	.00	.00	.61	.03	.00
25	.00	.03	.04	.00	.00	.23	.00	.00	.63	.01	.41	.00
26	.00	.04	.00	.00	.00	.02	.07	.32	.04	.00	.51	.00
27	.00	.00	.01	.00	.00	.00	1.94	.00	.01	.00	.00	.64
28	.00	.00	.10	.00	.14	.00	.23	.00	.02	.00	.00	.21
29	.00	.00	.07	.00	---	.00	.70	.00	.43	.01	.00	2.46
30	.00	.00	.00	.02	---	.00	.88	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.21	.00	---
TOTAL	1.65	1.81	2.42	3.82	2.74	1.90	4.20	2.41	3.97	2.42	1.27	6.64

## PEE DEE RIVER BASIN

351028080385545 CRN32

LOCATION.--Lat 35°10'28", long 80°38'55", Mecklenburg County, Hydrologic Unit 03040105, Bain Elementary School, Bain School Road, Mint Hill, NC.

PERIOD OF RECORD.--February 1996 to current year. Records for period February 1996 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.82	.00	.22	.00	.00	.00	.00	.00
2	.00	.46	.00	.12	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.52	.00	.28	.00	.22	.00	.00	.00	.00	.00	.00
4	.60	.01	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
5	.10	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	1.49
6	.02	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.03
7	.03	.00	.00	.00	.00	.00	.00	.00	.00	.22	.00	.00
8	.74	.00	.01	.07	.00	.00	.00	.00	.00	.00	.29	.00
9	.00	.00	.00	.00	.00	.17	.00	.00	.41	.00	.00	.37
10	.00	.00	.00	.00	.00	.19	.00	.00	.26	.03	.00	.00
11	.00	.01	.00	.00	.00	.00	.19	.00	.00	.05	.00	.00
12	.00	.00	.08	.00	.00	.00	.00	.00	.00	.88	.00	.00
13	.00	.00	.38	.00	.00	.00	.00	.07	.00	.61	.00	.00
14	.00	.52	.00	.28	.00	.62	.00	.00	.00	.01	.00	.00
15	.00	.02	.72	.18	.00	.03	.04	.00	.76	.00	.00	1.44
16	.00	.57	.25	.00	.00	.00	.00	.00	.94	.00	.00	.03
17	.00	.01	.00	.57	.10	.00	.00	.00	.01	.20	.00	.00
18	.00	.00	.00	.06	.74	.00	.00	.03	.00	.00	.00	.00
19	.00	.00	.01	.00	.58	.00	.00	.09	.03	.00	.00	.00
20	.00	.00	.00	.00	.07	.00	.01	.00	.19	.00	.38	.00
21	.00	.00	.05	.00	.00	.39	.00	.00	.01	.00	.00	.41
22	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.03	1.67	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	1.30	.00	.00	.00	.00	.01	.11	.02	.00
25	.00	.06	.11	.00	.00	.24	.00	.00	.17	.00	.35	.00
26	.00	.01	.00	.00	.00	.01	.07	.43	.22	.00	.56	.00
27	.00	.00	.00	.00	.00	.00	1.14	.00	.05	.00	.00	.70
28	.00	.00	.12	.00	.06	.00	.16	.00	.01	.00	.00	.44
29	.00	.00	.13	.01	---	.00	.87	.00	.03	.21	.00	1.84
30	.00	.00	.00	.02	---	.00	.94	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.28	.00	---
TOTAL	1.49	2.19	1.94	4.56	2.42	1.89	3.64	0.81	3.10	2.60	1.60	6.75

PEE DEE RIVER BASIN

253

352000080414645 CRN33

LOCATION.--Lat 35°20'00", long 80°41'46", Mecklenburg County, Hydrologic Unit 03040105, Mallard Creek WWTP, U.S. Highway 29 North, Charlotte, NC.

PERIOD OF RECORD.--December 1995 to current year. Records for period December 1995 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.89	.00	.61	.00	.00	.00	.00	.00
2	.00	.42	.00	.23	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.54	.00	.22	.00	.12	.00	.00	.00	.17	.00	.00
4	.31	.00	.00	.00	.03	.00	.10	.00	.00	.00	.00	.00
5	.87	.00	.00	.00	.00	.00	.01	.05	.00	.00	.00	1.16
6	.00	.00	.00	.00	.00	.01	.00	.08	.00	.90	.00	.01
7	.08	.00	.00	.00	.00	.00	.00	.02	.00	.05	.18	.00
8	.36	.00	.02	.05	.00	.00	.00	.00	.00	.00	.04	.00
9	.00	.00	.00	.00	.00	.26	.00	.00	.02	.00	.00	.24
10	.00	.01	.00	.00	.00	.00	.00	.00	.49	.00	.00	.00
11	.00	.06	.00	.00	.00	.00	.00	.00	.00	.11	.00	.00
12	.00	.00	.07	.00	.00	.00	.00	.00	.00	.34	.00	.00
13	.00	.00	.43	.00	.00	.01	.00	.01	.00	.07	.00	.00
14	.00	.44	.00	.06	.00	.41	.00	.00	.01	.00	.01	.00
15	.00	.01	.53	.23	.00	.01	.10	.00	.68	.00	.00	.86
16	.00	.41	.18	.00	.00	.00	.00	.00	.91	.00	.00	.03
17	.00	.00	.00	1.00	.12	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.07	.46	.00	.00	.23	.00	.00	.00	.00
19	.00	.00	.01	.00	.53	.00	.00	.09	.00	.00	.00	.00
20	.00	.00	.00	.00	.11	.00	.00	.00	.14	.00	.14	.00
21	.00	.00	.00	.00	.00	.45	.00	.00	.00	.00	.01	.31
22	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.33	1.97	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.65	.37	.00	.00	.00	.00	.02	.38	.12	.00
25	.00	.01	.07	.00	.00	.07	.00	.00	.36	.01	.49	.00
26	.00	.02	.00	.00	.00	.00	.01	.16	.50	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	1.38	.00	.10	.00	.00	.35
28	.00	.00	.12	.00	.06	.00	.35	.00	.01	.00	.00	.44
29	.00	.00	.02	.00	---	.00	.61	.00	.00	.01	.00	.94
30	.00	.00	.00	.02	---	.00	.83	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.35	.00	---
TOTAL	1.62	1.92	2.51	4.22	2.21	1.36	4.00	0.64	3.24	2.39	0.99	4.35

LOCATION.--Lat 35°29'21", long 80°47'32", Mecklenburg County, Hydrologic Unit 03040105, Westfork Substation, Shearer Road, Davidson, NC.

PERIOD OF RECORD.--February 1996 to current year. Records for period February 1996 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.90	.00	.34	.00	.00	.00	.07	.00
2	.00	.24	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.40	.00	.21	.01	.33	.00	.00	.00	.00	.00	.00
4	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.53	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.91
6	.00	.00	.00	.00	.00	.02	.00	.02	.00	.00	.00	.00
7	.11	.00	.00	.00	.00	.00	.00	.01	.00	.07	.00	.00
8	.17	.01	.02	.06	.00	.00	.00	.00	.00	.00	.49	.00
9	.00	.01	.01	.01	.00	.20	.00	.00	.27	.00	.00	.01
10	.00	.04	.00	.00	.00	.08	.00	.00	.08	.02	.00	.01
11	.00	.13	.00	.00	.00	.00	.01	.00	.00	.09	.00	.00
12	.00	.00	.18	.00	.00	.00	.00	.00	.00	.35	.00	.00
13	.00	.00	.93	.00	.00	.02	.00	.00	.00	.01	.00	.00
14	.00	.49	.00	.10	.00	.26	.00	.00	.00	.02	.00	.00
15	.00	.02	.44	.23	.00	.03	.26	.00	.57	.00	.00	.78
16	.00	.33	.12	.00	.00	.00	.00	.00	1.33	.00	.00	.05
17	.00	.01	.01	.47	.10	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.23	.35	.00	.00	.28	.00	.00	.00	.00
19	.00	.00	.03	.00	.42	.00	.00	.11	.00	.00	.00	.00
20	.00	.00	.00	.00	.46	.00	.00	.00	.14	.00	.23	.00
21	.00	.00	.00	.00	.00	.47	.00	.00	.01	.00	.00	.02
22	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.08	1.07	.00	.00	.00	.00	.00	.00	.14	.00
24	.00	.00	.00	.47	.00	.00	.00	.00	.01	1.80	.76	.00
25	.00	.21	.01	.00	.00	.03	.00	.00	1.95	.00	.38	.00
26	.00	.04	.04	.00	.00	.00	.01	.08	.05	.00	.06	.00
27	.00	.00	.00	.00	.00	.00	.71	.00	.00	.00	.00	.29
28	.00	.00	.16	.00	.02	.00	.55	.00	.74	.00	.00	.95
29	.00	.00	.02	.00	---	.00	1.03	.00	.01	.00	.00	.83
30	.00	.00	.00	.03	---	.00	.81	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.03	---	.00	---	.00	.00	---
TOTAL	0.86	1.93	2.08	2.89	2.27	1.47	3.72	0.54	5.16	2.36	2.13	3.86

350634080405245 CRN39

LOCATION.--Lat 35°06'34", long 80°40'52", Mecklenburg County, Hydrologic Unit 03040105, private residence, Mount Harmony Church Road, Matthews, NC.

PERIOD OF RECORD.--February 1996 to current year. Records for period February 1996 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.74	.00	.25	.00	.00	.00	.84	.00
2	.00	.31	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.38	.00	.03	.00	.18	.00	.00	.00	.00	.00	.00
4	.55	.01	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	1.08
6	.01	.00	.00	.00	.00	.00	.00	.16	.00	.40	.00	.00
7	.01	.00	.00	.00	.00	.00	.00	.00	.00	.11	.00	.00
8	.71	.00	.02	.06	.00	.00	.00	.00	.00	.01	.12	.00
9	.00	.00	.00	.01	.00	.29	.00	.00	.84	.00	.00	.36
10	.00	.00	.00	.00	.00	.11	.00	.00	.12	.52	.00	.00
11	.00	.02	.00	.00	.00	.00	.01	.00	.01	.00	.00	.00
12	.00	.00	.06	.00	.00	.00	.00	.00	.00	.50	.00	.00
13	.00	.00	.24	.00	.00	.01	.00	.01	.00	.41	.00	.00
14	.00	.54	.00	.22	.00	.68	.00	.00	.00	.01	.00	.00
15	.00	.02	.66	.19	.00	.02	.07	.00	.30	.00	.00	1.21
16	.00	.26	.17	.00	.00	.00	.00	.00	.86	.00	.00	.05
17	.00	.00	.00	.53	.10	.00	.00	.00	.00	.01	.00	.00
18	.00	.00	.00	.06	.64	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.02	.00	.55	.00	.00	.11	.01	.00	.00	.00
20	.00	.00	.02	.00	.00	.00	.02	.00	.19	.00	.91	.00
21	.00	.00	.01	.00	.01	.02	.00	.00	.01	.00	.00	.42
22	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.47	1.70	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.40	1.52	.00	.00	.00	.00	.01	.10	.01	.00
25	.00	.04	.12	.00	.00	.24	.00	.00	.20	.00	.34	.00
26	.00	.00	.00	.00	.00	.01	.10	.26	.52	.00	.08	.00
27	.00	.00	.00	.00	.00	.00	1.31	.00	.13	.00	.00	.51
28	.00	.00	.13	.00	.06	.00	.18	.00	.00	.00	.00	.28
29	.00	.00	.11	.00	---	.00	.81	.00	.00	.16	.00	1.16
30	.00	.00	.00	.01	---	.00	1.07	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.64	.00	---
TOTAL	1.28	1.58	2.49	4.34	2.14	1.56	3.82	0.58	3.20	2.87	2.30	5.08



352718080484345 CRN44

LOCATION.--Lat 35°27'18", long 80°48'43", Mecklenburg County, Hydrologic Unit 03040105, private residence, Mayes Road, Huntersville, NC.

PERIOD OF RECORD.--January 1997 to current year. Records for period January 1997 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.01	.00	.37	.00	.00	.00	.07	.00
2	.00	.39	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
3	.00	.27	.00	.09	.00	.23	.00	.00	.00	.00	.00	.00
4	.08	.00	.00	.00	.01	.00	.03	.00	.00	.00	.00	.00
5	.42	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.67
6	.00	.00	.00	.00	.00	.02	.00	.02	.00	.00	.00	.00
7	.13	.00	.00	.00	.00	.00	.00	.01	.00	.08	.00	.00
8	.37	.00	.00	.09	.00	.00	.00	.00	.00	.00	.42	.00
9	.00	.01	.00	.02	.00	.21	.00	.00	.00	.00	.00	.02
10	.00	.03	.00	.00	.00	.11	.00	.00	.10	.02	.00	.01
11	.00	.09	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00
12	.00	.00	.17	.00	.00	.00	.00	.00	.00	.43	.00	.00
13	.00	.00	1.05	.00	.00	.01	.00	.00	.00	.01	.00	.00
14	.00	.42	.00	.10	.00	.28	.00	.00	.00	.02	.10	.00
15	.00	.01	.42	.20	.00	.04	.22	.00	.51	.00	.00	.69
16	.00	.25	.13	.00	.00	.00	.00	.00	1.40	.00	.00	.05
17	.00	.01	.00	.43	.09	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.46	.36	.00	.00	.33	.00	.00	.00	.00
19	.00	.00	.02	.00	.44	.00	.00	.11	.01	.00	.00	.00
20	.00	.00	.00	.00	.46	.00	.00	.00	.09	.00	.15	.00
21	.00	.00	.01	.00	.00	.53	.00	.00	.01	.00	.01	.03
22	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.14	1.04	.00	.00	.00	.00	.00	.00	.06	.00
24	.00	.00	.00	.42	.00	.00	.00	.00	.00	1.35	.61	.00
25	.00	.16	.03	.00	.00	.03	.00	.00	1.64	.00	.34	.00
26	.00	.04	.00	.00	.00	.00	.01	.09	.06	.00	.01	.00
27	.00	.00	.00	.00	.00	.00	.64	.00	.00	.00	.00	.22
28	.00	.00	.16	.00	.12	.00	.56	.00	.32	.00	.00	1.18
29	.00	.00	.03	.00	---	.00	1.07	.00	.00	.02	.00	.62
30	.00	.00	.01	.02	---	.00	.91	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.03	---	.00	---	.00	.00	---
TOTAL	1.00	1.68	2.19	2.90	2.51	1.49	3.81	0.59	4.14	2.01	1.77	3.49

352135080462045 CRN46

LOCATION.--Lat 35°21'35", long 80°46'20", Mecklenburg County, Hydrologic Unit 03040105, private residence, Johnston-Oehler Road, Charlotte, NC.

PERIOD OF RECORD.--January 1997 to current year. Records for period January 1997 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.90	.00	.46	.00	.00	.00	.00	.00
2	.00	.48	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.51	.00	.05	.01	.19	.00	.00	.00	.00	.00	.00
4	.33	.00	.00	.00	.01	.00	.01	.00	.00	.00	.00	.00
5	.45	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	1.17
6	.00	.01	.00	.00	.00	.02	.00	.03	.00	.57	.00	.00
7	.20	.00	.00	.00	.00	.00	.00	.00	.00	.80	.06	.00
8	.25	.00	.00	.09	.00	.00	.00	.00	.00	.00	.14	.00
9	.00	.00	.00	.01	.00	.19	.00	.00	.00	.00	.00	.04
10	.00	.02	.00	.00	.00	.06	.00	.00	.50	.00	.00	.01
11	.00	.04	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00
12	.00	.00	.08	.00	.00	.00	.00	.00	.00	.34	.00	.00
13	.00	.00	1.08	.00	.00	.01	.00	.03	.00	.05	.00	.00
14	.00	.49	.00	.07	.00	.40	.00	.00	.00	.01	.11	.00
15	.00	.02	.46	.19	.00	.03	.16	.00	.34	.00	.00	.99
16	.00	.31	.12	.00	.00	.00	.00	.00	1.38	.00	.00	.08
17	.00	.00	.00	.70	.07	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.12	.40	.00	.00	.20	.00	.00	.00	.00
19	.00	.00	.01	.00	.44	.00	.00	.15	.00	.00	.00	.00
20	.00	.00	.00	.00	.31	.00	.01	.00	.08	.00	.28	.00
21	.00	.00	.00	.00	.00	.44	.00	.00	.00	.00	.01	.23
22	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.07	1.68	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.45	.00	.00	.00	.00	.01	.39	.82	.00
25	.00	.04	.03	.00	.00	.07	.00	.00	.50	.01	.47	.00
26	.00	.02	.03	.00	.00	.00	.01	.16	.02	.00	.03	.00
27	.00	.00	.00	.00	.00	.00	1.14	.00	.01	.00	.00	.27
28	.00	.00	.15	.00	.05	.00	.30	.00	.02	.00	.00	.71
29	.00	.00	.04	.00	---	.00	.58	.00	.00	.50	.00	.47
30	.00	.00	.00	.03	---	.00	.75	.00	.77	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.09	.00	---
TOTAL	1.23	1.94	2.15	3.39	2.19	1.43	3.42	0.62	3.63	2.84	1.92	3.98

## PEE DEE RIVER BASIN

354822080521501 STATESVILLE - PRECIPITATION

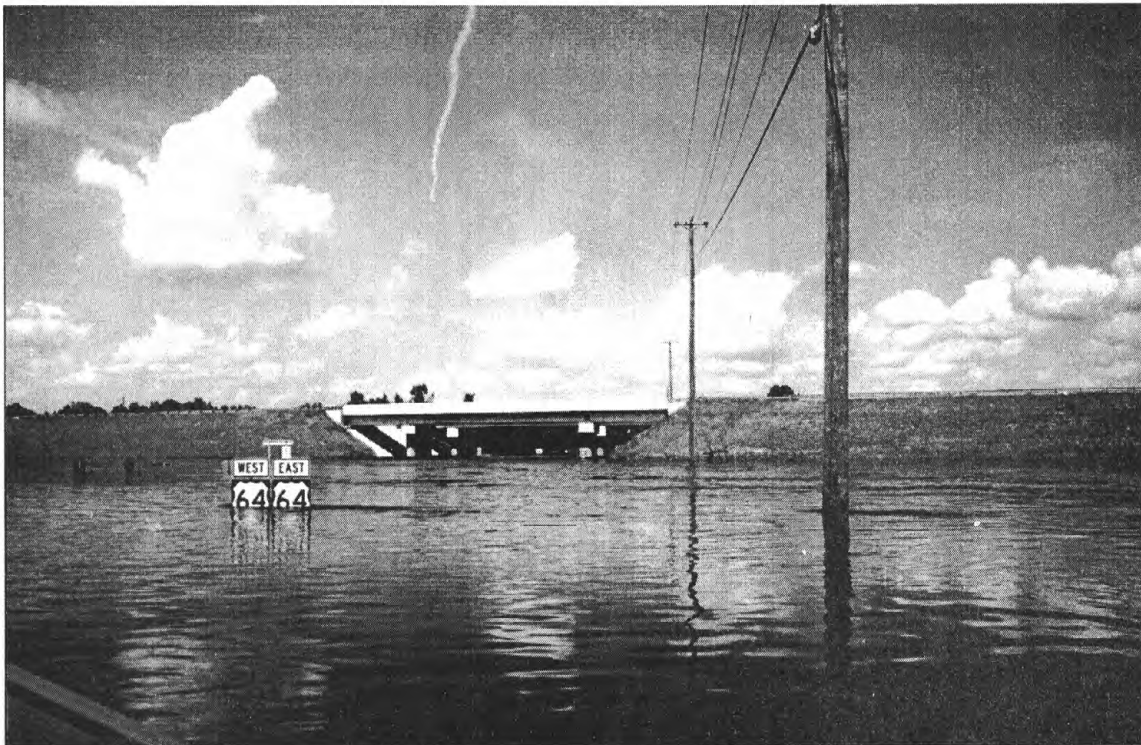
LOCATION.--Lat 35°48'22", long 80°52'15", Iredell County, Hydrologic Unit 03050101, Statesville WWP, Sunset Hill Road, Statesville, NC.

PERIOD OF RECORD.-- October 1998 to September 1999.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Satellite telemetry at station.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.63	.00	1.18	.00	.00	1.78	.00	.00
2	.00	.00	.00	.00	.04	.00	.00	.00	.00	.01	.00	.00
3	.00	.23	.00	.18	.00	.74	.00	.00	.10	.00	.00	.00
4	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	1.34
6	.00	.00	.00	.05	.00	.02	.00	.02	.00	.00	.00	.00
7	1.26	.00	.00	---	.00	.00	.00	.09	.00	1.27	.00	.00
8	.30	.00	.68	---	.00	.00	.00	.00	.00	.01	.37	.00
9	.00	.01	.03	---	.07	.08	.00	.00	.00	.00	.07	.95
10	.00	.10	.00	---	.00	.10	.00	.00	.01	.00	.00	.00
11	.00	.12	.00	---	.00	.00	.02	.00	.01	.06	.00	.00
12	.00	.00	.29	.00	.11	.00	.00	.00	.00	.69	.00	.00
13	.00	.01	1.13	.00	.00	.14	.00	.33	.00	.00	.00	.00
14	.00	.50	.00	.16	.00	.42	.00	.02	.00	.02	.46	.00
15	.00	.00	.19	.16	.00	.05	.45	.00	.14	.00	.00	.08
16	.00	.47	.03	.00	.00	.00	.01	.00	.70	.00	.00	.09
17	.00	.00	.01	.30	.51	.00	.00	.00	.09	.00	.00	.00
18	.00	.00	.00	.22	.33	.00	.00	.77	.00	.00	.00	.00
19	.01	.00	.09	.00	.36	.00	.00	.35	.00	.00	.00	.00
20	.00	.00	.00	.00	.36	.00	.02	.00	.14	.00	.97	.00
21	.00	.00	---	.00	.00	.52	.00	.00	.00	.04	.03	.00
22	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	---	.85	.00	.00	.00	.00	.00	.00	.19	.00
24	.00	.00	---	.47	.05	.01	.00	.00	.03	.08	.39	.00
25	.00	.03	---	.00	.02	.01	.00	.00	.68	.00	.76	.00
26	.00	.11	---	.00	.00	.00	.01	.08	.09	.00	.19	.00
27	.00	.00	---	.00	.00	.00	.83	.00	.00	.00	.00	.55
28	.00	.00	---	.00	.12	.00	.66	.00	.16	.00	.00	.49
29	.00	.00	.00	.00	---	.00	1.09	.00	.00	.01	.00	.82
30	.00	.00	.00	.00	---	.00	.72	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.05	---	.00	---	.00	.00	---
TOTAL	1.57	1.58	---	---	2.61	2.14	4.99	1.67	2.15	3.97	3.43	4.32



Highway 33 completely covered by the Tar River at the U.S. highway 64 interchange near Tarboro, N.C., September 1999.

## SANTEE RIVER BASIN

02137727 CATAWBA RIVER NEAR PLEASANT GARDENS, NC

LOCATION.--Lat 35°41'09", long 82°03'40", McDowell County, Hydrologic Unit 03050101, on right bank 18 ft downstream of bridge on Secondary Road 1221, 0.8 mi upstream from Buck Creek, 0.8 mi southeast of Pleasant Gardens, and at mile 297.

DRAINAGE AREA.--126 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1963, 1970-73, 1975. October 1980 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,230 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	72	74	88	269	163	423	322	92	101	74	41
2	64	73	72	93	360	154	290	236	92	93	72	40
3	62	83	72	206	268	175	228	195	95	97	69	37
4	63	81	72	165	224	169	201	172	89	102	68	35
5	210	85	71	e118	194	156	180	160	86	94	66	36
6	93	79	72	e102	178	154	167	180	86	94	64	43
7	202	74	71	e104	168	147	160	205	81	171	60	42
8	356	75	75	131	159	142	156	204	78	181	56	38
9	134	76	90	156	151	146	162	174	77	135	66	34
10	104	78	76	159	159	147	145	159	79	108	63	35
11	94	125	74	130	147	145	138	149	84	156	58	30
12	89	91	73	119	141	136	130	143	82	251	55	27
13	86	80	199	117	132	137	126	141	76	251	53	26
14	83	83	136	125	126	208	126	169	71	186	51	27
15	79	100	99	311	124	238	139	143	77	237	48	28
16	78	89	90	194	122	209	136	131	122	191	45	27
17	77	101	84	158	129	188	120	125	134	151	46	27
18	77	87	80	277	221	174	117	123	89	135	43	28
19	77	83	80	211	287	162	115	233	80	126	40	28
20	78	82	85	169	299	154	116	161	77	113	42	29
21	75	79	81	149	232	169	114	144	77	143	53	31
22	73	77	80	136	199	157	111	137	77	126	44	44
23	72	77	90	585	181	146	107	132	81	112	41	33
24	73	77	179	633	173	144	106	120	85	138	106	31
25	73	76	175	349	165	140	104	114	189	155	98	28
26	73	78	123	250	161	149	105	111	139	108	69	27
27	73	75	115	209	154	152	149	109	119	99	55	48
28	73	73	107	182	173	143	257	102	113	101	52	219
29	73	73	103	171	---	138	183	100	116	91	48	112
30	73	73	97	204	---	134	446	96	103	85	46	69
31	72	---	91	171	---	135	---	93	---	79	42	---
TOTAL	2979	2455	2986	6172	5296	4911	5057	4783	2846	4210	1793	1300
MEAN	96.1	81.8	96.3	199	189	158	169	154	94.9	136	57.8	43.3
MAX	356	125	199	633	360	238	446	322	189	251	106	219
MIN	62	72	71	88	122	134	104	93	71	79	40	26
CFSM	.76	.64	.76	1.57	1.49	1.25	1.33	1.21	.75	1.07	.46	.34
IN.	.87	.72	.87	1.81	1.55	1.44	1.48	1.40	.83	1.23	.53	.38

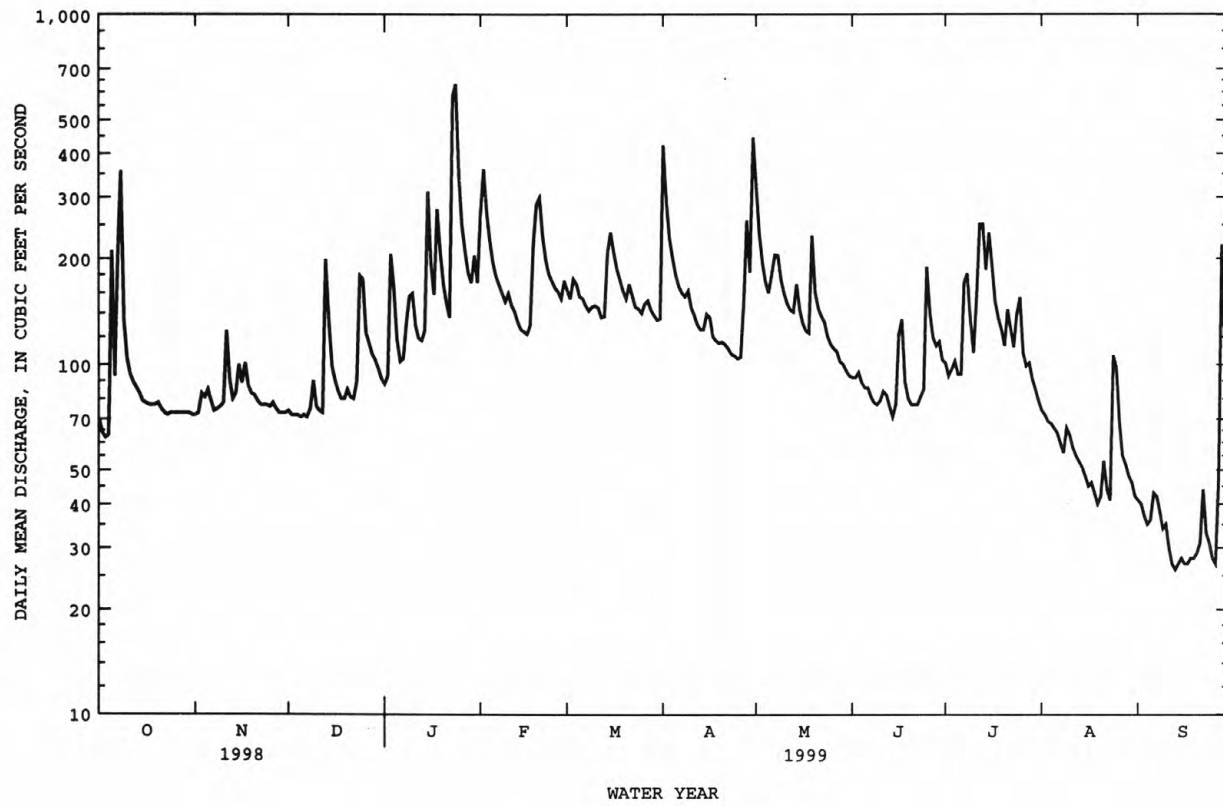
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1999, BY WATER YEAR (WY)

	199	215	236	298	354	360	325	253	214	167	201	168
MEAN	199	215	236	298	354	360	325	253	214	167	201	168
MAX	550	606	573	620	739	622	688	444	652	339	513	435
(WY)	1996	1986	1984	1995	1998	1990	1983	1984	1992	1991	1995	1989
MIN	67.5	69.0	77.6	107	159	130	138	109	70.7	57.9	50.5	43.3
(WY)	1994	1982	1989	1981	1988	1988	1986	1988	1988	1988	1988	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1981 - 1999	
ANNUAL TOTAL	99032		44788			
ANNUAL MEAN	271		123		249	
HIGHEST ANNUAL MEAN					351	
LOWEST ANNUAL MEAN					123	
HIGHEST DAILY MEAN	6010		Jan 8		7250	
LOWEST DAILY MEAN	56		Sep 20		26	
ANNUAL SEVEN-DAY MINIMUM	57		Sep 14		27	
INSTANTANEOUS PEAK FLOW			1570		13700	
INSTANTANEOUS PEAK STAGE			4.95		15.22	
INSTANTANEOUS LOW FLOW			24		24	
ANNUAL RUNOFF (CFSM)	2.14		.97		1.96	
ANNUAL RUNOFF (INCHES)	29.01		13.12		26.60	
10 PERCENT EXCEEDS	510		204		429	
50 PERCENT EXCEEDS	136		106		181	
90 PERCENT EXCEEDS	72		48		85	

e Estimated.

02137727 CATAWBA RIVER NEAR PLEASANT GARDENS, NC--Continued





## SANTEE RIVER BASIN

02138500 LINVILLE RIVER NEAR NEBO, NC

LOCATION.--Lat 35°47'41", long 81°53'25", Burke County, Hydrologic Unit 03050101, in Pisgah National Forest on right bank 370 ft upstream from bridge on State Highway 126, 0.2 mi downstream of Shooks Creek, 0.5 mi upstream from Lake James, 2.0 mi northeast of Longtown, and 6.0 mi northeast of Nebo.

DRAINAGE AREA.--66.7 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1907 to August 1908 (fragmentary). June 1922 to current year. Prior to 1908 published as "Linville River at Fonta Flora" and as "Linville River at Branch" 1923-70. Records for October to December 1908 "Linville River at Fonta Flora" published in WSP 242 have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 892: 1929, 1935, 1937. WSP 1503: 1923(M), 1924-28, 1930, 1932-33(M), 1938(M), 1939(P). WDR NC-80-1: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,203.87 ft above sea level. May 1907 to August 1908, nonrecording gage about 1.2 mi downstream at different datum. June 1922 to Aug. 27, 1937, nonrecording gage and Aug. 28, 1937, to Sept. 30, 1970, water-stage recorder at site on right bank 20 ft downstream of bridge on State Highway 126 at 1,204.87 ft. Oct. 1, 1970, to Sept. 30, 1973, at present site at 1,204.87 ft. Oct. 1, 1973, to Aug. 25, 1981, at present site at 1,204.87 ft. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum discharge for period of record, site and datum then in use, from rating curve extended above 6,400 ft<sup>3</sup>/s on basis of slope area measurement of peak flow. Minimum discharge for period of record, result of freezeup. Minimum discharge for current water year also occurred Sept. 19, 22, 23, 24, 25, 26, 27.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916 reached a stage of about 11 ft at former site and datum; discharge, 34,600 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	27	28	e50	150	176	143	212	50	53	40	27
2	22	26	27	e65	265	155	136	149	48	65	39	25
3	22	27	27	e106	195	160	128	121	60	137	36	24
4	22	27	27	e74	147	158	122	108	51	131	34	23
5	32	28	27	e71	127	141	114	98	46	92	32	24
6	32	34	27	e80	114	137	106	118	43	83	31	26
7	43	39	26	104	107	145	102	130	41	82	30	28
8	110	35	27	97	100	142	115	137	40	85	28	27
9	95	32	28	123	92	134	92	122	38	94	34	27
10	55	32	28	e132	90	127	63	110	47	85	40	25
11	42	46	27	e97	83	118	70	96	41	74	39	24
12	38	41	28	88	79	110	75	87	54	146	32	22
13	35	37	273	82	75	108	74	87	49	325	29	21
14	33	37	177	83	71	135	71	102	39	168	27	21
15	32	40	82	394	70	175	75	104	38	128	25	21
16	32	38	61	239	67	174	83	91	45	114	24	21
17	31	35	52	150	68	172	78	82	64	97	23	20
18	29	34	48	163	107	193	73	76	60	86	22	18
19	27	33	46	190	157	191	68	385	49	100	21	18
20	26	32	46	159	160	160	65	192	39	79	36	19
21	26	30	43	135	143	156	64	132	38	79	44	20
22	27	29	42	109	125	159	61	110	37	65	33	19
23	26	29	42	392	113	179	59	98	36	62	34	18
24	26	29	80	1020	104	149	57	89	38	58	46	18
25	26	28	150	494	99	119	57	81	61	75	60	18
26	26	29	89	305	95	114	55	74	75	71	73	18
27	25	29	72	233	91	110	58	68	81	60	60	21
28	25	28	63	193	117	106	77	63	90	59	45	142
29	25	28	58	169	---	103	81	58	74	53	35	245
30	25	28	55	160	---	99	252	55	59	46	32	86
31	26	---	52	141	---	96	---	52	---	43	29	---
TOTAL	1065	967	1858	5898	3211	4401	2674	3487	1531	2895	1113	1066
MEAN	34.4	32.2	59.9	190	115	142	89.1	112	51.0	93.4	35.9	35.5
MAX	110	46	273	1020	265	193	252	385	90	325	73	245
MIN	22	26	26	50	67	96	55	52	36	43	21	18
CFSM	.52	.48	.90	2.85	1.72	2.13	1.34	1.69	.77	1.40	.54	.53
IN.	.59	.54	1.04	3.29	1.79	2.45	1.49	1.94	.85	1.61	.62	.59

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
MEAN	125	137	138	178	194	233	201	151	130	97.8	120	112
MAX	433	678	349	664	569	632	479	369	598	449	1084	606
(WY)	1937	1978	1984	1995	1998	1979	1983	1976	1972	1989	1940	1979
MIN	18.9	27.8	30.9	31.8	60.8	74.3	62.0	48.9	33.7	23.0	15.5	13.8
(WY)	1955	1932	1940	1940	1941	1988	1986	1941	1941	1930	1925	1925

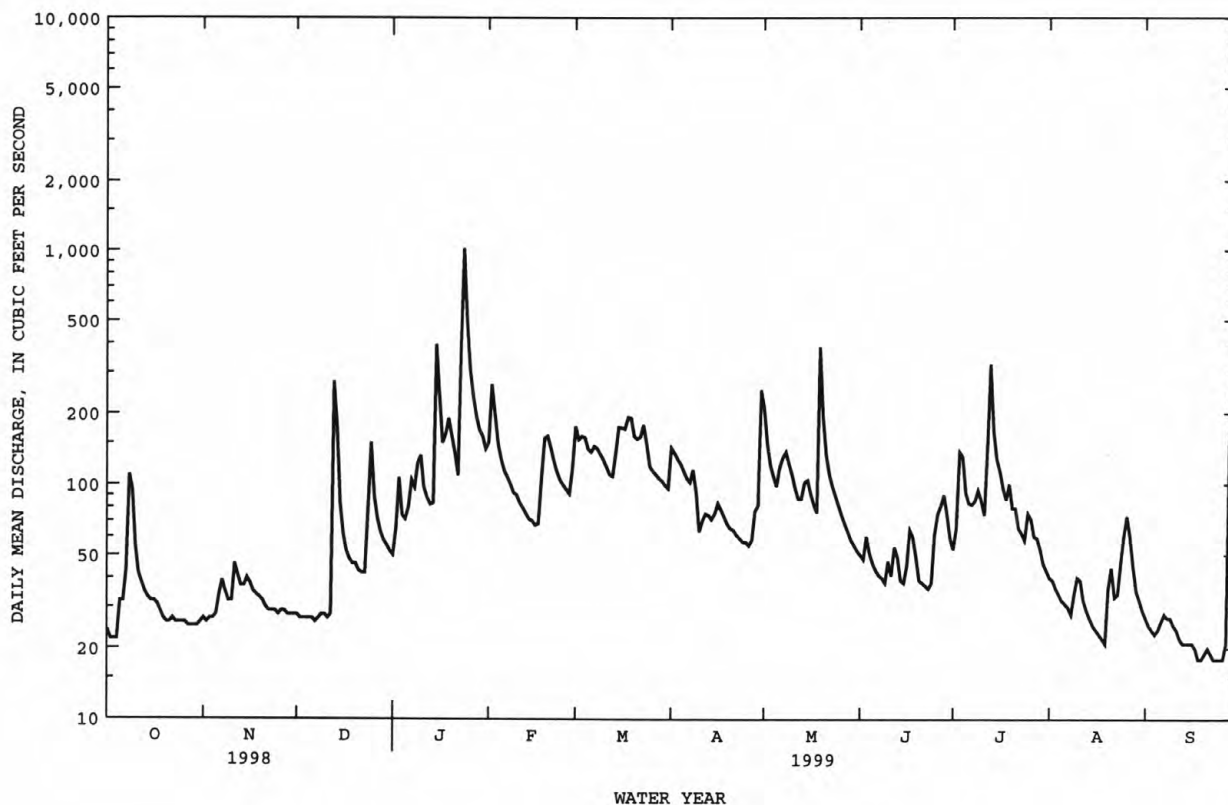
SANTEE RIVER BASIN

263

02138500 LINVILLE RIVER NEAR NEBO, NC--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1922 - 1999	
ANNUAL TOTAL	63061		30166		151	
ANNUAL MEAN	173		82.6		246	
HIGHEST ANNUAL MEAN					77.6	
LOWEST ANNUAL MEAN					14000	
HIGHEST DAILY MEAN	4550	Jan 8	1020	Jan 24	8.0	Aug 13 1940
LOWEST DAILY MEAN	18	Jul 19	18	Sep 18	10	Sep 7 1925
ANNUAL SEVEN-DAY MINIMUM	23	Sep 28	19	Sep 18	39500*	Aug 22 1925
INSTANTANEOUS PEAK FLOW			1410	Jan 23	11.40	Aug 13 1940
INSTANTANEOUS PEAK STAGE			3.17	Jan 23	2.0*	Jan 9 1956
INSTANTANEOUS LOW FLOW			18*	Sep 18	2.27	
ANNUAL RUNOFF (CFSM)	2.59		1.24		30.81	
ANNUAL RUNOFF (INCHES)	35.17		16.82		267	
10 PERCENT EXCEEDS	344		157		100	
50 PERCENT EXCEEDS	72		63		38	
90 PERCENT EXCEEDS	27		26			

e Estimated.  
\* See REMARKS.



## SANTEE RIVER BASIN

0213903612 CATAWBA RIVER AT CALVIN, NC

LOCATION.--Lat 35°44'23", long 81°43'44", Burke County, Hydrologic Unit 03050101, on right bank at City of Morganton's water intake, 0.5 mi upstream from Canoe Creek, and 0.5 mi north of Calvin.

DRAINAGE AREA.--508 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,002.40 ft above sea level (levels by City of Morganton). Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. City of Morganton diverted about 12.9 ft<sup>3</sup>/s from Catawba River for municipal water supply. Considerable regulation, at times, caused by Lake James (station 02138519), 6.5 mi upstream. Minimum discharge for all water years affected by regulation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	314	228	229	315	1760	823	556	433	437	e450	385	435
2	269	358	232	363	1870	770	488	367	574	e400	388	411
3	457	389	242	495	1670	467	369	355	538	e800	767	491
4	312	250	305	588	1720	440	421	391	535	e500	585	266
5	296	252	267	662	1670	388	478	358	319	e450	585	312
6	310	422	252	363	1600	368	481	373	319	e350	749	335
7	411	348	263	651	1580	295	343	863	512	e300	398	454
8	617	300	282	617	1620	404	293	426	424	e1200	221	363
9	428	428	323	463	1570	574	294	428	500	e900	615	362
10	351	254	285	473	1640	371	389	744	500	e500	602	278
11	271	453	280	908	1250	478	322	700	750	e400	659	192
12	300	557	260	651	506	421	390	673	256	e800	477	208
13	332	402	364	868	529	247	347	624	246	1080	576	247
14	290	318	356	866	597	319	297	400	504	694	304	328
15	270	336	343	956	721	421	362	431	296	990	373	250
16	361	489	249	602	815	537	434	438	327	931	275	270
17	274	600	262	519	919	477	372	434	372	423	507	233
18	245	357	285	1090	947	535	382	560	280	424	247	255
19	342	493	295	713	1220	338	543	465	251	905	343	264
20	310	435	307	967	1140	403	510	604	263	941	355	291
21	278	405	260	696	1020	316	485	585	270	929	361	313
22	361	322	281	682	966	346	340	352	316	549	331	298
23	330	454	280	672	1080	332	272	306	323	707	411	223
24	223	283	397	482	1060	333	435	483	377	330	492	248
25	248	552	426	1090	973	325	475	548	336	503	477	247
26	281	537	343	1190	1040	376	594	456	339	932	454	245
27	283	563	307	1620	666	292	609	572	349	747	271	250
28	320	607	272	1640	440	310	448	483	444	799	376	381
29	236	577	291	1630	---	346	803	370	395	885	285	266
30	244	256	325	1640	---	288	567	324	485	717	292	324
31	292	---	379	1600	---	324	---	479	---	501	363	---
TOTAL	9856	12225	9242	26072	32589	12664	13099	15025	11837	21037	13524	9040
MEAN	318	408	298	841	1164	409	437	485	395	679	436	301
MAX	617	607	426	1640	1870	823	803	863	750	1200	767	491
MIN	223	228	229	315	440	247	272	306	246	300	221	192
†	+39	-80	+118	+18	-370	+266	+215	+91	-11	-81	-189	-80

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1999, BY WATER YEAR (WY)

	MEAN	700	723	876	1469	1446	1351	1103	914	899	635	839	621
MAX	1943	1615	1700	2438	2659	2093	1855	1597	2103	785	2078	1146	
(WY)	1996	1993	1993	1995	1998	1993	1993	1993	1992	1995	1994	1995	
MIN	228	379	298	841	799	409	437	470	395	460	364	301	
(WY)	1994	1994	1999	1999	1992	1999	1999	1996	1999	1993	1997	1999	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1991 - 1999
ANNUAL TOTAL	385203	186210	†186208
ANNUAL MEAN	1055	510	961 (UNADJUSTED)
HIGHEST ANNUAL MEAN			1230 1993
LOWEST ANNUAL MEAN			510 1999
HIGHEST DAILY MEAN	4450	Feb 4	1870 Feb 2
LOWEST DAILY MEAN	223	Oct 24	192 Sep 11
ANNUAL SEVEN-DAY MINIMUM	255	Nov 30	247 Sep 11
INSTANTANEOUS PEAK FLOW			2650 Feb 19
INSTANTANEOUS PEAK STAGE			4.28 Feb 19
INSTANTANEOUS LOW FLOW			83* Sep 17
10 PERCENT EXCEEDS	2490		930 1900
50 PERCENT EXCEEDS	662		402 715
90 PERCENT EXCEEDS	275		263 290

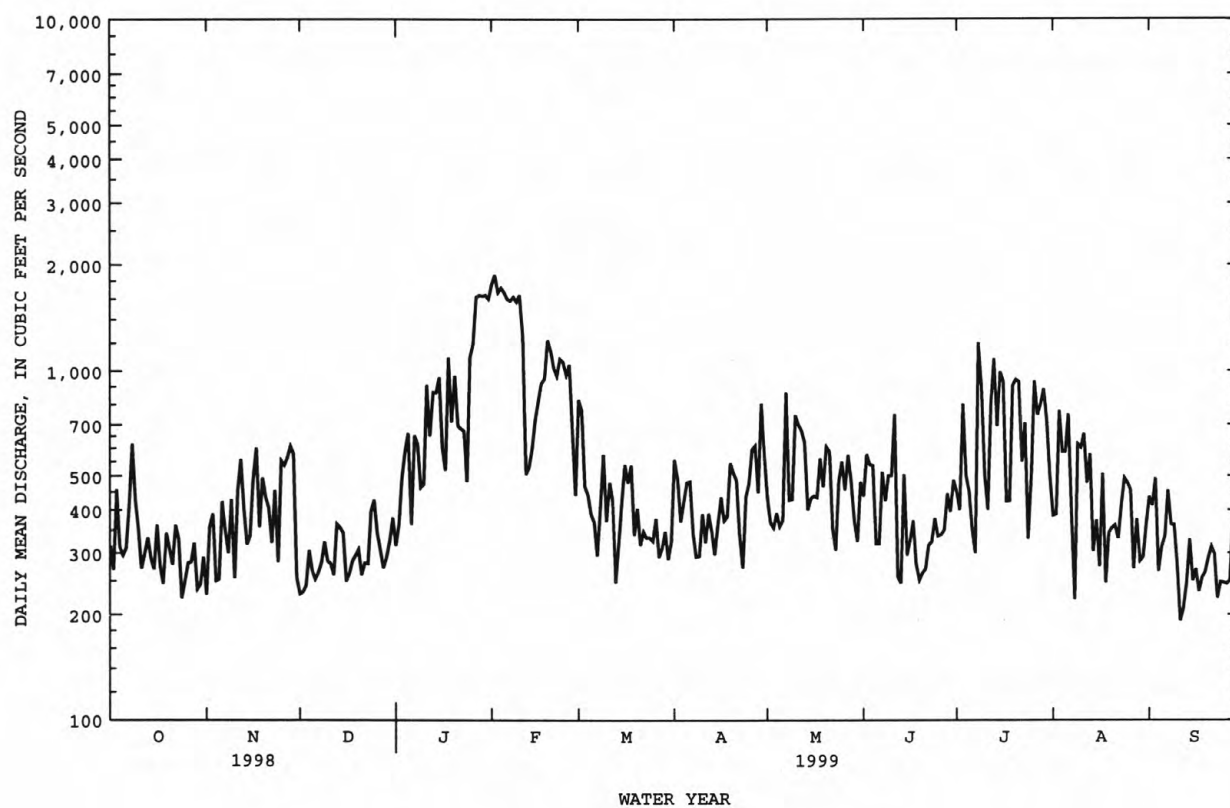
e Estimated.

† Change in contents, equivalent in cubic feet per second, in Lake James, provided by Duke Power Company.

‡ Adjusted for change in contents.

\* See REMARKS.

0213903612 CATAWBA RIVER AT CALVIN, NC--Continued



## SANTÉE RIVER BASIN

02140991 JOHNS RIVER AT ARNEYS STORE, NC

LOCATION.--Lat 35°50'01", long 81°42'43", Burke County, Hydrologic Unit 03050101, on right bank 12 ft downstream of bridge on Secondary Road 1438, 0.2 mi downstream of Sims Branch, and 0.8 mi northeast of Arneys Store.

DRAINAGE AREA.--201 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional discharge measurements, water years 1974-84. May 1985 to current year.

REVISED RECORDS.--WDR NC-87-1: 1985-86 (P).

GAGE.--Water-stage recorder. Datum of gage is 1,001.74 ft above sea level. Satellite and telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records fair. Maximum discharge for period of record from rating curve extended above 11,000 ft<sup>3</sup>/s on basis of slope-area measurement; maximum gage height from high-water mark in gage house. Minimum discharge for period of record also occurred Aug. 20, 1988. Minimum discharge for current water year also occurred Sept. 25, 26, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	96	96	131	255	287	381	504	136	215	123	76
2	87	96	96	131	485	252	428	347	134	303	117	73
3	79	100	95	327	388	275	327	273	161	388	113	70
4	80	104	95	290	327	401	292	239	146	387	108	66
5	106	104	95	204	289	321	270	221	136	292	106	66
6	127	104	95	212	264	298	254	323	131	235	102	88
7	176	102	95	170	250	289	244	372	117	247	97	84
8	657	102	97	173	240	267	233	397	113	255	93	74
9	239	104	117	224	220	262	230	300	107	205	105	66
10	147	105	104	286	217	263	222	257	104	190	111	63
11	122	158	99	215	203	253	207	229	126	244	91	61
12	111	161	97	190	198	240	201	213	151	412	85	56
13	105	120	693	183	192	235	189	222	111	634	81	54
14	103	114	390	193	181	358	187	307	102	391	77	54
15	97	129	208	737	179	532	195	228	105	318	74	55
16	95	121	163	497	176	460	241	202	125	432	69	56
17	95	114	144	344	176	390	209	189	230	300	67	53
18	96	108	130	405	277	355	192	183	146	256	64	50
19	96	105	122	412	355	334	187	630	113	276	58	48
20	96	104	129	325	541	303	182	336	107	216	116	48
21	95	102	121	279	418	297	168	258	106	216	136	50
22	92	99	116	249	339	307	156	228	111	201	86	54
23	91	98	116	388	291	277	152	215	109	174	76	48
24	93	100	235	1150	267	277	147	196	106	183	146	45
25	95	99	307	769	249	261	141	182	192	298	376	45
26	96	102	199	512	242	251	139	174	276	187	298	44
27	96	103	180	403	230	243	143	172	633	159	153	57
28	96	99	168	339	250	230	273	158	434	160	113	469
29	96	96	156	296	---	219	243	149	341	145	97	368
30	96	96	147	276	---	215	515	143	251	134	89	219
31	96	---	136	243	---	200	---	139	---	131	80	---
TOTAL	3845	3245	5041	10553	7699	9152	6948	7986	5160	8184	3507	2660
MEAN	124	108	163	340	275	295	232	258	172	264	113	88.7
MAX	657	161	693	1150	541	532	515	630	633	634	376	469
MIN	79	96	95	131	176	200	139	139	102	131	58	44
CFSM	.62	.54	.81	1.69	1.37	1.47	1.15	1.28	.86	1.31	.56	.44
IN.	.71	.60	.93	1.95	1.42	1.69	1.29	1.48	.95	1.51	.65	.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1999, BY WATER YEAR (WY)

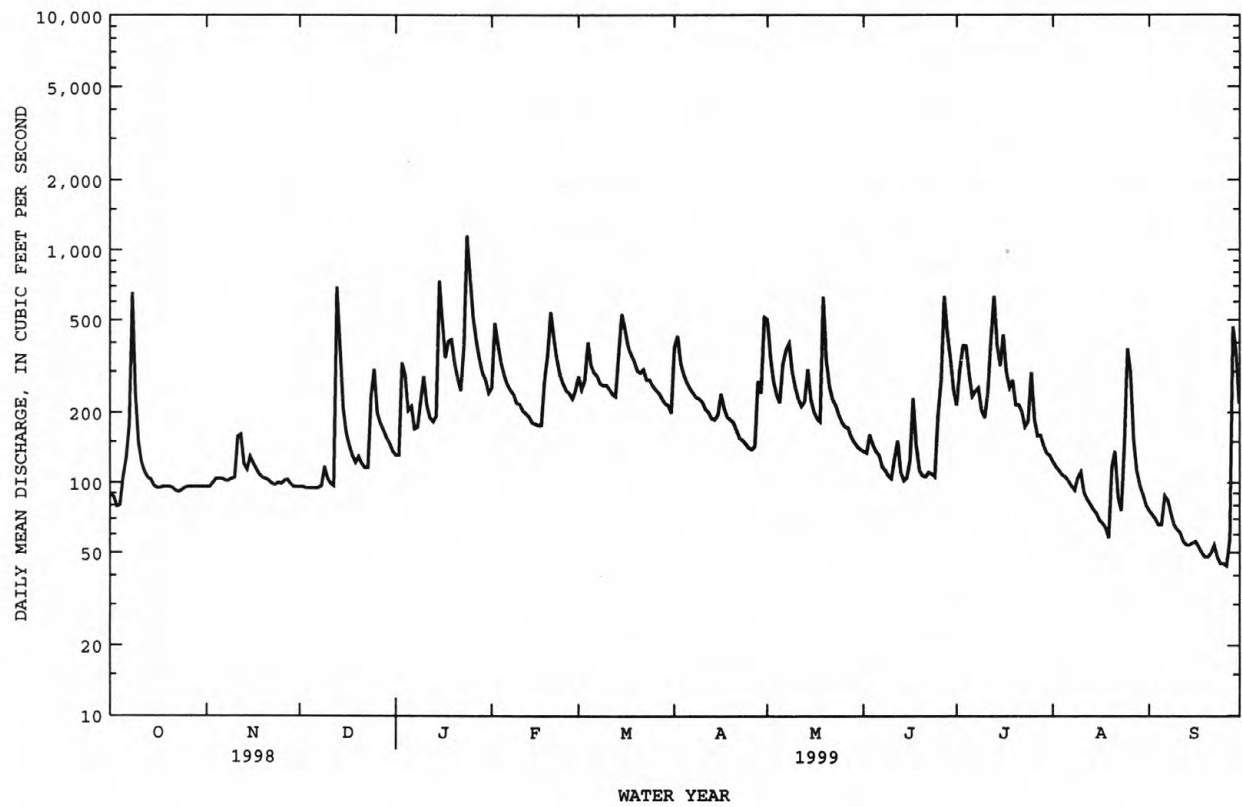
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	292	341	324	483	443	581	483	368	343	249	309	231			
MAX	890	938	602	1388	838	1151	883	595	963	570	1070	808			
(WY)	1991	1993	1997	1995	1990	1993	1987	1993	1992	1989	1994	1989			
MIN	85.7	108	113	180	206	179	206	166	96.9	75.5	65.5	88.7			
(WY)	1989	1999	1989	1989	1988	1988	1986	1988	1988	1988	1988	1999			

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR				FOR 1999 WATER YEAR				WATER YEARS 1985 - 1999			
ANNUAL TOTAL	137184				73980							
ANNUAL MEAN	376				203				372			
HIGHEST ANNUAL MEAN									502			
LOWEST ANNUAL MEAN									169			
HIGHEST DAILY MEAN	5140				1150				16100			
LOWEST DAILY MEAN	77				44				35			
ANNUAL SEVEN-DAY MINIMUM	80				48				45			
INSTANTANEOUS PEAK FLOW					1480				42300*			
INSTANTANEOUS PEAK STAGE					4.30				25.23*			
INSTANTANEOUS LOW FLOW					43*				33*			
ANNUAL RUNOFF (CFSM)	1.87				1.01				1.85			
ANNUAL RUNOFF (INCHES)	25.39				13.69				25.13			
10 PERCENT EXCEEDS	729				374				639			
50 PERCENT EXCEEDS	205				174				261			
90 PERCENT EXCEEDS	95				83				112			

\* See REMARKS.

02140991 JOHNS RIVER AT ARNEYS STORE, NC--Continued





## 02142000 LOWER LITTLE RIVER NEAR ALL HEALING SPRINGS, NC

LOCATION.--Lat 35°56'44", long 81°14'13", Alexander County, Hydrologic Unit 03050101, on left bank at upstream side of bridge on Secondary Road 1313, 0.3 mi downstream of Grassy Creek, 0.4 mi upstream from Lambert Creek, 2.2 mi northeast of All Healing Springs, and 4 mi northwest of Taylorsville.

DRAINAGE AREA.--28.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October to December 1952 (monthly discharge only), January 1953 to September 1995, October 1997 to current year.

REVISED RECORDS.--WDR NC-79-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,070 ft above sea level, by barometer. Prior to June 13, 1953, nonrecording gage at same site and datum. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period of record also occurred Sept. 21, 1955.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	13	15	17	37	28	44	67	12	11	11	8.1
2	11	13	14	17	53	27	36	44	12	14	10	7.8
3	11	15	14	40	43	59	33	34	11	36	9.7	7.3
4	12	14	14	32	37	64	31	30	10	31	9.7	6.9
5	16	14	14	28	33	49	29	27	10	20	9.0	10
6	15	14	14	28	31	42	27	28	10	16	8.8	13
7	23	14	14	22	29	37	26	27	9.7	44	8.2	8.8
8	79	14	15	31	27	33	25	29	9.3	35	8.1	8.0
9	22	14	18	36	26	33	25	24	9.0	21	8.8	7.7
10	18	15	15	32	25	32	24	22	8.8	26	8.2	7.7
11	17	33	14	26	24	30	24	20	9.3	37	7.3	6.9
12	16	19	15	24	24	28	23	19	10	41	7.0	6.4
13	16	17	65	23	23	28	22	19	9.0	39	6.8	6.3
14	15	17	30	23	22	41	22	19	8.3	32	7.1	6.4
15	15	19	22	42	22	54	27	18	8.9	28	6.5	6.3
16	15	17	20	30	22	47	25	17	15	24	6.5	5.8
17	15	17	18	26	24	40	22	16	14	24	6.4	5.5
18	15	16	17	38	56	36	22	16	9.9	21	6.1	5.9
19	15	16	17	31	55	33	21	15	9.3	19	5.6	6.1
20	15	16	17	27	63	31	21	20	9.6	19	9.8	6.0
21	14	15	16	24	53	36	21	20	10	20	8.3	5.9
22	14	15	16	23	43	32	20	18	10	19	7.0	5.7
23	14	15	16	77	37	32	20	16	10	17	7.0	5.3
24	14	15	40	158	34	30	19	15	9.5	17	9.2	5.4
25	14	15	31	76	32	29	19	15	13	16	11	5.3
26	14	16	24	52	30	28	19	15	13	15	38	5.2
27	14	15	22	42	29	27	21	14	11	14	16	10
28	14	15	21	37	32	26	35	13	11	14	11	30
29	14	15	20	33	---	25	34	13	11	13	9.5	21
30	13	15	19	31	---	24	152	12	9.8	12	8.7	14
31	14	---	17	28	---	24	---	12	---	12	8.4	---
TOTAL	526	478	624	1154	966	1085	889	674	313.4	707	294.7	254.7
MEAN	17.0	15.9	20.1	37.2	34.5	35.0	29.6	21.7	10.4	22.8	9.51	8.49
MAX	79	33	65	158	63	64	152	67	15	44	38	30
MIN	11	13	14	17	22	24	19	12	8.3	11	5.6	5.2
CFSM	.60	.57	.71	1.32	1.22	1.24	1.05	.77	.37	.81	.34	.30
IN.	.69	.63	.82	1.52	1.27	1.43	1.17	.89	.41	.93	.39	.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1999,<sup>9</sup> BY WATER YEAR (WY)

	MEAN	28.7	28.6	36.2	43.8	52.3	60.3	59.2	43.0	37.6	28.0	27.3	25.7
MAX	103	115	76.3	117	134	153	137	98.5	106	88.1	123	102	
(WY)	1965	1978	1984	1978	1960	1975	1958	1975	1975	1984	1970	1979	
MIN	6.04	7.03	8.16	9.36	22.4	21.1	18.8	16.4	10.1	9.11	4.86	4.75	
(WY)	1955	1956	1956	1956	1956	1956	1966	1956	1956	1954	1956	1954	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

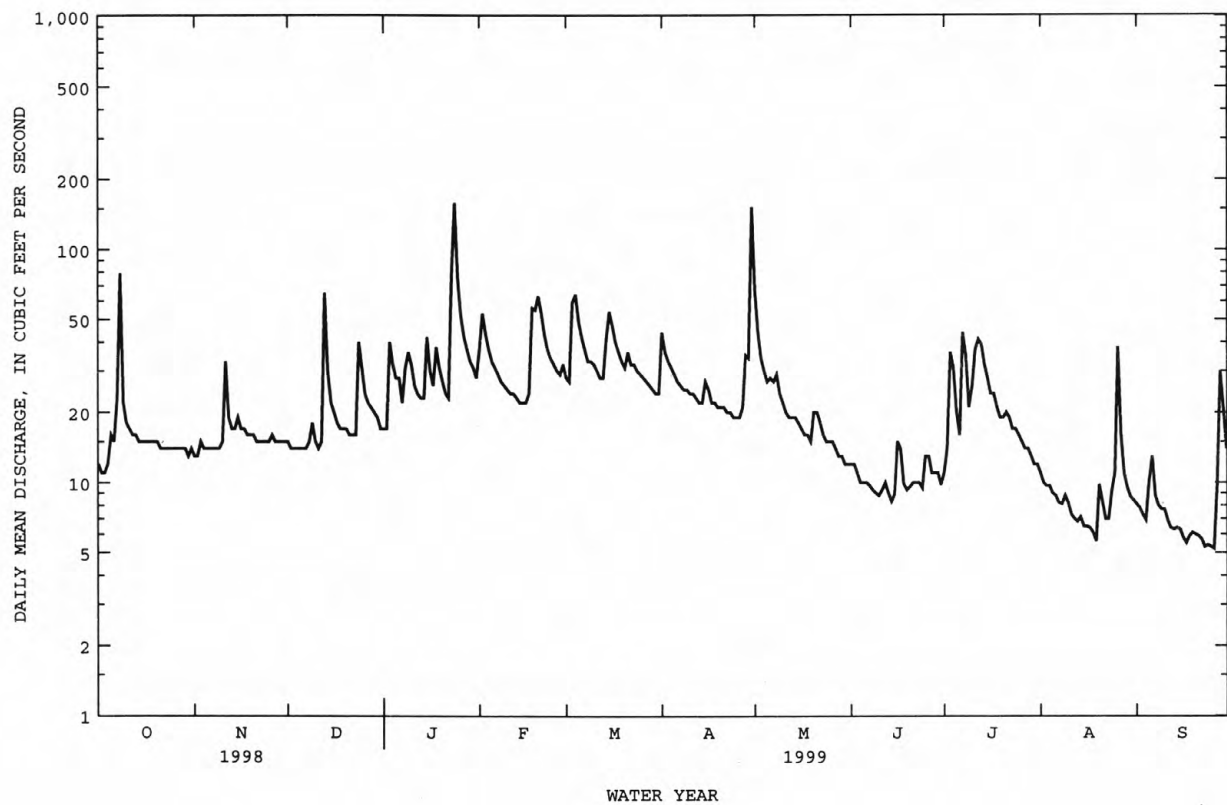
WATER YEARS 1953 - 1999<sup>9</sup>

ANNUAL TOTAL	17737	7965.8	
ANNUAL MEAN	48.6	21.8	
HIGHEST ANNUAL MEAN			39.3
LOWEST ANNUAL MEAN			65.2
HIGHEST DAILY MEAN	923	158	14.9
LOWEST DAILY MEAN	11	5.2	1993
ANNUAL SEVEN-DAY MINIMUM	11	5.5	1956
INSTANTANEOUS PEAK FLOW		261	3.1
INSTANTANEOUS PEAK STAGE		3.38	3.4
INSTANTANEOUS LOW FLOW		4.9	Aug 10 1970
ANNUAL RUNOFF (CFSM)	1.72	.77	15.68
ANNUAL RUNOFF (INCHES)	23.40	10.51	2.9*
10 PERCENT EXCEEDS	86	37	1.40
50 PERCENT EXCEEDS	30	17	18.96
90 PERCENT EXCEEDS	14	8.2	67
			26
			13

<sup>9</sup> See PERIOD OF RECORD.

\* See REMARKS.

02142000 LOWER LITTLE RIVER NEAR ALL HEALING SPRINGS, NC--Continued



## SANTEE RIVER BASIN

0214253830 NORWOOD CREEK NEAR TROUTMAN, NC

LOCATION.--Lat 35°40'48", long 80°56'44", Iredell County, Hydrologic Unit 03040102, on left upstream wingwall of culvert on Secondary Road 1328, 0.4 mi upstream from Lake Norman, 0.7 mi downstream of Powder Spring Branch, 1.0 mi northeast of East Monbo, and 3.7 mi southwest of Troutman.

DRAINAGE AREA.--7.18 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 761.09 ft above sea level. Satellite telemetry at station.

REMARKS.--Records fair except those for April to Sept., due to beaver activity, which are poor. Maximum discharge for period of record, from rating curve extended above 400 ft<sup>3</sup>/s by logarithmic plotting.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.8	3.2	3.8	5.2	4.2	12	9.6	3.5	2.4	2.4	2.7
2	2.1	2.8	3.2	3.9	7.2	4.2	7.6	6.4	3.5	2.5	2.4	2.7
3	2.1	3.0	3.2	12	5.8	5.5	6.1	5.2	3.9	2.5	2.3	2.7
4	2.2	3.0	3.2	8.0	5.1	5.7	5.7	4.8	3.0	2.4	1.9	2.7
5	2.3	3.0	3.2	5.9	4.8	5.0	5.4	4.3	3.0	2.2	2.0	2.7
6	2.4	3.0	3.2	5.4	4.7	4.8	5.2	4.5	2.8	2.2	2.1	2.5
7	3.5	2.9	3.2	4.7	4.6	4.6	5.1	4.7	2.2	2.9	e2.0	2.5
8	6.1	3.0	3.2	4.8	4.4	4.4	5.0	4.2	2.5	2.5	e2.2	2.5
9	3.8	3.1	3.4	4.7	4.5	4.6	4.9	4.4	2.5	2.1	2.3	2.6
10	2.8	3.1	3.2	4.5	4.3	4.6	4.8	4.5	2.5	2.1	2.3	2.6
11	2.7	3.5	3.2	4.4	4.3	4.4	4.9	4.4	2.8	2.2	2.2	2.5
12	2.7	3.2	3.2	4.3	4.2	4.3	4.9	4.4	2.7	2.5	2.2	2.4
13	2.6	3.2	6.2	4.2	4.2	4.3	5.0	4.5	2.5	2.4	2.2	2.5
14	2.6	3.4	4.2	4.2	4.2	4.8	5.0	4.4	2.3	2.4	2.1	2.5
15	2.6	3.8	3.7	4.5	4.1	4.8	6.1	4.3	2.5	2.3	2.3	2.6
16	2.6	3.5	4.2	4.2	4.1	4.5	5.4	4.3	2.8	2.3	2.2	2.7
17	2.6	3.7	3.7	4.3	4.2	4.4	5.2	4.3	2.6	2.2	2.2	2.8
18	2.6	3.3	3.6	5.4	5.5	4.3	5.2	4.2	2.2	2.3	2.2	2.8
19	2.6	3.2	3.5	5.0	6.0	4.2	5.2	4.4	2.1	2.3	2.2	2.8
20	2.6	3.2	3.5	4.7	7.9	4.1	5.4	3.9	2.4	2.3	2.4	2.8
21	2.6	3.2	3.4	4.5	6.4	5.4	5.5	4.0	2.3	2.3	2.2	2.9
22	2.6	3.2	3.3	4.4	5.5	4.8	5.3	4.0	2.2	2.4	2.2	2.9
23	2.6	3.2	3.5	6.9	5.0	4.5	5.4	3.8	2.2	2.5	2.3	3.0
24	2.7	3.2	6.6	19	4.9	4.4	4.1	3.8	2.3	2.5	2.6	3.0
25	2.7	3.2	5.9	9.3	4.7	4.3	4.7	e4.2	3.0	2.5	2.6	3.0
26	2.7	3.3	4.7	6.5	4.6	4.2	5.2	e4.8	2.6	2.4	2.5	3.0
27	2.7	3.2	4.3	5.7	4.4	4.1	5.5	e4.2	2.4	2.4	2.7	3.2
28	2.7	3.2	4.1	5.2	4.4	4.0	7.1	4.0	2.4	2.5	2.7	3.8
29	2.8	3.2	4.1	4.9	---	4.0	7.4	3.9	2.7	2.5	2.7	6.4
30	2.8	3.2	3.9	5.0	---	3.9	50	3.8	2.4	2.3	2.7	8.7
31	2.8	---	3.8	4.7	---	3.9	---	3.7	---	2.3	2.7	---
TOTAL	85.4	95.8	118.8	179.0	139.2	139.2	214.3	139.9	78.8	73.6	72.0	92.5
MEAN	2.75	3.19	3.83	5.77	4.97	4.49	7.14	4.51	2.63	2.37	2.32	3.08
MAX	6.1	3.8	6.6	19	7.9	5.7	50	9.6	3.9	2.9	2.7	8.7
MIN	2.1	2.8	3.2	3.8	4.1	3.9	4.1	3.7	2.1	2.1	1.9	2.4
CFSM	.38	.44	.53	.80	.69	.63	.99	.63	.37	.33	.32	.43
IN.	.44	.50	.62	.93	.72	.72	1.11	.72	.41	.38	.37	.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1999, BY WATER YEAR (WY)

	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	9.40	7.75	8.71	11.5	13.8	14.2	11.5	7.55	6.69
MAX	36.1	16.9	15.8	21.0	25.1	35.2	24.2	15.2	24.4
(WY)	1991	1993	1984	1993	1990	1993	1997	1990	1992
MIN	2.75	3.19	3.83	4.97	4.97	4.49	3.60	2.86	1.61
(WY)	1999	1999	1999	1986	1999	1999	1986	1986	1986

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

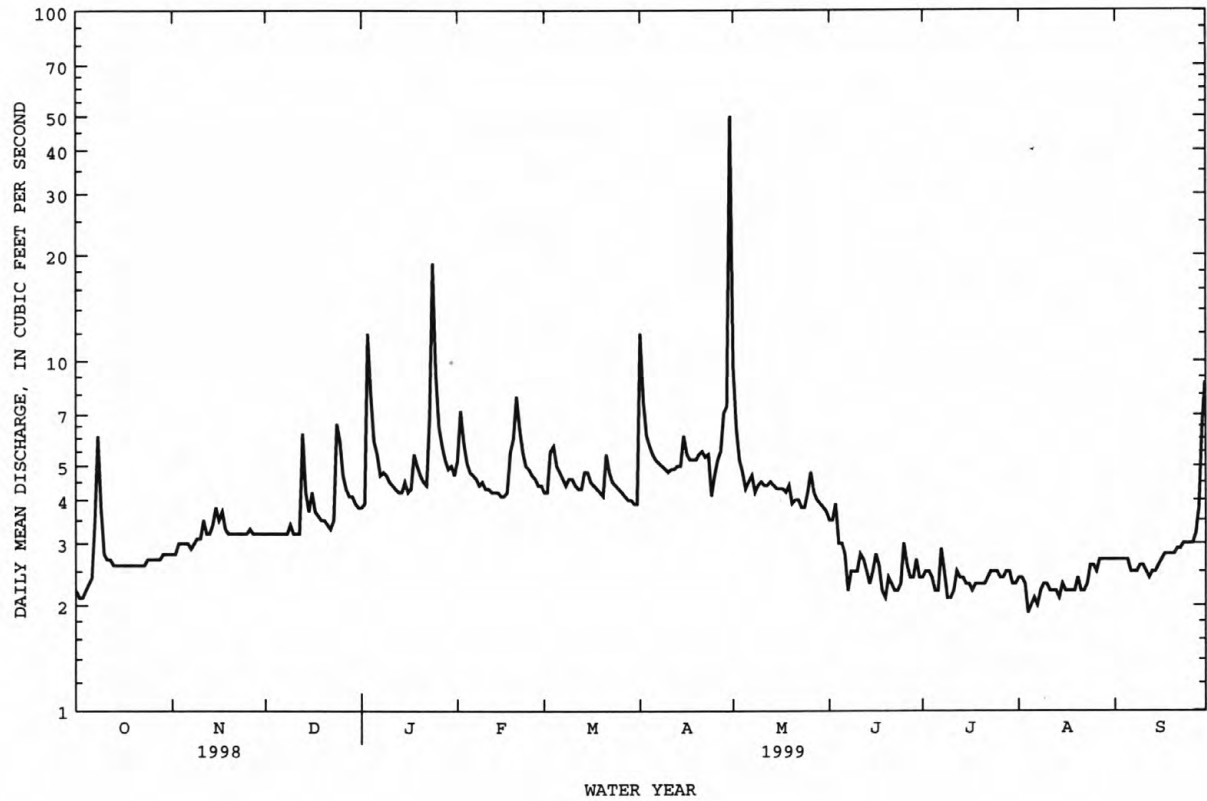
WATER YEARS 1984 - 1999

ANNUAL TOTAL	2568.7	1428.5	
ANNUAL MEAN	7.04	3.91	8.70
HIGHEST ANNUAL MEAN			13.1
LOWEST ANNUAL MEAN			3.91
HIGHEST DAILY MEAN	136	50	387
LOWEST DAILY MEAN	2.1	1.9	.82
ANNUAL SEVEN-DAY MINIMUM	2.1	2.1	.99
INSTANTANEOUS PEAK FLOW		123	1480*
INSTANTANEOUS PEAK STAGE		5.08	9.20
INSTANTANEOUS LOW FLOW		NOT DETERMINED	.67
ANNUAL RUNOFF (CFSM)	.98	.55	1.21
ANNUAL RUNOFF (INCHES)	13.31	7.40	16.47
10 PERCENT EXCEEDS	10	5.4	12
50 PERCENT EXCEEDS	4.5	3.4	5.6
90 PERCENT EXCEEDS	2.5	2.3	3.0

e Estimated.

\* See REMARKS.

0214253830 NORWOOD CREEK NEAR TROUTMAN, NC--Continued



## SANTÉE RIVER BASIN

02142651 CRN24

LOCATION.--Lat 35°27'49", long 80°52'36", Mecklenburg County, Hydrologic Unit 03050103, McDowell Creek at Westmoreland Road near Cornelius, NC.

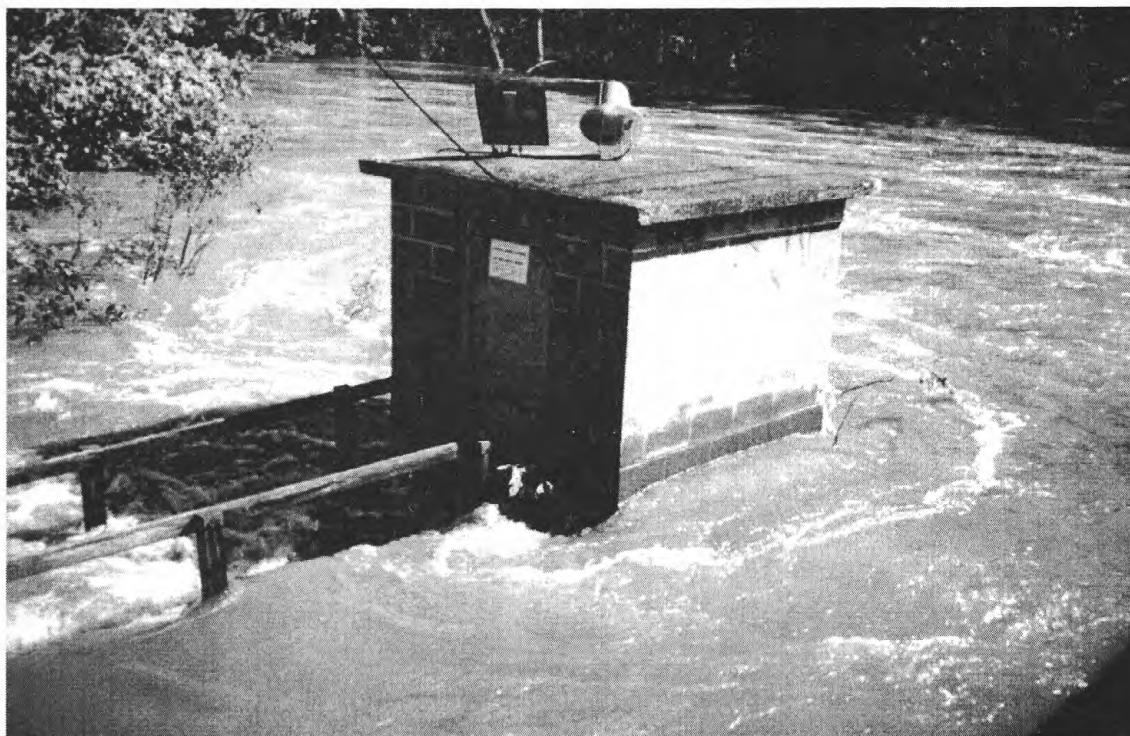
PERIOD OF RECORD.-- May 1994 to current year. Records for period May 1994 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.96	.00	.28	.00	.00	.00	.06	.00
2	.00	.23	.00	.02	.03	.00	.00	.00	.01	.00	.00	.00
3	.00	.35	.00	.14	.00	.31	.00	.00	.01	.00	.00	.00
4	.06	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
5	.06	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.93
6	.00	.00	.00	.00	.00	.02	.00	.03	.00	.00	.00	.01
7	.18	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00
8	.17	.00	.01	.06	.00	.00	.00	.00	.00	.00	.46	.00
9	.00	.02	.01	.02	.00	.13	.00	.00	.00	.00	.01	.06
10	.00	.04	.00	.00	.00	.13	.00	.00	.16	.03	.00	.00
11	.00	.09	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00
12	.00	.00	.15	.00	.00	.00	.00	.00	.00	.28	.00	.00
13	.00	.00	1.01	.00	.00	.01	.00	.00	.00	.02	.00	.00
14	.00	.50	.00	.11	.00	.19	.00	.00	.00	.02	.00	.00
15	.00	.02	.43	.19	.00	.06	.36	.00	.50	.00	.00	.46
16	.00	.28	.14	.00	.00	.00	.00	.00	1.30	.00	.00	.09
17	.00	.01	.00	.39	.12	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.15	.36	.00	.00	.66	.00	.00	.00	.00
19	.00	.00	.03	.00	.44	.00	.00	.11	.00	.00	.00	.00
20	.00	.00	.00	.00	.32	.00	.00	.00	.03	.00	.14	.00
21	.00	.00	.00	.00	.00	.67	.00	.00	.00	.00	.00	.04
22	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.07	1.04	.00	.00	.00	.00	.00	.00	.12	.00
24	.00	.00	.11	.59	.00	.00	.00	.00	.01	1.34	.32	.00
25	.00	.07	.05	.00	.00	.02	.00	.00	1.65	.01	.29	.00
26	.00	.04	.01	.00	.00	.00	.01	.05	.16	.00	.18	.00
27	.00	.00	.00	.00	.00	.00	.56	.00	.00	.00	.01	.23
28	.00	.00	.13	.00	.03	.00	.44	.00	.36	.00	.00	1.32
29	.00	.00	.02	.00	---	.00	1.09	.00	.01	.00	.00	.41
30	.00	.00	.00	.02	---	.00	.79	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.05	---	.00	---	.05	.00	---
TOTAL	0.47	1.65	2.20	2.73	2.26	1.59	3.56	0.88	4.20	1.96	1.59	3.55



The USGS gage house on the Tar River at N.C. 97 near Rocky Mount, N.C., September 1999.



0214266000 MCDOWELL CREEK NEAR CHARLOTTE, NC

LOCATION.--Lat 35°23'22", long 80°55'16", Mecklenburg County, Hydrologic Unit 03050101, on right bank at downstream side of bridge on Secondary Road 2074, 2.1 mi downstream of Torrence Creek, 2.8 mi south of Hicks Crossroads, 12.1 mi northwest of city hall, Charlotte.

DRAINAGE AREA.--26.3-mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1996 to current year. Streamflow data for November 1996 through September 1997 previously published in U.S. Geological Survey Open-File Report 98-67.

GAGE.--Water-stage recorder. Elevation of gage is 635 ft above sea level, from topographic map. Telephone telemetry at site.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Minimum discharge for current water year also occurred Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	3.5	3.4	5.5	59	12	17	25	4.5	e6.0	e2.6	1.5
2	4.4	3.2	3.6	7.5	105	11	11	15	4.4	5.8	e2.4	1.7
3	3.2	17	3.4	186	26	16	9.7	12	4.8	5.6	e1.9	1.3
4	5.0	4.7	3.3	23	19	14	9.6	11	4.5	5.7	1.8	.69
5	5.4	4.0	3.5	13	15	11	9.4	10	4.1	5.3	2.0	12
6	5.1	3.3	3.4	11	14	11	8.3	10	3.7	5.2	1.8	6.9
7	4.2	3.3	3.4	10	12	11	8.5	10	4.0	5.3	1.5	2.2
8	12	3.5	2.8	11	12	11	8.5	9.9	4.3	6.2	1.6	2.2
9	4.6	3.7	3.2	9.8	12	15	8.5	8.5	4.3	5.1	9.1	1.8
10	4.3	3.4	3.5	8.4	11	13	8.3	8.6	5.5	5.1	2.2	2.2
11	4.1	5.5	3.2	8.6	10	11	7.8	8.6	6.3	4.8	1.8	1.4
12	4.1	4.7	3.5	8.9	10	10	7.5	8.7	4.4	6.0	2.6	1.3
13	4.7	3.8	50	7.7	10	10	6.3	8.4	4.2	8.6	1.7	1.3
14	4.1	4.7	10	8.0	9.3	14	6.6	8.3	3.9	5.3	1.8	1.3
15	3.5	15	5.3	16	9.1	14	12	8.6	11	4.8	1.3	3.4
16	3.4	9.5	32	8.9	9.5	11	8.5	7.9	56	5.5	1.7	9.3
17	2.7	9.6	6.3	10	9.9	10	7.0	7.4	18	4.5	1.3	1.3
18	3.6	4.2	4.8	49	23	9.9	7.1	7.3	7.3	4.0	1.8	1.5
19	3.6	3.7	4.8	16	50	8.8	7.1	24	5.9	4.5	1.4	.83
20	3.6	4.2	4.1	12	80	9.1	7.1	7.4	5.6	3.7	2.9	1.3
21	3.4	4.3	4.2	10	29	37	6.5	6.4	6.6	3.9	2.7	1.5
22	4.3	3.3	4.8	9.2	18	15	6.1	6.1	5.8	3.6	1.8	1.1
23	5.3	3.4	9.7	85	15	12	6.4	6.0	5.1	3.6	1.8	.64
24	3.3	4.2	101	176	13	11	6.1	5.6	4.9	e5.4	3.2	1.1
25	3.2	4.0	27	35	13	11	6.1	5.5	e9.5	e4.3	12	.59
26	3.9	6.3	12	18	12	10	5.8	6.0	e23	e3.2	2.2	.69
27	3.5	3.6	7.7	15	12	9.3	8.0	5.8	e15	e3.1	3.0	3.3
28	3.2	4.0	6.6	13	13	9.7	32	5.2	e10	e3.0	1.8	42
29	3.5	3.6	10	12	---	9.0	23	5.0	e8.0	e2.8	1.2	47
30	2.7	3.2	7.5	11	---	8.7	193	5.0	e7.0	e2.7	1.3	7.2
31	2.9	---	6.4	10	---	9.0	---	4.6	---	e2.6	1.3	---
TOTAL	128.8	154.4	354.4	824.5	630.8	374.5	468.8	277.8	261.6	145.2	77.5	160.54
MEAN	4.15	5.15	11.4	26.6	22.5	12.1	15.6	8.96	8.72	4.68	2.50	5.35
MAX	12	17	101	186	105	37	193	25	56	8.6	12	47
MIN	2.7	3.2	2.8	5.5	9.1	8.7	5.8	4.6	3.7	2.6	1.2	.59
CFSM	.16	.20	.43	1.01	.86	.46	.59	.34	.33	.18	.10	.20
IN.	.18	.22	.50	1.17	.89	.53	.66	.39	.37	.21	.11	.23

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1999, BY WATER YEAR (WY)

	MEAN	20.2	22.9	30.5	51.8	52.4	32.8	29.4	19.8	10.0	13.1	5.56	12.4
MAX	36.3	40.7	48.9	94.0	73.3	48.0	37.9	27.4	10.9	27.9	7.40	24.0	
(WY)	1998	1998	1998	1998	1998	1998	1997	1997	1997	1997	1998	1997	
MIN	4.15	5.15	11.4	26.6	22.5	12.1	15.6	8.96	8.72	4.68	2.50	5.35	
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

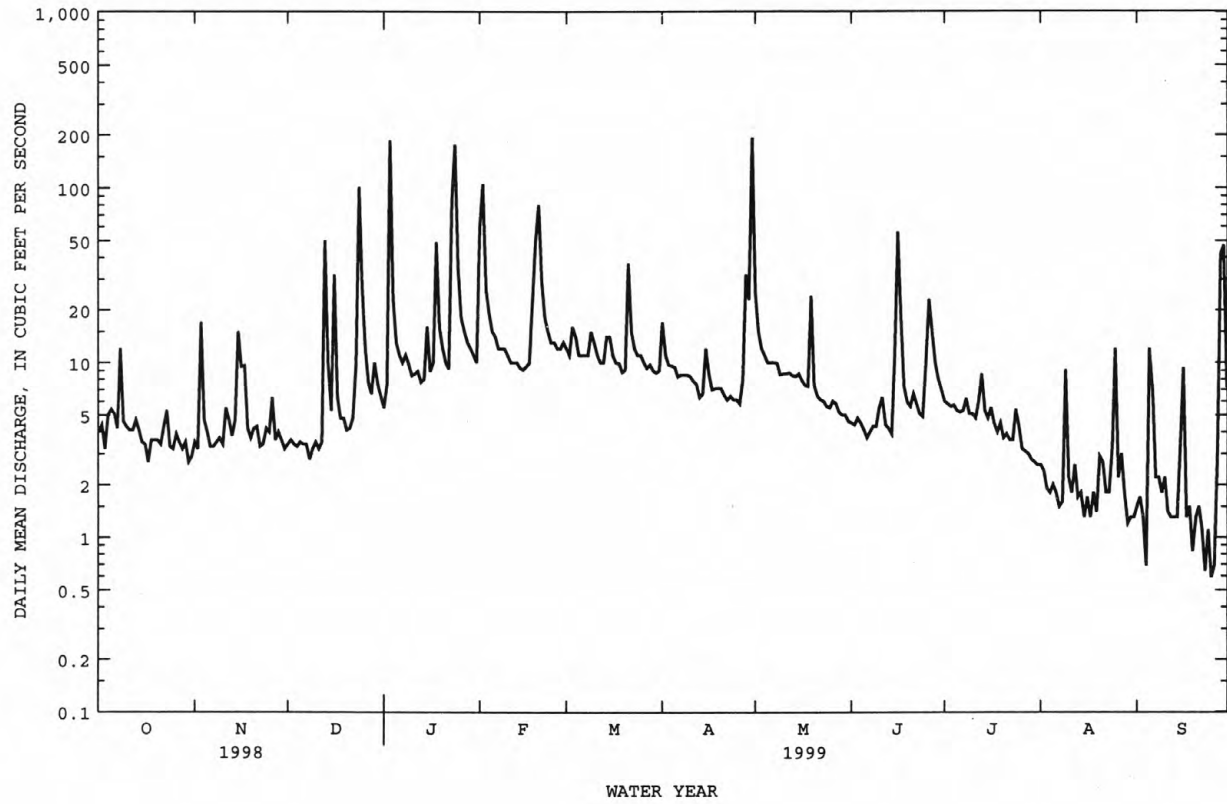
## WATER YEARS 1997 - 1999

ANNUAL TOTAL	9828.7	3858.84	
ANNUAL MEAN	26.9	10.6	23.2
HIGHEST ANNUAL MEAN			35.8
LOWEST ANNUAL MEAN			10.6
HIGHEST DAILY MEAN	410	193	477
LOWEST DAILY MEAN	2.7	.59	.59
ANNUAL SEVEN-DAY MINIMUM	3.2	.99	.99
INSTANTANEOUS PEAK FLOW		445	995
INSTANTANEOUS PEAK STAGE		8.33	11.11
INSTANTANEOUS LOW FLOW		.29*	.29
ANNUAL RUNOFF (CFSM)	1.02	.40	.88
ANNUAL RUNOFF (INCHES)	13.90	5.46	11.97
10 PERCENT EXCEEDS	52	15	46
50 PERCENT EXCEEDS	10	6.0	12
90 PERCENT EXCEEDS	3.5	1.8	3.5

e Estimated.

\* See REMARKS.

0214266000 MCDOWELL CREEK NEAR CHARLOTTE, NC--Continued



## SANTEE RIVER BASIN

0214266000 MCDOWELL CREEK NEAR CHARLOTTE--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.-- November 1996 to current year. Records for period November 1996 to September 1998 published in USGS OFR 98-67, and 99-273.

INSTRUMENTATION.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.19	.00	.33	.00	.00	.00	.00	.00
2	.00	.53	.00	.09	.01	.00	.00	.00	.01	.00	.00	.00
3	.00	.25	.00	.03	.00	.33	.00	.00	.01	.00	.00	.00
4	.26	.00	.00	.00	.01	.00	.02	.00	.00	.00	.00	.00
5	.02	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.67
6	.01	.00	.00	.00	.00	.02	.00	.03	.00	.00	.00	.01
7	.25	.00	.00	.00	.00	.00	.00	.01	.00	.10	.00	.00
8	.20	.00	.00	.11	.00	.00	.00	.00	.00	.00	.49	.00
9	.00	.01	.00	.02	.00	.27	.00	.00	.25	.00	.00	.09
10	.00	.03	.00	.00	.00	.08	.00	.00	1.06	.00	.00	.00
11	.00	.09	.00	.00	.00	.00	.00	.00	.01	.05	.00	.00
12	.00	.00	.17	.00	.00	.00	.00	.00	.00	.45	.00	.00
13	.00	.00	1.09	.00	.00	.01	.00	.03	.00	.00	.00	.00
14	.00	.61	.00	.15	.00	.23	.00	.00	.00	.04	.00	.00
15	.00	.02	.48	.15	.00	.05	.27	.00	.44	.00	.00	.47
16	.00	.38	.14	.00	.00	.00	.00	.00	1.63	.00	.00	.13
17	.00	.01	.00	.47	.13	.00	.00	.00	.01	.01	.00	.00
18	.00	.00	.00	.27	.35	.00	.00	.76	.00	.00	.00	.00
19	.00	.00	.02	.00	.51	.00	.00	.13	.00	.00	.00	.00
20	.00	.00	.00	.00	.81	.00	.00	.00	.04	.00	.26	.00
21	.00	.00	.04	.00	.00	.57	.00	.00	.00	.00	.00	.18
22	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.38	1.14	.00	.00	.00	.00	.00	.00	.08	.00
24	.00	.00	.34	.33	.00	.00	.00	.00	.00	1.21	.56	.00
25	.00	.31	.05	.00	.00	.04	.00	.00	1.89	.01	.16	.00
26	.00	.01	.00	.00	.00	.00	.03	.12	.47	.00	.11	.00
27	.00	.00	.00	.00	.00	.00	.82	.00	.00	.00	.00	.31
28	.00	.00	.16	.00	.10	.00	.22	.00	.06	.00	.00	2.01
29	.00	.00	.04	.01	---	.00	.83	.00	.01	.15	.00	.23
30	.00	.00	.00	.03	---	.00	.88	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.04	---	.00	---	.02	.00	---
TOTAL	0.74	2.25	2.93	2.80	3.11	1.64	3.40	1.12	5.89	2.04	1.66	4.11

0214266075 CRN25

LOCATION.--Lat 35°21'55", long 80°53'12", Mecklenburg County, Hydrologic Unit 03050103, Gar Creek at McCoy Road near Oakdale, NC.

PERIOD OF RECORD.--April 1994 to current year. Records for period April 1994 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.99	.00	.33	.00	.00	.00	.00	.00
2	.00	.39	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
3	.00	.36	.00	.09	.00	.22	.00	.00	.01	.08	.00	.00
4	.30	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
5	.35	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.65
6	.00	.00	.00	.00	.00	.02	.00	.03	.00	.04	.00	.02
7	.36	.00	.00	.00	.00	.00	.00	.04	.00	.10	.38	.00
8	.19	.00	.00	.09	.00	.00	.00	.00	.00	.01	.25	.00
9	.00	.00	.01	.02	.00	.18	.00	.00	.00	.00	.01	.63
10	.00	.03	.00	.00	.00	.07	.00	.00	.89	.06	.00	.00
11	.00	.06	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00
12	.00	.00	.13	.00	.00	.00	.00	.00	.00	.32	.00	.00
13	.00	.00	1.18	.00	.00	.01	.00	.02	.00	.02	.00	.00
14	.00	.56	.00	.10	.00	.25	.00	.00	.00	.02	.11	.00
15	.00	.03	.47	.20	.00	.03	.21	.00	.49	.00	.01	.53
16	.00	.41	.13	.00	.00	.00	.00	.00	1.20	.00	.00	.10
17	.00	.01	.01	.46	.08	.00	.00	.00	.01	.00	.00	.00
18	.00	.00	.00	.09	.37	.00	.00	.46	.00	.00	.00	.00
19	.00	.00	.01	.00	.49	.00	.00	.14	.00	.00	.00	.00
20	.00	.00	.00	.00	.20	.00	.00	.00	.01	.00	.17	.00
21	.00	.00	.02	.00	.00	.40	.00	.00	.01	.00	.00	.22
22	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.12	.93	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.01	.37	.00	.00	.00	.00	.00	1.02	.43	.00
25	.00	.19	.03	.00	.00	.04	.00	.00	1.22	.01	.47	.00
26	.00	.05	.00	.00	.00	.00	.01	.16	.69	.00	.02	.00
27	.00	.00	.00	.00	.00	.00	.73	.00	.01	.00	.01	.29
28	.00	.00	.16	.00	.08	.00	.22	.00	.00	.00	.00	2.46
29	.00	.00	.02	.01	---	.00	.69	.00	.00	.15	.00	.60
30	.00	.00	.00	.02	---	.00	.91	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.00	.00	---
TOTAL	1.20	2.09	2.33	2.41	2.24	1.23	3.10	0.90	4.54	1.88	1.86	5.51

## SANTÉE RIVER BASIN

0214267600 CRN35

LOCATION.--Lat 35°20'03", long 80°59'12", Gaston County, Hydrologic Unit 03050103, Catawba River at Mountain Island Dam, Mount Holly, NC.

PERIOD OF RECORD.--January 1996 to current year. Records for period January 1996 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.03	.00	.41	.00	.00	.00	.00	.00
2	.00	.48	.00	.06	.01	.00	.00	.00	.07	.00	.00	.00
3	.00	.25	.00	.04	.00	.25	.00	.00	.01	.00	.00	.00
4	.37	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
5	.22	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.66
6	.00	.00	.00	.00	.00	.02	.00	.03	.00	.00	.00	.01
7	.34	.00	.00	.00	.00	.00	.00	.03	.00	.37	.00	.00
8	.22	.00	.00	.11	.00	.00	.00	.00	.00	.01	.07	.00
9	.00	.01	.00	.02	.00	.29	.00	.00	.27	.00	.00	.22
10	.00	.02	.00	.00	.00	.00	.00	.00	.66	.00	.00	.00
11	.00	.06	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00
12	.00	.00	.13	.00	.00	.00	.00	.00	.00	.24	.00	.00
13	.00	.00	1.09	.00	.00	.01	.00	.06	.00	.01	.00	.00
14	.00	.60	.00	.14	.00	.22	.00	.00	.00	.02	.00	.00
15	.00	.02	.45	.13	.00	.04	.25	.00	.48	.00	.00	.21
16	.00	.45	.08	.00	.00	.00	.00	.00	1.30	.00	.00	.10
17	.00	.00	.00	.45	.14	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.19	.32	.00	.00	.59	.00	.00	.00	.00
19	.00	.00	.02	.00	1.07	.00	.00	.10	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.14	.00
21	.00	.00	.05	.00	.00	.58	.00	.00	.00	.00	.00	.28
22	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.11	1.26	.00	.00	.00	.00	.00	.00	.01	.00
24	.00	.00	.23	.29	.00	.00	.00	.00	.00	1.49	.40	.00
25	.00	.39	.05	.00	.00	.03	.00	.00	1.83	.00	.04	.00
26	.00	.03	.00	.00	.00	.00	.08	.21	.01	.00	.10	.00
27	.00	.00	.00	.00	.00	.00	.79	.00	.00	.00	.00	.76
28	.00	.00	.12	.00	.05	.00	.17	.00	.00	.00	.00	.64
29	.00	.00	.03	.00	---	.00	.56	.00	---	.10	.00	.13
30	.00	.00	.00	.02	---	.00	.81	.00	---	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.00	.00	---
TOTAL	1.15	2.31	2.42	2.71	2.63	1.46	3.07	1.10	---	2.30	0.76	3.01



Vehicles inundated by flood waters of the Tar River near Tarboro, N.C. at U.S. highway 64, September 1999.



## SANTEE RIVER BASIN

0214269560 KILLIAN CREEK NEAR MARIPOSA, NC

LOCATION.--Lat 35°26'03", long 81°01'49", Lincoln County, Hydrologic Unit 03050102, on right bank, 1,000 ft upstream from Forney Creek, 1.5 mi northwest of Lowesville, 1.7 mi upstream from bridge on Secondary Road 1511, and 2.4 mi northeast of Mariposa.

DRAINAGE AREA.--36.4 mi<sup>2</sup>.

PERIOD OF RECORD.-- October 1990 to June 1993, December 1994 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 643.085 ft above sea level (levels by Duke Power Co). Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Station was established to study low-flow conditions for Duke Power Co., no structure exists near the site for measuring high-stage flow; therefore, a peak flow was not determined to coincide with the peak stage for the year. Missing values on the daily values table are days when the flow exceeded the rating. Minimum discharges may be affected by diversions by Duke Power. Minimum discharge for current water year also occurred Aug. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	9.6	12	16	---	22	---	---	12	12	4.8	2.3
2	6.0	9.3	12	16	---	22	43	42	12	11	3.7	2.2
3	6.8	14	11	---	40	25	32	35	14	10	4.0	1.7
4	7.5	12	12	e43	31	30	28	31	13	9.7	4.6	1.2
5	11	11	12	31	26	24	27	28	12	8.6	5.7	2.6
6	9.9	10	12	29	24	23	24	28	12	7.0	5.4	5.1
7	11	10	13	21	23	22	24	27	10	8.0	4.6	4.4
8	28	11	13	21	22	21	23	26	9.1	12	4.4	3.7
9	12	11	13	21	21	24	22	23	8.5	9.7	5.7	3.6
10	10	11	12	19	20	24	21	22	7.9	8.6	5.0	7.3
11	9.6	12	12	19	20	23	20	20	12	9.4	4.4	4.4
12	9.6	12	12	18	19	22	19	20	11	12	3.9	3.3
13	9.5	11	29	18	18	21	19	20	10	15	3.1	3.0
14	9.4	12	22	17	18	24	19	20	9.0	12	2.5	2.8
15	9.3	17	16	19	18	26	22	20	15	11	2.2	3.6
16	9.0	14	28	17	18	23	21	19	23	10	2.1	4.0
17	9.4	17	19	17	18	22	18	18	24	9.0	2.0	3.0
18	9.1	13	16	27	28	22	18	18	14	8.9	1.5	2.5
19	9.3	13	16	25	29	21	17	34	12	7.6	1.1	2.5
20	9.4	13	15	22	52	20	17	20	12	6.6	1.8	2.5
21	9.1	12	15	20	43	34	17	18	12	6.2	3.9	2.6
22	8.8	12	15	19	33	30	17	17	12	7.1	2.7	3.9
23	8.6	12	15	---	28	26	16	17	11	5.7	2.4	2.4
24	9.0	12	35	---	27	24	16	16	11	5.6	5.4	2.2
25	9.2	12	37	---	25	24	15	15	17	8.5	6.5	2.3
26	9.3	13	23	36	24	24	15	15	24	5.7	5.4	2.0
27	9.5	12	20	28	24	22	18	16	19	5.0	9.2	3.7
28	9.6	12	18	25	26	22	30	15	14	4.9	5.0	7.5
29	9.4	12	18	23	---	21	28	14	20	3.9	4.3	---
30	9.3	12	17	22	---	18	---	14	14	4.6	3.3	17
31	9.3	---	16	21	---	20	---	13	---	4.2	2.9	---
TOTAL	303.9	363.9	536	610	675	726	606	641	406.5	259.5	123.5	109.3
MEAN	9.80	12.1	17.3	22.6	26.0	23.4	21.6	21.4	13.6	8.37	3.98	3.77
MAX	28	17	37	43	52	34	43	42	24	15	9.2	17
MIN	6.0	9.3	11	16	18	15	13	7.9	3.9	1.1	1.2	1.2
CFSM	.27	.33	.48	.62	.71	.64	.59	.59	.37	.23	.11	.10
IN.	.31	.37	.55	.62	.69	.74	.62	.66	.42	.27	.13	.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1999, BY WATER YEAR (WY)

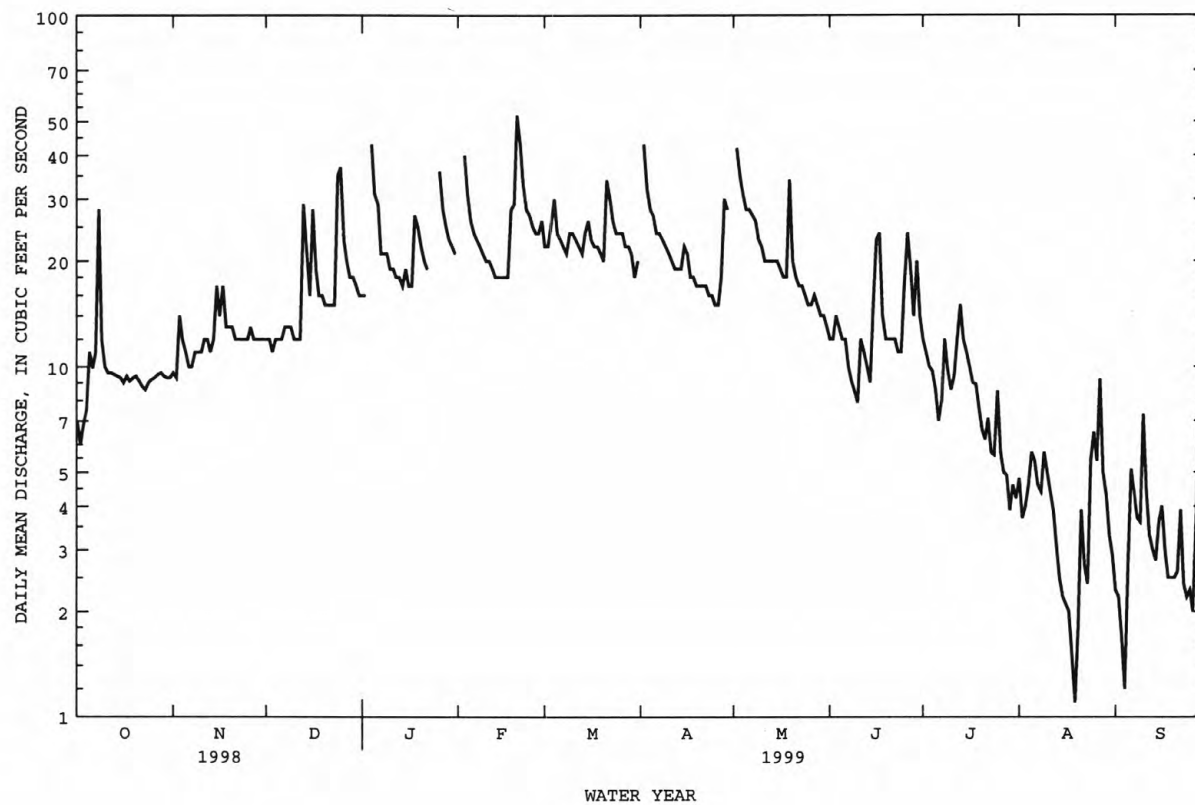
	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	19.2	26.3	29.5	37.9	39.5	45.8	42.0	34.0	27.6
MAX	31.1	51.0	47.7	61.7	60.0	96.6	64.4	49.4	48.8
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1992
MIN	9.80	12.1	17.3	22.6	24.5	23.4	21.6	21.4	13.6
(WY)	1999	1999	1999	1999	1992	1999	1999	1999	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1991 - 1999
ANNUAL MEAN	25.1	15.1	28.9
LOWEST DAILY MEAN	6.0 Oct 2	1.1 Aug 19	1.1 Aug 19 1999
INSTANTANEOUS PEAK STAGE		5.41 Apr 30	15.25 Apr 29 1997
INSTANTANEOUS LOW FLOW		.90* Aug 18	.90 Aug 18 1999

e Estimated.

\* See REMARKS.

0214269560 KILLIAN CREEK NEAR MARIPOSA, NC--Continued



## SANTÉE RIVER BASIN

02142900 LONG CREEK NEAR PAW CREEK, NC

LOCATION.--Lat 35°19'42", long 80°54'35", Mecklenburg County, Hydrologic Unit 03050101, on right bank at upstream side of bridge on Secondary Road 2042, 600 ft downstream of McIntyre Creek, 1.2 mi upstream from Gutter Branch, and 3.6 mi north of Paw Creek.

DRAINAGE AREA.--16.4 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1965 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 648.7 ft above sea level. Telephone telemetry at station.

REMARKS.--Records fair, except those for estimated daily discharges, which are poor. Frequent diversions during summer months for irrigation by upstream golf course. Minimum discharge for current water year and period of record affected by regulation. Minimum discharge for current water year was not determined and may have occurred during period of estimated record.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	1.1	2.3	4.5	42	6.5	29	23	2.4	2.5	2.0	e.61
2	1.2	1.7	2.2	4.7	55	5.5	15	14	2.6	1.8	e1.4	e.62
3	1.1	24	2.2	186	16	10	12	10	2.1	6.5	e1.1	e.51
4	6.5	3.8	2.3	14	11	8.9	12	8.2	1.8	4.5	e1.0	e.64
5	12	2.4	2.2	7.2	8.4	5.7	10	7.6	2.0	1.5	e1.1	e4.0
6	2.4	2.1	2.2	5.4	7.2	5.5	9.1	7.8	1.7	39	e1.0	8.6
7	1.9	2.0	2.2	5.0	6.5	5.1	8.8	9.0	1.5	23	e1.4	1.9
8	10	2.1	2.1	5.1	5.8	4.6	7.6	7.1	1.2	5.1	3.2	1.2
9	3.5	2.2	2.0	4.8	5.3	8.8	7.5	5.5	2.7	2.5	4.8	1.8
10	1.6	2.1	1.9	4.0	4.9	8.6	6.2	5.1	5.9	1.7	3.1	2.5
11	1.4	2.3	2.0	3.6	4.5	5.7	6.2	4.7	16	1.8	2.9	e.63
12	1.2	2.6	2.0	3.5	4.4	5.1	7.4	4.7	3.9	2.6	e2.0	e.59
13	1.2	2.1	53	3.4	4.1	4.8	5.2	4.7	2.8	11	e1.3	e.55
14	1.1	2.5	13	3.4	4.3	14	5.2	5.3	2.2	4.1	e.70	e.53
15	.98	20	5.5	12	3.7	18	13	4.6	12	3.4	e1.0	e.70
16	1.1	13	37	4.7	3.6	8.7	11	4.3	52	2.8	e1.0	25
17	1.2	13	8.8	9.7	3.7	7.0	7.2	4.1	20	2.6	e.75	3.1
18	1.1	3.5	4.6	37	16	6.3	6.4	4.1	4.2	2.2	e.64	1.8
19	1.1	3.0	4.0	10	31	5.6	5.8	25	2.7	1.8	e.48	1.3
20	1.2	2.8	3.7	6.5	57	5.4	5.7	6.4	2.4	1.5	e1.3	.97
21	1.2	2.5	3.5	5.4	23	25	5.4	5.2	2.5	1.6	1.7	.74
22	.97	2.4	5.5	4.8	12	12	4.9	4.8	2.4	1.4	e.64	8.1
23	.89	2.4	14	120	9.1	8.8	4.8	4.4	2.2	e.92	e.90	1.6
24	.98	2.4	114	120	8.0	7.5	4.8	4.0	1.6	e20	1.1	.96
25	.97	2.4	34	24	7.4	6.9	4.6	3.6	31	12	21	.75
26	.85	3.2	13	11	7.0	7.7	4.6	6.1	32	2.4	2.7	.65
27	.91	2.4	8.7	8.8	6.6	6.3	12	4.7	24	1.7	3.9	5.7
28	.90	2.4	6.4	7.4	7.7	5.9	51	6.9	6.3	1.8	1.2	28
29	.87	2.3	13	6.2	---	5.8	19	3.5	3.2	2.3	.77	33
30	1.1	2.3	7.1	5.5	---	11	171	2.9	2.8	4.9	e.72	18
31	1.4	---	4.8	4.8	---	11	---	2.7	---	2.4	e.67	---
TOTAL	64.92	133.0	379.2	652.4	375.2	257.7	472.4	214.0	250.1	173.32	67.47	155.05
MEAN	2.09	4.43	12.2	21.0	13.4	8.31	15.7	6.90	8.34	5.59	2.18	5.17
MAX	12	24	114	186	57	25	171	25	52	39	21	33
MIN	.85	1.1	1.9	3.4	3.6	4.6	4.6	2.7	1.2	.92	.48	.51
CFSM	.13	.27	.75	1.28	.82	.51	.96	.42	.51	.34	.13	.32
IN.	.15	.30	.86	1.48	.85	.58	1.07	.49	.57	.39	.15	.35

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1999, BY WATER YEAR (WY)

	14.5	14.9	19.6	30.9	34.7	35.0	20.1	16.5	11.9	8.46	9.61	8.08
MEAN												
MAX	70.8	91.3	59.5	74.4	78.4	86.8	44.3	101	66.5	58.4	59.0	66.2
(WY)	1991	1986	1984	1993	1979	1993	1987	1975	1982	1997	1967	1975
MIN	1.48	2.42	2.53	4.04	8.92	8.31	4.38	3.60	1.68	1.08	1.44	1.27
(WY)	1984	1982	1966	1981	1968	1999	1967	1981	1986	1986	1987	1986

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

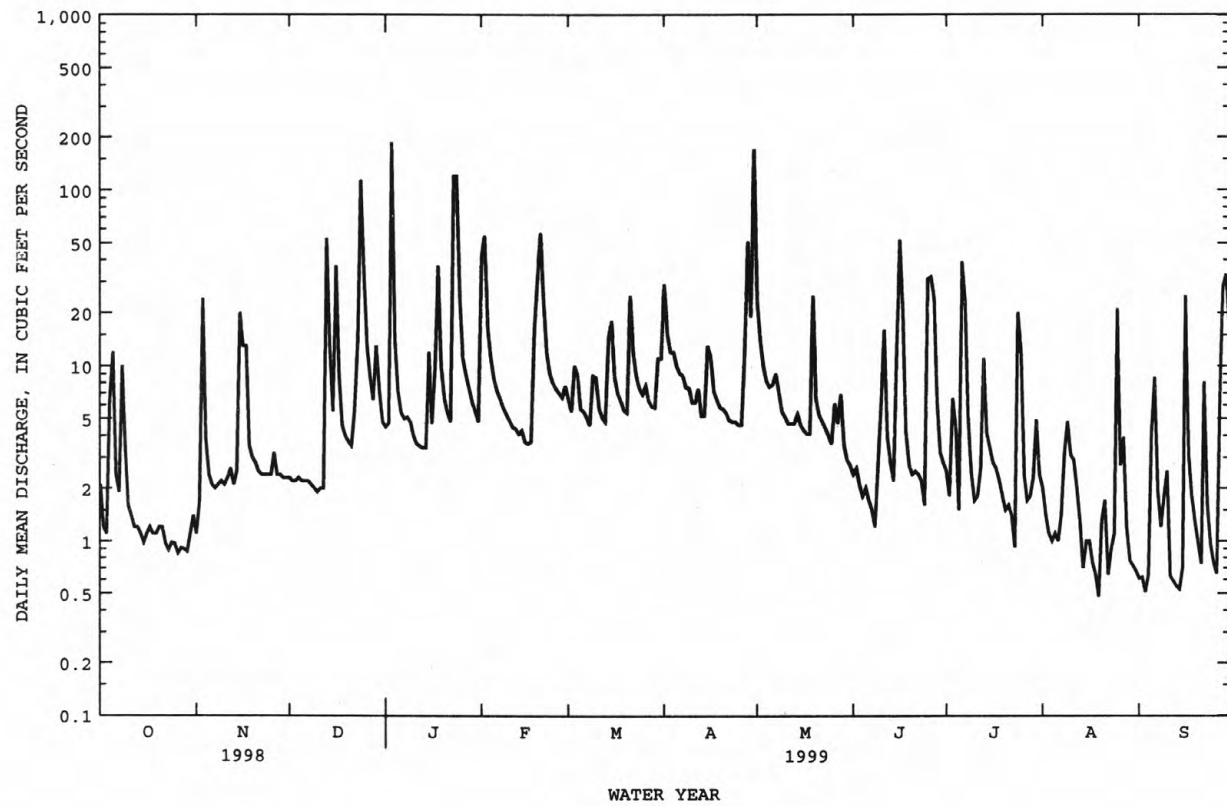
## WATER YEARS 1965 - 1999

ANNUAL TOTAL	7510.17	3194.76	
ANNUAL MEAN	20.6	8.75	18.6
HIGHEST ANNUAL MEAN			36.2
LOWEST ANNUAL MEAN			4.46
HIGHEST DAILY MEAN	473	186	1600
LOWEST DAILY MEAN	.85	.48*	.43*
ANNUAL SEVEN-DAY MINIMUM	.91	.65*	.49*
INSTANTANEOUS PEAK FLOW		797	4300
INSTANTANEOUS PEAK STAGE		8.51	13.45
INSTANTANEOUS LOW FLOW		NOT DETERMINED*	.35*
ANNUAL RUNOFF (CFSM)	1.25	.53	1.13
ANNUAL RUNOFF (INCHES)	17.04	7.25	15.37
10 PERCENT EXCEEDS	38	18	31
50 PERCENT EXCEEDS	7.2	4.4	6.8
90 PERCENT EXCEEDS	1.4	1.0	1.9

e Estimated.

\* See REMARKS.

02142900 LONG CREEK NEAR PAW CREEK, NC--Continued



## SANTEE RIVER BASIN

02142900 LONG CREEK NEAR PAW CREEK, NC--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.--March 1993 to current year. Records for period March 1993 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

INSTRUMENTATION.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.05	.00	.45	.00	.00	.00	.00	.00
2	.00	.42	.00	.07	.01	.00	.00	.00	.02	.00	.00	.00
3	.00	.49	.00	.18	.01	.25	.00	.00	.01	.00	.00	.00
4	.42	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
5	.08	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.72
6	.00	.00	.00	.00	.00	.03	.00	.04	.00	.19	.00	.01
7	.42	.00	.00	.00	.00	.00	.00	.03	.00	.23	.02	.00
8	.18	.00	.00	.10	.00	.00	.00	.00	.00	.01	.16	.00
9	.00	.01	.00	.02	.00	.27	.00	.00	.00	.00	.01	.20
10	.00	.03	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00
11	.00	.07	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00
12	.00	.00	.13	.00	.00	.00	.00	.00	.00	.30	.00	.00
13	.00	.00	1.24	.00	.00	.01	.00	.16	.00	.01	.00	.00
14	.00	.62	.00	.14	.00	.27	.00	.01	.00	.03	.00	.00
15	.00	.02	.51	.20	.00	.04	.28	.00	.48	.00	.00	.49
16	.00	.54	.11	.00	.00	.00	.00	.00	1.19	.00	.00	.11
17	.00	.00	.00	.48	.09	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.08	.39	.00	.00	.41	.00	.00	.00	.00
19	.00	.00	.02	.00	.71	.00	.00	.14	.00	.00	.00	.00
20	.00	.00	.01	.00	.41	.00	.00	.00	.05	.00	.24	.00
21	.00	.00	.01	.00	.00	.43	.00	.00	.00	.00	.01	.33
22	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.33	.95	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.66	.34	.00	.00	.00	.00	.00	1.89	.55	.00
25	.00	.20	.06	.00	.00	.06	.00	.00	.88	.00	.14	.00
26	.00	.02	.00	.00	.00	.00	.05	.20	.97	.00	.16	.00
27	.00	.00	.01	.00	.00	.00	.80	.00	.01	.00	.00	.37
28	.00	.00	.17	.01	.13	.00	.28	.00	.00	.00	.00	1.40
29	.00	.00	.04	.00	---	.00	.59	.00	.14	.45	.00	.35
30	.00	.00	.00	.03	---	.00	.94	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.01	.00	---
TOTAL	1.10	2.42	3.37	2.60	2.81	1.37	3.39	1.06	4.25	3.20	1.29	3.99



A flooded chicken farm near Chinquapin, N.C. along the Northeast Cape Fear River, September 1999.



0214291555 LONG CREEK NEAR RHYNE, NC

LOCATION.--Lat 35°18'03", long 80°55'24", Mecklenburg County, Hydrologic Unit 03050101, on right bank 1.6 mi downstream of Gum Branch, .6 mi upstream from bridge on NC Highway 27 and 5.5 mi northwest of Rhyne.

DRAINAGE AREA.--31.49 mi<sup>2</sup>.

PERIOD OF RECORD.-- October 1998 to September 1999.

GAGE.--Water-stage recorder. Datum of gage 610 ft above sea level, from topographic map. Telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records fair. Frequent diversions during summer months for irrigation by upstream golf course. Minimum discharge for current water year is affected by regulation. Maximum discharge for current water year from rating curve extended above 650 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	6.0	5.0	8.7	64	13	30	29	3.6	4.1	3.5	.94
2	3.9	6.6	4.9	11	142	11	15	14	3.5	3.5	3.2	1.0
3	3.5	30	4.1	312	33	14	11	11	3.5	3.5	2.9	.77
4	9.2	7.5	4.0	34	22	17	10	8.5	2.7	7.3	2.8	.84
5	13	5.5	3.9	19	17	12	9.5	9.0	3.2	2.9	2.7	7.4
6	5.3	4.9	3.8	15	15	11	8.9	9.0	3.1	11	2.0	11
7	4.7	4.5	4.2	14	14	11	8.9	8.9	2.9	50	2.5	3.3
8	15	4.7	4.0	13	13	10	8.1	8.6	2.8	6.8	2.9	2.6
9	7.5	4.7	3.7	12	12	13	8.1	7.1	2.7	4.0	3.9	1.9
10	4.2	5.0	3.2	11	12	17	7.9	6.6	5.0	3.4	2.9	3.7
11	3.5	4.4	3.2	10	11	12	7.8	5.8	15	3.3	2.5	2.0
12	3.3	3.7	3.5	10	11	11	10	5.8	4.4	4.0	2.4	1.3
13	3.5	4.2	66	9.8	10	11	7.5	7.2	3.1	10	2.0	.74
14	4.5	8.4	19	9.5	10	15	7.1	7.2	2.6	4.8	1.3	.84
15	3.3	20	11	20	10	27	11	6.1	9.6	3.6	1.5	.90
16	3.0	9.2	49	12	9.6	14	9.5	5.6	63	3.1	1.4	22
17	4.0	18	13	15	9.7	11	7.5	5.5	29	2.8	1.0	4.2
18	4.2	5.9	8.6	66	24	11	7.2	5.4	6.5	2.5	1.1	2.4
19	4.1	4.3	7.5	23	55	11	6.5	25	4.5	2.3	.94	1.6
20	3.6	5.0	7.3	16	143	11	6.7	7.5	4.0	2.1	1.4	.96
21	3.7	4.5	7.2	14	51	30	6.8	5.7	4.2	2.0	3.2	1.6
22	3.9	3.8	7.8	13	26	16	6.5	5.5	4.2	1.8	1.9	6.0
23	3.7	3.8	16	143	19	12	6.0	5.4	3.6	1.9	1.4	2.9
24	4.3	4.5	186	271	16	11	6.0	5.2	3.6	91	2.3	1.1
25	4.5	5.0	58	51	14	11	5.9	5.4	29	25	18	.92
26	4.1	6.6	19	26	14	11	6.0	6.4	27	6.4	5.2	.98
27	3.6	5.1	13	19	12	9.9	12	6.7	46	4.7	5.7	3.5
28	3.6	4.6	11	17	14	9.5	61	5.9	7.8	4.6	2.9	25
29	3.8	4.6	14	14	---	9.4	15	5.7	6.1	4.6	2.2	36
30	4.9	4.7	12	13	---	9.7	286	3.8	5.4	6.4	1.6	14
31	6.4	---	9.9	12	---	11	---	3.7	---	4.1	1.3	---
TOTAL	155.4	209.7	582.8	1234.0	803.3	403.5	609.4	252.2	311.6	287.5	90.54	162.39
MEAN	5.01	6.99	18.8	39.8	28.7	13.0	20.3	8.14	10.4	9.27	2.92	5.41
MAX	15	30	186	312	143	30	286	29	63	91	18	36
MIN	3.0	3.7	3.2	8.7	9.6	9.4	5.9	3.7	2.6	1.8	.94	.74
CFSM	.16	.22	.60	1.26	.91	.41	.65	.26	.33	.29	.09	.17
IN.	.18	.25	.69	1.46	.95	.48	.72	.30	.37	.34	.11	.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 1999, BY WATER YEAR (WY)

	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MEAN	5.01	6.99	18.8	39.8	28.7	13.0	20.3	8.14	10.4	9.27	2.92	5.41
MAX	5.01	6.99	18.8	39.8	28.7	13.0	20.3	8.14	10.4	9.27	2.92	5.41
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	5.01	6.99	18.8	39.8	28.7	13.0	20.3	8.14	10.4	9.27	2.92	5.41
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999

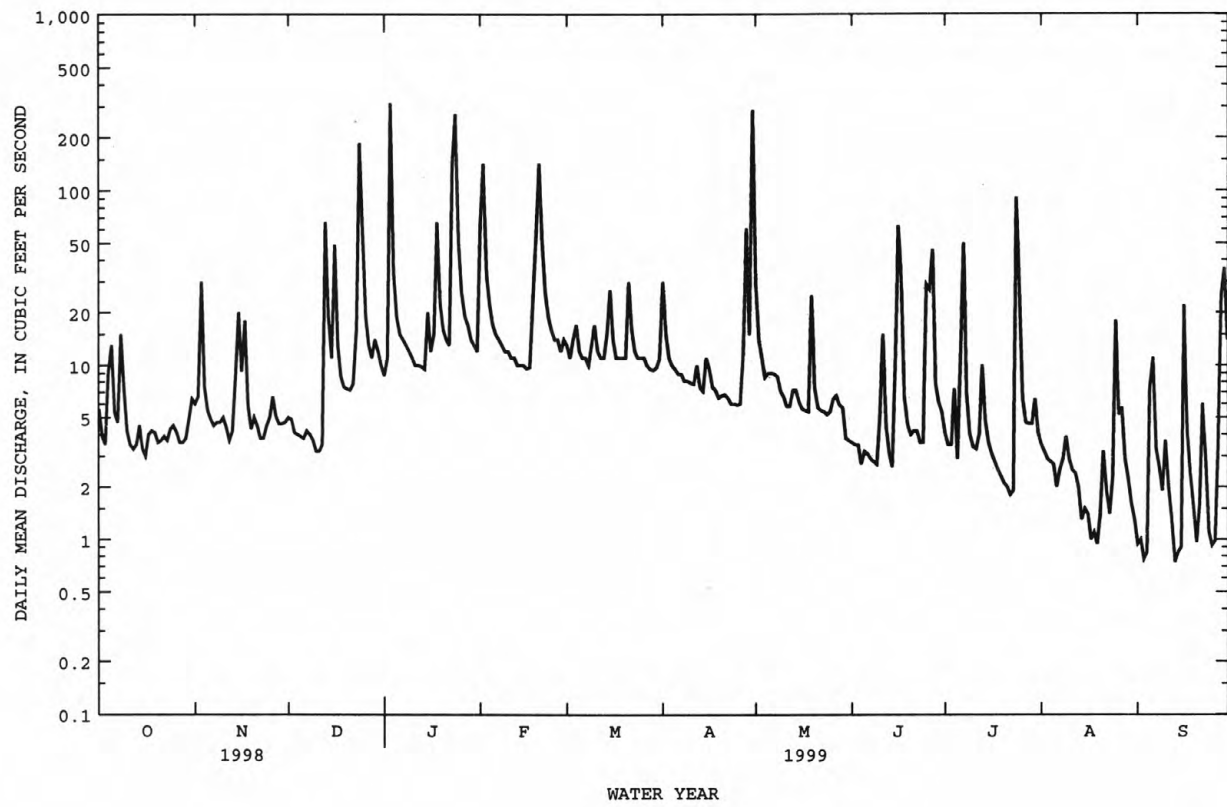
SUMMARY STATISTICS

FOR 1999 WATER YEAR

ANNUAL TOTAL	5102.33
ANNUAL MEAN	14.0
HIGHEST DAILY MEAN	312 Jan 3
LOWEST DAILY MEAN	.74* Sep 13
ANNUAL SEVEN-DAY MINIMUM	1.2* Aug 14
INSTANTANEOUS PEAK FLOW	763* Jan 3
INSTANTANEOUS PEAK STAGE	6.79* Jan 3
INSTANTANEOUS LOW FLOW	.25* Aug 19
ANNUAL RUNOFF (CFSM)	.44
ANNUAL RUNOFF (INCHES)	6.03
10 PERCENT EXCEEDS	24
50 PERCENT EXCEEDS	6.5
90 PERCENT EXCEEDS	2.4

\* See REMARKS.

0214291555 LONG CREEK NEAR RHYNE, NC--Continued



0214295600 PAW CREEK AT WILKINSON BOULEVARD NEAR CHARLOTTE, NC

LOCATION.--Lat 35°14'24", long 80°58'29", Mecklenburg County, Hydrologic Unit 03050103, near right bank on downstream side of culvert at U.S. Highway 74, 0.7 mi downstream of Interstate Highway 85, and 2.5 mi northwest of airport in Charlotte.

DRAINAGE AREA.--10.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 570 ft above sea level, from topographic map. Telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records poor, except those above 200 ft<sup>3</sup>/s, which are fair. Minimum discharge for current water year and period of record also occurred Sept. 27, 1999.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	.90	1.6	.96	31	5.2	15	12	1.7	1.1	.67	.53
2	1.3	.94	1.6	1.7	36	4.1	5.6	7.9	1.5	.90	.77	.53
3	1.3	17	1.4	91	12	6.7	4.2	6.3	1.4	.86	.61	.51
4	5.5	2.6	1.4	7.9	8.5	6.2	3.7	5.3	1.5	.75	.58	.46
5	2.6	1.6	1.4	4.0	6.7	4.4	3.2	4.7	1.6	.72	.55	7.0
6	1.7	1.5	1.4	2.7	5.3	4.0	3.0	5.1	1.5	12	.52	2.7
7	2.2	1.4	1.5	1.9	4.3	3.6	3.3	4.4	2.0	5.6	.50	.51
8	11	1.6	1.4	2.0	3.8	3.3	3.6	3.7	1.7	2.2	.47	.44
9	2.7	1.7	1.5	1.7	3.7	5.5	3.0	3.5	1.5	1.6	.59	.42
10	1.5	1.7	1.2	1.1	2.9	5.1	2.7	3.3	3.6	1.5	.50	.81
11	1.1	2.1	1.7	.88	2.5	4.0	2.8	3.3	16	1.4	.37	.39
12	.99	2.4	1.0	.81	2.7	3.3	3.0	3.0	2.0	1.4	.34	.34
13	.97	1.6	18	.75	2.7	3.1	2.2	7.9	1.3	1.7	.30	.34
14	1.1	2.4	4.4	.71	2.5	6.3	2.2	5.3	.95	1.1	.28	.37
15	1.0	13	3.6	6.7	2.4	8.4	4.5	3.2	5.3	.93	.26	.40
16	.98	6.9	17	1.7	2.4	4.6	3.2	2.9	40	.95	.28	8.1
17	1.0	6.7	2.8	8.8	2.3	3.8	2.3	2.7	12	.90	.28	.40
18	.91	2.7	1.7	23	11	3.5	2.3	2.7	3.3	.82	.27	.35
19	.90	2.0	1.3	6.1	30	3.2	2.2	11	2.1	.77	.29	.31
20	.92	1.7	1.3	3.2	39	3.0	2.1	2.9	1.9	.70	1.0	.28
21	.89	1.6	1.3	2.2	15	15	2.0	2.5	1.6	.67	.85	.52
22	.81	1.5	1.6	1.7	9.2	5.5	2.0	2.3	1.6	.60	.34	6.1
23	.87	1.4	7.0	38	7.2	4.1	1.9	2.3	1.4	.57	.27	.28
24	.93	1.4	66	77	6.1	3.7	2.2	2.2	1.5	14	2.2	.26
25	1.0	2.1	17	18	5.5	3.7	2.2	2.0	15	2.7	10	.25
26	1.1	1.8	5.0	9.2	5.1	3.5	2.2	3.5	5.2	1.4	1.7	.23
27	.98	1.7	2.8	6.1	5.1	3.0	17	2.2	7.0	1.3	9.9	2.4
28	.85	1.6	2.7	4.8	5.2	2.7	22	2.0	2.8	1.3	.94	4.7
29	.83	1.6	4.1	3.1	---	2.7	6.9	1.7	2.2	1.9	.64	17
30	.85	1.6	1.9	3.2	---	2.8	81	1.6	1.9	2.4	.61	9.7
31	.86	---	1.1	2.9	---	2.8	---	1.6	---	.78	.56	---
TOTAL	51.64	88.74	177.7	333.81	270.1	140.8	213.5	125.0	143.05	65.52	37.44	66.63
MEAN	1.67	2.96	5.73	10.8	9.65	4.54	7.12	4.03	4.77	2.11	1.21	2.22
MAX	11	17	66	91	39	15	81	12	40	14	10	17
MIN	.81	.90	1.0	.71	2.3	2.7	1.9	1.6	.95	.57	.26	.23
CFSM	.15	.27	.53	1.00	.89	.42	.66	.37	.44	.20	.11	.21
IN.	.18	.31	.61	1.15	.93	.48	.74	.43	.49	.23	.13	.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

	MEAN	8.38	9.47	8.22	18.4	21.4	14.0	14.7	6.95	7.97	10.0	4.77	4.45
MAX	23.0	26.1	14.0	28.9	33.4	18.7	22.0	13.2	11.6	35.2	9.92	5.68	
(WY)	1996	1996	1998	1998	1995	1998	1998	1995	1995	1997	1995	1996	
MIN	1.67	2.96	3.63	10.8	9.65	4.54	5.18	4.03	4.77	2.11	1.21	2.22	
(WY)	1999	1999	1995	1999	1999	1999	1999	1995	1999	1999	1999	1999	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

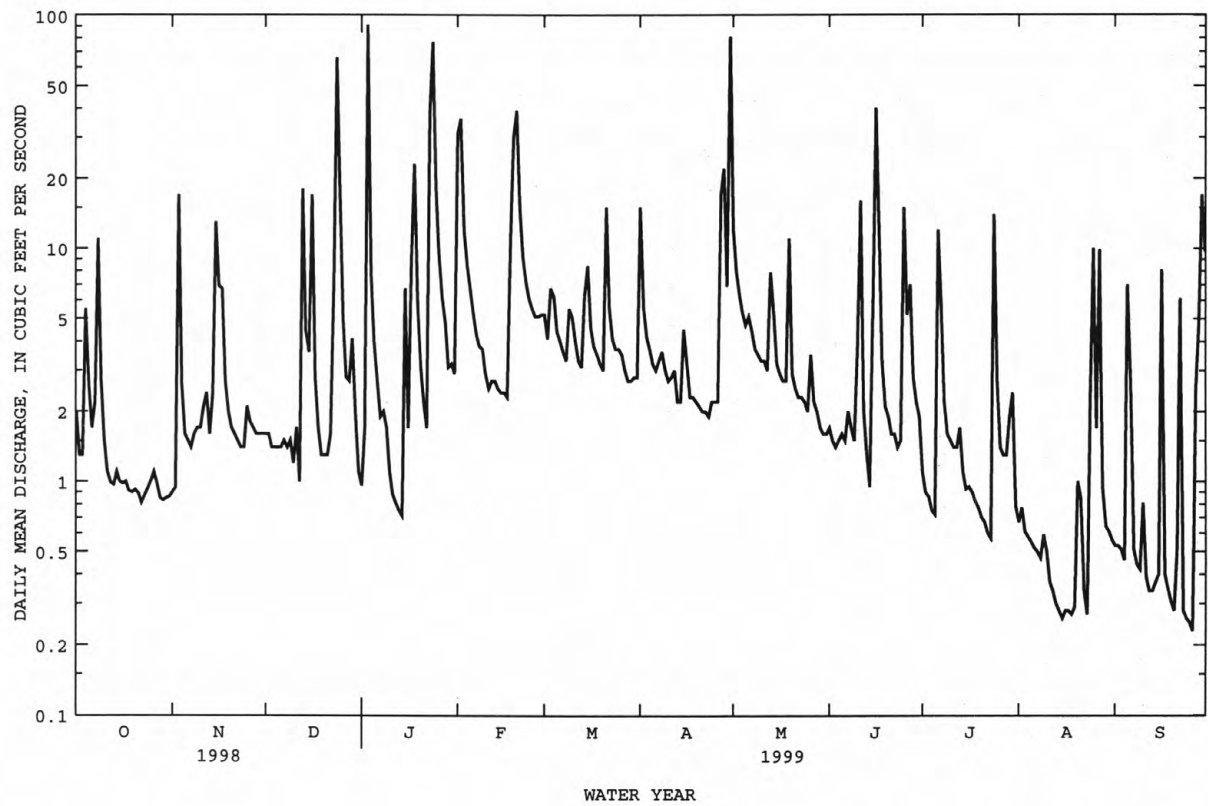
FOR 1999 WATER YEAR

WATER YEARS 1995 - 1999

ANNUAL TOTAL	3825.90	1713.93	
ANNUAL MEAN	10.5	4.70	10.7
HIGHEST ANNUAL MEAN			13.6
LOWEST ANNUAL MEAN			4.70
HIGHEST DAILY MEAN	218	91	835
LOWEST DAILY MEAN	.81	.23	.23
ANNUAL SEVEN-DAY MINIMUM	.89	.28	.28
INSTANTANEOUS PEAK FLOW		444	2740
INSTANTANEOUS PEAK STAGE		5.97	9.77
INSTANTANEOUS LOW FLOW		.17*	.17*
ANNUAL RUNOFF (CFSM)	.97	.43	.99
ANNUAL RUNOFF (INCHES)	13.18	5.90	13.42
10 PERCENT EXCEEDS	22	9.4	20
50 PERCENT EXCEEDS	3.3	2.2	3.9
90 PERCENT EXCEEDS	1.2	.54	1.2

\* See REMARKS.

0214295600 PAW CREEK AT WILKINSON BOULEVARD NEAR CHARLOTTE, NC--Continued



## SANTÉE RIVER BASIN

02143000 HENRY FORK NEAR HENRY RIVER, NC

LOCATION.--Lat 35°41'03", long 81°24'10", Catawba County, Hydrologic Unit 03050102, on left bank 325 ft downstream of bridge on Secondary Road 1124, at site of Old Link Ford, 1.2 mi downstream of Burke-Catawba County line, and 2 mi southeast of Henry River.

DRAINAGE AREA.--83.2 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1925 to November 1931, December 1941 to current year.

REVISED RECORDS.--WSP 952: 1928, 1930. WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 891.0 ft above sea level. July 1925 to November 1931, at site 450 ft upstream at same datum. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge for period of record, from rating curve extended above 2,300 ft<sup>3</sup>/s on basis of computation of peak flow over dam at Henry River; gage height: 29.2 ft. Minimum discharge for current water year also occurred Sept. 24, 25, 26, 27.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known: 29.2 ft, Aug. 13, 1940, at former site, from floodmarks; discharge: 31,300 ft<sup>3</sup>/s. The flood of July 16, 1916, reached a stage of about 23 ft at former site; discharge: 20,700 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	52	54	79	118	119	112	279	51	47	28	23
2	47	52	53	74	448	112	191	178	51	46	27	23
3	44	56	52	92	266	115	156	165	53	46	25	22
4	45	59	52	109	182	141	147	150	59	47	25	20
5	49	60	52	114	158	148	141	124	51	49	24	22
6	56	57	53	114	151	146	130	99	49	46	23	31
7	68	54	53	107	146	143	117	96	47	62	23	34
8	420	53	54	104	137	136	104	99	45	94	22	29
9	164	54	65	105	124	128	97	87	44	88	24	25
10	142	55	67	113	112	122	93	80	44	66	27	26
11	94	69	65	119	102	118	87	76	65	51	25	25
12	67	82	62	119	94	111	84	74	68	56	23	21
13	65	76	77	116	92	104	81	75	56	67	21	20
14	63	72	105	112	85	109	80	84	47	68	21	20
15	60	73	108	114	82	131	83	83	46	64	20	20
16	58	74	100	124	81	144	94	74	58	57	20	20
17	57	76	91	126	83	149	88	68	87	48	20	19
18	56	78	81	133	116	147	81	69	81	45	20	18
19	56	75	70	142	146	139	76	97	57	51	19	19
20	57	71	66	142	267	127	74	90	49	43	22	19
21	54	67	64	135	249	121	73	72	50	44	31	19
22	53	64	64	127	183	118	72	66	50	42	29	19
23	52	61	64	131	159	110	70	66	50	39	23	19
24	52	59	77	387	152	102	70	65	48	37	29	18
25	53	57	98	239	146	97	69	61	53	37	41	18
26	54	57	103	165	139	93	67	62	69	35	40	18
27	53	57	103	149	131	90	70	64	74	32	40	22
28	52	56	100	142	124	86	93	60	70	35	45	48
29	52	54	96	134	---	83	101	56	63	33	33	96
30	52	54	92	125	---	83	465	54	53	30	26	92
31	52	---	86	117	---	81	---	53	---	30	24	---
TOTAL	2299	1884	2327	4109	4273	3653	3266	2826	1688	1535	820	825
MEAN	74.2	62.8	75.1	133	153	118	109	91.2	56.3	49.5	26.5	27.5
MAX	420	82	108	387	448	149	465	279	87	94	45	96
MIN	44	52	52	74	81	81	67	53	44	30	19	18
CFSM	.89	.75	.90	1.59	1.83	1.42	1.31	1.10	.68	.60	.32	.33
IN.	1.03	.84	1.04	1.84	1.91	1.63	1.46	1.26	.75	.69	.37	.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1926 - 1999,<sup>a</sup> BY WATER YEAR (WY)

MEAN	109	105	128	156	190	207	186	140	118	90.0	99.3	93.2
MAX	562	392	276	380	473	583	470	322	392	203	554	594
(WY)	1930	1978	1984	1996	1960	1975	1983	1984	1947	1949	1928	1945
MIN	25.6	34.8	31.1	32.3	50.0	69.7	61.6	44.8	34.4	34.9	26.5	25.4
(WY)	1927	1932	1956	1956	1931	1985	1967	1927	1926	1986	1999	1954

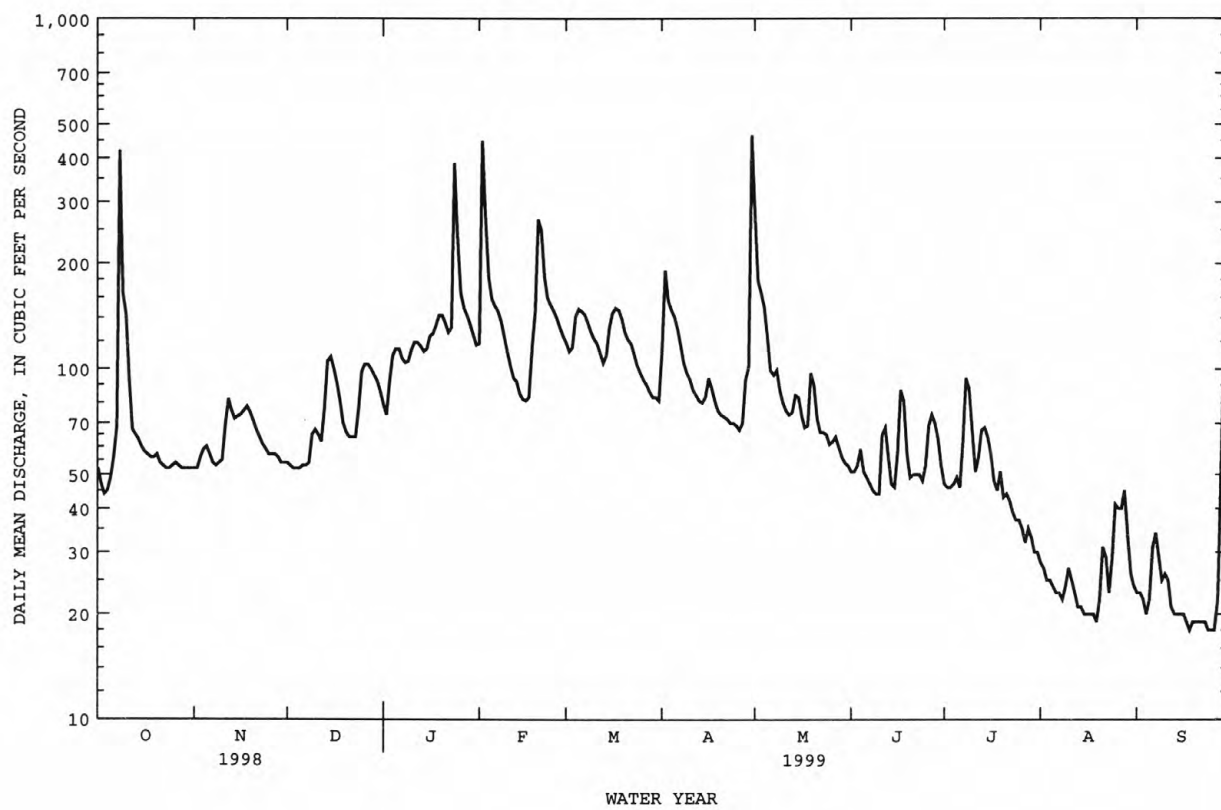
SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1926 - 1999 <sup>a</sup>
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ANNUAL TOTAL	57948		29505				
ANNUAL MEAN	159		80.8		135		
HIGHEST ANNUAL MEAN					221		1993
LOWEST ANNUAL MEAN					59.7		1927
HIGHEST DAILY MEAN	1980	Feb 4	465	Apr 30	10100		Oct 2 1929
LOWEST DAILY MEAN	44	Sep 28	18	Sep 18	4.0		Nov 15 1942
ANNUAL SEVEN-DAY MINIMUM	47	Sep 15	19	Sep 20	14		Jul 18 1926
INSTANTANEOUS PEAK FLOW			1090	Oct 8	15300*		Oct 2 1929
INSTANTANEOUS PEAK STAGE			3.91	Oct 8	18.71		Oct 12 1990
INSTANTANEOUS LOW FLOW			18*	Sep 18	3.0		Dec 20 1942
ANNUAL RUNOFF (CFSM)	1.91		.97		1.63		
ANNUAL RUNOFF (INCHES)	25.91		13.19		22.12		
10 PERCENT EXCEEDS	269		142		220		
50 PERCENT EXCEEDS	105		67		94		
90 PERCENT EXCEEDS	53		24		45		

<sup>a</sup> See PERIOD OF RECORD.

\* See REMARKS.

02143000 HENRY FORK NEAR HENRY RIVER, NC--Continued





02143040 JACOB FORK AT RAMSEY, NC

LOCATION.--Lat 35°35'26", long 81°34'02", Burke County, Hydrologic Unit 03050102, on left bank 16 ft downstream of bridge on Secondary Road 1924, 0.6 mi downstream of Queens Creek, and 0.6 mi north of Ramsey.

DRAINAGE AREA.--25.7 mi<sup>2</sup>

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1960-61. October 1961 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,103.00 ft above sea level. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge for period of record, from rating curve extended above 3,400 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow. Minimum discharge for period of record and current water year also occurred Aug. 19.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 1940 reached a stage of about 39 ft, from information by local resident. Flood of July 1916 reached a stage of about 19 ft, from information by North Carolina State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	14	12	14	45	29	101	116	13	16	7.0	5.4
2	12	14	11	14	184	26	75	58	13	15	6.5	5.1
3	12	16	11	52	93	38	46	40	19	15	6.1	4.7
4	13	15	11	50	50	49	37	33	14	14	5.7	4.4
5	19	14	11	30	34	37	32	30	13	13	5.7	5.6
6	16	14	11	26	27	32	28	30	13	13	5.4	7.5
7	52	13	11	18	24	28	26	32	12	13	5.3	6.8
8	181	14	13	24	23	24	25	27	12	15	5.2	5.8
9	38	14	25	50	19	25	25	24	11	13	6.3	21
10	24	15	14	52	19	27	24	22	13	13	5.9	11
11	20	32	12	31	17	26	22	20	30	14	5.7	6.6
12	18	19	11	23	17	24	21	20	16	24	4.9	6.0
13	17	15	48	20	16	23	20	20	14	24	4.5	5.5
14	16	15	35	20	15	33	19	21	13	18	4.4	5.4
15	15	19	20	35	15	54	23	20	14	16	4.1	5.5
16	15	21	17	29	14	52	22	18	45	14	4.0	5.4
17	15	28	14	23	18	40	19	17	37	13	4.1	4.9
18	15	18	13	43	61	34	19	21	19	13	3.9	4.6
19	15	16	13	43	72	29	19	41	15	14	3.7	4.6
20	16	15	13	30	92	26	18	21	15	12	6.5	4.6
21	15	14	12	23	91	32	18	19	15	11	6.8	4.5
22	14	13	12	19	55	27	17	18	14	11	5.5	4.7
23	14	13	12	33	40	24	17	17	14	11	5.1	4.2
24	14	13	27	183	33	23	17	16	14	10	10	4.1
25	14	13	31	81	29	23	16	16	29	9.8	11	4.2
26	14	13	22	42	27	22	17	16	46	8.6	11	4.1
27	14	12	20	30	25	21	18	16	29	8.5	16	15
28	14	12	20	25	31	20	35	14	30	8.8	8.5	52
29	14	12	21	22	---	20	43	14	22	8.2	7.1	33
30	14	12	19	22	---	19	283	13	18	7.6	6.5	16
31	14	---	16	18	---	19	---	13	---	7.4	5.7	---
TOTAL	698	468	538	1125	1186	906	1102	803	582	403.9	198.1	272.2
MEAN	22.5	15.6	17.4	36.3	42.4	29.2	36.7	25.9	19.4	13.0	6.39	9.07
MAX	181	32	48	183	184	54	283	116	46	24	16	52
MIN	12	12	11	14	14	19	16	13	11	7.4	3.7	4.1
CFSM	.88	.61	.68	1.41	1.65	1.14	1.43	1.01	.75	.51	.25	.35
IN.	1.01	.68	.78	1.63	1.72	1.31	1.60	1.16	.84	.58	.29	.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

	MEAN	42.1	42.3	48.2	60.9	68.4	78.0	68.8	54.0	42.6	34.6	33.8	28.6
MAX	154	130	92.6	131	134	177	157	109	82.3	72.7	152	102	
(WY)	1965	1978	1984	1993	1966	1975	1983	1984	1972	1985	1970	1989	
MIN	11.2	12.7	14.8	20.9	27.9	27.4	22.6	19.9	11.9	9.23	6.39	9.07	
(WY)	1994	1982	1989	1981	1986	1988	1967	1988	1988	1988	1999	1999	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

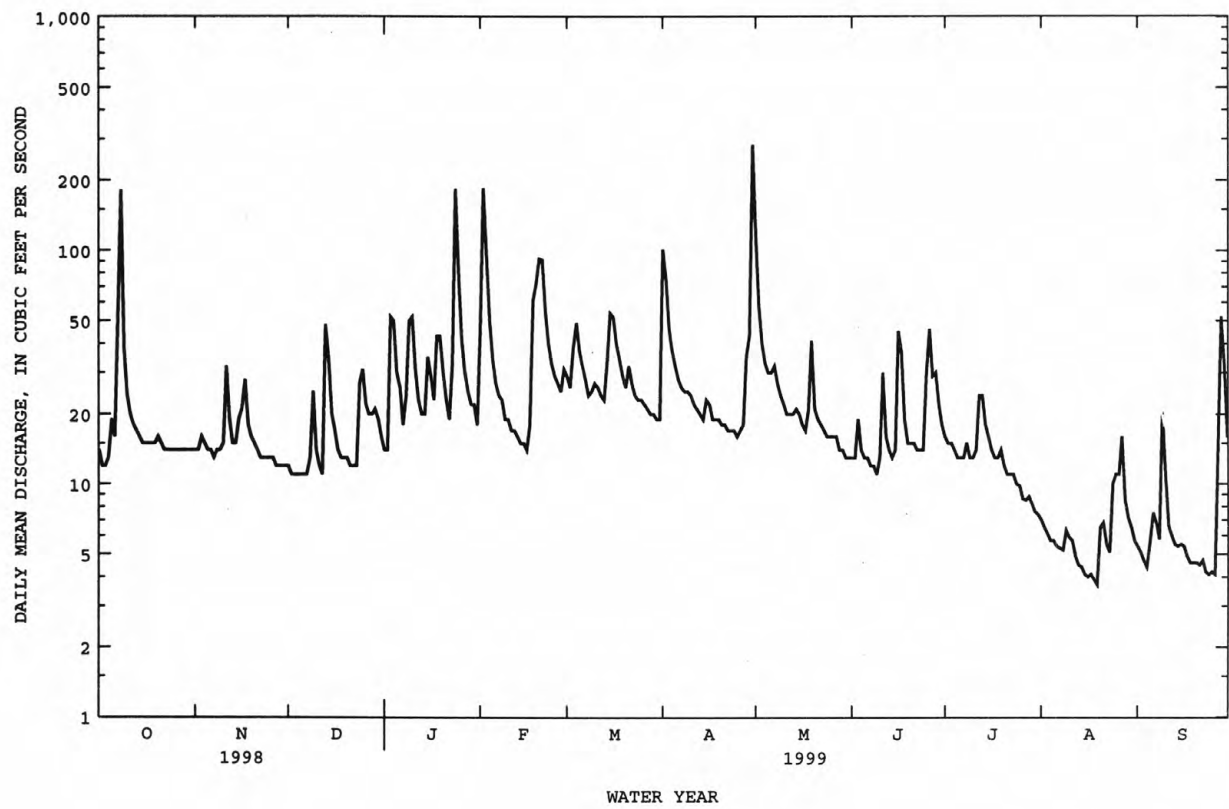
FOR 1999 WATER YEAR

WATER YEARS 1962 - 1999

ANNUAL TOTAL	18643		8282.2										
ANNUAL MEAN	51.1		22.7								50.1		
HIGHEST ANNUAL MEAN											80.8		1993
LOWEST ANNUAL MEAN											22.7		1999
HIGHEST DAILY MEAN	593	Jan 8	283	Apr 30							1730	Nov 6	1977
LOWEST DAILY MEAN	11	Dec 2	3.7	Aug 19							3.7	Aug 19	1999
ANNUAL SEVEN-DAY MINIMUM	11	Dec 1	4.1	Aug 13							4.1	Aug 13	1999
INSTANTANEOUS PEAK FLOW			421	Apr 30							7220*	Oct 17	1975
INSTANTANEOUS PEAK STAGE			3.94	Apr 30							19.74	Oct 17	1975
INSTANTANEOUS LOW FLOW			3.3*	Aug 18							3.3*	Aug 18	1999
ANNUAL RUNOFF (CFSM)	1.99		.88								1.95		
ANNUAL RUNOFF (INCHES)	26.99		11.99								26.48		
10 PERCENT EXCEEDS	103		40								86		
50 PERCENT EXCEEDS	28		16								33		
90 PERCENT EXCEEDS	13		5.8								15		

\* See REMARKS.

02143040 JACOB FORK AT RAMSEY, NC--Continued



## SANTÉE RIVER BASIN

02143500 INDIAN CREEK NEAR LABORATORY, NC

LOCATION.--Lat 35°25'20", long 81°15'52", Lincoln County, Hydrologic Unit 03050102, on left bank 250 ft upstream from remains of Rudisill Mill dam, 0.5 mi upstream from bridge on Secondary Road 1252, 1.5 mi south of Laboratory, 1.5 mi upstream from mouth, and 3.5 mi south of Lincolnton.

DRAINAGE AREA.--69.2 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1951 to current year.

REVISED RECORDS.--WDR NC-71-1: 1970(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 736 ft above sea level, by barometer. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Peak discharge of flood in October 1929 was 9,920 ft<sup>3</sup>/s; flood in July 1916, 7,840 ft<sup>3</sup>/s; flood in August 1940, 6,000 ft<sup>3</sup>/s. Discharge based on computation of peak flow over dam 1 mi downstream, using floodmarks and information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	18	24	29	93	54	195	347	30	32	14	12
2	18	19	23	30	248	51	125	125	30	30	13	11
3	18	29	24	280	117	68	83	88	38	43	10	10
4	20	23	24	231	94	91	65	75	31	33	10	8.3
5	26	22	24	79	77	65	75	67	28	27	11	11
6	24	22	24	53	72	57	59	70	28	25	9.9	18
7	26	22	24	49	69	55	53	75	27	55	9.8	14
8	53	22	25	48	63	51	50	68	26	58	9.7	13
9	30	22	26	56	58	56	51	59	23	30	10	11
10	21	23	26	51	58	61	46	54	26	27	10	22
11	17	27	24	43	55	59	43	51	78	30	9.6	15
12	20	25	24	43	55	54	42	49	41	37	9.3	9.6
13	18	23	56	40	53	49	37	49	29	46	8.6	9.0
14	19	25	50	39	50	62	37	55	28	35	6.5	9.0
15	18	37	30	46	50	91	41	52	34	32	8.0	9.7
16	18	30	50	39	49	68	45	43	43	29	6.5	9.7
17	18	44	32	38	48	59	36	44	70	27	7.8	8.5
18	18	27	28	53	86	54	34	42	43	27	6.6	8.0
19	19	26	27	54	88	52	34	122	39	24	6.0	8.1
20	18	25	29	48	160	50	34	63	36	23	9.1	8.9
21	17	24	27	41	118	98	31	46	33	e23	13	8.8
22	17	24	27	41	87	96	31	41	31	e22	11	19
23	17	23	27	181	70	68	30	44	30	e20	11	9.9
24	18	23	67	689	65	62	28	41	28	19	83	9.2
25	19	23	88	290	64	60	28	37	39	20	25	8.3
26	19	25	51	113	61	57	27	38	118	18	16	7.3
27	17	25	38	76	57	51	29	41	110	16	26	18
28	17	23	35	64	57	48	92	36	54	16	16	37
29	19	23	36	58	---	47	62	35	61	18	14	33
30	17	24	33	59	---	46	708	34	36	14	13	30
31	18	---	31	53	---	44	---	32	---	13	10	---
TOTAL	637	748	1054	3014	2222	1884	2251	2023	1268	869	423.4	406.3
MEAN	20.5	24.9	34.0	97.2	79.4	60.8	75.0	65.3	42.3	28.0	13.7	13.5
MAX	53	44	88	689	248	98	708	347	118	58	83	37
MIN	17	18	23	29	48	44	27	32	23	13	6.0	7.3
CFSM	.30	.36	.49	1.40	1.15	.88	1.08	.94	.61	.41	.20	.20
IN.	.34	.40	.57	1.62	1.19	1.01	1.21	1.09	.68	.47	.23	.22

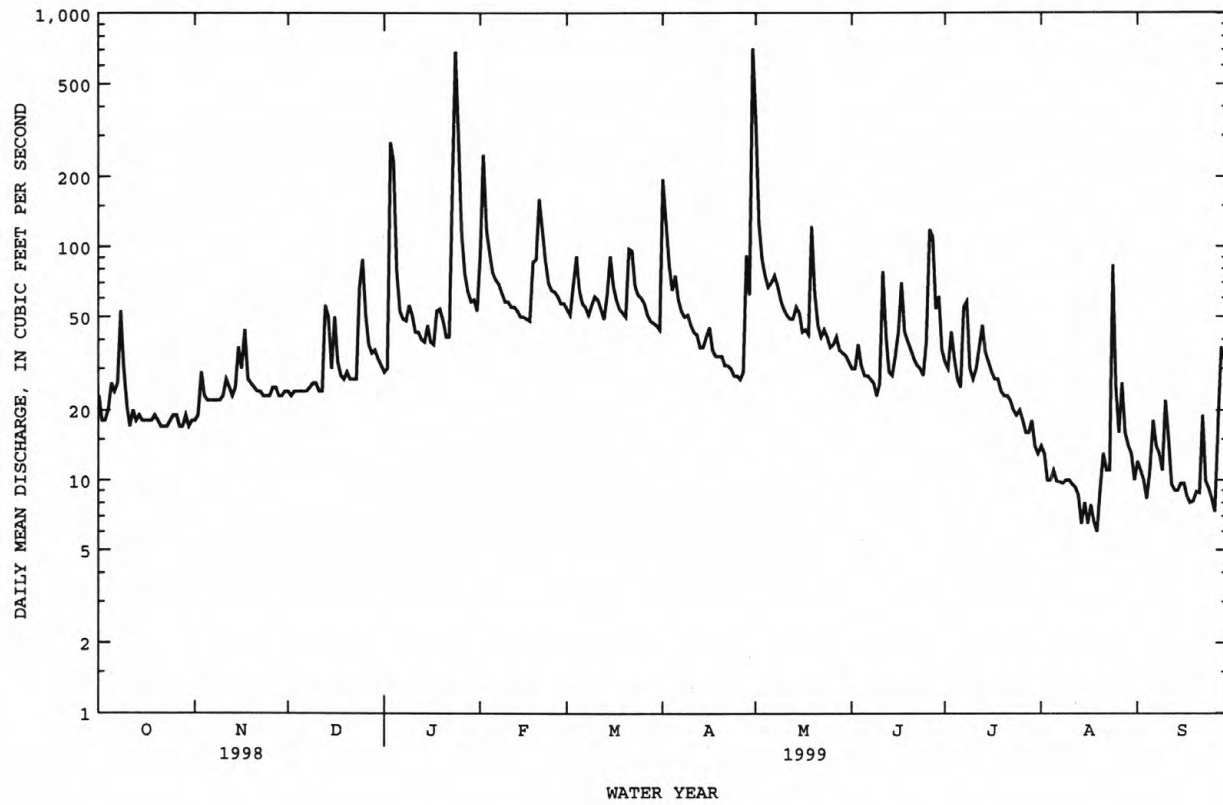
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1999, BY WATER YEAR (WY)

	MEAN	69.1	66.9	90.9	122	141	155	118	88.4	73.9	52.1	54.7	44.5
MAX	324	272	236	313	309	424	301	250	165	130	275	155	
(WY)	1965	1958	1968	1978	1960	1952	1958	1984	1962	1964	1970	1959	
MIN	8.30	19.2	26.0	25.8	44.0	59.8	38.1	27.6	11.8	12.7	13.7	8.62	
(WY)	1955	1955	1956	1956	1986	1986	1986	1986	1986	1986	1999	1954	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1951 - 1999
ANNUAL TOTAL	37424	16799.7	
ANNUAL MEAN	103	46.0	89.5
HIGHEST ANNUAL MEAN			145
LOWEST ANNUAL MEAN			40.4
HIGHEST DAILY MEAN	1550	Mar 9	4350
LOWEST DAILY MEAN	17	Oct 11	2.1
ANNUAL SEVEN-DAY MINIMUM	18	Oct 17	3.1
INSTANTANEOUS PEAK FLOW		1000	8450
INSTANTANEOUS PEAK STAGE		3.91	10.61
INSTANTANEOUS LOW FLOW		4.8	1.7
ANNUAL RUNOFF (CFSM)	1.48	.67	1.29
ANNUAL RUNOFF (INCHES)	20.12	9.03	17.57
10 PERCENT EXCEEDS	200	75	149
50 PERCENT EXCEEDS	50	32	57
90 PERCENT EXCEEDS	20	11	24

e Estimated.

02143500 INDIAN CREEK NEAR LABORATORY, NC--Continued



## SANTÉE RIVER BASIN

0214399575 LONG CREEK TRIBUTARY AT HEADWATERS NEAR BESSEMER CITY, NC

LOCATION.--Lat 35°18'12", long 81°16'42", Gaston County, Hydrologic Unit 03050102, on left bank at headwaters, 1.4 mi north of Bessemer City, NC.

DRAINAGE AREA.--0.16 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1993 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 830 ft above sea level, from topographic map.

REMARKS.--Records poor. Maximum gage height for period of record from floodmark inside of stilling well. No flow also occurred Aug. 14-19, 21, 22, 1999.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 19, 1993 reached a stage of 3.11 ft, from floodmark; discharge, 120 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.02	.03	.04	1.4	.06	.70	.10	.04	.06	.01	.01
2	.04	.04	.03	.76	.45	.07	.10	.09	e.05	.05	.01	.01
3	.04	.06	.03	2.0	.11	.37	.10	.08	e.10	.05	.01	.01
4	.06	.03	.03	.15	.08	.08	.11	.08	e.06	.05	.01	.01
5	.04	.02	.03	.07	.08	.07	.08	.08	e.05	.04	.01	.03
6	.03	.02	.03	.04	.07	.07	.08	.08	e.05	.04	.01	.01
7	.05	.03	.03	.05	.07	.06	.08	.09	e.05	3.0	.01	.01
8	.13	.03	.03	.06	.07	.06	.08	.07	e.04	.09	.01	.01
9	.03	.03	.03	.05	.07	.09	.08	.07	e.04	.05	.01	.35
10	.03	.03	.03	.05	.07	.07	.08	.07	e.20	.03	.01	.03
11	.03	.02	.03	.04	.06	.06	.08	.07	e.07	.04	.01	.02
12	.03	.02	.03	.04	.06	.06	.07	.07	e.05	.06	.01	.02
13	.03	.03	.34	.04	.05	.06	.07	.07	e.04	.04	.00	.02
14	.02	.09	.04	.04	.05	.20	.07	.07	e.04	.03	.00	.02
15	.02	.05	.12	.05	.05	.11	.10	.07	e.11	.03	.00	.02
16	.02	.10	.12	.04	.05	.09	.08	.07	e.40	.03	.00	.02
17	.02	.03	.04	.13	.06	.09	.07	.07	e.06	.03	.00	.02
18	.03	.03	.03	.11	.20	.08	.08	.30	e.05	.02	.00	.02
19	.02	.03	.04	.05	.38	.07	.07	.23	.06	.02	.00	.02
20	.02	.03	.04	.05	.28	.06	.07	.08	.06	.02	.01	.01
21	.02	.03	.04	.05	.11	.62	.07	.07	.06	.02	.00	.04
22	.02	.03	.04	.05	.08	.08	.07	.06	.06	.03	.00	.02
23	.02	.02	.08	1.8	.07	.06	.07	.06	.05	.04	.03	.01
24	.02	.02	.82	1.0	.07	.05	.07	.05	.06	.12	.02	.02
25	.02	.03	.12	.11	.07	.04	.07	.05	1.7	.03	.01	.02
26	.02	.04	.06	.08	.07	.06	.07	.07	.10	.02	.82	.02
27	.02	.04	.05	.08	.07	.07	.13	.05	.07	.02	.06	.19
28	.02	.05	.05	.08	.07	.05	.12	.05	.06	.02	.02	.05
29	.02	.04	.05	.09	---	.07	.38	.05	.06	.03	.02	.38
30	.02	.03	.05	.07	---	.08	1.3	.05	.06	.03	.01	.04
31	.02	---	.04	.06	---	.09	---	.05	---	.02	.01	---
TOTAL	0.95	1.07	2.53	7.33	4.32	3.15	4.60	2.52	3.90	4.16	1.13	1.46
MEAN	.031	.036	.082	.24	.15	.10	.15	.081	.13	.13	.036	.049
MAX	.13	.10	.82	2.0	1.4	.62	1.3	.30	1.7	3.0	.82	.38
MIN	.02	.02	.03	.04	.05	.04	.07	.05	.04	.02	.00	.01
CFSM	.19	.22	.51	1.48	.96	.64	.96	.51	.81	.84	.23	.30
IN.	.22	.25	.59	1.70	1.00	.73	1.07	.59	.91	.97	.26	.34

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1999, BY WATER YEAR (WY)

	1994	1995	1996	1997	1998	1999
MEAN	.12	.13	.12	.34	.30	.18
MAX	.38	.42	.24	.64	.43	.33
(WY)	1996	1996	1998	1998	1997	1998
MIN	.025	.036	.079	.14	.15	.10
(WY)	1994	1999	1994	1994	1994	1999

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

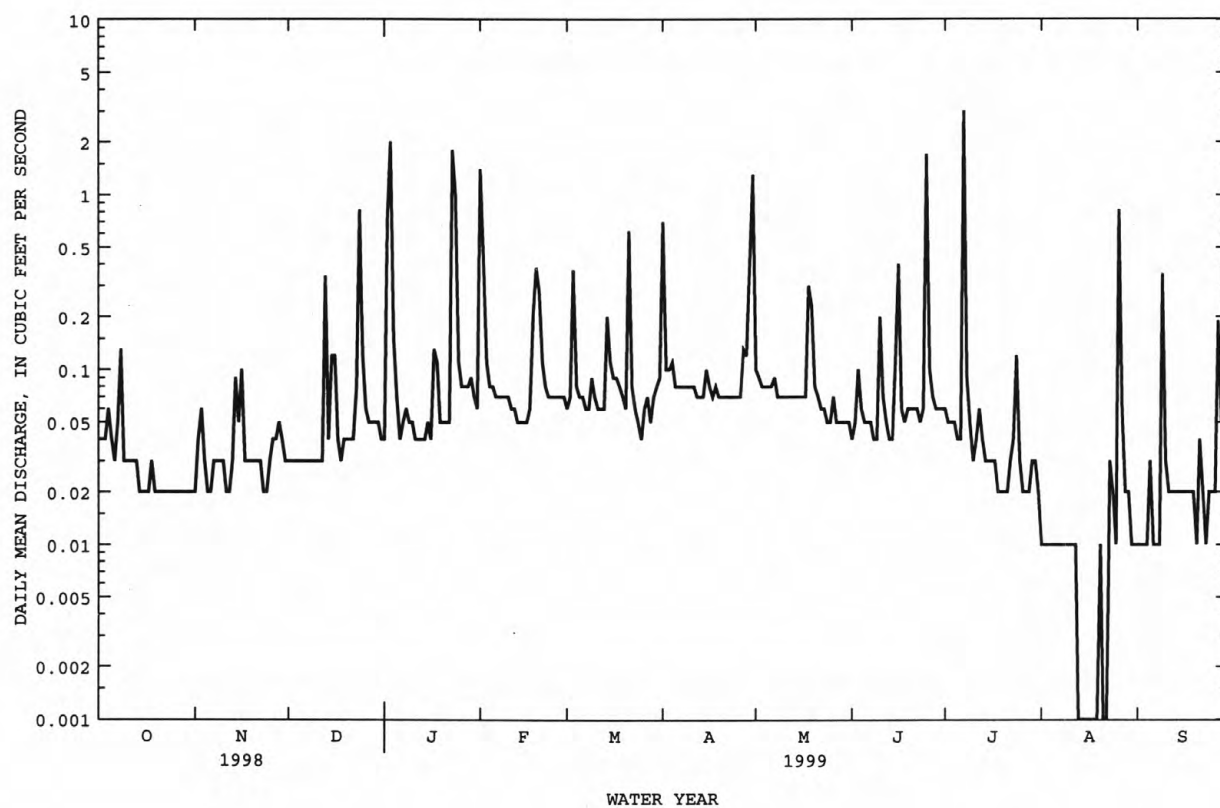
## WATER YEARS 1994 - 1999

ANNUAL TOTAL	65.42	37.12	
ANNUAL MEAN	.18	.10	.15
HIGHEST ANNUAL MEAN			.21
LOWEST ANNUAL MEAN			.10
HIGHEST DAILY MEAN	6.5	3.0	9.0
LOWEST DAILY MEAN	.01	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.02	.00	.00
INSTANTANEOUS PEAK FLOW		85	119
INSTANTANEOUS PEAK STAGE		2.80	3.10*
INSTANTANEOUS LOW FLOW		.00*	.00*
ANNUAL RUNOFF (CFSM)	1.12	.64	.96
ANNUAL RUNOFF (INCHES)	15.21	8.63	13.00
10 PERCENT EXCEEDS	.24	.11	.20
50 PERCENT EXCEEDS	.05	.05	.06
90 PERCENT EXCEEDS	.02	.02	.02

e Estimated.

\* See REMARKS.

0214399575 LONG CREEK TRIBUTARY AT HEADWATERS NEAR BESSEMER CITY, NC--Continued





## 0214399580 LONG CREEK TRIBUTARY BELOW HEADWATERS NEAR BESSEMER CITY, NC

LOCATION.--Lat 35°18'20", long 81°16'32", Gaston County, Hydrologic Unit 03050102, on left bank downstream end of culvert, 0.3 mi below headwaters and 1.6 mi north of Bessemer City, NC.

DRAINAGE AREA.--0.22 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 805 ft above sea level, from topographic map.

REMARKS.--Records poor. Maximum gage height for period of record from high-water mark in gage well. Maximum discharge for period of record from rating curve extended above 549 ft<sup>3</sup>/s. No flow also occurred Aug. 17-22, 1999.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 19, 1993 reached a stage of 5.29 ft, from floodmark; discharge, 549 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.10	.03	.03	.05	2.1	.08	1.0	.09	.07	.07	.03	.01
2	e.04	.04	.03	1.1	.54	.09	.09	.08	.08	.07	.02	.01
3	e.04	.06	.03	2.5	.09	.67	.08	.08	.13	.07	.02	.01
4	e.06	.03	.03	.09	.08	.08	.08	.08	.07	.07	.02	.01
5	e.04	.03	.03	.07	.08	.08	.09	.08	.07	.07	.02	.03
6	e.03	.03	.03	.07	.08	.08	.08	.08	.07	.07	.02	.02
7	e.05	.03	.03	.06	.08	.08	.08	.08	.07	2.4	.02	.02
8	e.20	.03	.03	.06	.08	.08	.08	.07	.06	.04	.02	.02
9	e.03	.03	.03	.06	.08	.11	.09	.07	.06	.04	.02	.38
10	.03	.03	.03	.05	.07	.08	.08	.07	.31	.03	.02	.03
11	.03	.04	.03	.05	.07	.08	.08	.07	.09	.04	.02	.03
12	.03	.03	.03	.05	.07	.09	.08	.08	.05	.05	.02	.03
13	.03	.03	.46	.05	.06	.09	.07	.07	.05	.04	.01	.02
14	.03	.09	.04	.05	.06	.31	.07	.08	.05	.03	.01	.02
15	.03	.05	.15	.05	.06	.10	.12	.07	.16	.03	.01	.02
16	.03	.10	.13	.05	.06	.09	.10	.07	.63	.03	.00	.02
17	.03	.04	.04	.18	.07	.11	.10	.07	.07	.03	.00	.02
18	.03	.03	.04	.10	.28	.10	.10	.41	.06	.03	.00	.01
19	.03	.03	.04	.06	.58	.10	.10	.23	.06	.03	.00	.01
20	.03	.03	.04	.05	.28	.10	.10	.07	.06	.03	.00	.01
21	.03	.03	.04	.05	.09	.98	.09	.07	.06	.03	.00	.02
22	.03	.03	.04	.05	.08	.10	.08	.07	.06	.03	.00	.03
23	.03	.03	.08	2.1	.08	.10	.08	.07	.06	.03	.03	.02
24	.03	.03	1.4	1.6	.08	.09	.08	.07	.06	.11	.03	.02
25	.03	.03	.10	.09	.08	.09	.08	.07	2.1	.06	.02	.02
26	.03	.03	.06	.08	.08	.10	.08	.08	.09	.04	.70	.01
27	.03	.03	.05	.08	.08	.10	.14	.07	.08	.04	.04	.16
28	.03	.03	.06	.07	.08	.10	.12	.06	.08	.03	.02	.04
29	.03	.03	.06	.08	---	.12	.52	.07	.07	.03	.02	.45
30	.03	.03	.05	.07	---	.14	2.1	.07	.07	.03	.02	.04
31	.03	---	.05	.06	---	.14	---	.07	---	.03	.02	---
TOTAL	1.25	1.11	3.29	9.13	5.52	4.66	6.04	2.77	5.00	3.73	1.18	1.54
MEAN	.040	.037	.11	.29	.20	.15	.20	.089	.17	.12	.038	.051
MAX	.20	.10	1.4	2.5	2.1	.98	2.1	.41	2.1	2.4	.70	.45
MIN	.03	.03	.03	.05	.06	.08	.07	.06	.05	.03	.00	.01
CFSM	.18	.17	.48	1.34	.90	.68	.92	.41	.76	.55	.17	.23
IN.	.21	.19	.56	1.54	.93	.79	1.02	.47	.85	.63	.20	.26

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1999, BY WATER YEAR (WY)

	MEAN	.22	.25	.19	.51	.47	.30	.28	.13	.26	.15	.27	.12
MAX	.80	.91	.38	.77	.74	.54	.80	.29	.83	.24	.70	.25	
(WY)	1996	1996	1998	1995	1997	1998	1997	1995	1995	1994	1994	1995	
MIN	.040	.037	.11	.27	.20	.15	.070	.075	.096	.11	.030	.051	
(WY)	1999	1999	1999	1997	1999	1999	1995	1996	1998	1997	1997	1999	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

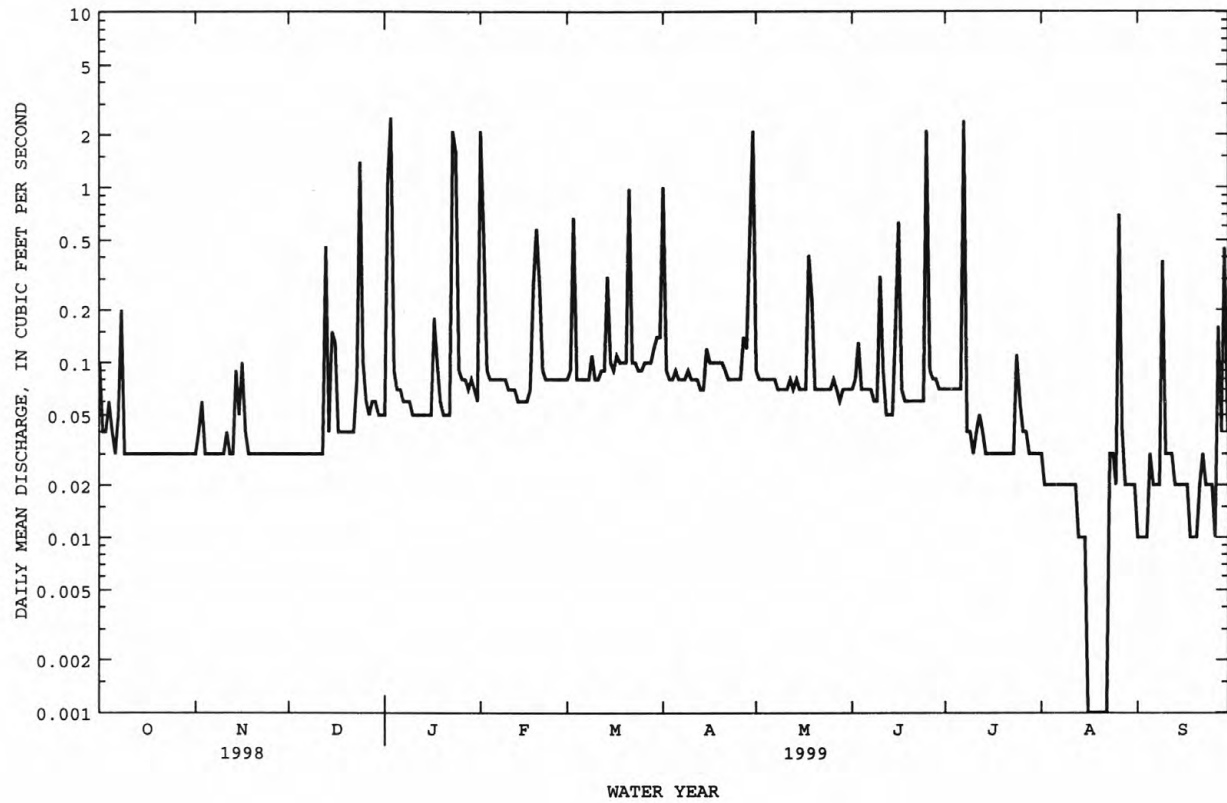
## WATER YEARS 1994 - 1999

ANNUAL TOTAL	86.89	45.22		
ANNUAL MEAN	.24	.12	.26	
HIGHEST ANNUAL MEAN			.35	1995
LOWEST ANNUAL MEAN			.12	1999
HIGHEST DAILY MEAN	9.9	Mar 8	2.5	Jan 3
LOWEST DAILY MEAN	.03	Jul 9	.00	Aug 16
ANNUAL SEVEN-DAY MINIMUM	.03	Jul 9	.00	Aug 16
INSTANTANEOUS PEAK FLOW			86	Jul 7
INSTANTANEOUS PEAK STAGE			2.67	Jul 7
INSTANTANEOUS LOW FLOW			.00*	Aug 16
ANNUAL RUNOFF (CFSM)	1.08		.56	
ANNUAL RUNOFF (INCHES)	14.69		7.65	
10 PERCENT EXCEEDS	.37		.12	
50 PERCENT EXCEEDS	.07		.06	
90 PERCENT EXCEEDS	.03		.02	

e Estimated.

\* See REMARKS.

0214399580 LONG CREEK TRIBUTARY BELOW HEADWATERS NEAR BESSEMER CITY, NC--Continued



## SANTEE RIVER BASIN

02144000 LONG CREEK NEAR BESSEMER CITY, NC

LOCATION.--Lat 35°18'23", long 81°14'05", Gaston County, Hydrologic Unit 03050102, on right bank 700 ft upstream from bridge on Secondary Road 1456, 3.3 mi northeast of Bessemer City, and 8.2 mi upstream from mouth.

DRAINAGE AREA.--31.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1952 to current year. Monthly discharge only for some periods, published in WSP 1723.

REVISED RECORDS.--WSP 1723: 1959-60 (M). WSP 1904: 1959-60. WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 706.1 ft above sea level. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Bessemer City diverts water upstream from gaging station for water supply and returns treated effluent to South Fork Catawba River downstream of mouth of Long Creek causing some diurnal fluctuation; a daily average of 1.76 ft<sup>3</sup>/s was diverted during the year. Minimum discharge for current water year also occurred Sept. 18.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916 reached a stage of 26 ft, from high-water mark on left bank 1,500 ft upstream, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	6.1	8.9	17	74	25	66	52	6.9	11	8.7	2.4
2	6.8	6.3	8.6	18	126	24	39	34	8.0	14	6.7	1.7
3	6.4	14	8.6	195	53	41	31	27	14	14	4.4	2.1
4	7.0	9.6	9.3	66	41	42	28	23	7.4	13	3.6	1.3
5	8.2	8.4	9.1	38	35	33	25	20	6.7	12	8.7	2.3
6	8.0	7.6	8.6	29	34	33	24	21	6.5	10	3.0	4.0
7	8.0	8.7	11	26	31	30	25	22	6.8	e16	2.9	2.2
8	20	8.9	14	26	29	27	23	20	5.9	e14	2.4	1.7
9	12	8.1	9.4	24	26	28	24	17	4.6	e12	2.2	4.1
10	9.5	8.9	8.2	22	28	29	20	14	5.9	e11	2.6	4.4
11	7.3	8.2	8.4	20	27	28	19	12	18	e10	2.5	1.8
12	8.3	8.4	8.2	19	26	25	18	12	9.9	e11	2.3	1.8
13	9.1	7.3	37	19	25	25	17	12	6.1	13	2.0	2.1
14	8.2	8.8	26	19	23	34	17	12	6.2	11	1.9	2.0
15	5.6	19	17	22	23	38	22	11	12	9.1	1.8	2.1
16	6.0	14	34	18	23	31	21	11	30	7.9	e1.7	1.4
17	8.1	15	17	18	23	30	19	9.9	29	5.9	e1.2	1.4
18	8.6	12	13	36	39	31	e18	9.8	13	6.6	e1.2	1.3
19	6.0	13	12	28	40	27	e17	28	8.2	6.6	e1.1	1.3
20	6.2	11	12	24	62	27	19	12	7.7	5.7	1.4	1.2
21	6.0	9.1	12	24	45	59	18	13	8.2	4.6	2.1	1.3
22	5.7	8.6	16	23	35	46	15	11	8.3	5.1	1.8	4.1
23	5.5	11	13	113	30	36	14	9.7	7.7	4.1	2.4	2.1
24	6.2	9.3	69	171	28	34	15	11	7.2	8.4	3.3	1.6
25	6.5	11	52	64	27	32	13	9.4	34	7.4	3.2	1.5
26	6.5	9.3	30	42	26	32	14	10	35	3.9	6.2	1.4
27	6.2	8.6	23	36	25	28	18	11	16	5.0	24	8.0
28	6.2	8.6	20	32	26	29	30	9.6	14	5.6	3.6	6.9
29	6.0	8.6	22	30	---	27	23	9.1	12	5.4	2.3	11
30	6.1	8.6	19	29	---	25	155	7.7	9.5	9.3	1.8	14
31	6.1	---	17	26	---	23	---	8.7	---	12	1.7	---
TOTAL	235.1	296.0	573.3	1274	1030	979	807	489.9	364.7	284.6	114.7	94.5
MEAN	7.58	9.87	18.5	41.1	36.8	31.6	26.9	15.8	12.2	9.18	3.70	3.15
MAX	20	19	69	195	126	59	155	52	35	16	24	14
MIN	5.5	6.1	8.2	17	23	23	13	7.7	4.6	3.9	1.1	1.2
CFSM	.24	.31	.58	1.29	1.16	.99	.85	.50	.38	.29	.12	.10
IN.	.28	.35	.67	1.49	1.20	1.15	.94	.57	.43	.33	.13	.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1999, BY WATER YEAR (WY)

	MEAN	26.0	26.7	34.2	50.8	59.5	62.1	48.1	32.6	25.6	18.4	20.5	15.6
MAX	147	128	85.2	135	137	146	142	89.2	72.5	65.9	81.7	59.3	59.3
(WY)	1972	1958	1977	1993	1960	1993	1958	1975	1962	1975	1985	1971	1971
MIN	2.37	7.09	7.37	8.17	22.5	22.8	14.3	10.0	3.74	2.41	3.70	1.99	1.99
(WY)	1955	1954	1956	1956	1986	1955	1967	1986	1986	1986	1999	1954	1954

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

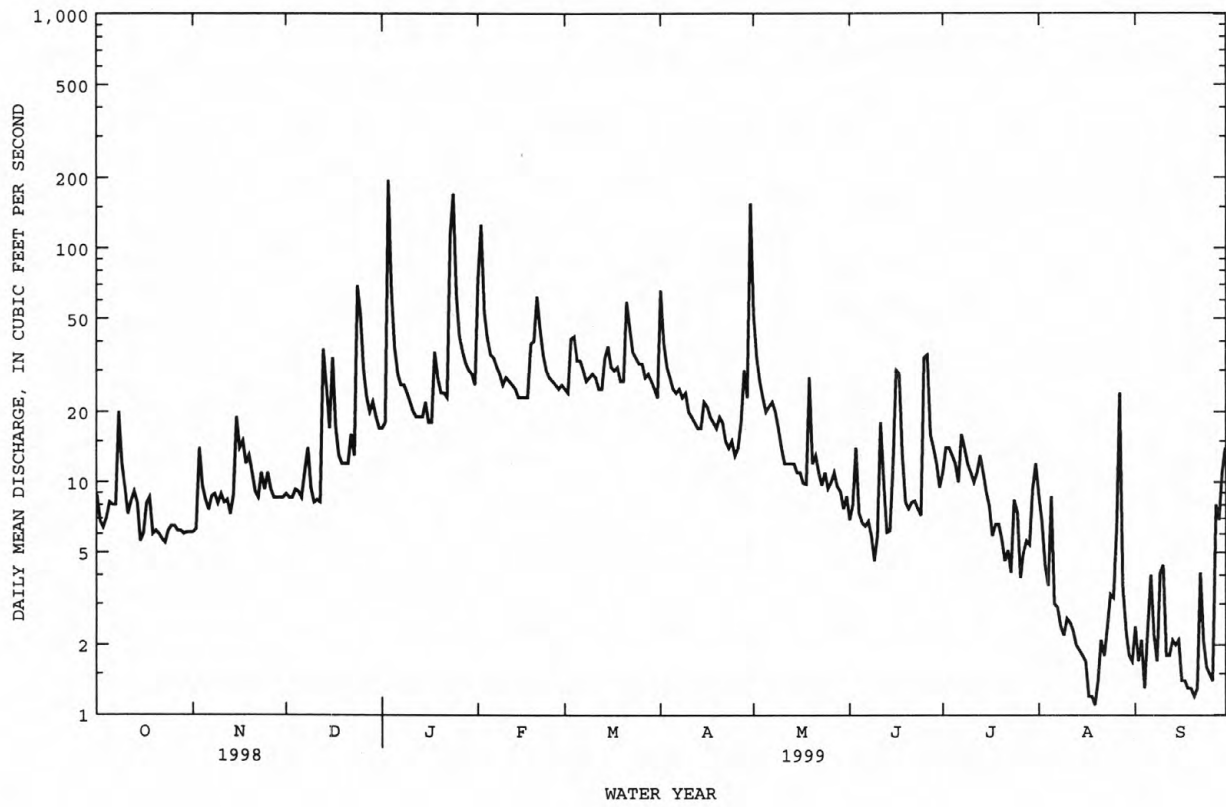
## WATER YEARS 1953 - 1999

ANNUAL TOTAL	13720.4	6542.8	
ANNUAL MEAN	37.6	17.9	35.0
HIGHEST ANNUAL MEAN			58.6
LOWEST ANNUAL MEAN			16.7
HIGHEST DAILY MEAN	592	Mar 8	2940
LOWEST DAILY MEAN	4.3	Aug 13	.55
ANNUAL SEVEN-DAY MINIMUM	5.6	Sep 14	.76
INSTANTANEOUS PEAK FLOW			6500
INSTANTANEOUS PEAK STAGE			9.10
INSTANTANEOUS LOW FLOW			.40
ANNUAL RUNOFF (CFSM)	1.18		1.10
ANNUAL RUNOFF (INCHES)	16.05		14.94
10 PERCENT EXCEEDS	64		57
50 PERCENT EXCEEDS	19		21
90 PERCENT EXCEEDS	6.2		6.8

e Estimated.

\* See REMARKS.

02144000 LONG CREEK NEAR BESSEMER CITY, NC--Continued



## SANTEE RIVER BASIN

02145000 SOUTH FORK CATAWBA RIVER AT LOWELL, NC

LOCATION.--Lat 35°17'10", long 81°06'00", Gaston County, Hydrologic Unit 03050102, on right bank 50 ft north of private mill road, 120 ft downstream of Housers Creek, 1.0 mi north of Lowell, 2.5 mi upstream from bridge on Interstate Highway 85, and 3.0 mi downstream of Long Creek.

DRAINAGE AREA.--628 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1942 to September 1971, October 1983 to current year.

REVISED RECORDS.--WSP 1002: 1943(M). WSP 1303: 1950(M).

GAGE.--Water-stage recorder. Datum of gage is 603.10 ft above sea level. Telephone telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Considerable diurnal fluctuation and slight regulation for short periods at low flow caused by power plant upstream from station. For diversion by Town of Bessemer City, see Long Creek near Bessemer City (station 02144000). Minimum discharge for all water years affected by regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Aug. 15, 1940, reached a stage of 21.33 ft, from floodmarks; discharge, 34,000 ft<sup>3</sup>/s. Depth of flow over dam during the July 1916 flood at High Shoals, 11 mi upstream, was about 1 ft higher than that for August 1940, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	329	263	351	474	806	757	910	2630	355	403	218	184
2	297	295	369	458	1790	746	1400	1550	354	369	219	170
3	277	353	323	1330	1660	745	1010	988	396	358	208	166
4	288	356	336	1490	1350	1010	871	830	425	343	193	148
5	282	343	334	952	1030	907	825	746	377	326	189	150
6	314	333	328	708	882	801	797	703	353	320	181	194
7	335	318	342	645	809	761	757	677	327	358	185	220
8	523	303	349	640	772	711	729	667	324	727	148	194
9	1020	317	387	647	734	708	693	606	316	471	166	224
10	624	330	417	644	710	784	641	565	305	404	189	253
11	470	340	392	625	682	754	608	531	549	395	187	240
12	408	401	384	600	646	710	596	516	476	392	180	205
13	352	388	523	589	597	679	554	501	395	483	161	172
14	337	374	831	568	583	677	540	501	352	448	144	161
15	330	448	592	576	570	862	564	537	366	414	140	158
16	316	452	649	592	573	844	630	490	527	384	138	150
17	304	512	551	568	576	773	571	476	780	329	143	150
18	310	469	464	728	744	754	538	455	585	328	148	144
19	305	420	409	826	988	723	516	730	e470	299	143	135
20	302	379	412	755	1530	693	511	699	380	288	144	138
21	293	379	413	675	1540	803	509	561	364	346	172	146
22	311	364	411	625	1280	1040	496	485	367	455	188	185
23	282	358	406	854	1100	794	482	450	363	311	207	156
24	276	359	704	2700	938	727	478	446	345	426	431	143
25	281	350	1070	2200	877	707	464	421	415	451	299	133
26	291	340	741	1410	849	708	464	416	836	249	230	126
27	295	338	607	1000	800	668	466	423	656	262	395	203
28	295	345	549	863	734	647	793	412	552	256	279	315
29	294	336	529	786	---	629	889	397	641	231	229	527
30	329	337	505	743	---	609	2310	378	488	e240	214	690
31	263	---	483	720	---	600	---	359	---	236	191	---
TOTAL	10933	10900	15161	26991	26150	23331	21612	20146	13439	11302	6259	6180
MEAN	353	363	489	871	934	753	720	650	448	365	202	206
MAX	1020	512	1070	2700	1790	1040	2310	2630	836	727	431	690
MIN	263	263	323	458	570	600	464	359	305	231	138	126
CFSM	.56	.58	.78	1.39	1.49	1.20	1.15	1.03	.71	.58	.32	.33
IN.	.65	.65	.90	1.60	1.55	1.38	1.28	1.19	.80	.67	.37	.37

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1999,<sup>®</sup> BY WATER YEAR (WY)

	MEAN	642	636	794	1029	1248	1313	1065	758	639	541	583	497
MAX	2862	2034	1748	2468	3204	3511	2676	1759	1424	1361	2266	2460	
(WY)	1965	1958	1968	1993	1960	1952	1958	1984	1962	1943	1970	1945	
MIN	104	215	235	242	499	561	390	337	196	162	182	110	
(WY)	1955	1955	1956	1956	1986	1955	1967	1986	1986	1986	1956	1954	

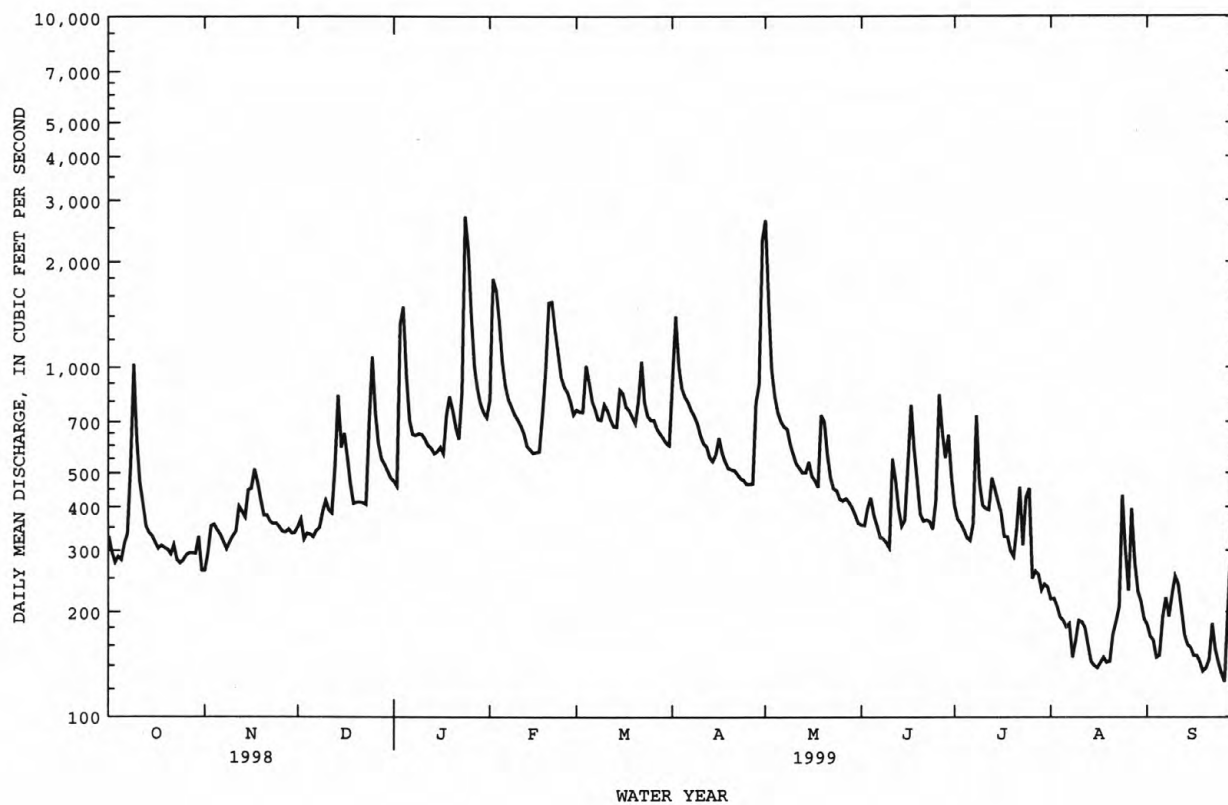
SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1942 - 1999 <sup>®</sup>
ANNUAL TOTAL	344174	192404	
ANNUAL MEAN	943	527	810
HIGHEST ANNUAL MEAN			1341
LOWEST ANNUAL MEAN			418
HIGHEST DAILY MEAN	8650	Mar 9	21700
LOWEST DAILY MEAN	243	Sep 20	31
ANNUAL SEVEN-DAY MINIMUM	262	Sep 15	73
INSTANTANEOUS PEAK FLOW			3510
INSTANTANEOUS PEAK STAGE			6.85
INSTANTANEOUS LOW FLOW			110*
ANNUAL RUNOFF (CFSM)	1.50		.84
ANNUAL RUNOFF (INCHES)	20.39		11.40
10 PERCENT EXCEEDS	1700		851
50 PERCENT EXCEEDS	618		448
90 PERCENT EXCEEDS	303		189
			282

e Estimated.

® See PERIOD OF RECORD.

\* See REMARKS.

02145000 SOUTH FORK CATAWBA RIVER AT LOWELL, NC--Continued





## SANTEE RIVER BASIN

0214620760 CRN03

LOCATION.--Lat 35°16'32", long 80°47'05", Mecklenburg County, Hydrologic Unit 03050103, Irwin Creek at Starita Road at Charlotte, NC.

PERIOD OF RECORD.--October 1992 to current year. Records for period October 1992 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.93	.00	.53	.00	.00	.00	.11	.00
2	.02	.37	.00	.50	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.49	.00	.82	.00	.28	.00	.00	.00	.00	.00	.00
4	.34	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
5	.10	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.80
6	.00	.00	.00	.00	.00	.02	.00	.08	.00	.72	.05	.02
7	.21	.00	.00	.00	.00	.00	.00	.01	.00	.22	.09	.00
8	.29	.00	.00	.05	.00	.00	.00	.00	.00	.00	.07	.00
9	.01	.00	.01	.01	.00	.25	.00	.00	.00	.00	.00	.03
10	.00	.01	.00	.00	.00	.01	.00	.00	.32	.01	.00	.00
11	.00	.02	.00	.00	.00	.00	.05	.00	.00	.06	.00	.00
12	.00	.00	.06	.00	.00	.00	.00	.00	.00	.30	.00	.00
13	.00	.00	.49	.00	.00	.00	.00	.12	.00	.04	.01	.00
14	.00	.55	.01	.07	.00	.48	.00	.01	.00	.00	.02	.00
15	.00	.03	.55	.21	.00	.04	.11	.00	.32	.00	.00	.91
16	.00	.34	.16	.00	.00	.00	.00	.00	1.48	.00	.00	.08
17	.00	.00	.00	.92	.03	.00	.00	.00	.01	.00	.00	.00
18	.00	.00	.00	.10	.48	.00	.00	.24	.00	.00	.00	.00
19	.00	.01	.01	.00	.46	.00	.00	.17	.00	.00	.00	.00
20	.00	.00	.01	.00	.52	.00	.00	.00	.03	.00	.62	.00
21	.00	.00	.00	.00	.00	.29	.00	.00	.01	.00	.00	.36
22	.00	.00	.10	.00	.00	.00	.00	.00	.00	.01	.00	.02
23	.00	.00	.34	1.97	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.42	.42	.00	.00	.00	.00	.00	1.18	.65	.00
25	.00	.00	.08	.00	.00	.06	.00	.00	.52	.00	.06	.00
26	.00	.05	.00	.00	.00	.00	.06	.30	.07	.01	.20	.00
27	.00	.00	.00	.00	.00	.00	.91	.00	.19	.00	.00	.26
28	.00	.00	.11	.00	.02	.00	.18	.00	.00	.00	.00	.46
29	.00	.00	.04	.01	---	.00	.60	.00	.20	.27	.00	.89
30	.00	.00	.00	.01	---	.00	.93	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.00	.00	---
TOTAL	0.97	1.87	3.39	5.09	2.46	1.45	3.37	0.99	3.15	2.82	1.88	3.83



USGS crew using an acoustic doppler current profiler to measure streamflow at Potecasi Creek, September 1999.

02146211 IRWIN CREEK AT STATESVILLE AVENUE AT CHARLOTTE, NC

LOCATION.--Lat 35°15'43", long 80°50'15", Mecklenburg County, Hydrologic Unit 03050103, on right bank 50 ft upstream from bridge on Statesville Avenue (U.S. Highway 21), 1,000 ft upstream from Kennedy Branch, 0.2 mi upstream from Interstate Highway 77, and 2.5 mi north of Trade and Tryon Street intersection in downtown Charlotte.

DRAINAGE AREA.--5.97 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1969-80, October 1981 to September 1994, November 1997 to current year.

REVISED RECORDS.--WDR NC-84-1: 1982.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 656.85 ft above sea level (levels by City of Charlotte). Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. A 140-acre solid-waste landfill, used 1940 to 1970, is located just upstream from station. No flow for parts of Aug. 1,3,4, 1987, occurred as a result of upstream construction; minimum discharge not affected by construction: 0.12 ft<sup>3</sup>/s, Aug. 30,31, 1987. Minimum discharge for current water year also occurred Aug. 22, 23, Sept. 12, 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.68	.60	1.6	1.1	26	2.7	14	5.1	1.0	1.0	.68	.50
2	.58	1.4	1.5	5.6	17	2.8	3.2	2.9	.94	.89	.62	.45
3	.55	13	1.1	90	5.9	6.0	2.3	2.2	.92	1.0	.43	.48
4	4.0	1.3	.96	6.4	4.4	3.0	2.1	2.0	.87	.75	.43	.45
5	2.1	.89	.90	3.3	3.2	2.7	1.9	2.2	.79	.71	.42	8.8
6	.87	.90	.91	2.5	3.0	2.6	1.9	2.5	.76	e45	.49	1.2
7	1.9	.81	.90	2.3	2.9	2.4	1.9	1.9	.79	e10	.51	.61
8	6.2	.84	.98	2.5	2.6	2.4	1.9	1.7	.68	2.6	.58	.48
9	1.3	.89	.97	2.1	2.4	6.1	1.9	1.6	.62	1.1	.63	.46
10	.79	.89	.98	1.8	2.3	3.2	1.7	1.5	2.6	.80	.48	.47
11	.70	1.5	.89	1.5	2.3	2.7	1.9	1.4	2.2	.82	.44	.38
12	.63	1.6	.92	1.6	2.3	2.5	1.9	1.4	.76	1.9	.36	.33
13	.64	1.5	7.4	1.5	2.1	2.3	1.6	2.1	.60	2.6	.40	.44
14	.69	5.5	1.9	1.5	2.0	12	1.6	1.7	.55	1.1	.42	.56
15	.65	5.1	6.6	6.2	2.1	6.4	2.6	1.5	2.9	.92	.48	8.8
16	.69	7.1	12	1.8	2.1	3.4	1.8	1.4	31	.82	.55	6.0
17	.70	2.8	2.2	45	2.2	3.0	1.7	1.4	4.6	.74	.58	.76
18	.66	1.4	1.6	23	13	2.9	1.6	1.6	1.2	.67	.61	.50
19	.62	1.2	1.3	5.0	28	2.5	1.7	5.8	.85	.66	.68	.46
20	.61	1.2	1.2	3.1	20	2.4	2.0	1.6	.88	.67	4.1	.45
21	.64	.98	1.2	2.5	6.8	7.5	1.9	1.4	.93	.65	1.0	2.1
22	.57	.98	1.9	2.0	4.2	3.3	2.0	1.3	.88	.61	.33	1.9
23	.57	.98	8.6	141	3.4	2.8	1.8	1.4	.83	.59	.36	.51
24	.49	1.1	53	87	3.1	2.7	1.5	1.2	.78	16	9.5	.59
25	.47	1.1	11	11	2.9	2.8	1.4	1.2	5.6	2.9	2.6	.44
26	.47	1.3	3.3	4.8	2.8	2.7	1.5	3.9	1.8	.87	1.3	.40
27	.51	.95	3.8	3.7	2.8	2.4	14	1.6	3.0	.65	2.2	2.1
28	.50	.93	3.9	3.7	3.0	2.3	11	1.3	1.8	.59	.55	6.7
29	.60	1.7	2.8	3.2	---	2.2	7.4	1.2	8.0	2.7	.45	24
30	.52	2.0	1.5	2.9	---	2.2	60	1.0	2.5	1.4	.48	4.5
31	.58	---	1.3	2.6	---	2.2	---	1.0	---	.69	.45	---
TOTAL	31.48	62.44	139.11	472.2	174.8	107.1	153.7	60.0	81.63	102.40	33.11	75.82
MEAN	1.02	2.08	4.49	15.2	6.24	3.45	5.12	1.94	2.72	3.30	1.07	2.53
MAX	6.2	13	53	141	28	12	60	5.8	31	45	9.5	24
MIN	.47	.60	.89	1.1	2.0	2.2	1.4	1.0	.55	.59	.33	.33
CFSM	.17	.35	.75	2.55	1.05	.58	.86	.32	.46	.55	.18	.42
IN.	.20	.39	.87	2.94	1.09	.67	.96	.37	.51	.64	.21	.47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1999,<sup>e</sup> BY WATER YEAR (WY)

	MEAN	5.27	6.45	7.42	12.1	14.6	14.2	7.84	6.59	6.39	3.66	4.10	3.44
MAX	23.8	27.9	21.3	22.9	38.8	35.0	16.0	16.5	24.9	8.15	11.3	16.2	
(WY)	1991	1986	1984	1993	1995	1995	1998	1990	1982	1984	1985	1987	
MIN	.97	1.08	2.97	4.04	4.71	2.99	2.71	1.94	.88	.93	.39	.47	
(WY)	1992	1982	1995	1986	1986	1985	1986	1986	1986	1986	1987	1983	

SUMMARY STATISTICS

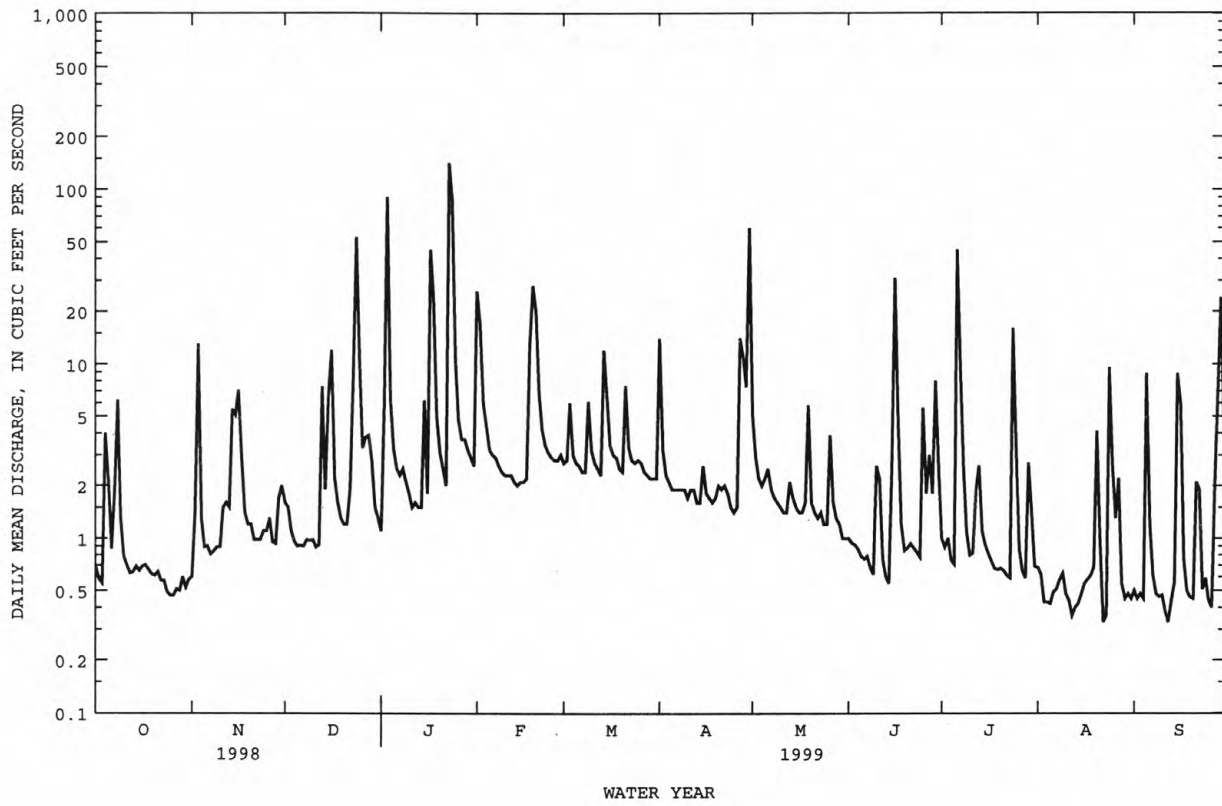
	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1981 - 1999 <sup>e</sup>
ANNUAL TOTAL	2849.50	1493.79	
ANNUAL MEAN	7.81	4.09	7.69
HIGHEST ANNUAL MEAN			12.0
LOWEST ANNUAL MEAN			4.09
HIGHEST DAILY MEAN	153	141	388
LOWEST DAILY MEAN	.47 Oct 25	.33 Aug 22	.16 Nov 21 1985
ANNUAL SEVEN-DAY MINIMUM	.51 Oct 24	.45 Sep 8	.26 Aug 1 1986
INSTANTANEOUS PEAK FLOW		880 Jan 23	1430 Jun 18 1982
INSTANTANEOUS PEAK STAGE		5.44 Jan 23	7.58 Jun 18 1982
INSTANTANEOUS LOW FLOW		.30* Aug 12	.00* Aug 1 1987
ANNUAL RUNOFF (CFSM)	1.31	.69	1.29
ANNUAL RUNOFF (INCHES)	17.76	9.31	17.50
10 PERCENT EXCEEDS	14	6.6	15
50 PERCENT EXCEEDS	2.3	1.6	2.6
90 PERCENT EXCEEDS	.69	.51	.74

<sup>e</sup> Estimated.

<sup>g</sup> See PERIOD OF RECORD.

\* See REMARKS.

02146211 IRWIN CREEK AT STATESVILLE AVENUE AT CHARLOTTE, NC--Continued



## SANTEE RIVER BASIN

02146300 IRWIN CREEK NEAR CHARLOTTE, NC

LOCATION.--Lat 35°11'50", long 80°54'18", Mecklenburg County, Hydrologic Unit 03050103, on left bank at sewage-disposal plant of city of Charlotte, 2,200 ft upstream from Southern Railway bridge, 0.7 mi upstream from Taggart Creek, and 4.2 mi southwest of city hall, Charlotte.

DRAINAGE AREA.--30.7 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1962 to current year. Prior to October 1963, published as "Sugar (Irwin) Creek at Charlotte".

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 591.53 ft above sea level (levels by City of Charlotte). Telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge for period of record from rating curve extended above 7,500 ft<sup>3</sup>/s on basis of step-backwater computation. Minimum discharge for period of record also occurred July 14, 1986.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 6, 1936, reached a stage of about 17.3 ft at site 400 ft downstream, from information by plant employee. Peak may have been affected by failure of Lakewood Dam, 5 mi upstream. Flood of Jan. 6, 1962, reached a stage of 14.32 ft, from floodmarks; discharge, 4,120 ft<sup>3</sup>/s. Flood of April 11, 1962, reached a stage of 15.18 ft, from floodmarks; discharge, 4,740 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	14	10	11	147	16	93	30	10	12	13	11
2	8.7	24	9.3	25	88	17	19	18	10	13	14	9.2
3	8.3	111	11	319	28	41	14	18	9.1	10	7.8	8.6
4	54	23	8.8	26	25	20	13	15	9.9	8.7	11	8.4
5	16	22	10	18	18	17	12	17	12	9.5	9.7	65
6	13	16	10	18	18	16	13	21	11	219	9.8	18
7	24	20	10	16	17	15	13	16	12	50	12	14
8	60	23	10	18	16	15	12	14	12	21	10	12
9	15	18	9.7	16	16	42	13	12	13	13	13	15
10	9.8	9.1	9.0	13	16	20	13	13	86	13	10	13
11	13	9.7	11	13	14	16	26	14	46	12	10	7.7
12	16	9.0	9.7	12	15	17	14	14	13	28	12	6.6
13	15	9.0	59	13	15	15	11	37	11	28	12	8.2
14	13	32	14	12	15	82	13	17	11	15	10	7.9
15	9.5	49	40	41	13	38	24	14	48	11	10	42
16	10	38	72	13	15	19	13	12	190	12	11	66
17	12	22	14	135	15	19	11	13	40	20	12	8.6
18	14	11	12	85	78	22	12	10	14	11	10	8.4
19	12	11	12	23	142	16	13	54	10	9.8	10	8.7
20	8.8	9.6	10	18	93	17	12	13	9.9	11	69	6.9
21	8.7	9.4	11	16	33	74	13	11	11	11	24	59
22	8.5	9.0	18	14	23	22	14	10	11	12	8.3	37
23	9.4	8.8	62	451	19	18	13	12	9.7	11	10	9.9
24	8.7	9.8	285	291	19	18	13	11	11	77	88	7.9
25	13	9.8	63	49	18	18	13	9.9	67	26	41	8.2
26	14	11	19	27	18	19	16	36	44	12	12	9.1
27	9.9	9.1	17	22	15	15	133	13	38	12	26	27
28	7.6	9.5	15	20	18	16	80	9.6	24	12	9.9	46
29	8.1	9.6	28	18	---	15	34	8.8	33	38	8.6	177
30	9.5	9.4	14	16	---	18	394	9.0	18	15	8.5	45
31	8.1	---	13	15	---	17	---	11	---	11	7.1	---
TOTAL	446.8	575.8	896.5	1784	967	730	1087	513.3	844.6	764.0	519.7	771.3
MEAN	14.4	19.2	28.9	57.5	34.5	23.5	36.2	16.6	28.2	24.6	16.8	25.7
MAX	60	111	285	451	147	82	394	54	190	219	88	177
MIN	7.6	8.8	8.8	11	13	15	11	8.8	9.1	8.7	7.1	6.6
CFSM	.47	.63	.94	1.87	1.12	.77	1.18	.54	.92	.80	.55	.84
IN.	.54	.70	1.09	2.16	1.17	.88	1.32	.62	1.02	.93	.63	.93

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

	MEAN	38.0	37.0	41.5	60.4	65.7	70.1	43.6	40.7	36.5	34.8	33.8	32.6
MAX	157	137	107	123	124	161	93.5	204	123	215	118	135	
(WY)	1991	1986	1984	1993	1979	1993	1998	1975	1982	1997	1995	1975	
MIN	9.00	9.32	10.2	13.4	20.7	18.5	14.9	14.0	6.95	6.67	7.97	6.00	
(WY)	1992	1982	1966	1981	1968	1985	1981	1986	1986	1986	1987	1983	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

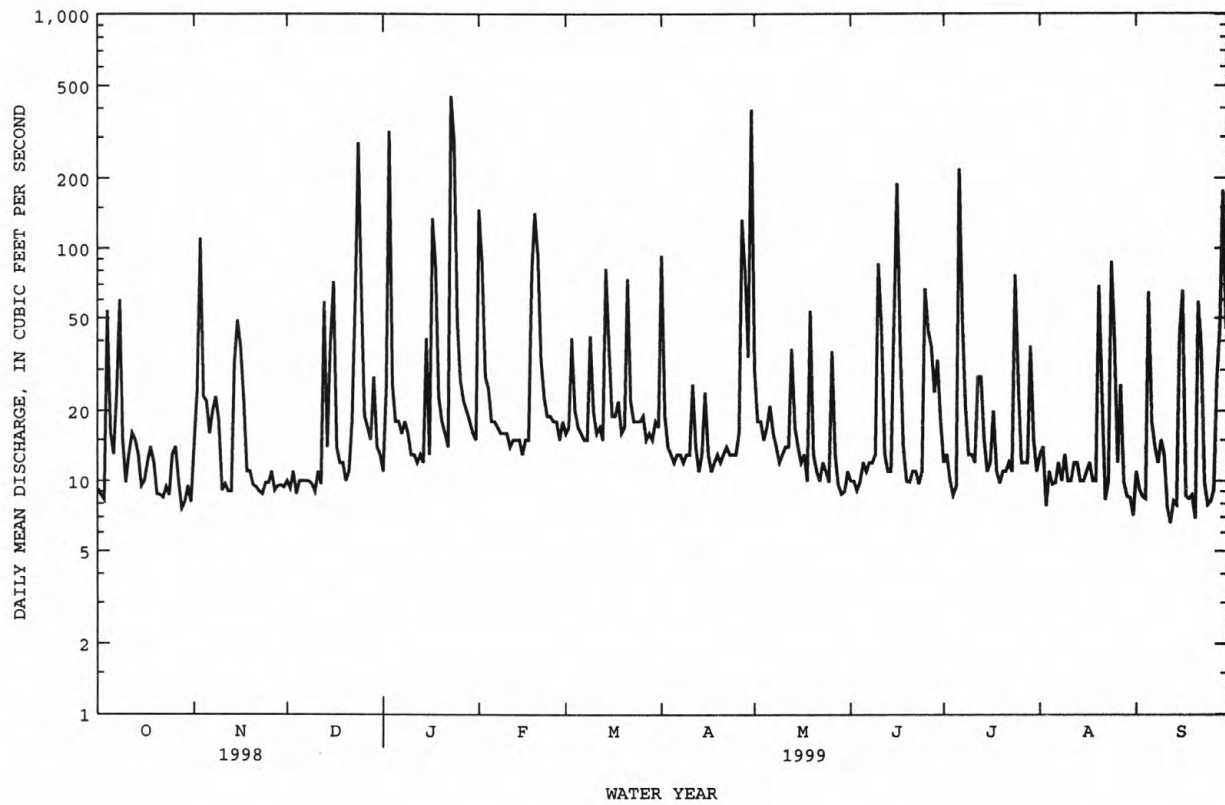
FOR 1999 WATER YEAR

WATER YEARS 1962 - 1999

ANNUAL TOTAL	17468.8	9900.0	
ANNUAL MEAN	47.9	27.1	44.6
HIGHEST ANNUAL MEAN			78.6
LOWEST ANNUAL MEAN			24.0
HIGHEST DAILY MEAN	983	451	5010
LOWEST DAILY MEAN	7.6	6.6	3.1
ANNUAL SEVEN-DAY MINIMUM	9.6	8.8	3.5
INSTANTANEOUS PEAK FLOW		2600	11600*
INSTANTANEOUS PEAK STAGE		10.50	20.38
INSTANTANEOUS LOW FLOW		5.4	2.8*
ANNUAL RUNOFF (CFSM)	1.56	.88	1.45
ANNUAL RUNOFF (INCHES)	21.17	12.00	19.76
10 PERCENT EXCEEDS	110	52	80
50 PERCENT EXCEEDS	21	14	18
90 PERCENT EXCEEDS	9.4	9.1	8.6

\* See REMARKS.

02146300 IRWIN CREEK NEAR CHARLOTTE, NC--Continued





## SANTEE RIVER BASIN

0214630800 TAGGART CREEK AT WEST BOULEVARD NEAR CHARLOTTE, NC

LOCATION.--Lat 35°12'21", long 80°55'24", Mecklenburg County, Hydrologic Unit 03050103, on right bank at northeast corner of intersection of Billy Graham Parkway and NC Highway 160 (West Blvd), 1.2 mi upstream of confluence with Irwin Creek, and 5.0 mi from city hall, Charlotte.

DRAINAGE AREA.--5.38 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1998 to September 1999.

GAGE.--Water-stage recorder. Datum of gage 604.27 ft above sea level, from levels.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period July to Sept. 1998 also occurred July 16, 18, 19, 22, 23. Minimum discharge for current water year and period of record also occurred Sept. 4, 5, 14, 15.

DISCHARGE, CUBIC FEET PER SECOND, FOR PERIOD JULY 1998 TO SEPTEMBER 1998  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	.70	1.1	.79
2	---	---	---	---	---	---	---	---	---	.78	.70	.76
3	---	---	---	---	---	---	---	---	---	.65	.63	51
4	---	---	---	---	---	---	---	---	---	3.5	.57	37
5	---	---	---	---	---	---	---	---	---	1.4	.55	1.4
6	---	---	---	---	---	---	---	---	---	.57	.55	.93
7	---	---	---	---	---	---	---	---	---	.53	11	.93
8	---	---	---	---	---	---	---	---	---	.54	3.5	.90
9	---	---	---	---	---	---	---	---	---	.60	4.9	.71
10	---	---	---	---	---	---	---	---	---	.56	2.0	.70
11	---	---	---	---	---	---	---	---	---	.48	.77	.85
12	---	---	---	---	---	---	---	---	---	.47	.63	.67
13	---	---	---	---	---	---	---	---	---	.55	1.7	.63
14	---	---	---	---	---	---	---	---	---	.65	.78	.69
15	---	---	---	---	---	---	---	---	---	.58	26	.68
16	---	---	---	---	---	---	---	---	---	.53	27	.73
17	---	---	---	---	---	---	---	---	---	.58	8.3	.77
18	---	---	---	---	---	---	---	---	---	.50	1.1	.82
19	---	---	---	---	---	---	---	---	---	.41	.83	.71
20	---	---	---	---	---	---	---	---	---	5.0	.69	.72
21	---	---	---	---	---	---	---	---	---	3.5	.65	8.1
22	---	---	---	---	---	---	---	---	---	.48	.60	1.4
23	---	---	---	---	---	---	---	---	---	.43	.57	.64
24	---	---	---	---	---	---	---	---	---	.44	.58	.80
25	---	---	---	---	---	---	---	---	---	18	.61	.70
26	---	---	---	---	---	---	---	---	---	1.1	.62	.56
27	---	---	---	---	---	---	---	---	---	72	.75	.59
28	---	---	---	---	---	---	---	---	---	1.8	.81	.68
29	---	---	---	---	---	---	---	---	---	1.2	.83	.82
30	---	---	---	---	---	---	---	---	---	1.1	.81	2.6
31	---	---	---	---	---	---	---	---	---	4.0	.80	---
TOTAL	---	---	---	---	---	---	---	---	---	123.63	100.93	119.28
MEAN	---	---	---	---	---	---	---	---	---	3.99	3.26	3.98
MAX	---	---	---	---	---	---	---	---	---	72	27	51
MIN	---	---	---	---	---	---	---	---	---	.41	.55	.56
CFSM	---	---	---	---	---	---	---	---	---	.74	.61	.74
IN.	---	---	---	---	---	---	---	---	---	.85	.70	.82

## STATISTICS OF MONTHLY MEAN DATA FOR PERIOD JULY 1998 TO SEPTEMBER 1998

MEAN	---	---	---	---	---	---	---	---	---	3.99	3.26	3.98
MAX	---	---	---	---	---	---	---	---	---	3.99	3.26	3.98
(WY)	---	---	---	---	---	---	---	---	---	1998	1998	1998
MIN	---	---	---	---	---	---	---	---	---	3.99	3.26	3.98
(WY)	---	---	---	---	---	---	---	---	---	1998	1998	1998

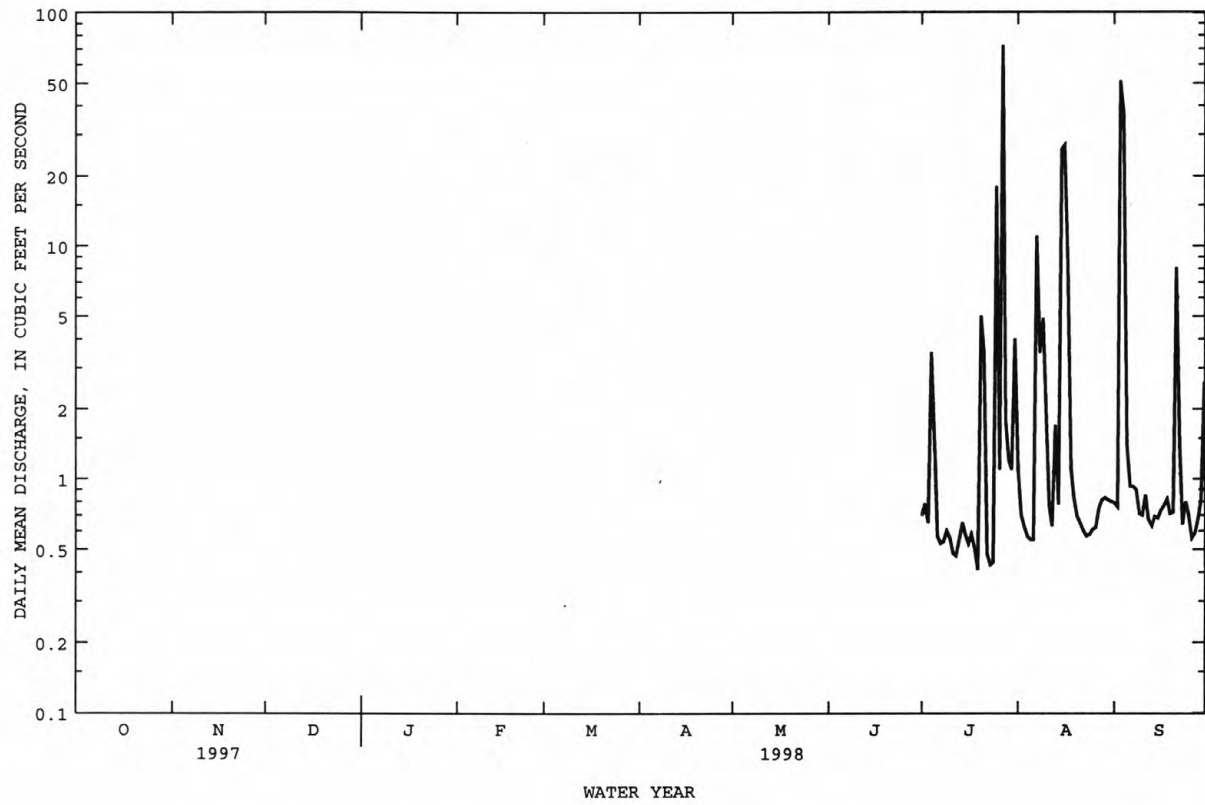
## SUMMARY STATISTICS

## FOR JULY TO SEPTEMBER

INSTANTANEOUS PEAK FLOW 780 Jul 27  
 INSTANTANEOUS PEAK STAGE 7.17 Jul 27  
 INSTANTANEOUS LOW FLOW .39\* Jul 15

\* See REMARKS.

0214630800 TAGGART CREEK AT WEST BOULEVARD NEAR CHARLOTTE, NC--Continued



## SANTÉE RIVER BASIN

0214630800 TAGGART CREEK AT WEST BOULEVARD NEAR CHARLOTTE, NC--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	.49	.72	.72	27	1.6	15	3.1	.60	.69	.84	.18
2	.45	1.7	.61	7.2	11	1.5	2.3	1.6	.56	.65	.79	.19
3	.50	18	.70	55	3.3	4.7	1.8	1.3	.89	.63	.20	.18
4	9.5	.53	1.1	2.7	2.7	1.9	1.7	1.1	.48	.60	.20	.16
5	3.1	.40	.66	1.7	2.0	1.5	1.7	1.9	.43	.58	.28	8.8
6	3.9	.47	.58	1.3	1.8	1.5	1.5	2.2	.42	28	.18	1.1
7	5.6	.58	.63	1.2	2.1	1.4	1.6	1.2	.49	3.9	.20	.37
8	6.4	.72	.66	1.8	2.0	1.4	1.7	.99	.43	1.3	.50	.34
9	.63	.80	.67	1.2	1.6	5.7	1.8	.90	1.7	.75	.78	7.4
10	.40	.78	.79	1.0	1.4	2.2	1.8	.85	19	.77	.19	1.1
11	.35	1.4	.75	.96	1.4	1.6	5.9	.81	5.2	.77	.20	.31
12	.31	.97	.65	.95	1.5	1.5	1.6	.79	.69	2.2	.24	.19
13	.30	.89	8.6	.95	1.3	1.4	1.1	1.9	.54	2.7	.25	.18
14	.38	7.5	.93	1.0	1.3	11	1.1	1.3	.48	.85	.63	.16
15	.40	5.7	7.5	6.4	1.3	3.8	3.6	.81	7.9	.82	.23	6.3
16	.26	8.8	7.8	1.1	1.3	1.9	1.2	.78	37	.84	.24	7.7
17	.30	2.0	.93	20	1.3	1.7	.99	.75	4.1	.74	.27	.33
18	.24	.70	.78	10	9.8	1.6	.99	2.2	.90	.46	.32	.22
19	.33	.57	.69	2.4	26	1.5	.96	13	.73	.58	.47	.22
20	.28	.67	.66	1.7	13	1.5	1.0	.83	.82	.65	14	.28
21	.25	.58	.65	1.4	3.9	21	.96	.72	.83	.53	1.6	21
22	.38	.58	2.4	1.2	2.5	2.7	1.0	.69	.85	.34	.24	4.2
23	.44	.57	10	42	2.1	1.9	.95	.68	.76	.33	.23	.33
24	.39	.59	50	37	1.9	1.8	.94	.69	.72	20	14	.22
25	.38	.59	8.2	4.6	1.8	1.9	.96	.63	18	1.4	4.1	.27
26	.45	1.1	1.5	2.5	1.9	1.9	1.5	5.3	6.7	.98	.46	.24
27	.57	.61	.93	2.0	1.8	1.7	16	.86	4.0	.45	1.7	7.5
28	.43	.57	1.1	1.7	2.0	1.7	5.7	.61	2.0	1.7	.29	10
29	.39	.58	3.0	1.5	---	1.7	4.6	.57	.98	1.2	.24	27
30	.35	.63	1.0	1.7	---	1.6	60	.56	.87	.53	.23	4.3
31	.38	---	.75	1.2	---	1.5	---	.53	---	1.0	.19	---
TOTAL	38.64	60.07	115.94	216.08	131.0	90.3	141.95	50.15	119.07	76.94	44.29	110.77
MEAN	1.25	2.00	3.74	6.97	4.68	2.91	4.73	1.62	3.97	2.48	1.43	3.69
MAX	9.5	18	50	55	27	21	60	13	37	28	14	27
MIN	.24	.40	.58	.72	1.3	1.4	.94	.53	.42	.33	.18	.16
CFSM	.23	.37	.70	1.30	.87	.54	.88	.30	.74	.46	.27	.69
IN.	.27	.42	.80	1.49	.91	.62	.98	.35	.82	.53	.31	.77

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

MEAN	1.25	2.00	3.74	6.97	4.68	2.91	4.73	1.62	3.97	3.23	2.34	3.83
MAX	1.25	2.00	3.74	6.97	4.68	2.91	4.73	1.62	3.97	3.99	3.26	3.98
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1998	1998	1998
MIN	1.25	2.00	3.74	6.97	4.68	2.91	4.73	1.62	3.97	2.48	1.43	3.69
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999

## SUMMARY STATISTICS

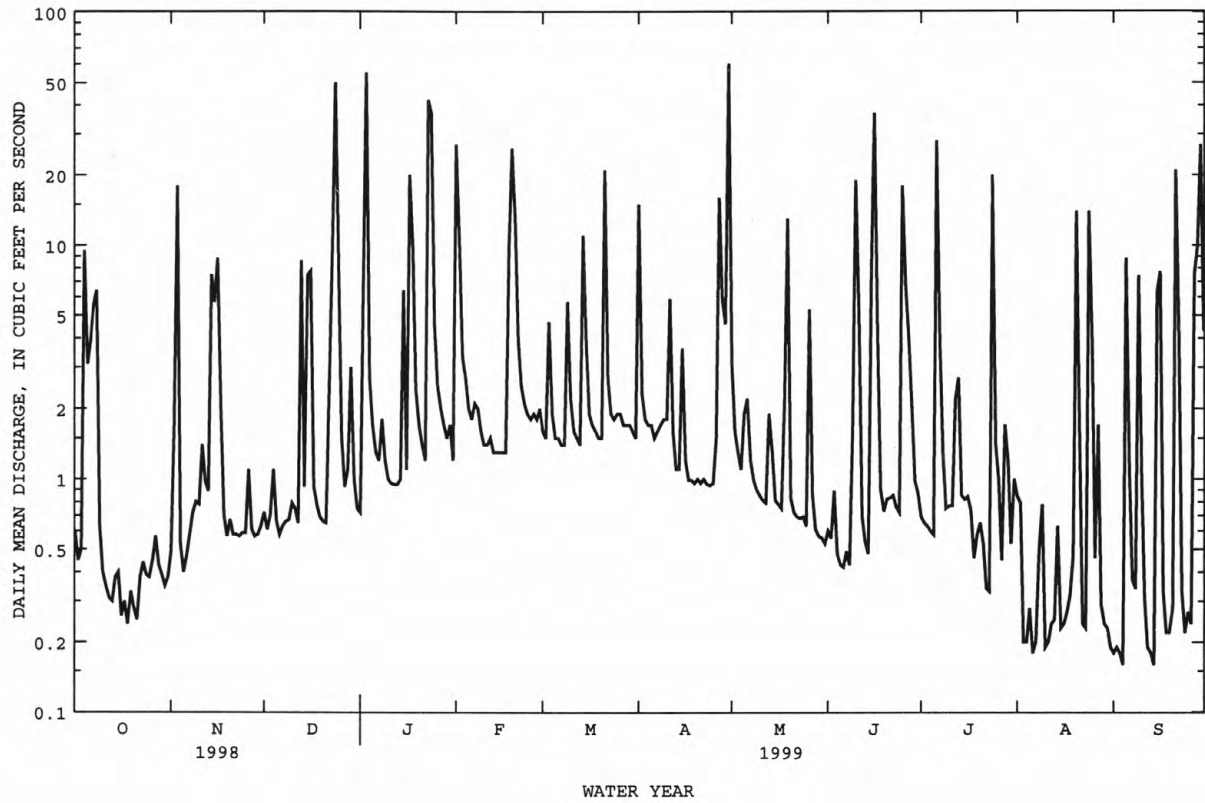
## FOR 1999 WATER YEAR

## WATER YEARS 1998 - 1999

ANNUAL TOTAL	1195.20	
ANNUAL MEAN	3.27	3.27
HIGHEST ANNUAL MEAN		3.27 1999
LOWEST ANNUAL MEAN		3.27 1999
HIGHEST DAILY MEAN	60	72 Jul 27 1998
LOWEST DAILY MEAN	.16	.16 Sep 4 1999
ANNUAL SEVEN-DAY MINIMUM	.20	.20 Aug 29 1999
INSTANTANEOUS PEAK FLOW	425	780 Jul 27 1998
INSTANTANEOUS PEAK STAGE	5.58	7.17 Jul 27 1998
INSTANTANEOUS LOW FLOW	.11*	.11* Aug 3 1999
ANNUAL RUNOFF (CFSM)	.61	.61
ANNUAL RUNOFF (INCHES)	8.26	8.27
10 PERCENT EXCEEDS	7.7	7.6
50 PERCENT EXCEEDS	1.0	.94
90 PERCENT EXCEEDS	.30	.35

\* See REMARKS.

0214630800 TAGGART CREEK AT WEST BOULEVARD NEAR CHARLOTTE, NC--Continued



## SANTEE RIVER BASIN

02146348 COFFEY CREEK NEAR CHARLOTTE, NC

LOCATION.--Lat 35°08'43", long 80°55'38", Mecklenburg County, Hydrologic Unit 03050103 on left bank at culvert on State Highway 49, 1.2 mi upstream from mouth, and 7.5 mi southwest of Charlotte.

DRAINAGE AREA.--9.14 mi<sup>2</sup>.

PERIOD OF RECORD.-- October 1998 to September 1999.

GAGE.--Water-stage recorder. Datum of gage is 565.72 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	.60	1.2	e1.6	37	3.7	21	15	.88	.76	.82	.20
2	.55	1.0	e1.0	e3.8	32	3.7	5.0	8.0	.85	.64	1.1	.18
3	.42	21	e1.8	e4.0	9.6	7.2	3.0	6.4	.89	.57	.41	.14
4	12	2.1	e1.6	e4.0	7.3	5.1	2.6	4.9	.83	.48	.50	.12
5	2.1	1.4	e1.5	e3.0	5.4	3.0	3.1	3.7	.73	.40	.20	7.6
6	1.1	1.3	e1.4	e2.8	4.7	2.9	2.6	5.6	.66	17	.21	3.5
7	3.5	1.3	e1.4	e2.4	4.4	2.7	2.5	3.5	.62	10	.21	.86
8	12	1.3	e1.4	e2.8	4.0	2.5	2.5	2.7	.57	3.4	.29	.49
9	1.5	1.3	e1.3	e2.4	3.7	7.7	2.6	2.1	.53	1.2	1.0	7.8
10	.90	1.4	e1.3	e2.0	3.6	5.1	2.2	1.7	3.6	2.3	.34	5.2
11	.78	1.8	e1.8	e2.0	3.4	3.5	5.7	1.4	27	1.1	.24	.79
12	.76	1.8	e1.4	e1.8	3.3	2.7	5.0	1.3	2.3	2.4	.19	.43
13	.75	1.5	e8.0	e2.0	3.1	2.5	2.4	1.8	1.4	4.6	.17	.31
14	.73	3.6	e2.0	e1.8	3.0	11	2.5	2.3	1.1	1.4	.14	.24
15	.68	14	e5.0	e6.0	3.0	10	6.6	1.3	9.5	1.0	.12	.86
16	.74	6.8	e10	e2.0	3.0	4.8	3.8	1.3	46	.82	.12	13
17	.76	5.5	e2.0	e20	3.1	3.9	1.9	.88	15	.68	.13	1.2
18	.76	2.1	e1.8	e14	16	3.6	1.4	.97	3.0	.55	.11	.61
19	.73	1.7	e1.7	e8.0	40	3.3	1.4	26	1.8	.46	.13	.44
20	.76	1.5	e1.6	5.8	30	3.2	1.3	3.0	1.5	.40	5.5	.34
21	.75	1.4	e1.5	4.6	11	23	1.1	1.8	1.4	.34	6.1	8.6
22	.69	1.3	e2.6	4.0	6.5	7.6	.93	1.5	1.3	.30	.78	19
23	.70	1.3	e9.0	71	5.1	5.3	.80	1.4	1.1	.26	.49	1.5
24	.79	1.4	e40	114	4.5	4.7	.76	1.2	1.1	17	2.0	.89
25	.80	1.4	e9.0	20	4.1	4.7	.71	1.5	18	5.8	11	.69
26	.82	1.6	e2.8	9.5	3.9	5.1	.90	6.3	3.5	1.1	1.4	.55
27	.86	e1.4	e2.6	6.4	4.1	3.9	10	2.3	2.2	.66	1.6	11
28	.99	e1.3	e2.0	5.1	3.8	3.6	24	1.4	2.9	.65	.84	3.7
29	.89	e1.5	e4.0	4.3	---	3.5	6.1	1.0	1.3	.42	.52	20
30	1.9	e1.2	e2.0	4.0	---	3.4	135	1.0	.98	.77	.37	10
31	.81	---	e1.8	3.5	---	3.3	---	.94	---	.40	.26	---
TOTAL	52.92	86.80	126.5	374.6	262.6	160.2	259.40	114.19	152.54	77.86	37.29	120.24
MEAN	1.71	2.89	4.08	12.1	9.38	5.17	8.65	3.68	5.08	2.51	1.20	4.01
MAX	12	21	40	114	40	23	135	26	46	17	11	20
MIN	.42	.60	1.0	1.6	3.0	2.5	.71	.88	.53	.26	.11	.12
CFSM	.19	.31	.44	1.31	1.02	.56	.94	.40	.55	.27	.13	.44
IN.	.21	.35	.51	1.52	1.06	.65	1.05	.46	.62	.32	.15	.49

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 1999, BY WATER YEAR (WY)

	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MEAN	1.71	2.89	4.08	12.1	9.38	5.17	8.65	3.68	5.08	2.51	1.20	4.01
MAX	1.71	2.89	4.08	12.1	9.38	5.17	8.65	3.68	5.08	2.51	1.20	4.01
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	1.71	2.89	4.08	12.1	9.38	5.17	8.65	3.68	5.08	2.51	1.20	4.01
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999

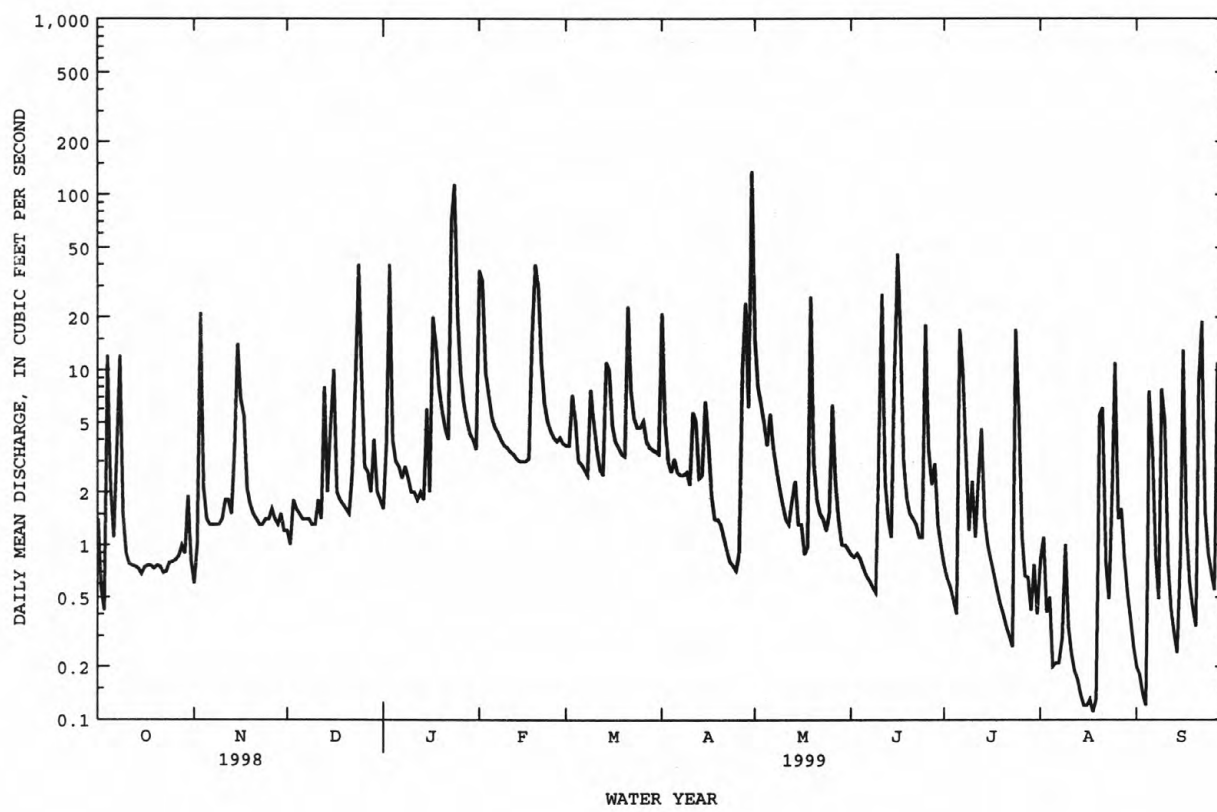
## SUMMARY STATISTICS

## FOR 1999 WATER YEAR

ANNUAL TOTAL	1825.14
ANNUAL MEAN	5.00
HIGHEST DAILY MEAN	135 Apr 30
LOWEST DAILY MEAN	.11 Aug 18
ANNUAL SEVEN-DAY MINIMUM	.13 Aug 13
INSTANTANEOUS PEAK FLOW	319 Apr 30
INSTANTANEOUS PEAK STAGE	7.45 Apr 30
INSTANTANEOUS LOW FLOW	.07 Sep 5
ANNUAL RUNOFF (CFSM)	.54
ANNUAL RUNOFF (INCHES)	7.39
10 PERCENT EXCEEDS	10
50 PERCENT EXCEEDS	1.8
90 PERCENT EXCEEDS	.49

e Estimated.

02146348 COFFEY CREEK NEAR CHARLOTTE, NC--Continued





## SANTÉE RIVER BASIN

0214635212 CRN28

LOCATION.--Lat 35°06'57", long 80°54'49", Mecklenburg County, Hydrologic Unit 03050103, unnamed tributary to Sugar Creek at Crompton Street, Charlotte, NC.

PERIOD OF RECORD.--April 1995 to current year. Records for period April 1995 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	---	---	.00	.24	.00	.44	.00	.00	.00	1.05	.00
2	.00	---	---	.53	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	---	---	.52	.00	.20	.00	.00	.00	.00	.00	.00
4	.52	---	---	.00	.10	.00	.00	.00	.00	.00	.00	.00
5	.00	---	---	.00	.00	.00	.00	.01	.00	.00	.00	.60
6	.00	---	---	.00	.00	.02	.00	.03	.00	.76	.00	.01
7	---	---	---	.00	.00	.00	.00	.00	.00	.13	.00	.00
8	---	---	---	.00	.00	.00	.00	.00	.00	.00	.17	.00
9	---	---	---	.00	.02	.31	.00	.00	.69	.00	.00	.09
10	---	---	---	.00	.01	.01	.00	.00	.30	.43	.00	.00
11	---	---	---	.00	.00	.00	.00	.00	.00	.02	.00	.00
12	---	---	---	.00	.00	.00	.00	.00	.00	.44	.00	.00
13	---	---	---	.00	.00	.00	.00	.54	.00	.26	.00	.00
14	---	---	---	.07	.00	.53	.00	.01	.00	.01	.00	.00
15	---	---	---	.20	.00	.01	.04	.00	.01	.00	.00	.79
16	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.14
17	---	---	---	1.05	.06	.00	.00	.00	.00	.00	.00	.00
18	---	---	.00	.02	.57	.00	.00	.31	.00	.00	.00	.00
19	---	---	.00	.00	.70	.00	.00	.26	.00	.00	.00	.00
20	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.29	.00
21	---	---	.00	.00	.00	.41	.00	.00	.00	.00	.00	.67
22	---	---	.01	.00	.00	.00	.00	.03	.00	.00	.00	.00
23	---	---	.10	1.79	.00	.00	.00	.00	.00	.00	.00	.00
24	---	---	.23	.55	.00	.00	.00	.00	.00	.31	.60	.00
25	---	---	.00	.00	.00	.13	.00	.00	.64	.01	.01	.00
26	---	---	.00	.00	.00	.00	.10	.41	.05	.00	.20	.00
27	---	---	.00	.00	.00	.00	.82	.00	.57	.00	.00	.57
28	---	---	.08	.00	.01	.00	.11	.00	.00	.00	.00	.16
29	---	---	.11	.00	---	.00	.45	.00	.00	.00	.00	1.10
30	---	---	.00	.01	---	.00	.96	.00	.00	.00	.00	.00
31	---	---	.00	.00	---	.01	---	.00	---	.00	.00	---
TOTAL	---	---	---	4.74	1.71	1.63	2.92	1.60	2.26	2.37	2.32	4.13



Floodwaters of the Neuse River surround this gas station along N.C. 117 in Goldsboro north of the main river channel, September 1999.

## 02146381 SUGAR CREEK AT NC 51 NEAR PINEVILLE, NC

LOCATION.--Lat 35°05'20", long 80°54'00", Mecklenburg County, Hydrologic Unit 03050103, on right bank on upstream side of bridge at N.C. Highway 51, 0.3 mi upstream from McCullough Branch, and 0.6 mi northwest of city hall, Pineville.

DRAINAGE AREA.--65.3 mi<sup>2</sup>.

PERIOD OF RECORD.-- Occasional discharge measurements, water years 1978-94. October 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 525 ft above sea level, from topographic map. Telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records fair. A daily average of 15.8 ft<sup>3</sup>/s of treated effluent from Irwin Creek wastewater treatment plant was discharged into the stream above the gage. Maximum discharge for period of record from rating curve extended above 9,710 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	23	27	35	178	43	158	113	29	33	44	26
2	33	37	27	35	301	44	70	60	29	32	53	28
3	32	195	27	707	87	53	49	51	30	30	29	25
4	109	45	28	94	68	69	44	46	30	28	29	24
5	50	37	28	66	58	46	42	43	29	27	29	77
6	44	32	28	51	50	42	43	52	29	95	29	80
7	37	30	27	48	47	40	44	46	29	269	28	34
8	157	36	28	47	44	40	37	40	30	64	28	29
9	47	35	27	46	43	62	37	36	37	40	33	29
10	36	26	26	42	43	69	39	36	45	45	29	53
11	33	27	27	39	42	45	40	35	261	39	28	28
12	39	28	27	39	41	42	57	36	44	56	28	24
13	39	26	77	38	41	40	39	44	36	75	29	24
14	29	29	49	37	41	82	38	78	33	43	28	25
15	28	134	40	78	41	133	48	38	74	36	26	30
16	29	41	172	43	40	56	48	35	277	35	26	176
17	29	92	44	118	40	49	38	34	177	39	29	35
18	30	33	34	367	161	48	37	33	50	32	28	27
19	32	29	32	74	225	45	37	146	38	29	26	25
20	28	28	29	53	241	43	38	44	34	30	54	25
21	27	26	30	46	92	145	36	36	34	31	117	36
22	25	27	35	44	61	70	35	32	35	31	32	187
23	28	25	91	571	54	53	27	32	25	31	28	36
24	28	26	588	1080	51	49	36	31	30	52	61	29
25	27	27	200	159	49	47	35	29	130	128	152	27
26	33	29	58	82	47	53	37	66	67	37	42	26
27	29	26	44	62	44	45	89	47	88	35	45	67
28	26	25	41	55	43	43	307	33	78	32	29	55
29	25	25	61	50	---	42	64	30	37	33	27	281
30	26	26	43	47	---	44	846	28	53	59	26	144
31	25	---	37	44	---	44	---	29	---	31	26	---
TOTAL	1197	1225	2032	4297	2273	1726	2495	1439	1918	1577	1218	1712
MEAN	38.6	40.8	65.5	139	81.2	55.7	83.2	46.4	63.9	50.9	39.3	57.1
MAX	157	195	588	1080	301	145	846	146	277	269	152	281
MIN	25	23	26	35	40	40	27	28	25	27	26	24
CFSM	.59	.63	1.00	2.12	1.24	.85	1.27	.71	.98	.78	.60	.87
IN.	.68	.70	1.16	2.45	1.29	.98	1.42	.82	1.09	.90	.69	.98

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999
MEAN	86.4	85.4	81.1	155	158
MAX	154	182	132	237	232
(WY)	1996	1996	1998	1998	1995
MIN	38.6	40.8	56.3	106	81.2
(WY)	1999	1999	1996	1997	1999

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

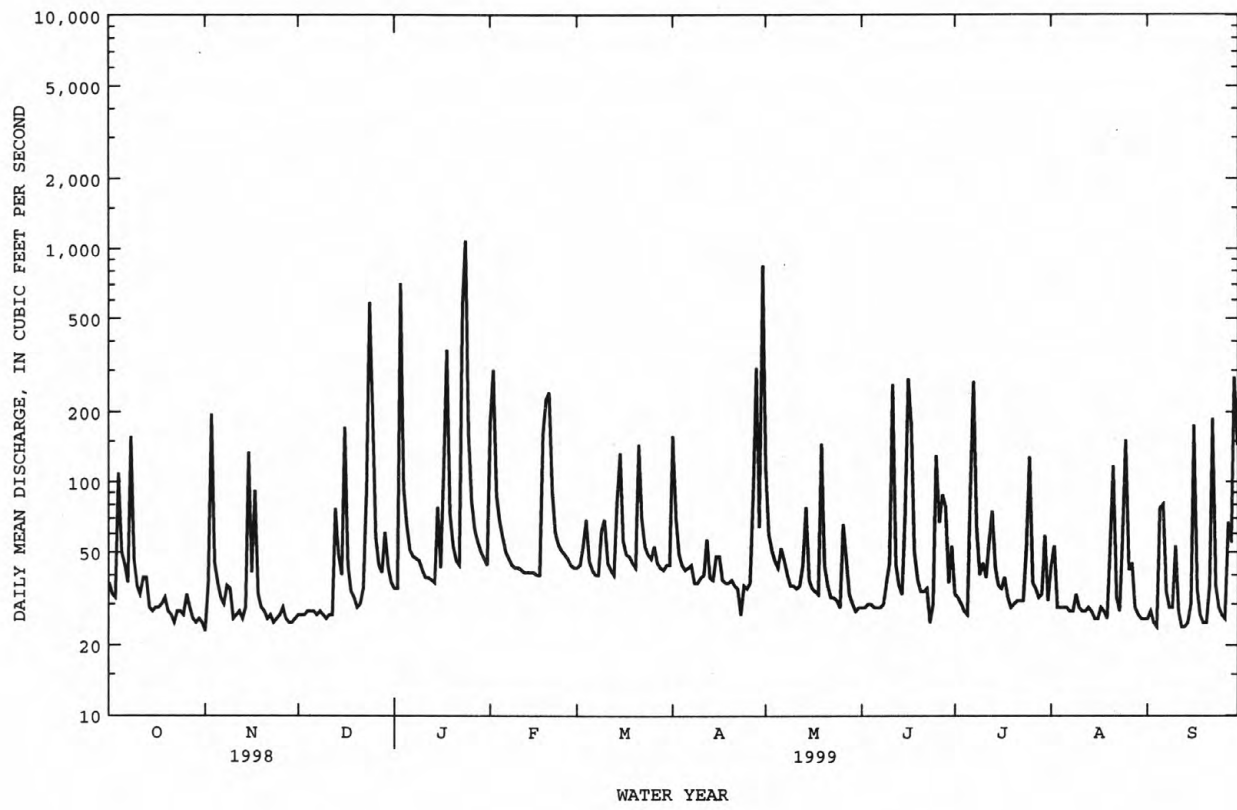
## FOR 1999 WATER YEAR

## WATER YEARS 1995 - 1999

ANNUAL TOTAL	39618	23109	
ANNUAL MEAN	109	63.3	102
HIGHEST ANNUAL MEAN			120
LOWEST ANNUAL MEAN			63.3
HIGHEST DAILY MEAN	1930	Apr 9	4790
LOWEST DAILY MEAN	23	Nov 1	19
ANNUAL SEVEN-DAY MINIMUM	26	Nov 23	22
INSTANTANEOUS PEAK FLOW			9890*
INSTANTANEOUS PEAK STAGE			18.68
INSTANTANEOUS LOW FLOW			15
ANNUAL RUNOFF (CFSM)	1.66	.97	1.56
ANNUAL RUNOFF (INCHES)	22.57	13.16	21.22
10 PERCENT EXCEEDS	185	111	166
50 PERCENT EXCEEDS	50	39	48
90 PERCENT EXCEEDS	28	27	28

\* See REMARKS.

02146381 SUGAR CREEK AT NC 51 NEAR PINEVILLE, NC--Continued



02146409 LITTLE SUGAR CREEK AT MEDICAL CENTER DRIVE AT CHARLOTTE, NC

LOCATION.--Lat 35°12'11", long 80°50'15", Mecklenburg County, Hydrologic Unit 03050103, on left bank on upstream side of bridge at Medical Center Drive, 3.3 mi upstream from Briar Creek, and 1.3 mi south of city hall in Charlotte.

DRAINAGE AREA.--11.8 mi<sup>2</sup>, revised.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1994 to current year. Fragmentary records 1964-1966, in files of Geological Survey as "Little Sugar Creek at Brunswick Avenue at Charlotte".

GAGE.--Water-stage recorder. Elevation of gage is 610 ft above sea level, from topographic map. Telephone telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Minimum discharge for period of record also occurred Sept. 6, 8, 1997 and may have been affected by regulation of unknown origin.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	2.1	2.3	3.1	80	7.0	76	5.4	2.5	3.8	3.6	2.6
2	4.9	10	2.4	22	20	5.8	5.1	3.9	2.4	3.5	3.4	2.7
3	4.7	47	2.4	165	7.4	14	4.2	3.7	2.4	3.3	3.1	2.4
4	28	2.6	2.6	6.9	7.4	6.9	3.8	3.5	2.4	2.9	3.1	2.3
5	e10	2.1	2.4	5.6	5.9	6.3	3.7	4.7	2.3	2.8	3.1	43
6	e5.5	2.0	2.3	5.2	5.7	6.1	3.6	4.9	2.4	e50	3.2	4.2
7	6.1	2.1	2.3	5.1	5.3	6.0	3.6	3.6	2.4	e20	3.1	2.4
8	32	2.1	2.4	6.2	5.3	5.7	3.5	3.3	2.2	5.5	3.2	2.2
9	2.1	2.2	2.5	5.0	5.1	15	3.5	3.3	2.4	3.9	4.3	2.3
10	1.8	2.3	2.5	4.7	5.0	7.5	3.4	3.1	27	3.5	2.9	2.3
11	1.8	3.1	2.5	5.3	4.9	5.6	9.4	2.8	e78	3.6	2.9	2.2
12	1.7	2.4	2.6	4.4	4.9	5.4	3.8	3.2	2.6	25	2.7	2.1
13	1.6	2.3	18	4.4	5.0	5.5	3.3	9.4	2.3	11	2.7	2.9
14	1.6	20	3.3	4.4	4.8	35	3.3	4.4	2.3	4.0	3.0	2.5
15	1.6	15	25	17	4.8	10	6.1	2.9	17	3.6	3.1	40
16	1.6	10	29	4.9	4.8	6.5	3.8	2.6	90	3.5	2.9	23
17	1.7	4.8	3.4	101	4.9	5.9	3.5	2.8	8.9	3.9	2.8	2.6
18	1.6	2.7	2.7	22	53	5.6	3.3	3.3	3.9	3.5	2.8	2.2
19	1.9	2.5	2.5	6.7	75	5.4	3.2	22	3.4	3.5	3.0	2.4
20	2.1	2.6	2.7	5.6	18	5.3	3.2	2.9	3.8	3.2	57	2.5
21	2.0	2.5	3.1	5.2	8.3	34	3.1	2.8	4.1	3.2	8.7	13
22	2.1	2.4	5.5	4.9	7.0	6.7	3.2	2.8	3.3	3.2	2.9	7.8
23	2.1	2.7	33	357	8.1	5.8	3.0	2.7	3.1	3.2	2.6	2.3
24	2.1	2.3	151	128	6.4	5.5	3.1	2.7	3.1	68	73	2.1
25	2.1	2.3	16	12	6.1	7.2	3.1	2.4	30	5.9	9.4	2.1
26	2.1	3.3	4.4	7.6	6.0	6.4	3.8	13	47	3.4	3.4	2.1
27	2.1	2.4	3.5	6.8	5.8	5.4	120	3.1	17	3.3	4.6	8.5
28	2.2	2.3	4.0	6.4	7.1	5.2	21	2.7	8.6	3.1	3.0	21
29	2.4	2.2	7.8	5.8	---	5.2	21	2.5	44	32	2.6	96
30	2.4	2.2	3.7	6.0	---	5.0	191	2.5	5.7	5.0	2.5	12
31	2.3	---	3.3	5.4	---	5.1	---	2.5	---	3.5	2.5	---
TOTAL	141.5	164.5	351.1	949.6	382.0	262.0	525.6	135.4	426.5	297.8	231.1	315.7
MEAN	4.56	5.48	11.3	30.6	13.6	8.45	17.5	4.37	14.2	9.61	7.45	10.5
MAX	32	47	151	357	80	35	191	22	90	68	73	96
MIN	1.6	2.0	2.3	3.1	4.8	5.0	3.0	2.4	2.2	2.8	2.5	2.1
CFSM	.37	.45	.93	2.51	1.12	.69	1.44	.36	1.17	.79	.61	.86
IN.	.43	.50	1.07	2.90	1.16	.80	1.60	.41	1.30	.91	.70	.96

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999
MEAN	16.6	15.2	13.0	29.2	28.1
MAX	28.9	30.3	23.1	48.5	36.9
(WY)	1996	1996	1998	1995	1996
MIN	4.56	5.48	8.15	15.5	13.6
(WY)	1999	1999	1995	1997	1999

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

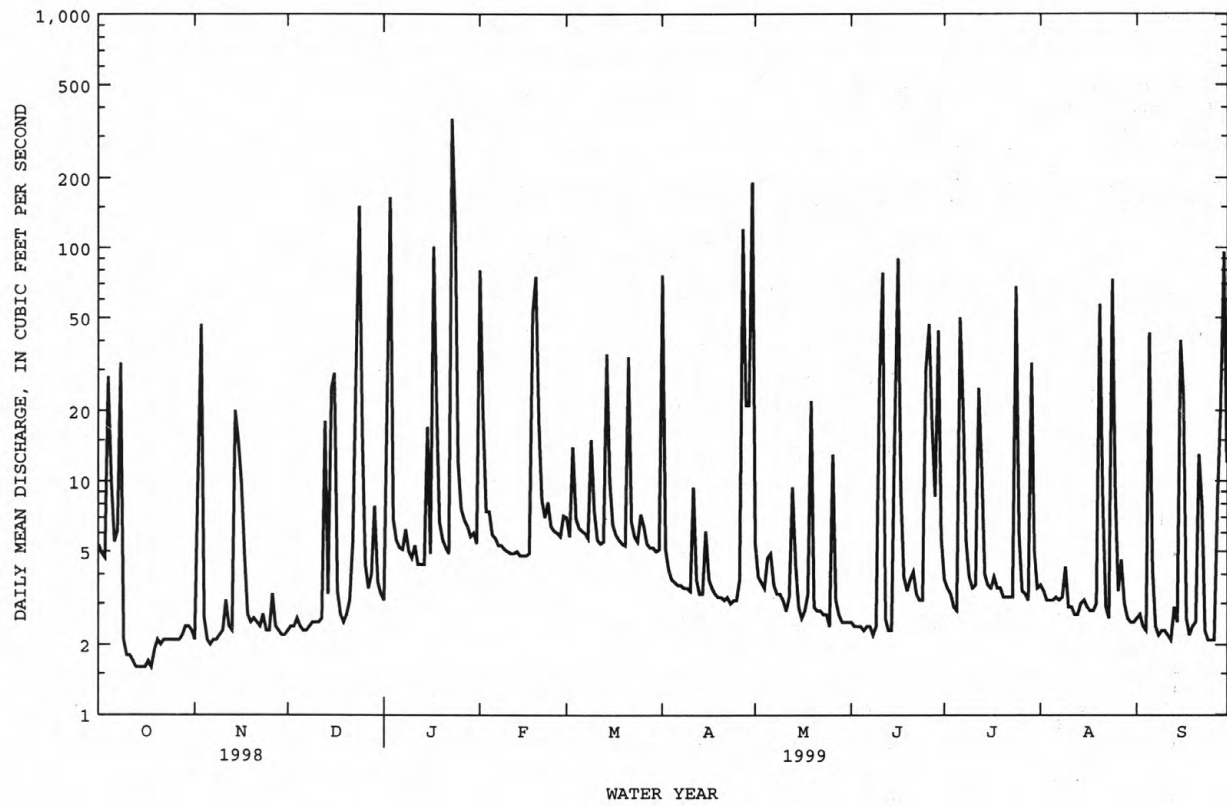
## FOR 1999 WATER YEAR

## WATER YEARS 1995 - 1999

ANNUAL TOTAL	7554.0	4182.8	
ANNUAL MEAN	20.7	11.5	19.5
HIGHEST ANNUAL MEAN			23.8
LOWEST ANNUAL MEAN			11.5
HIGHEST DAILY MEAN	426	Apr 9	357
LOWEST DAILY MEAN	1.6	Oct 13	1.6
ANNUAL SEVEN-DAY MINIMUM	1.6	Oct 12	1.6
INSTANTANEOUS PEAK FLOW			2720
INSTANTANEOUS PEAK STAGE			11.55
INSTANTANEOUS LOW FLOW			1.4
ANNUAL RUNOFF (CFSM)	1.70		.94
ANNUAL RUNOFF (INCHES)	23.03		12.75
10 PERCENT EXCEEDS	47		22
50 PERCENT EXCEEDS	8.0		3.6
90 PERCENT EXCEEDS	2.3		2.3

e Estimated.

02146409 LITTLE SUGAR CREEK AT MEDICAL CENTER DRIVE AT CHARLOTTE, NC--Continued





02146409 LITTLE SUGAR CREEK AT MEDICAL CENTER DRIVE AT CHARLOTTE, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.-- April to September 1999.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April to September 1999.

SPECIFIC CONDUCTANCE: April to September 1999.

DISSOLVED OXYGEN: April to September 1999.

DISSOLVED OXYGEN, PERCENT SATURATION: April to September 1999.

pH: April to September 1999.

INSTRUMENTATION.-- Water-quality monitor with telephone telemetry.

REMARKS.--Station operated in cooperation with Mecklenburg County Department of Environmental Protection to characterize water-quality conditions in Little Sugar Creek basin.

EXTREMES FOR CURRENT WATER YEAR.--

Extremes listed below may have been exceeded during periods of missing record.

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
WATER TEMPERATURE, °C	31.4, July 31	8.9, April 30
SPECIFIC CONDUCTANCE, microsiemens	395, May 21	38, June 26
DISSOLVED OXYGEN, mg/L	≥20.0, Sept. 3	3.4, Aug. 8
DISSOLVED OXYGEN, percent saturation	265, Aug. 7	39, April 19
pH, standard units	10.4, May 21	5.9, April 23

## TEMPERATURE, WATER (DEG. C), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	14.3	10.8	12.5
2	---	---	---	---	---	---	---	---	---	18.0	12.0	14.8
3	---	---	---	---	---	---	---	---	---	19.8	14.1	16.8
4	---	---	---	---	---	---	---	---	---	21.5	15.7	18.4
5	---	---	---	---	---	---	---	---	---	18.8	17.5	18.2
6	---	---	---	---	---	---	---	---	---	20.9	17.8	19.0
7	---	---	---	---	---	---	---	---	---	21.6	18.3	19.8
8	---	---	---	---	---	---	---	---	---	23.4	18.7	20.6
9	---	---	---	---	---	---	---	---	---	23.7	17.9	20.5
10	---	---	---	---	---	---	---	---	---	23.9	18.7	21.0
11	---	---	---	---	---	---	---	---	---	23.7	19.1	21.3
12	---	---	---	---	---	---	---	---	---	23.3	19.8	21.2
13	---	---	---	---	---	---	---	---	---	23.3	19.0	21.0
14	---	---	---	---	---	---	---	---	---	21.1	17.0	19.6
15	---	---	---	---	---	---	16.8	15.0	15.9	20.8	15.7	18.0
16	---	---	---	---	---	---	19.0	14.6	16.3	22.7	16.5	19.3
17	---	---	---	---	---	---	17.6	13.1	15.0	23.9	17.4	20.5
18	---	---	---	---	---	---	17.4	12.1	14.7	22.8	19.2	20.8
19	---	---	---	---	---	---	19.0	13.6	16.1	23.4	19.5	21.1
20	---	---	---	---	---	---	19.9	14.6	17.1	24.0	18.3	20.9
21	---	---	---	---	---	---	20.6	15.5	18.0	24.4	18.4	21.2
22	---	---	---	---	---	---	22.5	16.9	19.5	24.0	19.6	21.6
23	---	---	---	---	---	---	22.2	17.5	19.7	25.9	20.4	22.8
24	---	---	---	---	---	---	20.6	18.4	19.7	25.5	21.0	22.7
25	---	---	---	---	---	---	21.6	17.2	19.0	22.9	18.8	21.0
26	---	---	---	---	---	---	19.2	16.8	18.0	20.8	19.3	19.8
27	---	---	---	---	---	---	21.9	18.0	19.5	23.5	18.3	20.6
28	---	---	---	---	---	---	18.6	14.3	16.4	23.9	18.0	20.9
29	---	---	---	---	---	---	14.3	10.4	13.2	25.4	18.9	21.9
30	---	---	---	---	---	---	11.7	8.9	10.4	25.5	19.9	22.5
31	---	---	---	---	---	---	---	---	---	25.1	20.5	22.7
MONTH	---	---	---	---	---	---	---	---	---	25.9	10.8	20.1

## TEMPERATURE, WATER (DEG. C), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	24.5	20.6	22.6	28.4	24.3	25.9	30.8	26.3	28.4	25.2	19.4	21.7
2	25.6	20.8	23.0	28.2	23.8	25.7	29.7	25.9	27.6	26.3	20.4	22.7
3	26.3	21.6	23.8	29.0	24.1	26.3	29.0	24.1	26.1	26.8	21.1	23.0
4	26.7	21.8	23.9	29.7	24.5	26.8	29.2	23.6	25.9	27.2	21.5	23.0
5	26.1	21.3	23.5	30.5	25.2	27.5	29.0	24.0	26.1	24.0	22.6	23.0
6	26.5	21.0	23.5	30.0	25.3	26.9	29.4	24.7	26.6	25.4	22.4	23.8
7	27.7	22.0	24.6	28.7	24.3	26.1	29.1	24.6	26.5	27.7	23.2	25.1
8	27.7	22.5	24.9	28.0	24.3	26.1	29.6	25.4	27.3	28.4	23.9	25.6
9	28.0	22.8	25.2	29.8	24.8	26.9	27.4	25.4	26.2	28.4	24.3	25.4
10	28.8	23.8	25.6	27.5	24.7	25.9	29.3	24.1	26.3	27.1	22.6	24.0
11	24.4	22.9	23.6	25.4	22.0	23.9	30.0	25.4	27.3	26.7	20.7	22.7
12	26.8	21.7	23.8	22.0	20.0	20.7	30.6	25.2	27.3	26.0	20.4	22.3
13	26.5	21.4	23.6	20.0	19.4	19.7	30.6	25.3	27.5	27.1	20.4	22.9
14	27.4	21.9	24.5	22.0	19.8	20.9	30.1	26.4	27.7	25.2	20.7	23.0
15	25.1	23.1	23.9	26.1	21.0	23.2	29.5	25.1	26.6	23.7	20.0	22.2
16	23.1	20.9	21.9	27.0	22.4	24.5	29.9	25.2	26.9	23.1	19.2	20.6
17	24.3	20.6	22.1	27.4	23.4	25.3	30.5	25.6	27.4	23.0	18.4	20.2
18	24.8	19.7	22.0	29.1	24.0	26.2	30.0	25.7	27.4	23.2	18.3	20.3
19	23.5	19.1	21.3	29.1	24.3	26.4	28.6	24.8	26.5	23.7	18.9	20.9
20	21.3	19.3	20.0	29.0	24.7	26.6	26.3	23.3	25.2	23.7	19.3	21.3
21	21.1	18.8	19.9	30.1	25.1	27.2	26.8	22.9	24.6	23.3	20.0	21.6
22	22.4	19.6	21.0	30.1	25.7	27.6	27.3	23.0	25.0	20.9	18.0	19.4
23	24.5	19.7	21.9	30.6	26.1	28.1	26.7	24.3	25.2	21.2	16.0	18.1
24	23.2	20.7	22.1	30.9	26.2	27.8	26.4	24.1	24.8	22.0	16.4	18.8
25	24.4	21.6	22.6	30.0	24.9	27.1	26.8	23.9	25.0	23.7	18.0	20.3
26	26.2	22.4	24.0	29.8	24.9	27.2	28.3	24.1	25.9	24.8	19.9	21.9
27	26.8	23.5	24.9	28.8	25.7	27.0	27.9	24.3	25.8	23.2	22.0	22.8
28	28.4	23.8	25.7	30.1	25.2	27.4	28.2	23.9	25.7	24.0	22.2	23.1
29	29.3	24.5	26.1	30.4	25.6	27.8	26.8	24.2	25.3	24.8	22.5	23.3
30	27.2	24.3	25.6	28.9	25.6	27.2	26.4	21.6	23.4	23.5	18.9	21.0
31	---	---	---	31.4	26.0	28.5	24.0	19.3	21.2	---	---	---
MONTH	29.3	18.8	23.4	31.4	19.4	25.9	30.8	19.3	26.1	28.4	16.0	22.1

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), APRIL 1999 TO SEPTEMBER 1999

[illegible]

## SANTÉE RIVER BASIN

02146409 LITTLE SUGAR CREEK AT MEDICAL CENTER DRIVE AT CHARLOTTE, NC--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C). APRIL 1999 TO SEPTEMBER 1999

[illegible]

OXYGEN DISSOLVED (MG/L), APRIL 1999 TO SEPTEMBER 1999

[illegible]

## OXYGEN DISSOLVED (MG/L), APRIL 1999 TO SEPTEMBER 1999

> Actual value is known to be greater than the value shown

## OXYGEN DISSOLVED (% OF SATURATION), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
	FEBRUARY				MARCH				APRIL				MAY		
1	---	---	---		---	---	---		---	---	---		---	---	---
2	---	---	---		---	---	---		---	---	---		---	---	---
3	---	---	---		---	---	---		---	---	---		---	---	---
4	---	---	---		---	---	---		---	---	---		---	---	---
5	---	---	---		---	---	---		---	---	---		---	---	---
6	---	---	---		---	---	---		---	---	---		---	---	---
7	---	---	---		---	---	---		---	---	---		---	---	---
8	---	---	---		---	---	---		---	---	---		119	72	87
9	---	---	---		---	---	---		---	---	---		124	72	89
10	---	---	---		---	---	---		---	---	---		126	68	88
11	---	---	---		---	---	---		---	---	---		136	67	90
12	---	---	---		---	---	---		---	---	---		117	65	82
13	---	---	---		---	---	---		---	---	---		---	---	---
14	---	---	---		---	---	---		---	---	---		---	---	---
15	---	---	---		---	---	---		79	59	72		107	74	85
16	---	---	---		---	---	---		80	53	64		116	71	86
17	---	---	---		---	---	---		73	44	60		116	62	82
18	---	---	---		---	---	---		68	42	56		110	62	80
19	---	---	---		---	---	---		78	39	62		---	---	---
20	---	---	---		---	---	---		82	54	66		124	69	87
21	---	---	---		---	---	---		102	61	77		124	71	88
22	---	---	---		---	---	---		122	69	89		112	60	84
23	---	---	---		---	---	---		124	75	93		116	52	75
24	---	---	---		---	---	---		109	72	89		107	45	70
25	---	---	---		---	---	---		122	73	92		114	54	77
26	---	---	---		---	---	---		---	---	---		---	---	---
27	---	---	---		---	---	---		---	---	---		---	---	---
28	---	---	---		---	---	---		---	---	---		---	---	---
29	---	---	---		---	---	---		---	---	---		129	65	87
30	---	---	---		---	---	---		---	---	---		146	67	93
31	---	---	---		---	---	---		---	---	---		153	68	97
	---	---	---		---	---	---		---	---	---		161	68	100
MONTH	---	---	---		---	---	---		---	---	---		---	---	---

## SANTÉE RIVER BASIN

02146409 LITTLE SUGAR CREEK AT MEDICAL CENTER DRIVE AT CHARLOTTE, NC--Continued

OXYGEN DISSOLVED (% OF SATURATION), APRIL 1999 TO SEPTEMBER 1999

[illegible]

> Actual value is known to be greater than the value shown

PH, WATER, WHOLE, FIELD, STANDARD UNITS, APRIL 1999 TO SEPTEMBER 1999

[illegible]

02146409 LITTLE SUGAR CREEK AT MEDICAL CENTER DRIVE AT CHARLOTTE, NC--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.5	7.3	7.8	7.6	7.2	7.3	8.9	7.4	8.0	9.1	7.4	8.0
2	8.6	7.3	7.8	7.9	7.0	7.4	8.9	7.3	7.9	9.5	7.4	8.2
3	8.8	7.3	8.0	8.3	6.8	7.3	9.1	7.4	8.0	9.9	7.7	8.5
4	9.1	7.5	8.2	8.5	6.7	7.4	9.1	7.3	8.1	10.0	7.9	8.7
5	9.3	7.7	8.4	8.7	6.6	7.5	9.2	7.3	8.1	---	---	---
6	9.5	7.8	8.4	---	---	---	9.3	7.3	8.2	---	---	---
7	9.5	7.8	8.4	---	---	---	9.3	7.3	8.2	---	---	---
8	---	---	---	---	---	---	9.2	7.2	8.1	---	---	---
9	---	---	---	---	---	---	8.3	7.0	7.4	9.1	7.3	7.9
10	9.2	6.9	8.0	---	---	---	9.0	7.3	8.0	9.4	7.4	8.0
11	---	---	---	---	---	---	9.3	7.3	8.1	9.4	7.4	8.0
12	---	---	---	---	---	---	9.3	7.4	8.1	9.3	7.4	8.0
13	---	---	---	---	---	---	9.2	7.4	8.2	9.4	7.4	8.0
14	---	---	---	---	---	---	9.2	7.4	8.2	8.9	7.3	7.9
15	---	---	---	---	---	---	9.3	7.4	8.1	7.8	7.2	7.3
16	---	---	---	9.0	7.3	8.0	9.3	7.4	8.2	7.3	7.0	7.2
17	---	---	---	9.3	7.2	8.1	9.3	7.4	8.1	8.1	7.0	7.3
18	---	---	---	9.5	7.2	8.3	9.2	7.4	8.1	8.4	7.2	7.5
19	7.8	7.1	7.3	9.5	7.2	8.2	9.1	7.3	8.0	8.8	7.2	7.7
20	7.9	7.2	7.4	9.5	7.2	8.2	7.8	7.0	7.3	9.1	7.2	7.9
21	8.2	7.2	7.5	9.3	7.2	8.2	7.9	7.6	7.7	9.1	7.1	7.9
22	8.6	7.1	7.7	9.5	7.4	8.4	7.9	7.7	7.7	8.1	7.2	7.5
23	8.9	7.0	7.9	9.6	7.6	8.5	8.1	7.3	7.6	8.6	7.2	7.7
24	8.9	7.1	8.0	9.7	7.4	8.3	8.0	7.0	7.3	9.1	7.5	8.0
25	7.4	6.7	7.0	7.5	7.1	7.3	7.4	7.1	7.3	9.4	7.6	8.2
26	8.0	6.6	7.1	7.8	7.2	7.6	7.8	7.3	7.5	9.7	7.8	8.5
27	7.2	6.9	7.0	8.3	7.3	7.6	8.0	7.3	7.6	8.1	7.8	7.9
28	7.4	7.0	7.2	8.9	7.3	7.9	8.4	7.3	7.6	8.8	7.9	8.1
29	8.2	7.1	7.3	9.2	6.8	7.7	8.9	7.3	7.9	8.3	7.8	8.0
30	7.4	7.2	7.3	7.7	7.2	7.3	9.2	7.4	8.0	---	---	---
31	---	---	---	8.3	7.3	7.6	9.3	7.4	8.0	---	---	---
MONTH	---	---	---	---	---	---	9.3	7.0	7.9	---	---	---



## SANTÉE RIVER BASIN

0214642825 BRIAR CREEK NEAR CHARLOTTE, NC

LOCATION.--Lat 35°14'07", long 80°46'18", Mecklenburg County, Hydrologic Unit 03050103, 400 ft upstream from bridge on Shamrock Drive, and 4 mi northwest of city hall in Charlotte.

DRAINAGE AREA.--5.9 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1998 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 672 ft above sea level (City of Charlotte benchmark). Telephone telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum discharge for period of record and current water year from rating curve extended above 76 ft<sup>3</sup>/s by step-backwater analysis. No flow occurred periodically in Aug. and Sept. 1999.

DISCHARGE, CUBIC FEET PER SECOND, FOR PERIOD APRIL 1998 TO SEPTEMBER 1998  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	e4.5	14	1.4	1.5	.48	2.1
2	---	---	---	---	---	---	e3.0	4.9	1.3	.61	.32	2.4
3	---	---	---	---	---	---	e35	3.7	.87	.69	.37	64
4	---	---	---	---	---	---	e42	3.2	2.6	.91	.33	64
5	---	---	---	---	---	---	e5.5	2.7	8.0	1.6	.33	1.8
6	---	---	---	---	---	---	e4.0	2.5	1.6	1.4	.31	.89
7	---	---	---	---	---	---	e3.5	12	.87	1.6	12	.79
8	---	---	---	---	---	---	e3.5	2.9	.89	1.2	8.5	.79
9	---	---	---	---	---	---	375	2.2	1.3	1.2	1.7	.66
10	---	---	---	---	---	---	7.2	2.8	9.9	.84	16	.61
11	---	---	---	---	---	---	5.1	6.3	1.7	.75	.30	.52
12	---	---	---	---	---	---	3.8	1.8	1.0	.74	.26	.45
13	---	---	---	---	---	---	3.4	1.6	.83	.85	132	.41
14	---	---	---	---	---	---	5.1	1.5	.83	.76	4.1	.56
15	---	---	---	---	---	---	2.3	1.4	.83	.64	28	.72
16	---	---	---	---	---	---	2.0	1.3	.70	2.8	5.8	.82
17	---	---	---	---	---	---	75	.98	.75	5.2	7.8	.85
18	---	---	---	---	---	---	8.0	.82	.72	.48	1.7	.59
19	---	---	---	---	---	---	67	.81	1.8	.50	1.3	.50
20	---	---	---	---	---	---	6.5	.98	.76	38	1.4	.49
21	---	---	---	---	---	---	1.2	1.5	1.1	5.0	1.4	5.2
22	---	---	---	---	---	---	124	1.5	1.5	.58	1.4	2.2
23	---	---	---	---	---	---	68	1.2	18	.58	5.1	.67
24	---	---	---	---	---	---	10	1.0	.61	.51	1.3	.77
25	---	---	---	---	---	---	6.1	1.1	.92	.93	.85	.67
26	---	---	---	---	---	---	4.4	.87	.99	1.1	1.9	.58
27	---	---	---	---	---	---	7.9	1.7	.55	48	2.5	.50
28	---	---	---	---	---	---	4.1	.76	.81	1.0	3.0	.42
29	---	---	---	---	---	---	3.2	.76	58	.46	4.2	.46
30	---	---	---	---	---	---	26	9.2	5.9	.44	2.5	4.0
31	---	---	---	---	---	---	---	1.9	---	2.9	2.2	---
TOTAL	---	---	---	---	---	---	916.3	89.88	127.03	123.77	249.35	159.42
MEAN	---	---	---	---	---	---	30.5	2.90	4.23	3.99	8.04	5.31
MAX	---	---	---	---	---	---	375	14	58	48	132	64
MIN	---	---	---	---	---	---	1.2	.76	.55	.44	.26	.41
CFSM	---	---	---	---	---	---	5.18	.49	.72	.68	1.36	.90
IN.	---	---	---	---	---	---	5.78	.57	.80	.78	1.57	1.01

## STATISTICS OF MONTHLY MEAN DATA FOR PERIOD APRIL 1998 TO SEPTEMBER 1998

MEAN	---	---	---	---	---	---	30.5	2.90	4.23	3.99	8.04	5.31
MAX	---	---	---	---	---	---	30.5	2.90	4.23	3.99	8.04	5.31
(WY)	---	---	---	---	---	---	1998	1998	1998	1998	1998	1998
MIN	---	---	---	---	---	---	30.5	2.90	4.23	3.99	8.04	5.31
(WY)	---	---	---	---	---	---	1998	1998	1998	1998	1998	1998

## SUMMARY STATISTICS

## FOR PERIOD APRIL TO SEPTEMBER

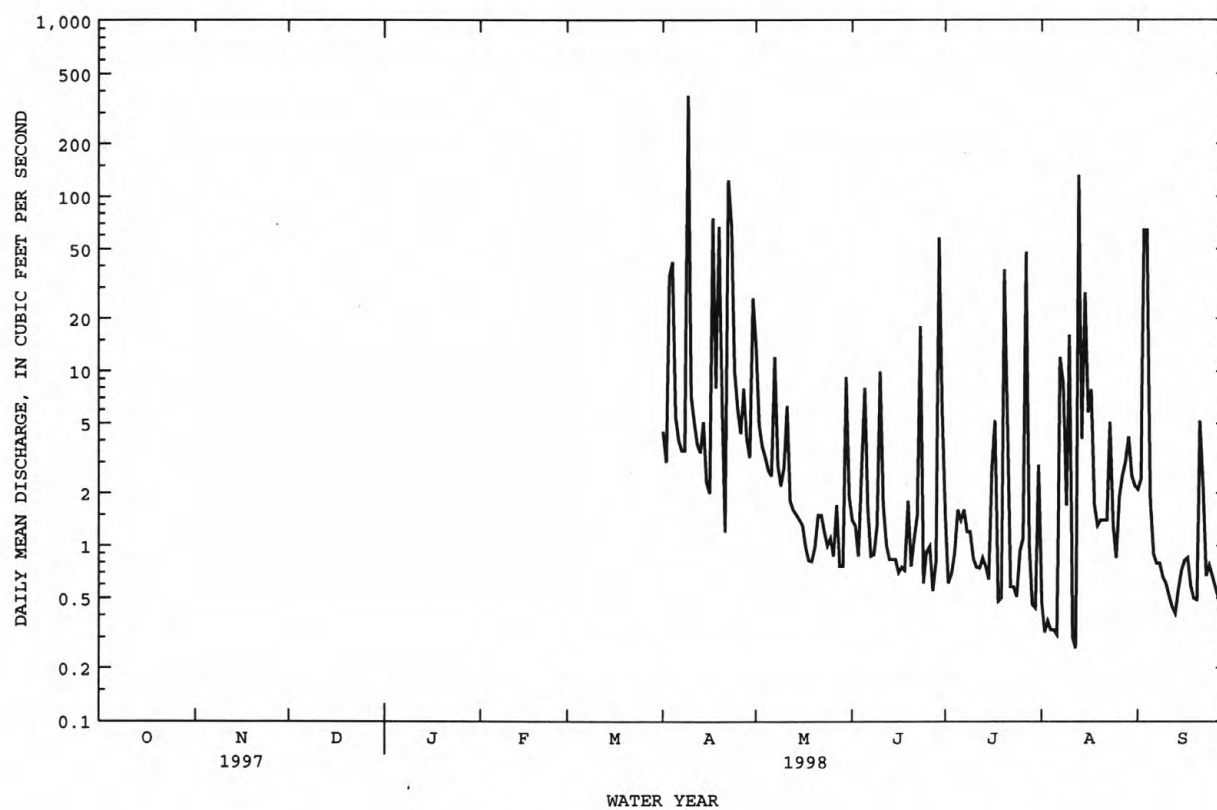
INSTANTANEOUS PEAK FLOW  
INSTANTANEOUS PEAK STAGE  
INSTANTANEOUS LOW FLOW

2880\* Apr 9  
6.18 Apr 9  
.13 Aug 8

e Estimated.

\* See REMARKS.

0214642825 BRIAR CREEK NEAR CHARLOTTE, NC--Continued



## SANTEE RIVER BASIN

0214642825 BRIAR CREEK NEAR CHARLOTTE, NC--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	.31	1.2	1.8	34	2.6	24	4.0	.64	1.2	.35	.06
2	1.8	4.7	1.2	5.9	14	2.3	3.4	2.1	.69	.97	.31	.09
3	2.3	20	.95	103	4.3	5.5	2.4	1.7	.69	1.3	.31	.18
4	7.9	.70	.64	3.1	3.6	2.6	2.3	1.7	.60	1.4	.30	.00
5	9.4	.55	.59	1.8	2.6	2.5	2.1	2.3	.59	1.5	.26	16
6	1.9	.49	.75	1.5	2.4	2.7	2.1	2.3	.56	51	.31	1.1
7	2.8	.52	.64	1.4	2.2	2.4	2.1	2.0	.54	3.7	.85	.39
8	11	.60	.62	1.7	2.1	2.4	2.4	1.9	.52	.92	.23	.33
9	.40	.56	.79	1.3	2.4	7.0	2.3	1.9	.51	.87	.77	3.7
10	.39	.56	.70	.96	2.5	2.7	2.0	2.1	3.7	1.6	.31	.83
11	.38	.75	.94	1.0	2.8	2.2	2.4	2.0	2.1	2.0	.28	.20
12	.39	.53	.88	1.4	2.6	2.1	2.3	2.0	.71	8.4	.20	.23
13	.39	.43	12	.72	2.5	2.1	2.3	2.7	.72	6.3	.15	.12
14	.37	5.6	1.6	.62	2.5	10	2.1	2.1	.64	1.6	.08	.04
15	.24	8.0	9.8	6.7	2.5	4.1	2.8	1.8	5.4	1.1	.08	13
16	.25	5.5	20	.94	2.4	2.2	1.3	2.0	20	.96	.06	8.1
17	.25	2.8	2.9	52	2.5	2.1	1.1	2.1	3.8	1.4	.03	.28
18	.23	1.5	3.8	15	28	2.0	1.4	3.4	.87	1.3	.00	.24
19	.28	1.7	2.6	3.1	32	1.8	1.4	12	.85	1.0	.00	.19
20	.25	1.8	1.9	2.2	14	1.8	1.2	.62	2.2	.85	9.3	.18
21	.30	1.9	2.1	1.8	5.6	11	.97	.58	1.8	.59	2.4	.95
22	.38	1.8	3.2	1.7	3.8	2.0	1.2	.61	1.4	.53	.15	2.8
23	.43	1.8	16	340	3.2	1.7	.93	.67	1.4	.44	.13	.22
24	.38	2.3	66	96	2.8	1.6	.95	.74	1.6	12	3.8	.08
25	.34	2.4	13	8.9	2.7	2.9	.99	.92	7.2	.99	3.4	.03
26	.33	3.2	3.5	4.2	2.6	1.9	1.4	3.3	28	.36	.77	.00
27	.35	2.0	2.2	3.2	2.6	1.2	50	.29	5.0	.32	.72	4.6
28	.38	1.8	2.0	2.7	3.2	.87	11	.32	2.2	.28	.43	33
29	.37	1.8	4.6	2.4	---	.77	11	.40	18	15	.64	32
30	.31	1.7	2.1	2.2	---	.66	97	.52	2.5	.87	.84	5.5
31	.30	---	1.8	1.7	---	.71	---	.55	---	2.2	.30	---
TOTAL	46.39	78.30	181.00	670.94	188.4	88.41	238.84	61.62	115.43	122.95	27.76	124.44
MEAN	1.50	2.61	5.84	21.6	6.73	2.85	7.96	1.99	3.85	3.97	.90	4.15
MAX	11	20	66	340	34	11	97	12	28	51	9.3	33
MIN	.23	.31	.59	.62	2.1	.66	.93	.29	.51	.28	.00	.00
CFSM	.25	.44	.99	3.67	1.14	.48	1.35	.34	.65	.67	.15	.70
IN.	.29	.49	1.14	4.23	1.19	.56	1.51	.39	.73	.78	.18	.78

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

	1998	1999	1998	1999	1998	1999	1998	1999	1998	1999	1998	1999
MEAN	1.50	2.61	5.84	21.6	6.73	2.85	19.3	2.44	4.04	3.98	4.45	5.02
MAX	1.50	2.61	5.84	21.6	6.73	2.85	30.5	2.90	4.23	3.99	8.00	5.89
(WY)	1999	1999	1999	1999	1999	1999	1998	1998	1998	1998	1998	1998
MIN	1.50	2.61	5.84	21.6	6.73	2.85	7.96	1.99	3.85	3.97	.90	4.15
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999

## SUMMARY STATISTICS

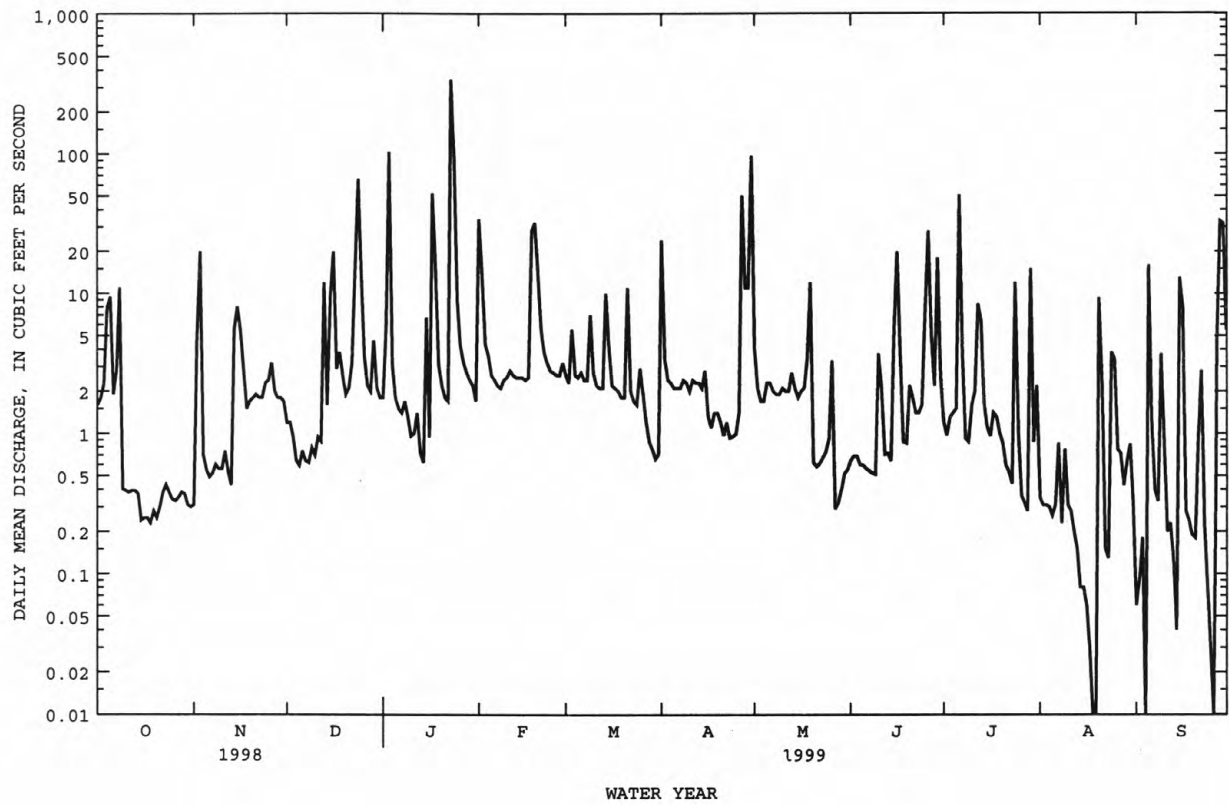
## FOR 1999 WATER YEAR

## WATER YEARS 1998 - 1999

ANNUAL TOTAL	1944.48		
ANNUAL MEAN	5.33		5.33
HIGHEST ANNUAL MEAN			5.33
LOWEST ANNUAL MEAN			5.33
HIGHEST DAILY MEAN	340	Jan 23	375
LOWEST DAILY MEAN	.00	Aug 18	.00
ANNUAL SEVEN-DAY MINIMUM	.06	Aug 13	.06
INSTANTANEOUS PEAK FLOW	2390*	Jan 23	2880*
INSTANTANEOUS PEAK STAGE	5.52	Jan 23	6.18
INSTANTANEOUS LOW FLOW	.00*	Aug 18	.00*
ANNUAL RUNOFF (CFSM)	.90		.90
ANNUAL RUNOFF (INCHES)	12.26		12.27
10 PERCENT EXCEEDS	9.6		10
50 PERCENT EXCEEDS	1.8		1.7
90 PERCENT EXCEEDS	.29		.33

\* See REMARKS.

0214642825 BRIAR CREEK NEAR CHARLOTTE, NC--Continued



## WATER-QUALITY RECORDS

PERIOD OF RECORD.-- April to September 1999.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April to September 1999.

SPECIFIC CONDUCTANCE: April to September 1999.

DISSOLVED OXYGEN: April to September 1999.

DISSOLVED OXYGEN, PERCENT SATURATION: April to September 1999.

pH: April to September 1999.

INSTRUMENTATION.-- Water-quality monitor with telephone telemetry.

REMARKS.--Station operated in cooperation with Mecklenburg County Department of Environmental Protection to characterize water-quality conditions in Briar Creek basin.

EXTREMES FOR CURRENT WATER YEAR.--

Extremes listed below may have been exceeded during periods of missing record.

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
WATER TEMPERATURE, °C	33.9, Aug.14	9.6, April 30
SPECIFIC CONDUCTANCE, microsiemens	204, April 16	28, Sept. 29
DISSOLVED OXYGEN, mg/L	17.2, April 25	2.2, April 17
DISSOLVED OXYGEN, percent saturation	200, April 25	21, April 17
pH, standard units	9.3, Aug. 8	5.7, April 27

## TEMPERATURE, WATER (DEG. C), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	15.5	10.4	12.7
2	---	---	---	---	---	---	---	---	---	19.6	11.2	14.8
3	---	---	---	---	---	---	---	---	---	20.6	12.2	16.0
4	---	---	---	---	---	---	---	---	---	21.9	13.7	17.5
5	---	---	---	---	---	---	---	---	---	18.1	15.8	16.7
6	---	---	---	---	---	---	---	---	---	20.2	16.1	17.9
7	---	---	---	---	---	---	---	---	---	21.4	16.8	18.9
8	---	---	---	---	---	---	---	---	---	22.8	17.7	19.9
9	---	---	---	---	---	---	---	---	---	22.9	16.5	19.7
10	---	---	---	---	---	---	---	---	---	23.6	17.5	20.4
11	---	---	---	---	---	---	---	---	---	23.6	17.7	20.6
12	---	---	---	---	---	---	---	---	---	23.1	18.6	20.7
13	---	---	---	---	---	---	---	---	---	22.8	18.2	20.3
14	---	---	---	---	---	---	---	---	---	19.8	16.1	18.1
15	---	---	---	---	---	---	---	---	---	21.0	14.7	17.5
16	---	---	---	---	---	---	20.0	13.7	16.3	22.3	16.0	18.9
17	---	---	---	---	---	---	18.1	12.0	14.8	23.1	16.5	19.7
18	---	---	---	---	---	---	17.3	10.8	14.1	21.8	18.2	20.1
19	---	---	---	---	---	---	19.5	12.1	15.6	24.3	18.6	20.8
20	---	---	---	---	---	---	21.1	13.8	17.0	23.9	17.3	20.4
21	---	---	---	---	---	---	20.9	14.3	17.5	24.3	17.2	20.6
22	---	---	---	---	---	---	23.4	16.0	19.5	23.1	18.6	20.9
23	---	---	---	---	---	---	---	---	---	25.4	19.8	22.4
24	---	---	---	---	---	---	---	---	---	24.2	21.0	22.4
25	---	---	---	---	---	---	21.5	16.2	18.6	22.5	18.0	20.4
26	---	---	---	---	---	---	18.3	15.5	17.1	20.5	17.8	19.0
27	---	---	---	---	---	---	21.7	16.5	18.6	23.5	16.7	19.8
28	---	---	---	---	---	---	17.9	13.3	15.4	23.9	16.9	20.3
29	---	---	---	---	---	---	13.3	10.6	12.2	24.7	18.0	21.2
30	---	---	---	---	---	---	11.7	9.6	10.7	25.3	19.4	22.2
31	---	---	---	---	---	---	---	---	---	25.4	19.9	22.5
MONTH	---	---	---	---	---	---	---	---	---	25.4	10.4	19.5

## 0214642825 BRIAR CREEK NEAR CHARLOTTE, NC--Continued

TEMPERATURE, WATER (DEG. C), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	24.7	20.3	22.3	28.6	24.1	26.0	32.3	26.4	29.0	---	---	---
2	25.9	20.6	23.0	28.8	23.9	25.9	31.8	26.1	28.6	---	---	---
3	26.8	21.8	24.1	29.0	24.1	26.4	30.4	24.7	27.4	---	---	---
4	27.4	21.9	24.1	31.0	24.7	27.4	30.8	23.6	27.0	---	---	---
5	26.7	21.0	23.4	31.7	25.6	28.3	30.7	24.3	27.3	---	---	---
6	25.7	20.7	23.0	31.7	24.5	27.3	31.4	24.8	27.9	26.5	21.8	23.6
7	28.4	21.5	24.7	29.0	23.9	25.7	29.3	23.8	26.5	29.6	22.9	25.7
8	28.5	22.6	25.3	27.8	23.6	25.8	32.3	25.5	28.5	30.4	23.5	26.6
9	28.9	22.8	25.4	30.4	24.8	27.2	28.2	25.3	26.8	29.5	23.6	26.1
10	29.2	23.7	25.6	28.3	25.2	26.5	30.9	24.1	27.2	27.4	22.0	24.2
11	24.0	22.3	23.1	25.6	21.9	24.0	32.6	26.2	29.2	27.7	19.9	23.4
12	27.5	21.2	23.8	21.9	19.1	20.2	32.6	26.4	29.4	26.8	19.5	22.8
13	27.4	21.0	23.7	19.3	18.7	19.1	33.2	26.6	29.7	27.2	19.6	23.0
14	28.4	21.9	24.9	21.3	19.2	20.2	33.9	27.8	30.0	27.6	20.6	24.0
15	25.0	21.9	23.4	26.3	20.4	22.9	31.6	26.2	28.4	24.7	19.5	22.5
16	21.9	20.5	21.1	27.4	21.9	24.1	31.5	26.5	28.7	23.1	18.7	20.5
17	24.4	20.1	21.7	27.2	23.6	25.2	---	---	---	24.6	17.4	20.5
18	25.3	19.6	22.0	29.8	23.8	26.3	---	---	---	24.3	16.8	20.3
19	23.7	18.7	20.8	30.3	24.5	26.9	---	---	---	25.0	17.8	21.2
20	20.7	18.4	19.5	30.2	24.9	27.0	---	---	---	25.6	18.8	21.9
21	20.1	17.8	18.8	30.1	25.1	27.3	28.3	21.3	24.2	24.6	19.7	22.2
22	22.0	18.8	20.2	31.1	25.6	28.0	30.3	21.4	25.3	21.7	17.3	19.3
23	25.5	18.8	21.7	31.6	26.2	28.6	28.1	23.7	25.5	22.5	14.5	18.2
24	23.3	20.1	21.8	32.3	25.8	28.2	25.9	23.3	24.9	23.7	15.7	19.5
25	22.3	20.6	21.5	31.0	24.4	27.1	27.6	23.1	24.8	---	---	---
26	25.0	21.4	23.1	31.5	25.1	27.9	29.4	24.0	26.1	---	---	---
27	26.9	23.0	24.5	30.1	25.6	27.5	30.3	23.9	26.7	---	---	---
28	29.1	23.1	25.6	32.0	25.0	28.0	30.1	23.8	26.8	23.5	21.1	22.2
29	29.6	24.5	26.0	32.5	25.5	27.5	28.1	24.2	26.2	23.5	22.0	22.7
30	28.2	24.0	25.5	28.5	24.3	26.3	27.1	22.2	24.5	22.5	18.0	20.3
31	---	---	---	31.7	25.0	27.9	25.4	20.1	22.7	---	---	---
MONTH	29.6	17.8	23.1	32.5	18.7	26.0	---	---	---	---	---	---

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	---	---	---	---	---	---	139	103	123
2	---	---	---	---	---	---	---	---	---	146	132	140
3	---	---	---	---	---	---	---	---	---	154	146	150
4	---	---	---	---	---	---	---	---	---	158	154	155
5	---	---	---	---	---	---	---	---	---	161	156	158
6	---	---	---	---	---	---	---	---	---	161	153	158
7	---	---	---	---	---	---	---	---	---	162	159	161
8	---	---	---	---	---	---	---	---	---	167	159	164
9	---	---	---	---	---	---	---	---	---	168	159	164
10	---	---	---	---	---	---	---	---	---	169	161	165
11	---	---	---	---	---	---	---	---	---	170	162	166
12	---	---	---	---	---	---	---	---	---	171	163	167
13	---	---	---	---	---	---	---	---	---	172	162	168
14	---	---	---	---	---	---	---	---	---	174	169	171
15	---	---	---	---	---	---	---	---	---	173	169	171
16	---	---	---	---	---	---	204	176	192	175	168	171
17	---	---	---	---	---	---	186	172	178	174	168	171
18	---	---	---	---	---	---	176	167	171	174	104	171
19	---	---	---	---	---	---	172	165	167	121	73	95
20	---	---	---	---	---	---	174	163	168	145	121	134
21	---	---	---	---	---	---	172	163	167	154	145	149
22	---	---	---	---	---	---	174	150	166	157	153	155
23	---	---	---	---	---	---	---	---	---	161	157	159
24	---	---	---	---	---	---	---	---	---	163	161	163
25	---	---	---	---	---	---	170	162	167	164	162	163
26	---	---	---	---	---	---	169	163	166	166	100	131
27	---	---	---	---	---	---	170	40	138	142	111	127
28	---	---	---	---	---	---	122	54	95	154	142	149
29	---	---	---	---	---	---	137	56	125	160	154	158
30	---	---	---	---	---	---	103	40	68	164	159	161
31	---	---	---	---	---	---	---	---	---	164	160	163
MONTH	---	---	---	---	---	---	---	---	---	175	73	155



## SANTÉE RIVER BASIN

0214642825 BRIAR CREEK NEAR CHARLOTTE, NC--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	168	164	165	132	118	125	128	107	116	---	---	---
2	167	164	165	143	132	137	139	128	132	---	---	---
3	171	165	168	151	143	146	145	137	140	---	---	---
4	173	166	168	156	151	153	149	141	145	---	---	---
5	172	166	168	160	156	157	151	144	148	---	---	---
6	174	165	169	161	55	135	153	147	150	88	52	70
7	177	168	170	106	69	93	157	132	148	106	88	95
8	174	168	170	126	98	115	135	128	132	116	106	109
9	175	168	171	140	126	132	151	130	142	125	70	110
10	199	94	177	149	140	143	154	147	151	100	83	91
11	143	93	125	152	148	149	155	148	151	110	100	103
12	157	142	149	151	70	92	156	150	153	116	109	112
13	163	155	158	93	67	80	158	152	155	118	113	116
14	165	156	160	120	93	108	160	154	157	120	116	119
15	165	85	133	133	119	126	162	155	158	145	34	109
16	115	41	83	140	132	136	162	155	158	75	34	58
17	112	58	89	148	139	143	---	---	---	98	75	86
18	134	112	124	153	146	149	---	---	---	108	98	103
19	144	133	139	156	150	153	---	---	---	114	108	111
20	153	134	143	160	154	157	---	---	---	119	113	115
21	139	132	135	161	158	160	86	54	73	120	111	118
22	149	139	145	164	160	162	98	86	90	112	76	81
23	151	146	149	168	162	165	104	98	101	89	82	85
24	156	150	153	169	71	141	116	66	102	91	87	89
25	156	70	116	122	84	105	89	75	81	---	---	---
26	111	41	86	138	121	129	110	89	100	---	---	---
27	108	51	87	149	138	142	119	109	113	---	---	---
28	124	82	110	155	148	151	121	116	119	76	29	64
29	134	47	109	157	60	127	129	120	124	66	28	50
30	118	80	102	110	70	91	132	127	130	94	60	79
31	---	---	---	119	97	103	133	127	131	---	---	---
MONTH	199	41	140	169	55	132	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), APRIL 1999 TO SEPTEMBER 1999

[illegible]

OXYGEN DISSOLVED (MG/L), APRIL 1999 TO SEPTEMBER 1999

OXYGEN DISSOLVED (% OF SATURATION), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
	FEBRUARY				MARCH				APRIL				MAY		
1	---	---	---		---	---	---		---	---	---		90	80	86
2	---	---	---		---	---	---		---	---	---		96	75	84
3	---	---	---		---	---	---		---	---	---		106	74	86
4	---	---	---		---	---	---		---	---	---		118	74	91
5	---	---	---		---	---	---		---	---	---		108	73	88
6	---	---	---		---	---	---		---	---	---		---	---	---
7	---	---	---		---	---	---		---	---	---		---	---	---
8	---	---	---		---	---	---		---	---	---		132	62	88
9	---	---	---		---	---	---		---	---	---		136	62	90
10	---	---	---		---	---	---		---	---	---		142	60	92
11	---	---	---		---	---	---		---	---	---		143	59	92
12	---	---	---		---	---	---		---	---	---		136	59	90
13	---	---	---		---	---	---		---	---	---		126	57	83
14	---	---	---		---	---	---		---	---	---		88	50	68
15	---	---	---		---	---	---		---	---	---		128	62	86
16	---	---	---		---	---	---		133	36	80		124	57	83
17	---	---	---		---	---	---		101	21	52		127	57	84
18	---	---	---		---	---	---		101	36	59		120	54	81
19	---	---	---		---	---	---		101	34	58		86	55	74
20	---	---	---		---	---	---		158	30	83		106	50	72
21	---	---	---		---	---	---		176	52	97		117	48	75
22	---	---	---		---	---	---		169	47	94		109	45	75
23	---	---	---		---	---	---		---	---	---		118	47	77
24	---	---	---		---	---	---		---	---	---		109	41	70
25	---	---	---		---	---	---		200	49	105		121	48	79
26	---	---	---		---	---	---		155	51	95		76	49	63
27	---	---	---		---	---	---		175	50	89		110	49	71
28	---	---	---		---	---	---		88	82	85		112	42	71
29	---	---	---		---	---	---		94	81	85		114	42	71
30	---	---	---		---	---	---		96	86	92		110	38	69
31	---	---	---		---	---	---		---	---	---		103	36	68
MONTH	---	---	---		---	---	---		---	---	---		---	---	---

## SANTEE RIVER BASIN

0214642825 BRIAR CREEK NEAR CHARLOTTE, NC--Continued

OXYGEN DISSOLVED (% OF SATURATION), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	105	32	65	106	53	75	106	40	68	---	---	---
2	109	34	69	114	51	78	108	47	72	---	---	---
3	---	---	---	120	54	83	107	49	75	---	---	---
4	---	---	---	127	55	87	120	51	79	---	---	---
5	---	---	---	134	57	90	149	53	92	---	---	---
6	---	---	---	123	60	84	146	52	95	74	54	66
7	---	---	---	92	63	75	135	44	89	89	44	63
8	---	---	---	112	60	79	146	63	103	120	44	74
9	---	---	---	128	48	82	128	42	83	114	44	71
10	---	---	---	106	47	76	166	54	107	92	48	64
11	68	35	48	82	49	65	176	70	124	112	40	69
12	111	32	63	79	62	72	182	71	123	119	43	74
13	117	34	68	80	63	74	179	68	120	124	50	83
14	118	40	73	85	57	69	164	63	115	125	64	94
15	76	37	57	113	55	79	178	61	112	---	---	---
16	78	50	64	129	52	81	172	68	117	---	---	---
17	93	60	77	126	56	88	---	---	---	---	---	---
18	113	53	77	134	60	93	---	---	---	---	---	---
19	112	49	78	134	65	96	---	---	---	---	---	---
20	99	54	75	133	70	98	---	---	---	---	---	---
21	104	60	79	132	73	98	86	51	70	---	---	---
22	118	54	84	146	72	103	99	44	66	---	---	---
23	130	57	89	151	69	105	118	44	75	103	50	70
24	112	52	83	162	64	92	110	51	77	110	56	79
25	87	57	74	90	54	66	92	52	72	---	---	---
26	96	56	74	129	44	78	109	39	70	---	---	---
27	84	66	73	123	56	85	124	43	78	---	---	---
28	95	57	74	150	62	93	122	44	80	90	65	76
29	93	49	66	148	56	83	124	42	78	88	77	82
30	86	58	71	78	57	66	116	44	78	---	---	---
31	---	---	---	92	53	68	125	53	85	---	---	---
MONTH	---	---	---	162	44	83	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	6.5	6.4	6.4
2	---	---	---	---	---	---	---	---	---	6.5	6.3	6.4
3	---	---	---	---	---	---	---	---	---	6.7	6.3	6.5
4	---	---	---	---	---	---	---	---	---	6.8	6.4	6.6
5	---	---	---	---	---	---	---	---	---	6.9	6.6	6.7
6	---	---	---	---	---	---	---	---	---	7.0	6.6	6.7
7	---	---	---	---	---	---	---	---	---	7.2	6.6	6.8
8	---	---	---	---	---	---	---	---	---	7.2	6.6	6.8
9	---	---	---	---	---	---	---	---	---	7.3	6.6	6.9
10	---	---	---	---	---	---	---	---	---	7.5	6.7	7.0
11	---	---	---	---	---	---	---	---	---	7.7	6.8	7.1
12	---	---	---	---	---	---	---	---	---	7.6	6.9	7.2
13	---	---	---	---	---	---	---	---	---	7.6	7.0	7.2
14	---	---	---	---	---	---	---	---	---	7.2	6.9	7.0
15	---	---	---	---	---	---	---	---	---	7.5	6.9	7.1
16	---	---	---	---	---	---	7.7	6.9	7.2	7.4	6.8	7.1
17	---	---	---	---	---	---	7.8	7.0	7.3	7.4	6.8	7.1
18	---	---	---	---	---	---	8.0	7.1	7.5	7.4	6.7	7.0
19	---	---	---	---	---	---	8.3	7.2	7.6	6.7	6.4	6.6
20	---	---	---	---	---	---	8.4	7.3	7.6	7.2	6.4	6.8
21	---	---	---	---	---	---	8.6	7.2	7.6	7.1	6.5	6.8
22	---	---	---	---	---	---	8.8	6.9	7.6	6.9	6.4	6.7
23	---	---	---	---	---	---	---	---	---	6.9	6.3	6.5
24	---	---	---	---	---	---	---	---	---	7.2	6.4	6.7
25	---	---	---	---	---	---	8.3	6.3	7.0	7.3	6.6	6.9
26	---	---	---	---	---	---	7.7	6.1	6.7	7.2	6.7	6.9
27	---	---	---	---	---	---	7.7	5.7	6.3	7.4	6.7	7.0
28	---	---	---	---	---	---	6.2	6.1	6.1	7.5	6.9	7.2
29	---	---	---	---	---	---	6.2	6.1	6.2	7.6	7.1	7.3
30	---	---	---	---	---	---	6.4	6.1	6.3	7.3	6.8	7.0
31	---	---	---	---	---	---	---	---	---	7.2	6.7	7.0
MONTH	---	---	---	---	---	---	---	---	---	7.7	6.3	6.9

PH, WATER, WHOLE, FIELD, STANDARD UNITS, APRIL 1999 TO SEPTEMBER 1999

[illegible]

0214645022 BRIAR CREEK AT SECOND FOOTBRIDGE UPSTREAM OF COLONY ROAD AT CHARLOTTE, NC

LOCATION.--Lat 35°10'30", long 80°49'55", Mecklenburg County, Hydrologic Unit 03050103, on right bank on downstream side of second footbridge 700 feet upstream of Colony Road at Charlotte. Located within Myers Park Country Club.

DRAINAGE AREA.--19.0 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 610 ft above sea level, from topographic map. Telephone telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Maximum gage height for period of record 15.41 ft, from floodmarks. Maximum discharge for period of record from slope-area measurement of peak flow. Minimum discharge for current water year also occurred Sept. 15.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 27, 1995 reached a stage of 15.6 ft, present site and datum, from floodmarks; discharge not determined.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	6.0	5.1	4.8	87	8.7	55	18	3.9	3.9	2.6	1.5
2	3.7	15	5.1	15	48	8.0	9.4	11	3.8	3.4	2.4	1.4
3	3.6	71	4.8	206	13	19	6.9	9.2	3.9	3.1	1.9	1.4
4	34	4.0	4.8	12	13	10	6.3	8.4	3.6	2.9	1.9	1.4
5	17	3.1	4.9	8.3	9.1	7.9	6.0	9.2	3.4	3.7	1.9	53
6	3.9	2.7	4.9	7.2	7.9	8.0	5.7	10	3.4	227	2.5	8.2
7	5.7	2.4	4.3	5.7	7.9	7.7	5.7	7.7	3.5	47	2.1	2.3
8	41	2.4	3.3	6.8	8.0	7.6	5.8	7.0	3.2	8.5	2.1	1.8
9	4.1	2.5	4.2	5.6	7.9	22	5.4	6.2	3.1	4.3	3.8	2.2
10	3.1	3.5	4.3	4.8	7.4	11	5.0	6.0	63	3.7	2.1	5.0
11	3.0	5.3	4.7	6.0	7.3	9.3	13	5.8	25	5.0	1.9	1.7
12	2.9	5.0	4.9	4.4	7.2	8.5	5.9	5.8	3.7	47	2.2	1.5
13	2.7	5.7	30	4.8	6.7	8.3	4.8	9.5	3.1	31	1.7	1.7
14	2.6	18	5.2	4.1	6.5	38	5.0	7.9	3.0	5.6	1.7	1.5
15	3.4	25	23	21	6.5	20	7.6	5.4	26	4.3	2.3	e19
16	3.8	15	46	5.1	6.4	9.6	5.4	5.0	78	3.8	2.4	e26
17	2.6	8.7	5.2	116	6.7	8.6	4.8	5.1	18	5.7	2.4	2.5
18	2.6	3.7	4.5	55	88	8.2	5.2	4.9	4.3	3.4	1.9	2.0
19	2.5	3.1	4.3	11	85	8.2	5.3	38	3.4	3.0	2.6	1.7
20	2.5	3.1	3.6	9.2	38	7.7	5.5	5.4	4.3	2.9	31	1.8
21	2.9	3.0	4.0	6.6	17	51	5.4	4.8	4.7	2.9	21	17
22	4.2	3.2	7.6	6.0	13	8.5	5.0	4.5	3.7	2.9	2.6	19
23	4.9	3.3	40	481	11	6.8	4.7	4.5	3.4	2.8	2.3	2.0
24	5.3	3.8	179	295	10	6.4	4.7	4.3	3.2	50	46	1.7
25	5.3	5.4	36	28	9.8	9.8	5.1	4.3	29	8.4	18	1.5
26	5.4	7.0	8.8	14	9.2	9.4	6.0	21	50	2.9	18	1.5
27	5.4	5.2	6.2	10	8.9	6.2	114	5.7	29	2.6	2.5	15
28	5.3	5.0	5.6	9.0	9.4	5.8	67	4.4	11	2.4	1.9	31
29	5.3	5.2	13	7.8	---	5.8	25	4.2	35	39	1.8	119
30	5.6	5.4	6.0	7.5	---	5.6	290	4.2	8.9	7.3	1.6	17
31	5.8	---	5.0	6.6	---	5.5	---	4.0	---	5.5	1.5	---
TOTAL	204.4	251.7	488.3	1384.3	555.8	357.1	700.6	251.4	441.5	545.9	190.6	362.3
MEAN	6.59	8.39	15.8	44.7	19.9	11.5	23.4	8.11	14.7	17.6	6.15	12.1
MAX	41	71	179	481	88	51	290	38	78	227	46	119
MIN	2.5	2.4	3.3	4.1	6.4	5.5	4.7	4.0	3.0	2.4	1.5	1.4
CFSM	.35	.44	.83	2.35	1.04	.61	1.23	.43	.77	.93	.32	.64
IN.	.40	.49	.96	2.71	1.09	.70	1.37	.49	.86	1.07	.37	.71

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1999, BY WATER YEAR (WY)

	1996	1997	1998	1999
MEAN	15.5	14.2	19.0	41.2
MAX	20.4	19.4	31.5	65.2
(WY)	1997	1998	1998	1998
MIN	6.59	8.39	14.0	19.4
(WY)	1999	1999	1997	1997

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

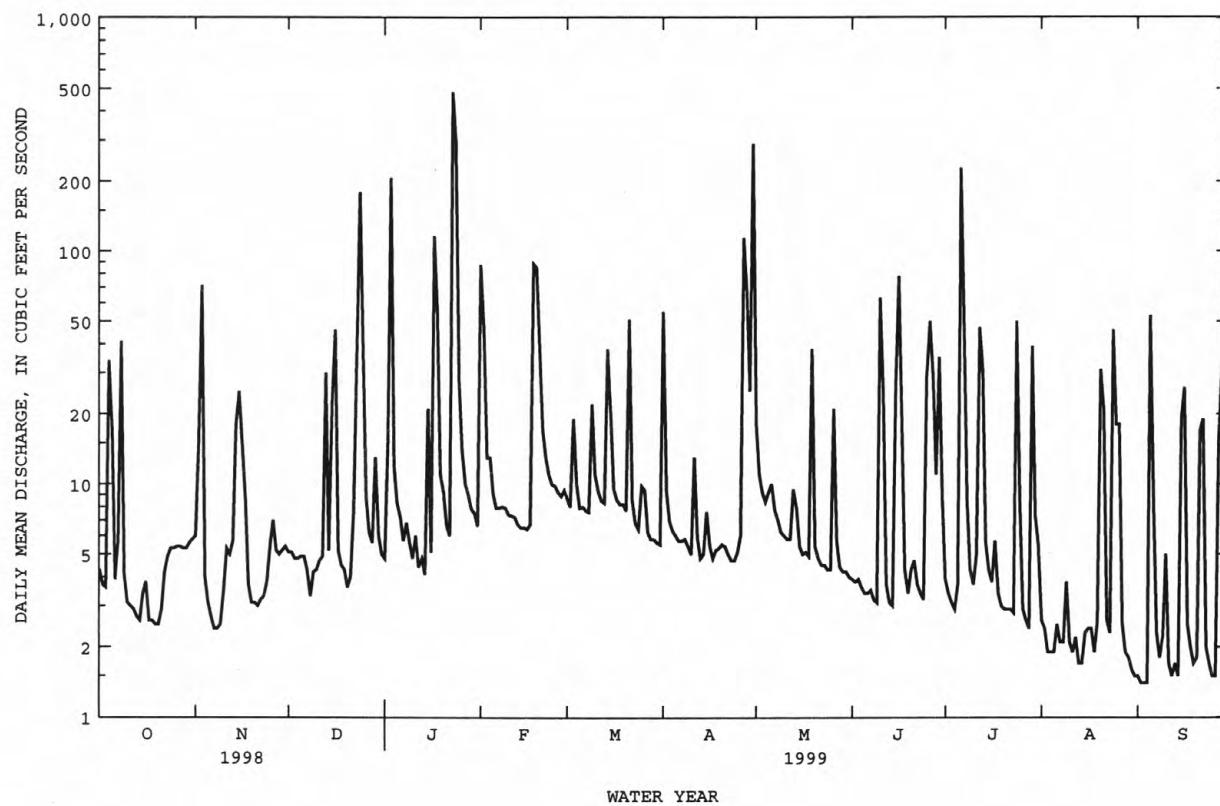
## WATER YEARS 1996 - 1999

ANNUAL TOTAL	10035.3	5733.9	
ANNUAL MEAN	27.5	15.7	24.8
HIGHEST ANNUAL MEAN			30.8
LOWEST ANNUAL MEAN			15.7
HIGHEST DAILY MEAN	839	481	2610
LOWEST DAILY MEAN	2.4	1.4	1.4
ANNUAL SEVEN-DAY MINIMUM	2.9	1.5	1.5
INSTANTANEOUS PEAK FLOW		2140	5680
INSTANTANEOUS PEAK STAGE		10.37	15.41
INSTANTANEOUS LOW FLOW		1.2*	1.2*
ANNUAL RUNOFF (CFSM)	1.45	.83	1.30
ANNUAL RUNOFF (INCHES)	19.65	11.23	17.72
10 PERCENT EXCEEDS	62	32	44
50 PERCENT EXCEEDS	9.6	5.5	8.7
90 PERCENT EXCEEDS	3.6	2.4	3.3

e Estimated.

\* See REMARKS.

0214645022 BRIAR CREEK AT SECOND FOOTBRIDGE UPSTREAM OF COLONY ROAD AT CHARLOTTE, NC--Continued





0214645022 BRIAR CREEK AT SECOND FOOTBRIDGE UPSTREAM OF COLONY RD AT CHARLOTTE, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.-- April to September 1999.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April to September 1999.

SPECIFIC CONDUCTANCE: April to September 1999.

DISSOLVED OXYGEN: April to September 1999.

DISSOLVED OXYGEN, PERCENT SATURATION: April to September 1999.

pH: April to September 1999.

INSTRUMENTATION.-- Water-quality monitor with telephone telemetry.

REMARKS.--Station operated in cooperation with Mecklenburg County Department of Environmental Protection to characterize water-quality conditions in Briar Creek basin.

EXTREMES FOR CURRENT WATER YEAR.--

Extremes listed below may have been exceeded during periods of missing record.

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
WATER TEMPERATURE, °C	35.0, July 31	9.4, April 30
SPECIFIC CONDUCTANCE, microsiemens	282, July 23	39, Sept. 29
DISSOLVED OXYGEN, mg/L	13.9, June 23	3.9, August 11, 12
DISSOLVED OXYGEN, percent saturation	186, July 18	48, June 25
pH, standard units	9.5, July 18	6.0, June 27

## TEMPERATURE, WATER (DEG. C), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
	FEBRUARY				MARCH				APRIL				MAY		
1	---	---	---		---	---	---		---	---	---		15.4	10.1	12.4
2	---	---	---		---	---	---		---	---	---		21.4	10.9	15.1
3	---	---	---		---	---	---		---	---	---		23.3	12.7	17.1
4	---	---	---		---	---	---		---	---	---		25.1	14.4	18.9
5	---	---	---		---	---	---		---	---	---		19.2	16.6	17.8
6	---	---	---		---	---	---		---	---	---		21.8	17.0	18.9
7	---	---	---		---	---	---		---	---	---		24.2	17.6	20.2
8	---	---	---		---	---	---		---	---	---		26.8	18.4	21.8
9	---	---	---		---	---	---		---	---	---		27.1	17.3	21.7
10	---	---	---		---	---	---		---	---	---		27.9	18.5	22.4
11	---	---	---		---	---	---		---	---	---		26.9	18.6	22.4
12	---	---	---		---	---	---		---	---	---		26.1	19.7	22.3
13	---	---	---		---	---	---		---	---	---		---	---	---
14	---	---	---		---	---	---		---	---	---		---	---	---
15	---	---	---		---	---	---		---	---	---		25.2	15.0	18.9
16	---	---	---		---	---	---		---	---	---		26.8	16.3	20.6
17	---	---	---		---	---	---		---	---	---		28.0	16.9	21.7
18	---	---	---		---	---	---		---	---	---		25.2	18.8	21.8
19	---	---	---		---	---	---		---	---	---		26.2	19.3	21.9
20	---	---	---		---	---	---		---	---	---		28.4	17.7	22.2
21	---	---	---		---	---	---		---	---	---		28.6	17.6	22.5
22	---	---	---		---	---	---		---	---	---		26.4	19.1	22.7
23	---	---	---		---	---	---	24.9	16.8	20.4	---		29.1	20.1	24.2
24	---	---	---		---	---	---	22.1	18.3	20.1	---		28.6	20.9	24.0
25	---	---	---		---	---	---	---	---	---	---		26.7	18.1	22.1
26	---	---	---		---	---	---	---	---	---	---		21.2	19.0	19.9
27	---	---	---		---	---	---	---	---	---	---		27.9	17.0	21.6
28	---	---	---		---	---	---	---	---	---	---		28.4	17.1	22.3
29	---	---	---		---	---	---	13.7	10.9	12.5	---		30.1	18.2	23.5
30	---	---	---		---	---	---	11.2	9.4	10.4	---		29.7	19.7	24.2
31	---	---	---		---	---	---	---	---	---	---		28.5	20.2	24.1
MONTH	---	---	---		---	---	---	---	---	---	---		---	---	---

TEMPERATURE, WATER (DEG. C), APRIL 1999 TO SEPTEMBER 1999

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), APRIL 1999 TO SEPTEMBER 1999[illegible]

## SANTÉE RIVER BASIN

0214645022 BRIAR CREEK AT SECOND FOOTBRIDGE UPSTREAM OF COLONY RD AT CHARLOTTE, NC--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C). APRIL 1999 TO SEPTEMBER 1999

[illegible]

OXYGEN DISSOLVED (MG/L), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
	FEBRUARY				MARCH				APRIL				MAY		
1	---	---	---		---	---	---		---	---	---		9.3	8.3	8.8
2	---	---	---		---	---	---		---	---	---		8.9	7.5	8.3
3	---	---	---		---	---	---		---	---	---		8.9	7.1	8.1
4	---	---	---		---	---	---		---	---	---		9.4	7.6	8.3
5	---	---	---		---	---	---		---	---	---		9.9	7.3	8.5
6	---	---	---		---	---	---		---	---	---		9.5	6.8	7.8
7	---	---	---		---	---	---		---	---	---		9.9	6.6	8.0
8	---	---	---		---	---	---		---	---	---		9.6	6.6	7.8
9	---	---	---		---	---	---		---	---	---		10.1	6.8	8.1
10	---	---	---		---	---	---		---	---	---		10.4	6.7	8.2
11	---	---	---		---	---	---		---	---	---		10.8	6.7	8.2
12	---	---	---		---	---	---		---	---	---		10.9	6.8	8.2
13	---	---	---		---	---	---		---	---	---		---	---	---
14	---	---	---		---	---	---		---	---	---		---	---	---
15	---	---	---		---	---	---		---	---	---		10.3	6.7	8.0
16	---	---	---		---	---	---		---	---	---		10.7	6.4	8.1
17	---	---	---		---	---	---		---	---	---		11.4	6.3	8.3
18	---	---	---		---	---	---		---	---	---		11.7	6.3	8.4
19	---	---	---		---	---	---		---	---	---		7.3	5.9	6.6
20	---	---	---		---	---	---		---	---	---		8.8	5.9	7.1
21	---	---	---		---	---	---		---	---	---		9.7	5.9	7.4
22	---	---	---		---	---	---		---	---	---		10.4	5.8	7.6
23	---	---	---		---	---	---		9.8	6.1	7.6		10.7	5.3	7.5
24	---	---	---		---	---	---		9.4	6.0	7.4		10.3	5.3	7.2
25	---	---	---		---	---	---		---	---	---		11.1	5.5	7.6
26	---	---	---		---	---	---		---	---	---		6.7	5.6	6.1
27	---	---	---		---	---	---		---	---	---		8.5	5.8	6.9
28	---	---	---		---	---	---		---	---	---		9.8	5.8	7.4
29	---	---	---		---	---	---		8.9	7.6	8.0		11.3	5.9	7.9
30	---	---	---		---	---	---		10.4	8.9	9.6		12.3	5.7	8.3
31	---	---	---		---	---	---		---	---	---		12.9	5.7	8.3
MONTH	---	---	---		---	---	---		---	---	---		---	---	---

OXYGEN DISSOLVED (MG/L). APRIL 1999 TO SEPTEMBER 1999

OXYGEN DISSOLVED (% OF SATURATION). APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
	FEBRUARY				MARCH				APRIL				MAY		
1	---	---	---		---	---	---		---	---	---		91	83	87
2	---	---	---		---	---	---		---	---	---		94	82	87
3	---	---	---		---	---	---		---	---	---		99	80	88
4	---	---	---		---	---	---		---	---	---		113	82	94
5	---	---	---		---	---	---		---	---	---		111	80	94
6	---	---	---		---	---	---		---	---	---		112	74	88
7	---	---	---		---	---	---		---	---	---		119	76	92
8	---	---	---		---	---	---		---	---	---		123	73	92
9	---	---	---		---	---	---		---	---	---		127	75	95
10	---	---	---		---	---	---		---	---	---		135	76	98
11	---	---	---		---	---	---		---	---	---		135	77	98
12	---	---	---		---	---	---		---	---	---		137	79	98
13	---	---	---		---	---	---		---	---	---		---	---	---
14	---	---	---		---	---	---		---	---	---		---	---	---
15	---	---	---		---	---	---		---	---	---		125	70	89
16	---	---	---		---	---	---		---	---	---		136	71	93
17	---	---	---		---	---	---		---	---	---		145	72	98
18	---	---	---		---	---	---		---	---	---		141	73	98
19	---	---	---		---	---	---		---	---	---		91	68	77
20	---	---	---		---	---	---		---	---	---		113	67	84
21	---	---	---		---	---	---		---	---	---		124	68	88
22	---	---	---		---	---	---		---	---	---		128	68	91
23	---	---	---		---	---	---		118	69	87		137	63	92
24	---	---	---		---	---	---		112	67	85		132	63	88
25	---	---	---		---	---	---		---	---	---		139	63	89
26	---	---	---		---	---	---		---	---	---		77	63	68
27	---	---	---		---	---	---		---	---	---		109	65	80
28	---	---	---		---	---	---		---	---	---		125	66	88
29	---	---	---		---	---	---		85	76	79		146	68	96
30	---	---	---		---	---	---		95	85	91		162	69	102
31	---	---	---		---	---	---		---	---	---		167	68	103
MONTH	---	---	---		---	---	---		---	---	---		---	---	---

OXYGEN DISSOLVED (% OF SATURATION), APRIL 1999 TO SEPTEMBER 1999

PH, WATER, WHOLE, FIELD, STANDARD UNITS, APRIL 1999 TO SEPTEMBER 1999[illegible]

PH, WATER, WHOLE, FIELD, STANDARD UNITS, APRIL 1999 TO SEPTEMBER 1999

[illegible]



## SANTÉE RIVER BASIN

02146470 LITTLE HOPE CREEK AT SENECA PLACE AT CHARLOTTE, NC

LOCATION.--Lat 35°09'53", long 80°51'12", Mecklenburg County, Hydrologic Unit 03050103, on right bank at downstream side of bridge on Seneca Place, 0.8 mi upstream from mouth, and 4 mi south of city hall in Charlotte.

DRAINAGE AREA.--2.63 mi<sup>2</sup>, revised.

PERIOD OF RECORD.--Water years 1967 to 1970 (annual maximum), December 1982 to September 1990, October 1994 to current year.

REVISED RECORDS.--WDR NC-85-1: 1984 (P). WDR NC-88-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 597.77 ft above sea level (North Carolina Coast and Geodetic Survey bench mark). Telephone telemetry at station.

REMARKS.--Records fair except those for estimated daily discharge, which are poor. No flow occurred periodically in 1986, 1987, and 1988.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.41	.25	.44	.72	17	1.0	11	2.2	.68	.67	.16	.19
2	.37	4.0	.43	4.3	5.1	.94	1.3	1.4	.60	.67	.22	.15
3	.44	8.0	.45	26	1.7	3.4	1.1	1.2	.54	.67	.16	.16
4	7.9	.49	.45	1.3	2.1	1.0	1.1	1.1	.54	.76	.18	.18
5	.43	.42	.42	1.1	1.3	.91	1.0	1.4	.53	.50	.22	5.9
6	.37	.44	.31	1.1	1.2	1.0	.95	1.3	.53	30	.12	.46
7	2.3	.46	.31	.86	1.1	.88	.94	1.1	.46	2.0	.12	.26
8	7.8	.43	.31	1.1	1.0	.92	.91	1.0	.40	.97	.20	.25
9	.42	.46	.37	.81	.96	3.5	1.1	.96	.38	.67	.87	.26
10	.34	.44	.28	.72	.98	1.2	.93	.86	20	2.2	.11	.23
11	.31	.56	.30	.72	.93	.97	2.0	.83	2.9	.79	.11	.19
12	.35	.42	.30	.71	.91	.95	.85	.80	.76	5.5	e.11	.21
13	.50	.42	3.4	.72	.87	.91	.78	1.1	.66	4.2	e.11	.18
14	.26	5.7	.39	.67	.83	9.8	.78	1.3	.56	.97	e.12	.13
15	.25	2.3	6.3	3.5	.86	1.9	1.3	.80	4.9	.80	e.11	6.7
16	.24	2.0	3.2	.73	.87	1.2	.76	.80	14	.73	e.16	3.7
17	.23	.91	.40	21	.85	1.1	.70	.75	2.1	.74	.14	.22
18	.21	.38	.32	5.5	11	1.1	.72	.81	.72	.62	.15	.19
19	.19	.40	.33	1.4	17	1.0	.68	5.1	.63	.59	.14	.20
20	.17	.49	.37	1.1	4.3	1.0	.74	.77	.67	.55	4.1	.18
21	.20	.46	.37	1.0	1.7	7.8	.70	.79	.67	.55	.66	11
22	.21	.47	.64	.93	1.4	1.2	.70	.77	.65	.53	.18	1.8
23	.26	.48	6.9	64	1.2	1.1	.67	.78	.65	.51	.18	.22
24	.29	.47	30	39	1.2	1.0	.63	.76	.56	4.3	11	.22
25	.29	.53	4.5	2.9	1.1	1.8	.66	.71	7.2	.60	.86	.22
26	.25	.74	1.1	1.7	1.0	1.2	.95	4.6	15	.29	.89	.20
27	.16	.40	.90	1.4	1.1	.98	22	.83	6.8	.23	.29	3.3
28	.16	.42	1.2	1.3	1.2	.88	4.0	.76	1.9	.22	.26	.68
29	.19	.52	2.6	1.2	---	.95	5.1	.75	.90	.68	.24	16
30	.19	.47	.86	1.1	---	.86	45	.76	.81	.35	.20	.80
31	.18	---	.73	1.0	---	.90	---	.71	---	.20	.19	---
TOTAL	25.87	33.93	68.88	189.59	80.76	53.35	110.05	37.80	87.70	63.06	22.56	54.38
MEAN	.83	1.13	2.22	6.12	2.88	1.72	3.67	1.22	2.92	2.03	.73	1.81
MAX	7.9	8.0	30	64	17	9.8	45	5.1	20	30	.11	.16
MIN	.16	.25	.28	.67	.83	.86	.63	.71	.38	.20	.11	.13
CFSM	.32	.43	.84	2.33	1.10	.65	1.39	.46	1.11	.77	.28	.69
IN.	.37	.48	.97	2.68	1.14	.75	1.56	.53	1.24	.89	.32	.77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1999,<sup>e</sup> BY WATER YEAR (WY)

	MEAN	2.37	3.15	3.23	4.65	5.83	4.54	3.43	2.80	2.53	3.11	2.80	2.39
MAX	5.05	10.5	10.5	9.46	8.96	9.04	9.13	6.65	7.18	13.8	9.12	8.17	
(WY)	1990	1986	1984	1998	1990	1984	1998	1990	1985	1997	1995	1989	
MIN	.57	.95	1.38	1.70	1.59	1.03	1.24	.88	.22	.31	.19	.34	
(WY)	1988	1985	1989	1986	1986	1985	1985	1987	1986	1986	1987	1983	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

WATER YEARS 1983 - 1999<sup>e</sup>

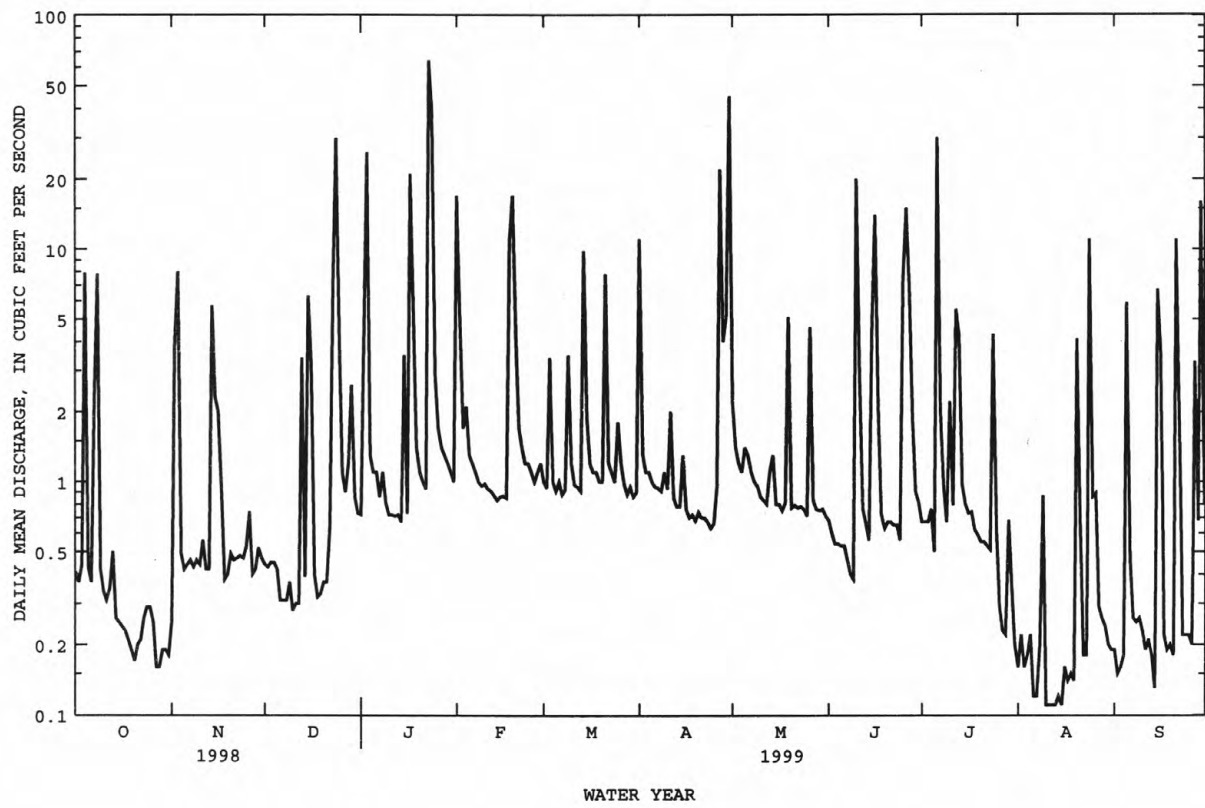
ANNUAL TOTAL	1488.69	827.93	
ANNUAL MEAN	4.08	2.27	3.41
HIGHEST ANNUAL MEAN			4.87
LOWEST ANNUAL MEAN			2.27
HIGHEST DAILY MEAN	112	64	282
LOWEST DAILY MEAN	.16	.11	.00
ANNUAL SEVEN-DAY MINIMUM	.20	.12	.00
INSTANTANEOUS PEAK FLOW		791	1700
INSTANTANEOUS PEAK STAGE		6.70	8.50
INSTANTANEOUS LOW FLOW		NOT DETERMINED	.00*
ANNUAL RUNOFF (CFSM)	1.55	.86	1.30
ANNUAL RUNOFF (INCHES)	21.06	11.71	17.60
10 PERCENT EXCEEDS	7.8	4.7	6.2
50 PERCENT EXCEEDS	1.1	.76	.99
90 PERCENT EXCEEDS	.38	.20	.26

e Estimated.

\* See PERIOD OF RECORD.

\* See REMARKS.

02146470 LITTLE HOPE CREEK AT SENECA PLACE AT CHARLOTTE, NC--Continued



## 02146507 LITTLE SUGAR CREEK AT ARCHDALE DRIVE AT CHARLOTTE, NC

LOCATION.--Lat 35°08'52", long 80°51'29", Mecklenburg County, Hydrologic Unit 03050103, on left bank at downstream side of bridge on Archdale Drive (Secondary Road 3657) in Charlotte, 0.7 mi downstream of Little Hope Creek, and 5.0 mi south of city hall, Charlotte.

DRAINAGE AREA.--42.6 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 564.46 ft above sea level (levels by City of Charlotte). Telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records fair. A daily average of 22.4 ft<sup>3</sup>/s of treated sewage effluent from Little Sugar Creek wastewater treatment plant was discharged into the stream 0.4 mi upstream from gage.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 22, 1975, reached a stage of about 12.7 ft, from floodmarks, discharge, 7,360 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	29	32	36	297	43	265	66	31	26	28	27
2	29	48	33	64	158	39	43	48	31	30	29	28
3	29	259	33	721	57	74	35	44	35	29	27	28
4	141	30	35	52	57	50	33	42	32	29	26	27
5	51	27	35	42	44	38	31	45	31	29	26	172
6	34	26	33	45	41	39	30	49	29	562	26	48
7	45	22	33	37	39	37	30	42	32	109	25	30
8	177	23	52	42	39	35	30	40	31	51	26	28
9	37	26	34	37	38	78	30	39	31	36	35	27
10	31	24	32	33	37	55	29	38	252	45	26	34
11	31	28	32	36	36	43	53	37	119	34	26	26
12	31	25	31	33	36	41	33	37	31	154	25	25
13	31	24	109	34	35	40	28	55	27	109	25	27
14	31	68	40	33	33	153	29	52	29	41	24	27
15	31	120	101	87	35	75	37	39	98	33	24	123
16	29	66	183	35	36	44	31	37	297	31	26	167
17	31	54	39	394	36	42	27	38	79	34	27	33
18	31	29	35	197	273	41	27	38	35	31	26	27
19	31	28	34	52	311	40	27	127	29	29	26	26
20	31	31	32	42	131	39	28	39	30	30	118	30
21	31	27	34	37	59	183	28	37	33	29	93	101
22	30	27	43	36	48	48	29	36	31	29	31	90
23	29	28	171	1520	46	43	30	36	30	29	30	34
24	30	30	637	902	43	42	30	35	30	176	199	29
25	29	29	131	108	41	53	26	34	121	52	92	24
26	32	34	44	58	40	50	27	89	177	30	57	24
27	30	30	36	46	40	41	345	40	119	30	34	69
28	29	31	36	42	43	39	220	40	66	29	30	62
29	32	30	61	39	---	40	77	33	113	115	28	392
30	33	32	39	40	---	46	897	32	45	50	28	72
31	30	---	38	36	---	39	---	31	---	32	30	---
TOTAL	1249	1285	2258	4916	2129	1670	2585	1395	2074	2073	1273	1857
MEAN	40.3	42.8	72.8	159	76.0	53.9	86.2	45.0	69.1	66.9	41.1	61.9
MAX	177	259	637	1520	311	183	897	127	297	562	199	392
MIN	29	22	31	33	33	35	26	31	27	26	24	24
CFSM	.95	1.01	1.71	3.72	1.78	1.26	2.02	1.06	1.62	1.57	.96	1.45
IN.	1.09	1.12	1.97	4.29	1.86	1.46	2.26	1.22	1.81	1.81	1.11	1.62

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1999, BY WATER YEAR (WY)

	MEAN	71.4	73.0	70.3	113	116	120	86.0	70.6	72.5	70.9	74.2	61.9
MAX	258	197	164	207	194	245	205	119	152	310	227	147	
(WY)	1991	1986	1984	1978	1979	1993	1998	1985	1992	1997	1995	1979	
MIN	25.7	22.6	32.8	31.6	44.8	40.0	30.8	33.8	20.5	27.2	29.5	21.7	
(WY)	1992	1982	1981	1981	1986	1985	1981	1986	1986	1986	1987	1986	

## SUMMARY STATISTICS

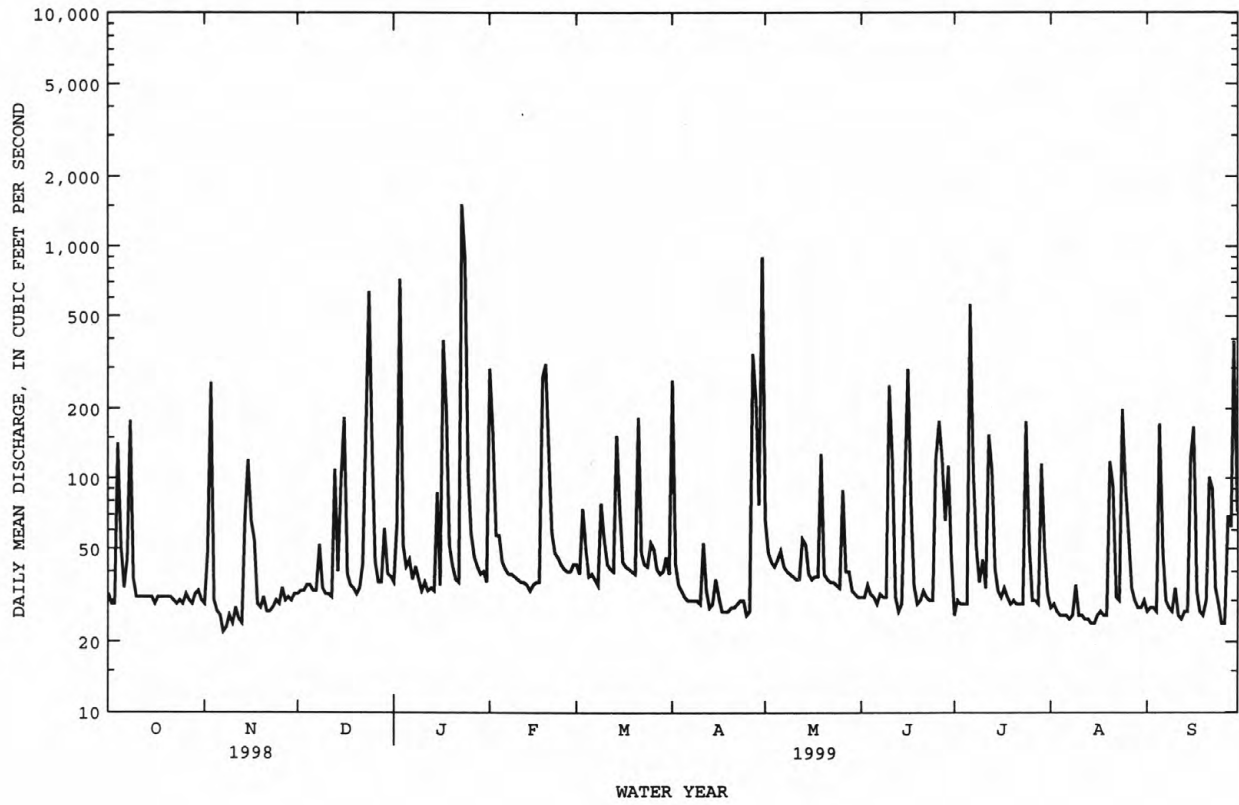
## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

## WATER YEARS 1978 - 1999

ANNUAL TOTAL	36747	24764	
ANNUAL MEAN	101	67.8	83.2
HIGHEST ANNUAL MEAN			110
LOWEST ANNUAL MEAN			51.7
HIGHEST DAILY MEAN	2060	Apr 9	1520
LOWEST DAILY MEAN	21	Sep 17	22
ANNUAL SEVEN-DAY MINIMUM	25	Nov 7	25
INSTANTANEOUS PEAK FLOW			8240
INSTANTANEOUS PEAK STAGE			12.15
INSTANTANEOUS LOW FLOW			9.6
ANNUAL RUNOFF (CFSM)	2.36		1.59
ANNUAL RUNOFF (INCHES)	32.09		21.62
10 PERCENT EXCEEDS	197		120
50 PERCENT EXCEEDS	46		35
90 PERCENT EXCEEDS	27		27

02146507 LITTLE SUGAR CREEK AT ARCHDALE DRIVE AT CHARLOTTE, NC--Continued



02146507 LITTLE SUGAR CREEK AT ARCHDALE DRIVE AT CHARLOTTE, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.-- April to September 1999.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April to September 1999.

SPECIFIC CONDUCTANCE: April to September 1999.

DISSOLVED OXYGEN: April to September 1999.

DISSOLVED OXYGEN, PERCENT SATURATION: April to September 1999

pH: April to September 1999. INSTRUMENTATION.-- Water-quality monitor with telephone telemetry.

REMARKS.--Station operated in cooperation with Mecklenburg County Department of Environmental Protection to characterize water-quality conditions in Little Sugar Creek basin.

EXTREMES FOR CURRENT YEAR.--

Extremes listed below may have been exceeded during periods of missing record.

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
WATER TEMPERATURE, °C	31.6, July 31	10.2, April 30
SPECIFIC CONDUCTANCE, microsiemens	774, Sept. 24	43, July 6
DISSOLVED OXYGEN, mg/L	13.0, June 23	1.9, Sept. 5
DISSOLVED OXYGEN, percent saturation	166, July 6	24, Sept. 5
pH, standard units	8.7, July 24	5.9, April 27

## TEMPERATURE, WATER (DEG. C). APRIL 1999 TO SEPTEMBER 1999

[illegible]

TEMPERATURE, WATER (DEG. C), APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	26.2	22.5	24.3	29.0	25.3	27.1	31.3	27.8	29.3	28.9	24.5	26.8
2	27.1	23.3	24.8	29.0	25.9	27.2	30.5	27.6	28.9	29.2	24.8	27.3
3	27.3	23.9	25.4	29.0	25.9	27.1	30.3	27.0	28.5	29.2	25.8	27.4
4	27.4	23.5	25.4	29.4	25.8	27.4	30.2	26.6	28.4	29.3	26.0	27.6
5	27.4	23.2	25.3	29.4	26.2	27.6	30.1	26.8	28.5	27.4	23.7	25.7
6	27.4	23.0	25.2	29.4	25.0	27.1	30.6	27.3	28.8	27.5	23.9	25.6
7	27.9	23.5	25.7	28.8	25.1	26.5	30.6	27.2	28.8	29.0	25.6	27.3
8	28.4	24.0	26.1	---	---	---	30.9	27.6	29.1	29.4	26.3	27.8
9	28.7	24.4	26.5	29.4	26.2	27.6	29.1	27.0	28.1	29.6	26.7	27.9
10	28.5	24.3	26.4	28.8	26.4	27.4	30.3	26.9	28.6	28.9	25.1	27.0
11	25.6	24.0	24.8	26.8	24.5	26.0	31.1	27.7	29.3	28.8	24.7	26.7
12	28.0	23.6	25.6	24.6	22.2	23.1	31.0	27.5	29.3	28.6	24.5	26.5
13	27.9	23.2	25.5	23.5	21.0	22.3	31.1	27.7	29.4	28.4	24.6	26.4
14	28.3	23.6	26.0	25.3	22.6	24.2	31.3	28.5	29.6	28.6	24.4	26.6
15	26.1	24.3	25.1	27.8	23.7	25.8	30.3	27.8	28.8	26.7	21.5	25.4
16	24.5	22.1	23.3	28.7	24.8	26.7	30.5	27.5	29.0	24.6	20.8	22.7
17	25.7	21.7	23.6	28.6	25.8	27.1	31.0	28.0	29.5	26.7	22.5	24.8
18	27.0	22.1	24.6	29.5	25.9	27.5	30.9	28.2	29.6	27.1	23.1	25.2
19	26.6	21.9	24.3	29.8	26.1	27.8	30.8	27.9	29.2	27.1	23.3	25.2
20	24.4	22.2	23.3	29.7	26.4	27.9	28.8	24.5	27.4	27.4	23.3	25.5
21	24.3	21.2	22.9	30.2	26.8	28.3	29.0	24.3	26.6	26.9	21.2	25.1
22	25.3	21.7	23.8	29.8	27.2	28.6	29.7	25.8	27.7	24.5	20.6	22.7
23	26.8	22.0	24.6	30.9	27.5	29.0	29.2	26.6	27.9	26.2	21.2	24.1
24	26.0	22.9	24.8	30.6	27.3	28.8	28.4	24.7	26.8	26.5	21.9	24.5
25	24.8	22.5	23.9	30.5	26.3	28.2	28.1	24.9	26.6	26.9	22.9	25.0
26	27.6	23.5	25.3	30.5	26.8	28.5	29.4	25.3	27.5	27.3	23.7	25.5
27	27.4	24.4	25.7	29.7	27.3	28.4	29.7	26.9	28.3	25.7	23.4	24.5
28	28.4	24.8	26.4	30.7	27.0	28.8	30.3	26.8	28.4	26.1	23.9	25.0
29	29.3	25.7	27.1	31.1	27.6	29.0	29.4	27.1	28.1	24.5	22.7	23.8
30	28.1	25.3	26.6	30.0	26.7	28.4	28.9	25.8	27.3	24.3	22.0	23.3
31	---	---	---	31.6	27.8	29.4	28.3	24.9	26.7	---	---	---
MONTH	29.3	21.2	25.1	---	---	---	31.3	24.3	28.4	29.6	20.6	25.6

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), APRIL 1999 TO SEPTEMBER 1999

[illegible]



SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C). APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	495	429	464	611	197	475	605	344	547	772	627	720
2	557	447	503	599	486	563	582	453	545	768	656	740
3	586	489	554	601	499	578	597	513	554	729	656	703
4	608	448	554	574	495	552	622	544	587	747	667	719
5	642	500	589	556	466	525	679	537	626	723	146	478
6	622	493	577	---	---	---	664	577	634	568	203	399
7	611	457	555	---	---	---	651	551	619	617	477	571
8	652	502	605	---	---	---	608	484	568	668	527	629
9	634	508	592	537	433	508	602	380	504	663	552	633
10	639	62	520	532	222	440	642	473	603	636	442	582
11	538	152	337	555	408	495	646	526	618	677	542	630
12	648	466	572	462	117	266	659	547	630	685	588	650
13	618	460	559	441	120	270	652	553	617	677	585	638
14	644	493	589	493	358	448	649	577	620	692	569	641
15	601	200	393	520	393	481	632	557	608	688	159	554
16	383	103	236	559	468	526	650	566	621	509	135	282
17	372	148	254	569	478	531	661	581	633	712	485	591
18	463	267	391	596	488	556	705	592	651	703	581	657
19	617	420	532	586	506	551	703	575	672	668	588	640
20	622	450	554	544	455	508	658	127	484	677	556	623
21	555	421	511	543	444	492	581	146	391	649	166	544
22	585	397	539	548	469	525	688	548	620	541	168	331
23	596	410	541	556	503	541	675	558	632	689	477	597
24	627	488	576	556	150	446	620	111	428	774	611	705
25	573	160	351	475	226	357	517	160	334	716	622	679
26	481	109	304	538	421	484	602	196	440	690	609	656
27	394	138	239	602	462	561	683	563	621	697	287	465
28	537	176	359	602	481	565	699	610	671	500	202	420
29	562	179	426	523	178	413	675	561	642	250	79	160
30	501	139	377	513	255	380	702	597	658	491	214	351
31	---	---	---	576	462	522	757	653	703	---	---	---
MONTH	652	62	472	---	---	---	757	111	583	774	79	566

OXYGEN DISSOLVED (MG/L), APRIL 1999 TO SEPTEMBER 1999

[illegible]

OXYGEN DISSOLVED (MG/L). APRIL 1999 TO SEPTEMBER 1999

OXYGEN DISSOLVED (% OF SATURATION), APRIL 1999 TO SEPTEMBER 1999[illegible]

## SANTÉE RIVER BASIN

02146507 LITTLE SUGAR CREEK AT ARCHDALE DRIVE AT CHARLOTTE, NC--Continued

OXYGEN DISSOLVED (% OF SATURATION), APRIL 1999 TO SEPTEMBER 1999

[illegible]

PH, WATER, WHOLE, FIELD, STANDARD UNITS, APRIL 1999 TO SEPTEMBER 1999

[illegible]

02146507 LITTLE SUGAR CREEK AT ARCHDALE DRIVE AT CHARLOTTE, NC--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, APRIL 1999 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.9	7.1	7.4	7.6	7.1	7.3	7.6	7.1	7.4	7.6	7.2	7.4
2	8.3	7.3	7.5	7.6	7.1	7.3	7.7	7.1	7.4	7.6	7.2	7.4
3	8.2	7.3	7.5	7.7	7.1	7.3	8.0	7.3	7.5	7.6	7.2	7.3
4	7.9	7.3	7.5	8.1	6.9	7.4	7.8	7.2	7.4	7.5	7.2	7.3
5	8.2	7.4	7.7	8.0	6.8	7.3	7.5	7.2	7.3	7.4	6.8	7.1
6	8.0	7.4	7.7	8.2	6.3	7.1	7.6	7.2	7.3	7.1	6.8	7.0
7	8.0	7.4	7.6	7.2	6.9	7.0	7.7	7.2	7.4	7.3	7.0	7.1
8	7.9	7.3	7.5	---	---	---	7.9	7.3	7.5	7.5	7.2	7.3
9	8.1	7.3	7.5	7.2	7.0	7.1	7.6	7.2	7.4	7.6	7.2	7.3
10	8.0	6.5	7.4	7.4	7.0	7.2	7.9	7.2	7.4	7.4	7.1	7.2
11	6.8	6.4	6.6	7.3	7.0	7.2	7.9	7.3	7.5	7.5	7.1	7.2
12	7.3	6.8	7.0	7.3	7.1	7.1	8.2	7.4	7.6	7.7	7.2	7.3
13	7.6	7.2	7.4	7.2	7.1	7.1	8.0	7.4	7.6	7.7	7.2	7.4
14	8.0	7.3	7.6	7.3	7.2	7.2	7.9	7.4	7.6	7.7	7.2	7.4
15	7.6	7.2	7.4	7.7	7.3	7.4	7.9	7.4	7.5	7.6	7.2	7.4
16	7.5	6.8	7.2	8.0	7.3	7.5	7.9	7.4	7.6	7.4	7.1	7.2
17	7.3	6.9	7.1	8.3	7.3	7.7	7.9	7.4	7.5	7.4	7.1	7.3
18	7.4	7.0	7.2	8.5	7.4	7.8	7.8	7.4	7.5	7.4	7.2	7.2
19	7.6	7.3	7.5	8.5	7.3	7.8	7.8	7.3	7.5	7.6	7.2	7.4
20	7.8	7.4	7.6	8.3	7.3	7.6	7.5	6.7	7.2	7.7	7.1	7.3
21	8.1	7.4	7.7	8.3	7.3	7.6	7.1	6.7	7.0	7.4	6.9	7.2
22	8.2	7.4	7.8	8.1	7.3	7.7	7.3	7.1	7.2	7.4	7.0	7.2
23	8.5	7.7	7.9	8.6	7.5	7.9	7.4	7.2	7.3	7.5	7.2	7.3
24	8.6	7.6	8.0	8.7	7.0	7.9	8.5	7.0	7.4	7.6	7.3	7.4
25	7.9	7.6	7.8	7.9	7.0	7.5	7.4	7.1	7.3	7.7	7.3	7.5
26	8.0	7.6	7.8	7.9	7.0	7.4	7.4	7.2	7.3	7.8	7.4	7.5
27	7.8	7.6	7.6	---	---	---	7.5	7.3	7.4	7.4	7.0	7.3
28	7.8	7.6	7.7	---	---	---	7.4	7.3	7.4	7.3	6.9	7.1
29	7.7	7.3	7.6	8.6	7.1	7.6	7.7	7.3	7.4	7.0	6.7	6.9
30	7.4	7.2	7.3	7.5	7.2	7.3	7.8	7.3	7.5	7.3	7.0	7.2
31	---	---	---	7.6	7.3	7.4	7.6	7.2	7.3	---	---	---
MONTH	8.6	6.4	7.5	---	---	---	8.5	6.7	7.4	7.8	6.7	7.3

## 02146530 LITTLE SUGAR CREEK AT HIGHWAY 51 AT PINEVILLE, NC

LOCATION.--Lat 35°05'06", long 80°52'58", Mecklenburg County, Hydrologic Unit 03050103, on left bank on upstream side of bridge on State Highway 51, 0.5 mi east of intersection of State Highway 51 and U.S. Highway 521 at Pineville.,

DRAINAGE AREA.--49.2 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional discharge measurements, water years 1966-97. June 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 530 ft above sea level, from topographic map. Telephone telemetry at station.

REMARKS.--Records fair. A daily average of 22.4 ft<sup>3</sup>/s of treated effluent from Little Sugar Creek wastewater treatment plant was discharged into the stream 5.2 mi upstream from the gage. Maximum gage height for period of record from floodmarks. Maximum discharge for period of record from rating curve extended above 10,120 ft<sup>3</sup>/s. Minimum discharge for period of record also occurred Nov. 13, 1998.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	29	27	36	259	44	244	79	28	34	53	28
2	28	32	27	44	242	40	57	44	28	34	38	28
3	28	281	27	725	68	68	42	38	30	35	32	28
4	152	35	28	64	65	54	40	36	28	34	30	27
5	55	29	27	46	51	41	38	36	27	34	30	160
6	36	28	27	47	47	41	37	43	26	397	30	77
7	37	24	26	41	45	40	37	36	27	206	30	32
8	213	25	43	42	44	39	37	33	27	71	30	30
9	43	27	27	39	43	81	37	31	32	44	41	30
10	34	26	26	34	43	57	36	31	115	69	31	35
11	33	28	26	35	41	43	51	29	240	40	30	28
12	32	27	26	34	41	40	46	29	38	169	30	26
13	32	26	102	34	40	40	36	50	33	148	30	28
14	31	39	41	33	38	141	36	58	33	49	29	28
15	31	163	62	96	39	103	42	33	102	37	29	72
16	30	62	236	36	40	47	41	30	266	35	31	246
17	30	82	38	281	41	43	36	30	131	39	32	36
18	31	32	32	332	292	41	35	31	42	34	31	30
19	31	29	30	57	289	39	35	123	35	32	31	28
20	31	31	29	44	183	39	36	32	33	32	66	30
21	31	28	30	39	66	196	36	30	37	32	154	63
22	30	27	38	37	52	54	36	30	35	32	34	150
23	29	28	160	1390	50	44	37	30	33	32	32	37
24	30	29	647	959	47	42	37	29	33	129	115	32
25	29	27	195	150	45	48	35	29	113	97	181	29
26	30	30	50	77	43	56	35	86	129	35	63	27
27	29	28	38	58	42	40	196	37	176	38	35	78
28	28	27	36	53	45	38	347	34	88	40	31	54
29	30	27	65	49	---	39	58	29	85	94	28	429
30	31	27	40	49	---	43	864	29	77	79	28	109
31	29	---	36	45	---	38	---	28	---	36	30	---
TOTAL	1295	1333	2242	5006	2341	1719	2680	1243	2127	2217	1415	2035
MEAN	41.8	44.4	72.3	161	83.6	55.5	89.3	40.1	70.9	71.5	45.6	67.8
MAX	213	281	647	1390	292	196	864	123	266	397	181	429
MIN	28	24	26	33	38	38	35	28	26	32	28	26
CFSM	.85	.90	1.47	3.28	1.70	1.13	1.82	.81	1.44	1.45	.93	1.38
IN.	.98	1.01	1.70	3.79	1.77	1.30	2.03	.94	1.61	1.68	1.07	1.54

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1999, BY WATER YEAR (WY)

	1997	1998	1999	1997	1998	1999	1997	1998	1999	1997	1998	1999
MEAN	64.4	69.7	101	199	125	94.4	149	54.7	81.2	176	52.9	67.6
MAX	86.9	95.0	130	236	167	133	209	69.4	90.6	336	73.9	77.2
(WY)	1998	1998	1998	1998	1998	1998	1998	1998	1997	1997	1998	1998
MIN	41.8	44.4	72.3	161	83.6	55.5	89.3	40.1	70.9	71.5	39.2	57.7
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1997	1997

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

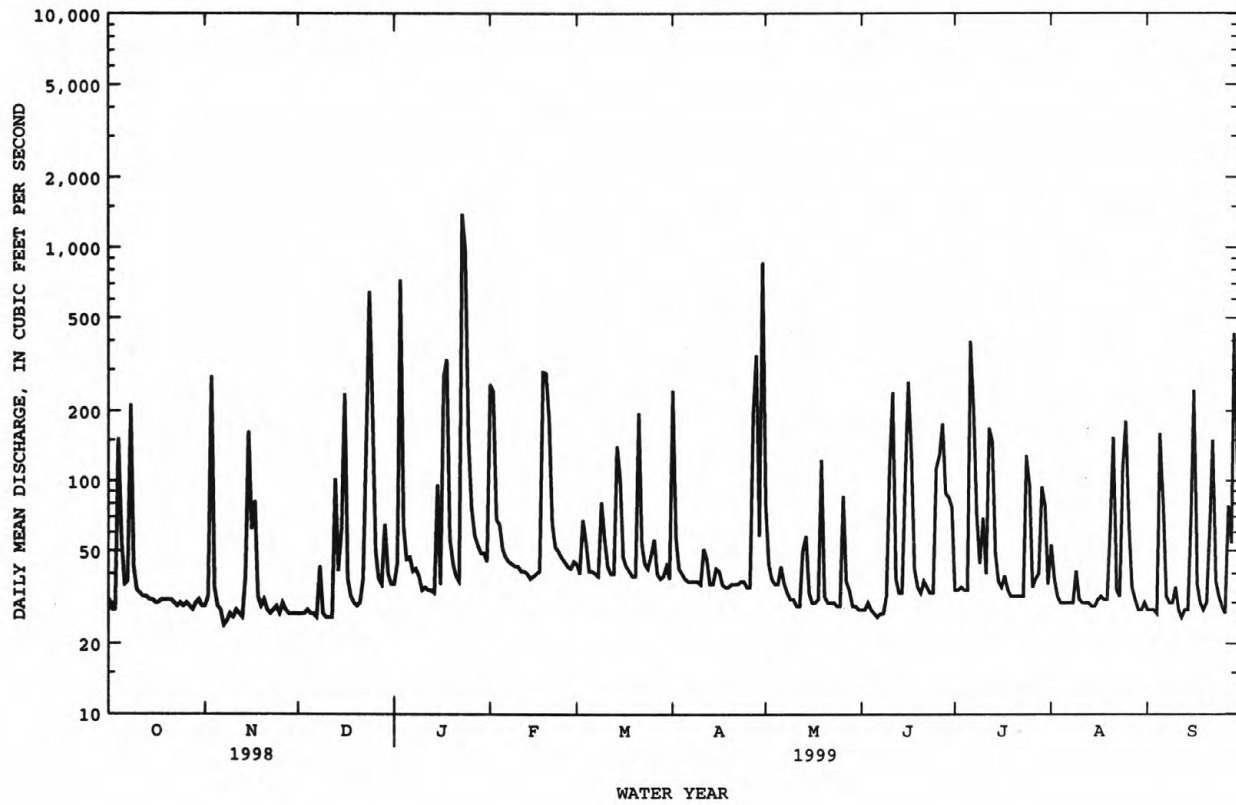
## FOR 1999 WATER YEAR

## WATER YEARS 1997 - 1999

ANNUAL TOTAL	40227	25653	
ANNUAL MEAN	110	70.3	96.7
HIGHEST ANNUAL MEAN			123
LOWEST ANNUAL MEAN			70.3
HIGHEST DAILY MEAN	1960	Apr 9	1390
LOWEST DAILY MEAN	24	Nov 7	24
ANNUAL SEVEN-DAY MINIMUM	26	Nov 7	26
INSTANTANEOUS PEAK FLOW			4770
INSTANTANEOUS PEAK STAGE			15.90
INSTANTANEOUS LOW FLOW			17*
ANNUAL RUNOFF (CFSM)	2.24	1.43	1.97
ANNUAL RUNOFF (INCHES)	30.42	19.40	26.71
10 PERCENT EXCEEDS	233	149	192
50 PERCENT EXCEEDS	51	37	42
90 PERCENT EXCEEDS	29	28	29

\* See REMARKS.

02146530 LITTLE SUGAR CREEK AT HIGHWAY 51 AT PINEVILLE, NC--Continued





## 02146600 MCALPINE CREEK AT SARDIS ROAD NEAR CHARLOTTE, NC

LOCATION.--Lat 35°08'14", long 80°46'05", Mecklenburg County, Hydrologic Unit 03050103, near left bank on downstream end of bridge pier at Sardis Road (Secondary Road 3356), 1.7 mi downstream of Irvins Creek, and 7 mi southeast of city hall, Charlotte.

DRAINAGE AREA.--39.6 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1962 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 553.39 ft above sea level (levels by City of Charlotte). Telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records fair. Occasional minor fluctuation and regulation of unknown origin. No flow for part of Nov. 15, 1972, was result of upstream construction; minimum discharge for current water year and period of record not affected by construction.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 6, 1962, reached a stage of about 14.0 ft, from floodmarks; discharge, 4,150 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	3.8	5.4	8.6	162	14	45	44	4.9	6.0	50	1.4
2	2.9	4.7	5.8	13	170	13	17	21	5.6	4.7	33	1.3
3	2.4	76	5.7	301	37	26	13	17	5.3	4.0	5.2	1.3
4	49	9.7	6.6	26	30	17	12	14	4.9	3.4	4.7	.88
5	10	7.1	6.5	15	19	12	11	14	4.5	3.1	4.6	80
6	5.5	6.0	6.1	12	17	12	10	17	4.1	103	2.9	19
7	4.7	4.5	6.3	12	15	11	11	14	4.1	173	3.2	5.1
8	104	4.5	7.3	13	14	10	11	12	4.3	57	4.0	3.1
9	12	5.0	8.6	12	14	34	11	10	17	13	13	3.6
10	7.1	5.5	5.9	9.4	13	20	9.7	10	24	16	4.0	4.7
11	6.1	5.6	5.9	8.7	12	14	14	9.5	44	13	2.8	2.1
12	5.6	5.9	5.8	9.1	11	12	13	9.1	6.9	41	2.4	1.8
13	5.9	5.3	32	8.6	11	11	8.6	12	5.5	78	2.3	1.5
14	6.0	15	12	8.8	9.9	59	8.4	17	5.0	16	2.3	1.9
15	5.1	50	34	79	10	39	11	9.7	36	9.5	2.2	46
16	5.2	27	108	15	11	18	9.4	8.0	111	7.5	2.2	78
17	5.1	32	14	93	11	14	8.2	7.6	44	14	1.9	6.4
18	5.2	8.6	8.5	156	195	13	7.4	8.0	9.5	8.5	1.5	3.5
19	4.6	6.9	7.1	25	167	12	7.5	28	6.3	5.3	1.3	4.6
20	5.9	6.4	6.6	16	108	12	7.6	8.2	7.3	5.0	13	3.4
21	4.6	6.0	6.9	13	32	63	7.9	6.9	7.9	4.4	16	4.6
22	4.2	6.5	8.3	12	21	20	7.1	6.5	6.1	4.1	2.9	30
23	4.4	6.4	90	896	17	15	6.3	6.1	5.8	3.9	2.0	3.6
24	4.3	7.2	376	1130	16	14	7.0	6.1	5.3	6.5	1.9	2.5
25	4.4	6.6	121	110	15	22	8.0	5.9	31	10	31	3.2
26	4.4	6.1	22	38	14	24	8.4	31	16	4.0	57	2.6
27	4.7	5.7	13	25	13	13	72	9.4	9.2	4.0	4.7	38
28	5.6	5.4	11	20	15	12	125	6.3	6.8	5.6	2.5	37
29	4.6	5.4	31	16	---	12	37	5.6	8.5	34	2.0	305
30	6.3	5.3	14	15	---	11	537	5.2	11	12	1.5	62
31	4.6	---	9.9	13	---	10	---	5.2	---	44	1.4	---
TOTAL	308.5	350.1	1001.2	3129.2	1179.9	589	1061.5	384.3	461.8	713.5	279.4	758.08
MEAN	9.95	11.7	32.3	101	42.1	19.0	35.4	12.4	15.4	23.0	9.01	25.3
MAX	104	76	376	1130	195	63	537	44	111	173	57	305
MIN	2.4	3.8	5.4	8.6	9.9	10	6.3	5.2	4.1	3.1	1.3	.88
CFSM	.25	.29	.82	2.55	1.06	.48	.89	.31	.39	.58	.23	.64
IN.	.29	.33	.94	2.94	1.11	.55	1.00	.36	.43	.67	.26	.71

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

	MEAN	34.2	30.1	40.4	69.6	76.1	84.0	49.6	32.7	30.1	28.9	33.6	23.4
MAX	212	109	128	157	169	200	134	173	123	140	178	162	
(WY)	1991	1986	1984	1978	1979	1977	1998	1975	1992	1997	1994	1987	
MIN	3.16	4.65	7.55	7.46	16.9	13.6	7.45	8.04	3.60	4.04	3.42	1.46	
(WY)	1963	1982	1966	1981	1968	1985	1967	1968	1986	1977	1968	1968	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

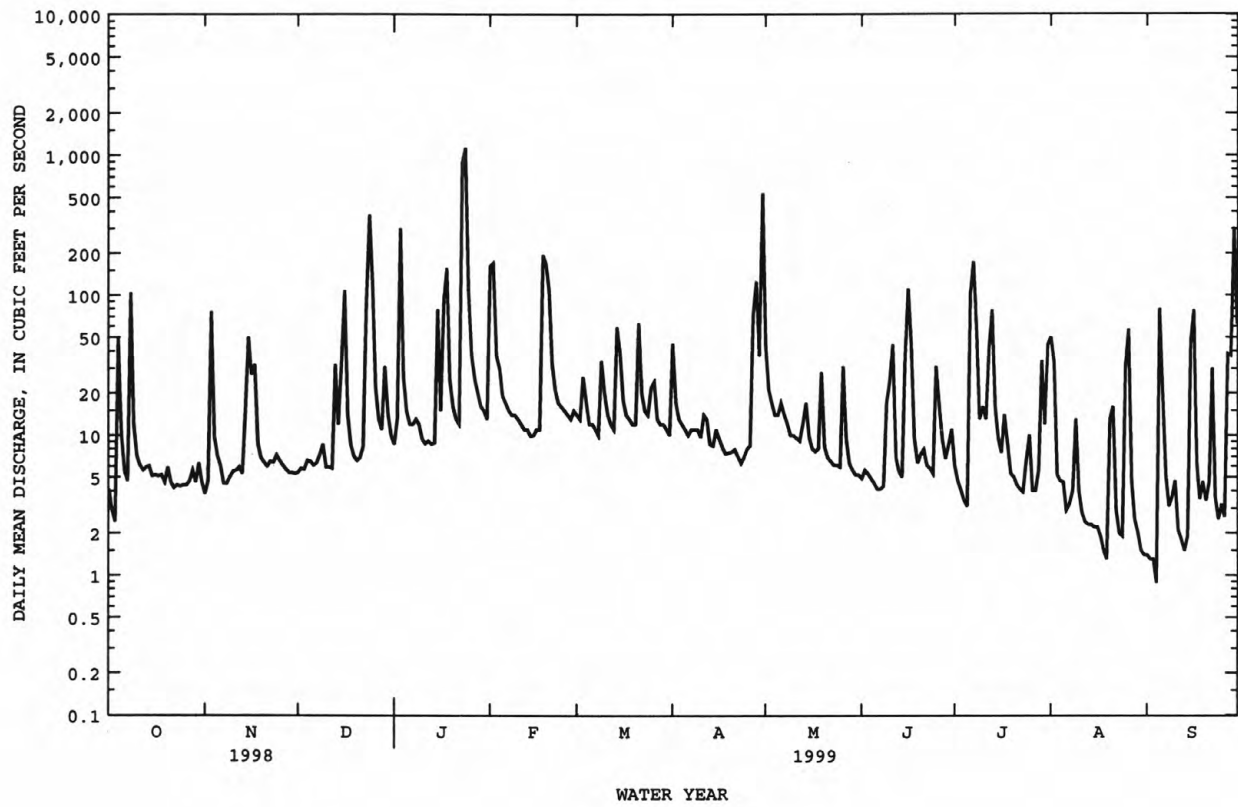
## FOR 1999 WATER YEAR

## WATER YEARS 1962 - 1999

ANNUAL TOTAL	21297.9	10216.48	
ANNUAL MEAN	58.4	28.0	44.3
HIGHEST ANNUAL MEAN			72.4
LOWEST ANNUAL MEAN			19.6
HIGHEST DAILY MEAN	1340	1130	4490
LOWEST DAILY MEAN	2.4	.88	.26
ANNUAL SEVEN-DAY MINIMUM	3.6	1.4	.40
INSTANTANEOUS PEAK FLOW		3050	9040
INSTANTANEOUS PEAK STAGE		11.17	17.79
INSTANTANEOUS LOW FLOW		.08*	.08*
ANNUAL RUNOFF (CFSM)	1.47	.71	1.12
ANNUAL RUNOFF (INCHES)	20.01	9.60	15.21
10 PERCENT EXCEEDS	127	47	74
50 PERCENT EXCEEDS	15	9.4	14
90 PERCENT EXCEEDS	4.6	3.6	3.9

\* See REMARKS.

02146600 MCALPINE CREEK AT SARDIS ROAD NEAR CHARLOTTE, NC--Continued



## SANTÉE RIVER BASIN

02146600 MCALPINE CREEK AT SARDIS ROAD NEAR CHARLOTTE, NC--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.--November 1992 to current year. Records for period November 1992 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

INSTRUMENTATION.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute interval.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.06	.00	.35	.00	.00	.00	.31	.00
2	.00	.26	.00	.46	.02	.00	.00	.00	.00	.00	.49	.00
3	.00	.36	.00	.57	.00	.14	.00	.00	.00	.00	.01	.00
4	.57	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
5	.02	.00	.00	.01	.00	.00	.00	.05	.00	.00	.00	.49
6	.01	.00	.00	.00	.00	.01	.00	.08	.00	.36	.00	.29
7	.04	.00	.00	.00	.00	.00	.00	.00	.00	.54	.00	.00
8	.71	.00	.01	.07	.00	.00	.00	.00	.00	.12	.04	.00
9	.00	.00	.00	.00	.00	.37	.00	.00	.04	.00	.21	.08
10	.00	.00	.00	.00	.00	.01	.00	.00	.14	.32	.00	.01
11	.00	.01	.00	.00	.00	.00	.00	.00	.23	.10	.00	.00
12	.00	.00	.05	.01	.00	.00	.00	.00	.00	.35	.00	.00
13	.01	.00	.35	.00	.00	.00	.00	.09	.00	.32	.00	.00
14	.00	.58	.00	.21	.00	.47	.00	.05	.00	.20	.00	.00
15	.00	.03	.70	.20	.00	.02	.02	.00	.28	.08	.00	.64
16	.00	.32	.16	.00	.00	.00	.00	.00	.18	.02	.00	.50
17	.00	.00	.00	.78	.09	.00	.00	.00	.23	.00	.00	.00
18	.00	.00	.00	.02	.76	.00	.00	.06	.13	.00	.00	.00
19	.00	.00	.00	.00	.60	.00	.00	.41	.07	.00	.00	.00
20	.00	.00	.01	.00	.00	.00	.02	.00	.04	.00	.20	.00
21	.00	.00	.01	.00	.00	.30	.00	.00	.02	.00	.01	.28
22	.00	.00	.08	.00	.00	.00	.00	.05	.00	.00	.00	.12
23	.00	.00	.52	2.31	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.47	.95	.00	.00	.00	.00	.00	.08	.09	.00
25	.00	.03	.11	.00	.00	.21	.00	.00	.23	.03	.27	.00
26	.00	.01	.00	.00	.00	.00	.08	.43	.09	.00	.48	.00
27	.00	.00	.00	.00	.00	.00	1.01	.02	.00	.00	.00	.51
28	.00	.00	.12	.00	.04	.00	.16	.00	.01	.00	.00	.31
29	.00	.00	.19	.00	---	.00	.79	.00	.00	.48	.00	.76
30	.00	.00	.00	.00	---	.00	1.60	.00	.00	.34	.00	.00
31	.00	---	.00	.01	---	.01	---	.00	---	.05	.01	---
TOTAL	1.36	1.60	3.78	5.60	2.60	1.54	4.03	1.24	1.69	3.39	2.12	3.99



An island home surrounded by floodwaters of the Tar River in Rocky Mount, N.C., September 1999.

## SANTEE RIVER BASIN

02146670 FOUR MILE CREEK NEAR PINEVILLE, NC

LOCATION.--Lat 35°04'30", long 80°49'20", Mecklenburg County, Hydrologic Unit 03050103, on left bank on downstream side of bridge at Elm Lane W. (Secondary Road 3649), 0.5 mi south of State Highway 51, 1.25 mi upstream of McAlpine Creek, and 4.5 mi east of U.S. Highway 521 at Pineville.

DRAINAGE AREA.--17.8 mi<sup>2</sup>.

PERIOD OF RECORD.-- July 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 528.19 ft above sea level (City of Charlotte bench mark). Telephone telemetry at station.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	2.6	3.1	5.2	52	7.5	12	27	1.5	1.2	11	.54
2	2.8	2.5	3.1	6.9	77	6.4	8.6	8.0	1.8	1.2	33	.54
3	2.6	23	3.0	147	24	10	6.7	4.0	1.9	1.2	.87	.54
4	19	7.1	3.2	22	17	10	6.1	2.6	2.0	1.1	.70	.51
5	6.4	6.2	3.6	12	12	6.4	5.8	2.1	2.0	1.2	.69	8.5
6	3.8	4.9	3.8	8.7	10	6.2	5.2	4.2	1.9	33	.69	3.9
7	3.6	4.7	3.9	7.0	9.8	5.9	5.5	4.6	1.8	40	.68	.73
8	55	6.1	4.1	6.2	9.1	5.5	5.4	2.2	1.4	16	.69	.65
9	9.0	6.7	4.4	5.8	7.9	19	5.4	1.6	2.4	2.5	.82	.66
10	4.6	7.1	4.3	4.7	7.6	14	5.0	1.3	3.2	23	.81	.78
11	3.1	8.2	4.1	4.2	6.8	7.9	5.0	1.3	9.2	11	.84	.71
12	2.7	7.3	4.1	4.0	7.0	6.3	5.1	1.2	.99	18	.82	.70
13	2.5	7.8	13	3.7	6.3	6.0	4.6	1.1	.88	58	.81	.69
14	2.6	11	8.6	3.8	6.0	37	4.9	3.1	.85	11	.86	.64
15	2.5	33	16	48	6.2	29	5.2	1.9	5.0	4.0	.85	4.5
16	2.6	15	57	9.2	6.2	10	5.5	1.1	34	2.6	.85	27
17	2.7	24	8.9	31	6.3	8.5	5.1	.97	25	5.8	.85	.88
18	2.9	5.1	4.8	77	71	7.6	4.5	.93	1.9	2.5	.82	.74
19	2.7	4.2	4.0	17	65	6.6	4.8	3.9	1.1	1.9	.82	.72
20	2.8	3.7	4.1	9.1	51	6.2	4.9	3.2	1.0	1.6	2.8	.76
21	2.7	3.4	4.5	8.3	18	36	5.0	4.2	1.3	1.4	4.2	.99
22	2.7	3.2	9.6	7.3	12	13	4.8	1.9	1.3	1.2	.64	9.3
23	2.6	3.0	30	362	9.4	8.1	4.0	1.0	1.3	1.2	.69	.89
24	2.6	3.2	168	472	8.5	7.1	4.0	.94	1.2	1.0	.65	.83
25	2.5	3.0	75	72	8.2	8.8	4.3	.89	4.0	1.0	2.3	.86
26	2.1	3.5	20	34	7.6	14	4.6	2.4	4.3	.90	1.6	.82
27	2.1	3.2	11	23	7.1	7.1	20	1.5	3.2	.86	.84	9.8
28	2.7	2.8	8.1	19	8.0	6.2	56	1.1	2.7	.83	.75	4.9
29	3.0	3.0	27	15	---	5.9	9.9	1.1	1.7	3.5	.72	39
30	2.9	2.9	10	13	---	5.7	247	1.2	1.3	5.9	.64	4.1
31	2.7	---	6.1	10	---	5.7	---	1.3	---	13	.57	---
TOTAL	165.9	221.4	530.4	1468.1	537.0	333.6	474.9	93.83	122.12	267.59	73.87	126.18
MEAN	5.35	7.38	17.1	47.4	19.2	10.8	15.8	3.03	4.07	8.63	2.38	4.21
MAX	55	33	168	472	77	37	247	27	34	58	33	39
MIN	2.1	2.5	3.0	3.7	6.0	5.5	4.0	.89	.85	.83	.57	.51
CFSM	.30	.41	.96	2.66	1.08	.60	.89	.17	.23	.48	.13	.24
IN.	.35	.46	1.11	3.07	1.12	.70	.99	.20	.26	.56	.15	.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1999, BY WATER YEAR (WY)

	1997	1998	1999	1997	1998	1999	1997	1998	1999	1997	1998	1999
MEAN	14.5	15.9	24.3	51.8	32.6	26.3	36.1	11.1	7.48	22.2	8.31	10.6
MAX	23.6	24.4	31.6	56.2	46.1	41.9	56.3	19.1	10.9	31.6	20.2	21.2
(WY)	1998	1998	1998	1998	1998	1998	1998	1998	1998	1997	1998	1998
MIN	5.35	7.38	17.1	47.4	19.2	10.8	15.8	3.03	4.07	8.63	2.36	4.21
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1997	1999

SUMMARY STATISTICS

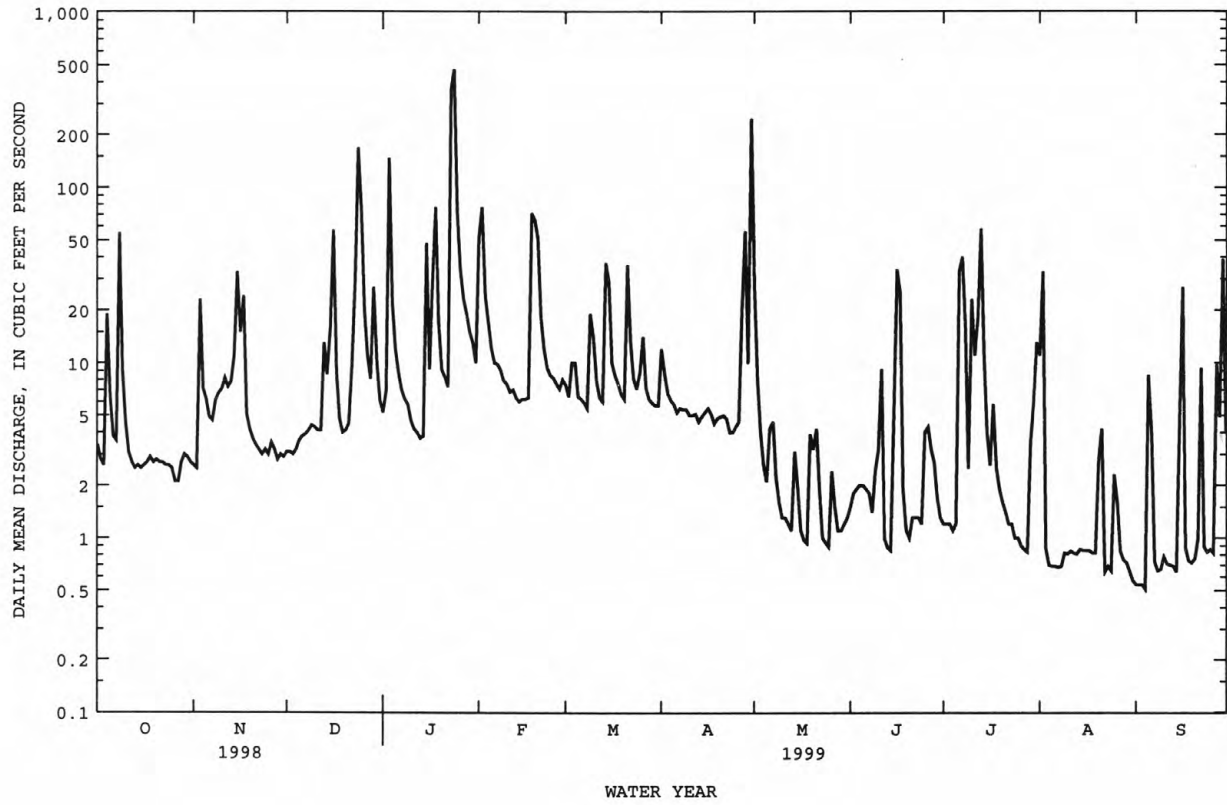
FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1997 - 1999

ANNUAL TOTAL	9933.6	4414.89	
ANNUAL MEAN	27.2	12.1	21.7
HIGHEST ANNUAL MEAN			31.4
LOWEST ANNUAL MEAN			12.1
HIGHEST DAILY MEAN	521	472	602
LOWEST DAILY MEAN	1.1	.51	.51
ANNUAL SEVEN-DAY MINIMUM	1.2	.58	.58
INSTANTANEOUS PEAK FLOW		1190	1630
INSTANTANEOUS PEAK STAGE		10.82	11.58
INSTANTANEOUS LOW FLOW		.47	.47
ANNUAL RUNOFF (CFSM)	1.53	.68	1.22
ANNUAL RUNOFF (INCHES)	20.76	9.23	16.60
10 PERCENT EXCEEDS	60	23	47
50 PERCENT EXCEEDS	9.2	4.2	6.1
90 PERCENT EXCEEDS	2.7	.84	1.2

02146670 FOUR MILE CREEK NEAR PINEVILLE, NC--Continued





02146700 MCMULLEN CREEK AT SHARON VIEW ROAD NEAR CHARLOTTE, NC

LOCATION.--Lat 35°08'27", long 80°49'13", Mecklenburg County, Hydrologic Unit 03050103, on left bank downstream of culvert wingwall at Sharon View Road (Secondary Road 3673), 3.3 mi south of Queens College, Charlotte, and 6.9 mi upstream from mouth.

DRAINAGE AREA.--6.95 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1962 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 592.91 ft above sea level (levels by city of Charlotte). Prior to Oct. 13, 1970, at site 73 ft upstream at same datum. Oct. 13, 1970, to Dec. 30, 1971, at site 154 ft downstream at 590.91 ft. Telephone telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Maximum discharge for period of record from rating curve extended above 2,650 ft<sup>3</sup>/s on basis of computation of peak flow through culvert. No flow occurred periodically from 1962 to 1973. Minimum discharge for current water year also occurred Aug. 20.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 6, 1962, reached a stage of 7.5 ft, former site and datum, from floodmarks; discharge, 1,040 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.85	.81	.68	1.3	45	2.2	11	4.5	.69	.80	.81	.30
2	.41	4.6	.72	7.0	17	2.1	2.6	2.4	.86	.76	2.1	.29
3	.39	19	.76	82	4.5	5.9	2.8	1.9	.87	.71	.65	.29
4	14	1.2	.71	3.2	5.8	2.4	1.8	1.6	1.0	.66	.55	.33
5	3.4	.80	.81	1.9	2.8	1.8	1.7	2.0	1.1	.67	.41	18
6	.99	.87	.67	1.6	2.5	1.8	1.6	2.3	.96	89	.39	2.0
7	1.2	.75	.70	2.3	2.4	1.7	1.6	1.8	.97	5.4	.38	.64
8	19	.66	.89	2.5	2.2	1.5	1.6	1.4	.90	2.2	.88	.45
9	1.9	.82	.83	1.8	2.0	7.4	1.6	1.4	.56	1.3	2.3	.43
10	.75	.78	.74	1.4	2.0	2.6	1.5	1.2	e24	4.6	.89	.70
11	.58	1.1	.70	1.4	1.8	1.8	3.3	1.2	e1.6	1.4	.56	.32
12	.52	1.3	.70	1.8	1.9	1.7	2.1	1.2	.97	19	.34	.33
13	.61	1.5	8.8	1.7	1.9	1.6	1.3	3.4	.67	15	.33	.29
14	.72	9.1	1.5	1.5	1.6	13	1.4	2.7	.64	1.8	.31	.31
15	.81	8.4	14	9.9	1.7	4.5	2.8	1.3	10	1.3	.31	14
16	.84	8.7	13	1.6	1.6	2.2	1.6	1.1	26	1.0	.31	9.9
17	.79	4.4	1.4	49	1.7	2.0	1.1	1.0	5.2	2.6	.34	.78
18	.76	.93	.95	17	45	1.8	1.1	3.3	1.1	1.1	.32	.48
19	.51	.81	.81	3.4	36	1.7	1.2	12	.71	.93	.26	.55
20	.62	.89	.81	2.4	11	1.6	1.5	1.3	.72	.86	3.4	.86
21	.50	.78	.81	2.2	4.2	13	1.3	1.0	1.1	.79	3.3	4.4
22	.60	.77	1.2	1.9	3.0	2.6	1.3	1.0	1.1	.78	.50	5.9
23	.73	.89	26	239	2.5	3.2	1.3	1.2	.76	1.2	.35	.53
24	.78	1.1	79	180	2.4	1.9	1.3	.99	.76	3.8	12	.39
25	.76	1.5	14	9.1	2.3	4.9	1.3	.81	5.6	2.1	5.3	.33
26	.78	1.2	2.6	4.2	2.3	3.2	1.9	9.4	2.2	.83	14	.34
27	.80	1.0	1.7	3.2	2.2	1.9	32	1.5	1.7	.62	.82	7.1
28	.78	1.3	1.7	2.7	2.4	1.8	12	.96	1.8	.64	.50	8.4
29	.77	1.2	5.3	2.3	---	1.7	11	.87	.83	13	.53	54
30	.86	.78	1.8	2.0	---	1.7	110	.81	.81	1.8	.45	2.7
31	.89	---	1.5	1.9	---	1.7	---	.83	---	.95	.33	---
TOTAL	57.90	77.94	185.79	643.2	211.7	98.9	218.6	68.37	96.18	177.60	53.92	135.34
MEAN	1.87	2.60	5.99	20.7	7.56	3.19	7.29	2.21	3.21	5.73	1.74	4.51
MAX	19	19	79	239	45	13	110	12	26	89	14	54
MIN	.39	.66	.67	1.3	1.6	1.5	1.1	.81	.56	.62	.26	.29
CFSM	.27	.37	.86	2.99	1.09	.46	1.05	.32	.46	.82	.25	.65
IN.	.31	.42	.99	3.44	1.13	.53	1.17	.37	.51	.95	.29	.72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

	6.24	5.89	7.86	13.0	13.7	15.2	7.91	6.49	6.66	6.46	5.90	5.35
MEAN	6.24	5.89	7.86	13.0	13.7	15.2	7.91	6.49	6.66	6.46	5.90	5.35
MAX	30.4	21.3	24.3	33.5	28.1	38.8	25.1	31.3	27.3	27.7	32.1	23.8
(WY)	1991	1986	1977	1978	1979	1977	1998	1975	1992	1997	1995	1987
MIN	.21	.54	.86	1.02	1.77	1.74	1.13	1.08	.75	.61	.24	.084
(WY)	1964	1970	1966	1981	1968	1985	1981	1962	1966	1963	1968	1970

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

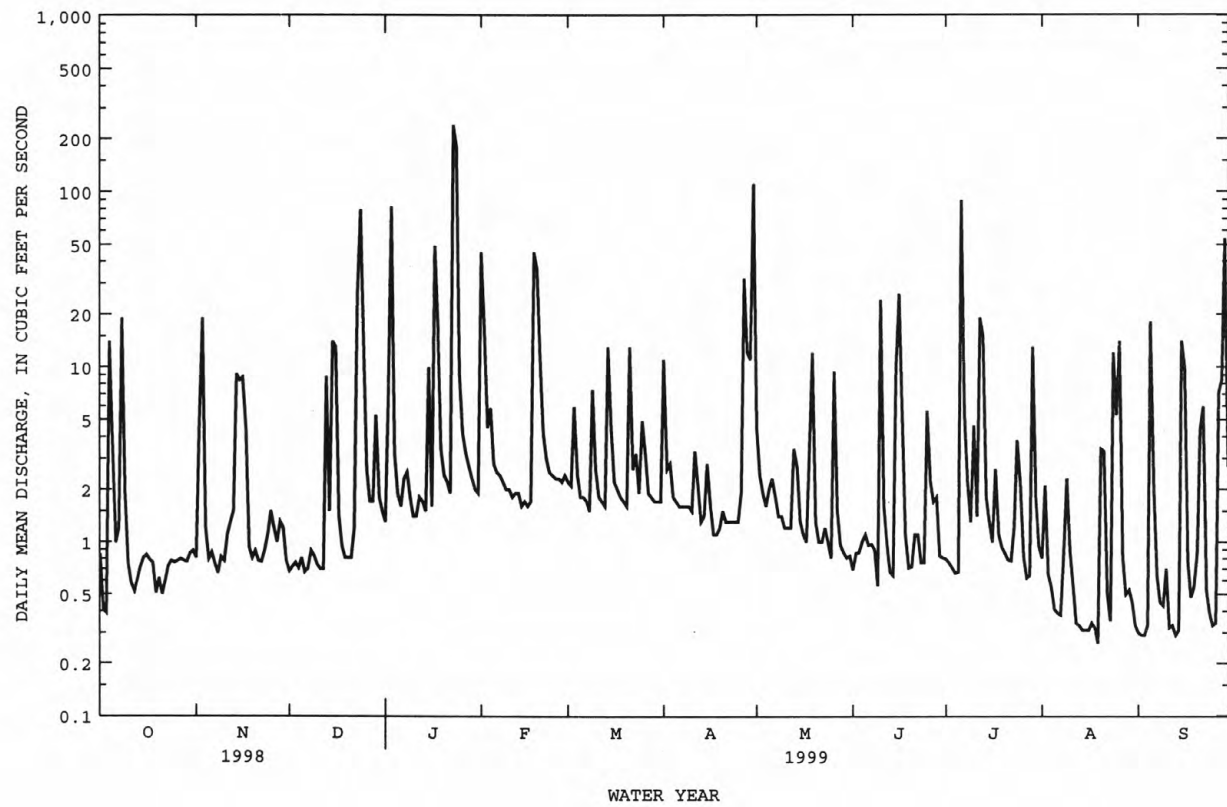
WATER YEARS 1962 - 1999

ANNUAL TOTAL	4134.66	2025.44	
ANNUAL MEAN	11.3	5.55	
HIGHEST ANNUAL MEAN			8.38
LOWEST ANNUAL MEAN			13.8
HIGHEST DAILY MEAN	426	239	3.19
LOWEST DAILY MEAN	.39	.26	868
ANNUAL SEVEN-DAY MINIMUM	.62	.31	.00
INSTANTANEOUS PEAK FLOW		1690	.01
INSTANTANEOUS PEAK STAGE		8.28	3470*
INSTANTANEOUS LOW FLOW		.22*	11.03
ANNUAL RUNOFF (CFSM)	1.63	.80	.00
ANNUAL RUNOFF (INCHES)	22.13	10.84	1.21
10 PERCENT EXCEEDS	24	11	16.38
50 PERCENT EXCEEDS	2.6	1.5	15
90 PERCENT EXCEEDS	.73	.53	1.6
			.30

e Estimated.

\* See REMARKS.

02146700 MCMULLEN CREEK AT SHARON VIEW ROAD NEAR CHARLOTTE, NC--Continued



## SANTEE RIVER BASIN

02146750 MCALPINE CREEK BELOW MCMULLEN CREEK NEAR PINEVILLE, NC

LOCATION.--Lat 35°03'59", long 80°52'12", Mecklenburg County, Hydrologic Unit, 03050103, on right bank at McAlpine Creek Wastewater Treatment Plant of Charlotte, 150 ft downstream of McMullen Creek, 735 ft upstream from effluent outfall, and 2.1 mi south of Pineville.

DRAINAGE AREA.--92.4 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1974 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 516.38 ft above sea level. Prior to Oct. 1, 1977, present site at 517.38 ft. Telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records fair. Records for periods of heavy overbank flow may be affected by variable backwater not adequately defined. Maximum stage for period of record from high-water mark in gage house. Maximum discharge for period of record from rating curve extended above 11,600 ft<sup>3</sup>/s. Minimum discharge for the current water year also occurred Sept. 5.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1964, about 12.9 ft. (former datum), Apr. 1, 1973, from information by wastewater treatment plant operator.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	12	13	26	214	34	75	325	12	15	46	3.2
2	11	12	13	28	687	29	49	69	11	13	139	3.1
3	10	149	13	1060	111	40	31	46	13	11	15	2.6
4	94	32	13	114	77	55	27	36	12	9.7	9.2	2.5
5	42	19	14	51	55	30	26	32	11	9.2	7.3	55
6	22	15	13	39	44	27	23	39	10	52	6.7	93
7	18	13	13	35	41	27	23	40	10	335	5.6	12
8	232	11	14	35	38	25	24	30	9.9	180	5.9	6.7
9	52	12	15	34	34	64	24	26	12	32	20	5.5
10	24	12	15	28	35	64	23	25	42	56	9.7	7.0
11	18	13	12	25	32	33	20	24	128	52	6.6	5.7
12	16	13	12	24	30	28	31	21	22	122	5.0	4.0
13	15	12	48	23	28	26	20	23	14	263	4.3	3.1
14	15	18	40	21	26	106	19	53	12	55	3.8	3.0
15	13	151	42	172	26	141	21	30	38	27	3.7	18
16	12	40	315	45	27	48	24	22	144	21	4.3	224
17	12	119	43	140	27	36	19	19	215	41	4.3	20
18	12	27	23	678	434	32	17	19	30	24	4.0	9.4
19	12	18	18	90	200	30	17	66	19	16	3.6	6.6
20	12	16	17	52	448	28	17	26	16	14	15	7.3
21	13	15	16	42	88	142	17	22	17	13	39	7.2
22	11	14	24	37	55	59	17	20	16	12	11	56
23	10	14	120	959	45	38	16	17	15	11	5.9	13
24	11	15	915	3630	39	32	15	15	14	13	12	6.5
25	11	15	692	866	36	34	16	14	32	25	48	4.9
26	10	15	86	124	34	62	17	47	49	13	95	5.1
27	11	14	44	79	32	33	56	34	25	10	18	43
28	11	13	35	63	35	29	426	17	20	11	8.2	45
29	11	13	88	51	---	28	75	14	16	21	6.0	365
30	9.7	13	49	44	---	26	1390	13	20	56	4.7	242
31	12	---	30	38	---	26	---	12	---	52	3.5	---
TOTAL	778.7	855	2805	8653	2978	1412	2575	1196	1004.9	1584.9	570.3	1279.4
MEAN	25.1	28.5	90.5	279	106	45.5	85.8	38.6	33.5	51.1	18.4	42.6
MAX	232	151	915	3630	687	142	1390	325	215	335	139	365
MIN	9.7	11	12	21	26	25	15	12	9.9	9.2	3.5	2.5
CFSM	.27	.31	.98	3.02	1.15	.49	.93	.42	.36	.55	.20	.46
IN.	.31	.34	1.13	3.48	1.20	.57	1.04	.48	.40	.64	.23	.52

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1999, BY WATER YEAR (WY)

	MEAN	104	110	133	241	226	257	131	96.6	75.7	92.4	110	82.6
MAX	540	414	497	550	506	544	304	397	258	400	597	510	
(WY)	1991	1986	1984	1978	1984	1980	1998	1975	1992	1997	1994	1987	
MIN	6.82	11.5	24.0	18.6	39.0	35.8	21.9	18.2	7.43	7.07	8.66	5.03	
(WY)	1979	1982	1981	1981	1978	1981	1981	1981	1986	1977	1977	1983	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

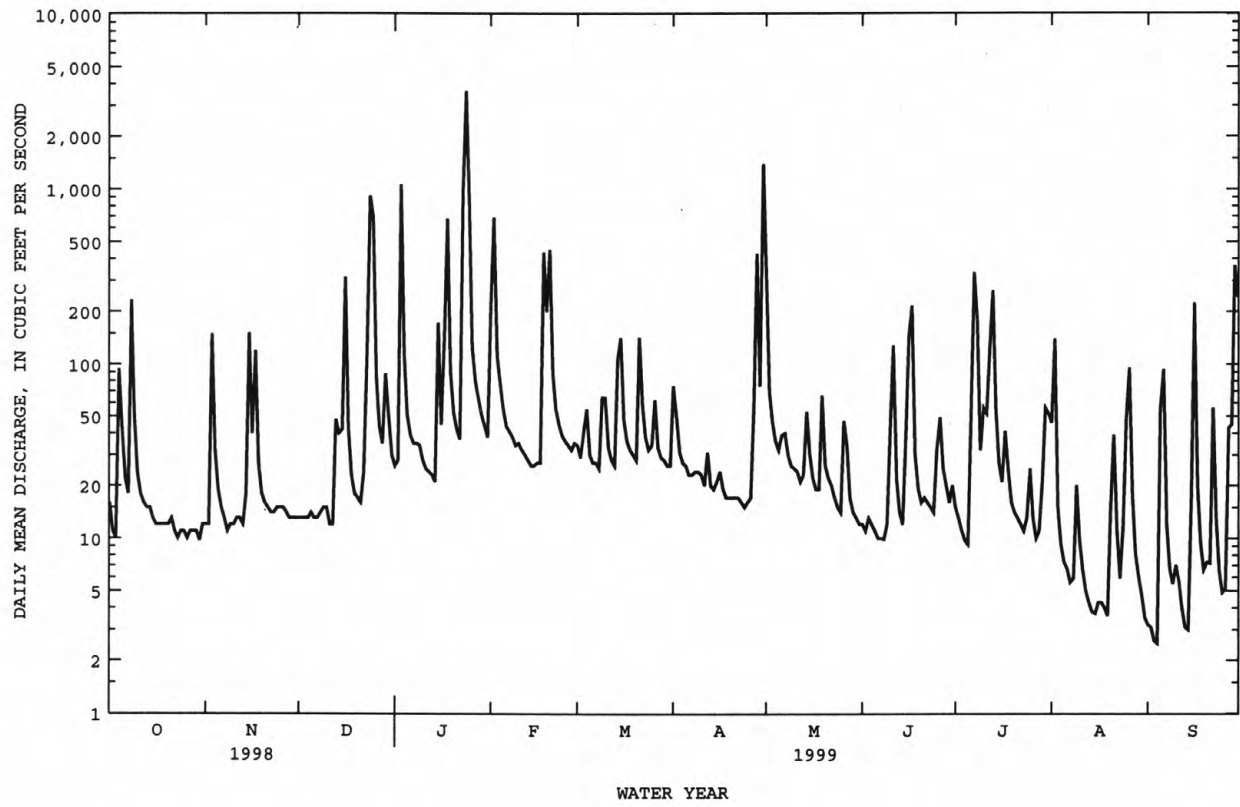
## FOR 1999 WATER YEAR

## WATER YEARS 1974 - 1999

ANNUAL TOTAL	54713.4	25692.2	138
ANNUAL MEAN	150	70.4	235
HIGHEST ANNUAL MEAN			70.4
LOWEST ANNUAL MEAN			1984
HIGHEST DAILY MEAN	3130	3630	7740
LOWEST DAILY MEAN	7.5	2.5	Aug 27 1995
ANNUAL SEVEN-DAY MINIMUM	8.4	3.7	Sep 30 1983
INSTANTANEOUS PEAK FLOW		4410	Sep 28 1983
INSTANTANEOUS PEAK STAGE		11.84	12500*
INSTANTANEOUS LOW FLOW		1.8*	19.40*
ANNUAL RUNOFF (CFSM)	1.62	.76	.45
ANNUAL RUNOFF (INCHES)	22.03	10.34	1.50
10 PERCENT EXCEEDS	348	119	20.36
50 PERCENT EXCEEDS	41	23	275
90 PERCENT EXCEEDS	12	9.2	34
			9.0

\* See REMARKS.

02146750 MCALPINE CREEK BELOW MCMULLEN CREEK NEAR PINEVILLE, NC--Continued



## SANTEE RIVER BASIN

02146750 MCALPINE CREEK BELOW MCMULLEN CREEK NEAR PINEVILLE, NC--Continued

## PRECIPITATION RECORDS

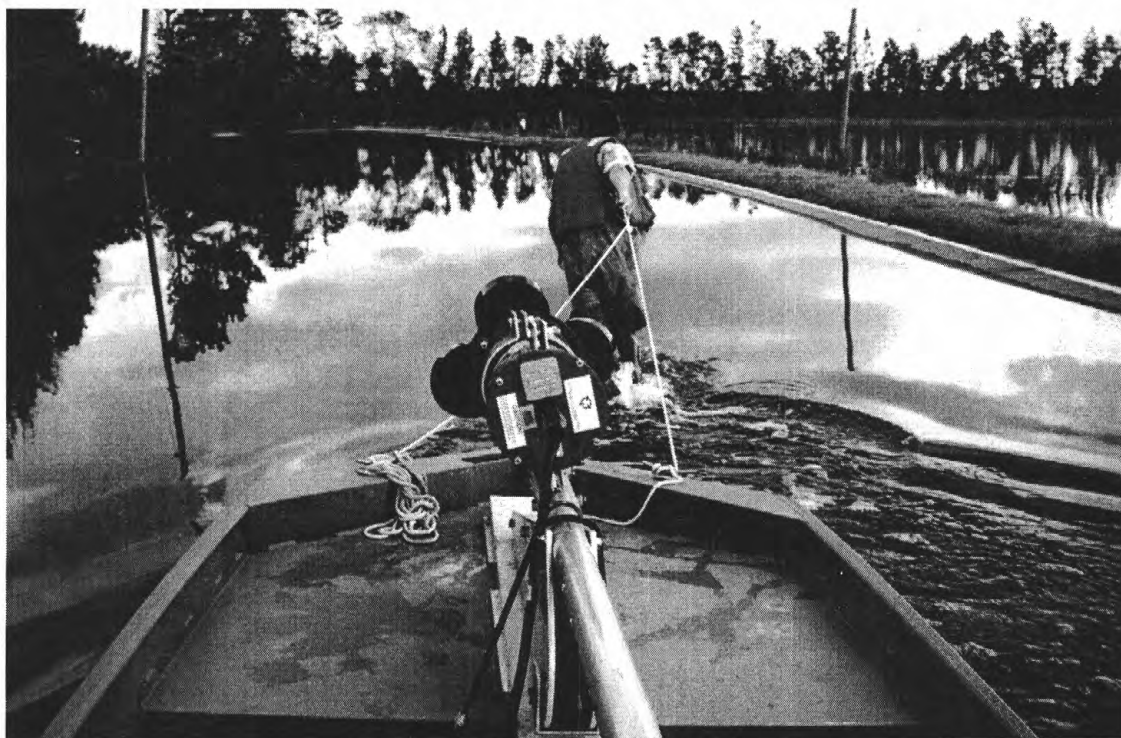
PERIOD OF RECORD.--May 1993 to current year. Records for period May 1993 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

INSTRUMENTATION.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.93	.00	.23	.00	.00	.00	.71	.00
2	.00	.40	.00	.40	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.29	.00	.76	.00	.13	.00	.00	.00	.00	.00	.00
4	.47	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.49
6	.00	.00	.00	.00	.00	.00	.00	.15	.00	.29	.00	.03
7	.21	.00	.00	.00	.00	.00	.00	.00	.00	.97	.01	.00
8	.59	.00	.00	.06	.00	.00	.00	.00	.00	.00	.30	.00
9	.00	.00	.00	.00	.01	.35	.00	.00	.07	.00	.00	.09
10	.00	.00	.00	.00	.01	.00	.00	.00	1.19	.67	.00	.00
11	.00	.02	.00	.00	.00	.00	.00	.00	.01	.04	.00	.00
12	.00	.00	.06	.00	.00	.00	.00	.00	.00	.65	.00	.00
13	.00	.00	.34	.00	.00	.00	.00	.03	.00	.06	.00	.00
14	.00	.61	.00	.12	.00	.47	.00	.00	.00	.01	.00	.00
15	.00	.04	.75	.19	.00	.00	.03	.00	.20	.00	.00	.83
16	.00	.46	.08	.00	.00	.00	.00	.00	.93	.00	.00	.10
17	.00	.01	.00	.90	.11	.00	.00	.00	.01	.03	.00	.00
18	.00	.00	.00	.07	.73	.00	.00	.05	.00	.00	.00	.00
19	.00	.00	.01	.00	.58	.00	.00	.18	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.02	.00	.01	.01	.77	.00
21	.00	.00	.04	.00	.00	.51	.00	.00	.00	.00	.00	.66
22	.00	.00	.13	.00	.00	.00	.00	.03	.01	.00	.00	.00
23	.00	.00	.36	2.20	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.60	.80	.00	.00	.00	.00	.02	.15	.27	.00
25	.00	.03	.13	.00	.00	.20	.00	.00	.46	.00	.00	.00
26	.00	.00	.00	.00	.00	.02	.06	.26	.01	.00	.26	.00
27	.00	.00	.00	.00	.00	.00	1.58	.00	.17	.00	.00	.55
28	.00	.00	.15	.00	.05	.00	.19	.00	.00	.00	.00	.33
29	.00	.00	.17	.01	---	.00	.48	.00	.00	.00	.00	.32
30	.00	.00	.01	.02	---	.00	.96	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.00	.00	---
TOTAL	1.27	1.86	2.83	5.53	2.47	1.69	3.55	0.75	3.09	2.88	2.32	3.40



USGS field crew making their way through floodwaters of the Northeast Cape Fear River to make an acoustic doppler current profiler measurement at Chinquapin, N.C., September 1999.



## SANTEE RIVER BASIN

0214678175 STEELE CREEK AT SECONDARY ROAD 1441 NEAR PINEVILLE, NC

LOCATION.--Lat 35°06'17", long 80°57'14", Mecklenburg County, Hydrologic Unit 03050103, on right bank on upstream side of culvert on Secondary Road 1441 (Carowinds Blvd.), and 4.5 mi west of Pineville.

DRAINAGE AREA.--6.73 mi<sup>2</sup>.

PERIOD OF RECORD.-- April 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 562.23 ft above sea level, from levels. Telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period May to Sept. 1998 also occurred July 16. Minimum discharge for current water year and period of record also occurred Sept. 5.

DISCHARGE, CUBIC FEET PER SECOND, FOR PERIOD MAY 1998 TO SEPTEMBER 1998  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	13	.72	.94	3.2	.40
2	---	---	---	---	---	---	---	5.5	1.5	.49	1.4	.44
3	---	---	---	---	---	---	---	3.5	.66	.47	.92	72
4	---	---	---	---	---	---	---	2.8	7.7	1.0	.78	56
5	---	---	---	---	---	---	---	2.4	14	1.8	.69	2.9
6	---	---	---	---	---	---	---	2.1	2.7	.65	.66	1.3
7	---	---	---	---	---	---	---	5.8	1.3	.65	19	.89
8	---	---	---	---	---	---	---	9.6	.91	.62	4.0	.83
9	---	---	---	---	---	---	---	4.0	.79	.48	4.5	.64
10	---	---	---	---	---	---	---	2.5	16	.48	8.0	.57
11	---	---	---	---	---	---	---	18	4.4	.51	1.8	.60
12	---	---	---	---	---	---	---	3.3	2.6	.61	1.0	.60
13	---	---	---	---	---	---	---	2.3	1.1	.70	1.7	.56
14	---	---	---	---	---	---	---	2.0	.99	.67	.97	.48
15	---	---	---	---	---	---	---	2.0	.97	.43	1.7	.45
16	---	---	---	---	---	---	---	1.7	1.5	.30	6.6	.49
17	---	---	---	---	---	---	---	1.6	.67	8.6	5.0	.50
18	---	---	---	---	---	---	---	1.4	.63	3.2	1.1	.53
19	---	---	---	---	---	---	---	1.3	2.7	.50	.77	.60
20	---	---	---	---	---	---	---	1.2	1.3	128	.62	.63
21	---	---	---	---	---	---	---	1.1	.73	170	.55	4.0
22	---	---	---	---	---	---	---	1.1	.65	3.5	.54	2.5
23	---	---	---	---	---	---	---	.99	.84	2.7	.49	.86
24	---	---	---	---	---	---	---	.95	.58	12	.43	.64
25	---	---	---	---	---	---	---	.97	.56	5.1	.42	.59
26	---	---	---	---	---	---	---	.92	.51	1.5	.56	.63
27	---	---	---	---	---	---	---	.79	.50	515	.44	.64
28	---	---	---	---	---	---	---	.80	.48	8.5	.43	.60
29	---	---	---	---	---	---	---	.79	.45	3.4	.42	.63
30	---	---	---	---	---	---	---	.85	.46	1.9	.42	2.2
31	---	---	---	---	---	---	---	.91	---	12	.35	---
TOTAL	---	---	---	---	---	---	---	96.17	68.90	886.70	69.46	154.70
MEAN	---	---	---	---	---	---	---	3.10	2.30	28.6	2.24	5.16
MAX	---	---	---	---	---	---	---	18	16	515	19	72
MIN	---	---	---	---	---	---	---	.79	.45	.30	.35	.40
CFSM	---	---	---	---	---	---	---	.46	.34	4.25	.33	.77
IN.	---	---	---	---	---	---	---	.53	.38	4.90	.38	.86

## STATISTICS OF MONTHLY MEAN DATA FOR PERIOD MAY 1998 TO SEPTEMBER 1998

MEAN	---	---	---	---	---	---	---	3.10	2.30	28.6	2.24	5.16
MAX	---	---	---	---	---	---	---	3.10	2.30	28.6	2.24	5.16
(WY)	---	---	---	---	---	---	---	1998	1998	1998	1998	1998
MIN	---	---	---	---	---	---	---	3.10	2.30	28.6	2.24	5.16
(WY)	---	---	---	---	---	---	---	1998	1998	1998	1998	1998

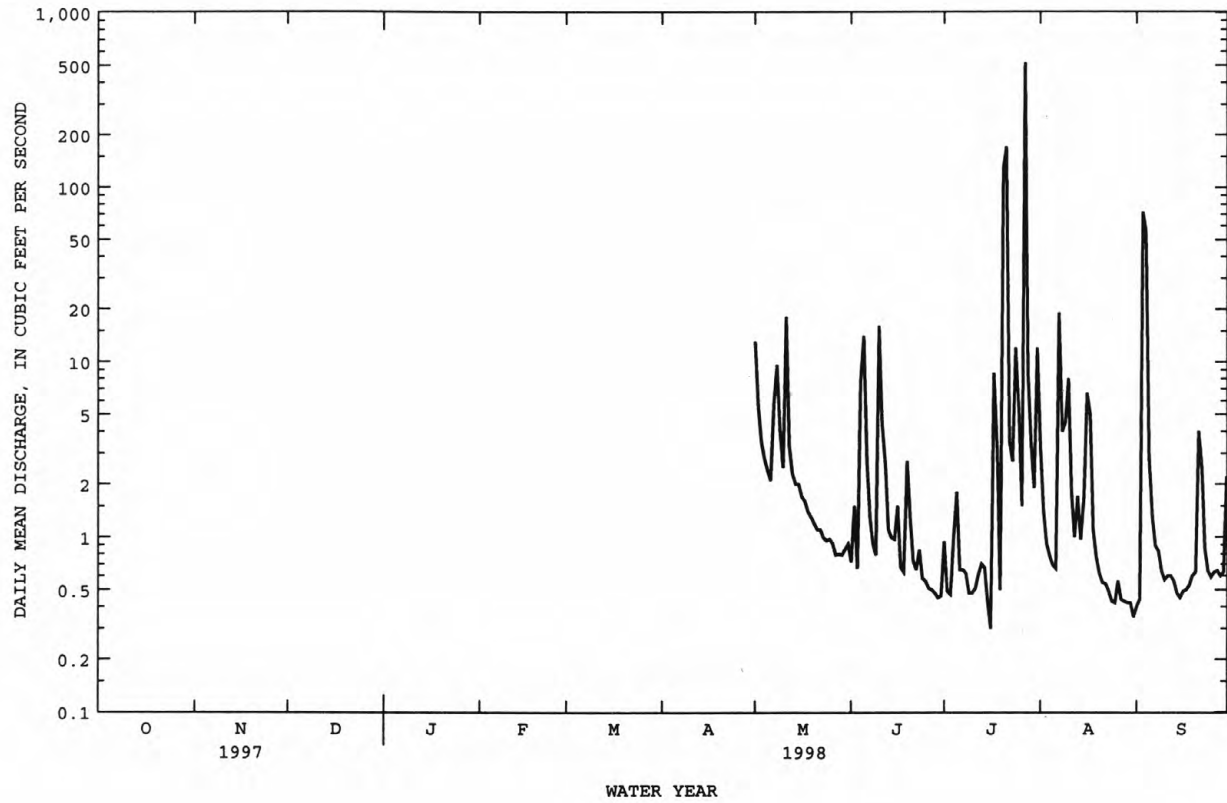
## SUMMARY STATISTICS

## FOR PERIOD MAY TO SEPTEMBER

INSTANTANEOUS PEAK FLOW 2450 Jul 27  
 INSTANTANEOUS PEAK STAGE 11.44 Jul 27  
 INSTANTANEOUS LOW FLOW .21\* Jul 15

\* See REMARKS.

0214678175 STEELE CREEK AT SECONDARY ROAD 1441 NEAR PINEVILLE, NC--Continued



## SANTEE RIVER BASIN

0214678175 STEELE CREEK AT SECONDARY ROAD 1441 NEAR PINEVILLE, NC--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.81	1.6	.47	1.4	35	1.9	12	6.4	.37	.78	23	.24
2	.60	2.3	.42	4.1	24	1.8	4.7	2.9	.43	.56	3.8	.23
3	.57	12	.38	104	8.9	3.7	1.9	2.3	.59	.51	1.1	.26
4	9.5	1.4	.62	6.7	8.4	2.3	1.5	1.5	.50	.52	.69	.18
5	1.5	.65	.43	3.7	5.1	1.6	1.3	1.5	.41	.55	.44	6.4
6	.75	2.7	.35	2.9	4.1	1.7	1.2	1.8	.42	2.0	.32	1.7
7	5.7	3.0	.33	2.6	3.7	1.9	1.1	1.4	.48	3.5	.30	1.3
8	16	.48	.39	3.2	3.5	1.6	1.1	1.2	.36	1.6	.43	.59
9	1.5	1.7	.39	2.5	2.9	6.4	1.1	.97	1.1	.68	2.0	2.0
10	.85	.60	.35	2.1	2.6	3.2	1.0	.85	22	7.1	.34	1.4
11	.70	.56	.33	2.0	2.1	1.9	.99	.82	11	1.6	.37	.47
12	.55	.58	.31	1.9	1.9	1.6	1.4	.77	1.6	8.1	.44	.34
13	.56	.45	3.3	1.9	1.8	1.6	1.3	5.8	.97	8.2	.30	.24
14	.55	4.6	.80	1.9	1.7	11	1.3	4.5	.63	1.8	.30	.24
15	.50	7.5	6.6	7.5	1.7	6.2	1.8	1.3	3.8	1.0	.34	5.4
16	.77	4.0	9.0	2.4	1.7	2.8	1.4	.85	18	.68	.39	9.9
17	.59	4.3	1.2	41	1.7	2.2	1.3	.70	6.2	.57	.31	1.0
18	.48	.97	.63	26	16	2.0	1.3	.93	1.6	.49	.28	.61
19	.43	.73	.51	7.2	38	1.9	1.1	29	.94	.42	.26	.34
20	.46	.61	.51	4.7	18	1.7	1.2	1.6	1.1	.40	5.1	.24
21	.43	.49	.49	3.5	6.5	15	1.1	1.0	.97	.59	2.7	6.3
22	.38	.46	.54	3.0	3.9	4.1	1.1	.74	.85	.35	.58	5.1
23	.44	.43	12	70	3.0	2.5	1.1	.64	.84	.74	.46	.83
24	.42	.44	69	92	2.6	2.1	1.0	.54	.80	3.6	1.9	.55
25	.43	.49	17	14	2.4	2.6	.94	.43	34	1.8	1.9	.35
26	.39	.52	4.3	7.9	2.1	2.5	1.3	5.3	6.2	.70	.89	.32
27	.42	.48	2.3	5.5	2.0	1.6	23	1.3	5.9	.49	.40	25
28	.48	.39	1.9	4.2	2.3	1.5	8.8	.75	3.3	.34	.24	3.9
29	.74	.39	5.5	3.5	---	1.4	4.1	.63	1.2	.27	.27	31
30	1.1	.41	2.3	3.1	---	1.3	68	.54	.87	.28	.28	3.4
31	1.1	---	1.7	2.6	---	1.3	---	.49	---	.34	.31	---
TOTAL	49.70	55.23	144.35	439.0	207.6	94.9	150.43	79.45	127.43	50.56	50.44	109.83
MEAN	1.60	1.84	4.66	14.2	7.41	3.06	5.01	2.56	4.25	1.63	1.63	3.66
MAX	16	12	69	104	38	15	68	29	34	8.2	23	31
MIN	.38	.39	.31	1.4	1.7	1.3	.94	.43	.36	.27	.24	.18
CFSM	.24	.27	.69	2.10	1.10	.45	.75	.38	.63	.24	.24	.54
IN.	.27	.31	.80	2.43	1.15	.52	.83	.44	.70	.28	.28	.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

MEAN	1.60	1.84	4.66	14.2	7.41	3.06	5.01	2.83	3.27	15.1	1.93	4.41
MAX	1.60	1.84	4.66	14.2	7.41	3.06	5.01	3.10	4.25	28.6	2.24	5.16
(WY)	1999	1999	1999	1999	1999	1999	1999	1998	1999	1998	1998	1998
MIN	1.60	1.84	4.66	14.2	7.41	3.06	5.01	2.56	2.30	1.63	1.63	3.66
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1998	1999	1999	1999

## SUMMARY STATISTICS

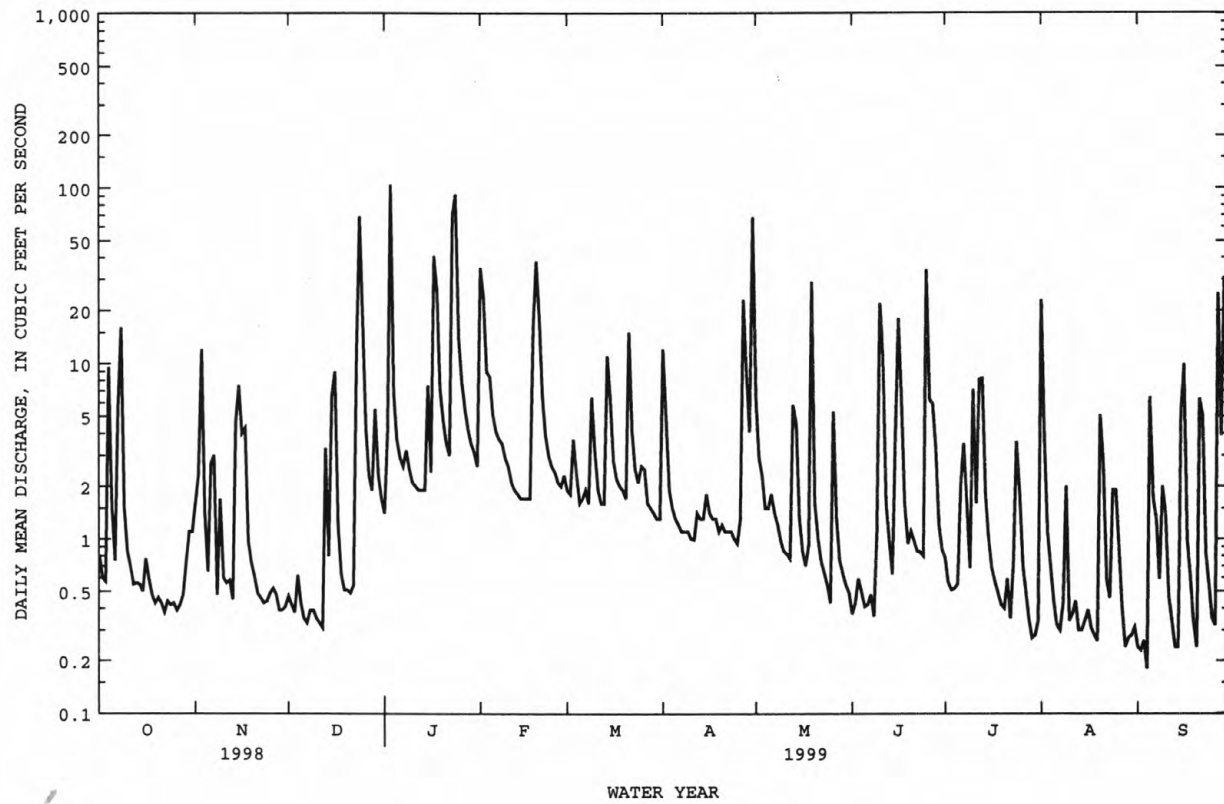
## FOR 1999 WATER YEAR

## WATER YEARS 1998 - 1999

ANNUAL TOTAL	1558.92	
ANNUAL MEAN	4.27	4.27
HIGHEST ANNUAL MEAN		4.27
LOWEST ANNUAL MEAN		4.27
HIGHEST DAILY MEAN	104	515
LOWEST DAILY MEAN	.18	.18
ANNUAL SEVEN-DAY MINIMUM	.25	.25
INSTANTANEOUS PEAK FLOW	562	2450
INSTANTANEOUS PEAK STAGE	6.55	11.44
INSTANTANEOUS LOW FLOW	.16*	.16*
ANNUAL RUNOFF (CFSM)	.63	.63
ANNUAL RUNOFF (INCHES)	8.62	8.62
10 PERCENT EXCEEDS	8.1	8.7
50 PERCENT EXCEEDS	1.3	1.3
90 PERCENT EXCEEDS	.37	.42

\* See REMARKS.

0214678175 STEELE CREEK AT SECONDARY ROAD 1441 NEAR PINEVILLE, NC--Continued



## SANTEE RIVER BASIN

02146900 TWELVE MILE CREEK NEAR WAXHAW, NC

LOCATION.--Lat 34°57'08", long 80°45'21", Union County, Hydrologic Unit 03050103, on left bank at downstream side of bridge on State Highway 16, 680 ft downstream of West Fork Twelve Mile Creek, and 2.5 mi north of Waxhaw.

DRAINAGE AREA.--76.5 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1949-60. October 1960 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 489.04 ft above sea level. Prior to Mar. 13, 1962, water-stage recorder at site 20 ft upstream, Mar. 13, 1962 to June 4, 1997, water-stage recorder at site 100 ft upstream at same datum. Telephone telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No flow also occurred Oct. 6, 1968, Oct. 7-15, 1970, and Oct. 1-22, 1983. Minimum discharge for current water year also occurred Sept. 5.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1900 is 23.6 ft, Sept. 7, 1949, from floodmarks. No flow observed on Oct. 6, 1954.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	3.2	3.5	11	e100	26	29	188	5.0	4.8	3.3	.20
2	7.1	3.1	3.5	9.1	339	23	45	67	4.8	3.9	3.0	.18
3	5.9	3.6	4.0	244	89	22	25	36	4.2	3.2	2.0	.16
4	6.3	5.4	4.3	67	51	25	22	26	4.0	2.7	1.0	.16
5	10	4.1	4.7	37	37	22	20	22	3.7	2.4	.63	1.2
6	8.6	3.5	5.0	29	27	20	18	21	3.4	4.0	.49	1.7
7	7.8	3.3	5.6	24	24	20	17	21	3.2	7.4	.39	1.9
8	22	3.4	5.7	22	22	19	17	19	3.0	5.1	e.40	.89
9	19	3.5	3.4	21	19	23	17	17	2.8	3.3	e.40	.63
10	9.3	3.6	3.2	19	17	52	17	15	4.1	3.1	.36	1.1
11	6.6	3.8	2.9	17	16	35	16	14	24	4.7	.36	1.5
12	5.4	3.8	3.3	16	15	26	15	13	10	3.7	.37	1.2
13	4.8	4.1	3.6	16	15	22	14	13	6.2	6.5	.44	.82
14	4.5	4.1	4.7	16	13	107	13	13	4.4	6.6	.32	.68
15	4.1	6.1	4.8	33	13	207	15	13	3.8	5.6	.36	.76
16	3.7	5.9	11	34	13	71	15	12	7.5	4.1	.40	7.2
17	3.4	8.9	7.3	23	12	41	14	11	26	3.0	.45	5.5
18	3.5	5.9	3.5	23	29	29	13	10	13	2.2	.46	2.0
19	4.0	3.5	2.4	e60	e100	23	13	11	7.5	1.8	.46	1.0
20	4.5	3.0	1.9	43	132	19	13	11	5.7	1.4	.52	.60
21	4.5	2.9	1.8	31	56	90	12	9.8	5.7	1.1	e35	.40
22	4.4	2.8	2.0	26	35	115	13	9.4	6.0	.95	e1.5	2.9
23	5.3	2.8	2.8	81	28	49	12	8.7	5.2	.83	e.60	3.3
24	5.4	2.9	136	2040	26	33	11	7.9	4.5	.73	.71	2.3
25	5.0	3.1	184	738	24	28	11	7.0	4.4	.67	.45	1.1
26	4.6	3.1	53	118	24	30	10	6.8	11	.69	1.0	.54
27	4.3	3.2	26	68	23	27	14	7.3	11	.65	.83	.92
28	3.8	3.4	16	52	24	23	e150	7.1	10	.51	.85	2.1
29	3.7	3.5	17	42	---	22	31	6.3	7.6	.49	.72	.166
30	3.5	3.6	20	e40	---	21	904	5.8	6.0	.45	.41	40
31	3.4	---	13	e35	---	19	---	5.4	---	e4.0	.26	---
TOTAL	196.2	117.1	559.9	4035.1	1323	1289	1536	634.5	217.7	90.57	58.44	248.94
MEAN	6.33	3.90	18.1	130	47.2	41.6	51.2	20.5	7.26	2.92	1.89	8.30
MAX	22	8.9	184	2040	339	207	904	188	26	7.4	35	166
MIN	3.4	2.8	1.8	9.1	12	19	10	5.4	2.8	.45	.26	.16
CFSM	.08	.05	.24	1.70	.62	.54	.67	.27	.09	.04	.02	.11
IN.	.10	.06	.27	1.96	.64	.63	.75	.31	.11	.04	.03	.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

	MEAN	52.8	37.5	66.3	137	163	166	94.7	45.1	33.3	36.8	43.8	30.3
MAX	372	161	261	331	351	425	289	178	111	238	318	161	
(WY)	1991	1986	1984	1978	1990	1980	1973	1989	1992	1978	1995	1987	
MIN	.39	2.18	5.97	11.5	22.7	25.8	14.2	6.19	1.26	2.33	.93	.15	
(WY)	1984	1962	1966	1981	1986	1985	1981	1981	1986	1986	1983	1968	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

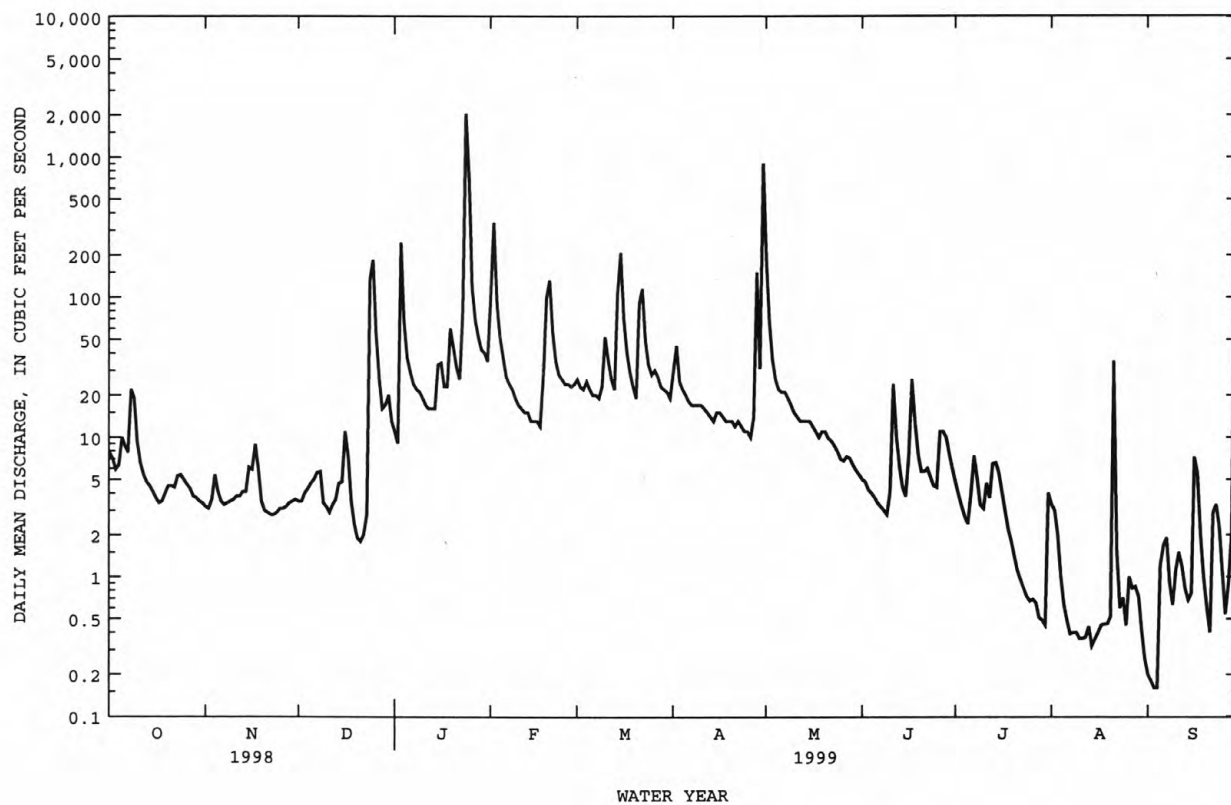
WATER YEARS 1961 - 1999

ANNUAL TOTAL	34578.6	10306.45	
ANNUAL MEAN	94.7	28.2	75.3
HIGHEST ANNUAL MEAN			150
LOWEST ANNUAL MEAN			25.4
HIGHEST DAILY MEAN	2000	2040	6700
LOWEST DAILY MEAN	1.8	.16	.00
ANNUAL SEVEN-DAY MINIMUM	2.9	.30	.00
INSTANTANEOUS PEAK FLOW		2510	9970
INSTANTANEOUS PEAK STAGE		13.51	21.94
INSTANTANEOUS LOW FLOW		.15*	.00*
ANNUAL RUNOFF (CFSM)	1.24	.37	.98
ANNUAL RUNOFF (INCHES)	16.81	5.01	13.37
10 PERCENT EXCEEDS	186	40	135
50 PERCENT EXCEEDS	20	6.6	19
90 PERCENT EXCEEDS	3.6	.72	2.6

e Estimated.

\* See REMARKS.

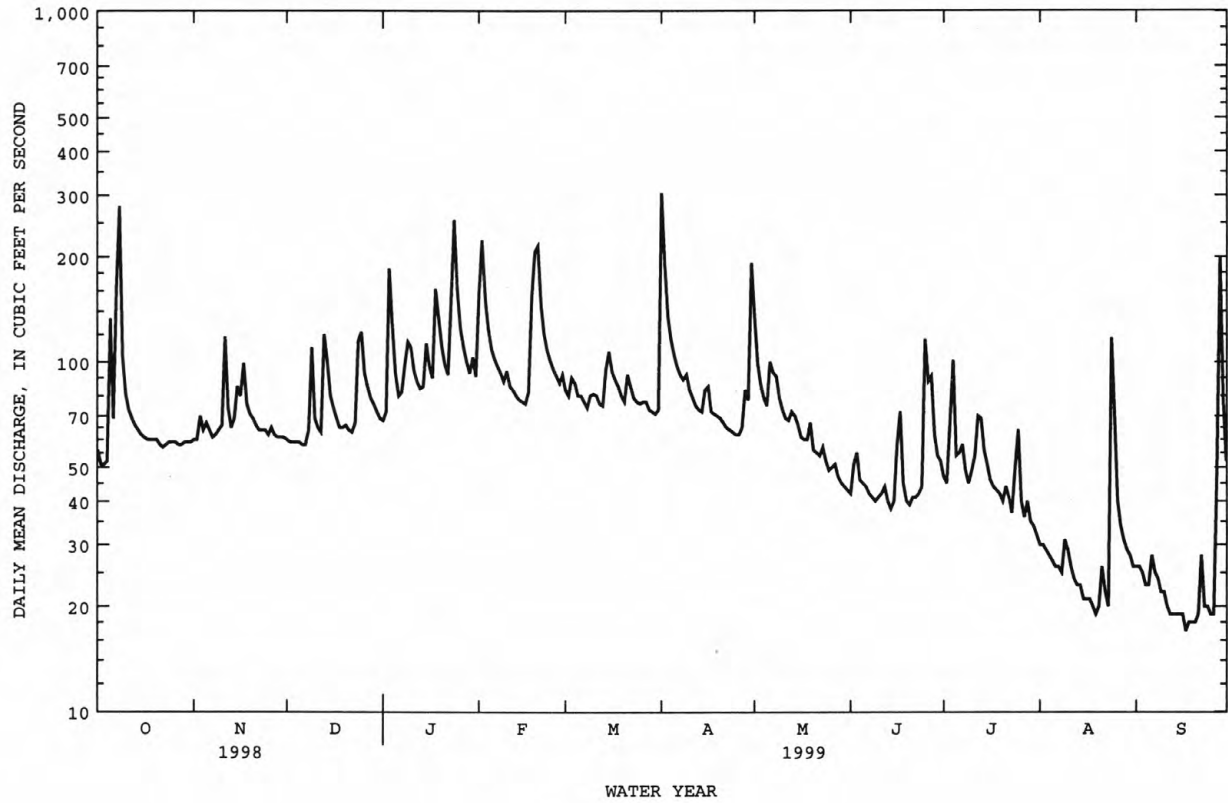
02146900 TWELVE MILE CREEK NEAR WAXHAW, NC--Continued







02149000 COVE CREEK NEAR LAKE LURE, NC--Continued



## SANTEE RIVER BASIN

02150495 SECOND BROAD RIVER NEAR LOGAN, NC

LOCATION.--Lat 35°24'15", long 81°52'20", Rutherford County, Hydrologic Unit 03050105, on right bank 30 ft downstream of bridge on Secondary Road 1538, 2.2 mi southeast of Logan, and 2.7 mi upstream from Catheys Creek.

DRAINAGE AREA.--86.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 840 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for current water year also occurred Sept. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	65	63	71	135	93	263	192	53	52	33	30
2	53	65	62	72	260	88	217	131	53	50	31	30
3	53	73	62	177	173	99	156	107	55	51	30	29
4	55	68	62	146	137	104	131	95	54	51	29	28
5	72	67	63	104	120	94	117	89	52	47	29	28
6	69	66	63	91	110	91	108	96	51	46	29	33
7	93	65	63	89	106	88	103	96	50	113	27	30
8	217	65	65	108	99	84	99	91	48	89	27	29
9	104	66	88	137	95	89	101	82	47	59	30	28
10	82	68	70	131	98	92	93	77	50	51	30	27
11	76	102	66	108	92	92	90	73	58	57	28	25
12	74	81	65	97	89	86	85	72	55	66	27	25
13	72	71	117	96	85	83	82	73	50	68	27	24
14	70	74	111	90	81	101	80	72	48	61	26	24
15	69	91	85	112	80	123	87	66	50	56	24	23
16	68	85	79	102	79	113	90	63	68	52	23	22
17	67	108	74	94	84	107	80	63	80	48	23	21
18	66	83	71	133	172	100	77	63	57	47	22	22
19	66	77	70	123	228	94	75	101	52	46	21	23
20	65	74	72	107	288	90	75	71	50	44	25	22
21	64	72	69	96	187	106	73	65	49	49	26	23
22	63	69	69	90	145	100	72	63	50	49	24	25
23	63	68	70	118	125	92	70	65	50	43	25	23
24	64	69	118	240	114	90	69	61	52	41	97	23
25	65	67	136	176	108	88	69	58	78	43	63	23
26	65	69	102	135	102	86	69	59	78	39	43	23
27	64	66	90	116	97	85	73	60	101	39	40	29
28	63	65	84	108	99	82	112	56	68	41	37	67
29	64	64	81	101	---	82	95	55	61	38	35	63
30	63	63	77	105	---	80	245	54	57	38	33	48
31	64	---	72	96	---	79	---	54	---	36	31	---
TOTAL	2250	2186	2439	3569	3588	2881	3156	2423	1725	1610	995	870
MEAN	72.6	72.9	78.7	115	128	92.9	105	78.2	57.5	51.9	32.1	29.0
MAX	217	108	136	240	288	123	263	192	101	113	97	67
MIN	53	63	62	71	79	79	69	54	47	36	21	21
CFSM	.84	.85	.91	1.34	1.49	1.08	1.22	.91	.67	.60	.37	.34
IN.	.97	.94	1.05	1.54	1.55	1.24	1.36	1.05	.74	.69	.43	.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 1999, BY WATER YEAR (WY)

	MEAN	72.6	72.9	78.7	115	128	92.9	105	78.2	57.5	51.9	32.1	29.0
MAX	72.6	72.9	78.7	115	128	92.9	105	78.2	57.5	51.9	32.1	29.0	
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	
MIN	72.6	72.9	78.7	115	128	92.9	105	78.2	57.5	51.9	32.1	29.0	
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	

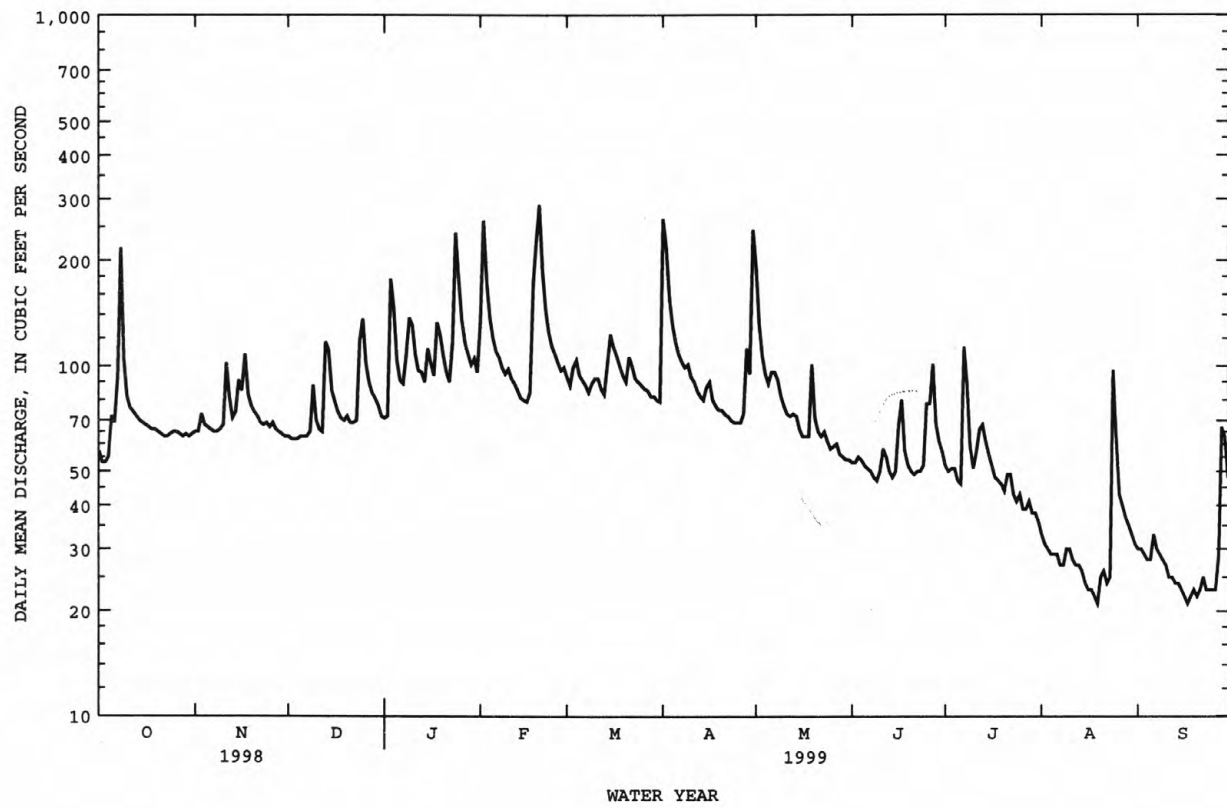
SUMMARY STATISTICS

FOR 1999 WATER YEAR

ANNUAL TOTAL	27692
ANNUAL MEAN	75.9
HIGHEST ANNUAL MEAN	
LOWEST ANNUAL MEAN	
HIGHEST DAILY MEAN	288
LOWEST DAILY MEAN	21
ANNUAL SEVEN-DAY MINIMUM	22
INSTANTANEOUS PEAK FLOW	458
INSTANTANEOUS PEAK STAGE	4.89
INSTANTANEOUS LOW FLOW	20*
ANNUAL RUNOFF (CFSM)	.88
ANNUAL RUNOFF (INCHES)	11.95
10 PERCENT EXCEEDS	113
50 PERCENT EXCEEDS	69
90 PERCENT EXCEEDS	29

\* See REMARKS.

02150495 SECOND BROAD RIVER NEAR LOGAN, NC--Continued



## SANTEE RIVER BASIN

02151500 BROAD RIVER NEAR BOILING SPRINGS, NC

LOCATION.--Lat 35°12'39", long 81°41'52", Cleveland County, Hydrologic Unit 03050105, on right bank 0.5 mi upstream from Sandy Run Creek, 3 mi downstream of Second Broad River, and 3.5 mi southwest of Boiling Springs.

DRAINAGE AREA.--875 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1925 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area. WDR NC-88: 1986(m).

GAGE.--Water-stage recorder. Datum of gage is 639.92 ft above sea level (Duke Power Company bench mark). Prior to July 20, 1934, at site 500 ft upstream at 640.92 ft. Satellite and telephone telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Considerable diurnal fluctuation and some regulation caused by power plants upstream from station. Maximum discharge and gage height for period of record from former site, present datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	614	501	704	867	1310	756	2080	2020	621	610	387	346
2	545	471	689	701	3080	1060	3010	1490	616	570	365	286
3	532	775	658	1800	2380	1260	2100	902	680	580	406	328
4	529	747	635	2100	1910	1190	1550	896	747	648	314	288
5	510	642	734	1440	1480	1110	1320	972	744	732	315	295
6	e600	657	532	1280	1700	1260	1430	e950	523	563	322	301
7	e500	675	511	1100	1110	901	1460	e1000	e500	680	312	296
8	e2600	509	710	1080	862	720	1240	1300	609	830	385	351
9	1770	509	736	1170	1290	1060	1170	815	531	714	320	330
10	1100	747	870	1120	1280	1270	e1000	652	522	759	312	353
11	836	804	732	934	1150	1140	989	964	523	632	304	376
12	546	965	842	914	1280	987	732	920	528	611	315	299
13	746	815	826	858	1260	1150	1090	787	599	1010	282	274
14	655	836	1020	905	823	1040	1050	1130	448	774	319	219
15	660	876	987	1110	986	933	1090	2470	546	704	317	226
16	534	663	895	1240	892	1130	1270	879	599	714	292	397
17	664	1340	806	793	966	1060	1210	638	900	619	266	331
18	509	1070	719	859	1380	1070	735	1030	734	459	300	223
19	480	834	805	1690	1710	944	644	1300	e600	457	262	238
20	651	848	600	1510	2790	1370	1010	1260	555	578	223	231
21	636	910	578	1230	2180	1380	760	846	471	550	367	233
22	485	610	972	1070	1550	1090	825	1300	541	518	343	387
23	565	516	864	1330	1380	1240	913	e800	552	481	309	339
24	655	692	1000	2160	1460	1270	1040	e500	527	556	797	273
25	502	761	1460	1910	1080	1210	708	e780	712	490	1560	316
26	481	736	1010	1660	1090	1200	550	837	1070	482	909	266
27	637	541	883	1450	1170	1120	936	718	908	434	546	271
28	627	794	810	1590	836	775	982	652	782	434	647	1030
29	602	548	1330	1300	---	727	1110	676	621	402	382	1160
30	509	517	879	1310	---	1080	1310	568	664	412	323	728
31	708	---	792	1080	---	998	---	535	---	466	351	---
TOTAL	21988	21909	25589	39561	40385	33501	35314	30587	18973	18469	12852	10991
MEAN	709	730	825	1276	1442	1081	1177	987	632	596	415	366
MAX	2600	1340	1460	2160	3080	1380	3010	2470	1070	1010	1560	1160
MIN	480	471	511	701	823	720	550	500	448	402	223	219
CFSM	.81	.83	.94	1.46	1.65	1.24	1.35	1.13	.72	.68	.47	.42
IN.	.93	.93	1.09	1.68	1.72	1.42	1.50	1.30	.81	.79	.55	.47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1999, BY WATER YEAR (WY)

	MEAN	1287	1237	1458	1786	1936	2117	1943	1559	1323	1108	1233	1070
MAX	5499	3275	2875	4750	4304	4868	4525	3441	2812	2505	6893	3100	
(WY)	1965	1993	1984	1937	1960	1975	1936	1973	1973	1949	1928	1945	
MIN	237	407	449	422	820	783	821	682	420	351	295	288	
(WY)	1955	1955	1956	1956	1941	1988	1986	1988	1988	1986	1956	1954	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1925 - 1999	
ANNUAL TOTAL	615598		310119		1505	
ANNUAL MEAN	1687		850		2328	
HIGHEST ANNUAL MEAN					768	
LOWEST ANNUAL MEAN					1988	
HIGHEST DAILY MEAN	14900	Feb 4	3080	Feb 2	63900	Aug 16 1928
LOWEST DAILY MEAN	424	Sep 14	219	Sep 14	105	Oct 10 1954
ANNUAL SEVEN-DAY MINIMUM	493	Sep 13	266	Sep 14	185	Aug 27 1956
INSTANTANEOUS PEAK FLOW			4290	May 15	73300*	Aug 16 1928
INSTANTANEOUS PEAK STAGE			4.57	May 15	24.30*	Aug 16 1928
INSTANTANEOUS LOW FLOW			174	Sep 15	40	Oct 17 1954
ANNUAL RUNOFF (CFSM)	1.93		.97		1.72	
ANNUAL RUNOFF (INCHES)	26.17		13.18		23.37	
10 PERCENT EXCEEDS	3220		1370		2510	
50 PERCENT EXCEEDS	1100		756		1180	
90 PERCENT EXCEEDS	535		329		580	

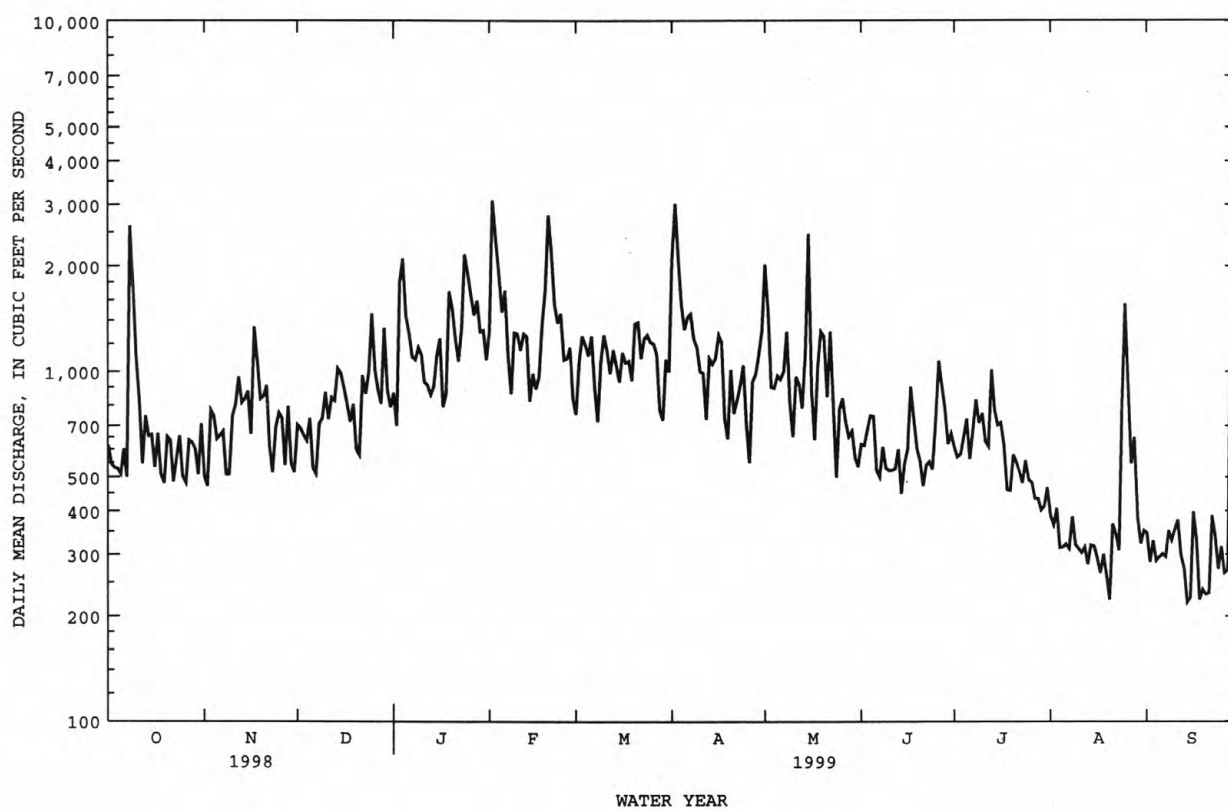
e Estimated.

\* See REMARKS.

SANTEE RIVER BASIN

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02151500 BROAD RIVER NEAR BOILING SPRINGS, NC--Continued





## SANTEE RIVER BASIN

02152100 FIRST BROAD RIVER NEAR CASAR, NC

LOCATION.--Lat 35°29'35", long 81°40'56", Cleveland County, Hydrologic Unit 03050105, on right bank 570 ft upstream from bridge on Secondary Road 1530, 0.5 mi upstream from No Business Creek, and 4.0 mi southwest of Casar.

DRAINAGE AREA.--60.5 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1949-56, March 1959 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 890 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Minimum discharge for current water year also occurred Sept. 25-27.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1916 and August 1940 reached a stage of about 25 ft, from information by local resident. A discharge of 14.5 ft<sup>3</sup>/s was measured on Sept. 21, 1955.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	35	36	41	90	54	191	229	32	33	24	20
2	30	35	35	42	235	51	139	112	32	32	23	20
3	30	45	35	212	114	72	91	82	33	38	22	19
4	31	39	36	132	88	84	75	69	32	39	22	18
5	38	37	35	73	71	67	65	64	31	34	22	19
6	40	37	36	e59	63	62	60	64	30	57	21	28
7	56	36	36	e53	60	58	58	64	29	172	21	24
8	204	36	37	62	56	53	54	60	28	127	20	21
9	59	37	59	80	52	56	56	54	27	62	20	21
10	45	38	40	75	56	59	51	51	42	46	22	21
11	41	63	37	62	50	59	49	50	45	47	21	19
12	40	46	36	55	49	54	46	49	35	56	20	18
13	39	39	119	51	47	51	45	50	31	60	19	18
14	38	40	96	50	45	64	45	48	29	49	19	18
15	36	56	54	68	44	e92	48	48	31	44	18	18
16	37	49	49	62	44	e62	52	45	58	39	18	18
17	36	87	43	59	47	e59	46	43	67	36	18	17
18	37	49	41	93	131	e56	44	42	39	35	18	17
19	36	44	40	86	168	e53	44	72	34	33	17	17
20	37	42	43	69	237	e51	42	43	32	32	23	17
21	35	40	40	61	144	e59	42	39	33	32	24	17
22	35	38	40	56	97	e55	41	38	32	39	21	19
23	35	38	42	104	77	e52	40	38	33	31	19	18
24	36	38	99	332	67	e51	39	36	33	29	50	17
25	36	37	127	162	63	e50	38	36	50	29	33	17
26	36	39	71	95	60	e50	38	37	63	27	26	16
27	35	37	62	74	56	e49	43	38	51	26	30	18
28	35	36	54	66	59	e48	100	35	45	27	25	66
29	35	36	51	61	---	e47	64	34	38	26	23	69
30	35	36	46	62	---	e46	545	33	36	25	22	38
31	35	---	43	56	---	44	---	32	---	25	20	---
TOTAL	1331	1265	1618	2613	2370	1768	2291	1735	1131	1387	701	683
MEAN	42.9	42.2	52.2	84.3	84.6	57.0	76.4	56.0	37.7	44.7	22.6	22.8
MAX	204	87	127	332	237	92	545	229	67	172	50	69
MIN	30	35	35	41	44	44	38	32	27	25	17	16
CFSM	.71	.70	.86	1.39	1.40	.94	1.26	.93	.62	.74	.37	.38
IN.	.82	.78	.99	1.61	1.46	1.09	1.41	1.07	.70	.85	.43	.42

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1999, BY WATER YEAR (WY)

	MEAN	76.4	69.6	85.3	108	126	141	127	99.5	80.5	63.1	68.6	55.3
MAX	318	191	185	273	286	386	291	254	168	138	262	132	
(WY)	1965	1978	1962	1995	1960	1975	1983	1975	1975	1984	1970	1959	
MIN	24.7	27.3	26.6	44.4	50.8	44.6	48.1	33.9	23.4	19.2	19.5	22.8	
(WY)	1964	1982	1989	1989	1988	1988	1967	1988	1988	1988	1988	1999	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

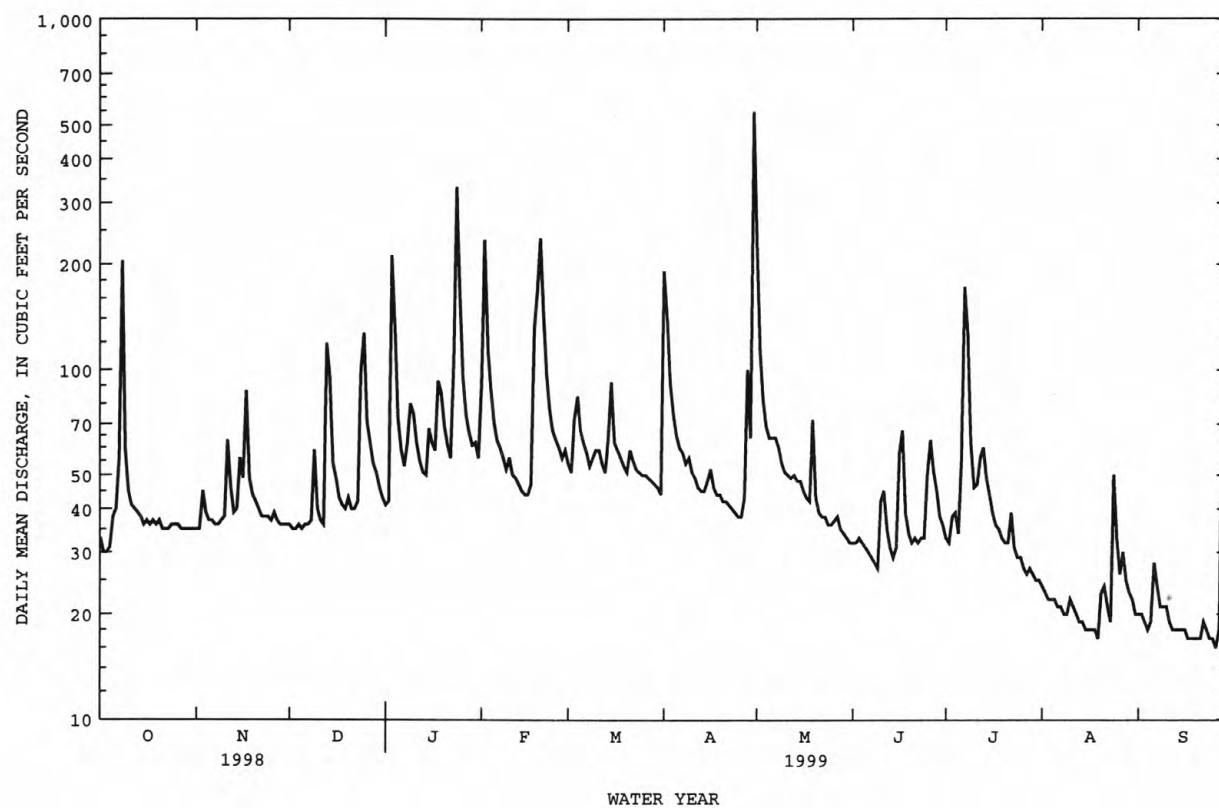
## WATER YEARS 1959 - 1999

ANNUAL TOTAL	37547	18893	
ANNUAL MEAN	103	51.8	91.7
HIGHEST ANNUAL MEAN			139
LOWEST ANNUAL MEAN			43.4
HIGHEST DAILY MEAN	1160	Jan 8	545
LOWEST DAILY MEAN	30	Oct 2	16
ANNUAL SEVEN-DAY MINIMUM	32	Sep 28	17
INSTANTANEOUS PEAK FLOW			944
INSTANTANEOUS PEAK STAGE			4.31
INSTANTANEOUS LOW FLOW			16*
ANNUAL RUNOFF (CFSM)	1.70	.86	1.52
ANNUAL RUNOFF (INCHES)	23.09	11.62	20.60
10 PERCENT EXCEEDS	189	78	149
50 PERCENT EXCEEDS	69	42	65
90 PERCENT EXCEEDS	36	21	35

e Estimated.

\* See REMARKS.

02152100 FIRST BROAD RIVER NEAR CASAR, NC--Continued



## SANTÉE RIVER BASIN

351954080493445 CRN02

LOCATION.--Lat 35°19'54", long 80°49'34", Mecklenburg County, Hydrologic Unit 03050103, Fire Station 28, Old Statesville Road, Charlotte, NC.

PERIOD OF RECORD.--October 1992 to current year. Records for period October 1992 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.82	.00	.40	.00	.00	.00	.00	.00
2	.00	.45	.00	.32	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.52	.00	.67	.03	.24	.00	.00	.00	.02	.00	.00
4	.30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.28	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.73
6	.00	.00	.00	.00	.00	.00	.00	.04	.00	2.06	.00	.04
7	.18	.00	.00	.00	.00	.00	.00	.12	.00	.16	.00	.00
8	.38	.00	.00	.03	.00	.00	.00	.00	.00	.00	.03	.00
9	.00	.01	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.01	.00	.00	.60	.00	.00	.01
11	.00	.01	.00	.00	.00	.00	.00	.00	.01	.04	.00	.00
12	.00	.00	.01	.00	.00	.00	.00	.00	.00	.31	.00	.00
13	.00	.00	1.00	.00	.00	.00	.00	.02	.00	.06	.00	.00
14	.00	.46	.00	.04	.00	.44	.00	.00	.00	.01	.02	.00
15	.00	.02	.46	.24	.00	.02	.32	.00	.36	.00	.00	.84
16	.00	.28	.13	.00	.00	.00	.00	.00	1.37	.00	.00	.08
17	.00	.01	.00	.56	.02	.00	.00	.00	.01	.00	.00	.00
18	.00	.00	.00	.18	.36	.00	.00	.36	.00	.00	.00	.00
19	.00	.00	.00	.00	.38	.00	.00	.19	.00	.00	.00	.00
20	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.13	.00
21	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00	.23
22	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.03
23	.00	.00	.15	1.66	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.06	.50	.00	.00	.00	.00	.00	.80	.56	.00
25	.00	.00	.15	.00	.00	.03	.00	.00	.65	.00	.39	.00
26	.00	.01	.01	.00	.00	.00	.00	.13	.04	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	1.16	.00	.01	.00	.00	.22
28	.00	.00	.11	.00	.03	.00	.38	.00	.03	.00	.00	.70
29	.00	.00	.05	.00	---	.00	.60	.00	.00	.13	.00	.42
30	.00	.00	.00	.00	---	.00	.86	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.00	.00	---
TOTAL	1.14	1.78	3.16	4.20	1.85	1.46	3.72	0.86	3.08	3.59	1.13	3.30

## SANTÉE RIVER BASIN

385

351132080562345 CRN04

LOCATION.--Lat 35°11'32", long 80°56'23", Mecklenburg County, Hydrologic Unit 03050103, Fire Station 30, Belle Oaks Road, Charlotte, NC.

PERIOD OF RECORD.--October 1992 to current year. Records for period October 1992 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.02	.00	.74	.00	.00	.00	.18	.00
2	.01	.31	.00	.57	.01	.00	.00	.00	.00	.00	.01	.00
3	.00	.52	.00	.65	.00	.20	.00	.00	.00	.00	.00	.00
4	.69	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.01	.09	.00	.00	.00	.63
6	.00	.00	.00	.00	.00	.02	.00	.11	.00	.29	.00	.02
7	.35	.00	.00	.00	.00	.00	.00	.01	.00	.16	.00	.00
8	.27	.00	.00	.06	.00	.00	.00	.00	.00	.01	.08	.00
9	.00	.00	.00	.01	.00	.20	.00	.00	.00	.00	.04	.57
10	.00	.00	.00	.00	.00	.05	.00	.00	.93	.00	.00	.00
11	.00	.03	.00	.00	.00	.00	.22	.01	.01	.02	.00	.00
12	.00	.00	.03	.00	.00	.00	.00	.00	.00	.35	.00	.00
13	.00	.00	.33	.00	.00	.00	.00	.08	.00	.05	.00	.00
14	.00	.59	.00	.11	.00	.45	.00	.01	.00	.00	.00	.00
15	.00	.02	.52	.22	.00	.03	.12	.00	.50	.00	.00	.58
16	.00	.23	.10	.00	.00	.00	.00	.00	1.25	.00	.00	.11
17	.00	.01	.00	.94	.02	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.04	.43	.00	.00	1.07	.00	.00	.00	.00
19	.00	.00	.00	.00	.79	.00	.00	.16	.00	.00	.00	.00
20	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.06	.00
21	.00	.00	.03	.00	.00	.67	.00	.00	.00	.00	.01	.80
22	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.22	1.41	.00	.00	.00	.00	.00	.00	.01	.00
24	.00	.00	1.24	.64	.00	.00	.00	.00	.00	.35	---	.00
25	.00	.01	.09	.00	.00	.05	.00	.00	.67	.02	---	.00
26	.00	.02	.00	.00	.00	.00	.11	.33	.01	.00	---	.00
27	.00	.00	.00	.00	.00	.00	.85	.00	.29	.00	.00	.60
28	.00	.00	.12	.00	.01	.00	.04	.00	.01	.00	.00	.30
29	.00	.00	.07	.00	---	.00	.40	.01	.00	.04	.00	1.02
30	.00	.00	.01	.00	---	.00	1.04	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	1.32	1.74	2.81	4.65	2.46	1.67	3.53	1.88	3.67	1.29	---	4.64

## SANTEE RIVER BASIN

351642080533445 CRN05

LOCATION.--Lat 35°16'42", long 80°53'34", Mecklenburg County, Hydrologic Unit 03050103, CMUD Administration Building, Brookshire Boulevard, Charlotte, NC.

PERIOD OF RECORD.--October 1992 to current year. Records for period October 1992 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.92	.00	.49	.00	.00	.00	.01	.00
2	.00	.44	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.49	.00	.25	.01	.18	.00	.00	.00	.00	.00	.00
4	.33	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
5	.10	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.64
6	.00	.00	.00	.00	.00	.01	.00	.05	.00	2.28	.00	.01
7	.21	.00	.00	.00	.00	.00	.00	.09	.00	.15	.02	.00
8	.22	.00	.00	.07	.00	.00	.00	.00	.00	.00	.09	.00
9	.00	.00	.00	.01	.00	.16	.01	.00	.00	.00	.00	.16
10	.00	.01	.00	.00	.00	.13	.00	.00	.59	.00	.00	.00
11	.00	.02	.00	.00	.00	.00	.09	.00	.00	.11	.00	.00
12	.00	.00	.07	.00	.00	.00	.00	.00	.00	.33	.00	.00
13	.00	.00	.70	.00	.00	.00	.00	.45	.00	.02	.00	.00
14	.00	.39	.00	.10	.00	.46	.00	.00	.00	.01	.00	.00
15	.00	.02	.45	.20	.00	.04	.31	.00	.54	.00	.00	.73
16	.00	.35	.07	.00	.00	.00	.00	.00	1.39	.00	.00	.10
17	.00	.00	.00	.64	.06	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.11	.37	.00	.00	.26	.00	.00	.00	.00
19	.00	.00	.01	.00	.74	.00	.00	.14	.00	.00	.00	.00
20	.00	.00	.01	.00	.32	.00	.00	.00	.01	.00	.64	.00
21	.00	.00	.00	.04	.00	1.82	.00	.00	.00	.00	.00	.52
22	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.02
23	.00	.00	.01	1.19	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.26	.53	.00	.00	.00	.00	.01	1.24	.56	.00
25	.00	.01	.14	.00	.00	.06	.00	.00	.60	.00	.27	.00
26	.00	.02	.07	.00	.00	.00	.07	.29	.40	.00	.44	.00
27	.00	.00	.00	.00	.00	.00	1.08	.00	.18	.00	.00	.24
28	.00	.00	.14	.00	.05	.00	.17	.00	.19	.00	.00	1.06
29	.00	.00	.02	.01	---	.00	.57	.00	.33	.39	.00	.36
30	.00	.00	.00	.01	---	.00	.90	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.00	.00	---
TOTAL	0.86	1.75	2.05	3.16	2.50	2.87	3.69	1.34	4.24	4.53	2.03	3.84

## SANTÉE RIVER BASIN

387

350351080454145 CRN07

LOCATION.--Lat 35°03'51", long 80°45'41", Mecklenburg County, Hydrologic Unit 03050103, Fire Station 9, McKee Road, Charlotte, NC.

PERIOD OF RECORD.--October 1992 to current year. Records for period October 1992 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.78	.00	.20	.00	.00	.00	.44	.00
2	.00	.14	.00	.34	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.48	.00	.58	.00	.19	.00	.00	.00	.00	.00	.00
4	.44	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.71
6	.00	.00	.00	.00	.00	.00	.00	.17	.00	1.00	.00	.01
7	.08	.00	.00	.00	.00	.00	.00	.01	.00	.41	.00	.00
8	.71	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.26	.00	.00	.39	.00	.00	.14
10	.00	.00	.00	.00	.00	.11	.00	.00	.79	.30	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.00	.00
12	.00	.00	.01	.00	.00	.00	.00	.00	.00	.26	.00	.00
13	.00	.00	.35	.00	.00	.00	.00	.00	.00	.43	.00	.00
14	.00	.58	.00	.26	.00	.58	.00	.00	.00	.01	.00	.00
15	.00	.03	.66	.24	.00	.02	.00	.00	.30	.00	.00	1.05
16	.00	.28	.10	.00	.00	.00	.00	.00	.79	.00	.00	.05
17	.00	.01	.01	.64	.06	.00	.00	.00	.00	.03	.00	.00
18	.00	.00	.00	.06	.68	.00	.00	.11	.00	.00	.00	.00
19	.00	.00	.01	.00	.56	.00	.00	.16	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	1.13	.01
21	.00	.00	.01	.00	.00	.60	.00	.01	.00	.00	.00	.56
22	.00	.00	.35	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.26	2.33	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.31	1.35	.00	.00	.00	.00	.00	.18	.05	.00
25	.00	.00	.12	.00	.00	.22	.00	.00	.30	.00	.39	.00
26	.00	.00	.01	.00	.00	.00	.03	.22	.00	.01	.21	.00
27	.00	.00	.00	.00	.00	.00	1.55	.00	.12	.00	.00	.59
28	.00	.00	.14	.00	.02	.00	.12	.00	.01	.00	.00	.18
29	.00	.00	.13	.00	---	.00	.82	.00	.00	.13	.00	.32
30	.00	.00	.00	.00	---	.00	1.11	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.49	.00	---
TOTAL	1.23	1.52	3.47	5.85	2.13	1.98	3.83	0.70	2.73	3.27	2.22	3.63



## SANTEE RIVER BASIN

350314080484945 CRN08

LOCATION.--Lat 35°03'14", long 80°48'49", Mecklenburg County, Hydrologic Unit 03050103, Elm Lane at intersection of Providence Road West, Charlotte, NC.

PERIOD OF RECORD.--October 1992 to current year. Records for period October 1992 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273. Records for October 1992 to August 4, 1994 at site McAlpine Creek Elementary School, Charlotte, NC (station 350458080493245).

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.76	.00	.19	.00	.00	.00	.41	.00
2	.00	.19	.00	.46	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.35	.00	.59	.00	.17	.00	.00	.00	.00	.00	.00
4	.43	.00	.00	.00	.02	.00	.01	.00	.00	.00	.00	.00
5	.00	.00	.00	.01	.00	.00	.00	.03	.00	.00	.00	.59
6	.00	.00	.00	.00	.00	.00	.00	.13	.00	1.16	.00	.05
7	.07	.00	.00	.00	.00	.00	.00	.00	.00	.19	.00	.00
8	.76	.00	.00	.05	.00	.00	.00	.00	.00	.00	.06	.00
9	.00	.00	.00	.01	.00	.40	.00	.00	.16	.00	.01	.15
10	.00	.00	.00	.00	.00	.01	.00	.00	.91	.30	.00	.01
11	.00	.00	.00	.00	.00	.00	.00	.00	.06	.08	.00	.00
12	.00	.00	.02	.00	.00	.00	.00	.00	.00	.38	.00	.00
13	.00	.00	.30	.01	.00	.00	.00	.00	.00	.50	.00	.00
14	.00	.61	.00	.38	.00	.46	.00	.00	.00	.01	.00	.00
15	.00	.03	.71	.20	.00	.02	.00	.00	.23	.01	.00	.95
16	.00	.28	.09	.00	.00	.00	.00	.00	.03	.00	.00	.09
17	.00	.00	.00	.69	.09	.00	.00	.00	.06	.08	.00	.00
18	.00	.00	.00	.03	.66	.00	.00	.15	.01	.00	.00	.00
19	.00	.00	.00	.00	.54	.00	.00	.18	.00	.00	.00	.00
20	.00	.00	.01	.00	.01	.00	.00	.00	.04	.00	.49	.00
21	.00	.00	.05	.00	.00	.32	.00	.00	.01	.00	.00	.49
22	.00	.00	.30	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.41	2.61	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.41	1.08	.00	.00	.00	.00	.00	.18	.17	.00
25	.00	.00	.13	.00	.00	.21	.00	.00	.17	.00	.11	.00
26	.00	.00	.00	.00	.00	.00	.03	.20	.01	.00	.20	.00
27	.00	.00	.00	.00	.00	.00	1.21	.00	.01	.00	.00	.77
28	.00	.00	.19	.00	.00	.00	.16	.00	.00	.00	.00	.19
29	.00	.00	.15	.00	---	.00	.68	.00	.01	.00	.00	.30
30	.00	.00	.00	.00	---	.00	1.12	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.11	.00	---
TOTAL	1.26	1.46	3.77	6.12	2.08	1.59	3.40	0.69	1.71	3.00	1.45	3.60

## SANTÉE RIVER BASIN

389

351414080463245 CRN09

LOCATION.--Lat 35°14'14", long 80°46'32", Mecklenburg County, Hydrologic Unit 03050103, Fire Station 15, Frontenac Road, Charlotte, NC.

PERIOD OF RECORD.--November 1992 to current year. Records for period November 1992 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.95	.00	.72	.00	.00	.00	.01	.00
2	.00	.69	.00	.02	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.42	.00	.22	.00	.20	.00	.00	.00	.00	.00	.00
4	.45	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
5	.36	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.88
6	.01	.00	.00	.00	.00	.01	.00	.07	.00	1.47	.13	.01
7	.13	.00	.00	.00	.01	.00	.00	.00	.00	.22	.00	.00
8	.47	.00	.01	.07	.00	.00	.00	.00	.00	.00	.11	.00
9	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00	.00	.02
10	.00	.00	.00	.00	.00	.06	.00	.00	.71	.00	.00	.00
11	.00	.04	.00	.00	.00	.00	.09	.00	.00	.04	.00	.00
12	.00	.00	.08	.00	.00	.00	.00	.00	.00	.64	.00	.00
13	.00	.00	.47	.00	.00	.01	.00	.07	.00	.15	.00	.00
14	.00	.55	.00	.09	.00	.35	.00	.00	.00	.00	.01	.00
15	.00	.03	.55	.20	.00	.03	.08	.00	.39	.00	.00	1.00
16	.00	.20	.19	.00	.00	.00	.00	.00	.96	.00	.00	.08
17	.00	.00	.00	1.03	.09	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.06	.66	.00	.00	.35	.00	.00	.00	.00
19	.00	.00	.01	.00	.48	.00	.00	.17	.00	.00	.00	.00
20	.00	.00	.04	.00	.27	.00	.00	.00	.12	.00	.56	.00
21	.00	.00	.01	.00	.01	.51	.00	.00	.01	.00	.00	.34
22	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.13	2.11	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.14	.65	.00	.00	.00	.00	.00	.71	.46	.00
25	.00	.06	.11	.00	.00	.13	.00	.00	.52	.01	.05	.00
26	.00	.04	.00	.00	.00	.00	.09	.38	.74	.00	.05	.00
27	.00	.00	.01	.00	.00	.00	1.42	.00	.22	.00	.00	.42
28	.00	.00	.09	.00	.04	.00	.21	.00	.00	.00	.00	.69
29	.00	.00	.06	.03	---	.00	.64	.00	.91	.41	.00	.78
30	.00	.00	.00	.01	---	.00	.94	.00	.00	.00	.00	.01
31	.00	---	.00	.00	---	.01	---	.00	---	.12	.00	---
TOTAL	1.42	2.03	1.97	4.49	2.57	1.56	4.19	1.10	4.58	3.77	1.38	4.23

## SANTEE RIVER BASIN

351331080525945 CRN11

LOCATION.--Lat 35°13'31", long 80°52'59", Mecklenburg County, Hydrologic Unit 03050103, Fire Station 10, Remount Road, Charlotte, NC.

PERIOD OF RECORD.--November 1992 to current year. Records for period November 1992 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.86	.00	.57	.00	.00	.00	.04	.00
2	.00	.46	.00	.16	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.50	.00	.55	.00	.21	.00	.00	.00	.00	.00	.00
4	.54	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
5	.03	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00	.66
6	.01	.00	.00	.00	.00	.01	.00	.09	.00	.91	.00	.02
7	.23	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00
8	.30	.00	.01	.08	.00	.00	.00	.00	.00	.01	.06	.00
9	.00	.00	.00	.01	.00	.26	.00	.00	.00	.00	.00	.18
10	.00	.02	.00	.00	.00	.00	.00	.00	1.40	.01	.00	.01
11	.00	.03	.00	.00	.00	.00	.34	.00	.01	.02	.00	.00
12	.00	.00	.08	.00	.00	.00	.00	.00	.00	.33	.00	.00
13	.00	.00	.38	.00	.00	.01	.00	.48	.00	.04	.00	.00
14	.00	.60	.00	.08	.00	.68	.00	.01	.00	.00	.00	.00
15	.00	.03	.51	.17	.00	.02	.12	.00	.40	.00	.00	.72
16	.00	.24	.08	.00	.00	.00	.00	.00	1.16	.00	.00	.12
17	.00	.00	.00	.90	.05	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.04	.39	.00	.00	.25	.00	.00	.00	.00
19	.00	.00	.01	.00	.50	.00	.00	.15	.00	.00	.00	.00
20	.00	.00	.00	.00	.34	.00	.00	.00	.02	.00	1.12	.00
21	.00	.00	.01	.00	.00	.40	.00	.00	.00	.00	.00	.73
22	.00	.00	.15	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.48	1.70	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.22	.50	.00	.00	.00	.00	.01	.41	.92	.00
25	.00	.03	.10	.00	.00	.07	.00	.00	.63	.00	.03	.00
26	.00	.03	.00	.00	.00	.00	.09	.37	.03	.00	.07	.00
27	.00	.00	.00	.00	.00	.00	.96	.00	.32	.00	.00	.32
28	.00	.00	.10	.00	.05	.00	.10	.00	.00	.00	.00	.25
29	.00	.00	.04	.03	---	.00	.50	.00	.12	.25	.00	1.10
30	.00	.00	.00	.02	---	.00	1.01	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.00	.00	---
TOTAL	1.11	1.94	3.17	4.24	2.23	1.67	3.69	1.46	4.10	2.10	2.24	4.11

## SANTÉE RIVER BASIN

391

350823080505345 CRN12

LOCATION.--Lat 35°08'23", long 80°50'53", Mecklenburg County, Hydrologic Unit 03050103, Fire Station 16, Park South Drive, Charlotte, NC.

PERIOD OF RECORD.--March 1993 to current year. Records for period March 1993 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.80	.00	.27	.00	.00	.00	.24	.00
2	.00	.49	.00	.03	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.38	.00	.68	.00	.18	.00	.00	.00	.00	.00	.00
4	.54	.01	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.58
6	.00	.00	.00	.00	.00	.02	.01	.07	.00	.58	.00	.01
7	.15	.00	.00	.00	.00	.00	.01	.00	.00	.05	.00	.00
8	.60	.00	.02	.08	.00	.00	.00	.00	.00	.00	.11	.00
9	.00	.00	.00	.00	.00	.29	.00	.00	.00	.00	.01	.04
10	.00	.00	.00	.00	.00	.02	.00	.00	.59	.45	.00	.00
11	.00	.03	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
12	.00	.00	.06	.00	.00	.00	.00	.00	.00	.67	.00	.00
13	.00	.00	.31	.00	.00	.00	.00	.22	.00	.30	.00	.00
14	.00	.62	.00	.09	.00	.46	.00	.00	.00	.01	.00	.00
15	.00	.03	.63	.21	.00	.01	.04	.00	.30	.00	.00	.77
16	.00	.44	.09	.00	.00	.00	.00	.00	.69	.00	.00	.13
17	.00	.00	.00	1.08	.08	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.03	.70	.00	.00	.22	.00	.00	.00	.00
19	.00	.00	.00	.00	.60	.00	.00	.17	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.02	.00	.03	.00	.35	.00
21	.00	.00	.01	.00	.00	.52	.00	.00	.00	.00	.00	.53
22	.00	.00	.05	.00	.00	.00	.00	.02	.00	.00	.00	.01
23	.00	.00	.47	2.24	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.40	.69	.00	.00	.00	.00	.01	.32	.88	.00
25	.00	.01	.08	.00	.00	.19	.00	.00	.32	.00	.06	.00
26	.00	.00	.00	.00	.00	.01	.11	.46	.22	.00	.14	.00
27	.00	.00	.00	.00	.00	.00	.87	.00	.18	.00	.00	.46
28	.00	.00	.08	.00	.03	.00	.10	.00	.00	.00	.00	.09
29	.00	.00	.12	.00	---	.00	.48	.00	.00	.08	.00	1.04
30	.00	.00	.00	.01	---	.00	1.01	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.00	.00	---
TOTAL	1.29	2.01	2.32	5.14	2.31	1.71	2.92	1.23	2.34	2.50	1.79	3.66

## SANTEE RIVER BASIN

350947080524945 CRN13

LOCATION.--Lat 35°09'47", long 80°52'49", Mecklenburg County, Hydrologic Unit 03050103, U.S. Geological Survey Office, Tyvola Road, Charlotte, NC.

PERIOD OF RECORD.--May 1993 to current year. Records for period May 1993 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.85	.00	.56	.00	.00	.00	.16	.00
2	.00	.54	.00	.46	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.35	.00	.51	.00	.12	.00	.00	.00	.00	.00	.00
4	.62	.01	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.49
6	.00	.00	.00	.00	.00	.02	.00	.06	.00	1.15	.00	.01
7	.23	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00
8	.50	.00	.00	.07	.00	.00	.00	.00	.00	.00	.19	.00
9	.00	.00	.01	.01	.01	.30	.00	.00	.00	.00	.00	.05
10	.00	.00	.00	.00	.00	.00	.00	.00	1.56	.34	.00	.00
11	.00	.02	.00	.00	.00	.00	.02	.00	.00	.09	.00	.00
12	.00	.00	.07	.00	.00	.00	.00	.00	.00	.39	.00	.00
13	.00	.00	.31	.00	.00	.01	.00	.13	.00	.19	.00	.00
14	.00	.58	.00	.07	.00	.61	.00	.01	.01	.00	.00	.00
15	.00	.03	.57	.17	.00	.01	.06	.00	.16	.00	.00	.79
16	.00	.27	.07	.00	.00	.00	.00	.00	.82	.00	.00	.13
17	.00	.00	.00	.95	.07	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.03	.58	.00	.00	.24	.00	.00	.00	.00
19	.00	.00	.00	.00	.77	.00	.00	.20	.00	.00	.00	.00
20	.00	.00	.01	.00	.00	.00	.02	.00	.01	.00	.37	.00
21	.00	.00	.02	.00	.00	.41	.00	.00	.00	.00	.00	.90
22	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.49	1.81	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.33	.88	.00	.00	.00	.00	.01	.39	.73	.00
25	.00	.03	.08	.00	.00	.14	.00	.00	.38	.00	.05	.00
26	.00	.01	.00	.00	.00	.00	.09	.37	1.01	.00	.10	.00
27	.00	.00	.00	.00	.00	.00	1.19	.00	.44	.00	.00	.44
28	.00	.00	.10	.00	.02	.00	.11	.00	.00	.00	.00	.18
29	.00	.00	.07	.00	---	.00	.50	.00	.00	.16	.00	.72
30	.00	.00	.00	.02	---	.00	1.17	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.00	.00	---
TOTAL	1.35	1.84	3.15	4.98	2.40	1.63	3.72	1.07	4.40	2.79	1.60	3.71

## SANTÉE RIVER BASIN

393

351553080562645 CRN14

LOCATION.--Lat 35°15'53", long 80°56'26", Mecklenburg County, Hydrologic Unit 03050103, Fire Station 21, Little Rock Road, Charlotte, NC.

PERIOD OF RECORD.--March 1993 to current year. Records for period March 1993 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.92	.00	.50	.00	.00	.00	.00	.00
2	.00	.37	.00	.03	.01	.00	.00	.00	.01	.00	.00	.00
3	.00	.48	.00	.03	.00	.24	.00	.00	.02	.00	.00	.00
4	.35	.01	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
5	.08	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.65
6	.00	.00	.00	.00	.00	.01	.00	.06	.00	.14	.00	.01
7	.45	.00	.00	.00	.00	.00	.00	.01	.00	.22	.00	.00
8	.20	.00	.00	.07	.00	.00	.00	.00	.00	.00	.01	.00
9	.01	.00	.00	.02	.00	.20	.00	.00	.09	.00	.00	.11
10	.00	.03	.00	.00	.00	.03	.00	.00	1.03	.00	.00	.00
11	.00	.05	.00	.00	.00	.00	.08	.00	.00	.14	.00	.00
12	.00	.00	.08	.00	.00	.00	.00	.00	.00	.27	.00	.00
13	.00	.00	.81	.00	.00	.01	.00	.33	.00	.02	.00	.00
14	.00	.54	.00	.12	.00	.25	.00	.00	.00	.01	.08	.00
15	.00	.04	.50	.20	.00	.06	.15	.00	.46	.00	.00	.47
16	.00	.30	.09	.00	.00	.00	.00	.00	1.59	.00	.00	.13
17	.00	.01	.00	.52	.09	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.08	.34	.00	.00	.38	.00	.00	.00	.00
19	.00	.00	.02	.00	.44	.00	.00	.13	.01	.00	.00	.00
20	.00	.00	.00	.00	.59	.00	.00	.00	.01	.00	.22	.00
21	.00	.00	.01	.00	.00	.39	.00	.00	.00	.00	.00	.44
22	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.02	1.03	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.14	.55	.00	.00	.00	.00	.01	1.21	.53	.00
25	.00	.04	.06	.00	.00	.06	.00	.00	.94	.01	.19	.00
26	.00	.02	.00	.00	.00	.00	.07	.00	.48	.00	.70	.00
27	.00	.00	.00	.00	.00	.00	1.15	.00	.03	.00	.00	.49
28	.00	.00	.12	.00	.09	.00	.18	.00	.11	.00	.00	.48
29	.00	.00	.05	.02	---	.00	.48	.00	.06	.04	.00	.40
30	.00	.00	.00	.02	---	.00	.91	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.00	.00	---
TOTAL	1.09	1.89	1.99	2.69	2.51	1.27	3.52	0.98	4.85	2.06	1.73	3.19



## SANTEE RIVER BASIN

351320080502645 CRN15

LOCATION.--Lat 35°13'20", long 80°50'26", Mecklenburg County, Hydrologic Unit 03050103, Charlotte Mecklenburg Government Center, East Fourth Street, Charlotte, NC.

PERIOD OF RECORD.--March 1993 to current year. Records for period March 1993 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.84	.00	.74	.00	.00	.00	.05	.00
2	.00	.37	.00	.48	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.38	.00	.62	.00	.26	.00	.00	.00	.00	.00	.00
4	.57	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
5	.02	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00	.73
6	.00	.00	.00	.00	.00	.01	.01	.07	.00	1.34	.00	.01
7	.19	.00	.00	.00	.01	.00	.00	.00	.00	.01	.00	.00
8	.45	.00	.00	.07	.00	.00	.00	.00	.00	.00	.12	.00
9	.00	.00	.00	.01	.00	.27	.00	.00	.00	.00	.00	.01
10	.00	.01	.00	.00	.00	.04	.00	.00	1.13	.01	.00	.00
11	.00	.03	.00	.00	.00	.00	.25	.00	.00	.01	.00	.00
12	.00	.00	.08	.00	.00	.00	.00	.00	.00	.46	.00	.00
13	.00	.00	.35	.00	.00	.00	.00	.31	.00	.09	.00	.00
14	.00	.58	.00	.07	.00	.53	.00	.01	.00	.01	.02	.00
15	.00	.02	.58	.19	.00	.03	.13	.00	.45	.00	.00	1.07
16	.00	.17	.10	.00	.00	.00	.00	.00	1.00	.00	.00	.12
17	.00	.01	.00	.91	.07	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.04	.55	.00	.00	.17	.00	.00	.00	.00
19	.00	.00	.00	.00	.72	.00	.00	.15	.00	.00	.00	.00
20	.00	.00	.03	.00	.07	.00	.00	.00	.02	.00	1.18	.00
21	.00	.00	.01	.00	.00	.33	.00	.00	.03	.00	.00	.49
22	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	2.36	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.61	.61	.00	.00	.00	.00	.00	.58	.88	.00
25	.00	.02	.13	.00	.00	.10	.00	.00	.42	.00	.02	.00
26	.00	.03	.01	.00	.00	.00	.07	.36	.44	.00	.04	.00
27	.00	.00	.00	.00	.00	.00	1.59	.00	.25	.00	.00	.26
28	.00	.00	.11	.00	.06	.00	.13	.00	.00	.00	.00	.23
29	.00	.00	.05	.02	---	.00	.60	.00	.15	.59	.00	.89
30	.00	.00	.00	.01	---	.00	1.13	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.00	.00	---
TOTAL	1.23	1.62	2.18	5.39	2.36	1.58	4.65	1.18	3.89	3.10	2.31	3.81

## SANTÉE RIVER BASIN

395

351023080435745 CRN17

LOCATION.--Lat 35°10'23", long 80°43'57", Mecklenburg County, Hydrologic Unit 03050103, Piney Grove Elementary School, Eaglewind Drive, Charlotte, NC.

PERIOD OF RECORD.--March 1993 to current year. Records for period March 1993 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.88	.00	.41	.00	.00	.00	.38	.00
2	.00	.34	.00	.34	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.40	.00	.64	.00	.19	.00	.00	.00	.00	.00	.00
4	.62	.01	.00	.01	.06	.00	.00	.00	.00	.00	.00	.00
5	.02	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.97
6	.00	.00	.00	.00	.00	.01	.00	.06	.00	1.35	.00	.01
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.91	.00	.00
8	.92	.00	.02	.07	.00	.00	.00	.00	.00	.00	.22	.00
9	.00	.00	.00	.00	.00	.20	.00	.00	.10	.00	.00	.07
10	.00	.00	.00	.00	.00	.03	.00	.00	.80	.05	.00	.00
11	.00	.01	.00	.00	.00	.00	.20	.00	.01	.03	.00	.00
12	.00	.00	.04	.00	.00	.00	.00	.00	.00	.59	.00	.00
13	.00	.00	.33	.00	.00	.00	.00	.02	.00	.35	.00	.00
14	.00	.53	.00	.22	.00	.41	.00	.00	.00	.01	.00	.00
15	.00	.03	.62	.23	.00	.04	.02	.00	.60	.00	.00	1.06
16	.00	.35	.19	.00	.00	.00	.00	.00	.97	.00	.00	.05
17	.00	.00	.00	.80	.04	.00	.00	.00	.00	.17	.00	.00
18	.00	.00	.00	.04	.80	.00	.00	.11	.00	.00	.00	.00
19	.00	.00	.00	.00	.67	.00	.00	.14	.00	.00	.00	.00
20	.00	.00	.00	.00	.03	.00	.01	.00	.04	.00	.21	.00
21	.00	.00	.01	.00	.00	.34	.00	.00	.01	.00	.00	.38
22	.00	.00	.03	.00	.00	.01	.00	.00	.00	.00	.00	.00
23	.00	.00	.48	2.73	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.26	1.26	.00	.00	.00	.00	.00	.18	.04	.00
25	.00	.01	.07	.00	.00	.25	.00	.00	.82	.00	.25	.00
26	.00	.00	.00	.00	.00	.00	.03	.41	.03	.00	.61	.00
27	.00	.00	.00	.00	.00	.00	.72	.00	.00	.00	.00	.51
28	.00	.00	.09	.00	.01	.00	.12	.00	.01	.00	.00	.48
29	.00	.00	.13	.00	---	.00	.74	.00	.00	.36	.00	1.38
30	.00	.00	.00	.00	---	.00	1.04	.00	.00	.01	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.31	.00	---
TOTAL	1.56	1.68	3.27	6.34	2.50	1.49	3.29	0.78	3.39	4.32	1.71	4.91

351132080504145 CRN19

LOCATION.--Lat 35°11'32", long 80°50'41", Mecklenburg County, Hydrologic Unit 03050103, Freedom Park, Cumberland Drive, Charlotte, NC.

PERIOD OF RECORD.--September 1993 to current year. Records for period September 1993 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.91	.00	.76	.00	.00	.00	.00	.00
2	.00	.65	.00	.56	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.45	.00	.69	.00	.23	.00	.00	.00	.00	.00	.00
4	.75	.01	.00	.01	.06	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.70
6	.00	.00	.00	.00	.00	.01	.00	.05	.00	1.46	.00	.02
7	.26	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
8	.50	.00	.00	.05	.00	.00	.00	.00	.00	.01	.01	.00
9	.00	.00	.00	.01	.00	.27	.00	.00	.00	.00	.00	.02
10	.00	.00	.00	.00	.00	.00	.00	.00	1.08	.01	.00	.00
11	.00	.03	.00	.00	.00	.00	.27	.00	.00	.02	.00	.00
12	.00	.00	.05	.00	.00	.00	.00	.00	.00	.52	.00	.00
13	.00	.00	.35	.00	.00	.01	.00	.10	.00	.04	.00	.00
14	.00	.63	.00	.06	.00	.53	.00	.01	.00	.01	.00	.00
15	.00	.02	.67	.19	.00	.02	.09	.00	.44	.00	.00	.82
16	.00	.24	.10	.00	.00	.00	.00	.00	.84	.00	.00	.14
17	.00	.00	.00	1.09	.06	.00	.00	.00	.01	.01	.00	.00
18	.00	.00	.00	.06	.59	.00	.00	.25	.00	.00	.00	.00
19	.00	.00	.00	.00	.80	.00	.00	.15	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	---	.00
21	.00	.00	.01	.00	.00	.53	.00	.00	.00	.00	---	.90
22	.00	.00	.11	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.30	2.62	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.25	.58	.00	.00	.00	.00	.01	.15	---	.00
25	.00	.04	.10	.00	.00	.12	.00	.00	.83	.04	---	.00
26	.00	.04	.00	.00	.00	.00	.09	.38	.69	.01	.03	.00
27	.00	.00	.00	.00	.00	.00	1.18	.00	.25	.00	.00	.33
28	.00	.00	.09	.00	.01	.00	.17	.00	.00	.00	.00	.14
29	.00	.00	.08	.01	---	.00	.61	.00	.00	.02	.00	.90
30	.00	.00	.00	.00	---	.00	1.09	.00	.00	.01	.00	.01
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	1.51	2.11	3.11	5.93	2.44	1.72	4.26	1.01	4.16	2.35	---	3.98

## SANTÉE RIVER BASIN

397

351032080475245 CRN20

LOCATION.--Lat 35°10'32", long 80°47'52", Mecklenburg County, Hydrologic Unit 03050103, Fire Station 14, North Sharon Amity Road, Charlotte, NC.

PERIOD OF RECORD.--September 1993 to current year. Records for period September 1993 to September 1998 published in USGS OFR 96-150, 98-67, and 99- 273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.92	.00	.43	.00	.00	.00	.00	.00
2	.00	.48	.00	.03	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.45	.00	.50	.00	.14	.00	.00	.00	.00	.00	.00
4	.56	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
5	.18	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.74
6	.00	.00	.00	.00	.00	.02	.00	.06	.00	2.37	.00	.02
7	.10	.00	.00	.00	.00	.00	.00	.00	.00	.11	.00	.00
8	.56	.00	.03	.07	.00	.00	.00	.00	.00	.00	.15	.00
9	.00	.00	.00	.00	.00	.28	.00	.00	.01	.00	.00	.08
10	.00	.00	.00	.00	.00	.03	.00	.00	.86	.09	.00	.01
11	.00	.02	.00	.00	.00	.00	.17	.00	.00	.03	.00	.00
12	.00	.00	.06	.00	.00	.00	.00	.00	.00	.78	.00	.00
13	.00	.00	.41	.00	.00	.00	.00	.13	.00	.26	.00	.00
14	.00	.56	.00	.10	.00	.41	.00	.00	.00	.00	.01	.00
15	.00	.02	.62	.17	.00	.01	.06	.00	.46	.00	.00	.83
16	.00	.33	.12	.00	.00	.00	.00	.00	.74	.00	.00	.07
17	.00	.00	.00	1.04	.11	.00	.00	.00	.00	.11	.00	.00
18	.00	.00	.00	.02	.79	.00	.00	.28	.00	.00	.00	.00
19	.00	.00	.00	.00	.63	.00	.00	.13	.00	.00	.00	.00
20	.00	.00	.01	.00	.00	.00	.01	.00	.03	.00	.44	.00
21	.00	.00	.01	.00	.00	.47	.00	.00	.00	.00	.00	.44
22	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.58	2.03	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.39	1.17	.00	.00	.00	.00	.00	.23	.75	.00
25	.00	.03	.09	.00	.00	.18	.00	.00	.32	.00	.05	.00
26	.00	.02	.00	.00	.00	.01	.08	.36	.00	.00	.36	.00
27	.00	.00	.00	.00	.00	.00	1.26	.00	.17	.00	.00	.41
28	.00	.00	.08	.00	.02	.00	.21	.00	.00	.00	.00	.36
29	.00	.00	.09	.01	---	.00	.73	.00	.00	.56	.00	.96
30	.00	.00	.00	.01	---	.00	1.13	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.01	.00	---
TOTAL	1.40	1.91	2.52	5.15	2.57	1.56	4.08	1.03	2.59	4.55	1.76	3.92

## SANTEE RIVER BASIN

350842080572801 CRN21

LOCATION.--Lat 35°08'42", long 80°57'28", Mecklenburg County, Hydrologic Unit 03050103, Kennedy Junior High School, Gallant Lane, Charlotte, NC.

PERIOD OF RECORD.--September 1990 to current year. Records for period September 1990 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.76	.00	.39	.00	.00	.00	.60	.00
2	.00	.27	.00	.56	.03	.00	.00	.00	.00	.00	.01	.00
3	.00	.43	.00	.51	.01	.17	.00	.00	.00	.00	.00	.00
4	.63	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.03	.01	.00	.00	.79
6	.00	.00	.00	.00	.00	.02	.00	.04	.00	.24	.00	.00
7	.42	.00	.00	.00	.01	.00	.00	.01	.00	.28	.00	.00
8	.37	.00	.00	.04	.01	.00	.00	.00	.00	.01	.27	.00
9	.00	.00	.00	.01	.01	.15	.02	.00	.01	.00	.01	.33
10	.00	.00	.00	.00	.01	.05	.00	.00	1.49	.75	.00	.00
11	.00	.00	.00	.00	.00	.01	.00	.00	.01	.04	.00	.01
12	.00	.00	.01	.00	.02	.00	.00	.00	.00	.44	.00	.00
13	.00	.00	.35	.00	.00	.00	.00	.14	.00	.12	.00	.00
14	.00	.59	.00	.03	.00	.52	.00	.01	.00	.01	.00	.00
15	.00	.03	.59	.18	.00	.01	.06	.00	.26	.00	.00	.62
16	.00	.19	.08	.00	.00	.00	.01	.00	.94	.00	.00	.19
17	.00	.01	.00	.92	.00	.00	.00	.00	.01	.00	.00	.00
18	.00	.00	.00	.04	.40	.00	.00	.75	.00	.00	.00	.00
19	.00	.00	.00	.00	.73	.00	.00	.15	.00	.00	.00	.00
20	.00	.00	.02	.00	.01	.00	.02	.01	.00	.00	1.26	.00
21	.00	.00	.01	.00	.00	.53	.00	.00	.00	.00	.01	.82
22	.00	.00	.02	.00	.00	.01	.00	.00	.00	.00	.00	.03
23	.00	.00	.10	1.07	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.85	.63	.00	.01	.00	.00	.00	.38	.32	.00
25	.00	.00	.08	.00	.00	.08	.00	.00	.70	.02	.06	.00
26	.00	.00	.00	.00	.01	.01	.09	.36	.01	.00	.01	.07
27	.00	.00	.00	.00	.00	.00	1.14	.00	.13	.00	.01	.94
28	.00	.00	.09	.00	.03	.00	.09	.00	.01	.00	.00	.17
29	.00	.00	.05	.00	---	.00	.41	.00	.00	.00	.00	.74
30	.00	.00	.02	.00	---	.00	1.00	.00	.00	.00	.00	.02
31	.00	---	.00	.00	---	.01	---	.00	---	.00	.00	---
TOTAL	1.42	1.52	2.27	3.99	2.08	1.58	3.23	1.50	3.58	2.29	2.56	4.73

## SANTÉE RIVER BASIN

399

350623080583801 CRN22

LOCATION.--Lat 35°06'23", long 80°58'38", Mecklenburg County, Hydrologic Unit 03050103, private residence, Choate Circle, Charlotte, NC.

PERIOD OF RECORD.--September 1990 to current year. Records for period September 1990 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Shaft encoder raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.91	.00	.65	.00	.00	.00	.46	.00
2	.00	.43	.00	.53	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.38	.00	.62	.00	.20	.00	.00	.00	.00	.01	.00
4	.64	.00	.00	.01	.12	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.61
6	.00	.00	.00	.00	.00	.03	.00	.05	.00	.10	.00	.00
7	.61	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.01
8	.46	.00	.00	.06	.00	.00	.00	.00	.00	.01	.33	.00
9	.00	.00	.00	.00	.06	.20	.00	.00	.07	.00	.00	.16
10	.00	.00	.00	.00	.01	.08	.00	.00	1.13	.43	.01	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.01
12	.00	.00	.03	.00	.00	.00	.00	.00	.01	.50	.00	.00
13	.00	.00	.24	.01	.00	.00	.00	.64	.01	.22	.00	.00
14	.00	.61	.00	.09	.00	.67	.00	.01	.00	.00	.00	.00
15	.00	.03	.62	.20	.00	.01	.08	.00	.15	.01	.00	.68
16	.00	.33	.07	.00	.00	.00	.00	.00	.78	.00	---	.13
17	.00	.01	.00	.96	.06	.00	.00	.00	.00	.00	---	.00
18	.00	.00	.00	.04	.58	.00	.00	.31	.00	.00	---	.00
19	.00	.00	.00	.01	.82	.00	.00	.79	.01	.00	---	.00
20	.00	.00	.00	.00	.01	.00	.03	.00	.01	.00	---	.00
21	.00	.00	.02	.00	.00	.73	.00	.00	.00	.00	---	.46
22	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	---	.01
23	.00	.00	.39	1.16	.00	.00	.00	.00	.00	.00	---	.00
24	.00	.00	1.29	.46	.00	.00	.00	.00	.01	.28	.10	.00
25	.00	.00	.09	.00	.00	.14	.00	.00	1.09	.01	.01	.00
26	.00	.00	.00	.00	.00	.02	.09	.40	.09	.00	.04	.09
27	.00	.00	.01	.00	.00	.00	1.29	.01	.02	.00	.00	.83
28	.00	.00	.10	.00	.02	.00	.06	.00	.01	.00	.00	.24
29	.00	.00	.13	.00	---	.00	.32	.01	.00	.00	.01	.60
30	.00	.00	.01	.00	---	.00	.87	.00	.01	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.00	.00	---
TOTAL	1.71	1.79	3.03	4.15	2.60	2.09	3.39	2.28	3.40	1.72	---	3.83



## SANTEE RIVER BASIN

351604080470845 CRN27

LOCATION.--Lat 35°16'04", long 80°47'08", Mecklenburg County, Hydrologic Unit 03050103, Hidden Valley Elementary School, Snow White Lane, Charlotte, NC.

PERIOD OF RECORD.--October 1994 to current year. Records for period October 1994 to September 1998 published in USGS OFR 96-150, 98-67, and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.84	.00	.71	.00	.00	.00	.00	.00
2	.00	.41	.00	.05	.02	.00	.00	.00	.00	.00	.00	.00
3	.00	.47	.00	.27	.00	.14	.00	.00	.00	.00	.00	.00
4	.34	.01	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
5	.06	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.86
6	.01	.00	.00	.00	.00	.01	.00	.06	.00	.69	.00	.01
7	.12	.00	.00	.00	.01	.00	.00	.00	.00	.13	.04	.00
8	.40	.00	.01	.06	.00	.00	.00	.00	.00	.00	.06	.00
9	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
10	.00	.01	.00	.00	.00	.04	.00	.00	.26	.00	.00	.00
11	.00	.03	.00	.00	.00	.00	.03	.00	.00	.12	.00	.00
12	.00	.00	.07	.00	.00	.00	.00	.00	.00	.57	.00	.00
13	.00	.00	.39	.00	.00	.01	.00	.19	.00	.09	.00	.00
14	.00	.48	.00	.06	.00	.48	.00	.00	.00	.01	.00	.00
15	.00	.03	.53	.20	.00	.02	.12	.00	.27	.00	.00	.97
16	.00	.25	.20	.00	.00	.00	.00	.00	.86	.00	.00	.07
17	.00	.01	.00	.88	.06	.00	.00	.00	.01	.09	.00	.00
18	.00	.00	.00	.03	.53	.00	.00	.20	.00	.00	.00	.00
19	.00	.00	.01	.00	.38	.00	.00	.18	.00	.00	.00	.00
20	.00	.00	.00	.00	.52	.00	.00	.00	.12	.00	.65	.00
21	.00	.00	.01	.00	.00	.44	.00	.00	.01	.00	.01	.25
22	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.21	2.03	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.06	.45	.00	.00	.00	.00	.01	1.16	.94	.00
25	.00	.03	.12	.00	.00	.07	.00	.00	.43	.00	.03	.00
26	.00	.04	.00	.00	.00	.00	.04	.27	.32	.00	.15	.00
27	.00	.00	.00	.00	.00	.00	.86	.00	.27	.00	.00	.33
28	.00	.00	.09	.00	.05	.00	.21	.00	.01	.00	.00	.69
29	.00	.00	.07	.01	---	.0	.61	.00	.32	.53	.00	.82
30	.00	.00	.00	.02	---	.0	.92	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.02	.00	---
TOTAL	0.93	1.77	1.84	4.06	2.44	1.43	3.50	0.98	2.89	3.41	1.88	4.01

## SANTÉE RIVER BASIN

401

350110080502045 CRN31

LOCATION.--Lat 35°01'10", long 80°50'20", Mecklenburg County, Hydrologic Unit 03050103, Elon Homes for Children, Ardrey-Kell Road, Charlotte, NC.

PERIOD OF RECORD.--February 1996 to current year. Records for period February 1996 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.00	.00	.00	.78	.00	.24	.00	.00	.00	.29	.00
2	.00	.15	.00	.02	.01	.00	.00	.00	.00	.00	.01	.00
3	.00	.40	.00	.31	.00	.12	.00	.00	.00	.00	.00	.00
4	.47	.01	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.09	.00	.13	.00	.60
6	.00	.00	.00	.00	.00	.01	.00	.23	.00	.69	.00	.04
7	.10	.00	.00	.00	.00	.00	.00	.00	.00	.34	.00	.00
8	.79	.00	.01	.07	.00	.00	.00	.00	.00	.08	.04	.00
9	.00	.01	.00	.00	.02	.38	.00	.00	.00	.02	.00	.19
10	.00	.00	.00	.00	.00	.05	.00	.00	1.15	.24	.00	.00
11	.00	.02	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00
12	.00	.00	.07	.00	.00	.00	.00	.00	.00	.02	.00	.00
13	.00	.00	.34	.00	.00	.00	.00	.00	.00	.02	.00	.00
14	.00	.61	.00	.45	.00	.47	.00	.00	.00	.02	.00	.00
15	.00	.04	.63	.24	.00	.01	.02	.00	.35	.03	.00	.99
16	.00	.35	.11	.00	.00	.00	.00	.00	.64	.00	.00	.08
17	.00	.00	.00	.76	.16	.00	.00	.00	.06	.00	.00	.00
18	.00	.00	.00	.08	.65	.00	.00	.14	.00	.00	.00	.00
19	.00	.00	.02	.00	.58	.00	.00	.07	.01	.00	.00	.00
20	.00	.00	.04	.00	.00	.00	.00	.00	.01	.00	.56	.00
21	.00	.00	.02	.00	.00	.36	.00	.00	.00	.00	.00	.53
22	.00	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.27	2.77	.00	.00	.00	.00	.00	.00	.01	.00
24	.00	.00	.07	1.10	.00	.00	.00	.00	.00	.11	.12	.00
25	.00	.01	.10	.00	.00	.18	.00	.00	.52	.00	.03	.00
26	.00	.00	.00	.00	.00	.01	.03	.13	.00	.00	.33	.02
27	.00	.00	.00	.00	.00	.00	.68	.00	.02	.00	.00	.68
28	.00	.00	.20	.00	.13	.00	.11	.00	.00	.00	.00	.25
29	.00	.00	.13	.00	---	.00	.61	.00	.00	.00	.00	.37
30	.00	.00	.00	.01	---	.00	1.04	.00	.00	.02	.00	.01
31	.00	---	.00	.00	---	.01	---	.00	---	.05	.00	---
TOTAL	1.37	1.60	2.24	5.81	2.36	1.60	2.73	0.66	2.78	1.80	1.39	3.76

## SANTEE RIVER BASIN

352555080574445 CRN34

LOCATION.--Lat 35°25'55", long 80°57'44", Lincoln County, Hydrologic Unit 03050103, Cowans Ford Dam warehouse, Duke Lane, Huntersville, NC.

PERIOD OF RECORD.--February 1996 to current year. Records for period February 1996 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.82	.00	.50	.00	.00	.00	.00	.00
2	.00	.34	.00	.05	.01	.00	.00	.00	.10	.00	.00	.00
3	.00	.23	.00	.09	.00	.28	.00	.00	.01	.00	.00	.00
4	.07	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.00
5	.01	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.53
6	.00	.00	.00	.00	.00	.02	.00	.04	.00	.00	.00	.00
7	.67	.00	.00	.00	.00	.00	.00	.04	.00	.19	.00	.00
8	.17	.00	.00	.08	.00	.00	.00	.00	.00	.00	.23	.00
9	.00	.01	.01	.03	.00	.13	.00	.00	.00	.00	.00	.16
10	.00	.04	.00	.00	.00	.13	.00	.00	.51	.06	.00	.00
11	.00	.04	.00	.00	.00	.00	.00	.00	.01	.13	.00	.00
12	.00	.00	.13	.00	.00	.00	.00	.00	.00	.28	.00	.00
13	.00	.00	.94	.00	.00	.01	.00	.00	.00	.00	.00	.00
14	.00	.43	.00	.11	.00	.16	.00	.00	.00	.03	.02	.00
15	.00	.02	.42	.07	.00	.03	.24	.00	.67	.00	.00	.22
16	.00	.23	.12	.00	.00	.00	.00	.00	1.38	.00	.00	.07
17	.00	.00	.00	.36	.14	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.09	.26	.00	.00	.97	.00	.00	.00	.00
19	.00	.00	.01	.00	.65	.00	.00	.11	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.34	.00
21	.00	.00	.00	.00	.00	.67	.00	.00	.00	.00	.00	.08
22	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.08	.98	.00	.00	.00	.00	.00	.00	.05	.00
24	.00	.00	.14	.66	.00	.00	.00	.00	.00	1.10	1.36	.00
25	.00	.03	.02	.00	.00	.02	.00	.00	1.21	.00	.03	.00
26	.00	.03	.00	.00	.00	.00	.04	.14	.14	.00	.39	.00
27	.00	.00	.00	.00	.00	.00	.43	.00	.00	.00	.01	.49
28	.00	.00	.12	.00	.06	.00	.24	.00	.29	.00	.00	2.06
29	.00	.00	.00	.00	---	.00	.75	.00	.00	.13	.00	.44
30	.00	.00	.00	.01	---	.00	.65	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.04	---	.00	---	.00	.00	---
TOTAL	0.92	1.40	2.02	2.53	1.94	1.49	3.00	1.34	4.36	1.92	2.43	4.05

## SANTÉE RIVER BASIN

403

351247080592745 CRN37

LOCATION.--Lat 35°12'47", long 80°59'27", Mecklenburg County, Hydrologic Unit 03050103, Berryhill Elementary School, Walkers Ferry Road, Charlotte, NC.

PERIOD OF RECORD.--February 1996 to current year. Records for period February 1996 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.02	.00	.62	.00	.00	.00	.31	.00
2	.00	.45	.00	.00	.01	.00	.00	.00	.10	.00	.00	.00
3	.00	.54	.00	.04	.00	.31	.00	.00	.01	.00	.00	.00
4	.66	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.85
6	.00	.00	.00	.00	.00	.01	.00	.10	.00	1.04	.00	.03
7	.41	.00	.00	.00	.00	.00	.00	.01	.00	.80	.00	.00
8	.23	.00	.00	.09	.00	.00	.00	.00	.00	.00	.10	.00
9	.00	.00	.00	.02	.01	.27	.00	.00	.00	.00	.00	.09
10	.00	.03	.00	.00	.00	.04	.00	.00	1.11	.01	.00	.01
11	.00	.04	.00	.00	.00	.00	.25	.00	.00	.07	.00	.00
12	.00	.00	.08	.00	.00	.00	.00	.00	.00	.28	.00	.00
13	.00	.00	.56	.00	.00	.02	.00	.05	.00	.03	.00	.00
14	.00	.59	.00	.16	.00	.27	.00	.01	.00	.02	.00	.00
15	.00	.02	.54	.19	.00	.03	.17	.00	.69	.00	.00	.55
16	.00	.42	.06	.00	.00	.00	.00	.00	1.29	.00	.00	.18
17	.00	.00	.00	.59	.11	.00	.00	.00	.01	.00	.00	.00
18	.00	.00	.00	.07	.43	.00	.00	1.00	.00	.00	.00	.00
19	.00	.00	.03	.00	.48	.00	.00	.13	.01	.00	.00	.00
20	.00	.00	.01	.00	.55	.00	.00	.00	.00	.00	.51	.00
21	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	1.05
22	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.23	1.01	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.15	.46	.00	.00	.00	.00	.02	.92	.35	.00
25	.00	.02	.10	.00	.00	.06	.00	.00	.94	.00	.11	.00
26	.00	.04	.00	.00	.00	.00	.11	.38	.05	.00	.23	.00
27	.00	.00	.00	.00	.00	.00	.71	.00	.10	.00	.00	.84
28	.00	.00	.17	.00	.02	.00	.09	.00	.00	.00	.00	.08
29	.00	.00	.03	.02	---	.01	.48	.00	.00	.00	.00	.73
30	.00	.00	.01	.03	---	.00	1.01	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.00	.00	---
TOTAL	1.30	2.15	2.10	2.68	2.68	1.24	3.44	1.77	4.33	3.17	1.61	4.41

## SANTÉE RIVER BASIN

350200081020345 CRN38

LOCATION.--Lat 35°02'00", long 81°02'03", York County, South Carolina, Hydrologic Unit 03050103, Tega Cay Town Hall, Tega Cay Drive, Tega Cay, SC.

PERIOD OF RECORD.--February 1996 to current year. Records for period February 1996 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.00	.00	.00	.82	.00	.31	.00	.00	.00	.00	.00
2	.00	.44	.00	.08	.01	.00	.00	.00	.00	.00	.00	.00
3	.00	.31	.00	.21	.00	.27	.00	.00	.00	.00	.00	.00
4	.56	.01	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.55
6	.00	.00	.00	.00	.00	.02	.00	.10	.00	.64	.00	.28
7	.65	.00	.00	.00	.00	.00	.00	.01	.00	.30	.11	.00
8	.73	.00	.00	.07	.00	.00	.00	.00	.00	.00	.26	.00
9	.00	.01	.00	.01	.04	.44	.00	.00	.00	.00	.01	.36
10	.00	.01	.00	.00	.01	.01	.00	.00	.71	.56	.00	.01
11	.00	.02	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00
12	.00	.00	.06	.00	.00	.00	.00	.00	.00	.29	.00	.00
13	.00	.00	.25	.00	.00	.01	.00	.02	.00	.36	.00	.00
14	.00	.68	.00	.16	.00	.45	.00	.06	.00	.00	.00	.00
15	.00	.02	.67	.21	.00	.01	.09	.00	.40	.00	.00	.67
16	.00	.88	.10	.00	.00	.00	.00	.00	.82	.00	.00	.15
17	.00	.00	.00	1.01	.09	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.03	.74	.00	.00	.11	.00	.00	.00	.00
19	.00	.00	.02	.00	.93	.00	.00	.08	.01	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.02	.00	.01	.00	.79	.00
21	.00	.00	.07	.00	.00	.59	.00	.00	.00	.00	.01	.52
22	.00	.00	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.46	1.08	.00	.00	.00	.00	.00	.00	.01	.00
24	.00	.00	.84	.51	.00	.00	.00	.00	.02	.13	.14	.00
25	.00	.02	.12	.00	.00	.21	.00	.00	1.19	.01	.03	.00
26	.00	.00	.00	.00	.00	.00	.03	.26	.01	.00	.00	.10
27	.00	.00	.00	.00	.00	.00	1.11	.00	.25	.00	.00	.71
28	.00	.00	.18	.00	.05	.00	.15	.00	.00	.00	.00	.13
29	.00	.00	.12	.02	---	.02	.42	.00	.00	.00	.00	.84
30	.00	.00	.00	.02	---	.00	.84	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.03	---	.00	---	.05	.00	---
TOTAL	1.95	2.40	3.06	3.41	2.74	2.06	2.97	0.76	3.42	2.40	1.36	4.32

353003080591745 CRN40

LOCATION.--Lat 35°30'03", long 80°59'17", Lincoln County, Hydrologic Unit 03050103, Westport Golf Course driving range, Denver, NC.

PERIOD OF RECORD.--February 1996 to current year. Records for period February 1996 to September 1998 published in USGS OFR 98-67 and 99-273. Records for February 1996 to June 1996 at site Lake Norman Fire Department, Mooresville, NC (station 353402080543145).

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.06	.00	.53	.00	.00	.00	.01	.00
2	.00	.20	.00	.02	.02	.00	.00	.00	.10	.00	.00	.00
3	.00	.63	.00	.34	.00	.48	.00	.00	.04	.00	.00	.00
4	.08	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00
5	.08	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.56
6	.00	.00	.00	.00	.00	.02	.00	.03	.00	.02	.00	.03
7	.80	.00	.00	.00	.00	.00	.00	.04	.00	1.20	.00	.00
8	.17	.00	.09	.11	.00	.00	.00	.00	.00	.01	.34	.00
9	.00	.03	.01	.02	.00	.10	.00	.00	.00	.00	.00	.26
10	.00	.05	.00	.00	.00	.21	.00	.00	.75	.08	.00	.00
11	.00	.08	.00	.00	.00	.00	.00	.00	.01	.06	.00	.00
12	.00	.00	.19	.00	.03	.00	.00	.00	.00	.54	.00	.00
13	.00	.00	.99	.00	.00	.03	.00	.00	.00	.00	.00	.00
14	.00	.50	.00	.12	.00	.28	.00	.00	.00	.01	.00	.00
15	.00	.01	.51	.12	.00	.06	.48	.00	.69	.01	.00	.26
16	.00	.40	.14	.00	.00	.00	.00	.00	1.30	.00	.00	.11
17	.00	.00	.00	.37	.21	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.18	.36	.00	.00	1.08	.00	.00	.00	.00
19	.01	.00	.07	.00	.47	.00	.00	.08	.00	.00	.00	.00
20	.00	.00	.00	.00	.33	.00	.00	.00	.04	.00	.27	.00
21	.00	.00	.00	.00	.00	.71	.00	.00	.00	.05	.00	.36
22	.00	.00	.04	.00	.00	.00	.00	.00	.00	.01	.00	.00
23	.00	.00	.13	.77	.00	.00	.00	.00	.00	.00	.20	.00
24	.00	.00	.63	.62	.02	.02	.00	.00	.00	.45	1.35	.00
25	.00	.04	.04	.00	.00	.04	.00	.00	1.02	.00	.35	.00
26	.00	.05	.00	.00	.00	.00	.02	.09	.01	.00	.30	.00
27	.00	.00	.00	.00	.00	.00	.48	.00	.00	.00	.00	.57
28	.00	.00	.11	.00	.03	.00	.45	.00	.42	.00	.00	.61
29	.00	.00	.01	.01	---	.00	1.25	.00	.00	.08	.00	.89
30	.00	.00	.00	.03	---	.00	.75	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.05	---	.00	---	.00	.00	---
TOTAL	1.14	1.99	2.96	2.71	2.53	2.00	4.05	1.37	4.38	2.52	2.82	3.65



## SANTÉE RIVER BASIN

353014080524945 CRN42

LOCATION.--Lat 35°30'14", long 80°42'49", Mecklenburg County, Hydrologic Unit 03050103, private residence, Norman Shores Drive, Cornelius, NC.

PERIOD OF RECORD.--January 1997 to current year. Records for period January 1997 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.95	.00	.57	.00	.00	.00	.14	.00
2	.00	.14	.00	.09	.02	.00	.00	.00	.01	.00	.00	.00
3	.00	.38	.00	.11	.00	.39	.00	.00	.00	.00	.00	.00
4	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.02	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.61
6	.00	.00	.00	.00	.00	.02	.00	.16	.00	.02	.00	.00
7	.30	.00	.00	.00	.00	.00	.00	.02	.00	.44	.00	.00
8	.24	.00	.08	.08	.00	.00	.00	.00	.00	.00	.74	.00
9	.00	.02	.02	.02	.00	.15	.00	.00	.00	.00	.00	.07
10	.00	.04	.00	.00	.00	.13	.00	.00	.23	.04	.00	.00
11	.00	.08	.00	.00	.00	.00	.02	.00	.00	.03	.00	.00
12	.00	.00	.16	.00	.01	.00	.00	.00	.00	.31	.00	.00
13	.00	.00	.83	.00	.00	.02	.00	.00	.00	.00	.00	.00
14	.00	.53	.00	.13	.00	.19	.00	.00	.00	.05	.00	.00
15	.00	.01	.41	.15	.00	.03	.40	.00	.60	.00	.00	.50
16	.00	.39	.12	.00	.00	.00	.00	.00	1.10	.00	.00	.07
17	.00	.00	.00	.34	.15	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.12	.33	.00	.00	.67	.00	.00	.00	.00
19	.00	.00	.04	.00	.65	.00	.00	.10	.00	.00	.00	.00
20	.00	.00	.01	.00	.13	.00	.00	.00	.07	.00	.31	.00
21	.00	.00	.00	.00	.00	.84	.00	.00	.00	.00	.01	.02
22	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.12	1.04	.00	.00	.00	.00	.00	.00	.92	.00
24	.00	.00	.12	.55	.00	.03	.00	.00	.01	1.18	.56	.00
25	.00	.04	.02	.00	.00	.02	.00	.00	1.70	.00	.15	.00
26	.00	.03	.00	.00	.00	.00	.01	.07	.06	.00	.27	.00
27	.00	.00	.01	.00	.00	.00	.72	.00	.00	.00	.00	.26
28	.00	.00	.11	.00	.01	.00	.50	.00	.62	.00	.00	.83
29	.00	.00	.00	.00	---	.00	1.31	.00	.00	.00	.00	.33
30	.00	.00	.01	.02	---	.00	.82	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.05	---	.00	---	.27	.00	---
TOTAL	0.62	1.66	2.08	2.65	2.25	1.87	4.35	1.06	4.40	2.34	3.10	2.69

352440080505045 CRN43

LOCATION.--Lat 35°24'40", long 80°50'50", Mecklenburg County, Hydrologic Unit 03050103, Huntersville Elementary School, Gilead Road, Huntersville, NC.

PERIOD OF RECORD.--January 1997 to current year. Records for period January 1997 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.94	.00	.38	.00	.00	.00	.00	.00
2	.00	.53	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
3	.00	.33	.00	.05	.00	.26	.00	.00	.00	.00	.00	.00
4	---	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.00
5	---	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	1.14
6	.00	.00	.00	.00	.00	.02	.00	.03	.00	.01	.00	.00
7	---	.00	.00	.00	.00	.00	.00	.02	.00	.14	.00	.00
8	---	.00	.00	.09	.00	.00	.00	.00	.00	.01	.49	.00
9	.00	.00	.00	.01	.00	.17	.00	.00	---	.00	.00	.09
10	.00	.03	.00	.00	.00	.16	.00	.00	---	.00	.00	.00
11	.00	.10	.00	.00	.00	.00	.00	.00	---	.04	.00	.00
12	.00	.00	.16	.00	.00	.00	.00	.00	.00	.35	.00	.00
13	.00	.00	1.02	.00	.00	.01	.00	.02	.00	.01	.00	.00
14	.00	.49	.01	.09	.00	.24	.00	.08	.00	.02	.02	.00
15	.00	.03	.45	.22	.00	.05	.22	.00	.37	.00	.00	.54
16	.00	.43	.13	.00	.00	.00	.01	.00	.59	.00	.00	.07
17	.00	.01	.00	.44	.10	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.21	.37	.00	.00	.31	.00	.00	.00	.00
19	.00	.00	.01	.00	.42	.00	.00	.13	.00	.00	.00	.00
20	.00	.00	.00	.00	.53	.00	.00	.00	.04	.00	.14	.00
21	.00	.00	.03	.00	.00	.57	.00	.00	.00	.00	.00	.07
22	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.01	1.15	.00	.00	.00	.00	.00	.00	.04	.00
24	.00	.00	.07	.35	.00	.00	.00	.00	.00	.86	.43	.00
25	.00	.17	.09	.00	.00	.04	.00	.00	2.35	.00	.37	.00
26	.00	.01	.03	.00	.00	.00	.02	.11	.62	.00	.01	.00
27	.00	.00	.01	.00	.00	.00	.76	.00	.00	.00	.00	.35
28	.00	.00	.16	.00	.08	.00	.27	.00	.47	.00	.00	1.81
29	.00	.00	.02	.00	---	.00	.89	.00	.14	.34	.00	.49
30	.00	.00	.00	.02	---	.00	.80	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.00	.00	---
TOTAL	---	2.13	2.21	2.66	2.46	1.54	3.50	0.75	---	1.78	1.50	4.56

## SANTÉE RIVER BASIN

350903081004545 CRN45

LOCATION.--Lat 35°09'03", long 81°00'45", Mecklenburg County, Hydrologic Unit 03050103, private residence, Withers Cove Road, Charlotte, NC.

PERIOD OF RECORD.--January 1997 to current year. Records for period January 1997 to September 1998 published in USGS OFR 98-67 and 99-273.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals. Telephone telemetry at site.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.03	.00	.79	.00	.00	.00	.28	.00
2	.00	.34	.00	.11	.01	.00	.00	.00	.02	.00	.00	.00
3	.00	.50	.00	.11	.00	.28	.00	.00	.01	.00	.00	.00
4	.77	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.08	.00	---	.00	.77
6	.00	.00	.00	.00	.00	.02	.00	.13	.00	---	.00	.01
7	.53	.00	.00	.00	.00	.00	.00	.07	.00	---	.00	.00
8	.30	.00	.00	.07	.00	.00	.00	.00	.00	.00	.36	.00
9	.00	.01	.00	.01	.06	.37	.00	.00	.00	.00	.00	.62
10	.00	.02	.01	.00	.00	.01	.00	.00	1.29	.57	.00	.01
11	.00	.04	.00	.00	.00	.00	.01	.00	.00	.09	.00	.00
12	.00	.00	.09	.00	.00	.00	.00	.00	.00	.34	.00	.00
13	.00	.00	.33	.00	.00	.01	.00	.59	.00	.05	.00	.00
14	.00	.69	.00	.17	.00	.40	.00	.01	.00	.01	.11	.00
15	.00	.02	.55	.17	.00	.01	.19	.00	.55	.00	.00	.64
16	.00	.25	.07	.00	.00	.00	.00	.00	.97	.00	.00	.14
17	.00	.00	.00	.78	.12	.00	.00	.00	.01	.00	.00	.00
18	.01	.00	.00	.02	.42	.00	.00	.78	.00	.00	.00	.00
19	.00	.00	.02	.00	.90	.00	.00	.10	.01	.00	.00	.00
20	.00	.00	.01	.00	.17	.00	.04	.00	.01	.00	.72	.00
21	.00	.00	.02	.00	.00	.60	.00	.00	.00	.03	.01	.74
22	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.42	1.10	.00	.00	.00	.00	.00	---	.02	.00
24	.00	.00	.63	.39	.00	.00	.00	.00	.02	---	.19	.00
25	.00	.04	.12	.00	.00	.10	.00	.00	1.44	---	.03	.00
26	.00	.01	---	.00	.00	.00	.08	.39	.00	---	.02	.21
27	.00	.00	---	.00	.00	.00	.84	.00	.37	.00	.00	.67
28	.00	.00	---	.00	.02	.00	.10	.00	.00	.00	.00	.17
29	.00	.00	.06	.00	---	.01	.49	.00	.04	.00	.00	.60
30	.00	.00	.00	.03	---	.00	.93	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.00	.00	---
TOTAL	1.61	1.92	---	2.96	2.83	1.83	3.47	2.15	4.74	---	1.74	4.58

## SANTÉE RIVER BASIN

409

351229080460245 CRN47

LOCATION.--Lat 35°12'29", long 80°46'02", Mecklenburg County, Hydrologic Unit 03050103, Winterfield Elementary School, Winterfield Place, Charlotte, NC.

PERIOD OF RECORD.--March 1999 to current year.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, FOR PERIOD MARCH 1999 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	.34	.00	.00	.00	.02	.00
2	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
3	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
4	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
5	---	---	---	---	---	---	.00	.08	.00	.00	.00	.86
6	---	---	---	---	---	---	.00	.05	.00	2.09	.00	.01
7	---	---	---	---	---	---	.00	.00	.00	.41	.00	.00
8	---	---	---	---	---	---	.00	.00	.00	.00	.10	.00
9	---	---	---	---	---	---	.00	.00	.00	.00	.00	.02
10	---	---	---	---	---	---	.00	.00	.94	.00	.00	.01
11	---	---	---	---	---	---	.30	.00	.00	.14	.00	.00
12	---	---	---	---	---	---	.00	.00	.00	.51	.00	.00
13	---	---	---	---	---	---	.00	.20	.00	.24	.00	.00
14	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
15	---	---	---	---	---	---	.07	.00	.50	.00	.00	.98
16	---	---	---	---	---	---	.00	.00	.91	.00	.00	.08
17	---	---	---	---	---	---	.00	.00	.00	.07	.00	.00
18	---	---	---	---	---	---	.00	.09	.00	.00	.00	.00
19	---	---	---	---	---	---	.00	.15	.01	.00	.00	.00
20	---	---	---	---	---	---	.00	.00	.07	.00	.45	.00
21	---	---	---	---	---	---	.00	.00	.01	.00	.00	.42
22	---	---	---	---	---	---	.00	.00	.00	.00	.00	.01
23	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
24	---	---	---	---	---	---	.00	.00	.00	.69	.41	.00
25	---	---	---	---	---	---	.00	.00	.37	.01	.09	.00
26	---	---	---	---	---	---	.09	.32	.02	.00	.35	.00
27	---	---	---	---	---	---	1.23	.00	.12	.00	.00	.49
28	---	---	---	---	---	---	.22	.00	.01	.00	.00	.47
29	---	---	---	---	---	---	.70	.00	.26	.32	.00	.86
30	---	---	---	---	---	---	.00	.95	.00	.00	.00	.01
31	---	---	---	---	---	---	.01	---	.00	---	.12	---
TOTAL	---	---	---	---	---	---	3.90	0.89	3.22	4.60	1.42	4.22

## SANTÉE RIVER BASIN

350637080475645 CRN48

LOCATION.--Lat 35°06'37", long 80°47'56", Mecklenburg County, Hydrologic Unit 03050103, Olde Providence School, Rea Road, Charlotte, NC.

PERIOD OF RECORD.--March 1999 to current year.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, FOR PERIOD MARCH 1999 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	.28	.00	.00	.00	.26	.00
2	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
3	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
4	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
5	---	---	---	---	---	---	.00	.04	.00	.00	.00	.76
6	---	---	---	---	---	---	.01	.12	.00	1.04	.00	.01
7	---	---	---	---	---	---	.00	.00	.00	.12	.00	.00
8	---	---	---	---	---	---	.00	.00	.00	.00	.24	.00
9	---	---	---	---	---	---	.00	.00	.18	.00	.01	.12
10	---	---	---	---	---	---	.00	.00	.45	.51	.00	.00
11	---	---	---	---	---	---	.00	.00	.01	.06	.00	.00
12	---	---	---	---	---	---	.00	.00	.00	.58	.00	.00
13	---	---	---	---	---	---	.00	.42	.00	.37	.00	.00
14	---	---	---	---	---	---	.00	.00	.00	.01	.00	.00
15	---	---	---	---	---	---	.02	.00	.27	.00	.00	.83
16	---	---	---	---	---	---	.00	.00	.84	.00	.00	.06
17	---	---	---	---	---	---	.00	.00	.00	.01	.00	.00
18	---	---	---	---	---	---	.00	.20	.00	.00	.00	.00
19	---	---	---	---	---	---	.00	.13	.01	.00	.00	.00
20	---	---	---	---	---	---	.02	.00	.02	.00	.29	.00
21	---	---	---	---	---	---	.00	.00	.00	.00	.00	.43
22	---	---	---	---	---	---	.00	.03	.00	.00	.00	.00
23	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
24	---	---	---	---	---	---	.00	.00	.01	.09	.36	.00
25	---	---	---	---	---	---	.00	.00	.22	.00	.12	.00
26	---	---	---	---	---	---	.11	.36	.00	.00	.34	.00
27	---	---	---	---	---	---	1.25	.00	.02	.00	.00	.42
28	---	---	---	---	---	---	.18	.00	.00	.00	.00	.16
29	---	---	---	---	---	---	.62	.00	.00	.32	.00	.68
30	---	---	---	---	---	.00	1.02	.00	.00	.00	.00	.00
31	---	---	---	---	---	.00	---	.00	---	.23	.00	---
TOTAL	---	---	---	---	---	---	3.51	1.30	2.03	3.34	1.62	3.47

## SANTÉE RIVER BASIN

411

352224080500345 CRN49

LOCATION.--Lat 35°22'24", long 80°50'03", Mecklenburg County, Hydrologic Unit 03050103, North Mecklenburg High School, Old Statesville Rd., Huntersville, NC.

PERIOD OF RECORD.--April 1999 to current year.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, FOR PERIOD APRIL 1999 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	.43	.00	.00	.00	.00	.00
2	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
3	---	---	---	---	---	---	.00	.00	.00	.59	.00	.00
4	---	---	---	---	---	---	.03	.00	.00	.00	.00	.00
5	---	---	---	---	---	---	.00	.04	.00	.00	.00	.93
6	---	---	---	---	---	---	.00	.02	.00	.12	.00	.00
7	---	---	---	---	---	---	.00	.03	.00	.09	.15	.00
8	---	---	---	---	---	---	.00	.00	.00	.00	.22	.00
9	---	---	---	---	---	---	.00	.00	.22	.00	.00	.00
10	---	---	---	---	---	---	.00	.00	.24	.17	.00	.00
11	---	---	---	---	---	---	.00	.00	.00	.04	.00	.00
12	---	---	---	---	---	---	.00	.00	.00	.30	.00	.00
13	---	---	---	---	---	---	.00	.01	.00	.00	.00	.00
14	---	---	---	---	---	---	.00	.00	.00	.01	.00	.00
15	---	---	---	---	---	---	.20	.00	.46	.00	.00	.65
16	---	---	---	---	---	---	.00	.00	1.17	.00	.00	.08
17	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
18	---	---	---	---	---	---	.00	.41	.00	.00	.00	.00
19	---	---	---	---	---	---	.00	.13	.00	.00	.00	.00
20	---	---	---	---	---	---	.00	.00	.03	.00	.01	.00
21	---	---	---	---	---	---	.00	.00	.01	.00	.00	.14
22	---	---	---	---	---	---	.00	.00	.00	.00	.00	.02
23	---	---	---	---	---	---	.00	.00	.00	.00	.01	.00
24	---	---	---	---	---	---	.00	.00	.00	.69	.32	.00
25	---	---	---	---	---	---	.00	.00	1.04	.01	.26	.00
26	---	---	---	---	---	---	.00	.14	.25	.00	.14	.00
27	---	---	---	---	---	---	.77	.00	.02	.00	.00	.26
28	---	---	---	---	---	---	.28	.00	.00	.00	.00	1.39
29	---	---	---	---	---	---	.69	.00	.00	.06	.00	.62
30	---	---	---	---	---	---	.86	.00	.00	.00	.00	.00
31	---	---	---	---	---	---	---	.00	---	.00	.00	---
TOTAL	---	---	---	---	---	---	3.26	0.78	3.44	2.08	1.11	4.09



## SANTÉE RIVER BASIN

351503080510145 CRN50

LOCATION.--Lat 35°15'03", long 80°51'01", Mecklenburg County, Hydrologic Unit 03050103, Oaklawn School of Math and Science, Oaklawn Ave, Charlotte, NC.

PERIOD OF RECORD.--July 1999 to current year.

GAGE.--Tipping bucket raingage and electronic datalogger records rainfall at five-minute intervals.

REMARKS.--Gage is operated as part of Charlotte/Mecklenburg Rainfall Runoff Network.

PRECIPITATION, TOTAL, INCHES, FOR PERIOD JULY 1999 TO SEPTEMBER 1999  
DAILY SUM VALUES

[illegible]

## LAKES AND RESERVOIRS IN SOUTH ATLANTIC SLOPE BASIN

**02098197 B. EVERETT JORDAN LAKE**

LOCATION.--Lat 35°39'17", long 79°04'02", Chatham County, Hydrologic Unit 03030002, at B. Everett Jordan Dam on Haw River, 0.3 mi downstream of mouth of New Hope River, 2.5 mi north of Moncure, 4.2 mi upstream from mouth of Haw River, and 202.2 mi upstream from mouth of Cape Fear River.

DRAINAGE AREA.--1,689 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1972 to current year.

GAGE.--Water-stage recorder and staff gage at dam. Datum of gage is sea level.

REMARKS.--Lake is used for flood control, water supply, low-flow augmentation, and recreation. Some storage was affected during construction and then operated temporarily as a "dry reservoir" January 1975 to August 1981. Reservoir began filling September 1981 and reached normal pool elevation, 216 ft, Feb. 4, 1982. Total capacity is 32,825,074,000 ft<sup>3</sup> at 240.0 ft, of which 23,454,011,000 ft<sup>3</sup> is controlled flood storage. (See station 02098198.)

**02111391 W. KERR SCOTT RESERVOIR**

LOCATION.--Lat 36°08'04", long 81°13'30", Wilkes County, Hydrologic Unit 03040101, at W. Kerr Scott Dam on Yadkin River, 0.1 mi upstream from Fish Trap Creek, 2.0 mi upstream from Millers Creek, and 4.0 mi west of Wilkesboro.

DRAINAGE AREA.--350 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--August 1962 to current year.

GAGE.--Water-stage recorder and staff gage at dam. Datum of gage is sea level.

REMARKS.--Lake is used for flood control, low-flow augmentation, recreation, and water supply. Some storage was affected during construction in July 1962, but gates were closed Aug. 22, 1962. Reservoir reached normal pool elevation on Jan. 19, 1963. Total capacity at elevation 1075.0 ft is 6,664,680,000 ft<sup>3</sup> of which 4,878,720,000 ft<sup>3</sup> is controlled flood storage.

COOPERATION.--Records furnished by Corps of Engineers. (See station 02129000.)

**02122400 HIGH ROCK LAKE**

LOCATION.--Lat 35°36'02", long 80°14'06", Davidson County, Hydrologic Unit 03040103, at High Rock Dam on Yadkin River, 2 mi upstream from Lick Creek, 0.8 mi northwest of High Rock, and 256 mi upstream from mouth of Pee Dee River in Winyah Bay.

DRAINAGE AREA.--4,000 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--November 1927 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.

GAGE.--Water-stage recorder and staff gage at dam. Datum of gage is 30.9 ft below sea level.

REMARKS.--Lake, used for hydroelectric power development, was first put in operation Nov. 7, 1927. Total capacity is 11,090,000,000 ft<sup>3</sup>. Usable capacity, 10,230,000,000 ft<sup>3</sup>, is between 625 and 655 ft gage datum (top of gates).

COOPERATION.--Records furnished by Yadkin, Inc. (See station 02129000.)

**02122699 TUCKERTOWN RESERVOIR**

LOCATION.--Lat 35°29'03", long 80°10'30", Stanly County, Hydrologic Unit 03040103, at Tuckertown Dam on Yadkin River, 2.5 mi upstream from Garr Creek, 3.8 mi northeast of New London, and 250 mi upstream from mouth of Pee Dee River in Winyah Bay.

DRAINAGE AREA.--4,120 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--April 1962 to current year.

GAGE.--Remote water-stage recorder in powerhouse. Datum of gage is 30.9 ft below sea level.

REMARKS.--Lake, used for hydroelectric power development, was first filled Apr. 6, 1962. Total capacity is 1,852,400,000 ft<sup>3</sup>. Usable capacity, 293,800,000 ft<sup>3</sup>, is between 593 and 596 ft gage datum.

COOPERATION.--Records furnished by Yadkin, Inc. (See station 02129000.)

**02122844 BADIN LAKE**

LOCATION.--Lat 35°35'10", long 80°05'34", Stanly County, Hydrologic Unit 03040103, at Badin Dam on Yadkin River, 2.5 mi upstream from Falls Dam, 1.5 mi northeast of Badin, and 242 mi upstream from mouth of Pee Dee River in Winyah Bay.

DRAINAGE AREA.--4,180 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--December 1917 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.

GAGE.--Water-stage recorder and staff gage at dam. Datum of gage is 30.9 ft below sea level.

REMARKS.--Lake, generally known as Narrows Reservoir, used for hydroelectric power development, was first put in operation July 12, 1917. Total capacity is 10,497,960,000 ft<sup>3</sup>. Usable capacity, 5,616,584,000 ft<sup>3</sup>, is between 510.00 and 541.10 ft.

COOPERATION.--Records furnished by Yadkin, Inc. (See station 02129000.)

## LAKES AND RESERVOIRS IN SOUTH ATLANTIC SLOPE BASIN--Continued

**02123736 LAKE TILLERY**

LOCATION.--Lat 35°12'24", long 80°03'57", Stanly County, Hydrologic Unit 03040104, at Norwood Dam on Pee Dee River, 700 ft upstream from Norfolk Southern Railroad bridge, 5 mi upstream from Rocky River, 3.5 mi southeast of Norwood, and 224 mi upstream from mouth in Winyah Bay.

DRAINAGE AREA.--4,600 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--February 1928 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.

GAGE.--Water-stage recorder and float-tape gage at dam. Datum of gage is 38.67 ft above sea level (levels by Carolina Power and Light Co.).

REMARKS.--Lake, used for hydroelectric power development, was first put in operation during January 1928. Total capacity is 7,274,520,000 ft<sup>3</sup>. Usable capacity, 5,927,040,000 ft<sup>3</sup>, is between elevations 200.5 and 239.5 ft gage datum (top of gates).

COOPERATION.--Records furnished by Carolina Power and Light Co. (See station 02129000.)

**02128800 BLEWETT FALLS LAKE**

LOCATION.--Lat 34°58'58", long 79°52'40", Richmond County, Hydrologic Unit 03040104, at Blewett Falls Dam on Pee Dee River, 1.2 mi upstream from Cartledge Creek, 6.5 mi northwest of Rockingham, and 195 mi upstream from mouth in Winyah Bay.

DRAINAGE AREA.--6,830 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--December 1929 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.

GAGE.--Self-synchronous motor, dial indicator, and staff gage at dam. Datum of gage is 39.08 ft above sea level (levels by Carolina Power and Light Co.).

REMARKS.--Lake, used for hydroelectric power development, was first put in use during 1911. Total capacity is 4,225,320,000 ft<sup>3</sup>. Usable capacity, 1,850,000,000 ft<sup>3</sup>, is between 120.0 and 139.0 ft gage datum (top of flashboards).

COOPERATION.--Records furnished by Carolina Power and Light Co. (See station 02129000.)

**02138519 LAKE JAMES**

LOCATION.--Lat 35°44'36", long 81°50'22", Burke County, Hydrologic Unit 03050101, at Linville Dam at intake tower on Catawba River, 2.1 mi northeast of Bridgewater, and 279 mi upstream from mouth of Wateree River.

DRAINAGE AREA.--380 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--March 1920 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.

GAGE.--Float gage with self-synchronous motor to indicator in powerhouse. Staff gage at Catawba River Dam is also read when lake elevation drops below 1,160 ft, 60 ft gage datum, and lake becomes two separate reservoirs. Datum of gage is 1,100.00 ft above sea level (levels by Duke Power Co.).

REMARKS.--Lake, generally known as Bridgewater Reservoir, used for hydroelectric power development, was first put in operation May 5, 1919. The total capacity is 12,581,800,000 ft<sup>3</sup> at 100.0 ft gage datum (crest of spillway). Usable capacity, 7,943,700,000 ft<sup>3</sup>, is between 65.0 and 100.0 ft gage datum.

COOPERATION.--Records furnished by Duke Power Co.

**02141490 RHODHISS LAKE**

LOCATION.--Lat 35°46'54", long 81°26'42", Caldwell County, Hydrologic Unit 03030101, at Rhodhiss Dam on Catawba River, 0.8 mi west of Rhodhiss, 1.8 mi south of Granite Falls, and 243 mi upstream from mouth of Wateree River.

DRAINAGE AREA.--1,090 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--September 1935 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.

GAGE.--Float gage, indicator, and reference point at dam. Datum of gage is 895.1 ft above sea level (levels by Duke Power Co.).

REMARKS.--Lake, used for hydroelectric power development, was first put in operation Feb. 18, 1925. Total capacity is 3,188,592,000 ft<sup>3</sup>. Usable capacity, 1,717,000,000 ft<sup>3</sup>, is between elevations 85.0 and 100.0 ft gage datum (crest of spillway).

COOPERATION.--Records furnished by Duke Power Co.

## LAKES AND RESERVOIRS IN SOUTH ATLANTIC SLOPE BASIN--Continued

**02141961 LAKE HICKORY**

LOCATION.--Lat 35°49'28", long 81°11'28", Alexander County, Hydrologic Unit 03050101, at Oxford Dam on Catawba River, 2 mi upstream from Lower Little River, 7 mi south of Taylorsville, and 226 mi upstream from mouth of Wateree River.

DRAINAGE AREA.--1,310 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--September 1935 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.

GAGE.--Float gage and indicator at dam. Datum of gage is 835.0 ft above sea level (levels by Duke Power Co.).

REMARKS.--Lake, generally known as Oxford Reservoir, used for hydroelectric power development, was first put in operation Apr. 5, 1928. Total capacity is 5,552,985,000 ft<sup>3</sup>. The usable capacity from Sept. 1, 1935, to Sept. 30, 1957, was considered to be 2,277,970,200 ft<sup>3</sup> between 85.0 and 100.0 ft gage datum (top of flood gates). Usable capacity from Apr. 30, 1928, to Aug. 31, 1935, Oct. 1, 1957, to Sept. 30, 1964, was considered to be 3,378,400,000 ft<sup>3</sup> between 75.0 and 100.0 ft gage datum (top of flood gates); and from Oct. 1, 1964, to present, is considered to be 2,277,800,000 ft<sup>3</sup> between 85.0 and 100.0 ft gage datum (top of flood gates).

COOPERATION.--Records furnished by Duke Power Co.

**02142441 LOOKOUT SHOALS LAKE**

LOCATION.--Lat 35°45'57", long 81°05'36", Catawba County, Hydrologic Unit 03050101, at Lookout Shoals Dam on Catawba River, 4 mi upstream from bridge on U.S. Highways 64 and 70, 4.2 mi north of Catawba, and 216 mi upstream from mouth of Wateree River.

DRAINAGE AREA.--1,450 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--December 1915 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.

GAGE.--Float gage, indicator, and staff gage at dam. Datum of gage is 738.1 ft above sea level (levels by Duke Power Co.).

REMARKS.--Lake, used for hydroelectric power development, was first put in operation Dec. 2, 1915. Total capacity was originally 1,355,190,000 ft<sup>3</sup>. Capacity has been reduced by silting. The usable capacity prior to October 1957 was considered to be 473,980,000 ft<sup>3</sup> and from October 1957 to Sept. 30, 1964, was considered to be 388,300,000 ft<sup>3</sup> between elevations 90.0 and 100.0 ft gage datum (crest of spillway). Usable capacity from Oct. 1, 1964, to present is considered to be 208,200,000 ft<sup>3</sup> between 95.0 and 100.0 ft gage datum (crest of spillway). Flood of July 16, 1916, washed out an earth dike.

COOPERATION.--Records furnished by Duke Power Co.

**02142647 LAKE NORMAN**

LOCATION.--Lat 35°26'05", long 80°57'28", Mecklenburg County, Hydrologic Unit 03050101, at Cowans Ford Dam on Catawba River, 0.8 mi upstream from Derr Creek, 7.8 mi southwest of Davidson, and 182 mi upstream from mouth of Wateree River.

DRAINAGE AREA.--1,790 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--March 1962 to current year.

GAGE.--Float gage with transmitter to dial meter in control room. Datum of gage is 660 ft above sea level (levels by Duke Power Co.).

REMARKS.--Lake, used for hydroelectric power development, began filling in March 1962. Total capacity is 47,586,200,000 ft<sup>3</sup>. Usable capacity, 26,910,400,000 ft<sup>3</sup>, is between 75.0 and 100.0 ft gage datum (top of flood gates).

COOPERATION.--Records furnished by Duke Power Co.

**02142676 MOUNTAIN ISLAND LAKE**

LOCATION.--Lat 35°20'03", long 80°59'12", Gaston County, Hydrologic Unit 03050101, at Mountain Island Dam on Catawba River, 1.5 mi downstream from bridge on State Highway 16, 3 mi northeast of Mount Holly, and 167 mi upstream from mouth of Wateree River.

DRAINAGE AREA.--1,860 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--December 1923 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.

GAGE.--Float gage, indicator, and stage gage at dam. Datum of gage is 547.5 ft above sea level (levels by Duke Power Co.).

REMARKS.--Lake, used for hydroelectric power development, was first put in operation Dec. 16, 1923. Total capacity is 2,495,988,000 ft<sup>3</sup>. Usable capacity prior to October 1964 was considered to be 1,132,000,000 ft<sup>3</sup> between 90.0 and 100.0 ft gage datum (crest of spillway) and from October 1964 to present, 845,000,000 ft<sup>3</sup>, is considered to be between 93.0 and 100.0 ft gage datum (crest of spillway).

COOPERATION.--Records furnished by Duke Power Co.



## LAKES AND RESERVOIRS IN SOUTH ATLANTIC SLOPE BASIN--Continued

**OTHER RESERVOIRS**

The following smaller reservoirs in the South Atlantic Slope basin are described below. Records of contents are not published herein.

**02093981 LAKE HIGGINS**

LOCATION.--Lat 36°10'11", long 79°52'49", Guilford County, Hydrologic Unit 03030002, on Brush Creek near Greensboro.

DRAINAGE AREA.--12 mi<sup>2</sup>, approximately.

REMARKS.--Lake is part of Greensboro's municipal water supply. Total capacity is 107,000,000 ft<sup>3</sup>. Reservoir was first filled Mar. 1, 1957. (See station 02094500.)

**02094117 LAKE BRANDT**

LOCATION.--Lat 36°10'20", long 79°50'20", Guilford County, Hydrologic Unit 03030002, on Reedy Fork and Horsepen Creek near Greensboro.

DRAINAGE AREA.--70.0 mi<sup>2</sup>, approximately.

REMARKS.--Total capacity is 294,000,000 ft<sup>3</sup>. Dam was completed February 1923 and raised to present level 1959-60.

Reservoir first filled to present level on Oct. 8, 1960. Lake is part of Greensboro's municipal water supply. (See station 02094500.)

**02094305 LAKE TOWNSEND**

LOCATION.--Lat 36°11'25", long 79°43'57", Guilford County, Hydrologic Unit 03030002, on Reedy Fork near Greensboro.

DRAINAGE AREA.--105 mi<sup>2</sup>.

REMARKS.--Lake is part of Greensboro's municipal water supply. Total capacity is 869,000,000 ft<sup>3</sup>. Dam was completed Oct. 18, 1968, and reservoir was first filled on Aug. 17, 1969. (See station 02094500.)

**02096003 LAKE BURLINGTON**

LOCATION.--Lat 36°10'25", long 79°24'53", Alamance County, Hydrologic Unit 03030002, on Stony Creek near Burlington.

DRAINAGE AREA.--44 mi<sup>2</sup>, approximately.

REMARKS.--Lake is part of Burlington's municipal water supply. Prior to October 1971 published as "Stony Creek Reservoir." Total capacity is 427,800,000 ft<sup>3</sup>. Dam completed August 1960 and reservoir first filled Jan. 28, 1961. (See station 02096500.)

**02096432 STONY CREEK RESERVOIR**

LOCATION.--Lat 36°07'37", long 79°24'20", Alamance County, Hydrologic Unit 03030002, on Stony Creek near Burlington.

DRAINAGE AREA.--95.0 mi<sup>2</sup>, approximately.

REMARKS.--Lake is part of Burlington's water supply. Prior to October 1971 published as "Lake Burlington." Total capacity is 64,900,000 ft<sup>3</sup>. Dam completed and reservoir filled in 1928. (See station 02096500.)

**02098495 OAK HOLLOW RESERVOIR**

LOCATION.--Lat 36°00'42", long 79°59'11", Guilford County, Hydrologic Unit 03030003, on West Fork Deep River and 1.8 mi southwest of Deep River.

DRAINAGE AREA.--32 mi<sup>2</sup>, approximately.

REMARKS.--Lake is part of High Point's municipal water supply. Total capacity is 468,000,000 ft<sup>3</sup>. Dead storage (nonwithdrawal) is minor. Total surface area, about 725 acres. Dam completed and filling began in May 1970. Reservoir first filled Dec. 24, 1970. (See station 02099500.)

**02099096 HIGH POINT MUNICIPAL LAKE**

LOCATION.--Lat 35°59'43", long 79°56'42", Guilford County, Hydrologic Unit 03030003, on Deep River near High Point, High Point's municipal water supply.

DRAINAGE AREA.--61.4 mi<sup>2</sup>.

REMARKS.--Total capacity is 220,588,000 ft<sup>3</sup>. Dam completed in 1926 and reservoir first filled in 1927. (See station 02099500)

**02102178 BUCKHORN RESERVOIR**

LOCATION.--Lat 35°31'35", long 78°59'22", Chatham County, Hydrologic Unit 03030004, on Cape Fear River near Corinth.

DRAINAGE AREA.--3,200 mi<sup>2</sup>, approximately.

REMARKS.-- Usable capacity is 69,700,000 ft<sup>3</sup>. Completed and filled in 1908. Hydroelectric power operation stopped Dec. 31, 1962.

**02102190 SHEARON HARRIS MAIN RESERVOIR**

LOCATION.--Lat 35°34'00", long 78°57'55", Chatham County, Hydrologic Unit 03030004, on Buckhorn Creek near Corinth.

DRAINAGE AREA.--71 mi<sup>2</sup>.

REMARKS.--Lake is a cooling-water reservoir for Carolina Power and Light Co. powerplant. Total capacity is 3,136,320,000 ft<sup>3</sup> with a surface area of 4,150 acres at a normal elevation of 220 ft above sea level. Dam was completed Dec. 23, 1981, and filling began Dec. 1, 1980. (See station 02102192.)

## LAKES AND RESERVOIRS IN SOUTH ATLANTIC SLOPE BASIN--Continued

**02121461 LEXINGTON-THOMASVILLE RESERVOIR**

LOCATION.--Lat 35°51'54", long 80°11'41", Davidson County, Hydrologic Unit 03050103, on Abbotts Creek near Lexington.

DRAINAGE AREA.--70.3 mi<sup>2</sup>.

REMARKS.--Total capacity is 284,100,000 ft<sup>3</sup> of which 281,400,000 ft<sup>3</sup> is usable. Dam completed Aug. 8, 1957, and reservoir first filled Nov. 23, 1957. Lexington and Thomasville's municipal water supply.

**02184122 LAKE TOXAWAY**

LOCATION.--Lat 35°07'27", long 82°55'56", Transylvania County, Hydrologic Unit 03060101, on Toxaway River at town of Lake Toxaway.

DRAINAGE AREA.--7.79 mi<sup>2</sup>.

REMARKS.--A recreation lake. Total surface area is about 640 acres. Lake reached spillway elevation September 1961.



## SOUTH ATLANTIC SLOPE BASIN

## LAKES AND RESERVOIRS IN SOUTH ATLANTIC SLOPE BASIN--Continued

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Elevation (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
02098197 B. Everett Jordan Lake			02111391 W. Kerr Scott Reservoir			
Sept. 30 .....	213.2	7,780	--	1,028.58	1,722.53	--
Oct. 31 .....	211.6	6,958	-822	1,029.21	1,755.95	+33
Nov. 30 .....	210.6	6,476	-482	1,028.94	1,743.38	-13
Dec. 31 .....	212.9	7,619	+1,143	1,030.13	1,801.24	+58
CAL YR 1998		--	-2,959		--	+15
Jan. 31 .....	219.9	11,962	+4,343	1,030.00	1,790.23	-11
Feb. 28 .....	216.2	9,497	-2,465	1,030.20	1,807.17	+17
Mar. 31 .....	216.6	9,748	+251	1,030.09	1,797.85	-9
Apr. 30 .....	217.6	10,385	+637	1,031.39	1,901.47	+104
May 31 .....	216.0	9,371	-1,014	1,030.02	1,791.92	-110
June 30 .....	214.8	8,668	-703	1,030.18	1,805.48	+14
July 31 .....	214.0	8,216	-452	1,030.14	1,802.09	-3
Aug. 31 .....	213.5	7,944	-272	1,028.84	1,737.59	-64
Sept. 30 .....	223.3	14,564	+6,620	1,028.78	1,734.11	-3
WTR YR 1999		--	+6,784		--	+13
Date	Elevation (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Gage Height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
02122400 High Rock Lake			02122699 Tuckertown Reservoir			
Sept. 30 .....	648.9	7,514	--	594.38	1,688	--
Oct. 31 .....	646.9	6,528	-986	594.93	1,741	+53
Nov. 30 .....	645.7	5,978	-550	594.01	1,653	-88
Dec. 31 .....	641.8	4,427	-1,551	595.25	1,775	+122
CAL YR 1998		--	-1,776		--	-1
Jan. 31 .....	651.2	8,757	+4,330	595.60	1,811	+36
Feb. 28 .....	646.6	6,389	-2,368	595.30	1,780	-31
Mar. 31 .....	644.8	5,586	-803	595.43	1,793	+13
Apr. 30 .....	653.6	10,182	+4,596	594.72	1,720	-73
May 31 .....	652.1	9,275	-907	595.09	1,758	+38
June 30 .....	651.2	8,757	-518	595.01	1,750	-8
July 31 .....	651.8	9,096	+339	593.68	1,622	-128
Aug. 31 .....	650.9	8,588	-508	593.86	1,639	+17
Sept. 30 .....	650.2	8,201	-387	595.89	1,841	+202
WTR YR 1999		--	+687		--	+153

## LAKES AND RESERVOIRS IN SOUTH ATLANTIC SLOPE BASIN--Continued

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Gage Height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Gage Height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
02122844 Badin Lake			02123736 Lake Tillery			
Sept. 30.....	538.7	9,937	--	278.0	5,881	--
Oct. 31.....	538.6	9,914	-23	277.9	5,859	-22
Nov. 30.....	538.9	9,984	+70	277.7	5,815	-44
Dec. 31.....	540.3	10,311	+327	277.4	5,750	-65
CAL YR 1998		--	-46		--	-131
Jan. 31.....	540.2	10,287	-24	277.3	5,729	-21
Feb. 28.....	540.1	10,264	-23	277.7	5,815	+86
Mar. 31.....	540.4	10,334	+70	277.4	5,750	-65
Apr. 30.....	539.1	10,031	-303	277.9	5,859	+109
May 31.....	539.8	10,194	-163	278.0	5,881	+22
June 30.....	539.0	10,007	-187	277.6	5,794	-87
July 31.....	539.0	10,007	0	277.7	5,815	+21
Aug. 31.....	538.8	9,961	-46	277.8	5,837	+22
Sept. 30.....	539.5	10,124	+163	276.8	5,622	-215
WTR YR 1999		--	+187		--	-259
Date	Elevation (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Gage Height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
02128800 Blewett Falls Lake			02138519 Lake James			
Sept. 30.....	176.3	1,661	--	94.8	11,173	--
Oct. 31.....	174.5	1,480	-181	95.2	11,277	+104
Nov. 30.....	169.4	970	-510	94.4	11,069	-208
Dec. 31.....	175.6	1,590	+620	95.6	11,386	+317
CAL YR 1998		--	-330		--	+57
Jan. 31.....	173.7	1,400	-190	95.8	11,434	+48
Feb. 28.....	177.3	1,766	+366	92.3	10,539	-895
Mar. 31.....	175.9	1,620	-146	95.1	11,251	+712
Apr. 30.....	180.2	2,060	+440	97.2	11,808	+557
May 31.....	177.2	1,756	-304	98.1	12,053	+245
June 30.....	176.0	1,630	-126	98.0	12,025	-28
July 31.....	177.4	1,776	+146	97.2	11,808	-217
Aug. 31.....	176.1	1,640	-136	95.3	11,303	-505
Sept. 30.....	179.1	1,950	+310	94.5	11,095	-208
WTR YR 1999		--	+289		--	-78

## SOUTH ATLANTIC SLOPE BASIN

## LAKES AND RESERVOIRS IN SOUTH ATLANTIC SLOPE BASIN--Continued

## MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Gage Height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Gage Height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
02141490 Rhodhiss Lake			02141961 Lake Hickory			
Sept. 30 .....	96.9	1,270	--	97.0	1,758	--
Oct. 31 .....	96.6	1,230	-40	97.5	1,842	+84
Nov. 30 .....	99.0	1,567	+337	96.9	1,941	+99
Dec. 31 .....	96.8	1,257	-310	97.2	1,791	-150
CAL YR 1998		--	-68		--	-150
Jan. 31 .....	96.5	1,216	-41	96.4	1,658	-133
Feb. 28 .....	97.2	1,311	+95	96.7	1,708	+50
Mar. 31 .....	97.6	1,367	+56	97.2	1,791	+83
Apr. 30 .....	97.7	1,381	+14	97.4	1,825	+34
May 31 .....	97.9	1,409	+28	97.1	1,775	-50
June 30 .....	97.3	1,325	-84	97.9	1,910	+135
July 31 .....	96.8	1,257	-68	96.5	1,674	-236
Aug. 31 .....	96.6	1,230	-27	96.7	1,708	+34
Sept. 30 .....	97.3	1,325	+95	96.9	1,941	+233
WTR YR 1999		--	+55		--	+183
Date	Gage Height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Gage Height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
02142441 Lookout Shoals Lake			02142647 Lake Norman			
Sept. 30 .....	97.1	84	--	95.5	41,520	--
Oct. 31 .....	96.9	76	-8	95.4	41,390	-130
Nov. 30 .....	97.3	92	+16	95.3	41,260	-130
Dec. 31 .....	97.2	88	-4	95.9	42,030	+770
CAL YR 1998		--	+21		--	+250
Jan. 31 .....	96.5	59	-29	95.4	41,390	-640
Feb. 28 .....	98.2	130	+71	94.0	39,630	-1,760
Mar. 31 .....	97.5	100	-30	95.0	40,880	+1,250
Apr. 30 .....	98.3	138	+38	97.2	43,740	+2,860
May 31 .....	97.3	92	-46	98.1	44,960	+1,220
June 30 .....	96.4	55	-37	98.3	45,230	+270
July 31 .....	97.0	80	+25	97.1	43,600	-1,630
Aug. 31 .....	96.5	59	-21	96.1	42,290	-1,310
Sept. 30 .....	97.4	94	+35	95.2	41,140	-1,150
WTR YR 1999		--	+10		--	-380

## LAKES AND RESERVOIRS IN SOUTH ATLANTIC SLOPE BASIN--Continued

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Gage Height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
02142676 Mountain Island Lake			
Sept. 30 .....	96.1	342	--
Oct. 31 .....	96.4	378	+36
Nov. 30 .....	96.7	414	+36
Dec. 31 .....	96.9	438	+24
CAL YR 1998		--	+48
Jan. 31 .....	97.5	512	+74
Feb. 28 .....	97.2	475	-37
Mar. 31 .....	96.1	342	-133
Apr. 30 .....	96.3	366	+24
May 31 .....	96.3	366	0
June 30 .....	96.6	402	+36
July 31 .....	97.6	525	+123
Aug. 31 .....	96.5	390	-135
Sept. 30 .....	96.7	414	+24
WTR YR 1999		--	+72

## KANAWHA RIVER BASIN

03161000 SOUTH FORK NEW RIVER NEAR JEFFERSON, NC

LOCATION.--Lat 36°23'35", long 81°24'26", Ashe County, Hydrologic Unit 05050001, on right bank 600 ft upstream from bridge on State Highways 16 and 88, 0.2 mi downstream of Bear Creek, and 4 mi southeast of Jefferson.

DRAINAGE AREA.--205 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1925-26(M), 1928-30(M), 1931-32, 1933-35(M), 1941-42(m), 1944(m). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,657.04 ft above sea level. Prior to Oct. 14, 1934, nonrecording gage on bridge 400 ft downstream at same datum. Oct. 14, 1934, to Mar. 25, 1935, nonrecording gage at present site and datum. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Maximum discharge for period of record, from rating curve extended above 14,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Minimum discharge for period of record result of freezeup. Minimum discharge for current water year also occurred Sept. 26.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 15, 1916, reached a stage of 18.0 ft, from floodmarks witnessed by local resident; discharge, 35,200 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	160	145	136	e194	363	510	371	627	181	239	168	126
2	156	144	135	e191	669	416	455	453	181	323	e180	120
3	151	147	133	e367	525	430	338	380	191	348	e162	116
4	146	151	135	e490	434	521	314	340	195	343	e155	115
5	151	146	134	e275	381	e452	299	317	175	266	145	124
6	172	145	136	e233	346	e443	287	320	166	233	140	158
7	204	146	135	e226	332	e429	278	347	161	245	134	201
8	520	141	144	e243	329	e420	270	318	157	390	132	139
9	428	142	162	e393	305	407	266	331	155	280	133	122
10	232	145	166	e615	299	394	260	284	164	235	138	116
11	196	220	151	e376	284	370	255	270	229	251	131	111
12	179	300	151	e310	278	356	269	259	317	394	124	107
13	170	186	980	e290	276	339	244	256	187	854	122	105
14	166	163	662	293	e268	367	238	387	166	455	130	105
15	160	156	316	930	e264	451	271	370	159	357	171	108
16	158	157	244	697	250	457	327	294	179	337	130	123
17	158	152	214	447	252	416	267	271	342	303	121	115
18	157	145	200	423	423	415	245	281	243	282	117	101
19	155	141	194	463	465	418	240	351	185	346	110	98
20	154	141	205	373	401	391	239	345	170	241	140	101
21	150	142	214	328	e393	390	229	273	171	222	173	106
22	148	140	192	306	e367	401	222	257	176	213	146	108
23	146	138	182	838	e342	356	219	248	170	222	146	100
24	147	138	248	1700	e318	344	216	236	168	197	197	98
25	148	138	418	1060	e298	339	220	230	202	270	383	93
26	148	143	277	667	294	320	216	222	319	251	507	92
27	147	145	232	528	294	309	234	217	391	195	234	121
28	147	140	213	450	359	297	426	205	430	181	171	374
29	146	135	206	402	---	287	433	196	308	179	151	552
30	147	135	202	366	---	280	613	190	251	174	141	352
31	146	---	e197	340	---	273	---	185	---	175	130	---
TOTAL	5593	4607	7314	14814	9809	11998	8761	9260	6489	9001	5162	4407
MEAN	180	154	236	478	350	387	292	299	216	290	167	147
MAX	520	300	980	1700	669	521	613	627	430	854	507	552
MIN	146	135	133	191	250	273	216	185	155	174	110	92
CFSM	.88	.75	1.15	2.33	1.71	1.89	1.42	1.46	1.06	1.42	.81	.72
IN.	1.01	.84	1.33	2.69	1.78	2.18	1.59	1.68	1.18	1.63	.94	.80

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1999, BY WATER YEAR (WY)

	MEAN	361	406	409	478	523	593	566	463	392	333	355	325
MAX	901	1889	797	1346	1173	1316	1350	1052	1036	904	2613	1212	
(WY)	1991	1978	1958	1995	1998	1979	1983	1973	1992	1941	1940	1979	
MIN	117	124	146	140	197	222	236	220	158	111	93.7	99.5	
(WY)	1955	1932	1934	1940	1934	1988	1986	1941	1988	1930	1925	1954	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

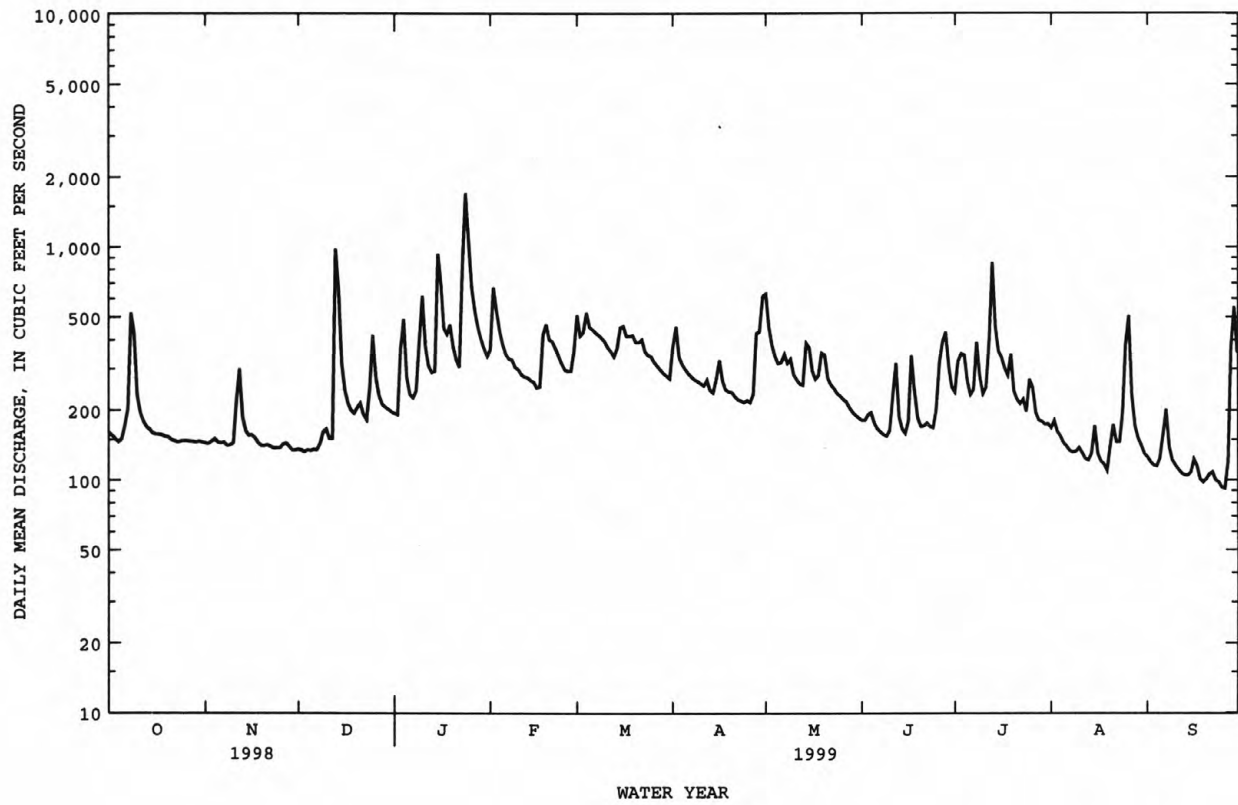
## WATER YEARS 1925 - 1999

ANNUAL TOTAL	190878	97215	
ANNUAL MEAN	523	266	433
HIGHEST ANNUAL MEAN			669
LOWEST ANNUAL MEAN			233
HIGHEST DAILY MEAN	6480	Jan 8	27700
LOWEST DAILY MEAN	133	Dec 3	65
ANNUAL SEVEN-DAY MINIMUM	135	Nov 29	72
INSTANTANEOUS PEAK FLOW			52800*
INSTANTANEOUS PEAK STAGE			22.50
INSTANTANEOUS LOW FLOW			52*
ANNUAL RUNOFF (CFSM)	2.55	1.30	2.11
ANNUAL RUNOFF (INCHES)	34.64	17.64	28.69
10 PERCENT EXCEEDS	974	429	715
50 PERCENT EXCEEDS	366	232	349
90 PERCENT EXCEEDS	147	134	171

e Estimated.

\* See REMARKS.

03161000 SOUTH FORK NEW RIVER NEAR JEFFERSON, NC--Continued





## TENNESSEE RIVER BASIN

03439000 FRENCH BROAD RIVER AT ROSMAN, NC

LOCATION.--Lat 35°08'32", long 82°49'28", Transylvania County, Hydrologic Unit 06010105, on left bank 50 ft upstream from bridge on U.S. Highway 178 at Rosman, 1.0 mi upstream from East Fork, and at mile 216.4.

DRAINAGE AREA.--67.9 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1907 to June 1909, October 1935 to current year. Monthly discharge only for some periods published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1306: 1908(M). WSP 1910: 1936(M), 1938(M), 1939-40, 1942-43.

GAGE.--Water-stage recorder. Datum of gage is 2,173.83 ft above sea level. Prior to June 30, 1909, nonrecording gage at site 500 ft downstream at different datum. Jan. 1, 1936, to July 6, 1937, nonrecording gage at present site and datum. Satellite and telephone telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Minimum discharge for period of record result of freezeup. Minimum daily discharge occurred several days in Sept. and Oct. 1954. Minimum discharge for current water year also occurred Oct. 28, Nov. 1, Dec. 6, 7, 8, and Sept. 13.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916 reached a stage of 13.9 ft, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	63	65	97	639	207	1290	175	119	138	112	74
2	71	64	63	211	530	192	528	164	120	133	109	73
3	70	90	63	627	425	219	398	159	153	133	106	72
4	73	71	63	290	359	199	342	156	121	145	104	70
5	197	67	63	e188	314	190	305	164	117	164	102	69
6	97	65	62	e170	283	190	278	322	116	169	99	69
7	367	63	61	174	262	184	254	306	112	191	96	69
8	485	63	78	175	237	178	243	342	109	186	93	67
9	140	64	100	182	218	185	238	248	106	166	92	66
10	104	101	70	169	274	182	213	209	161	153	91	69
11	89	345	66	160	229	181	202	191	136	182	87	65
12	81	116	67	154	214	177	192	186	116	225	85	64
13	76	92	186	150	196	175	188	180	110	203	89	63
14	73	91	128	158	185	297	185	178	107	177	89	65
15	67	121	101	266	181	300	209	170	130	162	82	67
16	65	125	91	184	178	238	190	164	254	153	81	66
17	65	155	85	174	220	214	179	160	188	144	80	65
18	64	115	80	278	323	197	175	158	143	145	76	68
19	65	101	88	208	342	188	172	161	128	141	75	72
20	65	94	96	186	313	183	177	153	121	142	78	74
21	64	86	85	176	266	215	169	150	117	138	77	84
22	63	82	87	175	232	188	166	148	116	131	74	94
23	63	80	97	423	214	180	163	146	115	128	74	81
24	63	78	237	644	200	180	161	140	168	272	117	80
25	63	75	183	362	193	176	159	135	362	258	179	80
26	63	74	147	292	188	198	160	134	183	164	96	79
27	63	70	129	249	188	192	162	132	174	148	86	112
28	63	67	121	219	264	188	165	127	167	143	82	295
29	63	66	119	199	---	185	166	125	158	132	80	160
30	63	66	107	217	---	180	198	122	147	125	78	128
31	64	---	100	233	---	275	---	120	---	118	75	---
TOTAL	3085	2810	3088	7390	7667	6233	7627	5425	4374	5009	2844	2560
MEAN	99.5	93.7	99.6	238	274	201	254	175	146	162	91.7	85.3
MAX	485	345	237	644	639	300	1290	342	362	272	179	295
MIN	63	63	61	97	178	175	159	120	106	118	74	63
CFSM	1.47	1.38	1.47	3.51	4.03	2.96	3.74	2.58	2.15	2.38	1.35	1.26
IN.	1.69	1.54	1.69	4.05	4.20	3.41	4.18	2.97	2.40	2.74	1.56	1.40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 1999,<sup>6</sup> BY WATER YEAR (WY)

	MEAN	178	203	246	288	323	340	327	265	221	177	188	164
	MAX	734	635	489	672	648	787	582	551	882	624	543	447
	(WY)	1965	1993	1993	1937	1939	1979	1983	1909	1909	1989	1994	1950
	MIN	42.2	56.7	72.6	72.0	130	135	108	114	79.8	75.8	65.3	43.6
	(WY)	1955	1955	1940	1981	1963	1988	1986	1941	1988	1986	1954	1954

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1908 - 1999<sup>6</sup>

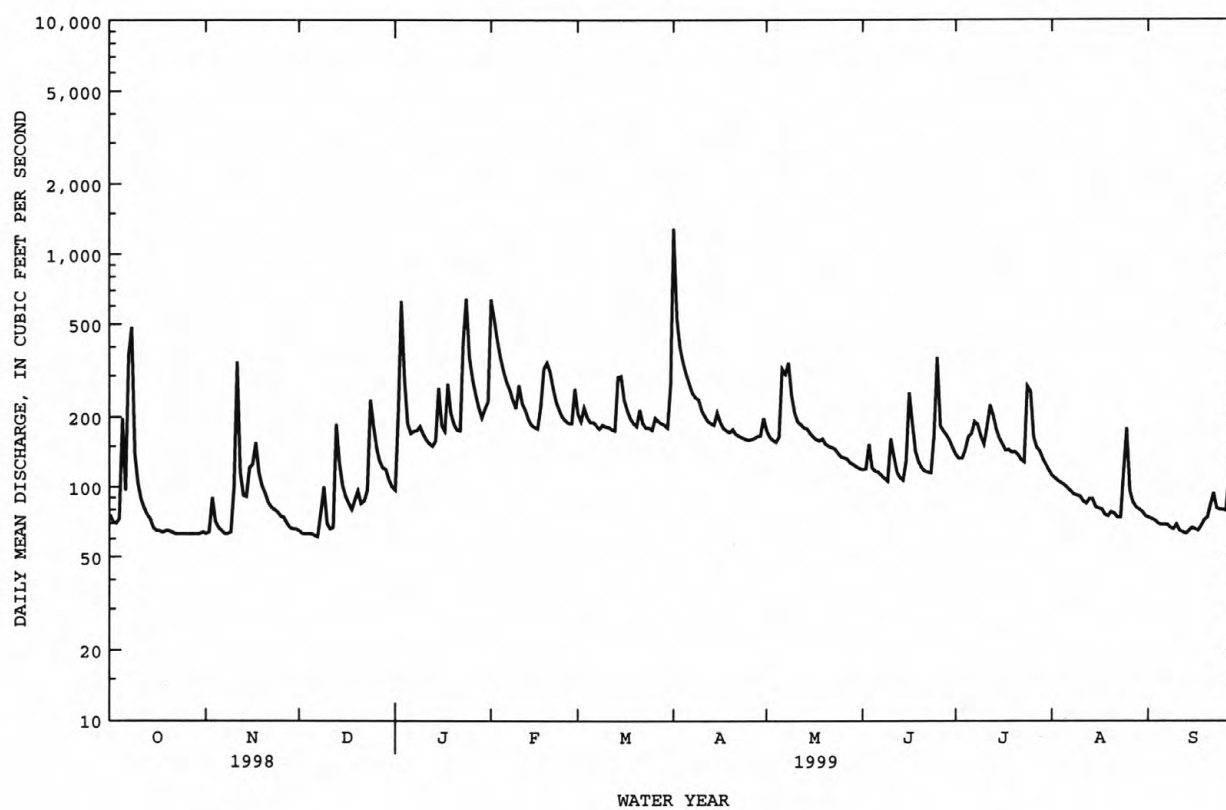
ANNUAL TOTAL	93900	58112	
ANNUAL MEAN	257	159	241
HIGHEST ANNUAL MEAN			370
LOWEST ANNUAL MEAN			136
HIGHEST DAILY MEAN	3180	Jan 7	5630
LOWEST DAILY MEAN	54	Sep 10	37*
ANNUAL SEVEN-DAY MINIMUM	56	Sep 8	38
INSTANTANEOUS PEAK FLOW			13500
INSTANTANEOUS PEAK STAGE		6.53	Apr 1
INSTANTANEOUS LOW FLOW		61*	Oct 23
ANNUAL RUNOFF (CFSM)	3.79	2.34	3.55
ANNUAL RUNOFF (INCHES)	51.44	31.84	48.24
10 PERCENT EXCEEDS	517	266	423
50 PERCENT EXCEEDS	142	145	193
90 PERCENT EXCEEDS	63	66	88

e Estimated.

<sup>6</sup> See PERIOD OF RECORD.

\* See REMARKS.

03439000 FRENCH BROAD RIVER AT ROSMAN, NC--Continued



## TENNESSEE RIVER BASIN

03440000 CATHEYS CREEK NEAR BREVARD, NC

LOCATION.--Lat 35°12'40", long 82°47'00", Transylvania County, Hydrologic Unit 06010105, on right bank 1,200 ft downstream of Kuykendall Creek, 1.0 mi upstream from U.S. Highway 64, 2.1 mi upstream from mouth, and 3.2 mi southwest of Brevard.

DRAINAGE AREA.--11.7 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1944 to September 1955, November 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,230 ft above sea level, from topographic map. Prior to Oct. 2, 1946, at site 0.9 mi downstream at different datum. October 2, 1946, to Jan. 9, 1947, at site 0.8 mi downstream of present gage at different datum. Jan. 10, 1947, to Oct. 3, 1951, at present site at different datum. Oct. 3, 1951, to Sept. 30, 1955, at site 40 ft downstream at different datum. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge for period of record from rating curve extended above 600 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. City of Brevard diverted about 1.9 ft<sup>3</sup>/s from Catheys Creek for municipal water supply. Minimum discharge for period of record and current water year also occurred Sept. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	7.5	7.8	12	75	29	137	32	19	21	15	9.6
2	7.3	7.6	8.1	33	64	28	65	29	22	20	15	9.1
3	7.3	12	7.9	70	52	30	51	28	23	22	15	8.9
4	7.9	8.0	7.7	35	44	27	45	26	20	25	15	8.2
5	23	7.9	7.8	28	38	26	41	30	19	23	15	8.7
6	11	8.0	7.9	27	35	26	39	51	19	21	14	8.6
7	45	7.1	7.5	20	33	25	36	50	18	26	14	8.5
8	56	8.0	15	21	30	24	36	51	17	31	13	7.8
9	15	7.6	14	22	29	27	35	40	17	26	14	7.9
10	12	14	9.9	20	37	27	32	35	21	23	13	7.7
11	11	39	9.1	18	31	26	32	33	18	34	13	7.5
12	10	13	9.8	17	29	25	30	32	17	41	12	7.1
13	9.3	11	31	17	27	25	30	31	16	36	12	6.9
14	9.2	13	17	19	26	42	30	30	17	30	12	7.2
15	9.0	15	14	32	25	39	35	29	24	27	12	6.9
16	8.6	19	12	22	24	33	31	28	38	24	11	6.0
17	8.7	18	12	21	32	30	29	27	25	24	11	6.1
18	8.3	14	10	39	45	29	28	27	19	22	10	6.6
19	8.1	12	12	29	52	27	28	27	18	21	10	7.3
20	7.8	11	12	25	47	27	28	25	18	27	11	6.5
21	7.8	11	11	23	40	31	27	25	17	24	11	7.8
22	7.7	10	11	23	35	27	26	24	17	21	9.7	7.7
23	7.8	9.8	13	72	33	26	26	24	17	19	10	6.7
24	7.6	9.6	32	93	31	26	26	23	27	25	21	6.7
25	7.7	9.2	24	50	30	26	25	22	55	23	32	6.2
26	7.6	9.2	18	39	29	32	26	22	28	19	13	6.5
27	7.3	8.5	16	34	28	32	27	21	29	19	11	9.9
28	7.2	8.6	16	30	36	30	27	20	27	18	11	28
29	7.5	8.3	15	28	---	30	28	20	25	17	11	12
30	7.5	8.0	14	31	---	28	41	20	22	17	10	9.6
31	7.5	---	13	31	---	40	---	19	---	16	9.5	---
TOTAL	365.7	344.9	415.5	981	1037	900	1097	901	669	742	406.2	254.2
MEAN	11.8	11.5	13.4	31.6	37.0	29.0	36.6	29.1	22.3	23.9	13.1	8.47
MAX	56	39	32	93	75	42	137	51	55	41	32	28
MIN	7.2	7.1	7.5	12	24	24	25	19	16	16	9.5	6.0
CFSM	1.01	.98	1.15	2.70	3.17	2.48	3.13	2.48	1.91	2.05	1.12	.72
IN.	1.16	1.10	1.32	3.12	3.30	2.86	3.49	2.86	2.13	2.36	1.29	.81

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1999,<sup>6</sup> BY WATER YEAR (WY)

	MEAN	25.1	30.8	35.3	45.6	48.7	55.3	49.5	39.1	34.1	29.4	29.1	24.9
MAX	70.0	77.9	63.3	86.3	90.1	110	71.4	57.3	78.2	94.9	91.2	67.8	
(WY)	1996	1949	1993	1998	1998	1952	1998	1949	1989	1949	1994	1950	
MIN	7.30	8.69	13.4	14.5	24.7	20.7	27.2	17.2	11.6	10.9	9.64	8.21	
(WY)	1955	1955	1999	1955	1989	1988	1988	1988	1988	1988	1988	1954	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

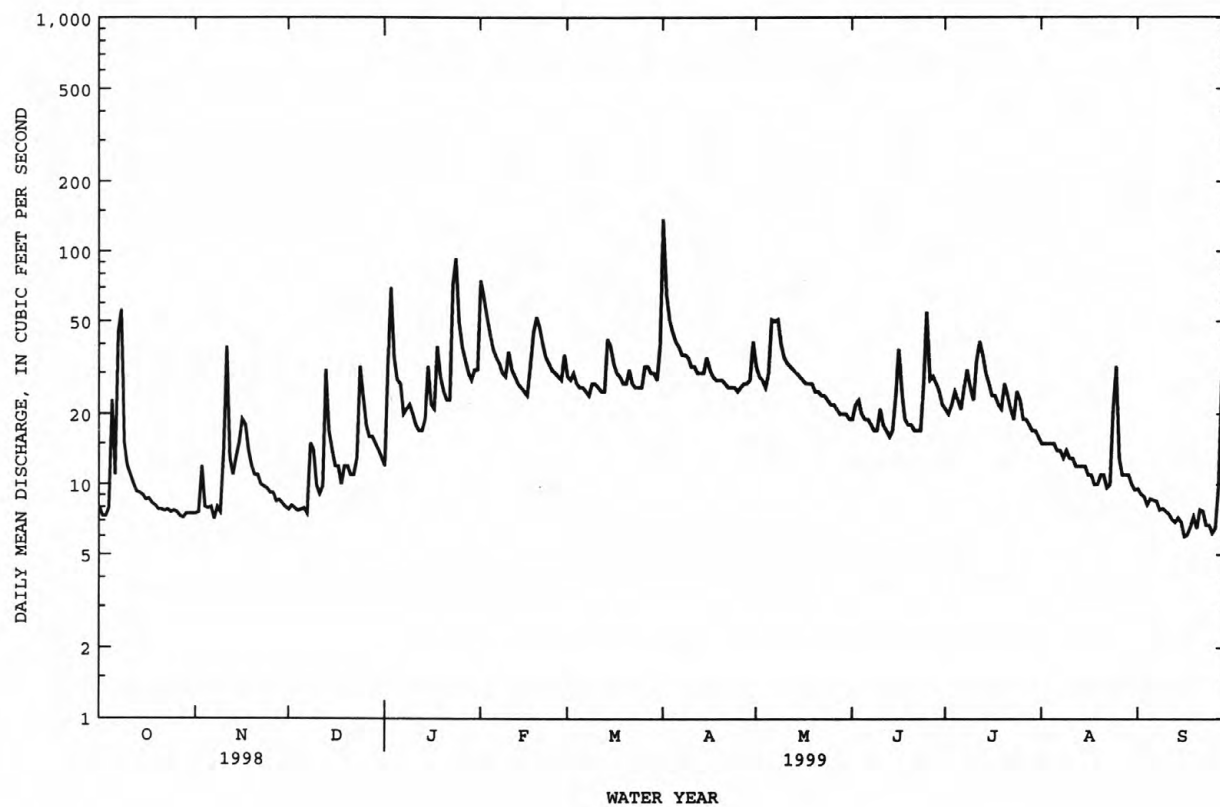
WATER YEARS 1945 - 1999<sup>6</sup>

ANNUAL TOTAL	14460.6	8113.5	
ANNUAL MEAN	39.6	22.2	37.2
HIGHEST ANNUAL MEAN			59.7
LOWEST ANNUAL MEAN			18.3
HIGHEST DAILY MEAN	449	Jan 7	814
LOWEST DAILY MEAN	7.1	Nov 7	6.0
ANNUAL SEVEN-DAY MINIMUM	7.4	Oct 26	6.7
INSTANTANEOUS PEAK FLOW			244
INSTANTANEOUS PEAK STAGE			3.07
INSTANTANEOUS LOW FLOW			2.9*
ANNUAL RUNOFF (CFSM)	3.39		1.90
ANNUAL RUNOFF (INCHES)	45.98		25.80
10 PERCENT EXCEEDS	79		36
50 PERCENT EXCEEDS	24		21
90 PERCENT EXCEEDS	8.1		7.8

<sup>6</sup> See PERIOD OF RECORD.

\* See REMARKS.

03440000 CATHEYS CREEK NEAR BREVARD, NC--Continued



## TENNESSEE RIVER BASIN

03441000 DAVIDSON RIVER NEAR BREVARD, NC

LOCATION.--Lat 35°16'23", long 83°42'21", Transylvania County, Hydrologic Unit 06010105, on right bank 150 ft upstream of bridge on State Highway 280, 2.1 mi downstream of Avery Creek, 3.3 mi northeast of Brevard, and at mile 2.2.

DRAINAGE AREA.--40.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1920 to September 1990. October 1993 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage Area. WSP 1336: 1921, 1922 (M), 1923, 1924-25(M), 1926, 1927(M), 1929-32(M).

GAGE.--Water-stage recorder. Datum of gage is 2,115.13 ft above sea level (levels by Tennessee Valley Authority). Prior to May 17, 1934, nonrecording gage at site 50 ft downstream at same datum. Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1869, 11.9 ft June 1876 (from studies by Tennessee Valley Authority).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	24	27	47	279	116	653	111	54	73	43	25
2	22	25	27	85	287	106	290	96	63	69	43	24
3	22	39	26	337	227	131	214	88	85	66	40	24
4	23	28	26	148	183	118	180	83	59	65	39	23
5	62	26	26	115	156	109	158	89	55	60	39	22
6	36	26	26	137	141	108	147	181	53	58	38	22
7	146	24	26	84	132	100	135	174	50	101	37	22
8	252	24	39	93	120	94	128	235	48	86	35	22
9	58	25	50	104	112	101	124	157	46	72	35	21
10	41	31	32	87	140	99	115	132	48	68	34	21
11	36	135	30	77	116	98	110	117	49	111	32	19
12	33	45	30	71	110	93	103	111	46	138	31	19
13	31	36	166	67	101	92	101	113	43	124	31	19
14	30	36	82	72	95	168	98	109	42	102	32	19
15	28	49	56	162	92	166	112	99	87	88	29	19
16	27	53	48	103	88	134	101	93	162	81	29	16
17	27	68	44	91	107	123	93	88	108	72	29	17
18	26	45	40	148	171	115	89	89	68	74	27	18
19	26	40	43	116	207	107	87	89	58	71	26	18
20	26	37	53	100	181	102	89	80	53	69	26	19
21	25	34	44	90	150	119	84	76	51	63	26	22
22	24	32	45	94	131	104	81	74	54	57	25	23
23	24	31	50	303	121	98	79	71	54	55	24	18
24	25	31	156	410	114	98	78	68	79	86	83	18
25	25	30	123	217	109	95	77	65	207	95	87	18
26	25	30	85	164	103	127	76	64	133	61	37	17
27	25	28	70	139	100	121	80	62	127	55	31	21
28	24	28	63	123	146	119	84	59	109	53	30	118
29	24	28	62	112	---	116	87	58	95	49	29	43
30	24	27	55	138	---	108	152	56	81	47	27	30
31	24	---	50	138	---	138	---	54	---	45	26	---
TOTAL	1246	1115	1700	4172	4019	3523	4005	3041	2267	2314	1100	737
MEAN	40.2	37.2	54.8	135	144	114	134	98.1	75.6	74.6	35.5	24.6
MAX	252	135	166	410	287	168	653	235	207	138	87	118
MIN	22	24	26	47	88	92	76	54	42	45	24	16
CFSM	.99	.92	1.36	3.33	3.55	2.81	3.30	2.43	1.87	1.85	.88	.61
IN.	1.15	1.03	1.57	3.84	3.70	3.24	3.69	2.80	2.09	2.13	1.01	.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1999,<sup>a</sup> BY WATER YEAR (WY)

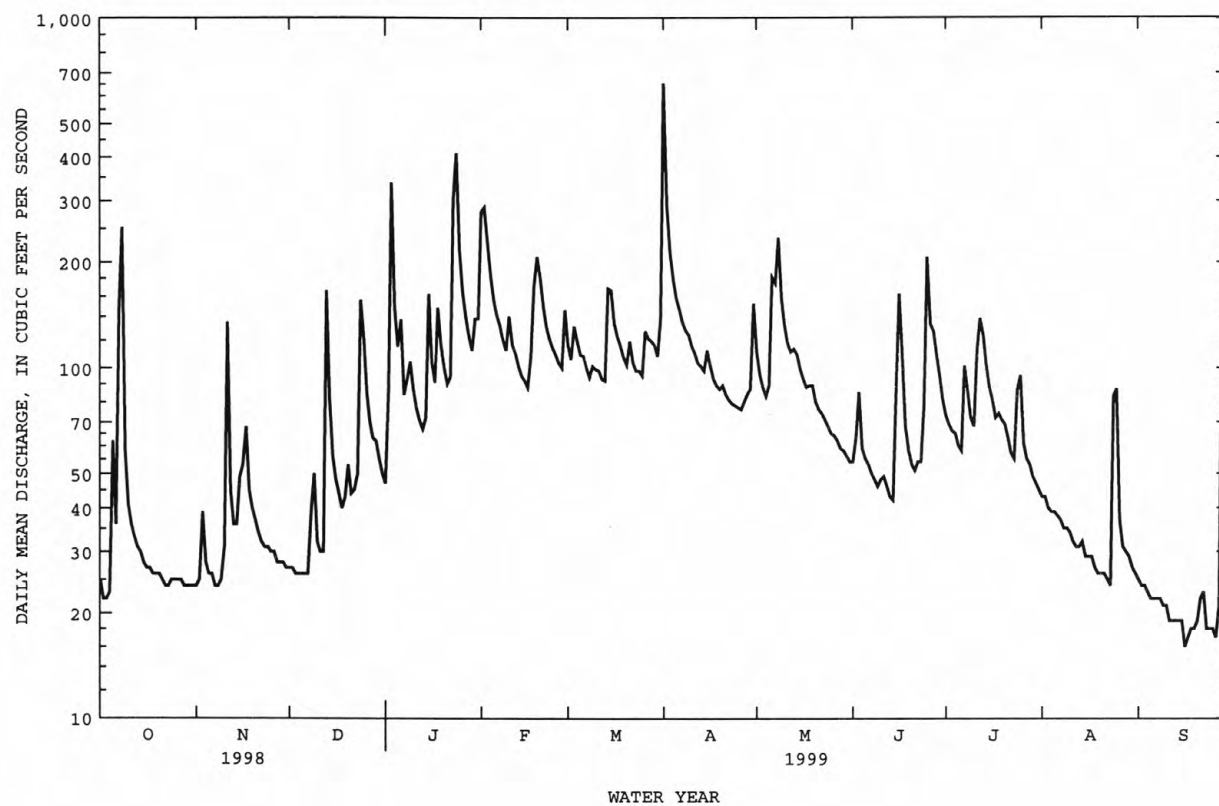
MEAN	96.5	105	131	158	171	186	174	143	114	92.6	99.2	88.9
MAX	379	362	323	374	363	466	349	293	254	285	404	297
(WY)	1965	1980	1933	1937	1939	1929	1957	1923	1967	1989	1928	1928
MIN	18.2	24.5	31.7	37.8	66.5	74.1	57.7	54.6	37.9	37.2	24.0	17.5
(WY)	1955	1955	1940	1956	1941	1988	1986	1941	1988	1986	1925	1954

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1921 - 1999 <sup>a</sup>
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ANNUAL TOTAL	50162		29239			
ANNUAL MEAN	137		80.1		130	
HIGHEST ANNUAL MEAN					208	1949
LOWEST ANNUAL MEAN					70.6	1988
HIGHEST DAILY MEAN	1750	Jan 8	653	Apr 1	2940	Aug 17 1994
LOWEST DAILY MEAN	21	Sep 17	16	Sep 16	14	Sep 28 1954
ANNUAL SEVEN-DAY MINIMUM	22	Sep 14	18	Sep 13	15	Sep 25 1954
INSTANTANEOUS PEAK FLOW			1110	Apr 1	8400	Aug 15 1928
INSTANTANEOUS PEAK STAGE			3.55	Apr 1	12.08	Aug 17 1994
INSTANTANEOUS LOW FLOW			15	Sep 16	13	Oct 11 1954
ANNUAL RUNOFF (CFSM)	3.40		1.98		3.21	
ANNUAL RUNOFF (INCHES)	46.19		26.92		43.60	
10 PERCENT EXCEEDS	292		146		232	
50 PERCENT EXCEEDS	68		68		101	
90 PERCENT EXCEEDS	26		24		42	

<sup>9</sup> See PERIOD OF RECORD.

03441000 DAVIDSON RIVER NEAR BREVARD, NC--Continued





## TENNESSEE RIVER BASIN

03443000 FRENCH BROAD RIVER AT BLANTYRE, NC

LOCATION.--Lat 35°17'56", long 82°37'26", Transylvania County, Hydrologic Unit 06010105, on left bank 40 ft upstream from bridge on Secondary Road 1503, 700 ft east of railroad at Blantyre, 3.5 mi downstream of Little River, and at mile 183.7.

DRAINAGE AREA.--296 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 923: 1921-23, 1929, 1933, 1935-36(M), 1938, 1940.

GAGE.--Water-stage recorder. Datum of gage is 2,060.32 ft above sea level (levels by Tennessee Valley Authority). Prior to July 5, 1930, nonrecording gage at same site and datum. Satellite and telephone telemetry at station.

REMARKS.--Records good except those above 2,600 ft<sup>3</sup>/s, which are fair. Considerable diurnal fluctuation at low flow caused by power plant about 8 mi upstream from station. Maximum gage height for period of record, 25.50 ft, from floodmarks. Minimum discharge for current water year also occurred Sept. 18, 19.

EXTREMES OUTSIDE PERIOD OF RECORD.--Since at least 1791, maximum stage 27.1 ft, July 16, 1916, from floodmarks (from studies by Tennessee Valley Authority).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	289	239	349	532	1980	983	3160	927	464	561	384	240
2	218	256	342	544	3200	890	3520	775	472	551	386	234
3	206	302	336	2510	2290	913	2050	705	632	528	344	217
4	207	315	334	1700	1680	926	1500	688	563	567	316	215
5	800	266	331	1070	1420	867	1300	683	487	564	321	215
6	615	257	329	878	1250	828	1180	1000	472	562	315	215
7	737	249	322	816	1160	828	1110	1270	454	595	305	216
8	2320	243	352	808	1070	780	1050	1360	435	702	295	212
9	1030	249	554	856	993	791	1020	1120	422	707	290	203
10	565	258	448	832	1130	830	963	951	418	576	292	203
11	444	1300	370	732	1040	811	921	857	508	711	282	198
12	383	918	355	696	975	783	880	800	449	895	271	188
13	346	570	797	658	920	759	839	782	415	934	275	185
14	325	501	875	659	867	974	833	777	383	757	290	184
15	301	599	598	1110	831	1350	874	737	431	682	267	186
16	293	619	518	981	818	1070	954	701	832	615	254	188
17	280	859	483	828	837	955	823	675	960	568	253	177
18	280	695	449	1190	1600	904	794	662	606	557	250	178
19	273	578	435	1130	1560	845	768	680	507	539	241	181
20	274	519	526	934	1660	817	772	649	464	511	233	186
21	261	487	489	850	1320	872	757	604	443	541	240	187
22	255	445	470	803	1150	916	718	592	433	493	233	227
23	274	432	496	1330	1050	807	704	576	437	468	225	217
24	271	423	908	3130	982	787	694	556	474	444	500	190
25	252	409	1210	2270	937	779	678	548	1610	752	705	186
26	248	399	863	1450	901	821	674	530	1130	571	464	183
27	245	385	725	1200	869	919	690	552	835	468	316	188
28	249	367	648	1060	1020	884	731	511	770	528	273	567
29	236	359	647	961	---	834	696	495	706	455	272	673
30	230	355	596	974	---	821	908	482	631	423	258	386
31	233	---	562	1040	---	837	---	478	---	388	243	---
TOTAL	12940	13853	16717	34532	35510	27181	32561	22723	17843	18213	9593	7025
MEAN	417	462	539	1114	1268	877	1085	733	595	588	309	234
MAX	2320	1300	1210	3130	3200	1350	3520	1360	1610	934	705	673
MIN	206	239	322	532	818	759	674	478	383	388	225	177
CFSM	1.41	1.56	1.82	3.76	4.28	2.96	3.67	2.48	2.01	1.98	1.05	.79
IN.	1.63	1.74	2.10	4.34	4.46	3.42	4.09	2.86	2.24	2.29	1.21	.88

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1999, BY WATER YEAR (WY)

	MEAN	769	843	1031	1221	1293	1405	1314	1071	883	731	779	688
MAX	3504	2486	2142	2783	2735	3169	2509	2339	1872	2214	2363	1828	
(WY)	1965	1980	1962	1937	1998	1979	1936	1973	1989	1949	1994	1979	
MIN	157	235	301	260	561	550	473	434	278	290	191	169	
(WY)	1955	1955	1956	1956	1941	1988	1986	1988	1988	1925	1925	1954	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

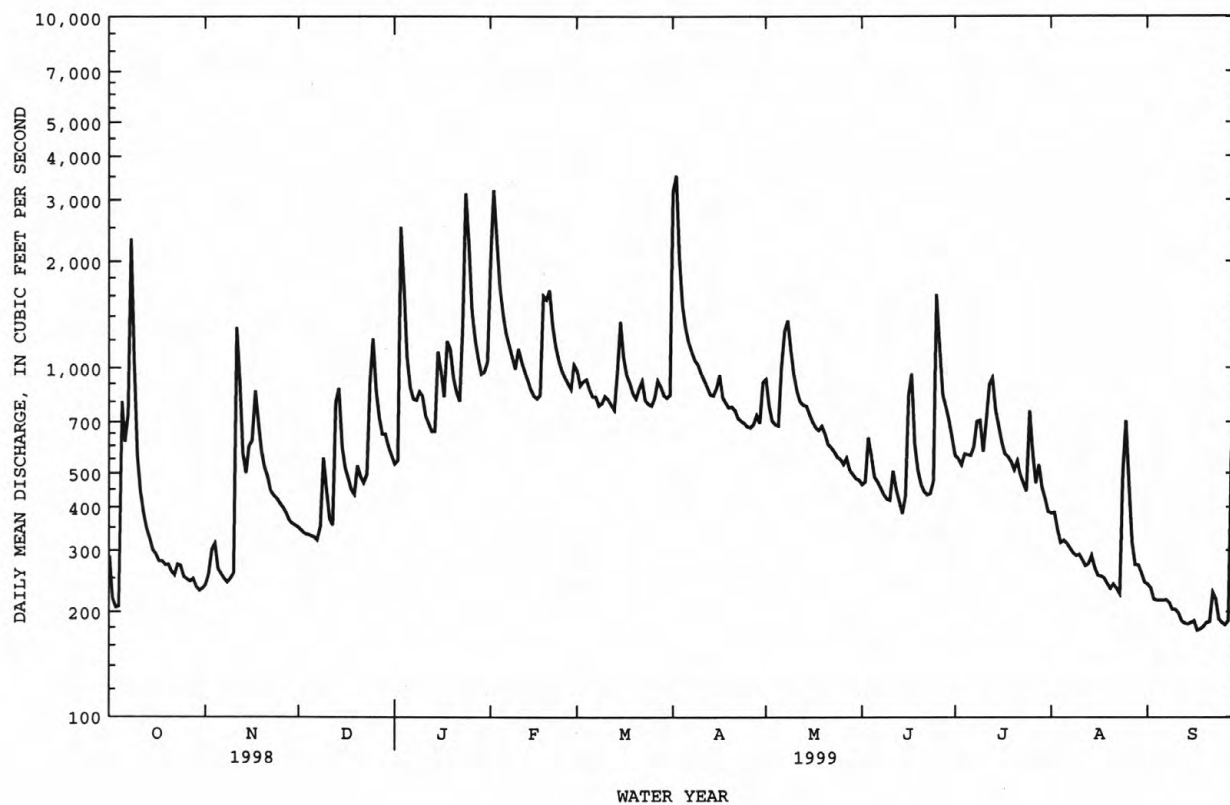
## FOR 1999 WATER YEAR

## WATER YEARS 1921 - 1999

ANNUAL TOTAL	408183	248691	
ANNUAL MEAN	1118	681	1001
HIGHEST ANNUAL MEAN			1564
LOWEST ANNUAL MEAN			534
HIGHEST DAILY MEAN	11400	Jan 8	22700
LOWEST DAILY MEAN	184	Sep 16	123
ANNUAL SEVEN-DAY MINIMUM	189	Sep 13	133
INSTANTANEOUS PEAK FLOW			30000
INSTANTANEOUS PEAK STAGE			25.50*
INSTANTANEOUS LOW FLOW			119
ANNUAL RUNOFF (CFSM)	3.78	2.30	3.38
ANNUAL RUNOFF (INCHES)	51.30	31.25	45.95
10 PERCENT EXCEEDS	2450	1120	1730
50 PERCENT EXCEEDS	657	592	812
90 PERCENT EXCEEDS	249	240	359

\* See REMARKS.

03443000 FRENCH BROAD RIVER AT BLANTYRE, NC--Continued



## 03446000 MILLS RIVER NEAR MILLS RIVER, NC

LOCATION.--Lat 35°23'55", long 82°35'42", Henderson County, Hydrologic Unit 06010105, on right bank 1.5 mi downstream of confluence of North and South Forks, 1.8 mi northwest of Mills River, 4.2 mi northwest of Horseshoe, and at mile 4.6.

DRAINAGE AREA.--66.7 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1924 to September 1926, October 1933 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 923: 1935, 1937, 1939. WSP 1003: 1938, 1940-42. WSP 1143: 1940(P). WSP 1276: 1926.

GAGE.--Water-stage recorder. Datum of gage is 2,088.47 ft above sea level (levels by Tennessee Valley Authority). Prior to Oct. 1, 1926, nonrecording gage at site 500 ft upstream at 2,091.44 ft. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharge, which are fair. City of Hendersonville diverted about 5.6 ft<sup>3</sup>/s from North Fork and Bradley Creek for municipal water supply. Maximum discharge for period of record, from rating curve extended above 6,200 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Minimum discharge for period of record result of freezeup.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	32	31	45	248	138	520	162	74	112	48	30
2	34	32	31	55	305	127	339	138	79	106	46	29
3	32	47	31	232	263	150	261	127	139	117	43	28
4	33	42	31	120	223	148	226	120	97	92	42	27
5	61	36	31	e87	192	135	203	119	81	83	41	25
6	51	35	31	e80	173	132	188	171	77	80	41	25
7	127	33	30	e82	159	125	176	188	72	90	39	25
8	239	33	36	95	146	118	168	231	68	96	39	25
9	78	34	46	128	136	124	165	187	66	100	48	25
10	52	39	35	116	162	122	152	163	69	83	42	24
11	44	145	32	96	138	121	145	148	68	103	39	23
12	41	64	32	86	131	115	137	139	66	135	36	22
13	38	46	134	80	121	113	132	145	61	129	38	22
14	37	45	89	81	114	159	130	167	59	109	55	22
15	35	53	57	157	111	198	149	138	69	97	41	26
16	34	51	48	115	107	164	144	129	133	87	36	21
17	33	59	43	100	115	154	127	122	132	79	35	20
18	33	47	40	167	189	147	122	119	81	82	33	21
19	33	42	42	139	224	138	120	138	70	104	31	22
20	33	40	58	119	230	131	119	115	66	78	31	24
21	32	38	47	102	190	143	114	109	64	80	31	24
22	31	36	46	102	167	134	111	106	65	69	30	25
23	31	35	46	313	154	123	108	102	69	67	29	23
24	31	35	96	525	144	121	107	96	74	64	100	22
25	32	35	104	295	137	117	104	92	183	78	103	27
26	31	36	76	218	131	139	105	89	141	62	56	26
27	32	35	65	180	125	143	107	88	118	58	41	31
28	32	33	57	156	158	145	118	83	112	60	37	145
29	33	32	56	142	---	137	118	81	237	55	35	73
30	34	32	51	174	---	132	192	78	144	52	33	42
31	35	---	47	166	---	142	---	76	---	49	31	---
TOTAL	1460	1302	1599	4553	4693	4235	4907	3966	2834	2656	1330	924
MEAN	47.1	43.4	51.6	147	168	137	164	128	94.5	85.7	42.9	30.8
MAX	239	145	134	525	305	198	520	231	237	135	103	145
MIN	31	32	30	45	107	113	104	76	59	49	29	20
CFSM	.71	.65	.77	2.20	2.51	2.05	2.45	1.92	1.42	1.28	.64	.46
IN.	.81	.73	.89	2.54	2.62	2.36	2.74	2.21	1.58	1.48	.74	.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1999,<sup>e</sup> BY WATER YEAR (WY)

	MEAN	127	143	164	202	223	247	237	189	153	120	129	115
MAX	465	510	338	534	499	520	468	412	359	356	506	354	
(WY)	1965	1980	1962	1937	1998	1979	1957	1973	1992	1989	1940	1979	
MIN	24.8	35.2	40.7	43.5	88.9	87.5	79.7	76.2	41.7	38.6	25.4	22.8	
(WY)	1955	1955	1940	1956	1941	1988	1986	1988	1988	1988	1925	1925	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

WATER YEARS 1925 - 1999<sup>e</sup>

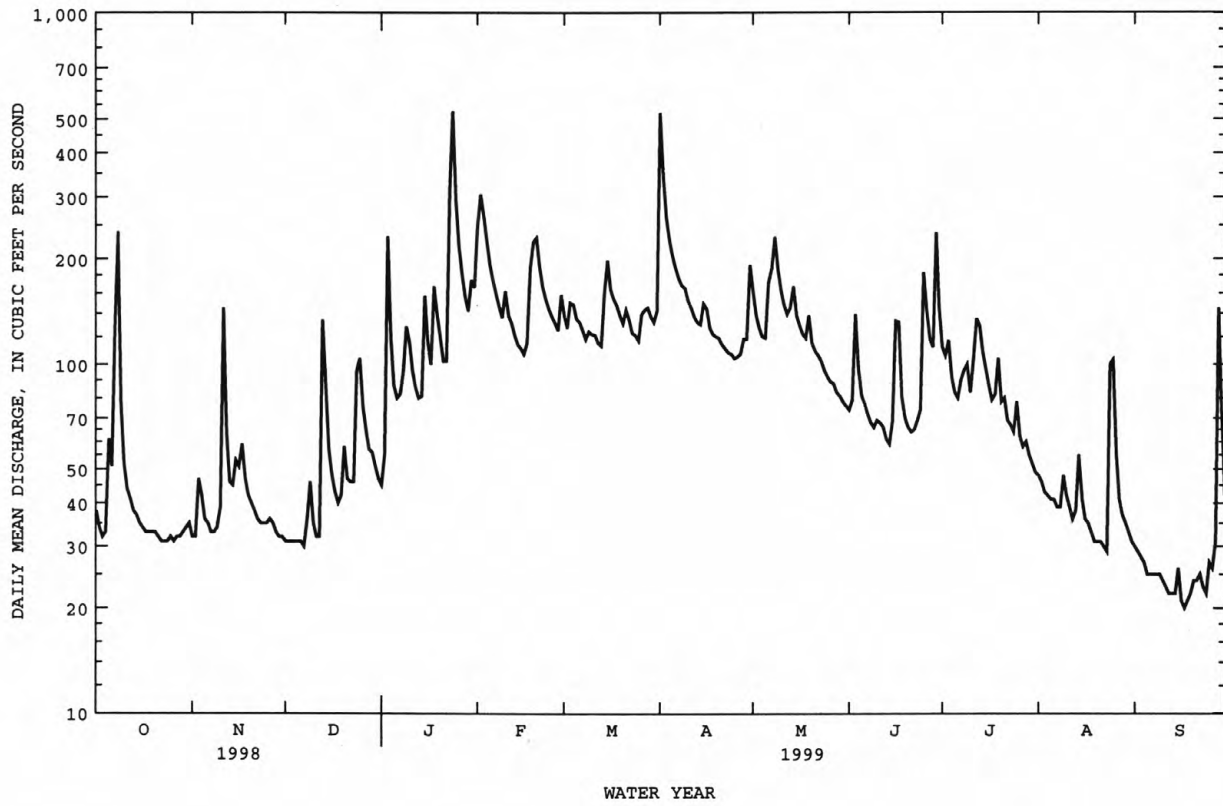
ANNUAL TOTAL	70840		34459										
ANNUAL MEAN	194		94.4							171			
HIGHEST ANNUAL MEAN										272		1949	
LOWEST ANNUAL MEAN										86.8		1988	
HIGHEST DAILY MEAN	2710	Jan 8		525	Jan 24					4470	Aug 13	1940	
LOWEST DAILY MEAN	27	Sep 15		20	Sep 17					18	Sep 30	1954	
ANNUAL SEVEN-DAY MINIMUM	28	Sep 12		22	Sep 12					19	Sep 24	1954	
INSTANTANEOUS PEAK FLOW				765	Jan 23					13400*	Aug 30	1940	
INSTANTANEOUS PEAK STAGE				3.53	Jan 23					13.62	Aug 30	1940	
INSTANTANEOUS LOW FLOW				19	Sep 16					16*	Dec 24	1943	
ANNUAL RUNOFF (CFSM)	2.91			1.42						2.56			
ANNUAL RUNOFF (INCHES)	39.51			19.22						34.74			
10 PERCENT EXCEEDS	417			167						304			
50 PERCENT EXCEEDS	97			81						137			
90 PERCENT EXCEEDS	33			31						55			

e Estimated.

\* See PERIOD OF RECORD.

\* See REMARKS.

03446000 MILLS RIVER NEAR MILLS RIVER, NC--Continued



0344894205 NORTH FORK SWANNANOA RIVER NEAR WALKERTOWN, NC

LOCATION.--Lat 35°41'07", long 82°19'58", Buncombe County, Hydrologic Unit 06010105, on left bank 400 ft downstream of Sugar Springs Cove, 0.6 mi upstream from Burnette Reservoir, and 2.3 mi north of Walkertown.

DRAINAGE AREA.--14.5 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1989 to current year.

REVISED RECORDS.--WDR NC-91-1: 1989(M).

GAGE.--Water-stage recorder. Elevation of gage is 2,650 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Minimum discharge for period of record also occurred Sept. 15, 16, 18, 19, 1998, Oct. 3, 4, 1998. Minimum discharge for current water year also occurred Oct. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	2.7	2.9	9.4	51	53	84	45	19	56	22	5.5
2	1.5	2.9	2.8	13	73	43	53	44	18	45	20	5.2
3	1.5	3.7	2.8	98	48	64	42	36	18	61	18	4.9
4	1.6	3.7	2.8	35	38	54	37	31	16	65	17	4.7
5	1.8	3.5	2.7	e22	32	45	33	28	15	52	15	4.9
6	1.8	3.4	2.7	e20	28	45	30	42	14	79	14	6.1
7	2.5	3.4	2.6	18	25	45	27	41	13	81	13	5.3
8	14	3.6	3.1	17	22	39	31	66	12	69	13	4.7
9	5.1	3.7	4.2	35	21	36	36	46	12	50	14	4.4
10	3.0	4.0	3.7	27	24	33	29	38	12	43	12	4.1
11	2.4	23	3.2	21	20	29	27	33	11	78	11	3.7
12	2.1	6.7	3.4	18	20	27	24	29	11	105	10	3.5
13	2.0	4.2	79	16	18	28	23	30	10	94	9.6	3.5
14	1.9	4.4	22	18	16	36	21	33	9.5	70	11	3.5
15	1.8	10	12	109	15	50	23	30	10	89	9.3	3.7
16	1.7	8.0	9.1	44	15	43	22	27	14	64	8.8	3.5
17	1.7	7.3	7.8	34	17	46	20	25	13	53	8.3	3.3
18	1.7	5.5	6.7	43	49	56	19	102	10	58	7.7	3.3
19	1.7	4.5	6.7	36	38	52	18	151	9.1	52	7.3	3.4
20	2.0	4.2	9.5	29	33	44	18	77	8.7	55	8.8	3.5
21	2.0	3.8	8.1	25	30	49	17	59	8.6	81	7.8	3.6
22	1.9	3.6	13	24	26	44	16	50	8.4	108	6.8	3.7
23	2.0	3.4	17	67	24	37	15	43	9.3	68	6.9	3.3
24	2.1	3.4	98	157	22	34	16	40	9.8	76	14	3.1
25	2.0	3.2	40	65	21	32	14	35	52	75	11	3.0
26	2.0	3.8	24	46	20	30	14	32	36	53	8.6	2.9
27	2.0	3.5	18	36	21	28	16	28	29	46	7.4	5.3
28	2.0	3.3	15	30	80	27	24	25	25	40	6.8	31
29	2.3	3.1	13	28	---	26	23	23	34	33	6.7	14
30	2.5	3.0	12	33	---	25	43	22	45	28	6.1	19
31	2.6	---	10	27	---	25	---	20	---	25	5.7	---
TOTAL	77.1	146.5	457.8	1200.4	847	1225	815	1331	512.4	1952	337.6	173.6
MEAN	2.49	4.88	14.8	38.7	30.2	39.5	27.2	42.9	17.1	63.0	10.9	5.79
MAX	14	23	98	157	80	64	84	151	52	108	22	31
MIN	1.5	2.7	2.6	9.4	15	25	14	20	8.4	25	5.7	2.9
CFSM	.17	.34	1.02	2.67	2.09	2.73	1.87	2.96	1.18	4.34	.75	.40
IN.	.20	.38	1.17	3.08	2.17	3.14	2.09	3.41	1.31	5.01	.87	.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1999, BY WATER YEAR (WY)

MEAN	31.3	32.0	43.8	70.6	64.5	76.9	53.8	48.8	37.6	23.4	31.9	18.9
MAX	79.1	84.6	79.8	134	120	111	82.2	74.4	78.0	63.0	123	64.3
(WY)	1996	1993	1993	1995	1990	1993	1998	1992	1995	1999	1994	1989
MIN	2.49	4.88	14.8	38.7	30.2	39.5	18.6	19.6	13.5	5.71	3.96	1.92
(WY)	1999	1999	1999	1999	1999	1999	1995	1994	1998	1998	1998	1998

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

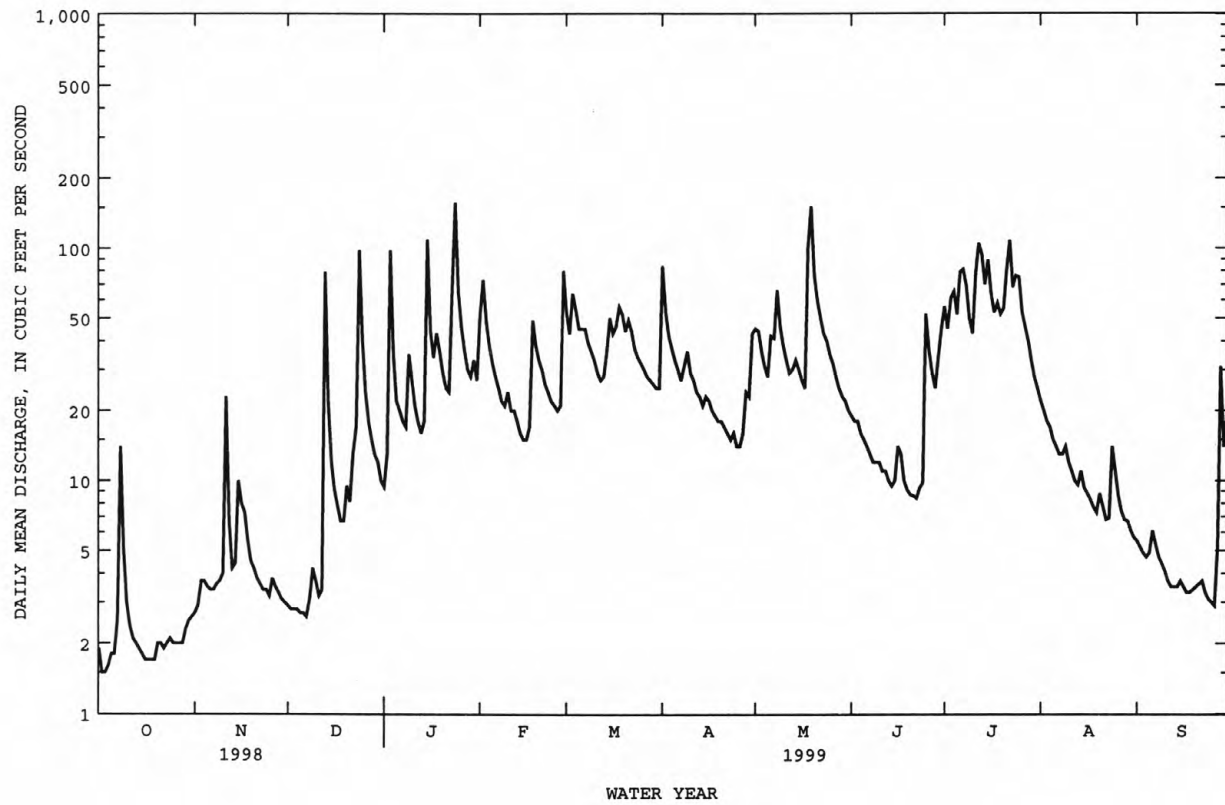
WATER YEARS 1989 - 1999

ANNUAL TOTAL	14192.7	9075.4	
ANNUAL MEAN	38.9	24.9	43.9
HIGHEST ANNUAL MEAN			51.9
LOWEST ANNUAL MEAN			24.9
HIGHEST DAILY MEAN	600	157	1740
LOWEST DAILY MEAN	1.5	1.5	1.5
ANNUAL SEVEN-DAY MINIMUM	1.6	1.8	1.6
INSTANTANEOUS PEAK FLOW		721	4600
INSTANTANEOUS PEAK STAGE		5.25	8.19
INSTANTANEOUS LOW FLOW		1.5*	1.5*
ANNUAL RUNOFF (CFSM)	2.68	1.71	3.03
ANNUAL RUNOFF (INCHES)	36.41	23.28	41.17
10 PERCENT EXCEEDS	98	54	86
50 PERCENT EXCEEDS	11	18	30
90 PERCENT EXCEEDS	2.0	2.9	6.2

e Estimated.

\* See REMARKS.

0344894205 NORTH FORK SWANNANOA RIVER NEAR WALKERTOWN, NC--Continued





## 03450000 BEETREE CREEK NEAR SWANNANOA, NC

LOCATION.--Lat 35°39'11", long 82°24'20", Buncombe County, Hydrologic Unit 06010105, on left bank 0.5 mi downstream of Wolfe Branch, 0.8 mi upstream from Beetree Reservoir dam, 3.8 mi north of Swannanoa, and 4.8 mi above mouth.

DRAINAGE AREA.--5.46 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1926 to September 1975, October 1979 to September 1981, October 1985 to September 1986, and May 1987 to current year.

REVISED RECORDS.--WSP 823: Drainage area. WSP 893: 1928, 1936-37 (M). WSP 953: 1929 (M). WSP 1276: 1932.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 2,728.39 ft above sea level. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum discharge for period of record, from rating curve extended above 240 ft<sup>3</sup>/s on basis of computation of peak flow over weir. Minimum discharge for period of record also occurred July 25, 1996.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	1.2	.83	2.5	13	20	14	8.2	2.2	7.9	3.3	.66
2	.52	1.2	.79	3.8	15	17	12	7.1	2.3	9.8	3.0	.66
3	.49	1.4	.79	31	13	21	11	6.4	2.3	14	2.7	.62
4	.53	1.3	.79	e15	12	18	11	6.0	1.8	17	2.5	.56
5	.60	1.3	.78	e10	9.7	17	9.9	6.0	1.6	16	2.3	.90
6	.59	1.2	.74	e7.5	8.5	18	9.4	13	1.5	27	2.2	1.2
7	1.2	1.2	.69	e6.2	7.6	19	8.6	12	1.4	31	2.0	.85
8	3.6	1.2	.83	6.1	6.4	16	9.1	26	1.3	22	2.0	.72
9	1.1	1.3	1.1	8.0	6.1	15	9.5	20	4.3	15	2.8	.63
10	.77	1.4	.83	7.2	7.1	13	8.0	16	2.3	14	2.0	.66
11	.61	4.0	.76	6.1	5.9	11	7.4	13	1.7	25	1.7	.53
12	.53	1.4	.78	5.5	5.4	9.6	6.6	12	1.5	33	1.6	.49
13	.49	1.2	11	5.1	4.5	10	6.4	11	1.4	30	1.5	.53
14	.49	1.4	3.8	5.4	4.2	14	6.1	10	1.2	24	1.9	.55
15	.47	2.2	2.4	22	4.0	22	6.8	9.2	1.7	19	1.5	.63
16	.48	1.6	1.9	14	3.7	21	6.0	8.0	2.6	15	1.4	.65
17	.48	1.7	1.7	11	4.9	21	5.4	7.2	2.2	13	1.3	.64
18	.46	1.3	1.5	12	17	21	5.1	6.9	1.5	15	1.2	.68
19	.48	1.2	1.6	11	16	19	4.8	7.8	1.3	16	1.0	.71
20	.58	1.1	1.8	9.3	16	16	4.8	5.8	1.2	12	1.4	.74
21	.52	1.0	1.6	8.2	13	16	4.4	5.2	1.1	10	1.3	.79
22	.63	.96	2.7	7.3	11	13	4.1	4.9	1.1	8.1	1.1	.79
23	.89	.96	3.1	23	8.9	12	3.8	4.4	1.1	7.5	1.0	.64
24	1.0	1.0	16	46	7.6	11	3.7	4.6	1.2	8.8	1.7	.61
25	1.1	.94	8.2	30	7.1	9.6	3.5	3.8	8.8	8.2	1.6	.58
26	1.1	1.1	5.2	22	6.4	9.2	3.6	3.5	6.3	6.0	1.3	.54
27	1.1	.95	4.1	17	6.9	9.2	4.8	3.2	6.3	7.7	1.1	1.2
28	1.1	.89	3.6	13	23	8.9	5.9	2.9	5.9	6.6	1.0	8.3
29	1.2	.88	3.2	11	---	8.4	5.7	2.7	12	5.1	.98	2.8
30	1.2	.84	2.9	11	---	8.0	8.8	2.4	9.7	4.4	.84	3.1
31	1.2	---	2.6	9.2	---	7.8	---	2.3	---	3.8	.72	---
TOTAL	26.11	39.32	88.61	396.4	263.9	451.7	210.2	251.5	90.8	451.9	51.94	32.96
MEAN	.84	1.31	2.86	12.8	9.43	14.6	7.01	8.11	3.03	14.6	1.68	1.10
MAX	3.6	4.0	16	46	23	22	14	26	12	33	3.3	8.3
MIN	.46	.84	.69	2.5	3.7	7.8	3.5	2.3	1.1	3.8	.72	.49
CFSM	.15	.24	.52	2.34	1.73	2.67	1.28	1.49	.55	2.67	.31	.20
IN.	.18	.27	.60	2.70	1.80	3.08	1.43	1.71	.62	3.08	.35	.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1926 - 1999,<sup>a</sup> BY WATER YEAR (WY)

	MEAN	6.30	8.30	10.5	13.8	15.7	19.2	16.7	11.9	8.48	6.17	6.58	4.96
MAX	33.9	45.3	25.4	38.5	43.0	43.1	34.2	28.5	27.0	37.9	61.8	21.3	
(WY)	1930	1980	1933	1937	1990	1975	1936	1973	1949	1949	1940	1928	
MIN	.65	1.23	1.58	1.99	4.46	5.25	5.21	4.68	1.82	1.18	.83	.51	
(WY)	1955	1955	1940	1940	1941	1988	1986	1948	1988	1998	1998	1954	

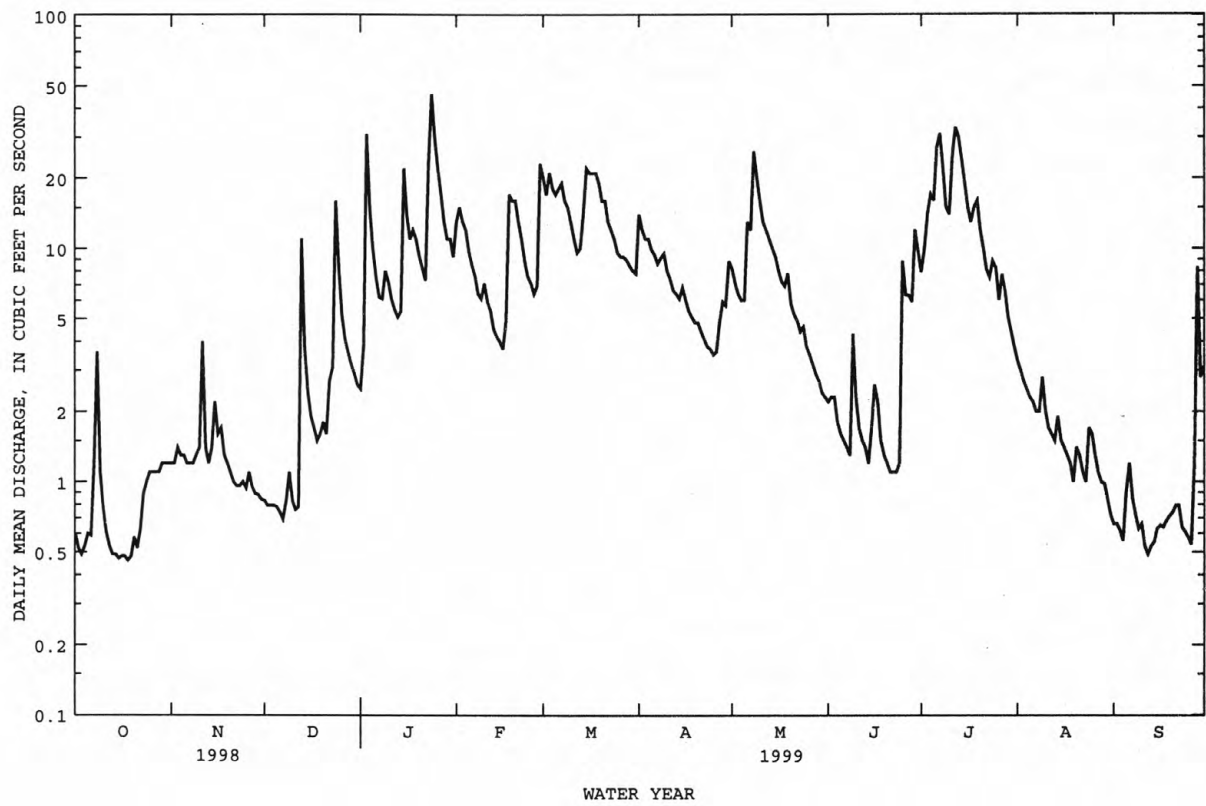
SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1926 - 1999 <sup>a</sup>	
ANNUAL TOTAL	4209.36		2355.34			
ANNUAL MEAN	11.5		6.45		10.7	
HIGHEST ANNUAL MEAN					17.8	
LOWEST ANNUAL MEAN					6.18	
HIGHEST DAILY MEAN	173		46		528	
LOWEST DAILY MEAN	.41		.46		.30	
ANNUAL SEVEN-DAY MINIMUM	.44		.48		.40	
INSTANTANEOUS PEAK FLOW			65		1370*	
INSTANTANEOUS PEAK STAGE			3.39		6.20	
INSTANTANEOUS LOW FLOW			.42		.28*	
ANNUAL RUNOFF (CFSM)	2.11		1.18		1.96	
ANNUAL RUNOFF (INCHES)	28.68		16.05		26.69	
10 PERCENT EXCEEDS	28		16		22	
50 PERCENT EXCEEDS	2.4		3.8		7.4	
90 PERCENT EXCEEDS	.57		.69		1.6	

e Estimated.

<sup>a</sup> See PERIOD OF RECORD.

\* See REMARKS.

03450000 BEETREE CREEK NEAR SWANNANOVA, NC--Continued



## 03451000 SWANNANOA RIVER AT BILTMORE, NC

LOCATION.--Lat 35°34'06", long 82°32'42", Buncombe County, Hydrologic Unit 06010105, on left bank at Biltmore, 100 ft downstream of Biltmore Avenue Bridge, 200 ft upstream from Southern Railway bridge, and 1.6 mi upstream from mouth.

DRAINAGE AREA.--130 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1920 to September 1926, May 1934 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 803: 1921(M), 1923(M), 1925(M). WSP 823: Drainage area. WSP 1306: 1921(M), 1924(M), 1926(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,976.58 ft above sea level (levels by Tennessee Valley Authority). Dec. 1, 1920, to Sept. 30, 1926, nonrecording gage at site 100 ft upstream at same datum. Satellite and telephone telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Considerable regulation from 1925-50 (reservoir silted) by Lake Craig, 3.6 mi upstream from station. City of Asheville diverted an average of 32.5 ft<sup>3</sup>/s from Burnett Lake (station 03448959) on North Fork Swannanoa River, 20 mi upstream from station and Bee Tree Lake on Beetree Creek (station 03450000), 13 mi upstream from station for water supply. An average of 32.0 ft<sup>3</sup>/s was discharged downstream of station into the French Broad River as treated sewage effluent. Maximum discharge for period of record, from rating curve extended above 9,100 ft<sup>3</sup>/s on basis of computation of peak flow over dam 3.6 mi upstream from station. Minimum discharge for period of record occurred several days in Oct. 1941. Minimum discharge for current water year also occurred Sept. 26.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed: 26 ft; discharge: 40,000 ft<sup>3</sup>/s in April 1971, from studies by Tennessee Valley Authority. Flood of July 1916 reached a stage of 20.7 ft; discharge, 23,000 ft<sup>3</sup>/s, from flood profile by Tennessee Valley Authority. Flood of Aug. 16, 1928 reached a stage of 18.74 ft, from floodmarks; discharge, 17,800 ft<sup>3</sup>/s. High stages are subject to backwater from French Broad River.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	35	42	45	122	94	172	110	43	67	45	18
2	29	37	40	113	120	83	111	86	42	123	41	17
3	27	41	41	e198	93	121	96	77	43	206	34	16
4	29	40	42	e78	84	111	92	72	39	191	31	15
5	30	40	40	e58	76	95	86	71	37	115	29	15
6	30	40	41	e55	70	94	79	145	36	131	27	17
7	62	40	41	e55	69	89	77	136	37	186	26	19
8	204	40	46	59	65	84	79	221	35	135	28	18
9	57	42	53	70	81	90	83	138	44	92	46	17
10	41	45	43	62	100	90	71	112	42	125	29	16
11	40	101	40	54	69	80	66	99	35	262	25	13
12	39	51	43	49	67	74	64	86	35	324	24	13
13	37	41	155	49	64	85	60	96	33	322	23	11
14	36	57	82	55	58	137	58	114	31	258	36	12
15	34	70	54	177	57	161	73	85	35	210	27	14
16	34	61	48	86	55	118	68	75	75	191	24	12
17	33	63	47	73	79	106	58	69	70	153	22	11
18	34	45	45	109	207	97	56	68	40	169	21	10
19	35	43	43	82	181	91	54	109	34	165	20	12
20	35	42	46	68	160	91	56	78	32	122	23	12
21	34	41	45	63	115	106	55	67	33	136	34	13
22	32	41	51	60	97	94	52	61	31	149	27	21
23	33	42	59	289	89	82	50	62	34	142	26	13
24	35	41	171	267	84	79	50	59	41	121	47	11
25	35	41	103	141	81	76	48	53	149	138	42	9.9
26	35	52	67	101	76	83	49	50	77	113	32	9.7
27	35	43	58	86	71	88	71	49	62	96	26	15
28	35	40	55	78	115	79	116	45	62	91	24	138
29	35	40	53	77	---	73	79	44	132	69	23	58
30	34	40	50	98	---	70	166	43	95	58	22	34
31	34	---	46	77	---	76	---	43	---	49	20	---
TOTAL	1276	1395	1790	2932	2605	2897	2295	2623	1534	4709	904	610.6
MEAN	41.2	46.5	57.7	94.6	93.0	93.5	76.5	84.6	51.1	152	29.2	20.4
MAX	204	101	171	289	207	161	172	221	149	324	47	138
MIN	27	35	40	45	55	70	48	43	31	49	20	9.7
CFSM	.32	.36	.44	.73	.72	.72	.59	.65	.39	1.17	.22	.16
IN.	.37	.40	.51	.84	.75	.83	.66	.75	.44	1.35	.26	.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1999,<sup>6</sup> BY WATER YEAR (WY)

	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
MEAN	100	119	141	197	231	280	250	188	137	101	102	86.5
MAX	569	604	385	610	598	740	560	480	387	503	828	421
(WY)	1965	1980	1962	1995	1990	1975	1936	1973	1949	1949	1940	1979
MIN	13.7	27.0	35.3	32.3	65.7	45.7	55.6	45.5	17.7	18.2	18.8	13.8
(WY)	1955	1982	1989	1956	1988	1988	1986	1988	1988	1986	1956	1954

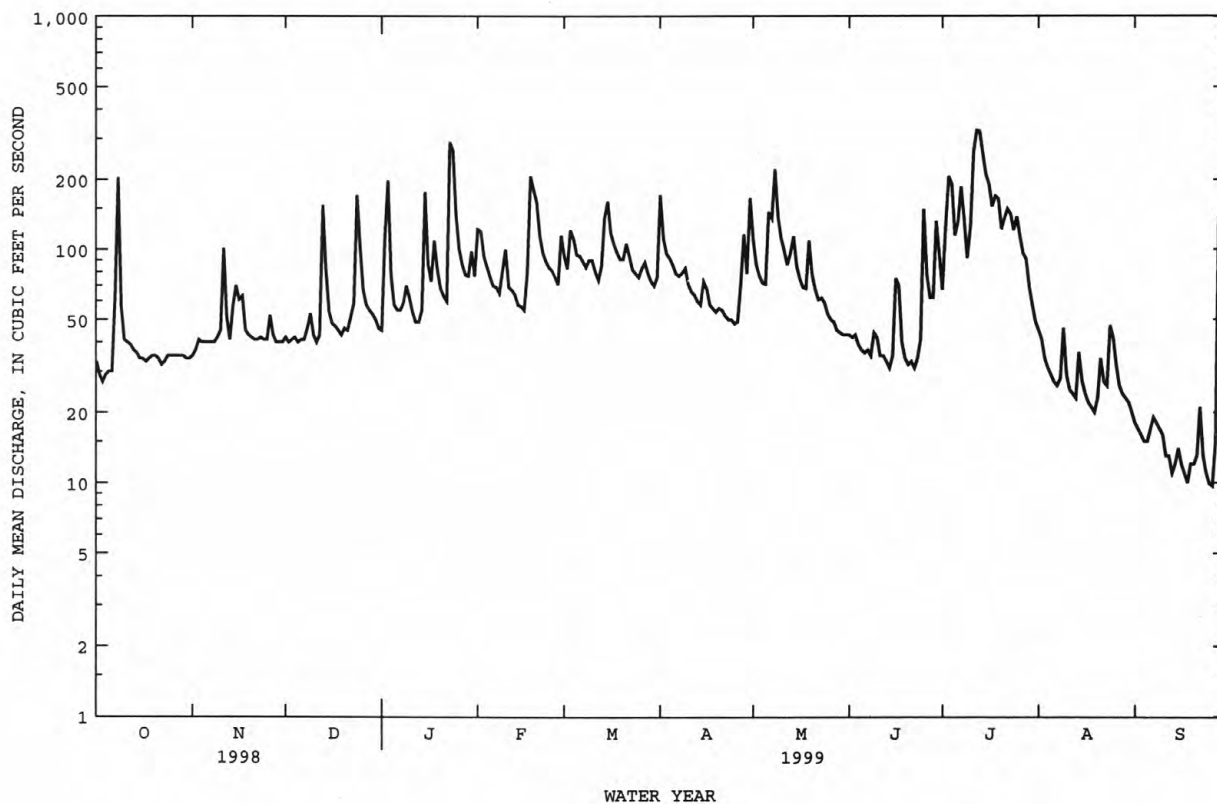
## 03451000 SWANNANOVA RIVER AT BILTMORE, NC--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1921 - 1999 <sup>a</sup>	
ANNUAL TOTAL	71648		25570.6		161	
ANNUAL MEAN	196		70.1		277	1949
HIGHEST ANNUAL MEAN					55.9	1988
LOWEST ANNUAL MEAN					7560	Aug 13 1940
HIGHEST DAILY MEAN	2770	Jan 8	324	Jul 12	1.2	Oct 14 1941
LOWEST DAILY MEAN	24	Sep 14	9.7	Sep 26	7.3	Sep 13 1953
ANNUAL SEVEN-DAY MINIMUM	25	Sep 10	12	Sep 13	18400*	Aug 13 1940
INSTANTANEOUS PEAK FLOW			882	Jul 3	19.00	Aug 13 1940
INSTANTANEOUS PEAK STAGE			3.74	Jul 3	1.1*	Oct 9 1941
INSTANTANEOUS LOW FLOW			9.5*	Sep 25	1.24	
ANNUAL RUNOFF (CFSM)	1.51		.54		16.79	
ANNUAL RUNOFF (INCHES)	20.50		7.32		311	
10 PERCENT EXCEEDS	442		136		106	
50 PERCENT EXCEEDS	72		56		38	
90 PERCENT EXCEEDS	31		24			

e Estimated.

a See PERIOD OF RECORD.

\* See REMARKS.



LOCATION.--Lat 35°36'33", long 82°34'43", Buncombe County, Hydrologic Unit 06010105, on right bank 27 ft upstream from Pearson Bridge (Secondary Road 1348) at Asheville, 1.4 mi downstream of bridge on U.S. Highways 19 and 23, 3.2 mi downstream of Swannanoa River, and at mile 145.8.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Datum of gage is 1,950.28 ft above sea level. Sept. 17, 1895, to Dec. 31, 1901, nonrecording gage at present site at different datum. Mar. 19, 1903, to July 15, 1916, and Jan. 1, 1917, to Sept. 30, 1922, nonrecording gage at Smith Bridge 1.5 mi upstream at datum 1961.80 ft. Oct. 1, 1922, to Aug. 9, 1930, nonrecording gage at present site and datum. Satellite and telephone telemetry at station.

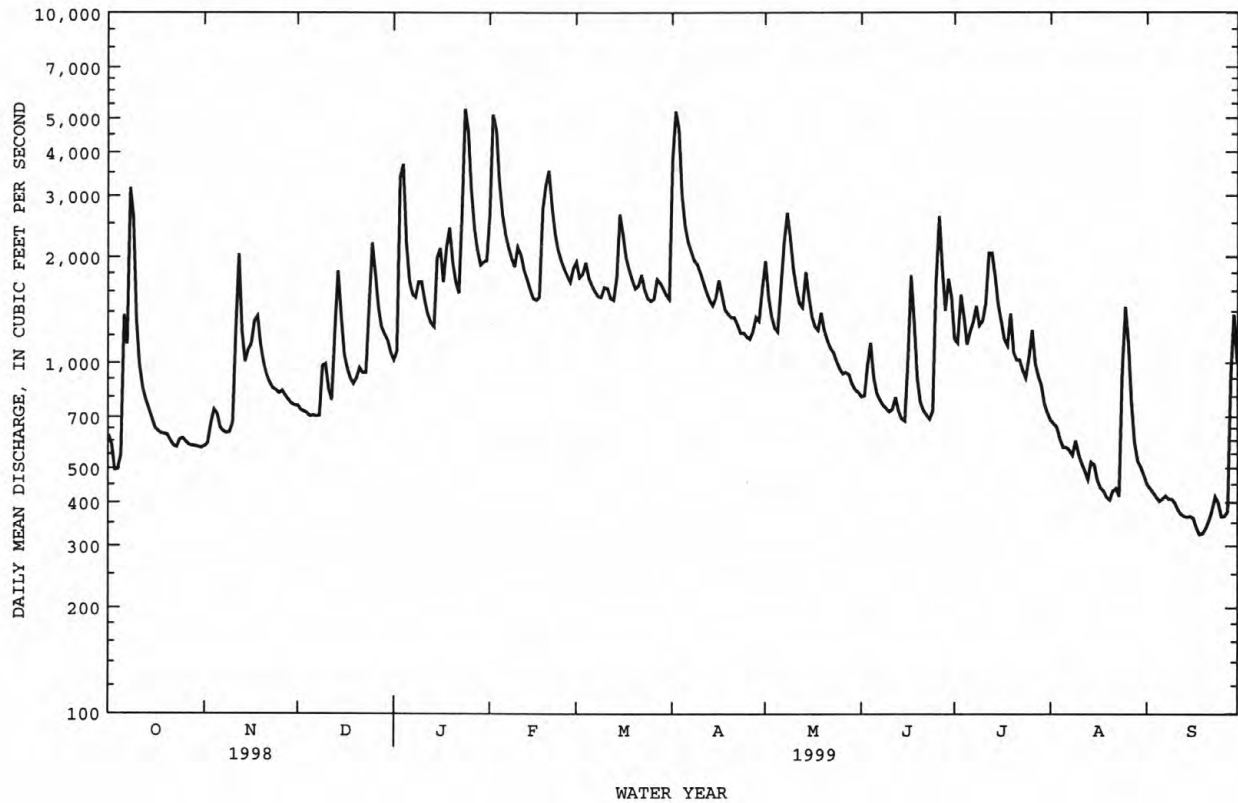
EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed since at least 1791, that of July 16, 1916, and flood of June 17, 1876, reached a stage of 18 ft, from studies by Tennessee Valley Authority.

MEAN	1600	1630	2105	2455	2695	3036	2768	2199	1894	1706	1697	1463
MAX	7025	5121	5700	6068	6364	7928	5705	4961	5774	11500	8362	4967
(WY)	1965	1980	1915	1937	1998	1899	1899	1973	1909	1916	1901	1906
MIN	353	507	636	548	1083	1037	973	859	547	559	328	346
(WY)	1955	1932	1956	1956	1931	1988	1986	1988	1988	1986	1925	1954

03451500 FRENCH BROAD RIVER AT ASHEVILLE, NC--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1896 - 1999	
ANNUAL TOTAL	925154		475212		2101	
ANNUAL MEAN	2535		1302		3671	1901
HIGHEST ANNUAL MEAN					1004	1988
LOWEST ANNUAL MEAN					66000	Jul 16 1916
HIGHEST DAILY MEAN	22600	Jan 8	5320	Jan 24	239	Sep 21 1925
LOWEST DAILY MEAN	397	Sep 18	344	Sep 15	258	Aug 24 1925
ANNUAL SEVEN-DAY MINIMUM	405	Sep 13	5550	Jan 24	110000*	Jul 16 1916
INSTANTANEOUS PEAK FLOW			4.09	Jan 24	23.10*	Jul 16 1916
INSTANTANEOUS PEAK STAGE			317	Sep 19	239*	Aug 28 1925
INSTANTANEOUS LOW FLOW					2.22	
ANNUAL RUNOFF (CFSM)	2.68		1.38		30.21	
ANNUAL RUNOFF (INCHES)	36.42		18.71		3680	
10 PERCENT EXCEEDS	5240		2140		1640	
50 PERCENT EXCEEDS	1470		1170		782	
90 PERCENT EXCEEDS	574		473			

\* See REMARKS.





## TENNESSEE RIVER BASIN

03451500 FRENCH BROAD RIVER AT ASHEVILLE, NC

## PRECIPITATION RECORDS

PERIOD OF RECORD.--October 1998 to September 1999.

INSTRUMENTATION.--Tipping bucket raingage and electronic datalogger. Satellite telemetry at site.

REMARKS.--Gage is operated in cooperation with Tennessee Valley Authority.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.34	.00	.22	.00	.00	.00	.01	.00
2	.00	.08	.00	.80	.00	.00	.00	.00	.05	.04	.00	.00
3	.03	.05	.00	.32	.00	.61	.00	.00	.00	.09	.00	.00
4	.00	.01	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.12	.00	.41	.00	.02
6	.00	.00	.00	.00	.00	.01	.01	1.02	.00	.03	.00	.00
7	1.54	.00	.00	.00	.00	.00	.00	1.08	.00	.59	.00	.00
8	.19	.00	.18	.00	.00	.00	.17	.00	.00	.00	.29	.00
9	.00	.03	.00	.12	.50	.17	.00	.00	.03	.00	.00	.00
10	.00	.31	.00	.00	.01	.00	.00	.00	.05	.45	.00	.00
11	.00	.21	.00	.00	.00	.00	.00	.00	.00	.65	.00	.00
12	.00	.00	.32	.00	.02	.00	.00	.00	.00	.12	.00	.00
13	.00	.00	.41	.00	.00	.34	.00	.03	.00	.00	.36	.00
14	.00	.38	.00	.46	.00	.21	.00	.03	.00	.00	.00	.00
15	.00	.00	.00	.04	.00	.11	.00	.00	.00	.00	.00	.00
16	.00	.18	.00	.00	.00	.00	.00	.00	.33	.00	.00	.00
17	.00	.01	.05	.02	.60	.00	.00	.00	.02	.00	.00	.00
18	.00	.00	.00	.16	.16	.00	.00	.23	.00	.05	.00	.00
19	.00	.00	.04	.00	.61	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	.00
21	.00	.00	.00	.01	.00	.17	.00	.00	.00	.00	.00	.23
22	.00	.00	.21	.02	.00	.00	.00	.02	.00	.00	.00	.00
23	.00	.00	.29	1.28	.00	.00	.00	.00	.00	.00	.06	.00
24	.00	.01	.49	.05	.00	.04	.00	.06	.41	.20	.25	.00
25	.00	.25	.01	.00	.00	.00	.00	.00	.42	.00	.01	.00
26	.00	.00	.00	.00	.00	.09	.00	.00	.01	.00	.07	.00
27	.00	.00	.00	.00	.10	.22	.00	.00	.04	.75	.00	.14
28	.00	.00	.01	.00	.20	.00	.00	.00	.10	.00	.00	1.08
29	.00	.00	.00	.20	---	.03	.00	.00	.84	.00	.00	.10
30	.00	.00	.01	.06	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.28	---	.00	---	.00	.00	---
TOTAL	1.76	1.52	2.02	3.54	2.54	2.28	0.40	2.59	2.30	3.40	1.20	1.57



Vehicles stranded by impassable floodwaters at U.S. Highway 64 near Princeville and Tarboro, N.C., September 1999.

## TENNESSEE RIVER BASIN

03453000 IVY RIVER NEAR MARSHALL, NC

LOCATION.--Lat 35°46'10", long 82°37'16", Madison County, Hydrologic Unit 06010105, on right bank 0.2 mi downstream from bridge on U.S. Highway 25-70, 1.9 mi upstream from mouth, and 4.0 mi southeast of Marshall.

DRAINAGE AREA.--158 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1933 to September 1973. July 1, 1994 to current year. Monthly discharge only for some periods, published in WSP 1306.

GAGE.--Water-stage recorder. Datum of gage is 1,700.41 ft above sea level (levels by Tennessee Valley Authority). Satellite telemetry at station.

REVISED RECORDS.--WSP 803: 1934(M), 1935. WSP 1910: 1936(P), 1937(M), 1940(M), 1946(M), 1957(P).

REMARKS.--No estimated daily discharges. Records good. Considerable low flow regulation, at times, caused by small power plant at Ivy Dam, 0.4 mi upstream. Minimum discharge for period of record and current water year affected by regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June, 1876, reached a stage of 16.0 ft, from studies by Tennessee Valley Authority (discharge 14,000 ft<sup>3</sup>/s). An outstanding but lesser flood occurred in July, 1916 (stage and discharge unknown).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	27	31	48	128	221	187	164	71	130	62	22
2	20	28	31	50	193	181	166	147	72	101	65	21
3	19	29	31	338	157	275	145	129	107	89	56	20
4	23	29	32	154	136	323	133	115	75	104	52	19
5	24	29	31	94	116	299	123	110	67	93	51	18
6	25	29	32	93	105	332	114	378	64	114	47	26
7	25	28	33	89	99	333	114	395	61	525	46	26
8	127	29	33	79	90	267	117	1260	58	307	44	22
9	48	30	43	110	83	235	124	599	56	155	54	18
10	32	31	37	107	110	213	112	387	103	116	46	19
11	29	83	35	82	87	177	106	283	81	270	42	17
12	27	48	34	75	83	155	99	224	62	694	39	16
13	26	36	272	69	79	156	93	192	57	526	37	16
14	25	35	114	87	71	252	90	204	54	266	44	16
15	26	59	62	392	70	647	105	215	56	177	36	16
16	25	44	50	223	68	470	99	164	119	146	34	16
17	26	39	47	150	81	364	85	142	113	112	32	14
18	25	36	42	157	313	303	82	135	72	113	30	16
19	26	33	41	136	321	263	79	361	61	97	28	15
20	31	33	47	114	347	216	87	213	57	85	42	16
21	27	32	43	99	248	209	78	171	56	106	38	17
22	26	32	53	90	185	190	74	149	55	106	30	22
23	25	31	64	288	150	161	70	138	70	89	29	18
24	26	32	374	524	133	152	93	137	64	89	37	17
25	26	32	189	319	121	141	76	117	131	192	37	16
26	27	36	105	212	116	141	73	109	149	108	33	16
27	26	34	77	160	105	145	75	101	110	110	31	15
28	27	32	68	133	211	136	117	89	117	96	28	96
29	27	32	62	115	---	127	115	84	259	78	27	65
30	27	32	60	130	---	122	160	79	208	75	25	44
31	27	---	52	108	---	115	---	74	---	67	23	---
TOTAL	922	1060	2225	4825	4006	7321	3191	7065	2685	5336	1225	695
MEAN	29.7	35.3	71.8	156	143	236	106	228	89.5	172	39.5	23.2
MAX	127	83	374	524	347	647	187	1260	259	694	65	96
MIN	19	27	31	48	68	115	70	74	54	67	23	14
CFSM	.19	.22	.45	.99	.91	1.49	.67	1.44	.57	1.09	.25	.15
IN.	.22	.25	.52	1.14	.94	1.72	.75	1.66	.63	1.26	.29	.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1999,<sup>a</sup> BY WATER YEAR (WY)

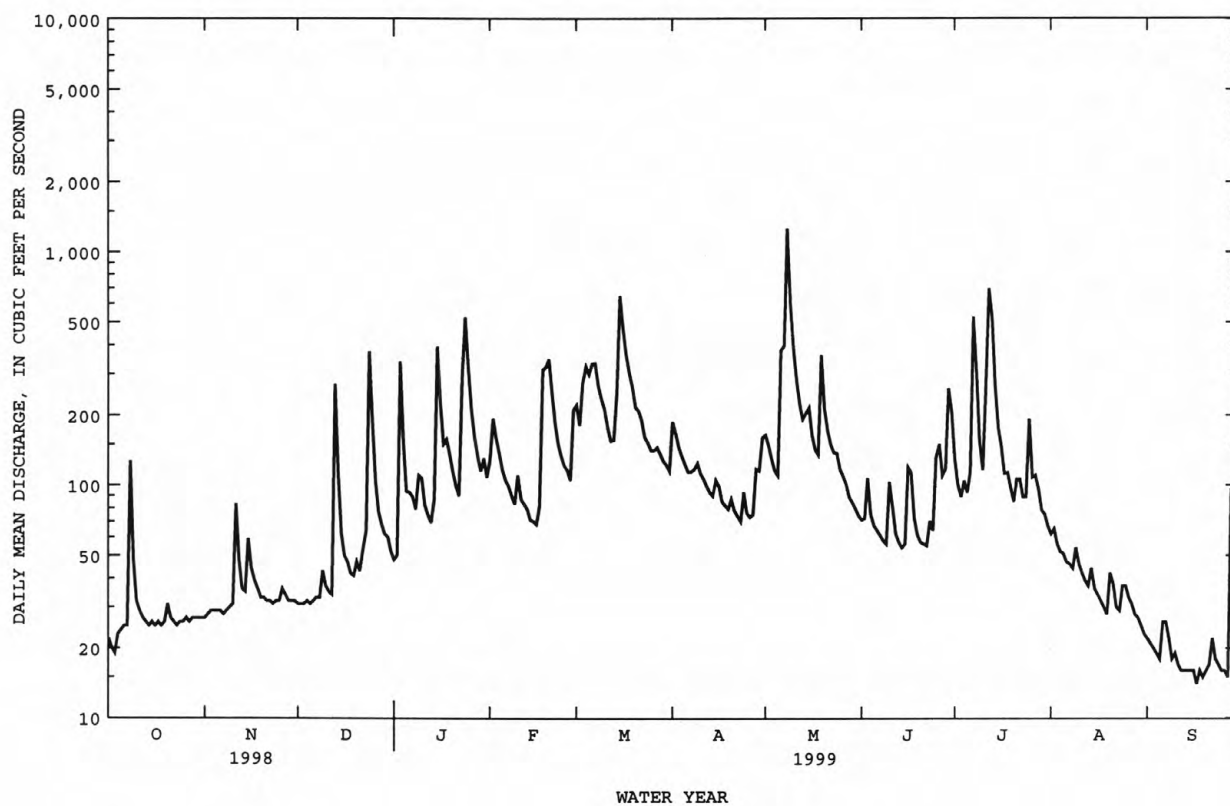
	MEAN	78.4	92.7	135	218	268	316	240	159	112	96.2	87.6	60.5
MAX	367	229	407	636	563	848	574	328	272	280	444	141	
(WY)	1965	1950	1962	1937	1957	1963	1936	1946	1950	1949	1940	1949	
MIN	19.3	28.9	39.8	46.4	60.9	129	76.1	58.6	43.3	29.8	22.8	20.5	
(WY)	1953	1940	1940	1940	1941	1970	1942	1941	1953	1952	1956	1998	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1934 - 1999 <sup>a</sup>	
ANNUAL TOTAL	67768		40556		154	
ANNUAL MEAN	186		111		232	
HIGHEST ANNUAL MEAN					92.1	
LOWEST ANNUAL MEAN					1941	
HIGHEST DAILY MEAN	2710		Jan 8		8010	
LOWEST DAILY MEAN	16		Sep 15		8.5	
ANNUAL SEVEN-DAY MINIMUM	18		Sep 12		9.8	
INSTANTANEOUS PEAK FLOW			1890		14400	
INSTANTANEOUS PEAK STAGE			7.24		17.21	
INSTANTANEOUS LOW FLOW			10*		3.0*	
ANNUAL RUNOFF (CFSM)	1.18		.70		.98	
ANNUAL RUNOFF (INCHES)	15.96		9.55		13.28	
10 PERCENT EXCEEDS	410		250		303	
50 PERCENT EXCEEDS	71		79		97	
90 PERCENT EXCEEDS	24		25		35	

<sup>a</sup> See PERIOD OF RECORD.

\* See REMARKS.

03453000 IVY RIVER NEAR MARSHALL, NC--Continued



## 03453500 FRENCH BROAD RIVER AT MARSHALL, NC

LOCATION.--Lat 35°47'10", long 82°39'39", Madison County, Hydrologic Unit 06010105, on right bank 0.7 mi upstream from Hayes Creek, 1.0 mi downstream of Ivy River, 1.5 mi southeast of Marshall, and at mile 126.7.

DRAINAGE AREA.--1,332 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1942 to current year.

REVISED RECORDS.--WSP 1436: 1954(M).

GAGE.--Water-stage recorder. Datum of gage is 1,646.79 ft above sea level (levels by Tennessee Valley Authority). Satellite and telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Small diversions from tributaries for water supply. Slight diurnal fluctuation and occasional slight regulation at low flow caused by small reservoirs upstream from station. Prior to July 1963, some regulation by Weaver plant of Carolina Power and Light Company 15 mi upstream, after November 1986 the same power plant was operated by the Metropolitan Sewage Treatment Plant. Minimum discharge for period of record also occurred Sept. 14, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed since at least 1791: 22.0 ft, July 16, 1916; discharge: 115,000 ft<sup>3</sup>/s. Flood of Aug. 30, 1940, reached a stage of 16.6 ft; discharge, 70,000 ft<sup>3</sup>/s, from high water marks, flood profiles, and studies by Tennessee Valley Authority.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	795	727	886	1190	2580	2400	3620	2440	1180	1630	984	670
2	805	731	873	1190	5610	2170	5800	2030	1160	1410	999	640
3	689	777	857	3770	5360	2330	5380	1770	1300	1890	924	623
4	669	876	854	4440	3950	2600	3740	1650	1460	1760	863	607
5	687	871	842	2650	3070	2350	2890	1620	1310	1490	832	584
6	1320	816	833	1970	2650	2280	2600	2580	1190	1610	823	589
7	1310	780	844	1830	2430	2210	2430	2980	1120	2190	805	629
8	3290	785	866	1730	2250	2070	2310	5590	1080	2100	791	594
9	3280	775	1020	1910	2110	2020	2340	3630	1040	1700	891	577
10	1660	810	1180	1960	2480	2070	2160	2740	1110	1690	863	563
11	1220	1200	1030	1760	2330	2040	2050	2310	1120	2120	793	548
12	1050	2180	930	1590	2120	1920	1960	2060	1110	3250	761	531
13	979	1500	1540	1520	1990	1910	1890	1930	1070	2970	730	514
14	907	1170	2110	1500	1860	2290	1810	2270	992	2400	794	508
15	877	1250	1630	2460	1760	3840	1870	2150	981	1960	813	505
16	837	1250	1280	2610	1730	3360	2030	1840	1230	1760	724	504
17	829	1370	1150	2090	1750	2750	1930	1710	2100	1550	689	487
18	798	1510	1100	2230	3190	2470	1740	1690	1770	1490	669	455
19	798	1280	1030	2860	4080	2280	1700	2260	1300	1770	651	445
20	802	1160	1050	2290	4670	2100	1680	1840	1130	1480	685	458
21	781	1070	1120	1990	3600	2100	1660	1660	1070	1380	662	494
22	768	1010	1170	1820	2870	2230	1620	1560	1040	1390	700	509
23	749	971	1150	3060	2520	2070	1540	1520	1030	1320	654	544
24	756	961	2010	6430	2320	1920	1550	1490	1050	1260	776	553
25	781	952	2500	5580	2180	1870	1510	1390	1680	1490	1770	518
26	765	973	2170	3950	2090	1880	1480	1350	3110	1540	1430	486
27	762	946	1670	2860	1980	2120	1530	1330	2270	1410	1120	487
28	753	908	1460	2450	2240	2110	1730	1320	1800	1340	874	935
29	732	894	1370	2210	---	2010	1720	1260	2350	1210	786	1490
30	749	885	1350	2240	---	1940	1950	1220	2240	1120	736	1310
31	718	---	1260	2220	---	1870	---	1190	---	1040	699	---
TOTAL	31916	31388	39135	78360	77770	69580	68220	62380	42393	52720	26291	18357
MEAN	1030	1046	1262	2528	2778	2245	2274	2012	1413	1701	848	612
MAX	3290	2180	2500	6430	5610	3840	5800	5590	3110	3250	1770	1490
MIN	669	727	833	1190	1730	1870	1480	1190	981	1040	651	445
CFSM	.77	.79	.95	1.90	2.09	1.69	1.71	1.51	1.06	1.28	.64	.46
IN.	.89	.88	1.09	2.19	2.17	1.94	1.91	1.74	1.18	1.47	.73	.51

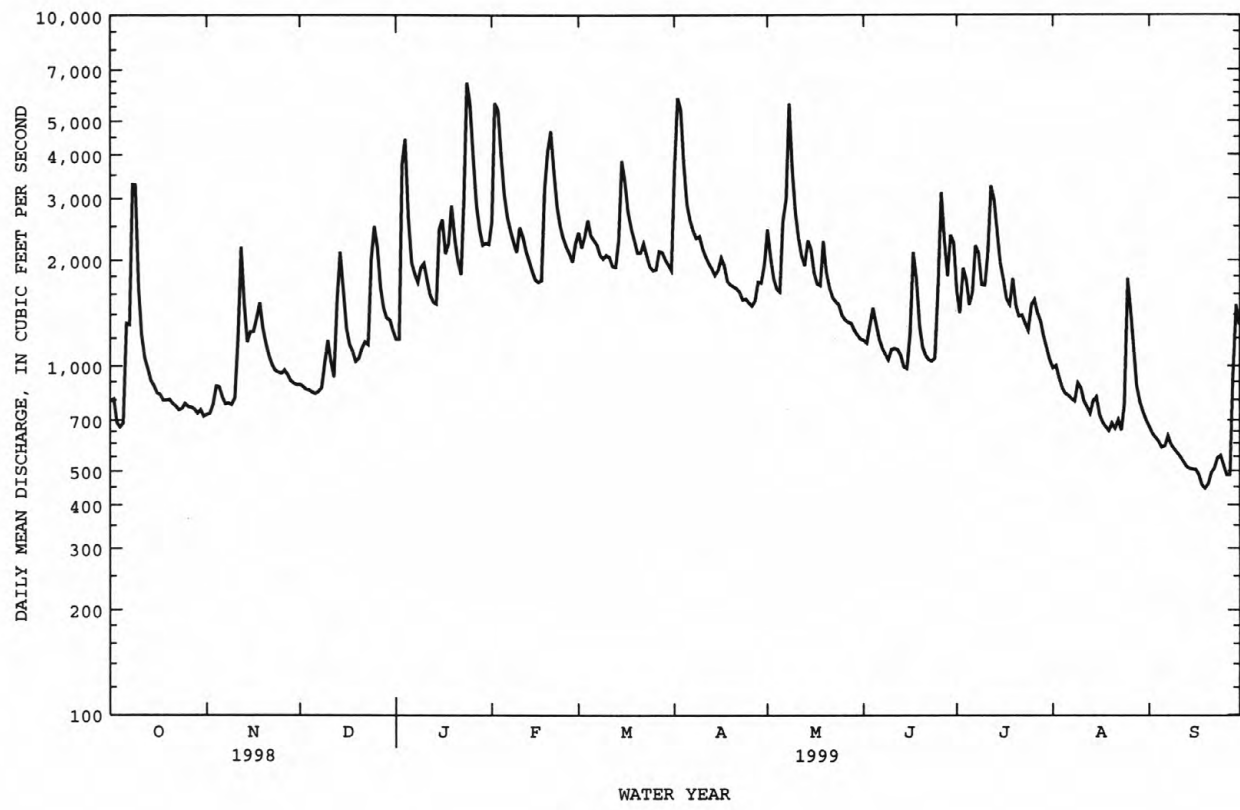
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1999, BY WATER YEAR (WY)

	1798	2028	2441	2969	3395	3798	3433	2695	2208	1769	1778	1542
MEAN	1798	2028	2441	2969	3395	3798	3433	2695	2208	1769	1778	1542
MAX	8172	5640	5465	6279	7373	7170	6149	5478	4191	5071	4905	3857
(WY)	1965	1980	1962	1998	1998	1975	1983	1973	1989	1949	1994	1950
MIN	450	651	778	715	1571	1235	1191	1066	700	708	635	384
(WY)	1955	1955	1956	1956	1988	1988	1986	1988	1988	1986	1956	1954

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1943 - 1999
ANNUAL TOTAL	1082513	598510	
ANNUAL MEAN	2966	1640	2483
HIGHEST ANNUAL MEAN			3573
LOWEST ANNUAL MEAN			1229
HIGHEST DAILY MEAN	25200	Jan 8	30800
LOWEST DAILY MEAN	565	Sep 16	292
ANNUAL SEVEN-DAY MINIMUM	575	Sep 14	292
INSTANTANEOUS PEAK FLOW		478	313
INSTANTANEOUS PEAK STAGE		7480	54000
INSTANTANEOUS LOW FLOW		4.33	13.64
ANNUAL RUNOFF (CFSM)	2.23	1.23	193*
ANNUAL RUNOFF (INCHES)	30.23	16.72	1.86
10 PERCENT EXCEEDS	6340	2630	25.33
50 PERCENT EXCEEDS	1580	1490	4440
90 PERCENT EXCEEDS	742	695	1980
			910

\* See REMARKS.

03453500 FRENCH BROAD RIVER AT MARSHALL, NC--Continued





03455500 WEST FORK PIGEON RIVER ABOVE LAKE LOGAN NEAR HAZELWOOD, NC

LOCATION.--Lat 35°23'46", long 82°56'17", Haywood County, Hydrologic Unit 06010106, on right bank at upstream side of bridge on Secondary Road 1216, 600 ft upstream from Big Creek, 1.1 mi upstream from Lake Logan, 6.7 mi southeast of Hazelwood, and at mile 9.3.

DRAINAGE AREA.--27.6 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1954 to current year.

REVISED RECORDS.--WDR NC-95-1: 1994(M).

GAGE.--Water-stage recorder. Datum of gage is 2,976.00 ft above sea level. Satellite and telephone telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Maximum gage height for period of record, from floodmarks. Minimum discharge for period of record also occurred Sept. 30, 1954. Minimum discharge for current water year also occurred Oct. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	15	20	47	258	129	549	75	45	50	32	17
2	12	16	19	146	230	112	173	69	65	46	32	16
3	12	26	19	300	180	180	141	59	74	44	30	16
4	13	18	19	e89	160	135	125	56	49	e41	29	16
5	13	16	19	e75	136	121	115	66	47	e39	29	15
6	16	15	20	e68	129	120	110	176	45	e52	28	16
7	105	15	19	e65	142	109	99	152	42	81	27	15
8	175	15	31	87	121	99	94	262	40	65	25	15
9	26	21	42	143	109	100	91	124	43	54	26	14
10	19	31	25	87	171	96	83	103	46	56	25	15
11	17	125	23	74	119	90	79	92	42	97	24	14
12	16	29	23	69	109	85	75	87	38	100	23	13
13	16	23	300	65	98	85	73	81	36	82	23	13
14	15	32	73	108	89	173	71	81	36	64	23	14
15	14	66	51	266	87	130	78	74	62	57	22	14
16	14	86	43	112	83	106	70	69	120	51	22	13
17	14	69	39	97	130	105	65	66	74	49	21	13
18	14	38	35	122	197	104	64	72	51	58	20	13
19	14	31	48	94	143	96	61	87	44	48	20	13
20	15	30	53	84	124	90	70	67	42	43	20	14
21	14	28	41	78	112	99	61	63	40	41	19	14
22	14	25	63	77	99	88	58	61	39	40	19	16
23	14	24	78	562	94	81	e55	60	41	39	20	14
24	14	24	267	323	91	83	e54	60	78	248	30	13
25	14	23	123	185	87	79	e52	55	122	86	26	13
26	14	24	84	151	83	82	e53	55	72	51	21	13
27	14	22	68	131	95	80	e53	53	69	53	20	17
28	14	21	65	117	256	80	e51	50	65	49	19	109
29	14	20	64	108	---	86	e56	49	68	41	19	29
30	15	20	54	126	---	83	e78	47	56	38	18	27
31	15	---	50	121	---	144	---	46	---	35	17	---
TOTAL	710	948	1878	4177	3732	3250	2857	2517	1691	1898	729	554
MEAN	22.9	31.6	60.6	135	133	105	95.2	81.2	56.4	61.2	23.5	18.5
MAX	175	125	300	562	258	180	549	262	122	248	32	109
MIN	12	15	19	47	83	79	51	46	36	35	17	13
CFSM	.83	1.14	2.19	4.88	4.83	3.80	3.45	2.94	2.04	2.22	.85	.67
IN.	.96	1.28	2.53	5.63	5.03	4.38	3.85	3.39	2.28	2.56	.98	.75

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1999, BY WATER YEAR (WY)

	MEAN	73.6	89.0	111	130	156	167	144	109	84.1	59.3	58.8	56.0
MAX	229	301	234	272	355	312	291	289	213	207	187	260	
(WY)	1965	1980	1962	1998	1966	1975	1983	1976	1967	1967	1994	1979	
MIN	13.5	26.8	29.7	34.0	68.7	53.8	47.8	51.6	30.8	23.3	16.4	13.0	
(WY)	1955	1979	1966	1981	1968	1988	1986	1988	1988	1993	1998	1954	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

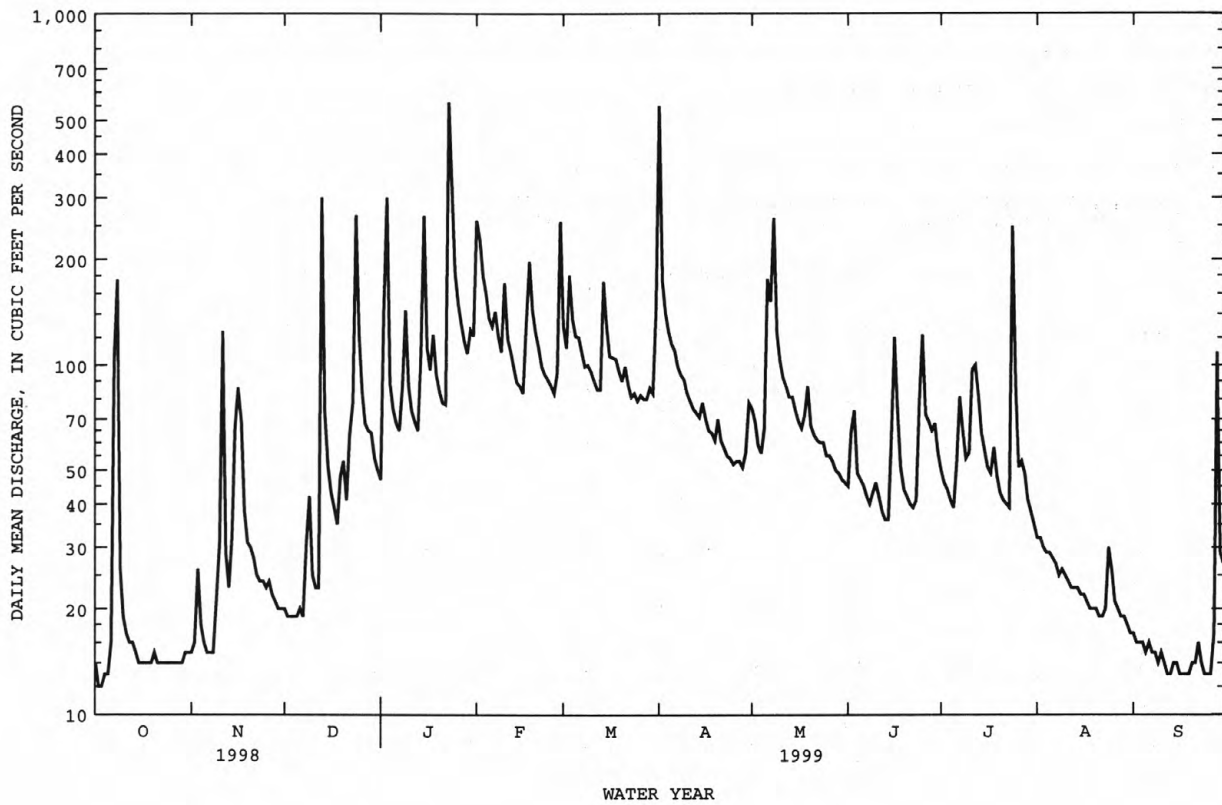
WATER YEARS 1954 - 1999

ANNUAL TOTAL	36465	24941	
ANNUAL MEAN	99.9	68.3	103
HIGHEST ANNUAL MEAN			143
LOWEST ANNUAL MEAN			59.6
HIGHEST DAILY MEAN	2170	Jan 7	4500
LOWEST DAILY MEAN	10	Sep 14	10
ANNUAL SEVEN-DAY MINIMUM	11	Sep 11	11
INSTANTANEOUS PEAK FLOW			2260
INSTANTANEOUS PEAK STAGE			5.19
INSTANTANEOUS LOW FLOW			12*
ANNUAL RUNOFF (CFSM)	3.62	2.48	9.50*
ANNUAL RUNOFF (INCHES)	49.15	33.62	9.4*
10 PERCENT EXCEEDS	219	129	189
50 PERCENT EXCEEDS	48	54	71
90 PERCENT EXCEEDS	14	15	26

e Estimated.

\* See REMARKS.

03455500 WEST FORK PIGEON RIVER ABOVE LAKE LOGAN NEAR HAZELWOOD, NC--Continued



## TENNESSEE RIVER BASIN

03455773 LAKE LOGAN AT DAM NEAR HAZELWOOD, NC

LOCATION.--Lat 35°25'15", long 82°55'30", Haywood County, Hydrologic Unit 06010106, at Lake Logan Dam on West Fork Pigeon River near Hazelwood, and at river mi 7.0.

DRAINAGE AREA.--33.3 mi<sup>2</sup>.

## GAGE HEIGHT RECORDS

PERIOD OF RECORD.--October 1997 to current year. Records for October 1986 to January 1991 and November 1995 to September 1997 are unpublished and available in the USGS District Office, Raleigh, NC.

GAGE.--Water-stage recorder. Datum of gage is 2,856.23 ft above sea level. Telephone telemetry at station.

REMARKS.--Records good. Total capacity is 1,040 ft<sup>3</sup>/s-day (top of flashboards), all of which is usable. Filling began November 1931. (See station 0345577330).

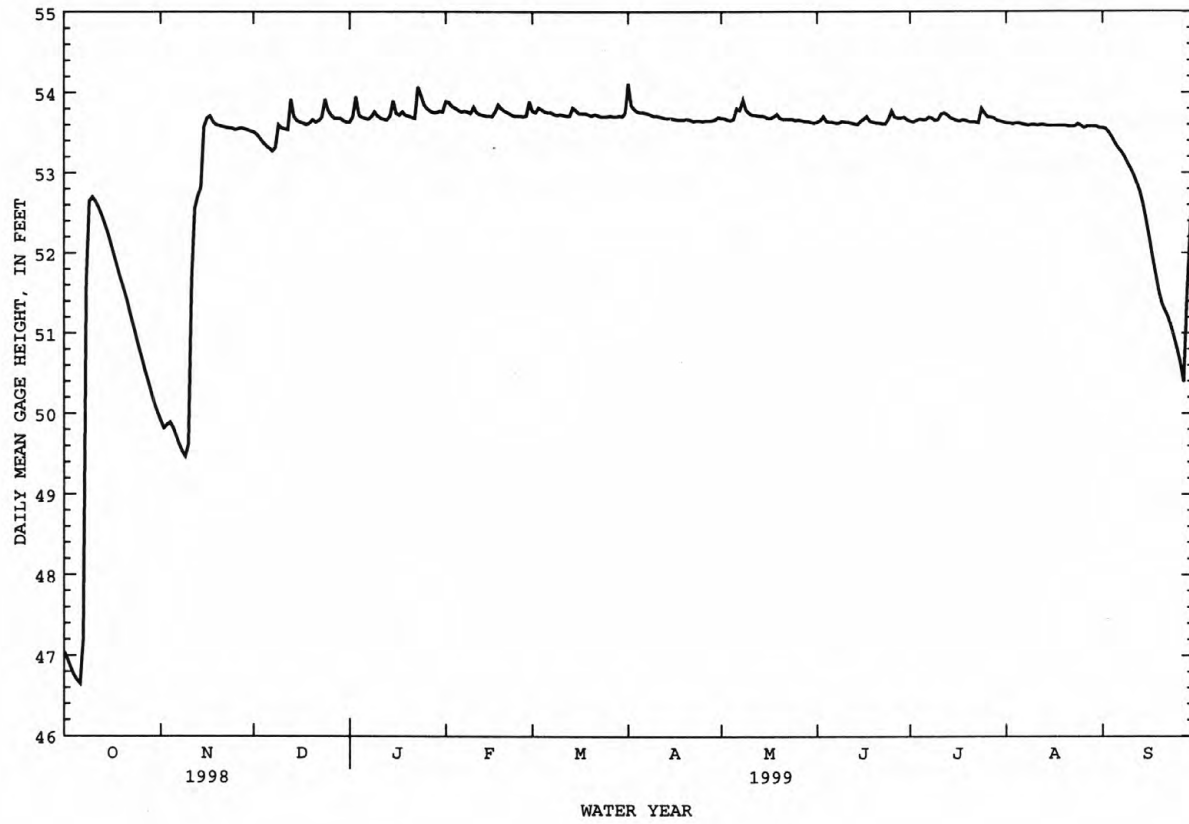
EXTREMES FOR PERIOD OF RECORD.--Maximum, 56.46 ft, Jan. 7, 1998; minimum, 46.42 ft, Sept. 21, 1998.

EXTREMES FOR CURRENT YEAR.--Maximum, 54.61 ft, Jan. 23; minimum, 46.65 ft, Oct. 6.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47.04	49.91	53.51	53.63	53.89	53.77	54.11	53.68	53.63	53.64	53.62	53.56
2	46.95	49.82	53.48	53.70	53.88	53.75	53.84	53.68	53.65	53.63	53.62	53.55
3	46.85	49.86	53.43	53.95	53.83	53.81	53.79	53.66	53.70	53.65	53.61	53.50
4	46.76	49.89	53.38	53.72	53.81	53.79	53.76	53.65	53.64	53.67	53.62	53.44
5	46.70	49.82	53.34	53.69	53.78	53.76	53.75	53.67	53.63	53.66	53.62	53.37
6	46.65	49.72	53.31	53.68	53.76	53.75	53.75	53.80	53.63	53.66	53.61	53.31
7	47.21	49.62	53.27	53.67	53.77	53.75	53.74	53.78	53.62	53.69	53.60	53.26
8	51.63	49.53	53.31	53.70	53.76	53.73	53.73	53.91	53.62	53.68	53.59	53.20
9	52.65	49.47	53.60	53.76	53.74	53.72	53.71	53.78	53.64	53.65	53.60	53.12
10	52.70	49.62	53.56	53.71	53.82	53.73	53.71	53.74	53.63	53.66	53.60	53.05
11	52.65	51.66	53.55	53.68	53.75	53.72	53.70	53.72	53.63	53.73	53.59	52.97
12	52.57	52.56	53.54	53.67	53.73	53.71	53.69	53.72	53.62	53.74	53.60	52.87
13	52.47	52.71	53.92	53.66	53.72	53.71	53.68	53.71	53.61	53.72	53.60	52.77
14	52.36	52.82	53.70	53.71	53.71	53.81	53.68	53.71	53.60	53.68	53.59	52.60
15	52.24	53.57	53.65	53.90	53.71	53.78	53.68	53.70	53.64	53.67	53.59	52.40
16	52.11	53.68	53.63	53.74	53.70	53.74	53.67	53.68	53.67	53.65	53.59	52.19
17	51.97	53.71	53.62	53.72	53.76	53.74	53.66	53.68	53.70	53.64	53.59	51.96
18	51.83	53.63	53.60	53.76	53.85	53.74	53.66	53.70	53.64	53.66	53.59	51.75
19	51.69	53.60	53.62	53.72	53.80	53.73	53.66	53.73	53.63	53.65	53.59	51.54
20	51.56	53.59	53.66	53.71	53.77	53.71	53.67	53.68	53.62	53.63	53.59	51.38
21	51.43	53.58	53.63	53.69	53.75	53.73	53.66	53.67	53.62	53.63	53.58	51.28
22	51.27	53.57	53.65	53.68	53.73	53.72	53.64	53.67	53.61	53.63	53.58	51.20
23	51.12	53.56	53.69	54.07	53.71	53.70	53.65	53.67	53.61	53.62	53.58	51.08
24	50.97	53.56	53.92	53.97	53.71	53.70	53.65	53.67	53.67	53.80	53.61	50.94
25	50.82	53.54	53.78	53.85	53.71	53.70	53.64	53.65	53.77	53.74	53.59	50.79
26	50.68	53.55	53.72	53.80	53.70	53.71	53.65	53.66	53.69	53.69	53.56	50.62
27	50.53	53.56	53.68	53.77	53.71	53.70	53.65	53.65	53.68	53.69	53.58	50.39
28	50.39	53.55	53.68	53.75	53.89	53.70	53.65	53.64	53.68	53.68	53.58	51.39
29	50.25	53.54	53.68	53.75	---	53.71	53.66	53.64	53.69	53.65	53.58	52.20
30	50.12	53.52	53.65	53.77	---	53.70	53.69	53.63	53.66	53.64	53.58	52.93
31	50.01	---	53.63	53.76	---	53.75	---	53.62	---	53.63	53.56	---
MEAN	50.46	52.14	53.59	53.75	53.77	53.73	53.71	53.70	53.65	53.67	53.59	52.29
MAX	52.70	53.71	53.92	54.07	53.89	53.81	54.11	53.91	53.77	53.80	53.62	53.56
MIN	46.65	49.47	53.27	53.63	53.70	53.70	53.64	53.62	53.60	53.62	53.56	50.39

03455773 LAKE LOGAN AT DAM NEAR HAZELWOOD, NC--Continued



## TENNESSEE RIVER BASIN

03455773 LAKE LOGAN AT DAM NEAR HAZELWOOD, NC--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.--December 1998 to September 1999.

INSTRUMENTATION.--Tipping bucket raingage and electronic datalogger. Telephone telemetry at site.

REMARKS.--Gage is operated in cooperation with Blue Ridge Paper Products, Inc.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	.00	.00	.72	.00	.49	.00	.00	.00	.00	.00
2	---	---	.00	1.25	.00	.00	.00	.00	.63	.34	.00	.00
3	---	---	.00	.00	.00	.82	.00	.00	.00	.06	.00	.00
4	---	---	.00	.00	.02	.00	.00	.00	.00	.01	.00	.00
5	---	---	.04	.00	.00	.00	.00	.34	.01	.00	.00	.00
6	---	---	.00	.00	.00	.11	.10	1.05	.00	.33	.00	.00
7	---	---	.00	.01	.07	.00	.00	1.17	.00	.03	.00	.00
8	---	---	.32	.29	.00	.00	.35	.02	.00	.00	.16	.00
9	---	---	.00	.33	.47	.27	.00	.00	2.29	.00	.01	.00
10	---	---	.00	.00	.01	.00	.00	.00	.12	.21	.00	.00
11	---	---	.00	.00	.01	.00	.00	.03	.00	1.29	.00	.00
12	---	---	.59	.00	.02	.00	.00	.01	.00	.31	.00	.00
13	---	---	1.30	.00	.00	.43	.00	.09	.00	.00	.03	.00
14	---	---	.00	.81	.00	.26	.00	.03	.08	.00	.01	.00
15	---	---	.00	.11	.00	.02	.44	.00	.21	.00	.00	.00
16	---	---	.00	.00	.00	.00	.00	.00	---	.00	.00	.00
17	---	---	.07	.01	1.05	.00	.00	.00	.07	.00	.00	.00
18	---	---	.05	.25	.08	.00	.00	1.45	.00	.01	.00	.00
19	---	---	.30	.00	.48	.00	.00	.01	.00	.00	.00	.00
20	---	---	.00	.00	.00	.00	.11	.00	.00	.00	.10	.21
21	---	---	.00	.00	.00	.16	.00	.00	.00	.00	.00	.09
22	---	---	.27	.04	.00	.00	.00	.25	.00	.27	.00	.00
23	---	---	.46	2.06	.00	.00	.03	.06	.00	.00	.04	.00
24	---	---	.91	.10	.00	.01	.01	.04	.33	.29	.18	.00
25	---	---	.05	.00	.00	.00	.00	.00	.14	.01	.02	.00
26	---	---	.00	.00	.00	.12	.16	.04	.22	.00	.00	.00
27	---	---	.00	.00	.58	.31	.05	.00	.03	.11	.00	.08
28	---	---	.09	.00	.41	.00	.00	.00	.02	.00	.00	.71
29	---	---	.00	.28	---	.02	.62	.00	.29	.00	.00	---
30	---	---	.00	.28	---	.00	.67	.00	.00	.00	.00	.00
31	---	---	.00	.03	---	.56	---	.00	---	.00	.00	---
TOTAL	---	---	4.45	5.85	3.92	3.09	3.03	4.59	---	3.27	0.55	---



Floodwaters of the Tar River near downtown Rocky Mount, N.C., September 1999.



## TENNESSEE RIVER BASIN

0345577330 WEST FORK PIGEON RIVER NEAR RETREAT, NC

LOCATION.--Lat 35°25'36", long 82°55'12", Haywood County, Hydrologic Unit 06010106, on right bank at upstream side of bridge on State Highway 215, and 1.6 mi southwest of Retreat.

DRAINAGE AREA.--33.5 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1988 to current year.

REVISED RECORDS.--WDR NC-95-1: 1994(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,839 ft above sea level, from topographic map. Satellite and telephone telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some low flow regulation, at times, caused by Lake Logan (station 03455773). Maximum discharge for period of record from rating curve extended above 4,000 ft<sup>3</sup>/s by logarithmic plotting.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e17	e21	25	45	308	151	681	92	48	55	39	17
2	e17	e21	26	114	296	127	245	89	65	51	37	18
3	e16	21	25	397	218	229	197	72	142	57	34	20
4	e16	21	23	102	184	161	176	63	78	69	33	20
5	e16	22	22	e71	151	143	151	54	70	67	33	20
6	e16	22	21	78	135	139	142	194	64	63	32	20
7	e22	21	e21	73	158	124	130	157	53	89	30	20
8	e36	22	e22	95	133	110	126	340	47	79	27	21
9	e20	22	e37	168	114	115	118	150	59	62	28	22
10	e18	21	e27	98	200	107	110	121	51	61	28	22
11	e17	e35	e26	83	128	102	104	106	47	122	24	22
12	e16	24	e25	74	115	95	96	99	41	126	23	20
13	e16	25	375	69	98	96	93	92	38	108	23	22
14	e16	26	95	99	86	205	91	90	37	80	22	25
15	e16	65	55	348	87	161	102	82	59	68	21	22
16	e16	124	44	129	82	120	92	76	162	60	21	20
17	e16	119	39	107	137	118	82	71	99	54	21	20
18	e16	49	32	138	258	116	79	83	57	66	20	20
19	e16	40	43	102	170	109	78	106	47	55	20	19
20	e16	39	62	89	141	101	89	75	43	46	20	16
21	e16	35	44	84	125	112	75	68	41	43	19	16
22	e18	29	63	82	109	99	71	65	39	44	19	16
23	e19	30	81	638	102	90	68	65	40	40	19	17
24	e19	28	358	445	97	90	68	63	77	275	37	16
25	e20	33	167	232	93	86	64	58	148	140	31	16
26	e20	26	104	179	88	92	66	58	89	66	22	20
27	e20	26	77	149	100	87	70	54	80	67	18	22
28	e20	25	71	131	333	84	70	52	75	69	19	18
29	22	24	74	117	---	93	75	55	81	52	19	16
30	e21	26	56	140	---	90	97	61	65	48	18	20
31	e22	---	51	134	---	135	---	49	---	43	17	---
TOTAL	572	1042	2191	4810	4246	3687	3706	2860	2042	2325	774	583
MEAN	18.5	34.7	70.7	155	152	119	124	92.3	68.1	75.0	25.0	19.4
MAX	36	124	375	638	333	229	681	340	162	275	39	25
MIN	16	21	21	45	82	84	64	49	37	40	17	16

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1999, BY WATER YEAR (WY)

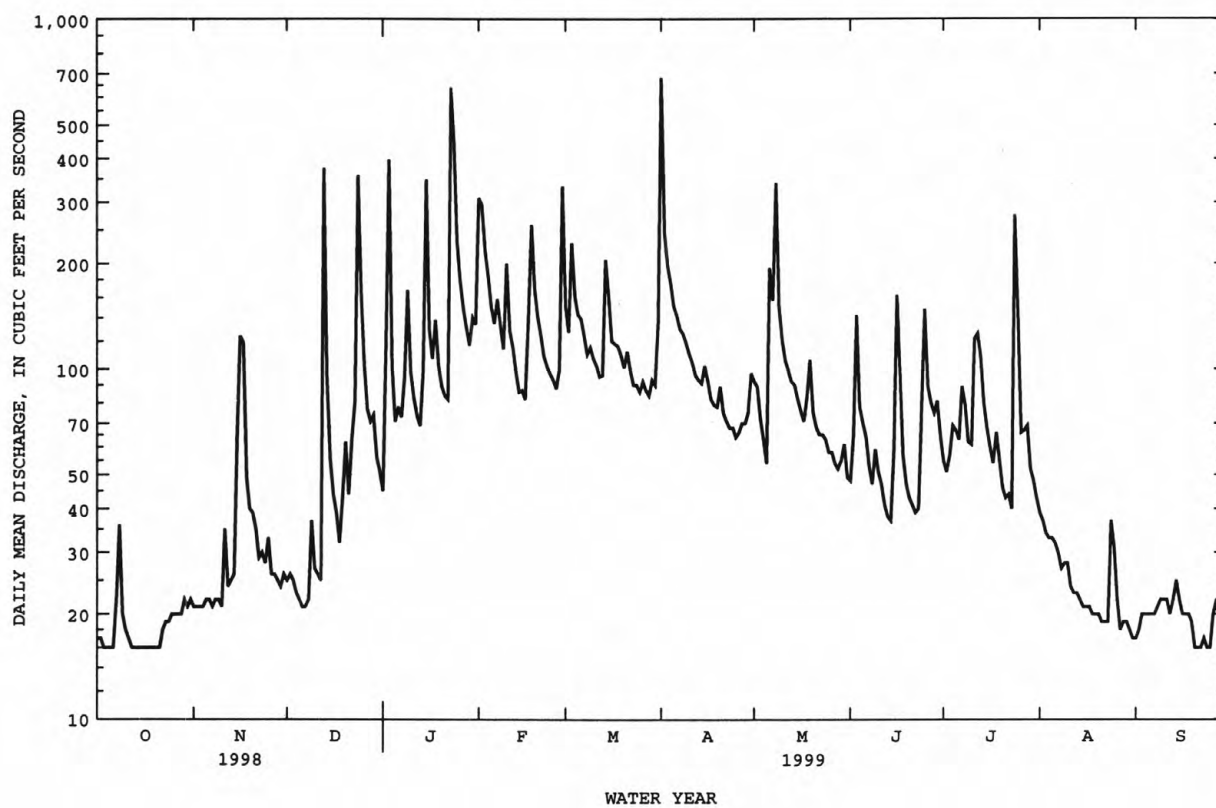
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	93.8	102	122	195	210	208	158	122	107	70.4	82.9	60.5
MAX	262	265	239	314	360	309	268	193	210	209	220	136
(WY)	1996	1993	1993	1996	1990	1990	1994	1990	1989	1989	1994	1989
MIN	18.5	34.7	52.1	115	116	62.6	72.2	62.9	40.0	31.3	24.7	17.3
(WY)	1999	1999	1989	1992	1992	1988	1995	1988	1988	1993	1998	1998

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1988 - 1999
ANNUAL TOTAL	43322	28838	
ANNUAL MEAN	119	79.0	130
HIGHEST ANNUAL MEAN			157
LOWEST ANNUAL MEAN			79.0
HIGHEST DAILY MEAN	2060	681	2940
LOWEST DAILY MEAN	15	16	15
ANNUAL SEVEN-DAY MINIMUM	16	16	16
INSTANTANEOUS PEAK FLOW		1570	7960*
INSTANTANEOUS PEAK STAGE		4.44	8.97
INSTANTANEOUS LOW FLOW		NOT DETERMINED	17
10 PERCENT EXCEEDS	281	149	239
50 PERCENT EXCEEDS	55	63	89
90 PERCENT EXCEEDS	18	19	32

e Estimated.

\* See REMARKS.

0345577330 WEST FORK PIGEON RIVER NEAR RETREAT, NC--Continued



## TENNESSEE RIVER BASIN

03456100 WEST FORK PIGEON RIVER AT BETHEL, NC

LOCATION.--Lat 35°27'48", long 82°54'00", Haywood County, Hydrologic Unit 06010106, on left bank 20 ft downstream of bridge on Secondary Road 1112, 0.6 mi southwest of Bethel, 1.6 mi upstream from confluence with East Fork Pigeon River, and 5.6 mi downstream of Lake Logan.

DRAINAGE AREA.--58.4 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1981 to current year.

REVISED RECORDS.--WDR NC-95-1: 1994(M).

GAGE.--Water-stage recorder. Datum of gage is 2,667.78 ft above sea level (levels by Tennessee Valley Authority). Satellite and telephone telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Considerable regulation, at times, caused by Lake Logan (station 03455773). Minimum discharge for current water year also occurred many days in Sept.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	33	34	70	360	211	780	124	79	72	50	26
2	28	33	35	92	363	184	288	119	81	68	49	26
3	27	37	36	515	293	280	235	103	132	70	47	27
4	27	37	35	160	253	233	211	97	84	87	45	26
5	27	38	36	e123	223	211	194	106	80	77	44	26
6	27	38	35	e113	204	205	183	248	80	e85	43	26
7	35	37	34	106	218	190	171	212	74	e140	42	27
8	58	38	36	123	195	172	165	462	69	e115	41	26
9	32	38	50	186	173	179	158	240	99	e95	42	26
10	30	41	41	131	249	168	144	198	89	77	40	26
11	29	67	37	111	186	159	136	173	78	140	38	26
12	28	38	37	104	171	148	128	160	71	149	37	26
13	28	35	369	98	154	150	124	148	67	133	37	26
14	28	38	117	115	142	250	119	144	66	101	38	29
15	28	70	75	377	137	235	134	132	75	88	34	29
16	28	87	63	171	131	189	121	123	162	80	34	29
17	28	117	58	147	168	183	111	117	132	73	34	29
18	28	55	53	174	302	179	108	136	86	81	33	29
19	28	45	56	142	230	169	106	179	75	76	32	29
20	28	41	83	128	207	158	113	129	69	67	33	28
21	28	40	66	119	190	166	105	119	67	64	31	29
22	30	37	85	118	168	152	103	113	64	64	31	28
23	31	36	95	699	161	141	95	112	64	62	31	28
24	31	36	371	541	149	138	94	107	84	236	41	27
25	32	36	210	300	144	134	92	99	157	145	39	26
26	32	38	134	239	137	142	93	98	107	71	35	28
27	32	35	109	207	140	136	97	95	95	68	30	31
28	32	34	99	182	363	134	96	89	90	74	30	37
29	32	33	100	169	---	140	100	86	97	60	30	30
30	33	36	84	188	---	139	130	84	83	56	29	33
31	33	---	77	187	---	156	---	81	---	54	27	---
TOTAL	946	1324	2750	6135	5811	5431	4734	4433	2656	2828	1147	839
MEAN	30.5	44.1	88.7	198	208	175	158	143	88.5	91.2	37.0	28.0
MAX	58	117	371	699	363	280	780	462	162	236	50	37
MIN	27	33	34	70	131	134	92	81	64	54	27	26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1999, BY WATER YEAR (WY)

	MEAN	98.9	128	173	219	269	277	227	171	122	87.1	94.3	71.5
MAX	336	341	334	450	522	461	481	368	287	281	317	207	
(WY)	1996	1993	1984	1998	1998	1997	1983	1984	1992	1989	1994	1989	
MIN	30.5	43.0	83.5	53.5	102	83.6	83.5	81.7	53.0	45.8	29.3	27.6	
(WY)	1999	1982	1989	1981	1986	1988	1986	1986	1988	1993	1993	1998	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

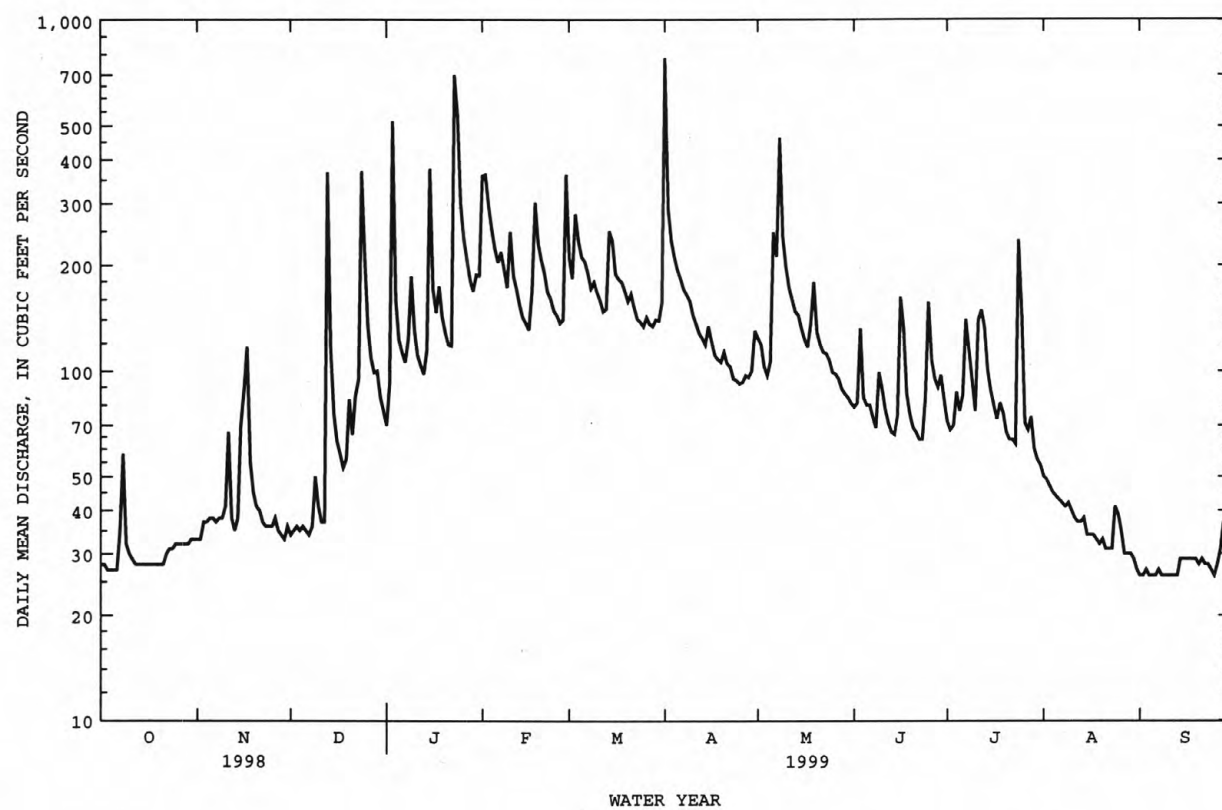
WATER YEARS 1981 - 1999

ANNUAL TOTAL	66186		39034										
ANNUAL MEAN	181		107										
HIGHEST ANNUAL MEAN										164			
LOWEST ANNUAL MEAN										211			1996
HIGHEST DAILY MEAN	2730	Jan 7								87.5			1988
LOWEST DAILY MEAN	25	Sep 27								3810			Feb 2 1983
ANNUAL SEVEN-DAY MINIMUM	26	Sep 11								9.2			Sep 2 1986
INSTANTANEOUS PEAK FLOW										16			Sep 2 1986
INSTANTANEOUS PEAK STAGE										8900			Aug 17 1994
INSTANTANEOUS LOW FLOW										12.63			Aug 17 1994
10 PERCENT EXCEEDS	411									4.2			Sep 5 1986
50 PERCENT EXCEEDS	85									312			
90 PERCENT EXCEEDS	29									110			
										45			

e Estimated.

\* See REMARKS.

03456100 WEST FORK PIGEON RIVER AT BETHEL, NC--Continued



## TENNESSEE RIVER BASIN

03456500 EAST FORK PIGEON RIVER NEAR CANTON, NC

LOCATION.--Lat 35°27'42", long 82°52'13", Haywood County, Hydrologic Unit 06010106, on right bank 800 ft upstream from bridge on U.S. Highway 276, 0.3 mi downstream of Dix Creek, 1.6 mi upstream from confluence with West Fork Pigeon River, and 5.2 mi southwest of Canton.

DRAINAGE AREA.--51.5 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1954 to current year.

REVISED RECORDS.--WDR NC-73-1: 1966(M), 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 2,674.34 ft above sea level (Tennessee Valley Authority bench mark). Satellite and telephone telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Maximum discharge for period of record, from rating curve extended above 5,470 ft<sup>3</sup>/s, on basis of contracted-opening measurement of peak flow. Minimum discharge for period of record also occurred Dec. 11, 1981, result of freezeup, and Oct. 9, 1994. Minimum discharge for current water year also occurred Oct. 4, Sept. 16-18, 24-27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	21	24	52	287	146	751	106	63	53	45	20
2	17	22	23	75	323	133	355	106	63	51	44	19
3	16	31	23	409	281	175	278	93	100	53	42	18
4	16	29	23	163	240	159	238	87	67	50	41	18
5	16	24	23	e128	207	147	210	89	62	49	39	17
6	22	23	23	e109	187	144	192	165	60	75	38	18
7	85	23	22	95	180	134	176	169	57	115	37	18
8	218	23	24	98	164	124	168	334	55	104	37	18
9	48	24	32	119	152	129	160	209	54	94	43	17
10	33	30	26	100	178	123	146	176	55	73	36	18
11	27	111	23	89	148	116	137	157	55	101	34	16
12	25	42	23	83	140	110	127	146	52	117	31	16
13	23	30	156	78	127	110	121	135	49	110	31	16
14	21	31	73	81	117	182	116	129	48	91	39	16
15	21	43	51	178	113	193	128	119	51	80	30	17
16	20	37	45	114	107	163	116	110	101	72	29	16
17	20	52	42	103	118	158	106	103	89	66	28	15
18	19	37	40	126	198	155	103	111	59	79	26	15
19	19	33	41	109	190	145	98	130	53	79	25	16
20	20	31	61	99	179	136	97	104	51	64	25	17
21	20	29	46	94	167	144	92	97	49	63	24	18
22	18	27	50	92	151	131	89	93	48	65	24	18
23	19	27	52	397	141	122	86	89	48	75	24	16
24	20	27	157	497	131	117	83	85	52	98	42	15
25	20	26	120	286	124	113	81	80	91	111	51	15
26	20	29	87	222	117	128	81	79	65	67	32	15
27	20	26	74	186	115	121	81	76	61	59	26	17
28	20	25	68	163	197	121	79	71	64	57	25	83
29	21	24	66	148	---	127	84	69	81	53	24	46
30	21	24	60	164	---	128	118	67	61	50	23	31
31	22	---	55	155	---	146	---	65	---	47	21	---
TOTAL	929	961	1633	4812	4779	4280	4697	3649	1864	2321	1016	615
MEAN	30.0	32.0	52.7	155	171	138	157	118	62.1	74.9	32.8	20.5
MAX	218	111	157	497	323	193	751	334	101	117	51	83
MIN	16	21	22	52	107	110	79	65	48	47	21	15
CFSM	.58	.62	1.02	3.01	3.31	2.68	3.04	2.29	1.21	1.45	.64	.40
IN.	.67	.69	1.18	3.48	3.45	3.09	3.39	2.64	1.35	1.68	.73	.44

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1999, BY WATER YEAR (WY)

	MEAN	112	132	146	171	210	238	211	157	118	73.8	78.3	80.5
MAX	363	484	337	444	517	541	480	453	339	268	263	436	
(WY)	1965	1980	1962	1998	1998	1979	1957	1976	1967	1989	1994	1979	
MIN	17.1	27.9	42.4	33.8	71.9	60.9	63.2	59.8	35.7	25.3	25.9	16.0	
(WY)	1955	1955	1956	1956	1986	1988	1986	1986	1988	1986	1998	1954	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

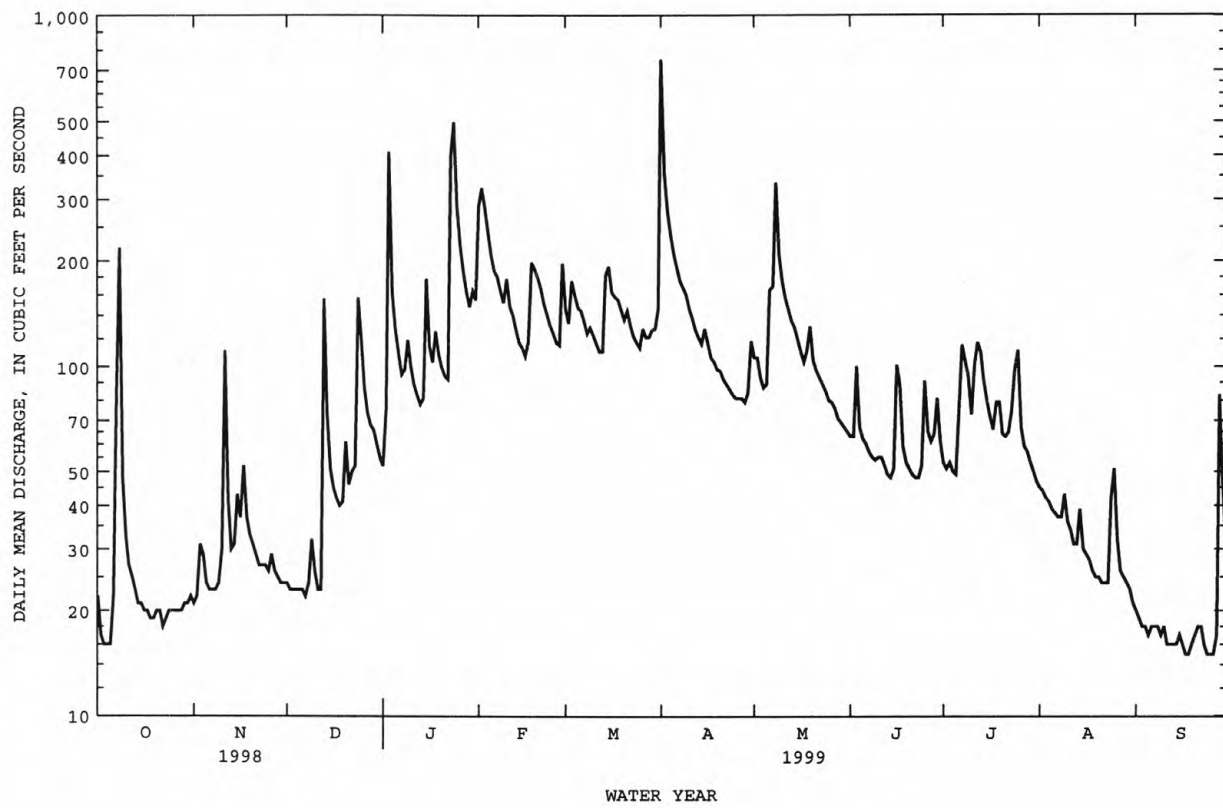
## WATER YEARS 1954 - 1999

ANNUAL TOTAL	60850	31556	144
ANNUAL MEAN	167	86.5	204
HIGHEST ANNUAL MEAN			71.9
LOWEST ANNUAL MEAN			1979
HIGHEST DAILY MEAN	2660	751	4390
LOWEST DAILY MEAN	13	15	13
ANNUAL SEVEN-DAY MINIMUM	13	16	13
INSTANTANEOUS PEAK FLOW		1480	12000*
INSTANTANEOUS PEAK STAGE		4.15	11.19
INSTANTANEOUS LOW FLOW		15*	12*
ANNUAL RUNOFF (CFSM)	3.24	1.68	2.80
ANNUAL RUNOFF (INCHES)	43.95	22.79	38.07
10 PERCENT EXCEEDS	383	166	269
50 PERCENT EXCEEDS	68	67	101
90 PERCENT EXCEEDS	19	20	35

e Estimated.

\* See REMARKS.

03456500 EAST FORK PIGEON RIVER NEAR CANTON, NC--Continued





LOCATION.--Lat 35°31'19", long 82°50'53", Haywood County, Hydrologic Unit 06010106, on right bank 600 ft upstream from State Highway 215 bridge, 1.3 mi upstream from U.S. Highways 19 and 23 at Canton, and at mile 64.9.

PERIOD OF RECORD.--May 1907 to June 1909, October 1928 to current year. Monthly discharge only for some periods published in WSP 1306. Published as Pigeon River at Canton, NC (03457000) May 1907 to June 1909, October 1928 to September 1983.

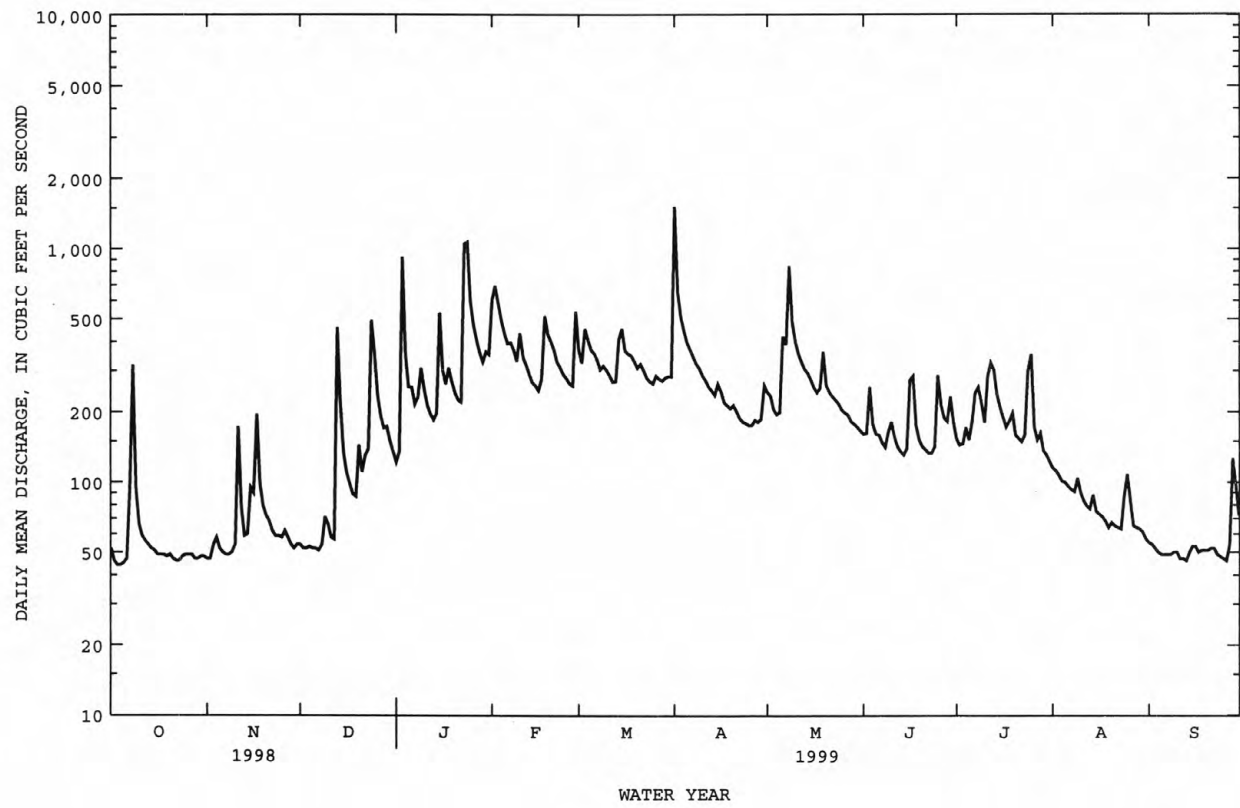
GAGE.--Water-stage recorder. Datum of gage is 2,581.66 ft above sea level (Tennessee Valley Authority bench mark). Prior to June 1909, nonrecording gage at bridge 1.2 mi downstream at different datum. Dec. 6, 1928, to Jan. 3, 1929, nonrecording gage at site 0.8 mi downstream at different datum. Prior to Oct. 1, 1983, water-stage recorder at site 0.8 mi downstream at different datum. Satellite and telephone telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Occasional diurnal fluctuation and considerable regulation at low flow, since 1932, caused by Lake Logan (station 03455773) on West Fork Pigeon River 11.2 mi upstream. Prior to regulation, maximum discharge: 21,500 ft<sup>3</sup>/s, Aug. 16, 1928; gage height: 16.40 ft; minimum discharge: 39 ft<sup>3</sup>/s, Sept. 3, 1930. Maximum discharge and gage height for period of record, at former site from high water mark in gage well; minimum discharge for period of record, at former site, result of freezeup. Minimum discharge for current water year also occurred Oct. 4.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about 1810 is believed to have been approximately equal to that of Aug. 30, 1940, and flood of June 15, 1876, reached a stage of 18.3 ft; discharge, 25,700 ft<sup>3</sup>/s, at former site, from studies by Tennessee Valley Authority.

\* Regulated period only (1932-1999). See REMARKS.

03456991 PIGEON RIVER NEAR CANTON, NC--Continued



LOCATION.--Lat 35°38'05", long 82°59'21", Haywood County, Hydrologic Unit 06010106, on left bank 95 ft east of Interstate Highway 40, 0.8 mi downstream of Jonathan Creek, 2.0 mi south of Hepco, 2.4 mi upstream from Fines Creek, and at mile 45.1.

PERIOD OF RECORD.--July 1927 to current year.

REVISED RECORDS.--WSP 823: Drainage area. WSP 893: 1928-31, 1932(M), 1933-36, 1937-39(M).

GAGE.--Water-stage recorder. Datum of gage is 2,335.95 ft above sea level (levels by Tennessee Valley Authority). Satellite and telephone telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Considerable regulation by Lake Junaluska (station 03458319) on Richland Creek and Lake Logan (station 03455773) on West Fork Pigeon River for periods at low flow, combined capacity of reservoirs, about 2,000 ft<sup>3</sup>/s-day. Maximum discharge for period of record, from rating curve extended above 12,000 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights 14.94 and 15.82 ft. Maximum gage height for period of record and current water year from high-water mark in gage house. Minimum discharge for current water year also occurred Sept. 14, 17, 18.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 1876 and February 1902 reached a stage of about 18 ft, from flood profiles by Tennessee Valley Authority; discharge, about 42,000 ft<sup>3</sup>/s.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	159	139	173	365	987	840	1900	551	360	450	236	121
2	141	201	170	355	1380	736	1180	489	358	379	226	115
3	132	324	169	1290	1150	1080	937	450	449	350	216	115
4	136	158	169	689	968	999	836	425	388	380	207	112
5	145	161	170	548	852	845	760	433	386	385	203	110
6	141	155	170	512	751	847	720	1340	400	392	197	111
7	175	177	164	520	738	788	679	1110	343	639	189	110
8	593	381	186	506	714	710	671	1940	322	551	184	107
9	275	373	211	627	658	724	682	1160	310	479	248	105
10	191	368	203	610	856	775	593	904	482	512	195	110
11	169	598	182	515	703	760	566	777	413	1140	179	105
12	159	388	178	476	662	737	528	706	337	1060	168	100
13	153	276	796	482	619	762	515	671	309	860	e161	98
14	148	225	543	533	581	1030	497	672	296	688	e190	98
15	143	297	346	1120	546	1200	562	637	321	569	e180	104
16	142	253	301	718	497	885	538	573	559	499	e170	103
17	140	309	298	613	539	755	472	536	647	442	164	99
18	138	253	281	762	956	702	457	568	422	420	157	99
19	140	215	261	678	929	667	446	886	351	424	148	102
20	144	203	310	593	919	632	461	610	323	378	150	105
21	140	196	291	556	815	635	446	553	309	368	148	143
22	137	187	350	531	750	616	418	524	296	335	140	134
23	136	181	362	1330	718	563	406	508	300	332	141	117
24	141	182	1030	2030	682	547	419	505	316	371	159	112
25	142	179	767	1360	654	534	389	444	533	638	207	107
26	143	198	553	1120	621	570	388	425	492	356	198	102
27	140	184	468	866	606	588	403	418	426	312	162	105
28	141	175	489	675	1080	601	406	400	412	323	146	229
29	139	171	529	635	---	602	435	387	660	292	139	287
30	139	170	503	698	---	594	609	380	532	269	135	222
31	141	---	436	700	---	586	---	368	---	250	127	---
TOTAL	5103	7277	11059	23013	21931	22910	18319	20350	12052	14843	5470	3687
MEAN	165	243	357	742	783	739	611	656	402	479	176	123
MAX	593	598	1030	2030	1380	1200	1900	1940	660	1140	248	287
MIN	132	139	164	355	497	534	388	368	296	250	127	98

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1999, BY WATER YEAR (WY)

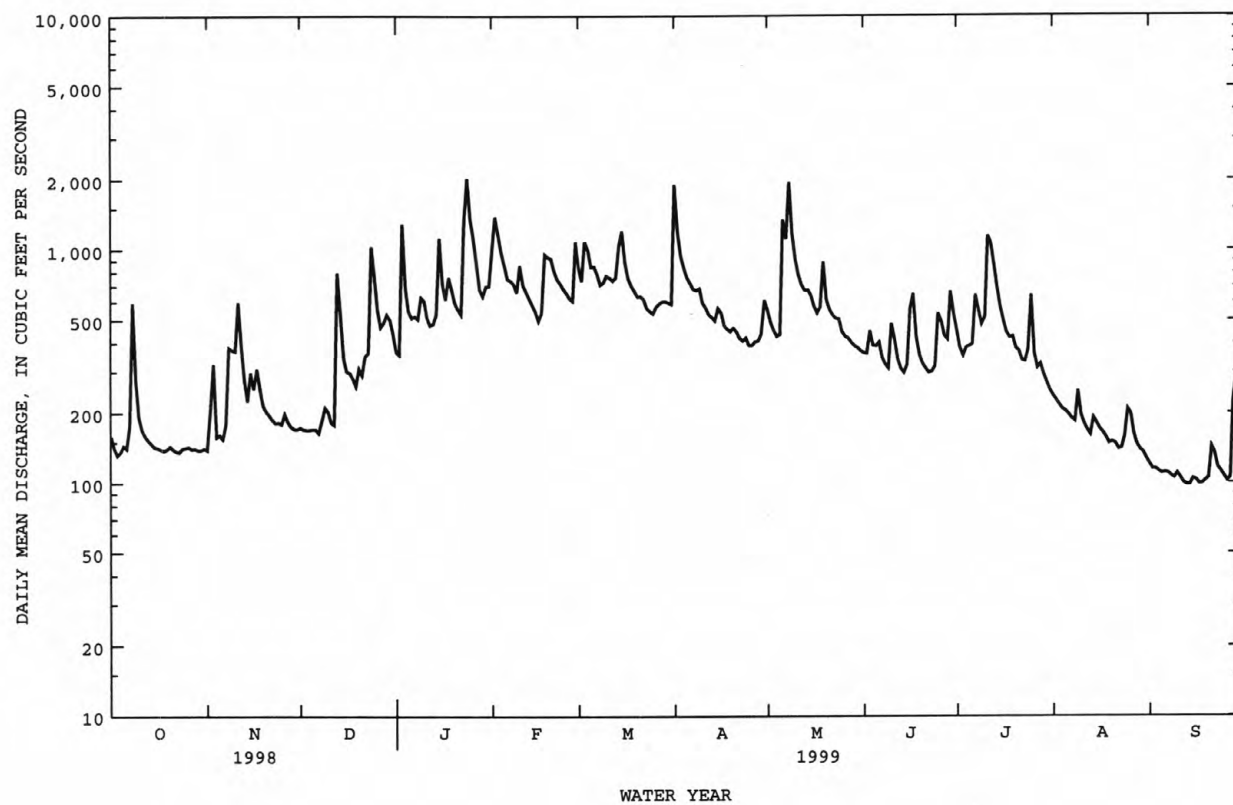
MEAN	419	501	672	893	1041	1165	995	729	546	425	428	377
MAX	1353	1627	2125	2275	2227	2455	2010	1630	1502	1141	2246	1214
(WY)	1965	1980	1933	1937	1990	1929	1936	1984	1967	1989	1940	1928
MIN	122	133	193	194	319	346	359	283	200	183	163	123
(WY)	1955	1954	1940	1940	1941	1988	1986	1941	1988	1986	1953	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1927 - 1999
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ANNUAL TOTAL	284232		166014			
ANNUAL MEAN	779		455		681	
HIGHEST ANNUAL MEAN					943	1949
LOWEST ANNUAL MEAN					341	1988
HIGHEST DAILY MEAN	8080	Jan 8	2030	Jan 24	17100	Aug 13 1940
LOWEST DAILY MEAN	104	Sep 15	98	Sep 13	95	Sep 30 1941
ANNUAL SEVEN-DAY MINIMUM	111	Sep 13	100	Sep 12	100	Sep 12 1999
INSTANTANEOUS PEAK FLOW			3370	Apr 1	32700*	Aug 30 1940
INSTANTANEOUS PEAK STAGE			5.34	Apr 1	15.82*	Aug 30 1940
INSTANTANEOUS LOW FLOW			97*	Sep 13	81	Sep 30 1941
10 PERCENT EXCEEDS	1700		846		1260	
50 PERCENT EXCEEDS	448		400		508	
90 PERCENT EXCEEDS	140		139		208	

e Estimated.  
\* See REMARKS.

03459500 PIGEON RIVER NEAR HEPCO, NC--Continued



## 03460000 CATALOOCHEE CREEK NEAR CATALOOCHEE, NC

LOCATION.--Lat 35°40'02", long 83°04'22", Haywood County, Hydrologic Unit 06010106, in Great Smoky Mountains National Park, on left bank 20 ft downstream of bridge on State Highway 284, 500 ft upstream from Little Cataloochee Creek, 2 mi north of Cataloochee, and 3.7 mi upstream from mouth.

DRAINAGE AREA.--49.2 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1933 to September 1952, October 1962 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,456.88 ft above sea level (levels by Tennessee Valley Authority). Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Minimum discharge for period of record also occurred Jan. 2, 1940, and Dec. 17, 24, 1943, result of freezeup. Minimum discharge for current water year also occurred Oct. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	18	20	55	184	199	199	106	69	127	62	29
2	22	18	19	64	194	175	170	101	68	110	60	27
3	21	22	19	186	175	316	158	98	68	98	57	27
4	24	20	19	e95	159	289	146	94	65	89	55	26
5	23	20	20	e98	139	240	136	102	96	84	54	26
6	22	20	20	146	128	231	132	386	81	82	52	26
7	23	19	19	91	127	198	121	318	65	110	50	26
8	55	20	44	88	115	178	129	476	61	86	50	25
9	27	20	47	135	110	178	123	324	62	93	56	25
10	23	24	27	110	136	161	110	247	90	113	49	25
11	22	98	25	100	112	147	108	206	75	234	46	24
12	21	27	25	92	109	136	101	182	62	323	44	23
13	21	22	245	86	103	148	97	164	58	301	47	23
14	20	29	86	156	97	223	95	158	57	279	62	24
15	20	48	56	468	95	243	120	143	61	214	44	24
16	20	27	47	239	92	210	101	127	114	178	42	22
17	19	29	43	175	136	190	94	118	92	154	41	21
18	18	24	40	205	195	179	92	122	70	142	38	21
19	19	22	48	167	182	170	89	130	61	125	36	21
20	20	22	56	148	167	160	98	109	58	114	37	22
21	18	21	46	132	152	161	88	102	56	112	36	34
22	17	20	76	118	135	146	85	98	54	100	34	32
23	17	20	70	220	125	135	83	95	55	93	34	24
24	18	20	e320	276	117	133	110	102	58	99	40	23
25	18	20	158	216	111	123	88	89	107	93	37	22
26	18	23	109	178	104	129	88	88	82	82	37	21
27	18	20	89	154	107	126	88	83	75	80	34	22
28	18	20	81	137	270	124	88	79	90	76	33	62
29	18	20	74	127	---	128	104	76	214	72	32	47
30	18	20	67	130	---	124	116	74	173	70	30	45
31	18	---	59	124	---	126	---	71	---	64	30	---
TOTAL	660	753	2074	4716	3876	5426	3357	4668	2397	3997	1359	819
MEAN	21.3	25.1	66.9	152	138	175	112	151	79.9	129	43.8	27.3
MAX	55	98	320	468	270	316	199	476	214	323	62	62
MIN	17	18	19	55	92	123	83	71	54	64	30	21
CFSM	.43	.51	1.36	3.09	2.81	3.56	2.27	3.06	1.62	2.62	.89	.55
IN.	.50	.57	1.57	3.57	2.93	4.10	2.54	3.53	1.81	3.02	1.03	.62

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1999, BY WATER YEAR (WY)

	MEAN	54.1	71.3	113	168	181	207	156	112	85.5	73.2	71.7	53.2
MAX	146	159	302	392	394	496	305	283	252	182	223	123	123
(WY)	1990	1980	1973	1937	1990	1963	1936	1984	1967	1949	1940	1989	1989
MIN	21.3	22.3	26.0	35.5	49.5	63.2	58.8	46.2	34.7	29.6	26.9	23.5	23.5
(WY)	1999	1940	1940	1940	1941	1988	1986	1986	1986	1986	1987	1998	1998

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

WATER YEARS 1934 - 1999<sup>g</sup>

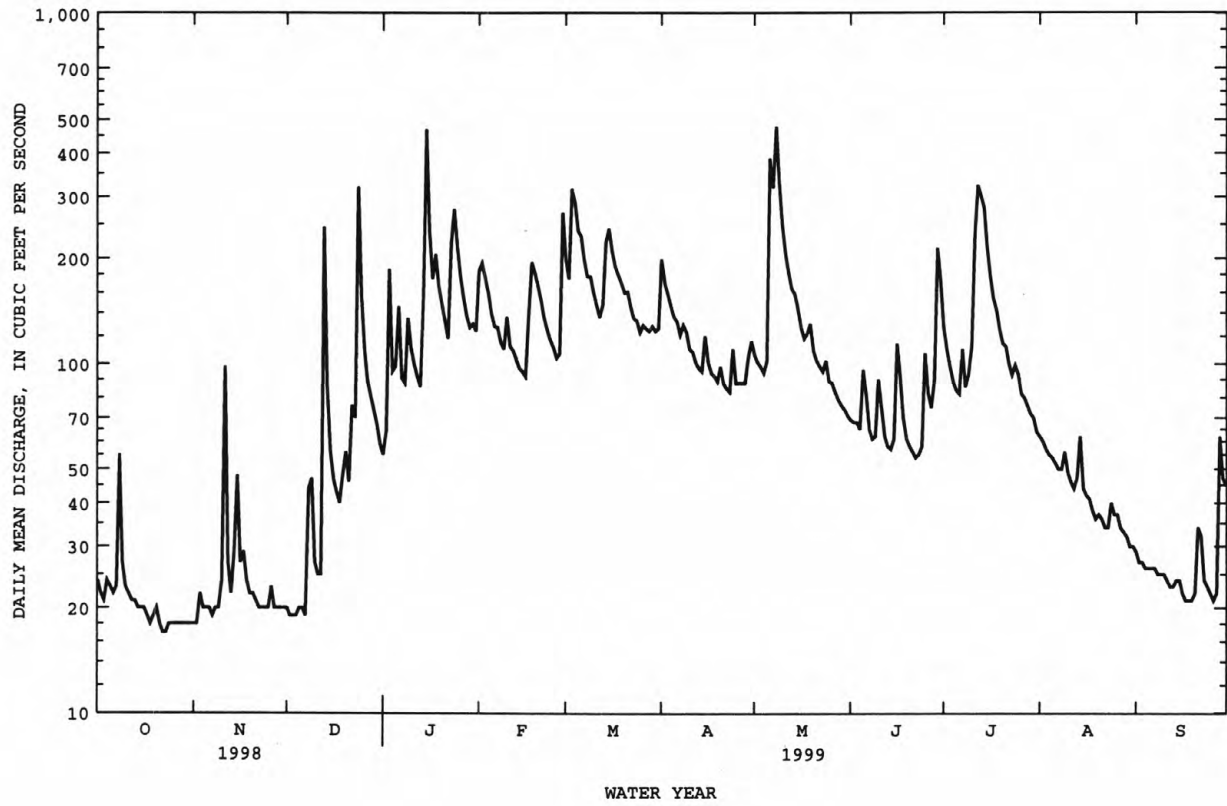
ANNUAL TOTAL	42201	34102	112
ANNUAL MEAN	116	93.4	171
HIGHEST ANNUAL MEAN			1994
LOWEST ANNUAL MEAN			1986
HIGHEST DAILY MEAN	877	Jan 8	2690
LOWEST DAILY MEAN	17	Oct 22	12
ANNUAL SEVEN-DAY MINIMUM	18	Oct 21	18
INSTANTANEOUS PEAK FLOW			5080
INSTANTANEOUS PEAK STAGE			8.08
INSTANTANEOUS LOW FLOW			9.4*
ANNUAL RUNOFF (CFSM)	2.35	1.90	2.28
ANNUAL RUNOFF (INCHES)	31.91	25.78	30.93
10 PERCENT EXCEEDS	255	183	207
50 PERCENT EXCEEDS	75	83	82
90 PERCENT EXCEEDS	20	20	34

e Estimated.

\* See REMARKS.

<sup>g</sup> See PERIOD OF RECORD.

03460000 CATALOOCHEE CREEK NEAR CATALOOCHEE, NC--Continued





## TENNESSEE RIVER BASIN

03460000 CATALOOCHEE CREEK NEAR CATALOOCHEE, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to 1996, May to September 1999.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: August 1973 to September 1986.

WATER TEMPERATURE: October 1962 to September 1986.

INSTRUMENTATION.--Temperature recorder from October 1962 to September 1986. water-quality monitor from May 1974 to September 1986.

REMARKS.--Station operated as part of the Hydrologic Benchmark network from October 1962 to current year. Miscellaneous chemical data published for 1945 water year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

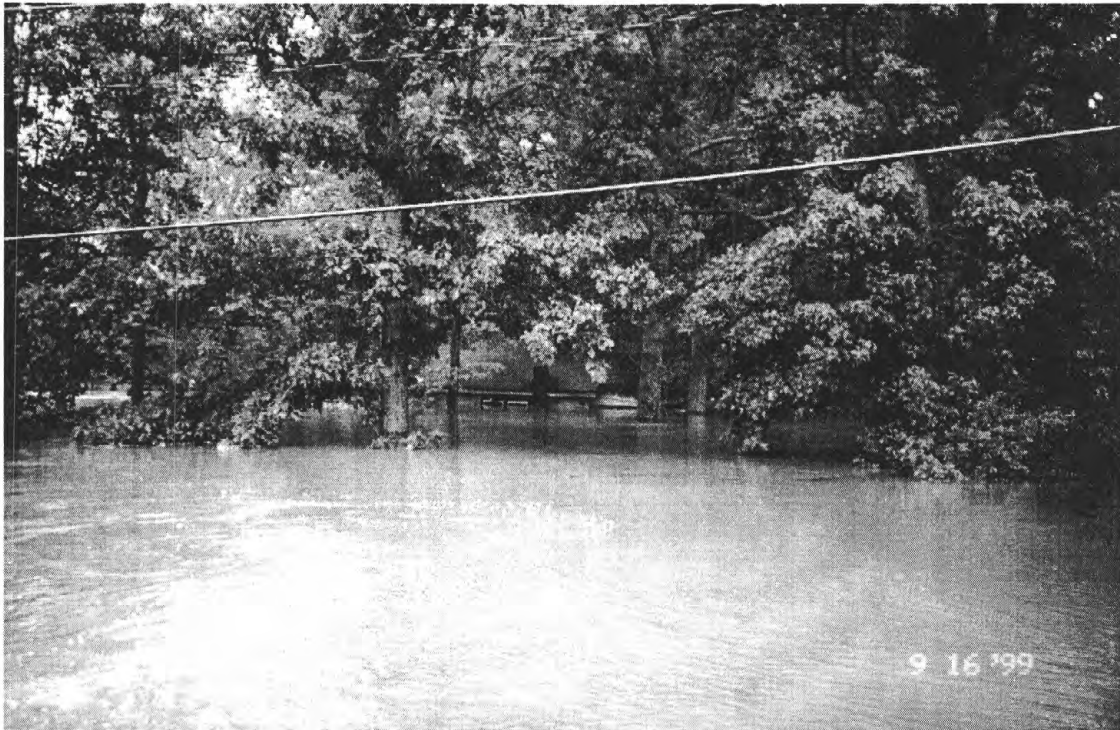
SPECIFIC CONDUCTANCE: Maximum daily, 43 microsiemens, June 13, 1974; minimum, 7 microsiemens, Feb. 28, 1983.

WATER TEMPERATURE: Maximum, 23.5°C, Aug. 5, 1977; minimum, 0.0°C, on several days during winter months of most years.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)
MAY										
18...	1200	114	14	6.8	14.1	700	9.2	.91	.29	1.0
JUN										
29...	1045	204	14	--	16.0	694	10.0	1.1	.34	.98
JUL										
27...	1150	79	14	--	17.4	700	10.1	1.0	.31	1.1
AUG										
24...	1105	42	16	--	16.8	698	9.1	1.1	.35	1.2
SEP										
29...	1050	34	16	--	15.0	697	9.3	1.2	.37	1.2

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE IT-LAB (MG/L HCO3) (90440)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)
MAY									
18...	.57	7.7	1.1	.40	7.2	.129	--	.96	<27
JUN									
29...	.69	6.7	1.3	.35	6.8	.155	<.028	2.9	82
JUL									
27...	.56	8.4	1.0	.42	8.2	.148	.052	1.2	41
AUG									
24...	.64	9.5	1.1	.80	8.9	.156	--	1.6	45
SEP									
29...	.80	11	1.2	.46	8.3	.087	--	2.6	32



Floodwaters from the Tar River reach the roof of this home near the USGS gage below the reservoir.

## 03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC

LOCATION.--Lat 35°47'02", long 83°06'44", Cocke County Tennessee, Hydrologic Unit 06010105, on left bank, 550 ft upstream of Browns Bridge on Waterville Road, 0.9 mi downstream of North Carolina and Tennessee state lines, 1.0 mi northwest of Waterville, and at mile 25.

DRAINAGE AREA.--538 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,360 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Considerable regulation, caused by Walters Hydroelectric Plant, 1.0 mi upstream. Minimum discharge for period of record and current water year affected by regulation. Minimum discharge for current water year also occurred Sept. 9, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	129	212	529	1650	1870	2080	650	738	1140	345	133
2	118	208	205	1000	2530	1170	2310	552	719	860	243	442
3	116	325	149	1700	2240	1710	1360	231	771	947	1070	128
4	115	482	149	1440	1560	2160	1860	1190	662	276	259	460
5	115	e425	149	989	1900	1720	1530	1040	626	517	710	117
6	112	419	150	996	720	1530	1240	2320	297	903	163	348
7	113	143	150	919	877	1590	1200	2500	940	911	681	123
8	131	145	473	431	618	1250	871	2900	1040	1130	158	345
9	131	170	540	690	1020	1320	1280	2040	662	793	151	129
10	130	756	501	1320	1640	1660	692	1650	853	970	663	369
11	141	766	353	1090	1480	1370	952	816	386	1460	339	120
12	132	300	176	385	1720	1730	1180	1370	705	2670	496	122
13	142	784	1480	1500	1040	1170	1760	1530	262	2460	147	124
14	221	390	854	1820	687	1460	697	1140	672	2260	465	121
15	227	190	681	2270	1290	2130	313	1760	803	1110	144	124
16	144	641	373	2400	898	2050	287	301	564	1100	134	137
17	184	409	461	1310	1240	1360	434	712	1120	1160	483	130
18	136	469	592	995	1450	1610	1070	e1320	598	1260	243	126
19	171	450	482	1290	1690	1000	648	e1650	969	570	470	125
20	147	144	230	587	1490	988	1010	1140	285	835	162	124
21	150	143	584	1330	1570	1270	1250	721	701	762	448	132
22	151	144	772	952	1680	1210	836	542	1010	1050	130	157
23	242	216	794	2350	1510	1460	821	1070	695	748	126	175
24	131	168	e2140	2690	1200	1020	295	851	720	821	468	127
25	132	334	1070	2130	1090	1320	262	687	640	249	130	127
26	216	158	1350	1880	560	1050	1210	874	918	986	462	114
27	e178	162	677	1570	378	917	744	706	658	980	150	128
28	213	162	700	1090	1770	407	982	531	399	1030	517	139
29	138	162	402	1180	---	1340	990	496	2090	847	138	163
30	163	635	1080	1160	---	986	1300	453	1640	559	192	170
31	134	---	686	884	---	914	---	567	---	758	437	---
TOTAL	4749	10029	18615	40877	37498	42742	31464	34310	23143	32122	10724	5279
MEAN	153	334	600	1319	1339	1379	1049	1107	771	1036	346	176
MAX	242	784	2140	2690	2530	2160	2310	2900	2090	2670	1070	460
MIN	112	129	149	385	378	407	262	231	262	249	126	114
†	+56	-11	+2	-45	+1	0	-31	+93	-18	-28	-17	+27

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1999, BY WATER YEAR (WY)

	MEAN	347	472	617	1753	2062	2333	1811	1333	1056	778	368	282
MAX	540	609	634	2187	3096	3505	2540	1488	1432	1036	416	476	
(WY)	1998	1998	1998	1998	1998	1997	1998	1997	1997	1999	1997	1997	
MIN	153	334	600	1319	1339	1379	1049	1107	771	479	342	176	
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1998	1998	1999	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1997 - 1999
ANNUAL TOTAL	433370	291552	‡291555
ANNUAL MEAN	1187	799	1022 (UNADJUSTED)
HIGHEST ANNUAL MEAN			1246 1998
LOWEST ANNUAL MEAN			799 1999
HIGHEST DAILY MEAN	10800	Jan 8	2900 May 8
LOWEST DAILY MEAN	110	Sep 6	112 Oct 6
ANNUAL SEVEN-DAY MINIMUM	117	Oct 2	117 Oct 2
INSTANTANEOUS PEAK FLOW			3390 May 6
INSTANTANEOUS PEAK STAGE			7.65 May 6
INSTANTANEOUS LOW FLOW			104* Aug 19
10 PERCENT EXCEEDS	2610	1670	2510
50 PERCENT EXCEEDS	690	690	860
90 PERCENT EXCEEDS	133	134	144

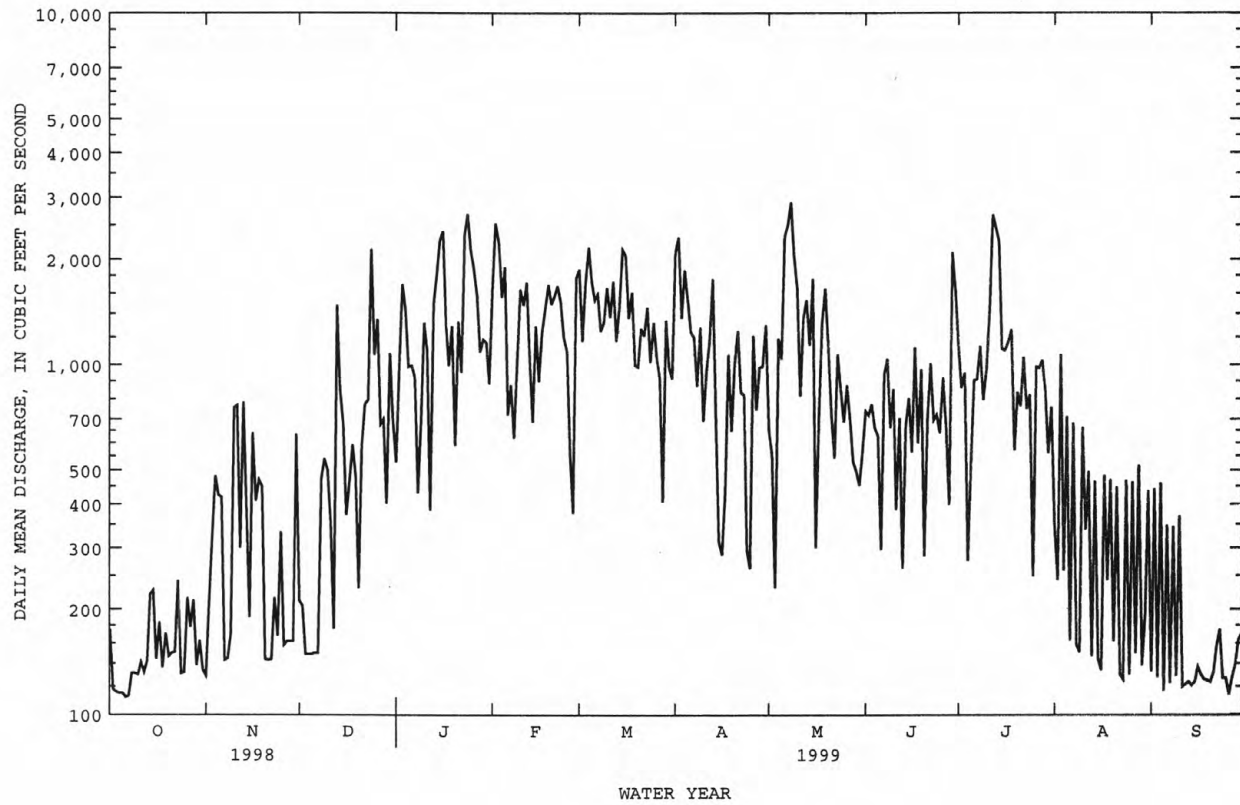
e Estimated.

† Change in contents, equivalent in cubic feet per second, in Walters Reservoir, provided by Carolina Power and Light Company.

‡ Adjusted for change in contents.

\* See REMARKS.

03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC--Continued



WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Water years 1997 to current year.

DISSOLVED OXYGEN: Water years 1997 to current year.

INSTRUMENTATION.--Water-quality monitor since May 1997.

REMARKS.--Interruptions in the data are due to malfunctions of the monitor. Data were collected during the current year for the months of October through Nov. 1, and May through September only.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum recorded, 24.8°C, July 19 and Aug. 28, 1998; minimum recorded, 8.5°C, April 11, 1998.

DISSOLVED OXYGEN: Maximum recorded, 11.3 mg/l, May 10, 1997; minimum recorded, 3.1 mg/l Nov. 1, 1998.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 24.6°C, Aug. 18; minimum recorded, 13.6°C, May 14.

DISSOLVED OXYGEN: Maximum recorded, 10.4 mg/l, July 25; minimum recorded, 3.1 mg/l, Nov. 1.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
	OCTOBER				NOVEMBER				DECEMBER				JANUARY		
1	22.2	20.8	21.2		15.7	14.7	15.1		---	---	---		---	---	---
2	21.6	20.2	20.8		---	---	---		---	---	---		---	---	---
3	21.3	20.3	20.8		---	---	---		---	---	---		---	---	---
4	21.9	20.9	21.2		---	---	---		---	---	---		---	---	---
5	21.8	20.5	21.0		---	---	---		---	---	---		---	---	---
6	21.6	20.5	20.9		---	---	---		---	---	---		---	---	---
7	21.3	20.4	20.8		---	---	---		---	---	---		---	---	---
8	20.8	19.6	20.2		---	---	---		---	---	---		---	---	---
9	19.9	19.3	19.6		---	---	---		---	---	---		---	---	---
10	20.0	18.7	19.3		---	---	---		---	---	---		---	---	---
11	19.8	18.6	19.1		---	---	---		---	---	---		---	---	---
12	19.5	18.2	18.8		---	---	---		---	---	---		---	---	---
13	19.1	18.2	18.5		---	---	---		---	---	---		---	---	---
14	18.6	17.6	18.2		---	---	---		---	---	---		---	---	---
15	18.7	17.2	18.0		---	---	---		---	---	---		---	---	---
16	18.6	17.3	17.9		---	---	---		---	---	---		---	---	---
17	18.3	17.5	17.9		---	---	---		---	---	---		---	---	---
18	18.3	17.2	17.7		---	---	---		---	---	---		---	---	---
19	17.8	17.4	17.6		---	---	---		---	---	---		---	---	---
20	18.0	17.0	17.6		---	---	---		---	---	---		---	---	---
21	17.4	16.8	17.1		---	---	---		---	---	---		---	---	---
22	17.0	16.2	16.6		---	---	---		---	---	---		---	---	---
23	16.9	15.9	16.4		---	---	---		---	---	---		---	---	---
24	16.6	15.5	15.9		---	---	---		---	---	---		---	---	---
25	16.2	15.1	15.6		---	---	---		---	---	---		---	---	---
26	15.7	14.7	15.2		---	---	---		---	---	---		---	---	---
27	---	---	---		---	---	---		---	---	---		---	---	---
28	15.6	14.5	15.0		---	---	---		---	---	---		---	---	---
29	15.8	14.9	15.3		---	---	---		---	---	---		---	---	---
30	15.7	14.9	15.2		---	---	---		---	---	---		---	---	---
31	15.9	15.0	15.3		---	---	---		---	---	---		---	---	---
MONTH	---	---	---		---	---	---		---	---	---		---	---	---

03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	15.5	14.6	15.1
14	---	---	---	---	---	---	---	---	---	15.5	13.6	15.1
15	---	---	---	---	---	---	---	---	---	16.1	15.3	15.7
16	---	---	---	---	---	---	---	---	---	17.4	14.1	15.7
17	---	---	---	---	---	---	---	---	---	16.3	14.6	15.7
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	17.8	16.2	17.0
28	---	---	---	---	---	---	---	---	---	17.9	15.9	17.0
29	---	---	---	---	---	---	---	---	---	18.0	16.3	17.1
30	---	---	---	---	---	---	---	---	---	17.6	16.5	17.2
31	---	---	---	---	---	---	---	---	---	18.4	16.8	17.5
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.9	17.3	17.6	20.0	16.8	19.0	22.7	21.7	22.3	23.6	21.9	22.7
2	18.8	17.5	17.9	20.2	18.5	19.4	23.2	21.9	22.5	23.3	21.6	22.5
3	18.7	17.7	18.1	20.8	19.0	20.0	23.2	21.4	22.5	23.8	22.0	22.8
4	19.4	17.8	18.3	21.2	19.2	20.2	23.7	22.0	22.8	23.2	21.6	22.5
5	19.3	18.0	18.4	21.4	19.5	20.3	23.2	21.4	22.4	23.4	22.0	22.6
6	19.1	17.5	18.2	---	---	---	23.8	22.0	22.9	23.2	22.3	22.6
7	19.0	17.7	18.4	---	---	---	23.4	21.5	22.6	23.8	22.2	22.9
8	19.4	18.3	18.9	21.2	17.3	19.3	23.4	22.0	22.6	23.5	21.6	22.4
9	20.2	18.8	19.2	21.3	17.8	19.8	23.6	21.4	22.3	22.7	22.0	22.3
10	19.3	18.2	18.8	21.1	19.9	20.5	23.3	21.5	22.5	23.0	21.6	22.3
11	19.7	18.1	18.8	21.2	19.3	20.1	23.7	22.3	23.0	23.0	21.3	22.0
12	19.9	18.5	19.2	20.7	17.7	20.0	23.8	22.2	23.0	23.1	21.2	21.9
13	20.7	18.9	19.7	19.4	18.4	18.9	24.3	22.8	23.4	22.6	21.0	21.7
14	19.9	18.9	19.4	19.5	18.3	18.9	23.9	22.5	23.1	22.4	21.2	21.7
15	20.1	19.3	19.7	19.3	16.1	18.2	24.4	22.5	23.4	21.8	20.9	21.3
16	19.8	17.3	18.9	19.6	16.4	18.4	24.5	22.2	23.3	21.7	20.4	21.0
17	19.3	17.1	18.4	20.0	17.2	18.8	24.2	22.5	23.2	21.8	20.1	20.8
18	19.3	17.0	18.2	20.6	18.2	19.8	24.6	22.8	23.5	21.6	19.9	20.6
19	19.6	17.3	18.7	20.4	17.4	18.9	24.2	22.8	23.5	21.3	19.8	20.4
20	19.6	17.7	18.7	20.3	18.2	19.5	24.4	23.0	23.7	21.3	19.7	20.4
21	20.0	17.9	19.0	20.8	19.5	20.2	23.8	22.4	23.1	20.5	19.3	20.0
22	20.1	19.3	19.8	20.9	19.8	20.4	24.1	22.2	23.1	19.6	18.5	19.1
23	20.4	19.3	19.8	21.3	19.8	20.6	23.6	22.1	22.8	19.9	17.8	19.0
24	20.2	19.5	19.9	21.2	20.5	20.9	23.6	22.2	22.9	19.9	18.1	18.9
25	20.0	18.8	19.3	22.0	19.1	20.3	23.6	22.6	23.1	19.8	18.1	18.8
26	20.1	17.8	18.9	21.1	18.7	20.2	23.6	22.5	23.1	19.8	17.9	18.7
27	20.1	17.3	18.9	21.5	20.1	20.9	23.8	22.6	23.2	19.6	18.7	19.1
28	21.6	18.0	19.6	---	---	---	23.5	22.2	23.0	19.8	18.8	19.2
29	20.2	18.8	19.5	22.2	20.7	21.6	24.1	22.5	23.3	19.0	17.1	18.4
30	19.9	17.1	18.9	22.9	20.9	21.7	24.0	22.2	23.0	17.5	14.7	16.3
31	---	---	---	23.3	21.3	22.1	23.5	21.5	22.6	---	---	---
MONTH	21.6	17.0	18.9	---	---	---	24.6	21.4	23.0	23.8	14.7	20.8



## TENNESSEE RIVER BASIN

03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.8	6.0	6.8	8.0	3.1	6.6	---	---	---	---	---	---
2	7.1	6.3	6.6	---	---	---	---	---	---	---	---	---
3	7.0	6.1	6.5	---	---	---	---	---	---	---	---	---
4	7.3	6.2	6.5	---	---	---	---	---	---	---	---	---
5	7.1	6.3	6.6	---	---	---	---	---	---	---	---	---
6	7.2	6.1	6.5	---	---	---	---	---	---	---	---	---
7	7.0	5.8	6.4	---	---	---	---	---	---	---	---	---
8	7.4	6.4	6.9	---	---	---	---	---	---	---	---	---
9	7.8	7.0	7.3	---	---	---	---	---	---	---	---	---
10	7.9	7.0	7.3	---	---	---	---	---	---	---	---	---
11	7.9	7.0	7.3	---	---	---	---	---	---	---	---	---
12	8.1	7.1	7.4	---	---	---	---	---	---	---	---	---
13	8.3	7.1	7.4	---	---	---	---	---	---	---	---	---
14	7.3	6.8	7.2	---	---	---	---	---	---	---	---	---
15	7.6	6.8	7.3	---	---	---	---	---	---	---	---	---
16	8.2	7.1	7.6	---	---	---	---	---	---	---	---	---
17	7.8	7.2	7.4	---	---	---	---	---	---	---	---	---
18	8.1	7.0	7.5	---	---	---	---	---	---	---	---	---
19	7.9	6.4	7.4	---	---	---	---	---	---	---	---	---
20	8.1	7.3	7.6	---	---	---	---	---	---	---	---	---
21	8.0	7.4	7.7	---	---	---	---	---	---	---	---	---
22	8.5	7.7	7.9	---	---	---	---	---	---	---	---	---
23	8.6	7.3	8.0	---	---	---	---	---	---	---	---	---
24	8.8	7.7	8.3	---	---	---	---	---	---	---	---	---
25	8.5	7.7	8.1	---	---	---	---	---	---	---	---	---
26	8.2	7.5	7.9	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	8.3	7.0	7.8	---	---	---	---	---	---	---	---	---
29	8.2	6.9	7.5	---	---	---	---	---	---	---	---	---
30	8.3	7.5	7.8	---	---	---	---	---	---	---	---	---
31	7.9	4.9	6.8	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	9.3	8.7	9.0
14	---	---	---	---	---	---	---	---	---	9.7	8.8	9.1
15	---	---	---	---	---	---	---	---	---	9.2	8.7	8.9
16	---	---	---	---	---	---	---	---	---	10.1	8.5	9.4
17	---	---	---	---	---	---	---	---	---	9.5	8.6	9.1
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	8.9	8.1	8.6
28	---	---	---	---	---	---	---	---	---	9.2	8.2	8.6
29	---	---	---	---	---	---	---	---	---	9.4	8.1	8.6
30	---	---	---	---	---	---	---	---	---	9.3	8.3	8.6
31	---	---	---	---	---	---	---	---	---	9.2	7.9	8.4
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.0	7.8	8.3	9.4	7.5	8.1	8.7	7.6	8.0	7.8	6.5	7.0
2	9.2	7.6	8.3	8.9	7.6	8.2	8.7	7.8	8.1	7.9	5.8	6.6
3	8.7	7.7	8.1	8.9	7.2	7.9	8.1	6.6	7.5	7.4	6.2	6.7
4	9.1	7.6	8.2	9.0	7.4	8.4	9.0	6.8	8.0	7.4	5.2	6.1
5	8.9	7.5	8.0	8.9	7.1	8.1	8.8	6.7	7.7	7.5	6.1	6.6
6	9.0	8.0	8.5	---	---	---	8.9	7.2	8.0	7.4	5.3	6.2
7	8.6	7.2	7.9	---	---	---	8.8	6.5	7.6	7.5	6.1	6.7
8	8.5	7.2	7.6	9.4	6.9	8.2	8.9	7.1	7.9	7.7	5.4	6.5
9	8.3	7.2	7.7	9.5	7.1	8.2	8.9	7.7	8.2	7.5	6.2	6.8
10	8.7	7.5	8.1	8.9	7.0	7.8	8.5	6.5	7.6	7.8	5.5	6.6
11	9.0	8.0	8.5	8.8	7.5	8.1	8.8	7.1	7.8	7.7	6.3	6.8
12	8.9	7.8	8.2	9.1	7.2	7.9	9.3	6.0	7.5	7.7	6.4	6.8
13	8.9	7.8	8.3	8.8	8.2	8.5	8.7	7.0	7.7	7.8	6.2	6.9
14	8.8	7.3	7.9	8.7	8.1	8.4	8.8	6.3	7.4	7.8	6.3	6.9
15	8.2	7.4	7.8	9.5	8.3	8.8	9.0	7.3	8.1	7.7	6.3	6.8
16	9.0	7.4	8.3	9.6	8.1	8.7	9.1	7.4	8.1	7.8	6.5	7.0
17	9.1	8.0	8.6	9.5	7.8	8.5	9.0	6.1	7.5	7.6	6.5	6.9
18	9.2	8.1	8.6	8.9	7.7	8.2	7.7	5.9	7.0	8.0	6.5	7.1
19	8.9	7.7	8.3	9.5	7.4	8.4	7.4	5.5	6.4	8.0	6.4	7.1
20	9.2	7.6	8.6	8.9	7.2	8.0	7.7	6.3	6.8	8.0	6.5	7.1
21	8.8	7.6	8.3	8.4	7.0	7.7	7.9	5.9	6.8	7.6	6.6	6.9
22	8.1	7.5	7.8	9.8	7.1	7.7	7.8	6.7	7.1	8.0	6.4	7.3
23	8.7	7.4	7.9	9.3	8.1	8.7	7.8	6.4	7.1	8.1	5.8	7.2
24	8.7	7.5	8.0	9.4	7.4	8.8	7.3	5.4	6.4	8.2	6.9	7.4
25	8.9	7.6	8.4	10.4	8.9	9.9	7.2	6.2	6.7	8.3	6.8	7.4
26	9.4	7.6	8.4	10.2	8.9	9.5	7.5	5.6	6.4	8.3	6.8	7.4
27	9.7	7.4	8.4	---	---	---	7.7	5.9	6.8	8.0	6.7	7.2
28	9.4	6.7	8.3	---	---	---	7.6	5.4	6.4	7.9	6.7	7.2
29	8.4	5.6	7.6	7.9	6.5	7.0	7.5	6.2	6.8	8.5	7.2	7.7
30	8.9	7.4	8.0	8.1	6.9	7.5	7.3	5.8	6.7	9.5	7.6	8.4
31	---	---	---	8.7	7.0	7.7	7.7	5.2	6.5	---	---	---
MONTH	9.7	5.6	8.2	---	---	---	9.3	5.2	7.3	9.5	5.2	7.0

## TENNESSEE RIVER BASIN

03463300 SOUTH TOE RIVER NEAR CELO, NC

LOCATION.--Lat 35°49'53", long 82°11'04", Yancey County, Hydrologic Unit 06010108, on right bank on Secondary Road 1168, 800 ft upstream from bridge on Secondary Road 1167, 0.3 mi downstream of Whiteoak Creek, 1.9 mi southeast of Celo, and at mile 20.1.

DRAINAGE AREA.--43.3 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1957 to current year.

REVISED RECORDS.--WSP 1910: 1958-59. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,658 ft above sea level, from topographic map. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Maximum discharge for period of record, from rating curve extended above 5,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; gage height from outside floodmarks. Minimum discharge for period of record and current water year also occurred Sept. 26, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	18	17	45	249	154	395	205	56	67	52	19
2	12	18	17	48	285	126	211	187	61	67	53	17
3	12	21	16	245	191	165	171	151	74	183	47	17
4	13	21	16	e111	156	142	151	126	55	165	44	16
5	24	21	16	e78	132	124	131	114	51	92	43	17
6	19	20	16	e66	120	124	119	172	50	77	41	26
7	55	20	16	e68	111	117	109	144	46	125	39	21
8	165	20	18	76	102	104	107	187	43	124	38	18
9	45	21	24	153	96	102	116	136	42	87	46	16
10	28	22	22	114	109	99	96	119	43	76	41	15
11	22	93	18	86	90	90	90	108	48	286	39	14
12	20	33	21	77	86	86	84	100	43	403	37	14
13	19	22	300	72	78	93	79	101	39	278	33	13
14	17	23	94	84	70	130	76	119	37	185	35	14
15	16	51	55	397	68	172	97	104	39	236	32	14
16	15	31	44	160	66	137	87	94	56	165	31	13
17	15	30	38	127	75	139	75	87	61	133	30	11
18	15	25	33	174	209	156	71	114	42	137	27	12
19	15	22	34	134	155	144	68	244	37	124	26	12
20	16	22	45	111	133	124	74	134	36	102	35	12
21	15	20	37	100	120	147	67	114	36	98	33	13
22	14	19	44	94	103	132	64	105	34	112	28	12
23	14	19	51	888	96	113	60	100	37	83	24	11
24	15	19	351	714	90	110	62	97	37	158	59	11
25	16	18	141	308	89	110	59	86	127	169	55	10
26	16	23	90	213	85	112	59	79	85	102	37	9.7
27	17	21	72	166	88	106	68	75	64	88	27	17
28	17	19	63	138	236	102	115	67	59	80	24	154
29	17	18	58	127	---	101	123	65	81	69	23	57
30	17	17	54	144	---	100	231	61	67	63	21	45
31	18	---	49	116	---	113	---	58	---	57	20	---
TOTAL	733	747	1870	5434	3488	3774	3315	3653	1586	4191	1120	650.7
MEAN	23.6	24.9	60.3	175	125	122	110	118	52.9	135	36.1	21.7
MAX	165	93	351	888	285	172	395	244	127	403	59	154
MIN	12	17	16	45	66	86	59	58	34	57	20	9.7
CFSM	.55	.58	1.39	4.05	2.88	2.81	2.55	2.72	1.22	3.12	.83	.50
IN.	.63	.64	1.61	4.67	3.00	3.24	2.85	3.14	1.36	3.60	.96	.56

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1999, BY WATER YEAR (WY)

MEAN	128	146	139	167	185	230	189	156	126	82.3	93.8	103
MAX	359	714	277	428	466	596	361	373	415	199	323	517
(WY)	1996	1978	1984	1995	1998	1979	1983	1976	1972	1967	1994	1979
MIN	15.8	24.9	41.5	62.2	76.6	69.1	59.7	53.1	34.8	23.3	27.3	14.6
(WY)	1994	1999	1966	1966	1963	1988	1986	1986	1988	1986	1993	1998

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

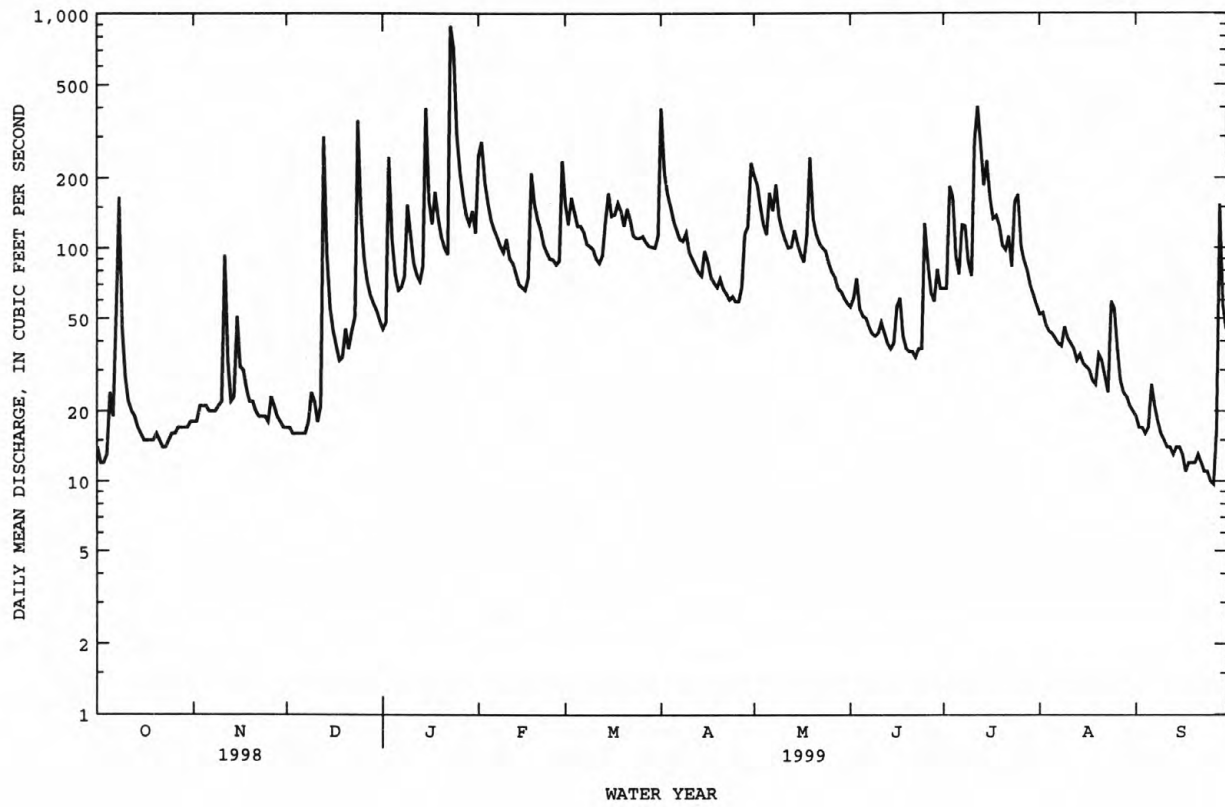
## WATER YEARS 1957 - 1999

ANNUAL TOTAL	54942	30561.7	145
ANNUAL MEAN	151	83.7	227
HIGHEST ANNUAL MEAN			1979
LOWEST ANNUAL MEAN			1988
HIGHEST DAILY MEAN	2730	888	9960
LOWEST DAILY MEAN	11	9.7	9.7
ANNUAL SEVEN-DAY MINIMUM	11	11	11
INSTANTANEOUS PEAK FLOW		2420	32900*
INSTANTANEOUS PEAK STAGE		3.78	17.41*
INSTANTANEOUS LOW FLOW		9.4*	9.4*
ANNUAL RUNOFF (CFSM)	3.48	1.93	3.36
ANNUAL RUNOFF (INCHES)	47.20	26.26	45.60
10 PERCENT EXCEEDS	337	162	262
50 PERCENT EXCEEDS	54	66	100
90 PERCENT EXCEEDS	16	16	37

e Estimated.

\* See REMARKS.

03463300 SOUTH TOE RIVER NEAR CELO, NC--Continued



## 03479000 WATAUGA RIVER NEAR SUGAR GROVE, NC

LOCATION.--Lat 36°14'18", long 81°49'22", Watauga County, Hydrologic Unit 06010103, on right bank 250 ft upstream from bridge on Secondary Road 1121, 300 ft downstream of Cove Creek, 2.3 mi southwest of Sugar Grove, and at mile 64.4.

DRAINAGE AREA.--92.1 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,607.84 ft above sea level. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight diurnal fluctuation at low flow caused by small mills above station. Maximum discharge for period of record from rating curve extended above 4,900 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow, from profile based on floodmarks. Minimum discharge for period of record, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916 reached a stage of 22.1 ft, from floodmarks on barn 0.25 mi upstream from station, as witnessed by local resident; discharge, 28,000 ft<sup>3</sup>/s, from rating curve extended above 4,900 ft<sup>3</sup>/s, on basis of slope-area measurement.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	28	29	e53	213	287	234	284	91	106	53	25
2	21	28	28	e52	302	245	194	223	91	153	61	23
3	20	28	28	295	231	274	167	189	99	208	49	21
4	24	30	29	e121	201	273	157	169	89	128	46	19
5	37	30	29	e94	175	244	149	159	85	109	44	32
6	40	29	29	e82	163	286	141	183	82	97	41	81
7	50	28	28	e75	158	325	136	165	78	128	39	43
8	228	29	30	85	148	264	133	196	75	151	37	32
9	82	29	40	281	137	240	133	166	77	104	44	28
10	54	29	32	190	134	221	125	151	82	104	43	26
11	44	88	30	e122	126	194	132	140	141	137	39	22
12	38	56	34	104	125	181	123	132	93	374	35	21
13	36	43	409	99	119	176	116	143	83	312	33	19
14	35	38	141	114	113	217	113	265	82	167	49	19
15	32	43	82	598	110	267	138	166	84	127	35	20
16	31	38	66	265	109	238	132	146	134	119	32	20
17	30	35	60	175	114	231	115	136	133	108	30	17
18	30	34	55	179	251	236	111	138	99	93	28	16
19	30	33	56	159	216	229	109	304	88	90	26	17
20	32	33	63	132	215	205	108	190	84	78	51	17
21	29	33	55	118	211	212	105	162	83	73	46	21
22	28	31	53	112	183	198	102	150	79	75	35	21
23	27	30	52	556	166	184	100	148	75	65	31	17
24	29	31	175	1170	155	179	102	175	74	72	35	16
25	28	29	128	544	150	171	98	126	109	77	88	16
26	29	36	90	331	146	162	98	120	106	74	66	15
27	28	33	75	253	148	157	152	116	308	71	44	23
28	28	30	69	210	261	147	239	112	199	67	37	216
29	28	30	67	184	---	141	198	107	141	62	34	95
30	27	29	67	166	---	136	340	100	114	58	31	74
31	28	---	e57	149	---	132	---	95	---	55	27	---
TOTAL	1226	1041	2186	7068	4780	6652	4300	5056	3158	3642	1289	1032
MEAN	39.5	34.7	70.5	228	171	215	143	163	105	117	41.6	34.4
MAX	228	88	409	1170	302	325	340	304	308	374	88	216
MIN	20	28	28	52	109	132	98	95	74	55	26	15
CFSM	.43	.38	.77	2.48	1.85	2.33	1.56	1.77	1.14	1.28	.45	.37
IN.	.50	.42	.88	2.85	1.93	2.69	1.74	2.04	1.28	1.47	.52	.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

	114	152	174	216	269	310	259	185	147	110	120	109
MEAN	114	152	174	216	269	310	259	185	147	110	120	109
MAX	380	662	434	817	643	858	689	411	583	461	1169	691
(WY)	1965	1978	1951	1995	1998	1979	1987	1973	1992	1989	1940	1979
MIN	19.2	34.6	45.6	55.5	67.5	77.0	82.1	67.5	41.4	35.0	25.6	18.1
(WY)	1955	1982	1964	1956	1941	1988	1986	1941	1988	1944	1956	1954

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

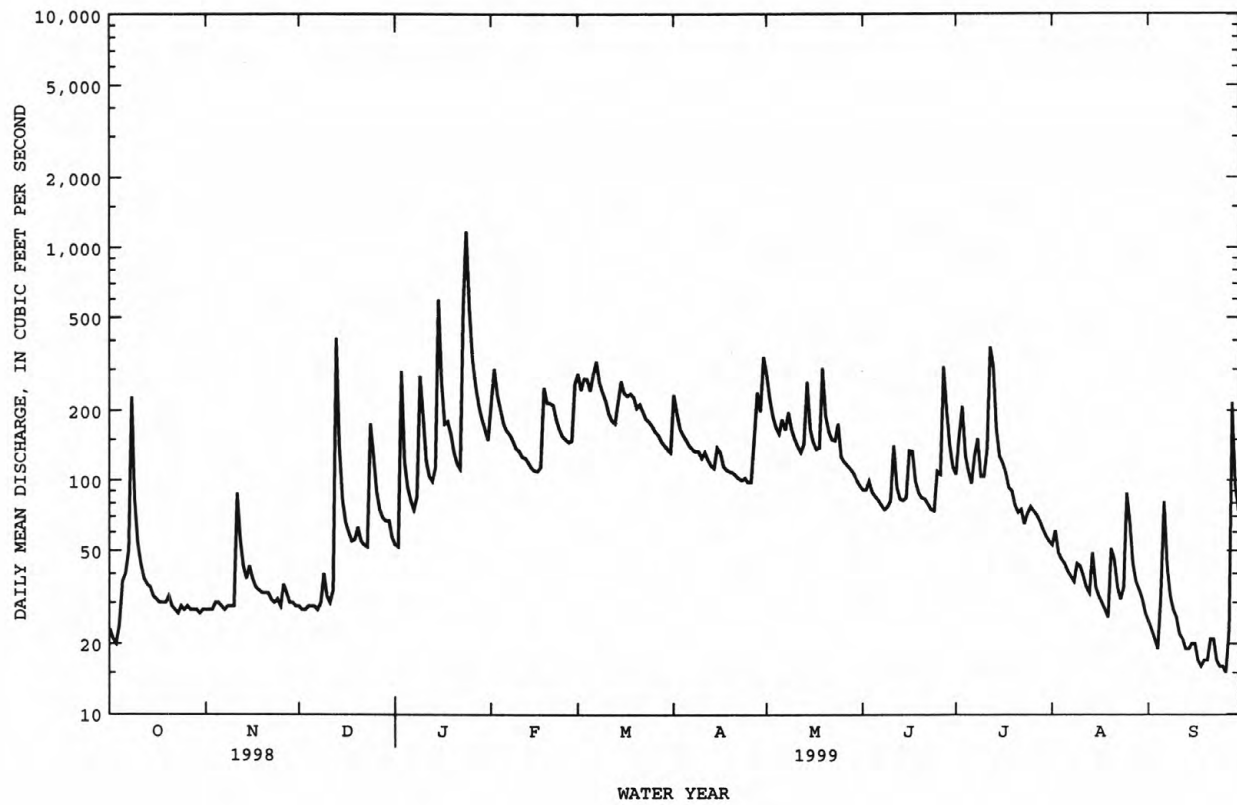
WATER YEARS 1940 - 1999

ANNUAL TOTAL	81522		41430									
ANNUAL MEAN	223		114							178		
HIGHEST ANNUAL MEAN										297		1979
LOWEST ANNUAL MEAN										84.7		1988
HIGHEST DAILY MEAN	5070	Jan 8				1170	Jan 24		15900		Aug 13	1940
LOWEST DAILY MEAN	20	Oct 3				15	Sep 26		13		Sep 19	1954
ANNUAL SEVEN-DAY MINIMUM	22	Sep 27				18	Sep 20		15		Sep 13	1954
INSTANTANEOUS PEAK FLOW						1700	Jan 24		50800*		Aug 13	1940
INSTANTANEOUS PEAK STAGE						5.70	Jan 24		29.60		Aug 13	1940
INSTANTANEOUS LOW FLOW						14	Sep 26		6.5*		Jan 1	1954
ANNUAL RUNOFF (CFSM)	2.43					1.23			1.94			
ANNUAL RUNOFF (INCHES)	32.93					16.73			26.30			
10 PERCENT EXCEEDS	452					230			329			
50 PERCENT EXCEEDS	109					93			117			
90 PERCENT EXCEEDS	28					28			39			

e Estimated.

\* See REMARKS.

03479000 WATAUGA RIVER NEAR SUGAR GROVE, NC--Continued





## TENNESSEE RIVER BASIN

03500000 LITTLE TENNESSEE RIVER NEAR PRENTISS, NC

LOCATION.--Lat 35°08'59", long 83°22'47", Macon County, Hydrologic Unit 06010202, on left bank 600 ft upstream from Owenby Branch, 0.5 mi upstream from Cartoogechaye Creek, 2 mi north of Prentiss, and at mile 119.5.

DRAINAGE AREA.--140 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1943 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 1236: 1949(M).

GAGE.--Water-stage recorder. Datum of gage is 2,008.39 ft above sea level (levels by Tennessee Valley Authority). Satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records good.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1898 reached a stage of about 15 ft, from profiles by Tennessee Valley Authority.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	83	111	185	1360	436	1600	348	227	296	136	85
2	89	85	109	195	1160	384	926	295	241	262	132	84
3	85	111	110	497	776	666	686	276	307	249	128	81
4	89	102	107	305	623	566	586	263	235	253	126	78
5	121	92	107	246	524	465	522	271	221	236	122	75
6	121	92	107	237	465	440	478	858	222	237	123	75
7	142	88	105	224	434	407	450	952	208	225	117	73
8	343	89	118	247	407	377	426	1250	201	243	115	72
9	162	95	175	293	371	388	423	710	195	210	120	72
10	118	106	126	276	572	385	395	549	200	205	114	80
11	106	364	118	242	445	367	375	469	220	225	108	72
12	100	179	116	228	403	347	354	428	196	372	105	69
13	96	134	346	215	367	336	342	401	189	319	103	66
14	94	131	269	224	341	416	338	396	184	256	118	67
15	90	249	188	452	328	449	353	389	209	240	106	66
16	89	230	164	319	315	385	341	352	415	224	100	60
17	88	387	149	276	384	361	316	332	374	204	99	55
18	88	217	139	313	866	344	308	322	246	198	94	60
19	88	177	146	286	603	330	299	327	217	196	89	63
20	90	158	177	258	550	317	307	300	200	185	100	65
21	85	149	152	245	469	353	292	289	195	179	94	74
22	82	135	159	237	420	337	282	281	196	176	90	76
23	81	129	173	756	391	311	274	276	199	225	88	68
24	84	129	589	1270	373	306	270	274	208	179	182	66
25	84	124	490	658	357	300	268	257	332	193	174	66
26	86	122	320	485	341	442	270	258	254	167	124	64
27	85	116	258	407	330	504	277	259	286	158	107	70
28	83	114	234	361	574	428	311	244	322	153	103	225
29	82	112	242	329	---	394	290	239	438	149	98	247
30	82	113	215	343	---	369	356	235	417	147	93	182
31	84	---	193	402	---	395	---	229	---	141	87	---
TOTAL	3221	4412	6012	11011	14549	12305	12715	12329	7554	6702	3495	2556
MEAN	104	147	194	355	520	397	424	398	252	216	113	85.2
MAX	343	387	589	1270	1360	666	1600	1250	438	372	182	247
MIN	81	83	105	185	315	300	268	229	184	141	87	55
CFSM	.74	1.05	1.39	2.54	3.71	2.84	3.03	2.84	1.80	1.54	.81	.61
IN.	.86	1.17	1.60	2.93	3.87	3.27	3.38	3.28	2.01	1.78	.93	.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1999, BY WATER YEAR (WY)

	MEAN	252	302	396	496	574	616	568	432	345	259	243	221
MAX	1078	815	841	1008	1252	1199	1014	999	694	772	695	671	
(WY)	1965	1980	1962	1946	1990	1952	1964	1976	1949	1989	1974	1950	
MIN	70.5	101	154	120	222	244	172	157	110	94.8	78.3	80.2	
(WY)	1955	1955	1981	1981	1986	1988	1986	1986	1988	1986	1986	1954	

SUMMARY STATISTICS

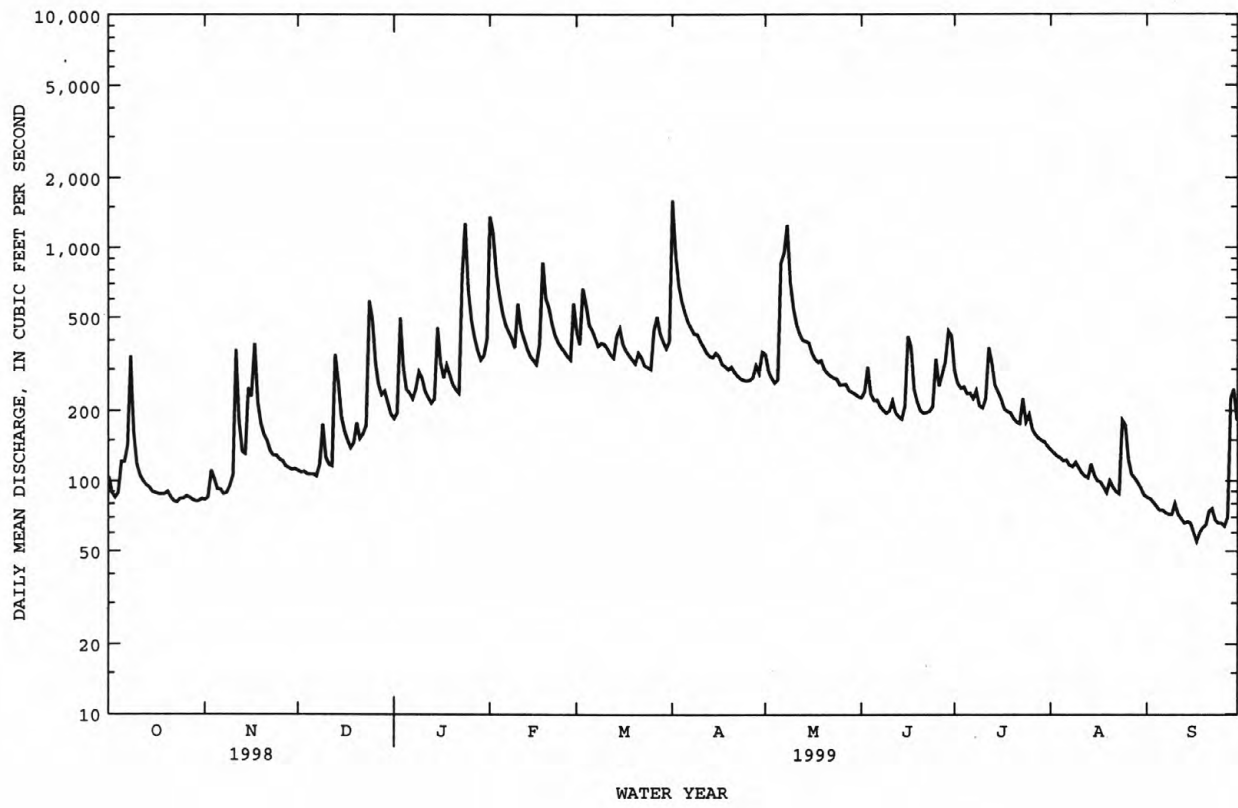
FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1944 - 1999

ANNUAL TOTAL	149318	96861	
ANNUAL MEAN	409	265	392
HIGHEST ANNUAL MEAN			588
LOWEST ANNUAL MEAN			173
HIGHEST DAILY MEAN	4790	Jan 8	1600
LOWEST DAILY MEAN	75	Sep 19	55
ANNUAL SEVEN-DAY MINIMUM	78	Sep 14	62
INSTANTANEOUS PEAK FLOW			1950
INSTANTANEOUS PEAK STAGE			5.30
INSTANTANEOUS LOW FLOW			52
ANNUAL RUNOFF (CFSM)	2.92	1.90	2.80
ANNUAL RUNOFF (INCHES)	39.68	25.74	38.00
10 PERCENT EXCEEDS	828	451	704
50 PERCENT EXCEEDS	258	228	310
90 PERCENT EXCEEDS	89	85	130

03500000 LITTLE TENNESSEE RIVER NEAR PRENTISS, NC--Continued



## TENNESSEE RIVER BASIN

03500240 CARTOOGECAYE CREEK NEAR FRANKLIN, NC

LOCATION.--Lat 35°09'31", long 83°23'40", Macon County, Hydrologic Unit 06010202, on downstream side of center pier of bridge on Secondary Road 1152, 0.1 mi downstream of unnamed creek, 1.8 mi south of Franklin, and 1.9 mi upstream from mouth.

DRAINAGE AREA.--57.1 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1944, 1947, 1953-55, 1958, 1960. June 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,017.18 ft above sea level. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Minimum discharge for period of record also occurred Oct. 8, 1986. Minimum discharge for current water year also occurred Sept. 17, 18, 19, 26.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1949 reached a stage of 15.6 ft, from studies by Tennessee Valley Authority; discharge, about 7,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	30	37	59	574	216	e380	106	75	148	43	27
2	36	31	36	81	395	182	264	98	118	123	42	27
3	35	38	36	220	273	302	212	93	151	111	40	27
4	37	33	35	119	221	248	183	89	94	108	39	26
5	35	32	36	e97	185	212	165	100	83	94	38	26
6	36	31	36	81	165	206	159	347	83	90	37	25
7	46	31	36	79	164	182	147	317	77	84	37	24
8	92	32	46	89	153	166	139	554	72	81	37	24
9	44	37	57	121	138	178	135	292	69	80	40	25
10	37	47	42	110	223	171	126	219	83	85	35	27
11	35	142	40	95	178	158	121	177	84	106	34	24
12	35	50	41	86	158	149	114	157	71	128	38	24
13	34	42	258	79	143	147	111	148	67	109	33	23
14	34	48	122	100	132	203	109	146	68	91	43	24
15	37	94	77	282	127	190	124	138	95	76	34	24
16	33	98	62	167	120	169	111	124	177	74	34	23
17	32	120	54	129	202	158	e108	116	141	69	33	22
18	31	64	49	162	324	149	e105	113	97	68	31	22
19	31	52	57	132	254	140	e100	126	83	68	30	23
20	32	49	62	115	218	134	e110	106	77	60	31	24
21	30	47	53	104	189	137	100	102	74	58	30	25
22	30	43	63	95	168	125	96	98	70	61	29	25
23	31	42	74	428	154	118	94	98	77	59	39	24
24	30	42	285	442	145	122	92	96	81	56	45	24
25	30	40	181	258	137	116	91	89	110	57	40	23
26	30	41	119	194	131	169	93	95	91	53	35	23
27	29	39	93	161	130	163	98	90	103	48	33	24
28	29	38	83	139	299	153	106	83	125	48	32	34
29	32	37	81	125	---	147	102	80	315	47	31	33
30	30	37	69	134	---	142	120	78	235	47	29	41
31	30	---	63	165	---	e180	---	76	---	43	28	---
TOTAL	1103	1507	2383	4648	5700	5232	4015	4551	3146	2430	1100	767
MEAN	35.6	50.2	76.9	150	204	169	134	147	105	78.4	35.5	25.6
MAX	92	142	285	442	574	302	380	554	315	148	45	41
MIN	29	30	35	59	120	116	91	76	67	43	28	22
CFSM	.62	.88	1.35	2.63	3.57	2.96	2.34	2.57	1.84	1.37	.62	.45
IN.	.72	.98	1.55	3.03	3.71	3.41	2.62	2.96	2.05	1.58	.72	.50

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

	MEAN	86.5	110	152	197	229	249	206	158	122	88.4	83.7	72.6
MAX	295	266	317	336	460	440	375	339	259	195	185	161	
(WY)	1965	1993	1962	1996	1990	1980	1964	1976	1989	1989	1994	1989	
MIN	33.9	41.5	52.2	55.2	102	84.7	72.9	61.2	42.3	33.1	33.1	25.6	
(WY)	1979	1979	1966	1981	1986	1988	1986	1986	1988	1986	1986	1999	

## SUMMARY STATISTICS

## FOR 1998 CALENDAR YEAR

## FOR 1999 WATER YEAR

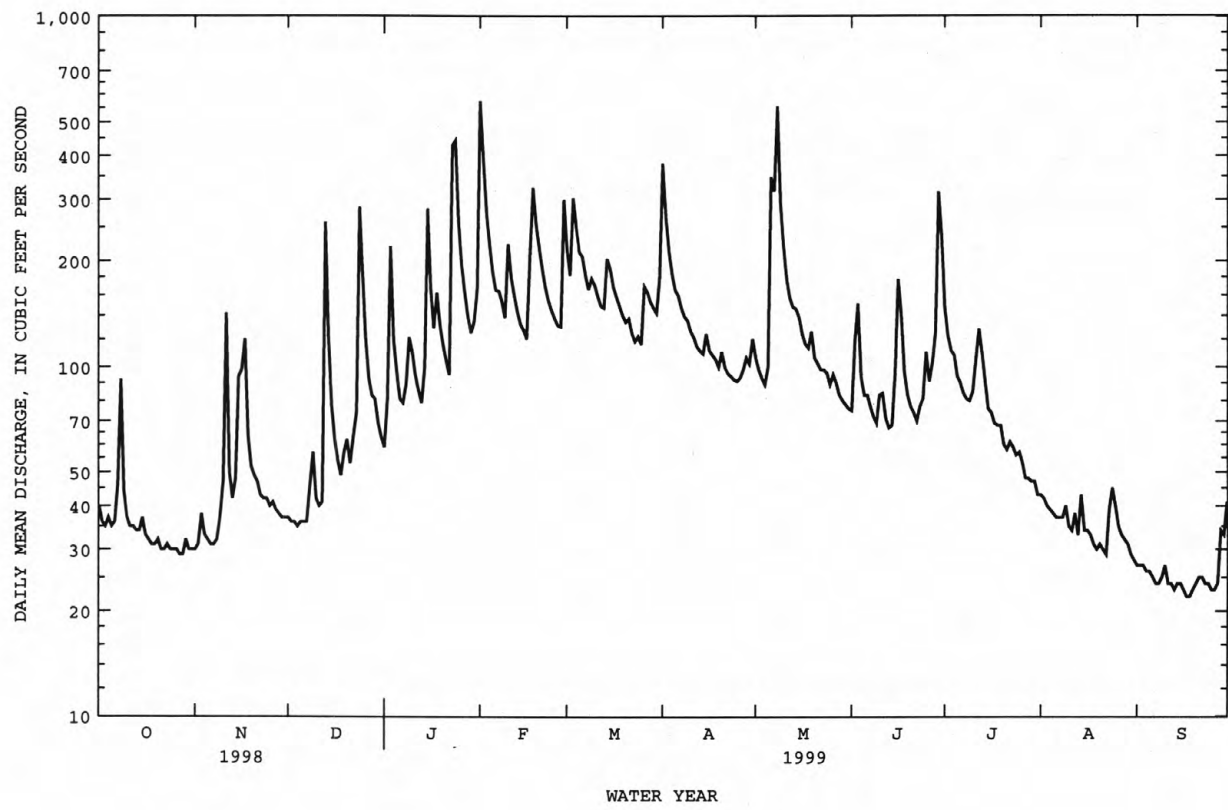
## WATER YEARS 1961 - 1999

ANNUAL TOTAL	55181	36582	
ANNUAL MEAN	151	100	146
HIGHEST ANNUAL MEAN			204
LOWEST ANNUAL MEAN			69.9
HIGHEST DAILY MEAN	1560	Jan 8	574
LOWEST DAILY MEAN	29	Oct 27	22
ANNUAL SEVEN-DAY MINIMUM	30	Oct 22	23
INSTANTANEOUS PEAK FLOW			869
INSTANTANEOUS PEAK STAGE			5.40
INSTANTANEOUS LOW FLOW			21*
ANNUAL RUNOFF (CFSM)	2.65	1.76	2.55
ANNUAL RUNOFF (INCHES)	35.95	23.83	34.65
10 PERCENT EXCEEDS	306	187	264
50 PERCENT EXCEEDS	98	83	109
90 PERCENT EXCEEDS	34	30	50

e Estimated.

\* See REMARKS.

03500240 CARTOOGECHAYE CREEK NEAR FRANKLIN, NC--Continued



## TENNESSEE RIVER BASIN

03503000 LITTLE TENNESSEE RIVER AT NEEDMORE, NC

LOCATION.--Lat 35°20'11", long 83°31'37", Swain County, Hydrologic Unit 06010202, on left bank on Secondary Road 1113, 0.8 mi downstream of DeHart Creek, 0.8 mi north of Needmore, 2.4 mi downstream of Brush Creek, 6.3 mi downstream of Tellico Creek, and at mile 92.9.

DRAINAGE AREA.--436 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1943 to December 1981, October 1983 to current year. Monthly discharge only for some periods, published in WSP 1306.

GAGE.--Water-stage recorder. Datum of gage is 1,761.19 ft above sea level (levels by Tennessee Valley Authority). Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Considerable diurnal fluctuation caused by Porters Bend power plant at Lake Emory, 20 mi upstream. Minimum discharge for period of record also occurred Nov. 8, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of October 1898 and Aug. 30, 1940, reached stages of about 13 and 11.5 ft, respectively, from flood profiles by Tennessee Valley Authority.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	317	234	314	485	3320	1470	4090	910	601	958	387	220
2	262	229	300	501	3630	1250	2690	795	612	829	374	219
3	244	258	293	1640	2350	1840	1880	718	921	754	351	214
4	261	300	309	990	1860	1940	1540	690	672	773	342	207
5	248	267	305	733	1540	1520	1330	704	604	848	314	181
6	376	252	307	675	1370	1440	1260	2180	647	764	289	190
7	338	247	314	649	1270	1340	1150	2540	590	742	320	186
8	e700	245	359	623	1220	1220	1070	3850	571	702	299	185
9	e1100	289	435	765	1110	1240	1050	2150	565	678	336	184
10	e600	311	412	789	1450	1240	983	1550	584	642	320	189
11	e300	937	307	677	1260	1180	932	1280	644	789	298	167
12	e270	601	341	613	1170	1090	893	1150	589	1030	301	165
13	e260	377	970	595	1050	1070	857	1090	551	1050	300	163
14	e250	377	760	e630	986	1280	846	1040	532	834	294	163
15	e240	627	551	e1300	930	1600	885	1010	532	734	321	162
16	e240	625	462	e910	933	1310	889	921	906	690	281	160
17	e235	982	431	e790	1040	1200	810	866	1260	623	275	160
18	e230	619	406	e880	2350	1130	778	827	754	636	266	164
19	e235	480	407	e810	1830	1050	766	991	610	624	265	160
20	e240	e440	490	764	1710	1010	809	837	570	583	258	165
21	e230	e410	439	731	1440	1000	783	784	555	542	240	170
22	e225	e380	447	696	1290	1060	735	753	545	505	238	172
23	e225	360	470	e2200	1200	955	708	748	686	594	241	165
24	e230	354	1700	e3600	1110	921	694	736	593	530	369	164
25	e235	356	1490	e1900	1070	930	682	705	1040	566	440	162
26	e240	340	918	e1400	1010	2770	693	694	928	536	346	160
27	e235	337	671	1130	1000	6590	728	696	816	425	290	163
28	e230	324	613	996	1700	2700	760	654	907	458	e270	214
29	e225	317	680	895	---	1310	789	630	1460	428	e260	611
30	e225	314	600	870	---	1120	861	617	1510	414	e240	454
31	222	---	517	1050	---	1100	---	602	---	398	220	---
TOTAL	9468	12189	17018	31287	42199	46876	32941	33718	22355	20679	9345	6039
MEAN	305	406	549	1009	1507	1512	1098	1088	745	667	301	201
MAX	1100	982	1700	3600	3630	6590	4090	3850	1510	1050	440	611
MIN	222	229	293	485	930	921	682	602	532	398	220	160
CFSM	.70	.93	1.26	2.31	3.46	3.47	2.52	2.49	1.71	1.53	.69	.46
IN.	.81	1.04	1.45	2.67	3.60	4.00	2.81	2.88	1.91	1.76	.80	.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1999,<sup>g</sup> BY WATER YEAR (WY)

	MEAN	656	806	1052	1387	1612	1767	1551	1190	936	703	648	580
MAX	2557	2169	2231	2570	3718	3372	2746	2573	2061	2136	1670	1605	
(WY)	1965	1980	1962	1946	1990	1990	1964	1976	1949	1989	1967	1950	
MIN	192	282	368	349	660	596	553	489	351	238	213	201	
(WY)	1955	1955	1966	1981	1986	1988	1986	1986	1988	1986	1986	1999	

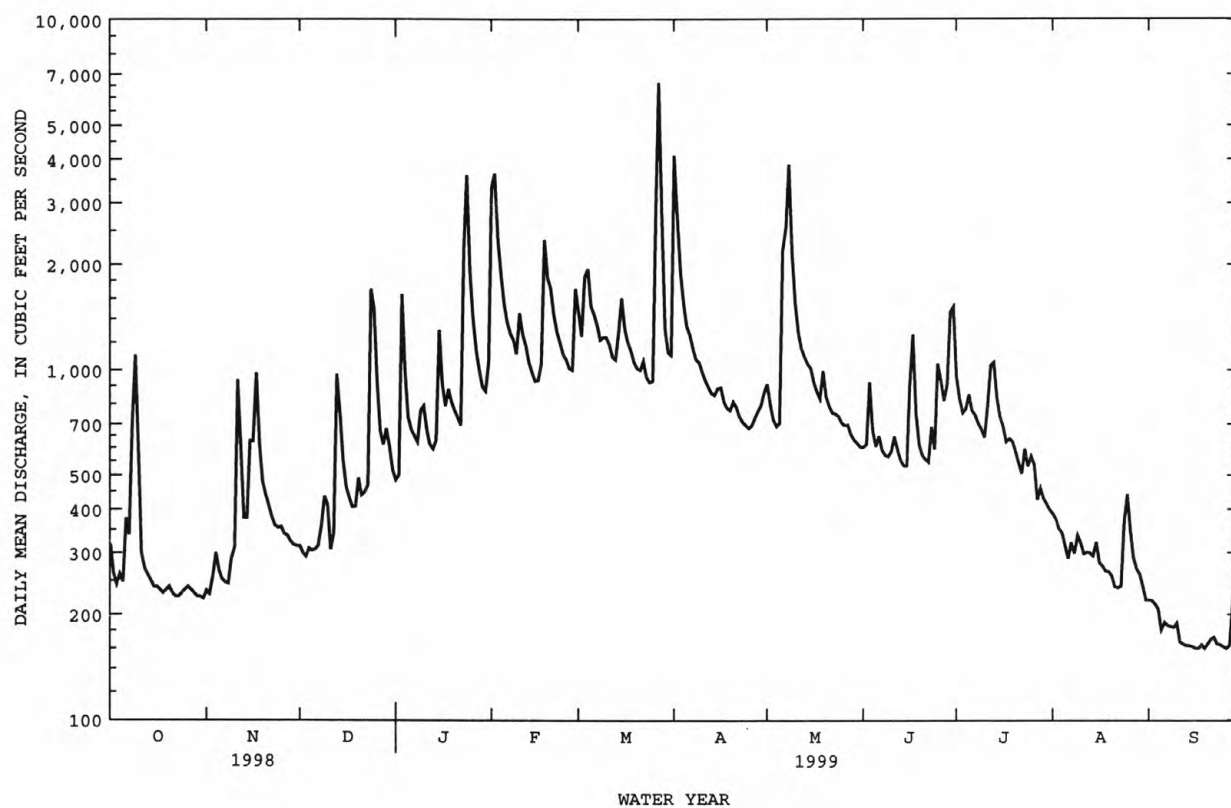
SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1944 - 1999 <sup>g</sup>	
ANNUAL TOTAL	404949		284114			
ANNUAL MEAN	1109		778		1075	
HIGHEST ANNUAL MEAN					1565	
LOWEST ANNUAL MEAN					495	
HIGHEST DAILY MEAN	13400	Jan 8	6590	Mar 27	17200	Oct 5 1964
LOWEST DAILY MEAN	193	Sep 16	160	Sep 16	71	Nov 7 1954
ANNUAL SEVEN-DAY MINIMUM	203	Sep 14	162	Sep 13	142	Oct 2 1986
INSTANTANEOUS PEAK FLOW			11300	Mar 27	22100	Oct 5 1964
INSTANTANEOUS PEAK STAGE			8.38	Mar 27	12.87	Oct 5 1964
INSTANTANEOUS LOW FLOW			150	Sep 19	52*	Nov 7 1954
ANNUAL RUNOFF (CFSM)	2.54		1.79		2.46	
ANNUAL RUNOFF (INCHES)	34.55		24.24		33.49	
10 PERCENT EXCEEDS	2300		1440		1940	
50 PERCENT EXCEEDS	692		642		820	
90 PERCENT EXCEEDS	240		230		366	

e Estimated.

<sup>g</sup> See PERIOD OF RECORD.

\* See REMARKS.

03503000 LITTLE TENNESSEE RIVER AT NEEDMORE, NC--Continued





## TENNESSEE RIVER BASIN

03503000 LITTLE TENNESSEE RIVER AT NEEDMORE, NC--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.--October 1998 to September 1999.

INSTRUMENTATION.--Tipping bucket raingage and electronic datalogger. Satellite telemetry at site.

REMARKS.--Gage is operated in cooperation with Tennessee Valley Authority.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.99	.00	.28	.00	.00	.00	.12	.00
2	.00	.21	.00	.77	.00	.00	.00	.00	.34	.12	.00	.00
3	.00	.00	.00	.01	.00	.84	.00	.00	.16	.00	.00	.00
4	.68	.01	.00	.00	.07	.00	.00	.00	.00	.04	.00	.00
5	.00	.01	.02	.00	.00	.00	.00	.49	.01	.00	.00	.00
6	.00	.00	.00	.00	.00	.31	---	2.21	.00	.03	.00	.00
7	.40	.00	.08	.09	.09	.00	---	1.15	.00	.55	.00	.00
8	.56	.06	.70	.13	.00	.00	---	.01	.00	.00	.05	.00
9	.00	.45	.00	.34	.52	.32	---	.00	.00	.00	.01	.03
10	.00	1.14	.01	.00	.00	.00	.00	.00	.27	.32	.00	.00
11	.00	.07	.03	.00	.00	.00	.01	.00	.00	.83	.00	.00
12	.00	.00	---	.00	.03	.00	.00	.27	.00	.31	.00	.00
13	.00	.00	---	.01	.00	.54	.00	.35	.00	.01	.29	.00
14	.00	.97	.00	---	.00	.34	.02	.08	.36	.00	.18	.00
15	.00	.01	.00	---	.00	.05	---	.00	.02	.00	.00	.00
16	.00	.17	.00	.00	.00	.00	---	.00	1.03	.00	.00	.00
17	.00	.00	.02	.04	1.37	.00	---	.00	.07	.00	.00	.00
18	.00	.00	.00	---	.01	.00	---	.15	.00	1.06	.00	.00
19	.07	.00	.35	---	.31	.00	---	.00	.00	.00	.00	.00
20	.00	---	.00	.00	.00	.01	.29	.00	.00	.00	.01	.00
21	.00	---	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00
22	.00	.00	.32	.00	.00	.00	.00	.27	1.06	.00	.00	.00
23	.00	.00	---	---	.00	.00	.00	.04	.07	.00	.11	.00
24	.00	.01	---	---	.04	.07	.00	.15	.61	.26	.21	.00
25	.00	.20	.01	---	.00	.00	.00	.00	.48	.00	.02	.00
26	.00	.01	.00	---	.00	---	.28	.19	.13	.00	.00	.00
27	.00	.00	.00	.00	1.06	---	.18	.00	.25	.00	.00	.03
28	.00	.00	.18	.00	.32	---	.00	.00	.57	.00	.00	.41
29	.00	.00	---	.06	---	---	.51	.00	1.27	.00	.00	.95
30	.00	.00	---	.37	---	.00	.05	.00	.00	.00	.00	.00
31	.00	---	.00	.92	---	.94	---	.00	---	.00	.00	---
TOTAL	1.71	---	---	---	4.81	---	---	5.36	6.70	3.53	1.00	1.42



Flooded homes in downtown Rocky Mount, N.C., near the Tar River.

## TENNESSEE RIVER BASIN

03504000 NANTAHALA RIVER NEAR RAINBOW SPRINGS, NC

LOCATION.--Lat 35°07'37", long 83°37'09", Macon County, Hydrologic Unit 06010202, on right bank on Forest Service Road 437 in Nantahala National Forest, 300 ft upstream from Roaring Fork, 0.2 mi downstream of Buck Creek, 4 mi northwest of town of Rainbow Springs, and at mile 34.3.

DRAINAGE AREA.--51.9 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 973: 1941(M).

GAGE.--Water-stage recorder. Datum of gage is 3,072.97 ft above sea level. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Occasional slight diurnal fluctuation at low flow caused by small ponds on tributaries upstream from station. Maximum discharge for period of record from rating curve extended above 3,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Minimum discharge for period of record and current water year also occurred Oct. 29, Nov. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	29	45	109	e600	346	486	159	137	222	88	48
2	36	31	44	143	e460	302	317	147	144	190	93	47
3	34	44	43	252	e380	489	278	139	151	187	84	45
4	36	34	43	e157	e340	376	254	135	128	184	82	44
5	35	32	45	e149	e310	338	237	165	123	160	80	43
6	40	32	44	e210	288	338	233	480	131	160	77	43
7	61	31	43	e152	312	304	215	427	117	155	74	42
8	150	33	95	190	276	281	207	608	113	158	73	41
9	51	48	107	283	265	292	208	379	109	e141	74	42
10	40	78	65	219	423	276	193	311	112	e182	70	46
11	37	202	e60	188	311	256	185	271	113	189	68	40
12	36	58	e70	171	290	242	176	263	103	230	66	39
13	34	45	e360	159	265	240	172	249	100	206	67	38
14	33	81	e160	260	245	292	168	250	98	177	127	38
15	32	154	e110	494	232	281	184	250	119	161	70	38
16	32	239	e90	285	220	249	165	219	225	150	66	35
17	32	214	e80	242	410	237	158	208	166	141	63	34
18	32	104	e70	279	464	228	153	242	124	149	61	35
19	32	80	e100	226	370	217	150	242	112	142	58	35
20	34	81	93	207	326	209	158	206	105	129	72	36
21	31	75	81	192	296	221	146	195	101	129	61	46
22	30	63	109	182	273	201	140	187	101	135	57	42
23	30	59	127	570	257	191	138	181	104	133	65	36
24	32	59	386	550	246	197	136	181	129	122	95	36
25	30	54	246	390	233	185	137	166	166	125	73	35
26	30	54	184	328	220	212	142	178	125	109	61	34
27	30	50	154	289	251	208	147	161	199	103	57	37
28	30	48	152	262	558	205	149	152	262	100	55	87
29	30	47	145	238	---	211	151	147	425	97	54	75
30	30	46	128	250	---	199	187	143	301	94	51	84
31	30	---	117	260	---	220	---	138	---	90	49	---
TOTAL	1191	2205	3596	7886	9121	8043	5770	7179	4443	4650	2191	1321
MEAN	38.4	73.5	116	254	326	259	192	232	148	150	70.7	44.0
MAX	150	239	386	570	600	489	486	608	425	230	127	87
MIN	30	29	43	109	220	185	136	135	98	90	49	34
CFSM	.74	1.42	2.24	4.90	6.28	5.00	3.71	4.46	2.85	2.89	1.36	.85
IN.	.85	1.58	2.58	5.65	6.54	5.76	4.14	5.15	3.18	3.33	1.57	.95

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1999, BY WATER YEAR (WY)

	MEAN	117	155	225	284	329	326	281	217	174	140	124	107
MAX	415	376	474	568	657	572	493	491	485	335	327	374	
(WY)	1965	1978	1993	1974	1957	1979	1979	1976	1989	1989	1994	1950	
MIN	38.4	56.6	77.2	84.4	115	138	118	96.8	67.1	59.0	49.5	41.8	
(WY)	1999	1955	1959	1981	1941	1988	1986	1986	1986	1986	1986	1986	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

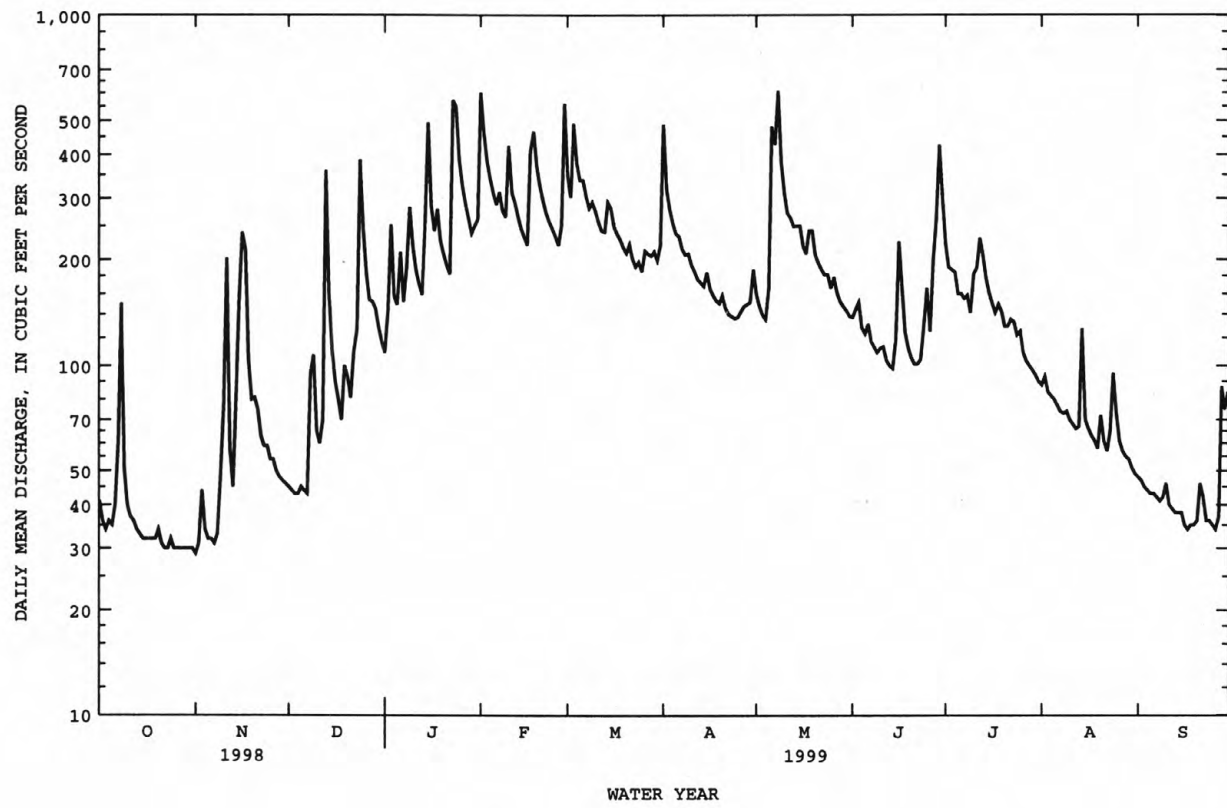
WATER YEARS 1941 - 1999

ANNUAL TOTAL	74923	57596	
ANNUAL MEAN	205	158	206
HIGHEST ANNUAL MEAN			280
LOWEST ANNUAL MEAN			109
HIGHEST DAILY MEAN	1730	Jan 7	3060
LOWEST DAILY MEAN	29	Nov 1	29
ANNUAL SEVEN-DAY MINIMUM	30	Oct 26	30
INSTANTANEOUS PEAK FLOW			1150
INSTANTANEOUS PEAK STAGE			3.32
INSTANTANEOUS LOW FLOW			29*
ANNUAL RUNOFF (CFSM)	3.96	3.04	3.97
ANNUAL RUNOFF (INCHES)	53.70	41.28	53.92
10 PERCENT EXCEEDS	409	298	375
50 PERCENT EXCEEDS	145	141	164
90 PERCENT EXCEEDS	36	36	68

e Estimated.

\* See REMARKS.

03504000 NANTAHALA RIVER NEAR RAINBOW SPRINGS, NC--Continued



## 03512000 OCONALUFTEE RIVER AT BIRDTOWN, NC

LOCATION.--Lat 35°27'41", long 83°21'13", Swain County, Hydrologic Unit 06010203, in Cherokee Indian Reservation on left bank 1500 ft upstream from bridge on Secondary Road 1359, 0.5 mi south of Birdtown, 0.6 mi downstream of Adams Creek, 0.6 mi upstream from Goose Creek, 2.2 mi southwest of Cherokee, and at mile 3.1.

DRAINAGE AREA.--184 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1945 to September 1946, July 1948 to current year.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,843.30 ft above sea level. Prior to Oct. 1, 1946, nonrecording gage at same site and datum. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum gage height for period of record from floodmarks. Minimum discharge for period of record also occurred Nov. 9, 1987. Minimum discharge for current water year also occurred Oct. 23, 24, 27-30.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Nov. 19, 1906, and Mar. 27, 1913, reached stages of 18 and 14.5 ft, respectively, from studies by Tennessee Valley Authority; discharge not determined.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	121	100	127	292	1010	828	1290	451	298	799	349	152
2	109	106	128	313	1040	697	914	419	327	680	354	146
3	105	124	126	1060	860	1020	802	399	320	592	310	142
4	129	115	125	e570	756	919	706	383	292	557	307	137
5	117	109	127	e482	652	825	638	424	270	559	300	135
6	112	115	130	e428	591	829	616	1970	386	657	288	137
7	122	113	124	e401	575	766	564	1460	292	805	279	133
8	312	111	296	444	527	696	551	2370	271	688	276	128
9	165	135	414	826	511	709	560	1330	254	576	320	127
10	131	155	239	657	735	664	504	1030	306	694	274	133
11	120	649	199	537	567	609	487	872	312	1020	260	121
12	114	214	205	480	519	569	461	771	286	1190	244	119
13	114	182	1690	436	479	600	438	696	264	1120	240	116
14	116	237	675	802	439	835	426	664	267	1020	284	118
15	110	369	404	2030	419	963	541	618	311	859	224	118
16	106	238	314	1070	397	789	539	554	608	777	e209	112
17	103	218	278	844	557	765	468	516	622	711	e198	109
18	100	179	245	1020	942	789	441	515	414	688	196	110
19	102	163	266	849	813	801	428	588	361	676	189	111
20	109	156	386	732	745	732	466	483	323	639	189	111
21	102	149	376	652	668	753	421	451	310	636	184	124
22	99	139	565	588	605	697	400	432	327	590	178	138
23	97	136	494	1350	565	633	384	419	308	553	180	116
24	99	137	1950	1470	523	613	517	444	347	521	221	110
25	99	135	946	1030	497	584	427	394	864	530	203	108
26	99	168	642	845	459	615	419	384	716	456	200	105
27	95	149	501	738	469	617	408	362	625	431	181	108
28	97	132	437	627	1250	585	407	339	584	414	175	259
29	97	128	399	565	---	587	458	318	1130	391	169	402
30	96	125	362	574	---	574	503	324	1100	378	163	411
31	99	---	317	608	---	596	---	310	---	359	155	---
TOTAL	3596	5186	13487	23320	18170	22259	16184	20690	13095	20566	7299	4396
MEAN	116	173	435	752	649	718	539	667	436	663	235	147
MAX	312	649	1950	2030	1250	1020	1290	2370	1130	1190	354	411
MIN	95	100	124	292	397	569	384	310	254	359	155	105
CFSM	.63	.94	2.36	4.09	3.53	3.90	2.93	3.63	2.37	3.61	1.28	.80
IN.	.73	1.05	2.73	4.71	3.67	4.50	3.27	4.18	2.65	4.16	1.48	.89

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1999, @ BY WATER YEAR (WY)

	MEAN	265	384	584	730	815	894	725	538	428	383	329	256
MAX	645	777	1266	1428	1700	1714	1315	1202	1136	938	733	584	
(WY)	1990	1958	1962	1974	1990	1963	1994	1984	1989	1989	1994	1989	
MIN	94.5	125	162	170	392	330	277	239	175	169	161	121	
(WY)	1955	1988	1966	1981	1978	1988	1986	1986	1988	1952	1987	1954	

SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1945 - 1999@

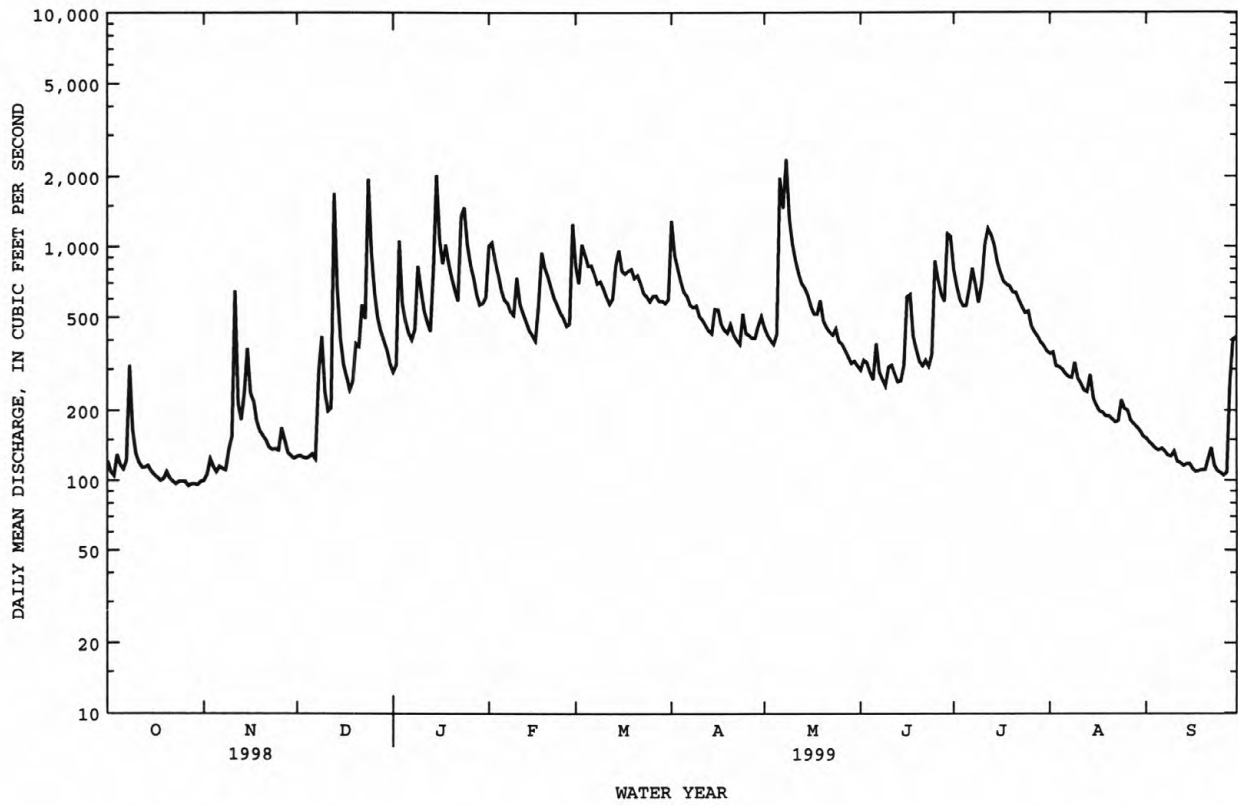
ANNUAL TOTAL	198349	168248	
ANNUAL MEAN	543	461	526
HIGHEST ANNUAL MEAN			771
LOWEST ANNUAL MEAN			274
HIGHEST DAILY MEAN	5700	Jan 8	8470
LOWEST DAILY MEAN	95	Oct 27	80
ANNUAL SEVEN-DAY MINIMUM	97	Oct 24	82
INSTANTANEOUS PEAK FLOW			15900
INSTANTANEOUS LOW FLOW			12.46*
ANNUAL RUNOFF (CFSM)	2.95		79*
ANNUAL RUNOFF (INCHES)	40.10		2.86
10 PERCENT EXCEEDS	1100		38.85
50 PERCENT EXCEEDS	388		953
90 PERCENT EXCEEDS	114		395
			168

e Estimated.

@ See PERIOD OF RECORD.

\* See REMARKS.

03512000 OCONALUFTEE RIVER AT BIRDTOWN, NC--Continued





## 03513000 TUCKASEGEE RIVER AT BRYSON CITY, NC

LOCATION.--Lat 35°25'40", long 83°26'51", Swain County, Hydrologic Unit 06010203, on left bank 400 ft downstream of bridge on Secondary Road 1364, Everett Street, in Bryson City, 0.6 mi downstream of Deep Creek, and at mile 12.6.

DRAINAGE AREA.--655 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1897 to December 1981, October 1983 to January 1995, April 1996 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 523: 1916, 1918-20. WSP 823: Drainage area. WSP 1306: 1898-1913. WSP 1336: 1907, 1915(M), 1916-20, 1921-29(M), 1933-34(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,714.54 ft above sea level (levels by Tennessee Valley Authority). Nov. 7, 1897, to Feb. 2, 1914, and May 18, 1920, to June 27, 1927, nonrecording gage at bridge 400 ft upstream at datum of 1,716.54 ft. Feb. 3, 1914, to May 17, 1920, water-stage recorder at site 200 ft upstream at datum of 1,716.54 ft. June 28, 1927, to Sept. 30, 1960, water-stage recorder at present site at datum of 1,716.54 ft. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Considerable diurnal fluctuation caused by power plants upstream from station. Flow regulated by Thorpe Reservoir, Cedar Cliff Lake, Bear Creek Lake, Tennessee Creek project lakes (stations 03507111, 03507131), and two small reservoirs with a combined capacity of 250 ft<sup>3</sup>/s-day. Maximum discharge for period of record, from rating curve extended above 28,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Minimum discharge for period of record and minimum daily discharge for period of record also occurred Sept. 10, 1925, caused by filling reservoir on Oconaluftee River. Minimum daily discharge during normal regulation: 186 ft<sup>3</sup>/s, Oct. 13, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1840, Mar. 6, 1867, and June 1876 reached stages of 22, 19, and 19 ft, respectively, present site and datum, from studies by Tennessee Valley Authority; discharge not determined. The flood in May 1840 exceeded all other observed floods at this location.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	424	502	486	975	2610	2090	3630	1470	894	2410	875	459
2	380	501	804	706	2750	1770	2850	1100	974	2050	854	455
3	365	550	964	2470	2220	2890	2290	942	1210	1550	891	546
4	390	523	832	1880	1970	2990	2070	908	1150	1350	909	515
5	410	519	602	1760	1700	2610	1810	981	1380	1300	885	444
6	567	511	545	1500	1460	2320	1700	4280	1480	1540	867	450
7	832	503	535	1520	1400	1870	1470	3760	899	1790	848	439
8	1360	505	758	1210	1330	1850	1330	5730	849	1800	671	510
9	1100	538	827	1730	1460	2130	1510	3730	945	1470	711	447
10	884	609	1020	1380	2320	2190	1400	2940	1100	1750	877	458
11	616	1660	885	1180	1740	1980	1260	2230	1150	3420	851	499
12	1040	751	815	1200	1640	1900	1130	2420	892	4250	840	374
13	730	555	3370	1180	1550	1880	1440	2380	789	4300	822	357
14	547	666	1800	1690	1150	2070	1360	2290	780	3690	851	409
15	612	1110	1190	4100	1360	2380	1510	1870	980	2850	609	527
16	532	739	1040	2520	1400	2320	1420	1340	1620	2420	575	452
17	631	1230	1180	1830	2000	2100	1320	1310	2090	2050	730	355
18	448	1040	1180	2630	3080	2270	1130	1600	1310	1740	748	348
19	527	483	1200	2110	2430	2220	1060	2180	1020	1760	730	349
20	530	435	1290	1520	2160	1980	1470	1620	859	1610	790	351
21	530	419	1300	1500	1660	2140	1290	1430	812	1600	733	379
22	507	493	1630	1370	1670	1720	1210	1220	1100	1560	521	402
23	424	620	1590	3910	1710	1790	1040	1180	1180	1510	512	376
24	510	474	e5190	3830	1660	1840	1280	1230	1370	1370	722	359
25	513	409	2880	2590	1570	1740	955	1430	3050	1730	726	487
26	505	491	1990	2100	1470	2010	952	1340	2230	1690	701	359
27	499	399	1410	1730	1460	2180	1000	1140	1540	1270	654	352
28	500	374	950	1540	2990	1510	1010	1020	1430	1230	654	717
29	497	367	1190	1390	---	1530	1580	1150	3140	1050	501	971
30	455	367	1380	1360	---	1480	1740	938	3120	1060	483	1220
31	501	---	1080	1470	---	1410	---	904	---	1010	464	---
TOTAL	18366	18343	41913	57881	51920	63160	45217	58063	41343	60180	22605	14366
MEAN	592	611	1352	1867	1854	2037	1507	1873	1378	1941	729	479
MAX	1360	1660	5190	4100	3080	2990	3630	5730	3140	4300	909	1220
MIN	365	367	486	706	1150	1410	952	904	780	1010	464	348

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 1999,<sup>6</sup> BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1898	928	3654	1899	347	1932
1899	1058	2899	1900	378	1932
1900	1595	3704	1901	457	1940
1901	2030	4819	1902	599	1940
1902	2296	5847	1903	736	1941
1903	2604	6504	1904	926	1988
1904	2243	4843	1905	841	1986
1905	1752	3744	1906	602	1941
1906	1411	3199	1907	531	1941
1907	1250	3379	1908	503	1925
1908	1161	4251	1909	220	1925
1909	953	3589	1910	195	1925

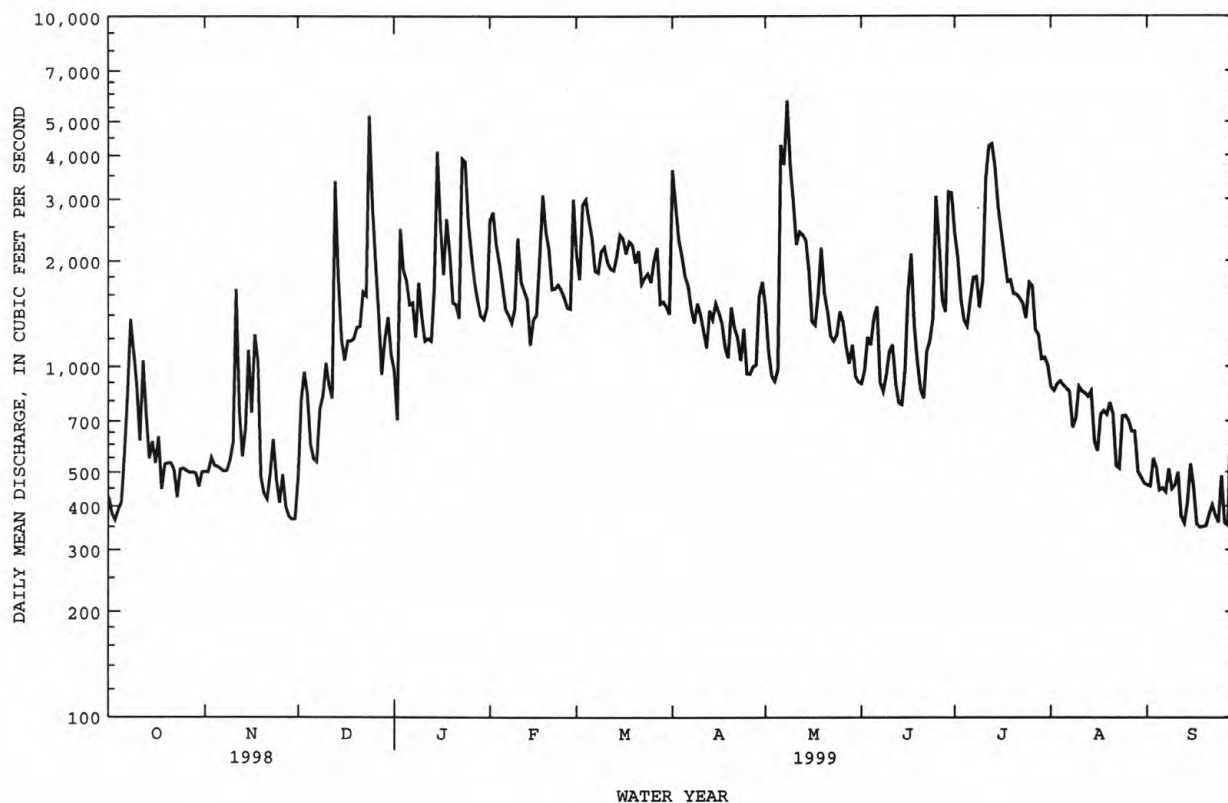
03513000 TUCKASEGEE RIVER AT BRYSON CITY, NC--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1898 - 1999 <sup>e</sup>	
ANNUAL TOTAL	658964		493357		1602	
ANNUAL MEAN	1805		1352		2576	
HIGHEST ANNUAL MEAN					879	
LOWEST ANNUAL MEAN					1899	
HIGHEST DAILY MEAN	16900	Jan 8	5730	May 8	28000	Mar 4 1917
LOWEST DAILY MEAN	356	Sep 16	348	Sep 18	31*	Sep 9 1925
ANNUAL SEVEN-DAY MINIMUM	398	Sep 14	366	Sep 17	97	Sep 4 1925
INSTANTANEOUS PEAK FLOW			7880	May 8	61600*	Aug 30 1940
INSTANTANEOUS PEAK STAGE			6.21	May 8	15.96	Aug 30 1940
INSTANTANEOUS LOW FLOW			336	Oct 23	27*	Sep 10 1925
10 PERCENT EXCEEDS	3580		2390		2860	
50 PERCENT EXCEEDS	1190		1210		1270	
90 PERCENT EXCEEDS	501		462		607	

e Estimated.

\* See PERIOD OF RECORD.

\* See REMARKS.



## 03548500 HIWASSEE RIVER ABOVE MURPHY, NC

LOCATION.--Lat 35°04'49", long 84°00'10", Cherokee County, Hydrologic Unit 06020002, on right bank on U.S. Highway 64, 600 ft upstream from Will Scott Creek, 2.0 mi southeast of Murphy, and at mile 99.1.

DRAINAGE AREA.--406 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1896 to August 1897 (gage heights only), October 1897 to current year. Published as "Hiwassee River at Murphy" 1897-1940. Records published for both sites August 1939 to April 1940. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORD.--WSP 583: 1899(M). WSP 973: Drainage area. WSP 1003: 1943. WSP 1306: 1901-2, 1904-17, 1919(M), 1922(M), 1924-26(M). WSP 1706: 1899, 1907.

GAGE.--Water-stage recorder. Datum of gage is 1,538.23 ft above sea level (levels by Tennessee Valley Authority). Prior to Jan. 30, 1921, nonrecording gage at bridge 2.8 mi downstream at 1,507.83 ft. Jan. 30, 1921, to Nov. 8, 1926, nonrecording gage 2.8 mi downstream at 1,509.83 ft. Nov. 9, 1926, to Apr. 30, 1940, water-stage recorder 2.8 mi downstream at 1,510.03 ft. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Considerable diurnal fluctuation since 1924 caused by Mission power plant at Andrews Dam 7 mi upstream, normal regulated storage, about 75 ft<sup>3</sup>/s-day. Flow regulated since 1942 by Chatuge Lake (station 03546500) 22 mi upstream. Prior to regulation, maximum discharge: 23,100 ft<sup>3</sup>/s, Mar. 19, 1899, from rating curve extended above 5,000 ft<sup>3</sup>/s; gage height: 18.4 ft, from graph based on gage readings, site and datum then in use; minimum daily discharge: 10 ft<sup>3</sup>/s, Dec. 3, 1924, result of freezeup and filling of Lake Andrews, site and datum then in use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed is that of Mar. 19, 1899.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	263	e300	e380	e270	e3200	1380	599	453	326	930	889	335
2	258	e300	e340	e270	e2100	1210	537	413	367	687	982	331
3	236	e310	e320	e730	e1100	1560	590	399	483	599	959	921
4	212	e370	e300	e430	e850	2250	482	373	346	740	1020	615
5	218	e330	e280	e360	e700	1740	461	420	337	666	934	360
6	211	e330	e270	e330	e650	1160	487	1350	506	1180	960	319
7	226	e340	e270	e320	e620	816	463	1370	328	1320	731	512
8	453	e320	e640	e480	e570	838	449	2220	319	1610	681	796
9	248	e340	e530	e720	e540	931	447	1250	333	1230	849	634
10	224	e510	e360	e1200	e1400	1060	429	847	414	1320	811	554
11	212	e650	e300	e570	e760	869	420	686	738	1520	862	679
12	258	e1000	e300	e470	e670	930	395	595	580	1800	1000	555
13	352	e340	e1300	e400	e590	1020	391	640	311	1620	880	688
14	358	e260	e870	e1200	e540	996	386	602	360	1450	950	627
15	320	e420	e530	e4300	e510	1000	442	545	578	1280	502	660
16	329	e800	e430	e1400	e480	640	407	497	791	1260	707	663
17	236	e470	e360	e870	1140	599	406	463	936	1120	795	563
18	299	e570	e320	e1700	2230	579	383	474	702	1160	826	262
19	425	e780	e330	e960	1460	553	375	591	520	1260	784	210
20	554	e660	e320	e760	902	529	388	462	364	1430	795	255
21	e450	e610	e280	e640	834	543	382	407	349	1490	740	764
22	e360	e590	e370	e570	810	503	357	399	890	1490	488	703
23	e300	e530	e450	e1100	624	476	351	409	899	1460	624	671
24	e320	e490	e2300	e2000	595	484	383	417	845	1220	759	703
25	e330	e500	e1300	e1300	557	480	368	384	807	1160	819	551
26	e310	e470	e730	e810	530	488	367	422	857	1040	1020	201
27	e300	e470	e570	e670	533	480	411	395	1010	856	1020	202
28	e300	e450	e500	e590	1670	449	449	362	1100	979	986	717
29	e290	e440	e450	e530	---	440	430	354	1240	905	814	650
30	e290	e430	e360	e520	---	441	488	342	1440	1030	454	704
31	e300	---	e300	e600	---	437	---	334	---	978	337	---
TOTAL	9442	14380	16360	27070	27165	25881	12923	18875	19076	36790	24978	16405
MEAN	305	479	528	873	970	835	431	609	636	1187	806	547
MAX	554	1000	2300	4300	3200	2250	599	2220	1440	1800	1020	921
MIN	211	260	270	270	480	437	351	334	311	599	337	201

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1999,<sup>6</sup> BY WATER YEAR (WY)

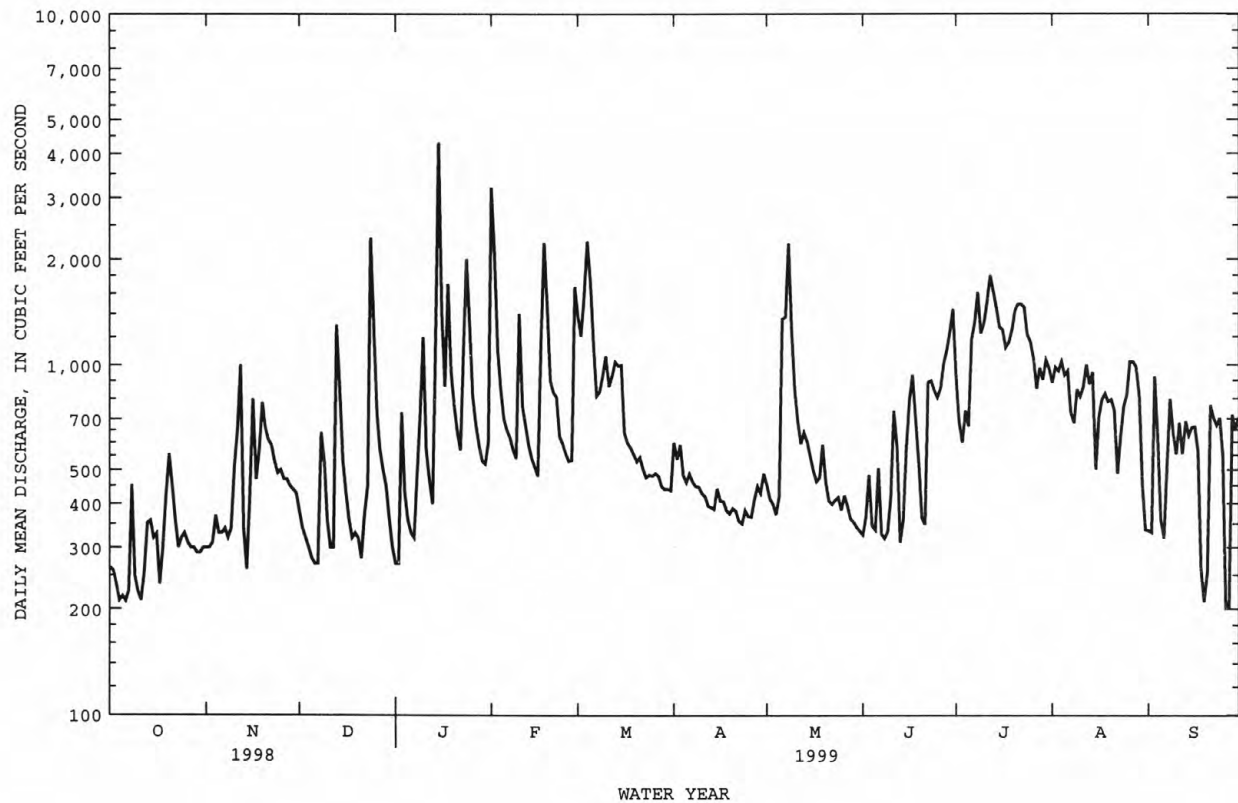
	MEAN	526	591	947	1144	1232	1121	1049	943	910	896	873	721
MAX	1530	1654	2532	2462	3076	2784	2155	2033	1852	1517	1674	1628	
(WY)	1990	1990	1993	1974	1990	1990	1953	1953	1989	1989	1994	1943	
MIN	98.8	106	214	223	408	373	219	212	238	228	120	141	
(WY)	1953	1954	1948	1948	1954	1988	1986	1988	1953	1953	1953	1953	

## 03548500 HIWASSEE RIVER ABOVE MURPHY, NC--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1942 - 1999 <sup>e</sup>	
ANNUAL TOTAL	375686		249345		911	
ANNUAL MEAN	1029		683		1414	1990
HIGHEST ANNUAL MEAN					397	1988
LOWEST ANNUAL MEAN					11600	Feb 16 1990
HIGHEST DAILY MEAN	4760	Jan 8	4300	Jan 15	62	Oct 19 1952
LOWEST DAILY MEAN	208	Sep 25	201	Sep 26	80	Oct 18 1952
ANNUAL SEVEN-DAY MINIMUM	232	Oct 1	232	Oct 1	18600	May 28 1973
INSTANTANEOUS PEAK FLOW			2970	May 8	13.88	May 28 1973
INSTANTANEOUS PEAK STAGE			5.60	May 8	NOT DETERMINED	
INSTANTANEOUS LOW FLOW			136	Sep 27	1640	
10 PERCENT EXCEEDS	2060		1250		806	
50 PERCENT EXCEEDS	816		545		222	
90 PERCENT EXCEEDS	305		300			

e Estimated.

e Regulated period only (1942-1999). See REMARKS.



## TENNESSEE RIVER BASIN

03550000 VALLEY RIVER AT TOMOTLA, NC

LOCATION.--Lat 35°08'20", long 83°58'50", Cherokee County, Hydrologic Unit 06020002, on right bank at site of former bridge on Secondary Road 1373 at Tomotla, 600 ft upstream from bridge on U.S. Highways 19 and 74, 0.2 mi upstream from Roger Creek, 4.7 mi northeast of Murphy, and at mile 6.6.

DRAINAGE AREA.--104 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1904 to December 1909, January 1914 to April 1917, October 1918 to current year.

REVISED RECORDS.--WSP 503: 1905-9, 1915-17. WSP 823: Drainage area. WSP 1306: 1917(M), 1920(M), 1922(M), 1925(M), 1930(M), 1933(M). WSP 1626: 1907(M). WDR NC-91-1: 1979-1994(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,556.46 ft above sea level (levels by Tennessee Valley Authority). Prior to May 11, 1934, nonrecording gage at same site and datum. Satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Maximum discharge for period of record, from flood profile by Tennessee Valley Authority, from rating curve extended above 5,800 ft<sup>3</sup>/s on basis of slope-conveyance study. Minimum discharge for period of record occurred several days in Aug. and Sept. 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of September 1898 reached a stage of 21.2 ft, from floodmark by Tennessee Valley Authority; discharge, about 20,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	35	49	129	1100	691	381	243	144	527	128	49
2	47	37	48	129	787	508	303	217	150	371	127	49
3	44	43	47	257	526	780	269	198	209	298	117	46
4	45	39	47	197	412	696	248	183	152	264	113	44
5	44	39	47	166	340	557	231	216	139	286	110	42
6	43	39	48	150	301	523	250	1000	136	312	105	42
7	47	37	47	148	290	453	231	1130	128	320	101	41
8	106	40	161	220	266	404	220	1510	121	325	97	39
9	59	61	133	386	253	443	217	772	118	244	99	44
10	49	76	89	355	485	408	205	528	124	279	94	51
11	46	220	77	265	352	370	198	416	121	417	90	42
12	44	76	76	219	315	339	187	359	113	464	88	39
13	42	59	431	190	282	330	179	402	123	426	84	37
14	42	95	221	527	257	411	178	449	124	335	90	37
15	40	201	142	1490	240	394	226	345	133	274	80	36
16	39	110	115	614	227	361	202	302	404	698	76	32
17	39	139	100	405	475	335	184	272	353	373	73	31
18	39	92	89	560	784	311	177	261	229	304	69	33
19	40	77	102	445	576	288	172	282	187	268	66	34
20	43	72	110	356	465	272	180	236	169	241	65	34
21	39	70	96	301	397	274	169	219	e160	228	62	40
22	37	62	128	262	346	253	161	209	e190	214	61	42
23	36	58	155	638	312	240	157	212	e230	197	60	36
24	38	59	772	690	294	246	155	197	e300	186	85	35
25	38	56	407	493	271	231	154	182	386	186	74	34
26	37	56	255	384	254	226	164	203	287	168	67	32
27	36	53	194	321	290	218	197	183	546	159	62	33
28	36	51	176	281	1200	208	207	168	582	151	61	182
29	35	50	172	252	---	206	233	161	1570	147	57	161
30	35	50	156	248	---	198	286	156	1020	143	53	115
31	36	---	139	316	---	218	---	146	---	135	51	---
TOTAL	1356	2152	4829	11394	12097	11392	6321	11357	8648	8940	2565	1512
MEAN	43.7	71.7	156	368	432	367	211	366	288	288	82.7	50.4
MAX	106	220	772	1490	1200	780	381	1510	1570	698	128	182
MIN	35	35	47	129	227	198	154	146	113	135	51	31
CFSM	.42	.69	1.50	3.53	4.15	3.53	2.03	3.52	2.77	2.77	.80	.48
IN.	.49	.77	1.73	4.08	4.33	4.07	2.26	4.06	3.09	3.20	.92	.58

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1999,<sup>6</sup> BY WATER YEAR (WY)

MEAN	99.3	159	292	401	458	464	369	262	192	169	137	102
MAX	442	685	1045	936	1022	1379	835	755	607	443	563	434
(WY)	1907	1930	1933	1974	1957	1917	1936	1929	1989	1949	1920	1928
MIN	25.2	38.6	57.4	69.9	92.7	155	135	88.9	44.8	42.4	24.6	21.3
(WY)	1955	1934	1934	1981	1941	1988	1986	1941	1988	1988	1925	1925

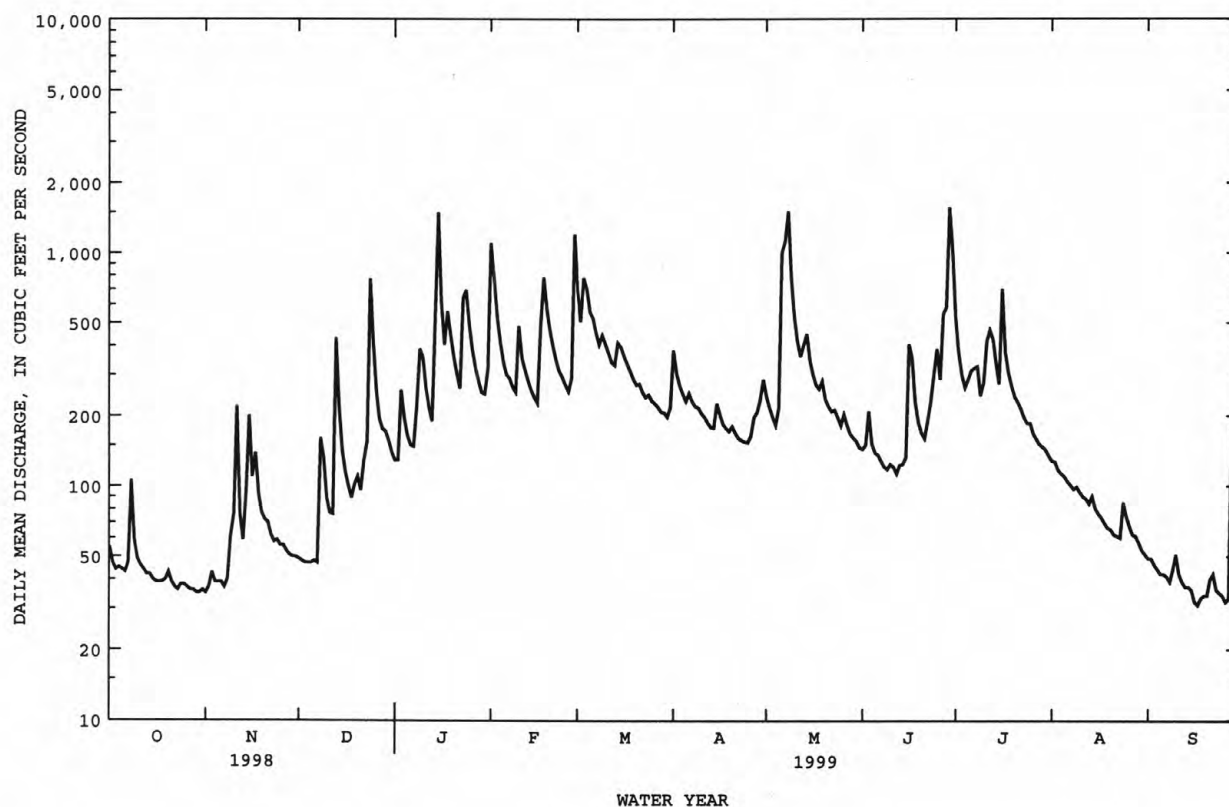
## 03550000 VALLEY RIVER AT TOMOTLA, NC--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1904 - 1999 <sup>e</sup>	
ANNUAL TOTAL	89905		82563		258	
ANNUAL MEAN	246		226		379	
HIGHEST ANNUAL MEAN					111	
LOWEST ANNUAL MEAN					1922	
HIGHEST DAILY MEAN	1870	Jan 8	1570	Jun 29	8190	Feb 16 1995
LOWEST DAILY MEAN	33	Sep 19	31	Sep 17	12	Aug 27 1925
ANNUAL SEVEN-DAY MINIMUM	34	Sep 14	34	Sep 14	13	Aug 24 1925
INSTANTANEOUS PEAK FLOW			3570	Jun 29	18000*	Nov 19 1906
INSTANTANEOUS PEAK STAGE			9.73	Jun 29	20.50	Nov 19 1906
INSTANTANEOUS LOW FLOW			30	Sep 17	12*	Aug 27 1925
ANNUAL RUNOFF (CFSM)	2.37		2.17		2.48	
ANNUAL RUNOFF (INCHES)	32.16		29.53		33.69	
10 PERCENT EXCEEDS	530		451		505	
50 PERCENT EXCEEDS	177		177		178	
90 PERCENT EXCEEDS	40		40		59	

e Estimated.

\* See PERIOD OF RECORD.

\* See REMARKS.





## LAKES AND RESERVOIRS IN OHIO RIVER BASIN

**03460242 WATERVILLE LAKE**

LOCATION.--Lat 35°41'41", long 83°03'02", Haywood County, Hydrologic Unit 06010206, at Waterville Dam on Pigeon River, 0.1 mi downstream from Cataloochee Creek, 5.5 mi southeast of Mount Sterling, and at river mile 38.0.

DRAINAGE AREA.--455 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1961 to current year. Prior to October 1979, published as Lake Walters.

GAGE.--Nonrecording gage read once daily. Datum of gage is sea level.

REMARKS.--Reservoir is formed by a single-arch, variable-radius, concrete dam with 14 taintor gates 10 ft high by 24 ft wide. Dam was completed in 1929 and filling began October 1929; water in reservoir first reached minimum pool elevation November 1929. Total capacity is 12,800 ft<sup>3</sup>/s-day at 2,258.60 ft (top of gate), of which 10,400 ft<sup>3</sup>/s-day is controlled storage above 2,175 ft, normal minimum pool elevation. Reservoir is used for power. Prior to Jan. 1, 1971, records furnished by Carolina Power and Light Co. New capacity table was put into use Jan. 1, 1971.

COOPERATION.--Gage-height record furnished by Carolina Power and Light Co.; water-level storage records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum content observed: 12,950 ft<sup>3</sup>/s-day, Mar. 27, 1994; elevation, 2,259.20 ft. Minimum content observed: 1,030 ft<sup>3</sup>/s-day, Sept. 16, 1980; elevation, 2,141.50 ft.

EXTREMES FOR CURRENT YEAR.--Maximum content observed: 12,850 ft<sup>3</sup>/s-day, Jul. 11; elevation, 2,258.60 ft. Minimum content observed: 9,060 ft<sup>3</sup>/s-day, Feb. 5; elevation, 2,234.40 ft.

**03514500 FONTANA LAKE**

LOCATION.--Lat 35°27'07", long 83°48'18", Graham County, Hydrologic Unit 06010202, at Fontana Dam on Little Tennessee River, 9.6 mi upstream from Cheoah Dam, 5.7 mi upstream from Twenty Mile Creek, 9.0 mi north of Robbinsville, and at river mile 61.0.

DRAINAGE AREA.--1,571 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1944 to current year. Prior to November 1944, monthend content only, published in WSP 1306.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by gravity, nonoverflow-type concrete dam. Spillway is equipped with four radial gates 35 ft high by 35 ft wide. Filling began Nov. 7, 1944; dam completed March 1945; water in reservoir first reached minimum pool elevation Jan. 16, 1945. Total capacity (based on 1967 resurvey) is 727,500 ft<sup>3</sup>/s-day, at 1,710.0 ft (top of gate) of which 476,900 ft<sup>3</sup>/s-day is controlled storage above 1,580.0 ft, normal minimum pool elevation. Reservoir is used for navigation, flood control, and power. New capacity table put into use Jan. 1, 1971.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum content observed: 728,600 ft<sup>3</sup>/s-day, May 28, 1973; elevation, 1,710.20 ft. Minimum content observed (after first filling): 78,300 ft<sup>3</sup>/s-day, Jan. 29, 1955; elevation, 1,472.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum content observed: 722,500 ft<sup>3</sup>/s-day, July 14; elevation, 1,709.07 ft. Minimum content observed: 370,400 ft<sup>3</sup>/s-day, Jan. 7; elevation, 1,624.68 ft.

**03546500 CHATUGE LAKE**

LOCATION.--Lat 35°01'01", long 83°47'28", Clay County, Hydrologic Unit 06020002, at Chatuge Dam on Hiwassee River, 2.0 mi upstream from Hyatt Mill Creek, 2.5 mi downstream from Georgia-North Carolina Stateline, 2.4 mi southeast of Hayesville, and at river mile 121.0.

DRAINAGE AREA.--189 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1942 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Aug. 4, 1942, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by a rolled, earthfill dam with side-channel spillway equipped with flashboards. Dam completed and filling began Feb. 12, 1942; water in reservoir first reached minimum pool elevation Feb. 26, 1942. Total capacity (based on 1965 resurvey) is 121,200 ft<sup>3</sup>/s-day, at 1,928.0 ft (top of flashboard), of which 61,700 ft<sup>3</sup>/s-day is controlled storage above 1,905.0 ft, normal minimum pool elevation. Reservoir is used for navigation, flood control, and power. New capacity table put into use Jan. 1, 1971.

COOPERATION.--Records furnished by Tennessee Valley Authority. (See station 03548500.)

EXTREMES FOR PERIOD OF RECORD.--Maximum content observed: 124,200 ft<sup>3</sup>/s-day, Apr. 20, 1943; elevation, 1,927.80 ft. Minimum content observed (after first filling): 9,400 ft<sup>3</sup>/s-day, Sept. 5, 1947, and Jan. 27, 1956; elevation, 1,860.11 ft, Sept. 5, 1947.

EXTREMES FOR CURRENT YEAR.--Maximum content observed: 113,900 ft<sup>3</sup>/s-day, July 14; elevation, 1,925.89 ft. Minimum content observed: 72,000 ft<sup>3</sup>/s-day, Jan. 12; elevation, 1,910.97 ft.

**03554500 HIWASSEE LAKE**

LOCATION.--Lat 35°09'01", long 84°10'40", Cherokee County, Hydrologic Unit 06020002, at Hiwassee Dam on Hiwassee River, 3.9 mi upstream from Shoal Creek, 0.3 mi northwest of village of Hiwassee Dam, and at river mile 75.8.

DRAINAGE AREA.--968 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.63 ft below sea level.

## LAKES AND RESERVOIRS IN OHIO RIVER BASIN

REMARKS--Reservoir is formed by gravity overflow concrete dam with seven taintor gates 23 ft high by 32 ft wide. Slight filling began Apr. 13, 1939, during construction; systematic filling operation began Jan. 14, 1940; dam completed February 1940; water in reservoir and first reached minimum pool elevation Feb. 23, 1940. Total capacity (based on 1965 resurvey) is 218,800 ft<sup>3</sup>/s-day at 1,526.5 ft (top of gate), of which 154,300 ft<sup>3</sup>/s-day is controlled storage above 1,450.0 ft, normal minimum pool elevation. Reservoir is used for navigation, floodcontrol, and power. New capacity table put into use Jan. 1, 1971.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum content observed: 223,400 ft<sup>3</sup>/s-day, May 28, 1973; elevation, 1,528.02 ft. Minimum content observed (after first filling): 35,800 ft<sup>3</sup>/s-day, Jan. 28, 1948; elevation, 1,413.41 ft.

EXTREMES FOR CURRENT YEAR.--Maximum content observed: 209,900 ft<sup>3</sup>/s-day, July 13; elevation, 1,523.78 ft. Minimum content observed: 75,600 ft<sup>3</sup>/s-day, Jan. 2; elevation, 1,459.58 ft.

## OTHER RESERVOIRS

The following smaller reservoirs in the Tennessee River basin are described below. Records of content are not published herein.

## 03447832 LAKE JULIAN

LOCATION.--Lat 35°28'37", long 82°32'51", Buncombe County, Hydrologic Unit 06010105, on Pollees Creek near Skyland.

DRAINAGE AREA.--4.78 mi<sup>2</sup>.

PERIOD OF RECORD.--Prior to November 1967 published as Asheville Steam-Electric Generating Plant Lake.

REMARKS.--Total capacity is 4,540 ft<sup>3</sup>/s-day, of which 2,120 ft<sup>3</sup>/s-day is controlled storage. Filling began Mar. 27, 1963, and lake reached spillway elevation, 2,160 ft, June 3, 1963. Most of initial storage and occasional, supplemental storage provided by pumped diversion from French Broad River. Lake is a cooling-water reservoir for Carolina Power and Light Co. plant.

## 03448959 BURNETT LAKE

LOCATION.--Lat 35°39'44", long 82°20'43", Buncombe County, Hydrologic Unit 06010105, on North Fork Swannanoa River near Black Mountain.

DRAINAGE AREA.--21.9 mi<sup>2</sup>.

REMARKS.--Total capacity at crest of spillway is 11,600 ft<sup>3</sup>/s-day, of which 8,900 ft<sup>3</sup>/s-day is controlled storage. Filling began Jan. 28, 1954. Lake is part of Asheville's municipal water supply. (See station 03451000.)

## 03450134 BEETREE RESERVOIR

LOCATION.--Lat 35°38'27", long 82°24'04", Buncombe County, Hydrologic Unit 06010105, on Beetree Creek near Swannanoa.

DRAINAGE AREA.--7.62 mi<sup>2</sup>.

REMARKS.--Total capacity is 844 ft<sup>3</sup>/s-day, of which 823 ft<sup>3</sup>/s-day is controlled storage. Dam completed December 1926, and filling began Jan. 11, 1927; water in reservoir first reached maximum pool elevation Mar. 8, 1927. Lake is part of Asheville's municipal water supply. (See station 03451000.)

## 03455773 LAKE LOGAN

LOCATION.--Lat 35°25'15", long 82°55'30", Haywood County, Hydrologic Unit 06010106, on West Fork Pigeon River near Canton and at river mile 7.0.

DRAINAGE AREA.--33.3 mi<sup>2</sup>.

REMARKS.--Total capacity is 1,040 ft<sup>3</sup>/s-day (top of flashboards), all of which is usable. Filling began November 1931. (See station 0345577330.)

## 03458319 LAKE JUNALUSKA

LOCATION.--Lat 35°31'38", long 82°57'48", Haywood County, Hydrologic Unit 06010106, on Richland Creek at Lake Junaluska and at river mile 2.4.

DRAINAGE AREA.--63.6 mi<sup>2</sup>.

REMARKS.--Total surface area is about 195 acres. The lake reached spillway elevation in the spring of 1913.

## 03500466 SEQUOYAH LAKE

LOCATION.--Lat 35°04'02", long 83°13'31", Macon County, Hydrologic Unit 06010202, on Cullasaja River near Highlands, and at river mile 18.4.

DRAINAGE AREA.--14.4 mi<sup>2</sup>.

REMARKS.--Total capacity is 233 ft<sup>3</sup>/s-day (at crest of spillway), of which approximately 116 ft<sup>3</sup>/s-day is usable. Filling began in 1926.

## LAKES AND RESERVOIRS IN OHIO RIVER BASIN

**03504500 NANTAHALA LAKE**

LOCATION.--Lat 35°11'56", long 83°39'17", Macon County, Hydrologic Unit 06010202, at Nantahala Dam on Nantahala River, 5.5 mi upstream from Whiteoak Creek, 4.2 mi southeast of Topton, and at river mile 22.8.

DRAINAGE AREA.--91.0 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1942 to September 1995. Prior to October 1944 monthend content only, published in WSP 1306.

REMARKS.--Reservoir is formed by rockfill dam with side-channel, gate-controlled spillway supplemented by fuse-plug dam. Dam completed and filling began Jan. 30, 1942; water in reservoir first reached minimum pool elevation Feb. 16, 1942. Total capacity (based on 1969 resurvey) is 69,200 ft<sup>3</sup>/s-day at 2,890.0 ft (top of gates), of which 63,500 ft<sup>3</sup>/s-day is controlled storage above 2,758.84 ft, normal minimum pool elevations. Reservoir is used for flood control and power. New capacity table put into use Jan. 1, 1971.

**03507111; 03507131 EAST FORK LAKE AND WOLF CREEK LAKE**

These two reservoirs are operated as a unit for storage of water for the Tennessee Creek Project.

**EAST FORK DAM**

LOCATION.--Lat 35°12'48", long 83°00'08", Jackson County, Hydrologic Unit 06010203, on Tuckasegee River near Tuckasegee.

DRAINAGE AREA.--24.9 mi<sup>2</sup>.

REMARKS.--Total capacity of East Fork Lake is 671 ft<sup>3</sup>/s-day, of which 625 ft<sup>3</sup>/s-day is controlled storage. Filling began April 18, 1955.

**WOLF CREEK DAM**

LOCATION.--Lat 35°13'18", long 83°00'00", on Wolf Creek near Tuckasegee.

DRAINAGE AREA.--15.2 mi<sup>2</sup>.

REMARKS.--Total capacity of Wolf Creek Lake is 5,070 ft<sup>3</sup>/s-day, of which 3,850 ft<sup>3</sup>/s-day is controlled storage. Filling began Mar. 22, 1955.

**03507216 BEAR CREEK LAKE**

LOCATION.--Lat 35°14'29", long 83°04'22", Jackson County, Hydrologic Unit 06010203, on Tuckasegee River near Tuckasegee.

DRAINAGE AREA.--74.8 mi<sup>2</sup>.

REMARKS.--Total capacity is 17,500 ft<sup>3</sup>/s-day, of which 2,290 ft<sup>3</sup>/s-day is controlled storage. Filling began Oct. 9, 1953.

**03507289 CEDAR CLIFF LAKE**

LOCATION.--Lat 35°15'12", long 83°05'58", Jackson County, Hydrologic Unit 06010203, on Tuckasegee River near Tuckasegee and at river mile 51.9.

DRAINAGE AREA.--80.3 mi<sup>2</sup>.

REMARKS.--Total capacity is 3,200 ft<sup>3</sup>/s-day, of which 350 ft<sup>3</sup>/s-day is controlled storage. Filling began Apr. 26, 1952.

**03507500 THORPE RESERVOIR**

LOCATION.--Lat 35°11'46", long 83°09'09", Jackson County, Hydrologic Unit 06010203, at Thorpe Dam on West Fork Tuckasegee River, 3.0 mi upstream from Shoal Creek, and 2.3 mi northwest of Glenville, and at river mile 9.7.

DRAINAGE AREA.--36.7 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1941 to September 1995. Prior to October 1944 monthend content only, published in WSP 1306. Prior to October 1948, published as Glenville Reservoir.

REMARKS.--Reservoir is formed by earth and rock dam and six 40 ft fuse-plug dams with side-channel spillway equipped with two taintor gates 12 ft high by 25 ft wide. Dam completed and storage began Feb. 12, 1941. Water in reservoir first reached minimum pool elevation Mar. 15, 1941. Total capacity (based on 1969 resurvey) is 35,500 ft<sup>3</sup>/s-day, at 3,100.0 ft (top of gate), of which 33,700 ft<sup>3</sup>/s-day is controlled storage above 3,023.25 ft, normal minimum pool elevation. Reservoir is used for flood control and power. New capacity table put into use Jan. 1, 1971.

**03515152 CHEOAH LAKE**

LOCATION.--Lat 35°26'54", long 83°56'11", Graham County, Hydrologic Unit 06010202, on Little Tennessee River at Cheoah and at river mile 51.4.

DRAINAGE AREA.--1,608 mi<sup>2</sup>.

REMARKS.--Total capacity is 17,700 ft<sup>3</sup>/s-day, of which 920 ft<sup>3</sup>/s-day is controlled storage. Filling began Dec. 8, 1918.

**03516500 SANTEETLAH LAKE**

LOCATION.--Lat 35°22'38", long 83°52'33", Graham County, Hydrologic Unit 06010204, at Santeetlah Dam on Cheoah River, 1.0 mi downstream from Santeetlah Creek, 5.5 mi northwest of Robbinsville, and at river mile 9.3.

DRAINAGE AREA.--176 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1927 to September 1995. Prior to October 1946 monthend content only, published in WSP 1306.

REMARKS.--Reservoir is formed by concrete gravity and arch dam with concrete spillway controlled by six taintor gates 12 ft high by 25 ft wide. Dam completed and filling began Dec. 7, 1927. Water in reservoir first reached minimum pool elevation December 1927. Total capacity (new capacity table put into use Jan. 1, 1971) is 78,800 ft<sup>3</sup>/s-day (top of gate) at elevation 1,817.0 ft, of which 66,600 ft<sup>3</sup>/s-day is controlled storage above 1,740.08 ft, normal minimum pool elevation. Reservoir is used for power.

## LAKES AND RESERVOIRS IN OHIO RIVER BASIN

**03555500 APPALACHIA LAKE**

LOCATION.--Lat 35°10'04", long 84°17'49", Cherokee County, Hydrologic Unit 06020002, at Appalachia Dam on Hiwassee River, 9.8 mi downstream from Hiwassee Dam, 0.1 mi upstream from North Carolina-Tennessee State line, 1.5 mi northeast of Fanner, Tennessee, and at river mile 66.0.

DRAINAGE AREA.--1,018 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1943 to September 1995.

REMARKS.--Reservoir is formed by concrete gravity dam. Spillway is equipped with 10 radial gates. Dam completed and filling began Feb. 14, 1943; water in reservoir first reached minimum pool elevation Feb. 21, 1943. Total capacity (based on 1965 resurvey) is 29,100 ft<sup>3</sup>/s-day at 1,280.0 ft (top of gate), of which 4,400 ft<sup>3</sup>/s-day is controlled storage above 1,272.0 ft, normal minimum pool elevation. Reservoir is used for navigation, flood control, and power. New capacity table put into use Jan. 1, 1971.



## LAKES AND RESERVOIRS IN OHIO RIVER BASIN

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (feet)	Contents (cfs- days)	Change in contents (cfs- days)	Gage height (feet)	Contents (cfs- days)	Change in contents (cfs- days)
03460242 Waterville Lake				03524500 Fontana Lake		
Sept. 30 .....	2,243.80	10,490	---	1,655.25	477,000	---
Oct. 31 .....	2,254.90	12,240	+1,750	1,639.47	419,100	-57,900
Nov. 30 .....	2,252.90	11,920	-320	1,633.45	398,700	-20,400
Dec. 31 .....	2,253.20	11,970	+50	1,625.70	373,600	-25,100
CAL YR 1998		---	+1,070		---	-7,500
Jan. 31 .....	2,244.20	10,560	-1,410	1,634.57	402,400	+28,800
Feb. 28 .....	2,244.50	10,600	+40	1,640.47	422,600	+20,200
Mar. 31 .....	2,244.40	10,590	-10	1,656.11	480,300	+57,700
Apr. 30 .....	2,238.30	9,650	-940	1,676.02	562,200	+81,900
May 31 .....	2,256.70	12,530	+2,880	1,699.73	673,700	+111,500
June 30 .....	2,253.40	12,000	-530	1,705.13	701,600	+27,900
July 31 .....	2,247.90	11,130	-870	1,701.64	683,500	-18,100
Aug. 31 .....	2,244.40	10,590	-540	1,682.11	589,300	-94,200
Sept. 30 .....	2,249.70	11,410	+820	1,662.18	504,300	-85,000
WTR YR 1999		---	+920		---	+27,300
Date	Gage height (feet)	Contents (cfs- days)	Change in contents (cfs- days)	Elevation (feet)	Contents (cfs- days)	Change in contents (cfs- days)
03546500 Chatuge Lake				03554500 Hiwasee Lake		
Sept. 30 .....	1,915.73	83,600	---	1,491.20	126,900	---
Oct. 31 .....	1,913.69	78,400	-5,200	1,472.30	93,400	-33,500
Nov. 30 .....	1,911.95	74,300	-4,100	1,464.92	82,500	-10,900
Dec. 31 .....	1,911.51	73,200	-1,100	1,460.31	76,500	-6,000
CAL YR 1998		---	-2,500		---	-3,100
Jan. 31 .....	1,912.40	75,300	+2,100	1,463.78	81,000	+4,500
Feb. 28 .....	1,914.69	80,900	+5,600	1,479.04	104,700	+23,700
Mar. 31 .....	1,917.48	88,200	+7,300	1,488.60	121,800	+17,100
Apr. 30 .....	1,920.64	97,200	+9,000	1,501.77	150,400	+28,600
May 31 .....	1,924.43	109,000	+11,800	1,520.53	199,700	+49,300
June 30 .....	1,925.29	111,800	+2,800	1,522.45	205,700	+6,000
July 31 .....	1,924.08	107,900	-3,900	1,517.74	191,600	-14,100
Aug. 31 .....	1,919.90	95,000	-12,900	1,506.34	161,600	-30,000
Sept. 30 .....	1,916.42	85,400	-9,600	1,495.15	135,200	-26,400
WTR YR 1999		---	+1,800		---	+8,300

## MEASUREMENTS AT MISCELLANEOUS SITES

These measurements and others collected for special reasons are called measurements at miscellaneous sites. Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table.

Station Number and Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1999, IN ATLANTIC SLOPE BASINS						
CAPE FEAR RIVER BASIN						
02093250 Haw River	Cape Fear River	Lat 36°12'47", long 79°57'24", Guilford County, Hydrologic Unit 03030002, on Secondary Road 2109, 0.2 mi downstream of Rocky Branch, and 3.3 mi northeast of Oak Ridge.	14.1	1971, 1973, 1984, 1986-98	1-13-99	8.77
					5-19-99	8.55
02093423 Little Troublesome Creek	Haw River	Lat 36°16'53", long 79°36'37", Rockingham County, Hydrologic Unit 03030002, at bridge on Secondary Road 2600, 0.8 mi west of Thompsonville, and 1 mi upstream from mouth.	13.0 <sup>a</sup>	1970-73, 1976-77, 1996-98	1-20-99	11.6
					7-19-99	4.41
					8-11-99	1.54
					8-24-99	2.39
02095091 South Buffalo Creek	Buffalo Creek	Lat 36°06'45", long 79°40'19", Guilford County, Hydrologic Unit 03030002, at bridge on Secondary Road 2821, 0.8 mi northwest of McLeansville, and 1.4 mi upstream from mouth.	43.5	1969-70, 1973, 1976-81, 1983-89, 1991-98	1-20-99	59.6
					5-19-99	40.9
					8-11-99	17.3
02095681 Reedy Fork	Haw River	Lat 36°10'23", long 79°30'38", Alamance County, Hydrologic Unit 03030002, at bridge on State Highway 87 at Ossipee, and 0.5 mi upstream from mouth.	256	1969-70, 1973, 1976-98	10-7-98	58.5
					3-17-99	151
					7-19-99	59.9
					8-11-99	61.0
02096230 Jordan Creek	Stony Creek	Lat 36°11'20", long 79°23'43", Alamance County, Hydrologic Unit 03030002, at bridge on Secondary Road 1754, 1.0 mi south of Union Ridge, and 2.0 mi above mouth.	24.1	1949-57, 1959-62, 1966, 1997-98	10-6-98	0
					3-17-99	26.3
					7-19-99	1.63
					8-11-99	0
02096879 Haw River	Cape Fear River	Lat 35°53'43", long 79°15'31", Alamance County, Hydrologic Unit 03030002, at bridge on Secondary Road 1005, 0.7 mi upstream from Cane Creek, and 5.8 mi north of Terrells.	1082	1974-75, 1979-86, 1989-91, 1993, 1996-98	10-8-98	205
					3-17-99	966
					7-20-99	168
					8-9-99	109
02097521 Morgan Creek	New Hope River	Lat 35°51'48", long 79°00'35", Chatham County, Hydrologic Unit 03030002, at bridge on Secondary Road 1726, 2 mi upstream from Cub Creek, and 4 mi north of Farrington.	45.6	1970, 1973, 1976, 1978, 1980-98	12-11-98	14.0
					2-24-99	31.0
02099484 Richland Creek	Deep River	Lat 35°56'26", long 79°54'08", Guilford County, Hydrologic Unit 03030003, at bridge on Secondary Road 1147, 0.2 mi upstream from mouth, and 4 mi southwest of Groomtown.	16.2	1971, 1973-76, 1978-98	1-13-99	27.8
					8-13-99	15.0

<sup>a</sup> Approximately.



## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1999--Continued

Station Number and Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
CAPE FEAR RIVER BASIN--Continued						
02101001 Bear Creek	Deep River	Lat 35°26'26", long 79°35'20", Moore County, Hydrologic Unit 03030003, at bridge on State Highway 705, 0.5 mi north of Robbins, and 1 mi downstream of Cabin Creek.	139	1973-74, 1985-98	1-12-99	37.2
					2-22-99	84.3
					8-10-99	0.37
02102634 Upper Little River	Cape Fear River	Lat 35°19'33", long 78°43'26", Harnett County, Hydrologic Unit 03030004, at bridge on Secondary Road 2021, 1.5 mi upstream from mouth, and 2.8 mi west of Erwin.	217	1968, 1974-76, 1979, 1985-98	11-30-98	29.6
					2-26-99	137
					6-29-99	8.30
02102897 Lower Little River	Cape Fear River	Lat 35°12'13", long 79°12'59", Moore County, Hydrologic Unit 030300004, at bridge on Secondary Road 2023, 0.5 mi above James Creek, 1.0 mi southwest of Lobelia.	110	1997-98	10-19-98	27.5
					2-22-99	195
					8-12-99	9.76
02103000 Little River	Cape Fear River	Lat 35°11'38", long 78°59'14", Cumberland County, Hydrologic Unit 03030004, at bridge on State Highway 87 at Manchester, and 0.3 mi upstream from Tank Creek.	347	1939-50 <sup>†</sup> , 1978, 1980-98	10-19-98	90.3
					2-22-99	372
					7-1-99	136
02104279 Rockfish Creek	Cape Fear River	Lat 34°58'10", long 79°06'40", Hoke County, Hydrologic Unit 03030004, at bridge on Secondary Road 1432, 0.2 mi downstream of Puppy Creek, and 1.2 mi northeast of Arabia.	150 <sup>a</sup>	1973-74, 1978, 1980-91, 1997-98	10-23-98	117
					2-26-99	190
					8-16-99	137
02104500 Rockfish Creek	Cape Fear River	Lat 34°57'57", long 78°55'00", Cumberland County Hydrologic Unit 03030004, at bridge on U.S. Highway 301, 0.1 mi downstream of Little Rockfish Creek, and 1.7 mi east of Hope Mills.	292	1974-76, 1979-92, 1996-97	10-22-98	174
PEE DEE RIVER BASIN						
02115860 Muddy Creek	Yadkin River	Lat 36°00'01", long 80°20'25", Forsyth County, Hydrologic Unit 03040101, 100 ft upstream from bridge on Secondary Road 2995, 0.2 mi downstream of Salem Creek and 1.8 mi east of Muddy Creek.	186	1964-87, 1988-93, 1996-98	1-21-99	171
					7-29-99	174
02120521 Third Creek	South Yadkin River	Lat 35°46'13", long 80°37'34", Rowan County, Hydrologic Unit 03040102, at bridge on Secondary Road 1970, and 2.2 mi west of Woodleaf.	96.6	1985-98	1-26-99	107
					3-3-99	62.0

<sup>†</sup> Operated as a continuous-record gaging station.<sup>a</sup> Approximately.

## DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1999--Continued

Station Number and Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
PEE DEE RIVER BASIN--Continued						
0212147355 Rich Fork Creek	Abbotts Creek	Lat 35°55'36", long 80°07'31", Davidson County, Hydrologic Unit 03040103, at bridge on Secondary Road 1800, 1.4 mi downstream of High Point sewage disposal plant, and 3.9 mi northwest of Thomasville.	26.6	1970-75, 1981-84, 1986-90, 1993-98	3-1-99	12.3
02123500 Uwharrie River	Pee Dee River	Lat 35°25'47", long 80°01'05", Montgomery County, Hydrologic Unit 03040103, at State Highway 109, 1 mi upstream from McLeans Creek, and 3 mi south of Eldorado.	342	1938-71 <sup>†</sup> , 1981-98	1-12-99 2-24-99	61.3 129
0212388100 Rocky River	Pee Dee River	Lat 35°28'29", long 80°46'48", Mecklenburg County, Hydrologic Unit 03040105, at bridge on Secondary Road 1608, 1.3 mi upstream from West Branch, and 4.2 mi southeast of Davidson	13.4	1970-98	10-9-98 1-29-99 4-28-99 8-5-99	8.16 12.3 37.2 4.32
02124374 Irish Buffalo Creek	Rocky River	Lat 35°20'50", long 80°32'52", Cabarrus County, Hydrologic Unit 03040105, at bridge on Secondary Road 1132, 1 mi south of Faggarts Crossroads, and 1 mi upstream from mouth.	45.4	1974-84, 1986-98	10-9-98 1-21-99 4-29-99 8-5-99	11.8 17.5 24.4 3.48
02124401 Rocky River	Pee Dee River	Lat 35°19'26", long 80°30'59", Cabarrus County, Hydrologic Unit 03040105, at bridge on U.S. Highway 601, 1 mi upstream from Hamby Branch, and 3 mi southeast of Faggarts Crossroads.	393	1970-71, 1973-98	10-9-98 1-21-99 4-29-99 8-6-99	163 210 332 49.3
02125126 Long Creek	Rocky River	Lat 35°13'05", long 80°15'28", Stanly County, Hydrologic Unit 03040105, at bridge on Secondary Road 1917, 1 mi upstream from mouth, and 4 mi east of Oakboro.	198	1970-71, 1973-98	10-9-98 1-21-99 4-29-99 8-6-99	57.8 134 98.7 10.9
02125482 Richardson Creek	Rocky River	Lat 35°04'16", long 80°24'25", Union County, Hydrologic Unit 03040105, at bridge on Secondary Road 1649, 1.2 mi downstream of Watson Creek, and 1.5 mi northwest of Fairfield.	153	1961-62, 1981-84, 1986-98	10-9-98 1-21-99 4-29-99 8-6-99	308 53.6 33.0 9.58
02129341 Hitchcock Creek	Pee Dee River	Lat 34°55'05", long 79°47'50", Richmond County, Hydrologic Unit 03040201, downstream of dam at Cordova, and 1.2 mi upstream from mouth.	134	1970-71, 1974, 1979-84, 1986-98	11-16-98 2-23-99	268 196

<sup>†</sup> Operated as a continuous-record gaging station.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1999--Continued

Station Number and Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
PEE DEE RIVER BASIN--Continued						
02129527 Jones Creek	Pee Dee River	Lat 34°54'15", long 79°55'51", Anson County, Hydrologic Unit 03040201, at bridge on State Highway 145, 2.9 mi downstream of Hale Creek, and 3.1 mi southwest of Pee Dee.	92.8	1985-98	10-19-98	27.9
					2-23-99	89.7
					6-21-99	45.5
02129558 Marks Creek	Pee Dee River	Lat 34°51'45", long 79°43'09", Richmond County, Hydrologic Unit 03040201, at bridge on Secondary Road 1812, 1.3 mi downstream of City Lake spillway, and 2.4 mi southwest of Hamlet.	12.9	1970-71, 1979-84, 1986-98	10-20-98	9.35
					2-23-99	17.9
02132269 Leith Creek	Little Pee Dee River	Lat 34°44'37", long 79°25'13", Scotland County, Hydrologic Unit 03040204 at bridge on Secondary Road 1609, 4 mi west of Maxton, and 5.4 mi upstream from mouth.	21.8	1973-75, 1979-92, 1995-98	10-20-98	0
					2-24-99	15.5
					8-13-99	0
SANTEE RIVER BASIN						
0214031250 Wilson Creek	Johns River	Lat 35°00'07", long 81°46'29", Caldwell County, Hydrologic Unit 03050101, at Secondary Road 1358 and 0.1 mi east of Edgemont.	15.1	1992-98	11-9-98	7.84
					3-2-99	18.9
					9-29-99	39.6
02141245 Lower Creek	Catawba River	Lat 35°49'31", long 81°38'10", Burke County, Hydrologic Unit 03050102, at bridge on Secondary Road 1501, 0.8 mi downstream of Husband Creek, and 7 mi northeast of Morganton.	89.5	1949-50, <sup>b</sup> 1964-69, <sup>b</sup> 1972-73, 1975-84, 1986-92, 1993-94, <sup>†</sup> 1995-98	12-7-98	52.6
					2-10-99	79.6
					5-3-99	92.3
					7-28-99	43.3
02142722 Dutchmans Creek	Catawba River	Lat 35°20'10", long 81°00'50", Gaston County, Hydrologic Unit 03050102, at bridge on Secondary Road 1918, and 0.7 mi west of Mountain Island.	116	1986-98	10-9-98	48.1
					1-29-99	77.3
					5-7-99	74.6
					8-10-99	14.6
02143027 Henry Fork	South Fork Catawba River	Lat 35°39'27", long 81°18'33", Catawba County, Hydrologic Unit 03050102, at bridge on Secondary Road 1143, 1.7 mi upstream from mouth and 2.5 mi northwest of Startown.	110	1970-71, 1973-74, 1978-80, 1996-98	3-1-99	139
					4-29-99	149
					7-28-99	53.2

<sup>b</sup> Baseflow.<sup>†</sup> Operated as a continuous-record gaging station.

## DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1999--Continued

Station Number and Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
SANTEE RIVER BASIN--Continued						
02143069 South Fork Catawba River	Catawba River	Lat 35°37'58", long 81°18'20", Catawba County, bridge on State Highway 10, 1 mile downstream from Henry Fork, and 2.2 miles west of Startown.	210	1974-77, 1979-88, 1991-93, 1997-98	10-13-98 7-28-99	153 97.0
02143260 Clark Creek	South Fork Catawba River	Lat 35°28'30", long 81°16'00", Lincoln County, Hydrologic Unit 03050102, at bridge on Secondary Road 1008 at Lincolnton, and 0.2 mi upstream from mouth.	91.2	1947, 1949-57, 1962-64, 1970-72, 1975, 1978-98	10-13-98 2-4-99 8-10-99	50.4 107 26.9
02145640 Crowders Creek	Catawba River	Lat 35°08'15", long 81°08'15", York County, South Carolina, Hydrologic Unit 03050101, at bridge on Ridge Road, 3.4 mi upstream from Beaver Dam Creek, and 3.2 mi east-southeast of Bowling Green, South Carolina.	89	1970-77, 1979-91, 1996-98	10-7-98 1-22-99 5-7-99 8-3-99	37.8 56.2 56.0 24.0
0214676115 McAlpine Creek	Sugar Creek	Lat 35°03'12", long 80°53'06", Lancaster County, South Carolina, Hydrologic Unit 03050103, at bridge on Secondary Road 2964, 0.5 mi north of Camp Cox, South Carolina, 0.6 mi above Sugar Creek, and 1.0 mi below North Carolina-South Carolina state line.	95.4	1996-98	10-7-98 8-3-99	72.2 88.9
02146800 Sugar Creek	Catawba River	Lat 35°00'21", long 80°54'09", York County, Hydrologic Unit 03050103, at bridge on State Highway 160, 0.7 mi downstream from Clems Branch, and 2.6 mi east of Fort Mill, S.C.	262	1969, 1974-78 <sup>†</sup> , 1982-98	8-3-99	165
02152596 First Broad River	Broad River	Lat 35°13'03", long 81°36'28", Cleveland County, Hydrologic Unit 03050105, at bridge on Secondary Road 1140, 3 mi upstream from mouth, and 4.8 mi northwest of Earl.	296	1968-77, 1980-98	2-8-99 5-4-99 9-30-99	283 329 195
02153456 Buffalo Creek	Broad River	Lat 35°10'20", long 81°31'02", Cleveland County, Hydrologic Unit 03050105, at bridge on State Highway 198, 0.1 mi upstream from North Carolina-South Carolina State line, and 4 mi west of Grover.	161	1968-77, 1979-98	3-1-99 5-4-99 9-30-99	129 119 64.7

<sup>b</sup> Baseflow.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1999--Continued

Station Number and Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
SAVANNAH RIVER BASIN						
02184242 Horse- pasture River	Toxaway River	Lat 35°05'33", long 82°58'04", Transylvania County, Hydrologic Unit 03060101, at bridge on State Highway 281, and 4 mi southwest of Lake Toxaway.	24.1	1985-98	12-15-98	41.3
					3-23-99	73.6
					5-26-99	51.7
					8-12-99	16.6
KANAWA RIVER BASIN						
03160271 South Fork New River	New River	Lat 36°13'14", long 81°38'25", Watauga County, Hydrologic Unit 05050001, at bridge on U.S. Highway 421, and 2 mi east of Boone.	34.8	1925, 1955-56, 1960, 1962, 1974-98	2-2-99	100
					5-2-99	60.8
03162500 North Fork New River	New River	Lat 36°30'14", long 81°23'25", Ashe County, Hydrologic Unit 05050001, 0.2 mi downstream of bridge on State Highway 16 at Crumpler, and 6 mi upstream from South Fork.	277	1930-58 <sup>†</sup> , 1977, 1981-98	10-1-98	123
					2-2-99	482
					5-20-99	300
TENNESSEE RIVER BASIN						
03441440 Little River	French Broad River	Lat 35°11'32", long 82°36'49", Transylvania County, Hydrologic Unit 06010105, above High Falls, 0.2 mi upstream from Grassy Creek, 1.0 mi downstream from Reasonover Creek, 3.8 mi northeast of Cedar Mountain.	26.8	1963-1990, <sup>†</sup> 1995-98	12-15-98	48.4
					3-23-99	71.7
					5-26-99	41.8
					8-12-99	13.6
03446569 Mud Creek	French Broad River	Lat 35°21'10", long 82°27'51", Henderson County, Hydrologic Unit 06010105, at bridge on Secondary Road 1508, 0.2 mi downstream of Clear Creek, and 0.6 mi northeast of Balfour.	97.4	1968-74, 1977, 1992-98	5-25-99	83.0
					8-12-99	44.3
0344776625 French Broad River	Tennessee River	Lat 35°27'11", long 82°33'00", Buncombe County, Hydrologic Unit 06010105, at Secondary Road 3495 and 2.1 mi southwest of Arden.	652	1993-98	11-23-98	596
					5-25-99	837
					8-11-99	418
03457124 Pigeon River	French Broad River	Lat 35°32'05", long 82°54'41", Haywood County, Hydrologic Unit 06010106, at bridge on Secondary Road 1818 at Clyde, and 0.2 mi down- stream of Chambers Branch.	162	1969-78, 1980-98	10-22-98	60.2
					6-7-99	141
					8-10-99	87.3

<sup>†</sup> Operated as a continuous-record gaging station.

## DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1999--Continued

Station Number and Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
TENNESSEE RIVER BASIN--Continued						
03458121 Richland Creek	Pigeon River	Lat 35°30'30", long 82°58'19", Haywood County, Hydrologic Unit 06010106, at bridge on Secondary Road 1184, 0.8 mi upstream from Raccoon Creek, and 1.5 mi northeast of Waynesville.	48.0	1981-98	12-8-98 4-2-99 6-3-99 8-18-99	24.2 127 64.1 21.6
03461976 North Toe River	Nolichucky River	Lat 35°58'51", long 82°00'59", Avery County, Hydrologic Unit 06010108, at bridge on U.S. Highway 19E, 0.1 mi downstream of Jones Creek, 0.7 mi north of Ingalls, and at mile 50.9.	74.1	1969-71, 1973-74, 1976-98	1-27-99 5-27-99 8-4-99 9-28-99	211 111 66.2 89.4
03463021 North Toe River	Nolichucky River	Lat 35°55'46", long 82°06'57", Mitchell County, Hydrologic Unit 06010108, at bridge on Secondary Road 1162 at Penland, 0.4 mi down- stream of Bear Creek, and at mile 27.6	145	1969-70, 1972-75, 1978, 1982-98	1-27-99 6-17-99 8-4-99 9-28-99	332 188 99.4 182
03463162 South Toe River	Cane River	Lat 35°43'08", long 82°14'55", Yancey County, Hydrologic Unit 06010108, 3 mi southeast of Mt. Mitchell, and 4.7 mi southwest of Busick.	1.8	1985-98	3-2-99 6-17-99 8-2-99 9-29-99	3.02 3.30 3.57 2.14
03464000 Cane River	Nolichucky River	Lat 36°00'52", long 82°19'40", Yancey County, Hydrologic Unit 06010108, 1.3 mi upstream from North Toe River, and 1.5 mi east of Sioux.	157	1933-71 <sup>†</sup> , 1974-78, 1980-98	10-2-98 3-2-99	42.0 254
03464500 Nolichucky River	French Broad River	Lat 36°04'28", long 82°20'42", Mitchell County, Hydrologic Unit 06010108, at Poplar, and 0.7 mi upstream from Hollow Poplar Creek.	608	1922-45 <sup>†</sup> , 1962-63, 1968-72, 1974-78, 1980-95, 1997-98	10-2-98	203
03478819 Watauga River	South Fork Holston River	Lat 36°11'39", long 81°44'45", Watauga County, Hydrologic Unit 06010103, at bridge on State Highway 105, 300 ft upstream from Laurel Fork, and 1.4 mi north of Shulls Mills.	26.6	1971-73, 1975, 1986-98	2-2-99 5-27-99 7-27-99	89.4 34.1 23.7
03500466 Cullasaja River	Little Tennessee River	Lat 35°04'02", long 83°13'31", Macon County, Hydrologic Unit 06010202, at Dam, and 2.0 mi northwest of Highlands.	14.4		6-4-99 7-30-99	22.7 15.9

<sup>†</sup> Operated as a continuous-record gaging station.



## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1999--Continued

Station Number and Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Date	Discharge (ft <sup>3</sup> /s)
TENNESSEE RIVER BASIN--Continued						
03502000 Little Tennessee River	Tennessee River	Lat 35°14'01", long 83°23'35", Macon County, Hydrologic Unit 06010202, 0.2 mi upstream from State Highway 28 at Iotla, and 0.2 mi upstream from Iotla Creek.	323	1929-45 <sup>†</sup> , 1972-79, 1982-98	11-12-98	377
					3-22-99	828
					6-22-99	401
					9-2-99	176
03515633 Cheoah River	Little Tennessee River	Lat 35°20'04", long 83°48'21", Graham County, Hydrologic Unit 06010204, 0.1 mi upstream from Long Creek, and 0.9 mi north of Robbinsville.	55.3	1968-71, 1973-98	11-3-98	15.9
					3-12-99	158
					6-9-99	43.5
					9-2-99	18.8



USGS field crew making an acoustic doppler current profiler streamflow measurement in floodwaters of the Tar River below the reservoir near Rocky Mount, N.C., September 1999.

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## CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	$2.54 \times 10^1$	millimeter
	$2.54 \times 10^{-2}$	meter
foot (ft)	$3.048 \times 10^{-1}$	meter
mile (mi)	$1.609 \times 10^0$	kilometer
<i>Area</i>		
acre	$4.047 \times 10^3$	square meter
	$4.047 \times 10^{-1}$	square hectometer
	$4.047 \times 10^{-3}$	square kilometer
square mile (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometer
<i>Volume</i>		
gallon (gal)	$3.785 \times 10^0$	liter
	$3.785 \times 10^0$	cubic decimeter
	$3.785 \times 10^{-3}$	cubic meter
million gallons (Mgal)	$3.785 \times 10^3$	cubic meter
	$3.785 \times 10^{-3}$	cubic hectometer
cubic foot (ft <sup>3</sup> )	$2.832 \times 10^1$	cubic decimeter
	$2.832 \times 10^{-2}$	cubic meter
cubic-foot-per-second day [(ft <sup>3</sup> /s) d]	$2.447 \times 10^3$	cubic meter
	$2.447 \times 10^{-3}$	cubic hectometer
acre-foot (acre-ft)	$1.233 \times 10^3$	cubic meter
	$1.233 \times 10^{-3}$	cubic hectometer
	$1.233 \times 10^{-6}$	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liter per second
	$2.832 \times 10^1$	cubic decimeter per second
	$2.832 \times 10^{-2}$	cubic meter per second
gallon per minute (gal/min)	$6.309 \times 10^{-2}$	liter per second
	$6.309 \times 10^{-2}$	cubic decimeter per second
	$6.309 \times 10^{-5}$	cubic meter per second
million gallons per day (Mgal/d)	$4.381 \times 10^1$	cubic decimeter per second
	$4.381 \times 10^{-2}$	cubic meter per second
<i>Mass</i>		
ton (short)	$9.072 \times 10^{-1}$	megagram or metric ton

*Sea level:* In this report “sea level” refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.



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