Summary of Data on Temperature of Streams in North Carolina, 1943-67

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1895-A

Prepared in cooperation with the North Carolina Department of Water and Air Resources

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By THOMAS H WOODARD

QUALITY OF SURFACE WATERS OF NORTH CAROLINA

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SUMMARY OF DATA ON TEMPERATURE OF STREAMS IN NORTH CAROLINA, 1943–67

By THOMAS H. WOODARD

ABSTRACT

This report summarizes stream-temperature data collected by the U S Geological Survey in cooperation with the State of North Carolina during the period 1943–67 Listed in two tables are summary values determined from records from 176 locations throughout the State Of the 850 station years of record, 31 percent is monthly records, 50 percent is daily, and 19 percent is continuous Table 1 shows average monthly, average annual, and extreme observed temperatures for the period of record at each location Table 2, for stations having continuous water-temperature recorders, shows the following temperature variables Average of monthly maximums, average of daily maximums, average daily, average of daily minimums, and average of monthly minimums

INTRODUCTION

Water in streams is used for many purposes, and its acceptability for a specific use often depends on the temperature of the water Careful planning for the most beneficial use of water requires knowledge of seaonsal and annual averages and extremes of temperature for such activities as producing goods and making related heat-transmission calculations, developing areas for swimming and boating, stocking streams with fish and preserving an environment suitable for their health and continued reproduction, selecting hatchery sites, designing facilities for storage and treatment of water, and regulating thermal pollution in streams.

Thermal pollution in streams has become an increasing concern in recent years. The excessive heat can cause changes in stream ecology, including heavier growth of undesirable vegetation and inhibition of the reproduction of certain species of fish. Within those reaches of streams in which thermal pollution occurs, the quality of water may be adversely affected for commercial fish-

ing, sport fishing, recreation, and water supplies for industries and municipalities

Present and future steam-electric plants and other facilities that add heat to streams increase the need for data on stream temperatures In April 1968 the National Technical Advisory Committee on Water Quality Criteria to the Secretary of the Interior recommended that, for warm waters during any month of the year, heat should not be added in excess of that amount that would raise the temperature of the water (at the expected minimum daily flow for that month) more than 5°F. These recommendations further stated "the increase should be based on the monthly average of the maximum daily temperature." The committee recommended similar criteria for cold waters (except no heat is to be added to trout waters). The second line of data for each station in table 2 gives the monthly average of the maximum daily temperature The same committee also suggested that "total heat added (in BTU's) might be specified as an allowable increase in temperature of the minimum daily flow expected for the month or period in question." Presumably, the allowable temperature would be the monthly average of the maximum daily temperature plus the allowable increase

A regulation relative to stream temperatures issued by the North Carolina Board of Water and Air Resources in January 1968 contains the following statements: "Temperature. Not to exceed 7°F above the ambient stream or water temperature, and in no case exceed 95°F. The temperature of trout producing waters shall not exceed 70°F due to the discharge of heated liquids."

This report summarizes stream-temperature records collected in North Carolina during the years 1943–67. The average and extreme temperature data included are generally sufficient to define seasonal variations in the sections of the streams studied.

ACKNOWLEDGMENTS

The collection of data on stream temperatures was started in 1943 as a part of the part of the cooperative studies of the U S. Geological Survey and the North Carolina Department of Conservation and Development. State support of the program was transferred to the Department of Water Resources (now the Department of Water and Air Resources) in 1956

The temperature measurements at the daily stations and at some of the monthly stations were made by local observers The contributions of these observers is gratefully ackowledged Measurements at all remaining stations were made by personnel of the Geological Survey The temperature data were collected under the

direction of the following district chemists: W. L. Lamar, F. H. Pauszek, G A. Billingsley, and R. A. Krieger. This report was prepared under the immediate supervision of G C. Goddard, head of the Hydrologic Studies Section of the North Carolina District of the Geological Survey and under the general supervision of Ralph C. Heath, District Chief.

DATA-COLLECTION PROGRAM

Officials of the U.S. Geological Survey and the North Carolina Department of Conservation and Development recognized the need for stream-temperature data as an essential part of an overall quality-of-water study In 1943 a program of collection and analysis of stream-water samples and temperature measurements was inaugurated and financed jointly by the Geological Survey and the Department of Conservation and Development. The temperature-data program began with daily measurements at four locations. As the need for data increased and funds became available, the program grew into a statewide network of data-collection stations. In 1967, the last year for which data are included in this report, the program consisted of monthly temperature measurements at 21 sites, daily measurements at 34 sites, and continuous records at 26 sites.

During the 24 years of data collection, the frequency of sampling and the length of record collected at each station varied depending upon funds available and needs for water-quality and temperature data in the various river basins of the State. Temperature data were collected as an integral part of quality-of-water and salinity-data-collection programs and as an adjunct to the stream-gaging-station program. In all, temperature records were obtained for 176 locations (some of which had various combinations of monthly, daily and continuous records). Of the 850 station years of record, 31 percent is monthly records, 50 percent is daily, and 19 percent is continuous.

Plate 1 shows locations where water-temperature measurements were made monthly, daily, and continuously. At stations where two or three types of records are available, only the symbol representing the most frequent observation is shown. For example, if continuous, daily, and monthly measurements have been made during different periods at the same station, that station is shown on the map as a continuous recorder site. Not included in this report are temperature measurements that were made less frequently than once a month in connection with miscellaneous programs of water-quality sampling and low-flow discharge measurements.

Daily and monthly stream-temperature measurements were made from depth-integrated water samples, except where top and bottom samples were collected from estuaries. The temperature sensors for continuous records were installed near the gage houses at levels low enough to insure submersion at all times. The sensors were shaded only by chance, no shielding having been provided. The continuous-temperature values were recorded on charts from which daily maximum, mimimum, and average values were extracted

Temperature values are reported to the nearest whole number in degrees Fahrenheit. A curve for converting temperature from Fahrenheit degrees to Celsius (centigrade) degrees is shown in figure 1.

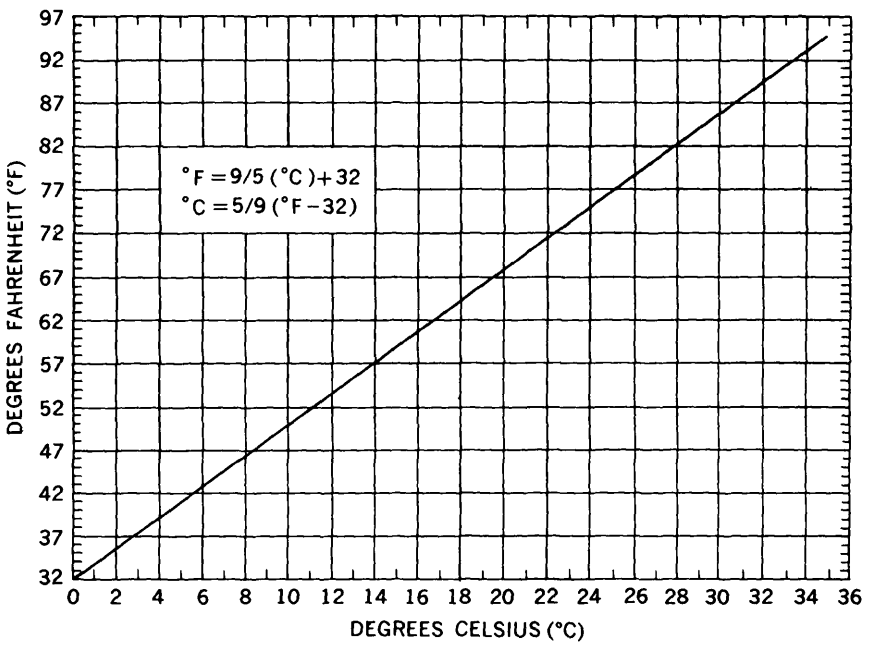

FIGURE 1 — Relationship between degrees Fahrenheit and degrees Celsius (centigrade).

EXPLANATION AND USE OF TABLES

Average temperatures and other temperature data are listed in tables 1 and 2 The tables summarize all temperature data collected monthly or more frequently on the State's streams through the water year ending September 30, 1967.

The data for some of the stations in the tables are based on short periods of record. For these stations the temperatures shown may not represent the values that would be derived from a longer-term record. Temperature data based on only one temperature observation per month are of limited use, particularly for short periods of record, because there was little opportunity to derive average-temperature data and define the extremes. Water temperatures at a few of the stations were affected by thermal pollution and thus do not represent natural conditions.

Except for these limitations, however, the data summarized in tables 1 and 2 are adequately defined for the point of observation. Similarly, the data in the tables represent the temperatures that may be expected in the vicinity of the observation point. The length of reach in which water temperature coincides with that at the observation point depends on difference in shading, reflective or absorptive character of the water surface or channel bottom, velocity, location of stagnant pools, and other factors The amount that water temperatures vary along a reach during any particular period depends on interaction of these channel conditions and variable climatic factors, the most important of which are ambient air temperature and radiation. These characteristics of the data should be considered in any proposed utilization of the stream waters for cooling or other water management problem requiring the use of stream-temperature data.

The data in tables 1 and 2 are explained below. To assist in use of the temperature data, some of their features and methods of derivation are described.

EXPLANATION OF TABLE 1

Station number: Stations are listed and numbered in downstream order by river basin, a higher number being assigned to each successive station Stations on tributaries to the main stem are assigned numbers between the number of the last station on the main stream before the tributary enters the main stem and the first station on the main stem downstream from the tributary's mouth. Numbers for stations on tributaries also ascend in a downstream direction Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive.

The complete number for each station, such as 2–0536.52, includes the part number, 2, and a six-digit station number. Only the essential digits of decimals are shown For example, the complete number 2–0705 00 would appear as 2–0705.

There are 14 parts for the U.S. Geological Survey station index system in the conterminous United States. Streams in North Carolina are in parts 2 and 3; streams in part 2 drain to the east of the Applalachian Mountain range and those in part 3 drain to the west.

Station name and location: The station name (underlined) is followed by the latitude and longitude of the location, reference in miles and direction to one or more nearby landmarks, and the county in which the station is located.

Period of record: The dates a station was started and discontinued are listed by month and year. At stations where combinations of monthly, daily, and continuous measurements were made, the period of record for each frequency of measurement is shown. Records were incomplete during some periods, as indicated by footnote a.

Average temperatures for period of record: Shown for each of the 12 months of the water year (beginning with October) is the average monthly temperature compiled from measurements made at the intervals specified in the frequency column for the period of record. It should be noted that the reliability of these averages depends on the frequency of sampling and length of record. For some of the shorter periods of record, it was not possible to determine an acceptable average for some months (and sometimes for the annual average) because the record was incomplete.

Extremes observed: The maximum and minimum temperatures observed at each measuring site for the period of record are tabulated. These values for a short period of record may be somewhat less extreme than is potentially probable, particularly for monthly observations.

Average annual: The average annual temperature for the period of record at each measuring site is shown. No value is shown for stations having a record of less than 1 year or where missing records prevented the determination of all average monthly values.

EXPLANATION OF TABLE 2

Station number : Same as table 1.

Station name and location: Same as table 1.

Period of record: Same as table 1.

Variables for which temperature values are shown in monthly columns: The values tabulated are average temperatures (arithmetic averages of the various months) for each of the following

five variables for the period of record: (1) Average of monthly maximums, (2) Average of daily maximums, (3) Average daily, (4) Average of daily minimums, and (5) Average of monthly minimums.

The average of the monthly maximums was computed by selecting from the recorder chart the maximum instantaneous temperature recorded during each month for each year during the period of record. All the maximum temperatures for each month were then averaged to produce an average monthly maximum temperature. For example, if a continuous recorder was operated at a station for 5 complete years, the maximum temperature recorded during October of each year was tabulated. These five temperatures were than totaled and divided by 5 to produce the average of monthly maximum temperatures for October at that station. This procedure was repeated for each month.

It is emphasized that at any given location the maximum temperature for a month may vary by several degrees from year to year. The averages presented in table 2 are intended as a general indication of the highest temperature to be expected for each month at the various locations. The maximum instantaneous temperature recorded during the entire period of record is shown in table 1 in the column headed extremes observed.

The average of daily maximums was determined from the maximums recorded each day. These recorded daily maximums were averaged for each month of record, and then for the same month an average was determined for the period of record.

The average daily temperature was determined from the average of daily maximums and the average of daily minimums. The last two figures were first averaged, treating each month separately, to obtain a monthly average for individual months. These monthly averages were then the basis for computing the average daily temperature for each month in the table. All the monthly averages for October, for example, were added together and divided by the number of October monthly averages available during the period of record. The values are termed daily because the data used in the first step are the maximums and minimums recorded each day. The average daily temperatures listed in table 2 for continuous-recorder stations are the same as the average monthly values listed in table 1.

The average of daily minimums and of monthly minimums was computed in the same manner as the average of the respective maximums, except that the minimum daily and monthly temperatures were used. The minimum temperature recorded during

the period of record is shown in table 1 in the column headed extremes observed.

Average: The values shown are averages of the 12 preceding columns for each of the five variables. The average for the third variable, average daily temperature, is the same as that shown in the last column of table 1.

TABLES 1 AND 2

Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)

[Frequency of measurement is indicated by the following abbreviations D - Daily, M - Monthly, C - Continuous]

No on Pl 1	Station name and location	Period of record	Frequency	Average temperatures for period of record												Extremes observed		Average Annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Max	Min	
	PASQUOTANK RIVER BASIN																	
2-0438 52	Pasquotank River near Elizabeth City --Lat 36°21'45", long 76°15'11", at end of Secondary Road 1351, 3 6 miles below Drummond Canal and 5 miles northwest of Elizabeth City, Pasquotank County	10-57 to 9-67	D	66	56	46	44	45	52	62	72	78	82	82	75	95	32	63
2-0438 62	Pasquotank River at Elizabeth City --Lat 36°18'00", long 79°13'00", at bridge on U S Highway 158, in Elizabeth City, Pasquotank County, and ½ mile below Knobbs Creek	10-57 to 9-67	D	66	57	46	42	44	51	61	70	76	81	81	76	89	32	63
	PERQUIMANS RIVER BASIN																	
2-0438 92	Perquimans River at Hertford --Lat 36°11'40", long 76°28'00", at bridge on U S Highway 17 at Hertford, Perquimans County and 3/4 mile above Mill Creek	10-57 to 9-60	D	64	56	45	44	42	46	58	68	74	80	81	74	87	32	61
	CHOWAN RIVER BASIN																	
2-0501 6	Chowan River near Eure --Lat 36°30'30", long 76°54'20", at Gatlington Landing, 1 8 miles below Somerton Creek and 6 3 miles northwest of Eure, Gates County	[a]6-66 to 9-67	C	66	55	-	43	41	51	-	-	73	82	78	74	86	33	-
2-0530 73	Meherrin River near Severn --Lat 36°32'20", long 77°11'20", at bridge on State Highway 35, 1½ miles above Tarrara Creek and 1-3/4 miles north of Severn, Northampton County	10-54 to 9-55	M	68	47	39	38	42	58	67	66	70	84	78	74	84	38	61
2-0532 44	Chowan River at Winton --Lat 36°24'00", long 76°55'50", at bridge on U S Highway 158 at Winton, Hertford County and 2½ miles below Meherrin River	[a]10-54 to 9-67	D	64	56	47	42	42	49	58	67	74	79	79	74	87	32	61
2-0536 52	Chowan River near Edenhouse --Lat 36°02'50", long 76°41'50", at bridge on U S Highway 17, 1 mile northeast of Edenhouse, Bertie County, 3-3/4 miles below Rockyhock Creek	[a]10-57 to 9-67	D	67	58	47	44	44	51	61	70	77	82	82	77	91	32	63

2-0705	Mayo River near Price --Lat 36°32'10", long 79°59'30", 300 ft below bridge ¼ mile below South Mayo River, 4 miles west of Price, Rockingham County	10-49 to 9-50	D	60	45	40	47	43	45	54	64	72	74	72	67	79	32	57
2-0710	Dan River near Wentworth --Lat 36°25', long 79°50', 600 ft below bridge 3½ miles northwest of Wentworth, Rockingham County, 7½ miles below Mayo River, 103 7 miles upstream from mouth	10-50 to 9-51	D	60	46	37	38	41	50	58	68	74	78	80	73	83	32	59
2-0715	Dan River at Leaksville --Lat 36°29', long 79°46', at Leaksville, Rockingham County, ½ mile downstream from bridge on State Highway 87, and ½ mile upstream from Smith River	10-44 to 9-45 [a]10-61 to 9-67	D	57	48	40	39	42	50	59	67	73	76	75	67	87	32	58
2-0715	do	10-54 to 9-55	M	56	46	40	41	45	54	65	58	74	83	79	72	83	40	59
2-0740	Smith River at Spray --Lat 36°31'30", long 79°46'00", 1½ mile below Stuart Creek, 3/4 mile north of Spray, Rockingham County, and 3 9 miles above mouth	10-49 to 9-50	M	65	50	44	45	44	51	52	68	78	75	78	69	78	44	60
2-0772	North Hyco Creek near Leasburg --Lat 36°24', long 79°12', at bridge on U S Highway 158, 1½ miles above Cobbs Creek and 2½ miles west of Leasburg, Caswell County	6-64 to 6-66 10-66 to 9-67	C	56	48	41	39	40	48	58	64	69	72	71	64	80	32	56
2-0772 3	South Hyco Creek near Hesters Store --Lat 36°21', long 79°08', at bridge on Secondary Road 1102, 1½ miles north of Hesters Store, Person County, and 2½ miles above Mill Creek	5-64 to 6-66, 8-66	C	56	50	42	38	40	47	58	66	68	76	76	70	88	32	57
2-0772 4	Double Creek near Roseville --Lat 36°21', long 79°06', at bridge on Secondary Road 1166, 1 mile above mouth and 3 miles west of Roseville, Person County	5-64 to 4-67, 7-67 to 9-67	C	56	49	43	40	40	48	56	65	70	72	71	65	85	32	56
2-0773	Hyco River at McGehees Mill --Lat 36°31'02", long 79°01'42", below bridge on Secondary Road 1322, at McGehees Mill, Person County, and 1 7 miles downstream from dam	9-64 to 9-67	C	61	54	46	42	42	48	58	70	78	82	81	72	92	32	61
2-0805	Roanoke River at Roanoke Rapids --Lat 36°28', long 77°38', 1½ miles below bridge on State Highway 48 at Roanoke Rapids, Halifax County, 2½ miles above Chockoyotte Creek	10-48 to 9-49	D	60	57	45	46	48	50	59	68	79	80	80	72	90	37	62
2-0810	Roanoke River near Scotland Neck --Lat 36°12', long 77°23', at bridge on U S Highway 258, 3 miles below Bridges Creek, 5-3/4 miles north of Scotland Neck, Halifax County, at mile 102 5	10-44 to 9-45, 10-53 to 9-54	D	66	54	43	40	41	46	60	64	78	79	78	76	85	33	60

a Record incomplete

Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)--Continued

No on Pl 1	Station name and location	Period of record	Frequency	Average temperatures for period of record												Extremes observed		Average annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep			
	ROANOKE RIVER BASIN--Continued																	
2-0810 94	Roanoke River at Jamesville --Lat 35°49', long 76°54', at boat dock in Jamesville, Martin County, and 1½ miles downstream from Devils Gut	10-54 to 9-55	M	72	54	43	41	43	54	63	64	74	80	79	73	80	41	58
2-0810 94	do	[a]10-55 to 9-67	D	63	54	44	40	42	49	59	67	74	79	78	73	88	32	60
2-0811 22	Cashie River at Windsor --Lat 35°59', long 76°57', 3/4 mile south of Windsor, Bertie County, and 4-3/4 miles upstream from Wading Place Creek	[a]10-61 to 9-67	M	69	62	49	40	40	49	60	66	71	73	77	76	81	34	61
	ALBEMARLE SOUND																	
2-0811 55	Albemarle Sound near Edenton --Lat 35°59'13", long 76°30'14", at drawbridge on State Highway 32, 5 1 miles east of Norfolk Southern Railway and 7 8 miles southeast of Edenton, Chowan County	10-57 to 6-67, 8-67 to 9-67	D	66	56	46	42	43	49	59	69	76	80	81	75	88	32	62
	SCUPPERNONG RIVER BASIN																	
2-0811 66	Scuppernong River near Creswell --Lat 35°52'39", long 76°20'15", at bridge on Secondary Road 1105 and 3 2 miles northeast of Creswell, Tyrrell County	[a]10-59 to 5-67	D	64	57	47	46	48	54	62	69	77	78	79	74	84	32	63
2-0811 72	Scuppernong River at Columbia --Lat 35°55'02", long 76°15'19", at bridge on U S Highway 64, at Columbia, Tyrrell County, and 1 5 miles below Riders Creek	[a]10-63 to 3-67	D	66	57	50	46	49	54	61	68	76	77	78	76	80	32	63
	PAMLICO RIVER BASIN																	
2-0820	Tar River near Nashville --Lat 35°51'00", long 77°55'50", at bridge on State Highway 58, 5 miles above Sapony Creek, 10 miles south of Nashville, Nash County and 103 6 miles above Pamlico River at Washington	10-49, 12-49 to 9-50	M	70	-	46	50	53	52	57	65	75	73	75	71	75	46	-

2-0830	Fishing Creek near Enfield --Lat 36°09'03", long 77°41'35", at bridge on U S Highway 301, 2,000 ft below Atlantic Coast Line Railroad bridge, and 2 6 miles southwest of Enfield, Halifax County	10-48 to 9-49	D	56	54	45	47	48	50	58	66	74	78	76	68	83	33	60
2-0830	do	[a]10-53 to 9-67	C	62	51	42	40	42	50	60	67	74	78	77	72	86	33	60
2-0835	Tar River at Tarboro --Lat 35°53'40", long 77°32'00", at bridge on U S Highway 64 at Tarboro, Edgecombe County, 6½ miles below Fishing Creek, and 49 2 miles above Pamlico River at Washington	10-44 to 9-45, [a]10-53 to 9-67	D	61	52	42	40	42	51	60	67	74	77	76	71	86	32	59
2-0840	Tar River at Greenville --Lat 35°37'00", long 77°22'30", at bridge on Secondary Road 1531, at Greenville, Pitt County, and 1 mile below Schoolhouse Branch	10-55 to 9-56	D	63	51	41	38	45	52	60	71	79	81	79	75	87	35	61
2-0841 24	Tar River near Pactolus --Lat 35°36'30", long 77°13'20", at Yankee Hall 1 4 miles south of Pactolus, Pitt County, and 3½ miles above Chicod Creek	10-56 to 11-57, 1-58 to 9-60	D	67	58	46	43	47	50	63	73	79	82	81	77	94	32	64
2-0841 71	Tar River at Grimesland --Lat 35°34'40", long 77°10'50", at bridge on Secondary Road 1565 below Chicod Creek, and 1 1 miles northeast of Grimesland, Pitt County	[a]10-54 to 9-58, [a]11-63 to 9-67	D	66	56	46	42	43	53	61	70	76	81	79	74	92	34	62
2-0841 71	do	10-63 to 9-64, 11-64 to 2-65	C	65	56	46	43	46	54	63	74	81	84	81	73	88	33	64
2-0843 92	Tranters Creek near Washington --Lat 35°33'46", long 77°05'13" at bridge, 0 9 mile above mouth, and 2½ miles northwest of Washington, Beaufort County	10-60 to 9-61, 11-61 to 9-67	D	66	56	46	43	44	54	63	70	75	79	80	75	88	32	63
2-0844 72	Pamlico River at Washington --Lat 35°32'33", long 77°03'43", at bridge on U S Highway 17 at Washington, Beaufort County, and 0 7 mile below Kennedy Creek	10-61 to 9-67	D	66	56	46	43	44	52	62	70	76	80	80	75	90	33	62
2-0845 4	Durham Creek at Edward --Lat 35°19'25", long 76°52'26", at bridge on Secondary Road 1949, at Edward, Beaufort County, and 6-3/4 miles above mouth	11-65 to 9-67	C	64	54	45	45	44	54	61	64	70	76	74	69	88	34	60

a Record incomplete

Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)--Continued

No on Pl 1	Station name and location	Period of record	Frequency	Average temperatures for period of record												Extremes observed		Average Annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Max	Min	
	NEUSE RIVER BASIN																	
2-0852 2	Little River near Orange Factory --Lat 36°08'20", long 78°54'24", at bridge on U S Highway 501, 1 mile above Mountain Creek, and 1½ miles northwest of Orange Factory, Durham County	[a]10-61 to 8-63	M	62	46	45	42	40	53	54	72	82	74	74	71	82	39	60
2-0852 2	do	10-61 to 5-65, 8-65 to 9-67	C	58	49	41	39	41	48	59	68	74	77	76	68	86	32	58
2-0865	Flat River at Dam near Bahama --Lat 36°08'55", long 78°49'43", 900 ft below Durham municipal dam, 3 miles southeast of Bahama, Durham County, 5 miles above mouth	10-55 to 5-56, 7-56 to 9-56	M	59	35	34	40	47	52	53	62	-	64	74	69	74	34	-
2-0870	Neuse River near Northside --Lat 36°02'54", long 78°44'59", at Fish Dam bridge on Secondary Road 1801, 1½ miles below Rocky Creek, and 2½ miles south of Northside, Granville County	10-55 to 5-56, 7-56 to 9-56	M	53	55	43	38	49	53	56	74	-	76	78	72	78	43	-
2-0871 82	Neuse River at Falls --Lat 35°56'27", long 78°34'57", above bridge on Secondary Road 2000, at Falls, Wake County, and below Honeycutt Creek	10-53 to 9-54, 11-60 to 9-67	D	59	51	41	40	42	50	59	65	72	76	75	70	81	32	58
2-0872 24	Neuse River near Milburnie --Lat 35°50'55", long 78°31'50", at bridge on Secondary Road 2215, 0 5 mile below Hodges Mill Creek, and 3 4 miles north of Milburnie, Wake County	1-58 to 9-59, 11-59 to 9-60	D	60	54	42	41	43	47	61	68	75	78	78	72	84	32	60
2-0872 29	Neuse River near Raleigh --Lat 35°47'35", long 78°32'21", at bridge on U S Highway 64, 2 0 miles above Crabtree Creek, and 5 7 miles east of State Capital Building in Raleigh, Wake County	10-56 to 9-57	D	62	51	47	41	48	48	69	78	73	76	76	67	78	34	61

2-0875	Neuse River near Clayton --Lat 35°38'50", long 78°24'21", at bridge on State Highway 42, 2 3 miles above Mill Creek, and 3 miles east of Clayton, Johnston County	10-43 to 9-44	D	62	51	41	40	44	49	58	72	82	82	76	74	85	32	61
2-0875	do	11-63 to 9-67	M	64	54	45	44	40	46	57	64	72	76	76	73	81	35	59
2-0875 3	Neuse River near Selma --Lat 35°33'26", long 78°19'32", at bridge on Secondary Road 1900, 2 6 miles above Poplar Branch, and 2 8 miles northwest of Selma, Johnston County	[a]10-55 to 8-58	D	61	54	46	42	47	51	61	71	78	81	80	76	90	32	62
2-0875 7	Neuse River at Smithfield --Lat 35°30'46", long 78°21'00", at bridge on U S Highway 70, at Smithfield, Johnston County, and 2 1 miles above Swift Creek	10-54 to 12-54, 3-55 to 9-55	D	65	53	39	-	-	54	62	71	74	80	78	73	85	34	-
2-0875 7	do	10-58 to 9-67	M	67	55	45	42	40	47	58	64	72	77	78	74	88	32	60
2-0883 64	Neuse River near Rosewood --Lat 35°22', long 78°05', at bridge on Secondary Road 1008, 4 miles south of Rosewood, Wayne County, and 7 miles above Little River	[a]10-58 to 9-64	M	76	62	49	44	43	48	58	65	75	81	78	79	90	37	63
2-0885	Little River near Princeton --Lat 35°30'40", long 78°09'30", below bridge on Secondary Road 2320, 3/4 mile above Little Creek, and 3 miles north of Princeton, Johnston County	10-50 to 9-51	M	64	52	38	45	45	46	62	69	77	85	85	75	85	38	62
2-0885	do	10-55 to 9-56	D	65	53	40	36	35	45	57	70	81	83	78	74	89	32	60
2-0888 21	Neuse River at Goldsboro --Lat 35°21', long 78°02', at bridge on State Highway 117, ½ mile above Atlantic Coast Line Railroad, 1-3/4 miles above gaging station and 3 miles southwest of Goldsboro, Wayne County	10-58, 12-58 to 9-60	M	74	59	46	46	45	47	58	64	74	84	74	78	87	44	62
2-0888 21	do	10-60 to 9-67	D	66	57	47	43	44	52	61	71	76	79	79	74	88	32	62
2-0890	Neuse River near Goldsboro --Lat 35°20'15", long 77°59'50", at bridge on Secondary Road 1915, ½ mile above Stony Creek, and 3 miles south of Goldsboro, Wayne County	10-48 to 9-49, [a]10-58 to 9-60	D	61	56	45	44	46	48	60	69	75	79	78	74	89	32	61
2-0890	do	10-54 to 9-55	M	61	61	42	43	41	60	66	75	78	78	78	72	78	41	63
2-0891 16	Neuse River near Whitehall --Lat 35°15'40", long 77°54'40", at bridge on State Highway 111, 1½ miles below Sleepy Creek, and 4½ miles northwest of Whitehall, Wayne County	10-58, 12-58 to 9-60	M	74	59	47	46	44	48	58	65	74	84	75	78	86	44	63

a Record incomplete

Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)--Continued

No on Pl 1	Station name and location	Period of record	Frequency	Average temperatures for period of record												Extremes observed		Average Annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Max	Min	
	NEUSE RIVER BASIN--Continued																	
2-0891 92	Neuse River at Whitehall --Lat 35°13'45", long 77°50'47", at bridge on Secondary Road 1731, at Whitehall, Wayne County, and 2 miles below Mill Creek	[a]10-58 to 9-64	M	72	59	50	42	43	48	59	66	75	79	80	78	86	36	63
2-0895	Neuse River at Kinston --Lat 35°15'30", long 77°35'10", 600 ft below State Highway 11 at Kinston, Lenoir County, 3 miles above Yadkin Branch, and 90 miles above mouth	10-49 to 9-50, 10-55 to 9-56	D	69	56	47	49	52	53	62	71	78	79	81	76	92	36	64
2-0895	do	10-58 to 9-67	M	70	60	49	45	42	48	59	66	75	80	80	78	88	36	63
2-0905	Contentnea Creek near Wilson --Lat 35°41'10", long 77°56'50", at bridge on U S Highway 301, below municipal dam, and 3 miles southwest of Wilson, Wilson County	[a]10-55 to 9-56	M	69	59	44	44	43	-	59	68	-	74	77	81	81	43	-
2-0915	Contentnea Creek at Hookerton --Lat 35°25'40", long 77°35'10", 0 3 mile above bridge on State Highway 123 at Hookerton, Greene County, and 2 5 miles above Wheat Swamp Creek	10-49 to 9-50	D	67	54	49	52	52	52	60	70	78	78	79	76	84	45	64
2-0918 14	Neuse River near Fort Barnwell --Lat 35°18'40", long 77°18'20", at bridge on Secondary Road 1470, 1¿ miles above Core Creek, and 2 miles east of Fort Barnwell, Craven County	[a]10-54 to 9-60	D	68	57	47	45	47	51	64	74	80	83	82	78	95	32	65
2-0918 2	Core Creek near Fort Barnwell --Lat 35°15'10", long 77°17'10", at bridge on State Highway 55, 3 miles southeast of Fort Barnwell, Craven County, and 7 miles above mouth	[a]10-57 to 9-61	M	72	57	48	50	43	49	59	64	71	74	77	76	82	40	62
2-0918 31	Neuse River at Cowen Landing near Vanceboro --Lat 35°14'20", long 77°10'00", at Cowen Landing, 3/4 mile above Dolly Gut and 6 miles south of Vanceboro, Craven County	[a]10-54 to 9-67	D	67	57	46	43	46	52	61	70	77	81	80	75	92	32	63
2-0918 36	Neuse River at Streets Ferry near Vanceboro --Lat 35°12'20", long 77°07'40", at Streets Ferry, 1 4 miles above The Gut, and 7 miles south of Vanceboro Craven County	[a]10-54 to 8-64	D	67	59	48	45	47	54	63	72	79	83	81	77	92	32	65

2-0920	Swift Creek near Vanceboro --35°20'40", long 77°11'40", at bridge on Secondary Road 1478, 2₂ miles below Clayroot Swamp, and 3½ miles northwest of Vanceboro, Craven County	[a]10-51 to 7-64	D	62	53	45	43	46	54	62	67	72	76	75	72	87	32	61
2-0920	do	[a]12-54 to 7-64	C	62	53	44	42	45	53	61	66	72	76	76	72	87	32	60
2-0920	do	10-50 to 9-51	M	61	59	39	48	48	45	62	63	70	76	76	71	76	39	60
2-0921 24	Bachelor Creek near Streets Ferry --Lat 35°10'40", long 77°08'00", at bridge, 1 6 miles above The Gut, and 2½ miles south of Streets Ferry, Craven County	[a]10-57 to 9-62	M	70	60	50	48	44	52	56	65	73	74	78	78	85	40	62
2-0921 62	Neuse River at New Bern --Lat 35°06'42", long 77°01'37", at bridge on U S Highway 17 at New Bern, Craven County, and 0 9 mile above Trent River	10-56 to 8-64, 11-64 to 9-67	D	67	58	48	45	47	53	63	71	77	80	80	76	89	33	64
2-0921 62	do	[a]10-63 to 8-67	C	67	59	47	45	46	53	62	70	76	80	79	75	86	32	63
2-0925	Trent River near Trenton --Lat 35°03'50", long 77°27'20", at Free Bridge on Secondary Road 1129, 800 ft below Little Chinquapin Branch, and 6 miles west of Trenton, Jones County	[a]10-51 to 12-63	D	62	54	45	43	48	51	60	68	73	77	77	73	86	32	61
2-0925	do	12-64 to 4-67	C	64	54	46	44	46	54	64	70	72	76	76	73	83	35	62
2-0925 54	Trent River at Pollocksville --Lat 35°00'35', long 77°13'10", bridge on U S Highway 17, and ½ mile northeast of Pollocksville, Jones County	[a]10-55 to 9-67	D	63	55	46	44	45	52	62	68	72	77	74	73	88	32	61
2-0925 56	Trent River below Mill Creek near Pollocksville --Lat 35°01'50", long 77°11'25", 2₂ miles northeast of Pollocksville, Jones County, and 2½ miles below Mill Creek	10-58 to 9-59	D	65	59	45	42	50	54	62	73	78	78	80	75	89	34	63
2-0925 57	Trent River near Rhems --35°03'40", long 77°08'40", at Rhems, Craven County, and 0 5 mile below Island Creek	10-56 to 9-58	D	66	56	50	45	48	53	62	72	76	80	80	76	84	36	64
2-0925 58	Trent River near New Bern --Lat 35°04'40", long 77°07'25", 0 2 mile above Hayward Creek, and 5 0 miles southwest of New Bern, Craven County	10-58 to 9-61	D	67	57	45	45	47	52	62	71	77	80	80	75	86	37	63

a Record incomplete

Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)--Continued

No on Pl 1	Station name and location	Period of record	Frequency	Average temperatures for period of record												Extremes observed		Average annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Max	Min	
	NEW RIVER BASIN																	
2-0930	New River near Gum Branch --Lat 34°51'00", long 77°31'00", ½ mile below Jenkins Swamp, and 1-3/4 miles southwest of Gum Branch, Onslow County	10-49 to 9-50	M	68	58	48	58	64	50	54	65	70	74	71	69	74	48	62
2-0930 32	New River at Jacksonville --Lat 34°45'20", long 77°26'00", at bridge on U S Highway 17 at Jacksonville, Onslow County, and 0 3 mile below Deep Gully Creek	10-60 to 9-61	D	71	60	46	45	51	61	61	71	77	84	83	79	93	34	66
	CAPE FEAR RIVER BASIN																	
2-0935	Haw River near Benaja --Lat 36°15', long 79°34', 500 ft above bridge on Secondary Road 2620, 6 miles below Troublesome Creek, and 6 miles east of Benaja, Rockingham County	10-52 to 9-53	D	56	50	42	44	46	51	60	71	74	79	77	71	84	35	60
2-0935	do	[a]8-54 to 9-67	C	57	48	39	36	40	48	58	64	69	73	72	66	82	32	56
2-0935 49	Haw River at Altamahaw --Lat 36°11', long 79°30', at dam above bridge on State Highway 87 at Altamahaw, Alamance County, and 1½ miles above Reedy Fork	[a]10-62 to 9-67	M	60	53	39	37	40	50	62	62	72	74	73	68	77	33	58
2-0945	Reedy Fork near Gibsonville --Lat 36°11', long 79°37', 1½ miles above Buffalo Creek, and 6 miles northwest of Gibsonville, Guilford County	10-51 to 9-52	D	63	55	61	62	46	50	58	68	80	80	79	71	88	38	64
2-0950	South Buffalo Creek near Greensboro --Lat 36°03'36", long 79°43'33", at bridge on McConnel Road, 3 8 miles east of Greensboro, Guilford County, and 6 miles above North Buffalo Creek	10-55 to 9-56	M	68	62	48	41	52	52	54	75	77	76	81	73	81	41	63
2-0955	North Buffalo Creek near Greensboro --Lat 36°07'13", long 79°42'30", at bridge on Secondary Road 2832, 4 2 miles above mouth, and 5 8 miles northeast of Greensboro, Guilford County	10-55 to 9-56	M	74	69	57	49	59	58	59	78	82	76	86	77	86	49	69
2-0956 81	Reedy Fork near Ossipee --Lat 36°10', long 79°32', at bridge on State Highway 87, at Ossipee, Alamance County, and ½ mile above mouth	11-63 to 1-64, 9-64	M	-	43	37	39	-	-	-	-	-	-	-	73	73	37	-

2-0960	Stony Creek near Burlington --Lat 36°11', long 79°25', ½ mile above Buttermilk Creek, and 6 miles north of Burlington, Alamance County	10-55 to 5-56, 7-56 to 9-56	M	64	55	41	34	48	48	53	73	-	73	78	68	78	34	58
2-0965	Haw River at Haw River --Lat 36°05', long 79°22', at Haw River, Alamance County, 650 ft below Southern Railway bridge, and 3 miles below Stony Creek	[a]10-56 to 9-60	M	60	50	42	40	40	48	54	70	77	80	80	72	88	33	79
2-0967 58	Alamance Creek at Bellemont --Lat 36°02', long 79°29', at bridge on State Highway 49, ½ mile northeast of Bellemont, and 1½ miles above Stinking Creek	[a]10-57 to 9-61	M	57	46	37	43	41	45	55	64	72	74	74	65	76	33	56
2-0969 59	Haw River at Bynum --Lat 35°46', long 79°09', at bridge on U S Highway 15, ½ mile southwest of Bynum, Chatham County, and 1 mile above Pokeberry Creek	[a]10-55 to 8-67	D	60	50	40	38	42	49	60	69	75	78	78	72	88	32	59
2-0980	New Hope River near Pittsboro --Lat 35°44', long 79°02', at bridge on U S Highway 64, ½ mile below White Oak Creek, and 8-3/4 miles east of Pittsboro, Chatham County	[a]10-53 to 9-54	M	57	52	48	38	49	60	66	-	71	76	-	69	76	38	-
2-0980	do	10-55 to 3-56, 5-56 to 9-56	D	58	49	36	34	41	46	-	66	71	77	75	67	80	32	-
2-0981 56	New Hope River near New Hill --Lat 35°42', long 79°03', at bridge on Secondary Road 1700, ½ mile below Beaver Creek, and 6 miles northwest of New Hill, Chatham County	11-56 to 8-67	D	56	48	40	38	41	48	58	64	70	73	71	68	80	32	56
2-0982 08	Haw River at Moncure --Lat 35°37', long 79°03', at bridge on U S Highway 1, 1½ miles east of Moncure, Chatham County, and 1½ miles above mouth	10-60 to 9-61	M	69	54	38	44	46	56	59	70	72	81	78	71	81	38	62
2-1005	Deep River at Ramseur --Lat 35°44', long 79°39', ½ mile below Main Street bridge in Ramseur, Randolph County, and 1½ miles below Sandy Creek	10-46 to 9-47	D	63	57	45	45	40	44	61	70	74	76	78	73	82	33	60
2-1005	do	10-56 to 1-57, 3-57 to 9-57	M	65	51	49	42	-	61	56	74	80	85	81	76	85	42	-
2-1010	Bear Creek at Robbins --Lat 35°26', long 79°35', ½ mile below Cabin Creek, and 0 2 mile west of Robbins, Moore County	10-55 to 5-56, 7-56 to 8-56	M	62	58	38	38	50	49	54	72	-	75	77	-	77	38	-

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Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)--Continued

No on Pl 1	Station name and location	Period of record	Frequency	Average temperatures for period of record												Extremes observed		Average annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Max	Min	
	CAPE FEAR RIVER BASIN--Continued																	
2-1020 49	Deep River at U S Highway 1 at Moncure --Lat 35°37', long 79°06', at bridge on U S Highway 1, 1 mile west of Moncure, Chatham County, 1½ miles below gaging station, and 3 miles above Haw River	10-43 to 9-44, 10-55 to 9-56, [a]10-61 to 8-67	D	63	53	43	40	45	51	60	71	77	80	79	74	94	32	61
2-1025	Cape Fear River at Lillington --Lat 35°24', long 78°49', at bridge on U S Highway 401, ½ mile north of Lillington, Harnett County, and 1 mile below Neal Creek at mile 178	10-44 to 9-45, 10-54 to 9-55	D	59	44	40	41	48	59	64	75	78	80	78	68	86	34	61
2-1025	do	[a]10-60 to 9-67	M	65	54	49	42	41	45	56	67	76	80	81	76	87	35	61
2-1025	do	[a]7-59 to 9-67	C	66	56	45	42	42	50	62	70	78	82	81	76	96	33	62
2-1035	Little River at Linden --Lat 35°15'46", long 78°46'35", in Harnett County, at bridge on U S Highway 401, 1 6 miles west of Linden, Cumberland County, and 2 miles above Stewarts Creek	10-46 to 9-47	D	63	56	46	49	43	45	63	71	77	78	80	74	85	36	62
2-1035	do	10-54 to 9-55	M	55	55	45	35	38	60	60	67	75	75	77	69	77	35	59
2-1040	Cape Fear River at Fayetteville --Lat 35°02'49", long 78°51'36", at bridge on Person Street, at Fayetteville, Cumberland County, and 0 3 mile below Cross Creek, at mile 145	10-64 to 9-67	M	67	60	46	47	42	48	60	68	73	80	77	73	84	35	62
2-1045	Rockfish Creek near Hope Mills --Lat 34°57'57", long 78°55'04", below Little Rockfish Creek, and 1-3/4 miles east of Hope Mills, Cumberland County	10-53, 12-53 to 9-54	M	66	-	49	48	50	46	68	63	80	78	80	72	80	46	-

2-1055	Cape Fear River at William O Huske Lock near Tarheel --Lat 34°50'05", long 78°49'27", at William O Huske Lock, 7 miles north of Tarheel, Bladen County, and 9 miles above Phillips Creek, at mile 123	10-46 to 9-47, 10-54 to 9-55	D	67	56	44	46	44	51	64	72	78	81	82	76	87	37	63
2-1055 36	Cape Fear River near Elizabethtown --Lat 34°37'57", long 78°36'12", at bridge on U S Highway 701, ½ mile below Ellis Creek, and ½ mile above Elizabethtown, Bladen County	10-53, 12-53 to 9-54	M	68	-	47	45	48	54	65	67	82	82	86	80	86	45	-
2-1057 71	Cape Fear River near Acme --Lat 35°23'48", long 78°16'05", in Bladen County, at bridge on State Highway 141, 0 8 mile below Natmore Creek and 6 6 miles northwest of Acme, Columbus County	10-56 to 9-61	D	65	54	46	42	44	48	58	67	75	80	81	77	86	33	61
2-1057 71	do	[a]10-61 to 9-67	M	72	61	50	44	42	48	59	68	75	79	80	78	80	42	63
2-1060	Little Coharie Creek near Roseboro --Lat 34°57'13", long 78°29'17", at bridge on State Highway 24, 1½ miles east of Roseboro, Sampson County, and 1½ miles above Bearskin Swamp	11-52 to 9-53	M	-	55	40	41	50	58	58	74	71	75	80	78	80	40	-
2-1065	Black River near Tomahawk --Lat 34°45'17", long 78°17'21", at bridge on State Highway 411, ¼ mile below Clear Run Swamp, and 3-3/4 miles northeast of Tomahawk, Sampson County	10-52 to 9-53	M	62	54	49	48	47	60	58	68	72	74	73	74	74	47	62
2-1070	South River near Parkersburg --Lat 34°48'45", long 78°27'26", in Bladen County, at bridge on Secondary Road 1503, 1 9 miles southwest of Parkersburg, Sampson County, and 2 1 miles above Cypress Creek	10-54 to 9-55	M	70	54	45	43	42	58	65	72	75	77	76	72	77	42	62
2-1070	do	11-61 to 12-62, 2-63 to 9-67	C	62	53	44	42	44	53	62	68	73	76	76	71	84	32	60
2-1075 44	Black River near Currie --Lat 34°25'57", long 78°08'33", at bridge on State Highway 210, 3 miles above Moores Creek, and 3½ miles southwest of Currie, Pender County	10-55 to 9-56	D	67	57	47	43	52	58	59	71	79	84	81	74	86	38	64
2-1075 7	Cape Fear River near Phoenix --Lat 34°19'50", long 78°01'40", in New Hanover County, 1½ miles below Black River, 3 miles northeast of Phoenix, Brunswick County, and 12 7 miles above Market Street in Wilmington, at mile 40 7	[a]2-66 to 3-67	C	70	58	-	-	44	45	-	71	-	-	-	-	-	-	-
2-1075 71	Cape Fear River near Navassa --Lat 34°17'00", long 77°59'50", in New Hanover County, 1½ miles below Catfish Creek, and 2 miles northeast of Navassa, Brunswick County, at River Mile 34 0 and 6 0 miles above Market Street in Wilmington	10-60 to 9-61	D	70	59	47	45	47	58	60	69	76	81	82	80	87	41	64
2-1075 71	do	[a]2-66 to 7-67	C	72	-	-	48	46	56	66	-	78	84	-	77	-	-	-

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Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)--Continued

No on Pl 1	Station name and location	Period of record	Frequency	Average temperatures for period of record												Extremes observed		Average Annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Max	Min	
	CAPE FEAR RIVER BASIN--Continued																	
2-1075 72	Cape Fear River at Royster --Lat 34°16'15", long 78°00'00", at Royster, Brunswick County, 2½ miles below Indian Creek	11-61 to 1-65, 3-65 to 9-67	D	69	60	50	46	47	54	64	73	78	82	82	76	88	39	65
2-1075 72	do	[a]11-63 to 9-67	C	70	60	50	47	48	56	65	74	78	82	82	78	90	36	66
2-1075 76	Cape Fear River at Navassa --Lat 34°15'40", long 77°39'20", above mile marker 4 at Seaboard Air Line Railroad bridge, and 3/4 mile northeast of Navassa, Brunswick County	10-59 to 9-67	D	70	60	50	47	48	54	64	71	76	81	80	76	88	34	65
2-1080	Northeast Cape Fear River near Chinquapin --Lat 34°49'40", long 77°50'00", ½ mile below Muddy Creek, and 1¼ miles west of Chinquapin, Duplin County	10-50 to 9-51, [a]10-56 to 5-62	D	66	57	45	41	45	51	59	68	73	76	76	73	87	32	61
2-1085 66	Northeast Cape Fear River near Burgaw --Lat 35°36'00", long 77°52'30", at bridge on State Highway 53, 3 9 miles above Holly Shelter Creek, and 4½ miles northeast of Burgaw, Pender County	[a]10-63 to 9-67	D	64	56	46	46	46	55	64	70	79	79	78	73	86	34	63
2-1086 19	Northeast Cape Fear River at Castle Hayne --Lat 34°22'20", long 77°54'00", at bridge on U S Highway 117, 0 8 mile north of Castle Hayne, New Hanover County, and 4 7 miles above Prince George Creek	[a]11-54 to 9-67	D	68	60	49	45	46	52	61	71	77	80	81	77	90	33	64
2-1086 37	Northeast Cape Fear River near Castle Hayne --Lat 34°20'20", long 77°59'40", in Pender County at end of Secondary Road 1428, 4 2 miles below Long Creek and 5 8 miles west of Castle Hayne, New Hanover County	[a]10-59 to 9-67	D	68	59	49	45	46	54	64	71	77	80	80	75	85	35	64
2-1086 37	do	11-63 to 7-66	C	67	60	50	46	46	54	64	74	77	80	80	76	85	35	64

WACCAMAW RIVER BASIN																		
2-1095	Waccamaw River at Freeland --Lat 34°05'43", long 78°32'55", below bridge on State Highway 130, 1 mile southwest of Freeland, Brunswick County, 7 miles below Juniper Creek, and 117 miles above mouth in Winyah Bay	10-50 to 9-51	D	68	55	43	46	48	58	62	69	77	81	79	74	88	38	63
2-1095	do	[a]10-56 to 9-62	M	68	62	55	53	55	52	62	72	81	78	80	78	85	41	66
2-1095	do	11-62 to 1-64, 3-64 to 9-67	C	64	56	46	44	46	56	64	71	74	76	76	72	88	32	62
PEE DEE RIVER BASIN																		
2-1115	Reddies River at North Wilkesboro --Lat 36°10', long 81°10', above bridge on Secondary Road 1517, 1¼ miles northwest of North Wilkesboro, Wilkes County, and 2 miles above mouth	11-53, 1-54 to 8-54	M	-	40	-	33	54	44	64	65	72	78	76	-	78	33	-
2-1115	do	10-54 to 6-55, 8-55 to 9-55	D	61	45	39	40	42	50	56	66	68	-	73	68	80	32	-
2-1120	Yadkin River at Wilkesboro --Lat 36°09', long 81°09', above U S Highway 421A, below Reddies River, and ½ mile northeast of Wilkesboro, Wilkes County, at mile 382	10-47 to 9-48	D	62	49	42	38	44	53	60	67	74	76	73	68	83	33	59
2-1120	do	10-61 to 7-62, 9-62	M	55	58	34	37	40	43	45	70	65	64	-	63	70	34	-
2-1120	do	[a]11-57 to 9-67	C	60	50	42	40	41	46	52	61	66	70	71	68	81	32	56
2-1155	Forbush Creek near Yadkinville --Lat 36°08', long 80°33', 3 miles above Logan Creek, and 6 miles east of Yadkinville, Yadkin County	10-61 to 9-67	M	58	50	38	40	40	41	58	64	67	71	71	68	78	32	56
2-1165	Yadkin River at Yadkin College --Lat 35°51'24", long 80°23'10", below U S Highway 64, 0 3 mile below Dykers Creek, and 1 5 miles south of Yadkin College, Davidson County	10-43 to 9-44, 10-50 to 9-51, [a]10-55 to 8-67	D	59	49	40	39	41	48	57	67	74	78	76	71	88	32	58

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Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)--Continued

No on Pl 1	Station name and location	Period of record	Frequency	Average temperatures for period of record												Extremes observed		Average Annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Max	Min	
	PEE DEE RIVER BASIN--Continued																	
2-1180	South Yadkin River near Mocksville --Lat 35°51', long 80°40', in Rowan County, at bridge on Secondary Road 1972, 1 mile above Little Creek, and 6½ miles southwest of Mocksville, Davie County	11-53 to 6-54, 9-54	M	-	40	40	38	50	37	40	58	58	-	-	73	73	37	-
2-1180	do	11-60 to 9-66	D	56	49	40	39	40	48	56	65	70	72	72	68	79	32	56
2-1180	do	10-61 to 9-67	C	56	49	40	39	40	48	56	64	69	72	72	67	79	32	56
2-1185	Hunting Creek near Harmony --Lat 36°00', long 80°44', at bridge on Secondary Road 2115, 3/4 mile below Kennedy Creek, and 3½ miles northeast of Harmony, Iredell County	10-52 to 9-53	M	57	50	35	44	44	54	54	65	68	74	73	68	74	35	57
2-1190	South Yadkin River at Cooleemee --Lat 35°48', long 80°34', at Cooleemee, Davie County, above State Highway 801, 2 5 miles above Third Creek, and 7 2 miles above mouth	10-47 to 9-48, 10-55 to 9-56	D	62	50	40	38	45	52	59	67	73	78	76	70	82	32	59
2-1205	Third Creek at Cleveland --Lat 35°45', long 80°41', below bridge on Secondary Road 1957, 3/4 mile north of Cleveland, Rowan County, and 7 miles above Fourth Creek	10-49, 12-49 to 9-50	D	59	-	45	46	45	47	53	63	68	70	70	65	77	34	-
2-1215	Abbotts Creek at Lexington --Lat 35°48'23", long 80°14'05", above bridge on Secondary Road 2205, 1 5 miles southeast of Lexington, Davidson County, and 4 9 miles below Rich Fork	10-47 to 9-48	D	63	50	40	37	42	54	63	67	74	78	75	69	83	32	59
2-1215	do	10-56 to 4-58, 6-58 to 9-58	M	62	48	46	39	48	54	54	75	76	79	76	70	80	33	61

2-1225	Yadkin River at High Rock --Lat 35°35'46", long 80°13'59", 0 3 mile below High Rock Dam, and 0 6 mile west of High Rock, Davidson County	10-47 to 9-48	D	65	55	45	41	40	52	62	69	74	80	77	75	81	37	61
2-1235	Uwharrie River near Eldorado --Lat 35°25'47", long 80°01'05", at State Highway 109, 1 mile above McLeans Creek, and 3 miles south of Eldorado, Montgomery County	10-56 to 9-57	M	63	53	53	38	61	57	60	76	77	86	79	78	86	38	65
2-1241 83	Rocky River at Harrisburg --35°19'57", long 80°37'42", at bridge on State Highway 49, 1 8 miles northeast of Harrisburg, Cabarrus County, and 3 9 miles below Mallard Creek	10-56 to 4-58, 6-58 to 9-58	M	54	51	46	41	33	47	53	-	73	76	74	71	76	33	-
2-1242 3	Coddle Creek near Concord --Lat 35°24'29", long 80°40'29", at bridge on Secondary Road 1394, below Afton Run, and 5 miles west of Concord, Cabarrus County	10-56 to 9-57	M	57	52	55	38	62	62	64	68	78	79	80	75	80	38	64
2-1242 37	Coddle Creek near Harrisburg --Lat 35°20'32", long 80°36'45", at bridge on State Highway 49, 2 0 miles above mouth, and 2 7 miles northeast of Harrisburg, Cabarrus County	10-57 to 4-58, 6-58 to 9-58	M	54	52	47	41	33	47	54	-	73	76	76	72	76	33	-
2-1243 34	Rocky River near Rocky River --Lat 35°19'27", long 80°33'40", at bridge on Secondary Road 1132, 1½ miles above Irish Buffalo Creek, and 2½ miles northeast of Rocky River, Cabarrus County	10-57 to 4-58, 6-58 to 9-58	M	54	52	47	40	33	47	54	-	73	76	75	71	76	33	-
2-1243 68	Irish Buffalo Creek near Concord --Lat 35°21'49", long 80°33'25", at bridge on Secondary Road 1153, 2 7 miles above mouth, and 3 miles southeast of Concord, Cabarrus County	10-57 to 4-58, 6-58 to 9-58	M	63	62	52	45	38	53	56	-	78	82	81	82	82	38	-
2-1243 74	Irish Buffalo Creek at Faggarts Crossroads --Lat 35°20'50", long 80°32'52", at bridge on Secondary Road 1132, 1 mile south of Faggarts Crossroads, Cabarrus County, and 1 mile above mouth	10-56 to 9-57	M	71	66	67	51	64	68	71	78	85	89	89	80	89	51	73
2-1244 2	Rocky River near Concord --Lat 35°18'50", long 80°28'45", at bridge on Secondary Road 1006, 3/4 mile above Dutch Buffalo Creek, and 9 miles southeast of Concord, Cabarrus County	10-56 to 4-58, 6-58 to 9-58	M	58	54	52	40	48	56	58	73	78	81	79	78	84	33	63
2-1245 24	Dutch Buffalo Creek near Mt Pleasant --Lat 35°23'20", long 80°25'28", at bridge on Secondary Road 2610, ½ mile above Adams Creek, and 1 mile southeast of Mount Pleasant, Cabarrus County	10-56 to 9-57	M	61	52	55	38	58	62	62	71	77	81	79	75	81	38	64

a Record incomplete

Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)--Continued

No on Pl 1	Station name and location	Period of record	Frequency	Average temperatures for period of record												Extremes observed		Average Annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Max	Min	
	PEE DEE RIVER BASIN--Continued																	
2-1245 96	Dutch Buffalo Creek at Georgeville --Lat 35°18'51", long 80°27'52", at bridge on State Highway 200, ½ mile west of Georgeville, Cabarrus County, and ½ mile above mouth	10-57 to 4-58, 6-58 to 9-58	M	59	52	45	41	33	47	55	-	72	78	76	73	78	33	-
2-1246 44	Rocky River near Midland --Lat 35°15'16", long 80°28'22", at bridge on State Highway 27, 2 4 miles northeast of Midland, Cabarrus County, and 5 1 miles below Dutch Buffalo Creek	10-57 to 4-58, 6-58 to 9-58	M	57	55	47	41	35	47	54	-	75	79	76	78	79	35	-
2-1250 2	Big Bear Creek near Albemarle --Lat 35°16'49", long 80°18'10", at bridge on State Highway 27, 2½ miles above Stony Run, and 8 miles southwest of Albemarle, Stanly County	10-51 to 4-52, 6-52 to 9-52	M	59	59	37	49	48	50	59	-	75	75	77	70	77	37	-
2-1256 81	Rocky River at Gaddy near Norwood --Lat 35°10', long 80°12', at bridge on Secondary Road 1943, ½ mile below Cribs Creek, and 6½ miles southwest of Norwood, Stanly County	10-55 to 8-67	D	64	54	44	43	46	53	64	74	79	82	81	76	90	32	63
2-1260	Rocky River near Norwood --Lat 35°09', long 80°10', below Lanes Creek, 6 miles southwest of Norwood, Stanly County, and 11½ miles above mouth	10-47 to 9-48	D	65	50	40	37	42	53	63	69	75	80	77	71	85	32	60
2-1281 01	Little River near Mt Gilead --Lat 35°11'46", long 79°56'03", at bridge on State Highway 731, 0 8 mile above Susies Creek, and 4 0 miles southeast of Mount Gilead, Montgomery County	10-56 to 9-57	M	64	55	53	40	59	57	62	75	76	85	79	78	85	40	65
2-1290	Pee Dee River near Rockingham --Lat 34°56'46", long 79°52'11", at bridge on U S Highway 74, 2 5 miles above Falling Creek, and 6 miles west of Rockingham, Richmond County	10-46 to 9-48, [a] 10-57 to 8-67	D	66	56	47	42	42	48	58	68	75	78	79	76	85	32	61

2-1335	Drowning Creek near Hoffman --Lat 35°03'38", long 79°29'39", at bridge on U S Highway 1, 3/4 mile below Deep Creek, and 4 miles northeast of Hoffman, Richmond County	10-46 to 11-46, 1-47 to 9-47	D	61	60	-	47	42	46	63	67	73	72	74	71	77	37	-
2-1335	do	11-54 to 3-55, 5-55 to 9-55	M	-	55	43	40	39	55	-	65	65	75	75	70	75	39	-
2-1335	do	11-53 to 1-57, 5-57 to 9-67	C	60	52	44	42	44	50	60	65	69	72	72	68	79	33	58
2-1345	Lumber River at Boardman --Lat 34°26'32", long 78°57'38", at bridge on U S Highway 74, 1 mile below Atlantic Coast Line Railroad bridge at Boardman, Columbus County, and 1½ miles below Big Swamp	10-46 to 9-47	D	63	58	47	48	43	47	65	71	77	76	79	74	81	36	62
	SANTEE RIVER BASIN																	
2-1380	Catawba River near Marion --Lat 35°42'26", long 82°02'00", at bridge on U S Highway 221, 0 4 mile below Tom Creek, and 2 1 miles northwest of Marion, McDowell County at mile 294	10-45 to 9-46	D	62	56	43	42	42	49	57	62	69	73	74	71	79	32	58
2-1424 41	Catawba River at Lookout Shoals Dam --Lat 35°46', long 81°06', at Lookout Shoals Dam, and 4½ miles north of Catawba, Catawba County	10-61 to 2-66, [a]4-66 to 8-67	D	66	57	46	42	42	47	55	64	71	75	76	74	85	35	60
2-1425	Catawba River at Catawba --Lat 35°43', long 81°04', at bridge on U S Highway 70, ½ mile above Lyle Creek, and 1 mile northeast of Catawba, Catawba County	10-45 to 9-46, 10-54 to 9-55	D	65	54	44	42	42	50	56	64	69	74	75	72	81	37	59
2-1430	Henry Fork near Henry River --Lat 35°41', long 81°24', below bridge on Secondary Road 1124, 2 miles southeast of Henry River, Catawba County, and 4½ miles below Tims Creek	10-53 to 9-54	M	60	46	44	34	41	44	60	53	70	76	72	63	76	34	55
2-1432 84	South Fork Catawba River at Lincolnton --Lat 35°27'20", long 81°15'40", at Madison Street bridge at Lincolnton, Lincoln County, and ¼ mile above Seaboard Air Line Railroad	[a]10-50 to 9-51	M	61	48	-	44	-	44	54	68	70	77	76	70	77	44	-

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Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)--Continued

No on Pl 1	Station name and location	Period of record	Frequency	Average temperatures for period of record												Extremes observed		Average Annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Max	Min	
	SANTEE RIVER BASIN--Continued																	
2-1435	Indian Creek near Laboratory --Lat 35°25'20", long 81°15'50", ½ mile above bridge on Secondary Road 1252, 1½ miles above mouth, and 1½ miles south of Laboratory, Lincoln County	10-51 to 3-52, 5-52 to 9-52	M	63	60	45	57	48	49	-	68	78	78	78	70	78	45	-
2-1435.-	do	[a]10-53 to 9-67	C	58	50	43	42	44	50	59	64	68	72	72	68	82	32	58
2-1439 08	South Fork Catawba River Stanley --Lat 35°19'50", long 81°08'00", at bridge on State Highway 275, 0 1 mile below Hoyle Creek, and 3 miles southwest of Stanley, Gaston County	[a]10-61 to 7-67	M	60	50	44	43	45	56	66	70	72	68	75	64	78	32	59
2-1450	South Fork Catawba River at Lowell --Lat 35°17'10", long 81°06'00", below Housers Creek, and 1 mile north of Lowell, Gaston County	12-49 to 9-50	D	-	-	46	51	49	50	59	70	74	76	75	70	81	40	-
2-1456 1	Crowders Creek near Gastonia --Lat 35°10'09", long 81°11'44", at bridge on U S Highway 321, 0 1 mile below South Fork, and 6½ miles south of Gastonia, Gaston County	[a]10-56 to 9-58	M	52	50	52	44	33	56	55	66	75	75	74	66	77	33	58
2-1465	Little Sugar Creek near Charlotte --Lat 35°09'13", long 80°51'18", at bridge on Tyvola Road 0 2 mile below Little Hope Creek, and 4 9 miles south of Charlotte, Mecklenburg County, at mile 8 8	10-56 to 4-58, 6-58 to 9-58	M	58	53	52	39	50	56	59	68	80	84	83	76	90	33	63
2-1510	Second Broad River at Cliffside --Lat 35°14'08", long 81°45'57", ½ mile below dam at Cliffside, Rutherford County, and 1½ miles above mouth	10-48 to 9-49, 10-56 to 9-60	D	59	51	45	43	46	48	58	65	70	73	73	68	80	32	58
2-1515	Broad River near Boiling Springs --Lat 35°12'40", long 81°41'50", ½ mile above Sandy Run Creek, and 3½ miles southwest of Boiling Springs, Cleveland County	10-45 to 9-46, [a]10-56 to 8-67	D	61	52	46	44	46	52	60	68	74	78	78	70	89	32	61

2-1525	First Broad River near Lawndale --Lat 35°22'50", long 81°32'40", ½ mile above Shoal Rock Creek, and 2½ miles southeast of Lawndale, Cleveland County	10-48 to 9-49	D	57	53	46	48	50	51	57	66	74	77	74	68	81	33	60
	KANAWHA RIVER BASIN																		
3-1610	South Fork New River near Jefferson --Lat 36°24', long 81°25', above bridge on State Highway 16, ½ mile below Bear Creek, and 4 miles southeast of Jefferson, Ashe County	10-49 to 9-50	D	57	43	41	47	43	39	54	63	71	75	72	67	81	32	56
	FRENCH BROAD RIVER BASIN																		
3-4390	French Broad River at Rosman --Lat 35°08'32", long 82°49'28", at bridge on U S Highway 178 at Rosman, Transylvania County, and 1 0 mile above East Fork, at mile 215 4	10-45 to 9-46	D	51	46	38	43	42	48	51	55	54	64	64	60	66	32	51
3-4390	do	[a]10-57 to 9-67	M	56	50	41	38	38	44	49	56	61	63	66	64	71	33	52
3-4415	Little River near Penrose --Lat 35°13'23", long 82°38'07", 0 4 mile below Cascade Lake Dam, 1 2 miles above Hart Branch, and 3 3 miles south of Penrose, Transylvania County	10-53 to 9-54	D	54	43	41	41	42	46	55	56	64	69	69	64	78	32	54
3-4430	French Broad River at Blantyre --Lat 35°17'56", long 82°37'27", at bridge on Secondary Road 1503 at Blantyre, Transylvania County, and 3 4 miles below Little River, at mile 183 7	10-52 to 9-53	D	53	45	40	43	44	49	56	65	69	69	69	65	79	32	56
3-4430	do	[a]10-57 to 9-67	M	59	50	43	40	42	46	50	58	63	68	70	68	74	34	55
3-4460	Mills River near Mills River --Lat 35°23'56", long 82°35'46", 1 5 miles below North and South Forks, and 1 8 miles northwest of Mills River, Henderson County	10-51 to 9-52	D	53	42	40	42	41	43	50	56	65	66	65	60	74	32	52
3-4470	Mud Creek at Naples --Lat 35°22'52", long 82°29'54", at bridge on U S Highway 25, below Byers Creek, and 0 8 mile south of Naples, Henderson County	11-51, 1-52 to 9-52	M	-	53	-	50	48	48	49	59	70	69	74	68	74	48	-
3-4475	Cane Creek at Fletcher --Lat 35°26'08", long 82°29'23", at bridge on Secondary Road 1551, 0 5 mile above Hooper Creek, and 0 5 mile northeast of Fletcher, Henderson County	10-53 to 9-54	M	56	46	42	46	42	49	53	61	64	76	79	67	79	42	57
3-4478 61	French Broad River near Arden --Lat 35°28'56", long 82°33'30", at Long Shoals Bridge on N C Highway 280, 0 05 mile above Ducker Creek, and 2 6 miles northwest of Arden, Buncombe County at mile 160 7	10-53 to 9-54	D	56	45	43	42	44	47	58	60	69	77	77	71	81	32	57

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Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)--Continued

No on Pl 1	Station name and location	Period of record	Frequency	Average temperatures for period of record												Extremes observed		Average annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Max	Min	
	FRENCH BROAD RIVER BASIN--Continued																	
3-4480	French Broad River at Bent Creek --Lat 35°30'07", long 82°35'35", at Bent Creek, Buncombe County, and 50 ft below Bent Creek, at mile 157 7	[a]10-57 to 9-67	M	57	50	42	39	41	46	56	62	64	68	70	64	75	32	55
3-4510	Swannanoa River at Biltmore --Lat 35°34'06", long 82°32'42", below Biltmore Avenue bridge at Biltmore, Buncombe County, and 1 6 miles above mouth	10-55 to 11-55, 1-56 to 9-56	M	56	57	-	37	42	48	63	61	62	83	79	70	83	37	-
3-4515	French Broad River at Asheville --Lat 35°36'32", long 82°34'41", at Pearson Bridge on Secondary Road 1348 at Asheville, Buncombe County, and 1 0 mile below Mill Creek	10-50 to 11-50, 3-51 to 4-51	D	61	47	-	-	-	51	60	-	-	-	-	-	79	32	-
3-4515	do	[a]10-56 to 9-67	M	60	51	45	42	42	47	58	64	68	72	72	68	78	35	57
3-4530	Ivy River near Marshall --Lat 35°46'10", long 82°37'16", 0 2 mile below bridge on Secondary Road 1586, 1 9 miles above mouth, and 4 0 miles southeast of Marshall, Madison County	10-52 to 9-53	M	64	47	35	39	39	51	52	71	69	71	68	57	71	35	55
3-4535	French Broad River at Marshall --Lat 35°47'10", long 82°39'39", 0 7 mile above Hayes Creek, and 1 5 miles southeast of Marshall, Madison County, at mile 126 7	10-56 to 9-57	M	62	48	52	51	44	52	64	67	76	80	75	75	80	44	62
3-4535	do	[a]10-57 to 9-67	D	58	48	40	38	41	46	55	64	70	74	73	69	83	32	56
3-4540	Big Laurel Creek near Stackhouse --Lat 35°55'11", long 82°45'42", 0 2 mile below Big Hurricane Creek, 2 8 miles north of Stackhouse, Madison County, and 4 2 miles above mouth	10-51 to 9-52	D	63	44	42	44	45	49	57	66	78	79	77	71	88	32	60

3-4545 12	French Broad River at U S Highway 25 at Hot Springs --Lat 35°53'41", long 82°49'23", at bridge on U S Highway 25 at Hot Springs, Madison County, and 0 2 mile below Silver Mine Creek	10-45 to 9-46	D	57	47	36	40	43	49	57	63	71	75	72	67	80	32	56
3-4545 12	do	[a]10-57 to 9-67	M	58	51	39	37	43	46	53	63	69	69	70	65	75	32	55
3-4565	East Fork Pigeon River near Canton --Lat 35°27'42", long 82°52'12", 0 1 mile above U S Highway 276, 0 4 mile below Dix Creek, and 5 2 miles southwest of Canton, Haywood County	10-56 to 9-60	C	56	48	42	40	42	44	52	60	66	70	71	66	82	32	55
3-4570	Pigeon River at Canton --Lat 35°31'30", long 82°50'28', 0 5 mile above U S Highway 19 at Canton, Haywood County, and 1 1 miles below Garden Creek	[a]10-57 to 9-67	M	58	50	42	38	40	43	53	57	64	70	74	67	78	33	55
3-4595	Pigeon River near Hepco --Lat 35°38'07", long 82°59'22", 0 8 mile below Jonathan Creek, and 2 0 miles south of Hepco, Haywood County	[a]10-55 to 9-56, [a]10-57 to 9-67	M	62	55	46	41	42	46	53	65	69	73	75	72	80	37	58
3-4600	Cataloochee Creek near Cataloochee --Lat 35°40'02", long 83°04'23", at bridge on State Highway 284, 0 1 mile above Little Cataloochee Creek, and 2 0 miles north of Cataloochee, Haywood County	[a]10-62 to 9-67	M	48	47	38	38	37	44	46	51	55	63	62	59	69	32	49
3-4600	do	11-62 to [a]11-64, [a]1-65 to 9-67	C	50	46	38	38	37	42	51	54	59	62	62	58	68	32	50
3-4606 18	Hydroelectric Tunnel Millrace at Waterville --Lat 35°46'28", long 83°05'58", at tailrace of Carolina Power and Light power plant, above Big Creek, and at Waterville, Haywood County	[a]10-57 to 9-67	M	62	57	47	47	48	50	58	64	68	71	72	71	76	40	60
3-4620	North Toe River at Altapass --Lat 35°53'59", long 82°01'50", 0 1 mile above Rose Creek, and 1 0 mile northwest of Altapass, Mitchell County	10-48 to 9-49	D	50	48	41	44	43	43	50	59	66	68	66	60	74	32	53
3-4633	South Toe River near Celo --Lat 35°49'52", long 82°11'04", 0 1 mile above Secondary Road 1169, 0 3 mile below White Oak Creek, and 1 9 miles southeast of Celo, Yancey County	10-58 to 5-67, 8-67 to 9-67	C	54	46	38	38	39	44	52	57	62	66	66	62	78	32	52
3-4635	South Toe River at Newdale --Lat 35°54'31", long 82°11'29", at bridge on U S Highway 19E, 0 8 mile northwest of Newdale, Yancey County, and 1 3 miles above Little Crabtree Creek	10-51 to 9-52	M	60	36	43	47	42	43	60	64	72	70	83	52	83	36	56

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Table 1 --Average annual, average monthly, and extreme temperatures of streams in North Carolina (1943-67)--Continued

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				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Max	Min	
	FRENCH BROAD RIVER BASIN--Continued																	
3-4640	Cane River near Bioux --Lat 36°00'52", long 82°19'40", 1 3 miles above North Toe River, and 1 5 miles east of Bioux, Yancey County	10-51 to 9-52	D	57	41	40	42	42	44	51	60	74	73	71	65	79	32	55
3-4645	Nolichucky River at Poplar --Lat 36°04'29", long 82°20'41", at Poplar, Mitchell County, and 0 7 mile above Hollow Poplar Creek	10-53, 1-54 to 9-54	D	55	-	-	38	41	44	57	57	67	72	71	64	78	32	-
	WATAUGA RIVER BASIN																	
3-4790	Watauga River near Sugar Grove --Lat 36°14'18", long 81°49'22", at bridge on Secondary Road 1121, below Cove Creek, and 2 3 miles southwest of Sugar Grove, Watauga County	10-52 to 6-53, 8-53 to 9-53	D	55	45	40	42	43	49	53	68	77	-	79	70	86	32	-
	LITTLE TENNESSEE RIVER BASIN																	
3-5000	Little Tennessee River near Prentiss --Lat 35°08'57", long 83°22'46", 0 1 mile above Owensby Branch, and 1 9 miles north of Prentiss, Macon County	10-52 to 9-53	D	57	49	44	46	47	51	57	65	71	73	72	67	78	37	58
3-5010	Cullasaja River at Cullasaja --Lat 35°09'59", long 83°19'25", at Cullasaja, Macon County above bridge on N C 28, and 1 4 miles below Ellijay Creek	10-54 to 9-55, [a]11-55 to 9-56	M	67	48	39	40	42	57	54	64	63	72	71	67	75	35	57
3-5105	Tuckasegee River at Dillsboro --Lat 35°21'59", long 83°15'38", 0 4 mile below Scott Creek, and 0 6 mile west of Dillsboro, Jackson County	[a]10-57 to 9-67	M	58	51	43	40	42	47	53	58	62	67	69	65	76	34	55
3-5106 1	Connelly Creek at Whittier --Lat 35°25'55", long 83°21'42", at railroad bridge, above mouth, and 0 2 mile south of Whittier, Swain County	[a]11-56 to 9-57	M	-	59	45	39	46	-	-	60	-	73	75	67	75	39	-

3-5110 32	Oconaluftee River at Cherokee --Lat 35°28'30", long 83°19'10", at Cherokee, Swain County, 0 2 mile below U S Highway 441, and 1 1 miles above Soco Creek	10-45 to 9-46	D	52	45	37	40	40	46	50	54	60	64	64	61	69	32	51
3-5120	Oconaluftee River at Birdtown --Lat 35°27'42", long 83°21'13", above bridge, 0 5 mile south of Birdtown, Swain County, and 0 6 mile below Adams Creek	10-49 to 4-50, 6-50 to 9-50	M	60	47	42	48	50	46	48	-	65	62	65	68	68	42	-
3-5130	Tuckasegee River at Bryson City --Lat 35°25'40", long 83°26'50", 0 1 mile below State Highway 288 at Bryson City, Swain County, and 0 6 mile below Deep Creek	10-50 to 9-51	D	61	46	40	40	43	49	52	62	67	71	73	67	78	33	56
3-5130	do	[a]10-57 to 9-67	M	58	49	42	38	42	49	55	63	67	73	70	64	77	33	56
	HIWASSEE RIVER BASIN																	
3-5500	Valley River at Tomotla --Lat 35°08'20", long 83°58'50", at bridge on Secondary Road 1373, at Tomotla, Cherokee County, 0 2 mile above Rogers Creek, and 6 6 miles above mouth	10-52 to 9-53	D	53	46	43	45	46	50	54	61	69	70	69	64	74	37	56
3-5500	do	10-61 to 9-67	C	56	49	42	41	43	48	55	60	65	68	68	64	74	32	55

a Record incomplete

Table 2 --Summary of average monthly stream temperatures in North Carolina computed from continuous records (1953-67)

No on Pl 1	Station name and location	Period of record	Variables for which temperature values are shown in monthly columns	Average temperatures for variables indicated for period of record												Average
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
	CHOWAN RIVER BASIN															
2-0501 6	Chowan River near Eure --Lat 36°30'30", long 76°54'20", at Gatlington Landing, 1 8 miles below Somerton Creek and 6 3 miles northwest of Eure, Gates County	[a]6-66 to 9-67	Average of monthly maximums	74	60	-	49	49	60	-	-	79	85	84	78	-
			Average of daily maximums	67	56	-	44	42	53	-	-	74	82	79	74	-
			Average daily	66	55	-	43	41	51	-	-	73	82	78	74	-
			Average of daily minimums	65	54	-	42	40	49	-	-	72	81	77	73	-
			Average of monthly minimums	57	50	-	38	33	36	-	-	66	78	72	70	-
	ROANOKE RIVER BASIN															
2-0772	North Hyco Creek near Leasburg --Lat 36°24', long 79°12', at bridge on U S Highway 158, 1½ miles above Cobbs Creek and 2½ miles west of Leasburg, Caswell County	6-64 to 9-67	Average of monthly maximums	66	55	52	50	51	58	69	72	76	76	75	72	64
			Average of daily maximums	57	50	42	40	42	50	61	66	71	73	72	66	58
			Average daily	56	48	41	39	40	48	58	64	69	72	71	64	56
			Average of daily minimums	54	46	40	38	39	46	56	63	68	71	70	63	54
			Average of monthly minimums	45	40	35	33	34	38	48	56	64	67	62	56	48
2-0772 3	South Hyco Creek near Hesters Store --Lat 36°21', long 79°08', at bridge on Secondary Road 1102, 1½ miles north of Hesters Store, Person County, and 2½ miles above Mill Creek	5-64 to 6-66, 8-66	Average of monthly maximums	66	58	52	50	52	57	72	73	79	80	81	78	66
			Average of daily maximums	58	52	43	39	41	50	61	69	72	77	77	71	59
			Average daily	56	50	42	38	40	47	58	66	68	76	76	70	57
			Average of daily minimums	55	49	40	36	38	44	55	64	64	74	74	69	55
			Average of monthly minimums	46	40	33	32	32	36	46	57	60	71	69	61	49
2-0772 4	Double Creek near Roseville --Lat 36°21', long 79°06', at bridge on Secondary Road 1166, 1 mile above mouth and 3 miles west of Roseville, Person County	5-64 to 4-67, 7-67 to 9-67	Average of monthly maximums	67	59	56	52	51	60	71	74	80	78	77	72	66
			Average of daily maximums	58	51	45	41	42	51	61	68	73	74	73	67	59
			Average daily	56	49	43	40	40	48	56	65	70	72	71	65	56
			Average of daily minimums	53	47	41	38	39	44	52	62	66	70	69	63	54
			Average of monthly minimums	45	38	36	34	33	36	44	53	56	64	62	56	46
2-0773	Hyco River at McGehees Mill --Lat 36°31'02", long 79°01'42", below bridge on Secondary Road 1322, at McGehees Mill, Person County, and 1 7 miles downstream from dam	9-64 to 9-67	Average of monthly maximums	71	60	53	52	46	57	69	82	86	89	88	80	69
			Average of daily maximums	63	55	47	44	43	50	62	73	80	85	83	74	63
			Average daily	61	54	46	42	42	48	58	70	78	82	81	72	61
			Average of daily minimums	59	52	45	41	41	46	53	67	75	80	79	69	59
			Average of monthly minimums	51	46	40	36	37	40	49	60	65	72	71	62	52

	PAMLICO RIVER BASIN														
2-0830	Fishing Creek near Enfield --Lat 36°09'03", long 77°41'35", at bridge on U S Highway 301, 2,000 ft below Atlantic Coast Line Railroad bridge, and 2.6 miles southwest of Enfield, Halifax County	[a]10-53 to 9-67	Average of monthly maximums	68	57	49	46	48	57	70	73	80	83	82	77	66
			Average of daily maximums	62	51	42	40	43	50	61	68	75	79	78	72	60
			Average daily	62	51	42	40	42	50	60	67	74	78	77	72	60
			Average of daily minimums	61	51	41	39	42	49	60	66	73	77	76	71	59
			Average of monthly minimums	54	46	37	35	39	43	52	60	67	72	72	66	54
2-0841 71	Tar River at Grimesland --Lat 35°34'40", long 77°10'50", at bridge on Secondary Road 1565 below Chicod Creek, and 1.1 miles northeast of Grimesland, Pitt County	10-63 to 9-64, 11-64 to 2-65	Average of monthly maximums	68	62	56	49	52	63	74	82	88	86	85	80	70
			Average of daily maximums	-	57	46	44	46	56	64	76	82	84	82	74	-
			Average daily	65	56	46	43	46	54	63	74	81	84	81	73	64
			Average of daily minimums	-	56	44	42	44	54	62	73	80	83	80	73	-
			Average of monthly minimums	62	51	38	36	40	44	52	63	73	82	76	66	57
2-0845 4	Durham Creek at Edward --Lat 35°19'25", long 76°52'26", at bridge on Secondary Road 1949, at Edward, Beaufort County, and 6-3/4 miles above mouth	11-65 to 9-67	Average of monthly maximums	76	60	54	54	56	65	70	71	78	84	82	76	69
			Average of daily maximums	66	55	46	46	46	56	63	66	72	77	75	70	62
			Average daily	64	54	45	45	44	54	61	64	70	76	74	69	60
			Average of daily minimums	63	52	44	44	43	52	59	62	68	74	74	68	59
			Average of monthly minimums	56	47	40	40	34	42	52	54	60	72	69	63	52
	NEUSE RIVER BASIN														
2-0852 2	Little River near Orange Factory --Lat 36°08'20", long 78°54'24", at bridge on U S Highway 501, 1 mile above Mountain Creek, and 1½ miles northwest of Orange Factory, Durham County	10-61 to 5-65, 8-65 to 9-67	Average of monthly maximums	67	58	49	48	49	59	69	77	82	83	82	77	67
			Average of daily maximums	59	50	42	40	42	50	60	70	76	79	78	70	60
			Average daily	58	49	41	39	41	48	59	68	74	77	76	68	58
			Average of daily minimums	56	48	40	38	40	47	58	65	71	75	74	67	57
			Average of monthly minimums	47	41	35	33	35	40	48	58	65	69	69	60	50
2-0920	Swift Creek near Vanceboro --Lat 35°20'40" long 77°11'40", at bridge on Secondary Road 1478, 2½ miles below Clayroot Swamp, and 3½ miles northwest of Vanceboro, Craven County	[a]12-54 to 7-64	Average of monthly maximums	68	61	53	50	52	61	69	72	78	80	79	76	67
			Average of daily maximums	62	54	44	43	46	54	62	67	72	76	76	72	61
			Average daily	62	53	44	42	45	53	61	66	72	76	76	72	60
			Average of daily minimums	61	52	43	41	44	52	60	66	72	76	75	72	60
			Average of monthly minimums	55	46	38	36	39	45	55	60	67	72	72	67	54
2-0921 62	Neuse River at New Bern --Lat 35°06'42", long 77°01'37", at bridge on U S Highway 17 at New Bern, Craven County, and 0.9 mile above Trent River	10-63 to 8-67	Average of monthly maximums	74	63	52	53	52	62	70	76	82	82	81	80	69
			Average of daily maximums	67	60	48	46	47	54	64	72	78	82	80	70	64
			Average daily	67	59	47	45	46	53	62	70	76	80	79	75	63
			Average of daily minimums	66	59	47	44	45	52	61	68	73	80	78	74	62
			Average of monthly minimums	62	54	42	38	38	43	54	62	71	75	76	70	57

a Record incomplete

Table 2 --Summary of average monthly stream temperatures in North Carolina computed from continuous records (1953-67)--Continued

No on Pl 1	Station name and location	Period of record	Variables for which temperature values are shown in monthly columns	Average temperatures for variables indicated for period of record												Annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
	ROANOKE RIVER BASIN--Continued															
2-0925	Trent River near Trenton --Lat 35°03'50", long 77°27'20", at Free Bridge on secondary Road 1129, 800 ft below Little Chinquapin Branch, and 6 miles west of Trenton, Jones County	12-64 to 4-67	Average of monthly maximums	72	58	52	51	55	61	69	74	76	80	78	77	67
			Average of daily maximum	64	55	46	44	47	54	64	70	72	76	76	74	62
			Average daily	64	54	46	44	46	54	64	70	72	76	76	73	62
			Average of daily minimums	64	54	45	43	46	53	63	70	71	75	76	72	61
			Average of monthly minimums	56	50	41	37	39	46	55	64	67	73	72	69	56
	CAPE FEAR RIVER BASIN															
2-0935	Haw River near Benaja --Lat 36°15', long 79°34', 500 ft above bridge on secondary Road 2620, 6 miles below Troublesome Creek and 6 miles east of Benaja, Rockingham County	[a]8-54 to 9-67	Average of monthly maximums	66	57	48	47	48	58	68	71	76	79	78	74	64
			Average of daily maximums	58	49	40	38	41	49	60	66	70	74	74	68	57
			Average daily	57	48	39	36	40	48	58	64	69	73	72	66	56
			Average of daily minimums	56	47	38	34	39	46	57	63	68	72	71	65	55
			Average of monthly minimums	47	40	34	33	34	39	49	56	63	67	67	58	49
2-1025	Cape Fear River at Lillington --Lat 35°24', long 78°49', at bridge on U.S. Highway 401, ½ mile north of Lillington, Harnett County, and 1 mile below Neal Creek at mile 178	[a]7-59 to 9-67	Average of monthly maximums	76	64	52	49	49	58	69	76	86	88	88	84	70
			Average of daily maximums	67	57	46	43	43	50	63	70	79	82	82	78	63
			Average daily	66	56	45	42	42	50	62	70	78	82	81	76	62
			Average of daily minimums	65	55	44	42	42	49	61	69	76	80	80	75	62
			Average of monthly minimums	57	49	39	38	38	41	56	62	69	74	74	70	56
2-1070	South River near Parkersburg --Lat 34°48'45", long 78°27'26", in Bladen County, at bridge on secondary Road 1503, 1.9 miles southwest of Parkersburg, Sampson County, and 2.1 miles above Cypress Creek	11-61 to 12-62, 2-63 to 9-67	Average of monthly maximums	71	60	52	50	52	61	70	74	80	80	81	77	67
			Average of daily maximums	63	54	45	43	45	54	63	69	74	77	76	72	61
			Average daily	62	53	44	42	44	53	62	68	73	76	76	71	60
			Average of daily minimums	61	52	43	41	43	52	61	66	72	75	76	70	59
			Average of monthly minimums	52	47	37	35	37	42	53	60	66	72	71	65	53
2-1 75 7	Cape Fear River near Phoenix --Lat 34°19'50" long 78°01'40", in Navassa quadrangle, New Hanover County, 4 miles below Black River, 3 miles northeast of Phoenix, Brunswick County and 12 miles above Market Street in Wilmington, at mile 40[illegible]	[a]1-66 to 3-[illegible]	Average of monthly maximums	77	64	-	-	54	64	-	78	-	-	-	-	-
			Average of daily maximums	71	59	-	-	45	56	-	72	-	-	-	-	-
			Average daily	70	58	-	-	44	55	-	71	-	-	-	-	-
			Average of daily minimums	69	58	-	-	42	54	-	70	-	-	-	-	-
			Average of monthly minimums	63	53	-	-	34	44	-	66	-	-	-	-	-

2-1075 71	Cape Fear River near Navassa --Lat 34°17'00", long 77°59'50", in New Hanover County, 1¿ miles below Catfish Creek, and 2 miles northeast of Navassa, Brunswick County, at River Mile 34 0 and 6 0 miles above Market Street in Wilmington	[a]2-66 to 7-67	Average of monthly maximums	79	-	-	58	54	71	76	-	84	92	-	84	-
			Average of daily maximums	74	-	-	49	48	58	68	-	80	86	-	79	
			Average daily	72	-	-	48	46	56	66	-	78	84	-	77	-
			Average of daily minimums	71	-	-	46	45	54	63	-	76	82	-	74	-
			Average of monthly minimums	65		-	44	38	43	57	-	70	76	-	73	-
2-1075 72	Cape Fear River at Royster --Lat 34°16'15", long 78°00'00", at Royster, Brunswick County, 2¿ miles below Indian Creek	[a]11-63 to 9-67	Average of monthly maximums	79	66	57	55	56	65	73	81	86	87	87	84	73
			Average of daily maximums	70	61	51	48	49	57	66	76	80	84	84	78	67
			Average daily	70	60	50	47	48	56	65	74	78	82	82	78	66
			Average of daily minimums	68	59	48	46	46	54	64	72	77	81	80	76	64
			Average of monthly minimums	62	54	44	40	42	46	56	66	71	78	76	74	59
2-1086 37	Northeast Cape Fear River near Castle Hayne -- Lat 34°20'20", long 77°59'40", in Pender County at end of Secondary Road 1428, 4 2 miles below Long Creek and 5 8 miles west of Castle Hayne, New Hanover County	11-63 to 7-66	Average of monthly maximums	75	64	56	53	52	61	71	79	82	83	83	82	70
			Average of daily maximums	68	60	50	47	47	56	66	75	78	81	80	76	64
			Average daily	67	60	50	46	46	54	64	74	77	80	80	76	64
			Average of daily minimums	66	59	49	46	46	54	64	74	76	80	79	76	64
			Average of monthly minimums	60	55	45	39	41	46	57	68	72	77	78	72	59
	W CCAHA' RIVER BASIN															
2-1095	Jacocama River at Freeland --Lat 34°05'43" long 78°32'55", below bridge on State Highway 130, 1 mile southwest of Freeland, Brunswick County, 7 miles below Juniper Creek, and 117 miles above mouth in Smyah Bay	11-62 to 1-64, 3-64 to 9-67	Average of monthly maximums	74	61	55	52	53	62	72	80	81	81	81	79	69
			Average of daily maximums	65	57	47	45	46	57	64	72	75	77	77	73	64
			Average daily	64	56	46	44	46	56	64	71	74	76	77	72	62
			Average of daily minimums	64	56	45	44	45	55	63	70	74	76	76	72	62
			Average of monthly minimums	57	52	42	37	38	46	56	63	68	74	73	67	56
	PEE DEE RIVER BASIN															
2-1120	Yadkin River at Wilkesboro --Lat 36°09', long 81°09', above U S Highway 421A, below Peddies River, and 1 mile northeast of Wilkesboro, Wilkes County, at mile 382	[a]11-57 to 9-67	Average of monthly maximums	67	58	49	46	46	53	60	67	73	76	76	74	62
			Average of daily maximums	61	52	43	41	42	47	54	63	68	72	73	70	57
			Average daily	60	50	42	40	41	46	52	61	66	70	71	68	56
			Average of daily minimums	58	49	41	39	40	44	50	59	64	68	69	66	54
			Average of monthly minimums	50	43	36	35	36	40	46	54	60	65	67	61	49
2-1180	South Yadkin River near Mocksville --Lat 35°51', long 80 40' in Rowan County, at bridge on Secondary Rd 1972, 1 mile above Little Creek, and 6 miles southeast of Mocksville, Davie County	10-61 to 9-67	Average of monthly maximums	64	57	49	47	46	56	65	71	74	77	77	74	63
			Average of daily maximums	57	50	41	40	41	49	58	65	70	73	73	68	57
			Average daily	56	49	40	39	40	48	56	64	69	72	72	67	56
			Average of daily minimums	56	48	40	38	40	47	55	63	68	72	72	66	55
			Average of monthly minimums	48	40	35	34	35	40	48	56	62	68	68	59	49

a Record incomplete

Table 2 --Summary of average monthly stream temperatures in North Carolina computed from continuous records (1953-67)--Continued

No on Pl 1	Station name and location	Period of record	Variables for which temperature values are shown in monthly columns	Average temperatures for variables indicated for period of record												Annual
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
	PEE DEE RIVER BASIN--Continued															
2-1335	Drowning Creek near Hoffman --Lat 35°03'38", long 79°29'39", at bridge on U S Highway 1, 3.4 mile below Deep Creek, and 4 miles northeast of Hoffman, Richmond County	11-53 to 1-57, 5-57 to 9-67	Average of monthly maximums	68	60	52	50	53	60	70	70	74	76	76	73	65
			Average of daily maximums	61	53	45	43	45	52	62	66	70	73	73	69	59
			Average daily	60	52	44	42	44	50	60	65	69	72	72	68	58
			Average of daily minimums	59	51	43	41	43	49	58	64	68	72	72	67	57
			Average of monthly minimums	52	44	37	36	37	42	50	58	63	68	68	62	51
	SANTEE RIVER BASIN															
2-1435	Indian Creek near Laboratory --Lat 35°25'20", long 81°15'50", ½ mile above bridge on secondary Road 1252, 1.1 miles above mouth, and 1½ miles south of Laboratory, Lincoln County	[a]10-53 to 9-67	Average of monthly maximums	67	60	52	52	52	59	68	70	75	77	7.	74	65
			Average of daily maximums	60	52	44	43	46	52	61	66	70	74	74	69	59
			Average daily	58	50	43	42	44	50	59	64	68	72	72	68	58
			Average of daily minimums	57	48	42	41	43	49	57	62	67	71	71	66	56
			Average of monthly minimums	49	42	36	35	37	42	49	55	62	67	66	59	50
	FRENCH BROAD RIVER BASIN															
3-4565	East Fork Pigeon River near Canton --Lat 35°27'42", long 82°52'12", 0.1 mile above U S Highway 276, 0.4 mile below Dix Creek, and 5.2 miles southwest of Canton, Haywood County	10-56 to 9-60	Average of monthly maximums	64	57	50	49	50	54	64	70	78	80	80	77	64
			Average of daily maximums	58	50	44	41	44	47	56	64	70	75	75	69	58
			Average daily	56	48	42	40	42	44	52	60	66	70	71	66	55
			Average of daily minimums	53	45	40	38	40	41	49	56	62	66	67	62	52
			Average of monthly minimums	45	36	34	33	34	36	42	48	58	63	62	56	46
3-4600	Cataloochee Creek near Cataloochee --Lat 35°40'02", long 83°04'23", at bridge on State Highway 284, 0.1 mile above Little Cataloochee Creek, and 2.0 miles north of Cataloochee, Haywood County	11-62 to [a]11-64, [a]1-65 to 9-67	Average of monthly maximums	58	51	46	45	44	52	60	61	65	66	66	63	56
			Average of daily maximums	52	48	39	39	38	45	53	57	61	63	63	59	51
			Average daily	50	46	38	38	37	42	51	54	59	62	62	58	50
			Average of daily minimums	48	44	37	36	36	40	49	52	57	60	60	56	48
			Average of monthly minimums	42	36	34	3.	33	34	41	46	51	56	56	49	43

3-4633	South Toe River near Celo --Lat 35°49'52", long 82°11'04", 0 1 mile above Secondary Road 1169, 0 3 mile below White Oak Creek, and 1 9 miles southeast of Celo, Yancey County	10-58 to 5-67, 8-67 to 9-67	Average of monthly maximums	63	56	47	46	47	53	62	66	71	74	74	69	61
			Average of daily maximums	56	48	40	39	41	46	55	60	65	69	69	64	54
			Average daily	54	46	38	38	39	44	52	57	62	66	66	62	52
			Average of daily minimums	51	44	37	36	37	41	48	54	59	63	63	59	49
			Average of monthly minimums	42	36	33	33	33	35	42	48	54	59	59	52	44
	HIWASSEE RIVER BASIN															
3-5500	Valley River at Tomotla --Lat 35°08'20", long 83°58'50", at bridge on Secondary Road 1373, at Tomotla, Cherokee County, 0 2 mile above Rogers Creek, and 6 6 miles above mouth	10-61 to 9-67	Average of monthly maximums	64	56	50	50	49	56	62	66	70	71	72	69	61
			Average of daily maximums	57	50	43	42	44	50	56	62	66	69	69	65	56
			Average daily	56	49	42	41	43	48	55	60	65	68	68	64	55
			Average of daily minimums	55	48	41	40	42	46	53	59	64	67	67	64	54
			Average of monthly minimums	47	40	35	34	35	39	46	52	59	64	63	57	48

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