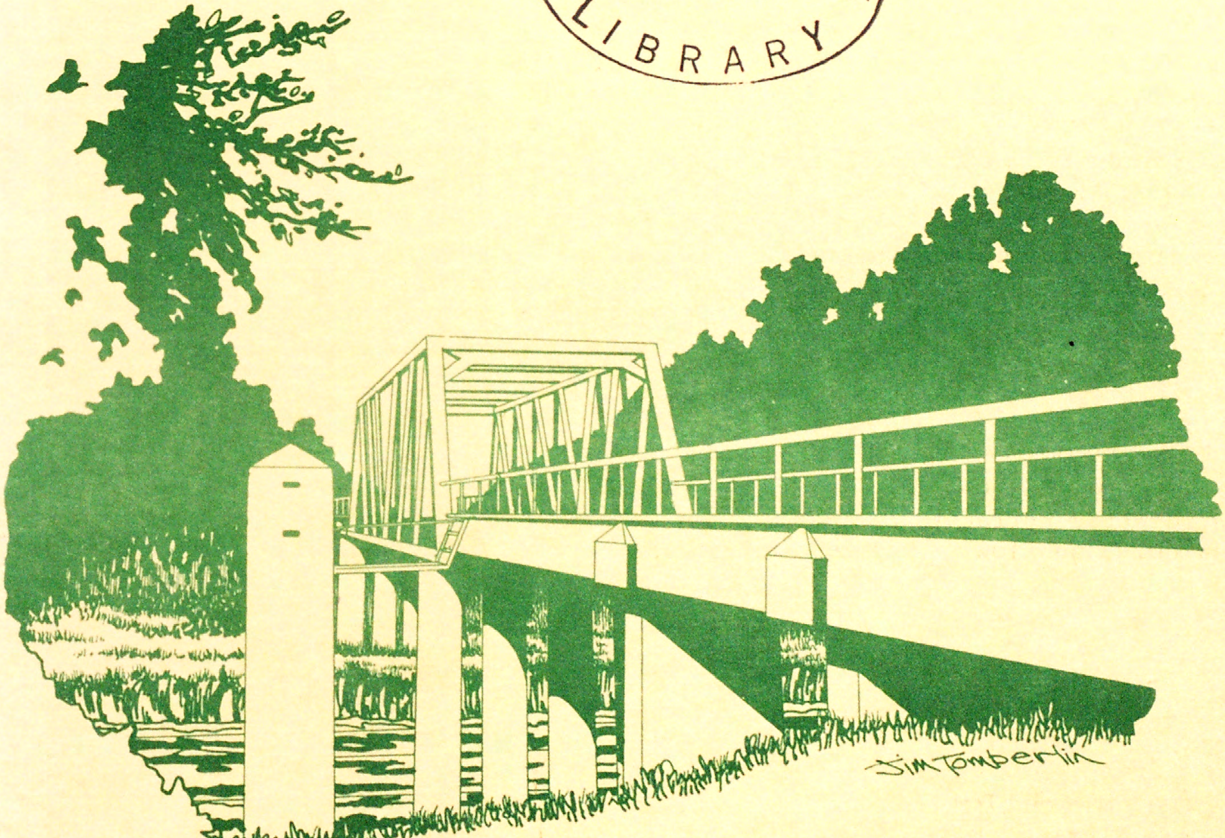
WATER RESOURCES INVENTORY OF NORTHWEST FLORIDA

U. S. GEOLOGICAL SURVEY

Water-Resources Investigation 77-84



Prepared in cooperation with
U. S. ARMY CORPS OF ENGINEERS,
MOBILE DISTRICT

BIBLIOGRAPHIC DATA SHEET	1. Report No.	2.	3. Recipient's Accession No.
4. Title and Subtitle WATER RESOURCES INVENTORY OF NORTHWEST FLORIDA			5. Report Date November 1977 6.
7. Author(s) J. E. Dysart, C. A. Pascale, H. Trapp, Jr., and others			8. Performing Organization Rept. No. USGS/WRI-77- 84
9. Performing Organization Name and Address U.S. Geological Survey, Water Resources Division Suite L-103, 325 John Knox Road Tallahassee, Florida 32303			10. Project/Task/Work Unit No. 11. Contract/Grant No.
12. Sponsoring Organization Name and Address U.S. Geological Survey, Water Resources Division Suite L-103, 325 John Knox Road Tallahassee, Florida 32303			13. Type of Report & Period Covered FINAL 1975-76 14.

15. Supplementary Notes

Prepared in cooperation with the U.S. Army Corps of Engineers

16. Abstracts

Water resources of the 16 counties of the northwest Florida appear adequate until at least 2020. In the 4 westernmost counties, the sand-and-gravel aquifer and streams combined could provide 2,200 to 3,600 million gallons per day of water. Streams outside these counties could provide 5,600 million gallons per day. The Floridan aquifer could provide 220 million gallons per day.

Generally, water of quality suitable for most purposes is available throughout the area, although water in smaller streams and in the sand-and-gravel aquifer is acidic and locally contains excessive iron. Water in the upper part of the Floridan aquifer is generally fresh, but saline at depth and in some coastal areas.

The quantity of water available in the study area is about 8,020 to 9,420 million gallons per day and projected needs for the year 2020 range from 2,520 to 4,130 million gallons per day. "Approximate method" flood-prone area maps cover most of the area. The U.S. Geological Survey was flood-mapping urbanized areas in detail in 1976.

17. Key Words and Document Analysis. 17a. Descriptors *Water resources, *Florida, *Water utilization, *Water demand, *River flow, *Aquifers, *Water quality, *Floods, Consumptive use, Potentiometric surface, Safe yield, Surface runoff, Ground-water recharge, Saline-water intrusion, Base flow, Flood-plain insurance, Water types, Water supply, Gulf coastal plain.

17b. Identifiers/Open-Ended Terms

Northwest Florida, Floridan aquifer, Sand-and-gravel aquifer of northwest Florida, Flood hazards.

17c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 118
No restriction on distribution.	20. Security Class (This Page) UNCLASSIFIED	22. Price

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November 1977

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For those readers who may prefer to use metric units rather than English units, the conversion factors for the terms used in this report are listed below.

Multiply English unit	By	To obtain metric unit
inches (in)	25.4	millimeters (mm)
feet (ft)	.3048	meters (m)
miles (mi)	1.609	kilometers (km)
square miles (mi^2)	2.590	square kilometers (km^2)
acres	.4047	hectares (ha)
gallons (gal)	3.785	liters (L)
million gallons (Mgal)	3,785	cubic meters (m^3)
cubic feet (ft^3)	.0283	cubic meters (m^3)
acre-feet (acre-ft)	.0012	cubic hectometers (hm^3)
cubic feet per second (ft^3/s)	28.32	liters per second (L/s)
cubic feet per day (ft^3/d)	3.278×10^{-4}	liters per second (L/s)
gallons per minute (gal/min)	.0631	liters per second (L/s)
gallons per day (gal/d)	4.381×10^{-5}	liters per second (L/s)
million gallons per day (Mgal/d)	.0438	cubic meters per second (m^3/s)
cubic feet per second per square mile [$(ft^3/s)/mi^2$]	.0109	cubic meters per second per square kilometer [$(m^3/s)/km^2$]
square feet per day (ft^2/d)	.0929	square meters per day (m^2/d)

WATER-RESOURCES INVENTORY OF NORTHWEST FLORIDA

By
J. E. Dysart, C. A. Pascale, H. Trapp, Jr., and Others

ABSTRACT

Water resources of the 16 counties of northwest Florida appear adequate until at least the year 2020. In the four westernmost counties, the sand-and-gravel aquifer and streams combined could provide 2,200 to 3,600 million gallons per day of water. Streams in the other 12 counties could provide at least 5,600 million gallons per day. The Floridan aquifer could provide at least 220 million gallons per day.

Generally, water of quality suitable for most purposes is available throughout the area, although water in some streams and in the sand-and-gravel aquifer is acidic and locally contains excessive iron. Water in the upper part of the Floridan aquifer is generally fresh, but saline at depth and in some coastal areas.

The quantity of water available in the study area is about 8,020 to 9,420 million gallons per day, while projected needs for the year 2020 range from 2,520 to 4,130 million gallons per day.

"Approximate method" flood-prone area maps cover most of the area. The U.S. Geological Survey was mapping urbanized areas in detail with respect to flood hazards in 1976.

INTRODUCTION

The U.S. Army Corps of Engineers, Mobile District, is making a water-resources management study of Pensacola-Tallahassee metropolitan areas of northwest Florida, including the 16-county area from Escambia County east to and including Jefferson County. The Corps of Engineers study was authorized by resolutions adopted in June 1972 and March 1973 by the Committees on Public Works of the Senate and House of Representatives, 92d and 93d Congresses of the United States.

In 1975, the U.S. Geological Survey entered into agreement with the U.S. Army Corps of Engineers to provide hydrologic information for the area of their study. The authors were assisted in preparation of this report by R. P. Rumenik, L. J. Slack, F. P. Kipple, and J. R. Wagner.

Water resources management in the study area included in this report is the responsibility of the Northwest Florida Water Management District (NWFWMD). The NWFWMD extends from a line approximately following the divide between the Wacissa River and Aucilla River drainage basins in Jefferson County west to and including Escambia County.

Major population centers within the area of investigation include Pensacola, Tallahassee, Panama City, and the Fort Walton Beach area.

PURPOSE AND SCOPE

The purpose of this report is to summarize hydrologic information available for the 16-county area of northwest Florida from Escambia County east to and including Jefferson County. The sources of information include the publications and files of the U.S. Geological Survey and of other agencies. Surface-water records were analyzed to determine statistical relations for low-flow, average-flow, and high-flow conditions in major streams. Particular attention was directed to the hydrology of streams at points of entry to the area, and to the hydrology of problem reaches of the streams within the area. Available data on ground-water resources are presented from the standpoint of ground-water use, changes in water levels, and changes in water quality. The future use of water was estimated to the year 2020.

PHYSICAL SETTING

The area of investigation consists of approximately 12,000 mi^2 of the northwest Florida Panhandle (fig. 1). The following 16 counties are included within the study area boundaries:

Escambia	Bay	Calhoun	Gadsden
Santa Rosa	Washington	Jackson	Wakulla
Okaloosa	Holmes	Franklin	Leon
Walton	Gulf	Liberty	Jefferson

Puri and Vernon (1964, fig. 4, p. 7-15) divided northwestern Florida into three physiographic features, the Gulf Coastal Lowlands, the Northern Highlands, and the Marianna Lowlands. The Gulf Coastal Lowlands, adjacent to the coastline, is generally low in elevation and poorly drained. The Northern Highlands extend along the northern boundary of the state and into Alabama and Georgia. The Marianna Lowlands is a generally low area that breaks the continuity of the Northern Highlands, with Grand Ridge and the Tallahassee Hills to the east and the Western Highlands to the west. The region is further divided more or less perpendicular to the coast by eight major streams.

The climate of the study area is typical of much of the gulf coast with heavy rainfall, hot summers and mild winters. Rainfall averages about 60 in annually and relative humidity generally remains high throughout the year. Temperatures during the summer months seldom exceed 100°F but often reach 80°F to 90°F.

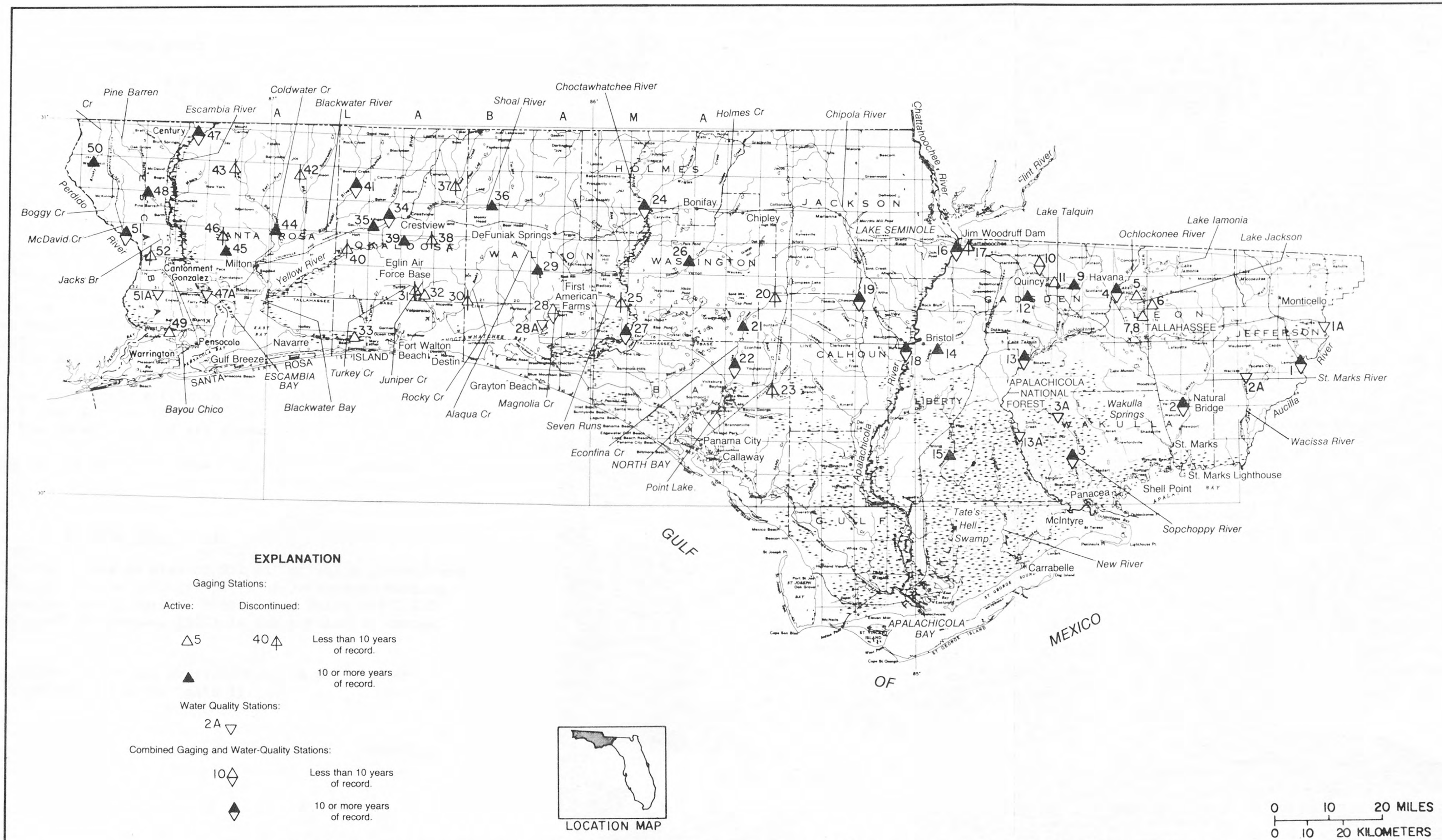


FIGURE 1.--Area of investigation, geographic features, and location of gaging and water-quality stations.

SURFACE WATER

The study area is comprised of 19 drainage basins as shown on the River Basin and Hydrologic Unit Map (fig. 2). Major streams in the area head in Georgia or Alabama and discharge to the Gulf of Mexico.

The major streams draining the area (fig. 1) include the Aucilla, Ochlockonee, Apalachicola, Choctawhatchee, Yellow, Blackwater, Escambia, and Perdido Rivers. The streams have well-defined channels and moderate slopes that provide adequate drainage for most of the area.

Streamflow data collected at daily discharge sites (fig. 1) in the 16-county area are summarized in table 1. The maximum and minimum instantaneous discharges for the period of record are tabulated along with average annual runoff. For streams with 10 or more years of record, statistical summaries are given that include low-flow frequency data based on 1-, 7-, and 30-day flows for a 10-year recurrence interval and flow duration values for 10, 50, and 90 percent exceedence. Locations of the streamflow gaging sites are shown on figure 1.

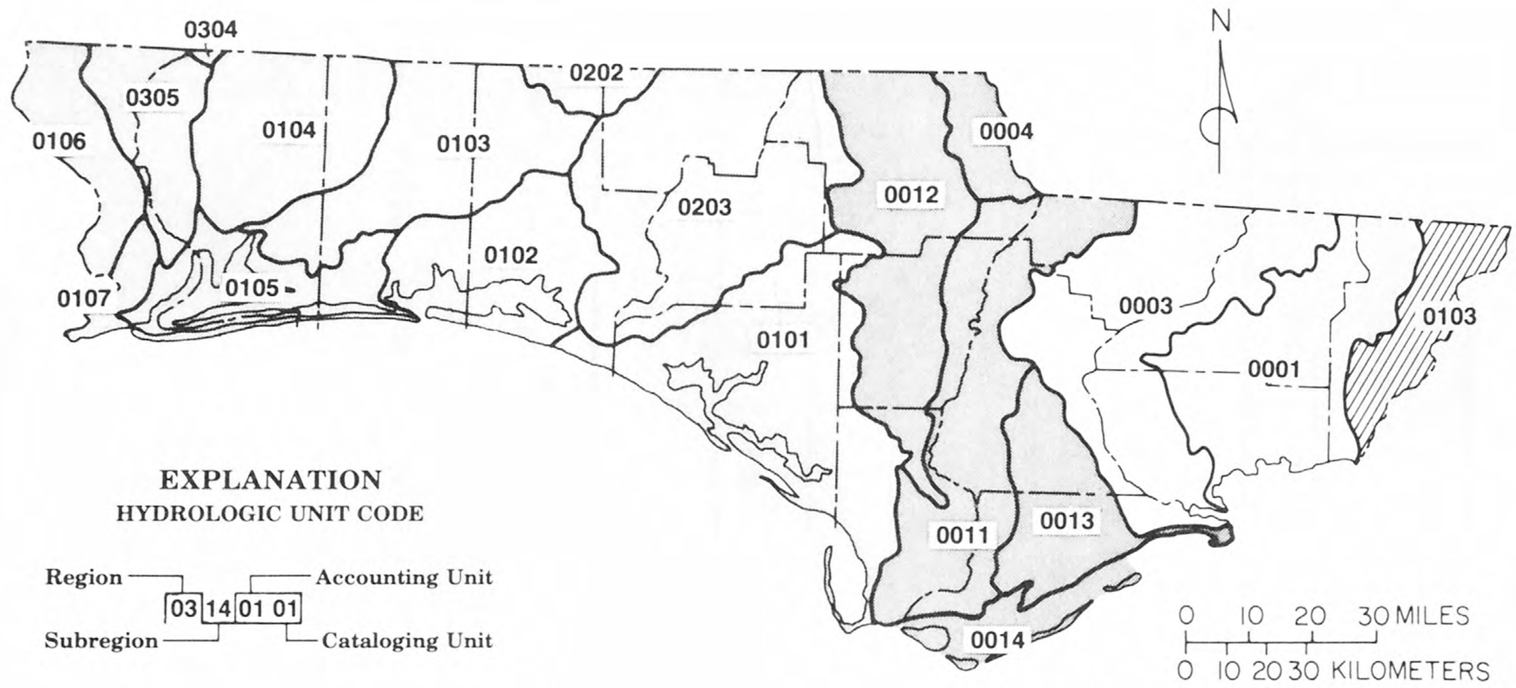
Major lakes in the area include Lake Jackson, Lake Talquin, Lake Iamonia, Lake Seminole, and Deer Point Lake (fig. 1). Stage data for four of the lakes in the 16-county area are summarized in table 2.

The river basins in the 16-county area are described separately below.

Aucilla River Basin

The Aucilla River basin has an area of 952 mi^2 of which 756 mi^2 are in Florida. The basin in Florida includes parts of Jefferson, Madison and Taylor Counties and is mostly rural. Monticello, which had 2,473 residents in 1970 (Bur. of the Census, 1970) is the population center of the area.

Runoff from the basin is low and averages 6.63 in per year or 0.49 $(ft^3/s)/mi^2$ at station 1 (fig. 1, table 1).



HYDROLOGIC UNITS, NAMES, AND AREAS, IN SQUARE MILES, FOR THE SOUTH ATLANTIC–GULF REGION 03 IN FLORIDA
(Number in parenthesis following name refers to designation on superseded Map Series 28.)

Sub-region No.	Accounting Unit	Cataloging Unit	Name of Hydrologic Unit	Drainage Area[1]	Sub-region[2]	Accounting Unit[2]	Cataloging Unit[2]
11			SUWANNEE AND AUCILLA RIVERS		7,832		
	01		Aucilla River and Coastal area			3,572	
12			OCHLOCKONEE RIVER		2,324		
	00		Ochlockonee River			2,324	
		01	St. Marks and Wakulla Rivers and coastal area between Aucilla and Ochlockonee Rivers (11B)				1,047
		03	Ochlockonee River Basin (11C)	2,270			1,277
13			APALACHICOLA, CHATTAHOOCHEE, AND FLINT RIVERS	19,600	3,081		
	00		Apalachicola River			3,081	
		04	Lower Chattahoochee (11E2)				191
		11	Apalachicola River (11E7)				1,061
		12	Chipola River Basin (11E8)	1,237			1,020
		13	Coastal area between Ochlockonee and Apalachicola Rivers (11D)				557
		14	Apalachicola Bay coastal area and offshore islands (11E7)				252
14			CHOCTAWHATCHEE, YELLOW, AND ESCAMBIA RIVERS		6,491		
	01		Florida Panhandle Coastal			4,528	
		01	St. Andrew Bay, inflow and coastal area (11F)				1,351
		02	Choctawhatchee Bay, inflow and coastal area (12B)				692
		03	Yellow River Basin (12C)	1,365			858
		04	Blackwater River Basin (12D)	860			700
		05	Escambia Bay, inflow and coastal area (12B-12E4)				542
		06	Perdido River Basin (12F)	925			252
		07	Perdido Bay, inflow and coastal area (12F)				133
	02		Choctawhatchee River Basin	4,646		1,538	
		02	Pea River (12A3)				108
		03	Choctawhatchee River below Pea River (12A4)				1,430
	03		Escambia River Basin	4,233		425	
		04	Lower Conecuh River (12E1)				8
		05	Escambia River (12E4)				417

[1]Includes area (sq. miles) in adjacent states.
[2]Includes area (sq. miles) in Florida only.

This map and accompanying table delineate the "river basins" and the "Hydrologic Units" for 16 counties in Northwest Florida. A river basin consists of a drainage system composed of a surface stream or a body of surface water together with all tributary surface streams and bodies of water. A river basin contributes runoff to a stream and is bounded by a drainage divide.

A Hydrologic Unit is a geographic area designated as a basis for cataloging and processing the large volumes of hydrologic data and other information that are accumulating in the National Water Data network. Retrieval and statistical analysis of the large volumes of hydrologic data in storage are handled by means of an electronic computer system.

Hydrologic Units depict the basin areal planning units and form a national system for cataloging hydrologic and other information. The boundaries of Hydrologic Units coincide with those of river basins but also delineate areas such as intervening segments of drainage areas and islands, estuaries, coastal lands, and other similar areas that are not part of river basins. The Hydrologic Unit code consists of an eight digit code representing the Region, Subregion, Accounting, and Cataloging Unit. The Regions, Subregions and Accounting Units are aggregates of the Cataloging Units. The Regions and Subregions are currently (1975) used by the U.S. Water Resources Council for comprehensive planning, including the National Assessment, and as a standard geographical framework for more detailed water and related land resources planning. The Accounting and Cataloging Units are those currently (1975) in use by the U.S. Geological Survey for managing the National Water Data Network.

Florida is within the South Atlantic-Gulf Region of the U.S. Water Resources Council (03). The 4 Subregions (Nos. 11–14) in northwest Florida are indicated by patterned shades on the map and are named in the table. Presently 53 cataloging units are recognized and listed in the table. Additional cataloging or sub-units may be added as needed to delineate drainage basins of small tributary streams, bays, or estuaries. Some Hydrologic Units, primarily the Cataloging Units, given in the table include poorly defined coastal areas that do not drain to a point, and intervening and partial drainage areas. The areas of the Hydrologic Units given in the table include only those in Florida.

Modified from Conover and Leach, 1975

FIGURE 2.--River basins and hydrologic units in northwest Flor_da.

Table 1.--Summary of streamflow data for northwest Florida

Map number on figure 1	Stream and place of determination	Drainage area (mi^2)	Period of record (years)	Discharge (ft^3/s)		Average annual discharge		Mean low flow 10-year frequency (ft^3/s)			Flow duration (ft^3/s)		
				Minimum	Maximum	ft^3/s	inches	1 day	7 days	30 days	*Q10	Q50	Q90
	Aucilla River basin, hydrologic unit 03110103												
1	Aucilla River at Lamont	747	1950-75	no flow	11,500	365	6.63	0.78	1.70	1.91	690	62	3.60
	St. Marks and Wakulla Rivers and coastal area between Aucilla and Ochlockonee Rivers, hydrologic unit 03120001												
2	St. Marks River near Newport	535	1956-75	310	4,750	664	16.85	318	326	339	980	560	370
	Ochlockonee River basin, hydrologic unit 03120003												
3	Sopchoppy River near Sopchoppy	97.9	1964-75	1.0	5,260	197	27.33	1.17	1.34	1.97	470	60	3.60
4	Ochlockonee River near Havana	1,140	1926-75	17	55,900	1,020	12.20	27	29	35	2,100	400	73
5	Ox Bottom Creek near Tallahassee	2.36	1973-75	no flow	100	1.2	6.99	-	-	-	-	-	-
6	Fords Arm Tributary at Tallahassee	1.66	1973-75	no flow	114	0.96	7.85	-	-	-	-	-	-

Footnote appears at end of table.

Table 1.--Summary of streamflow data for northwest Florida--Continued

Map number on figure 1	Stream and place of determination	Drainage area (mi^2)	Period of record (years)	Discharge (ft^3/s)		Average annual discharge		Mean low flow 10-year frequency (ft^3/s)			Flow duration (ft^3/s)		
				Minimum	Maximum	ft^3/s	inches	1 day	7 days	30 days	*Q10	Q50	Q90
7	Megginnis Arm above I-10	3.06	1973-75	no flow	658	2.18	9.70	-	-	-	-	-	-
8	Megginnis Arm below I-10	3.10	1973-75	no flow	695	2.12	9.28	-	-	-	-	-	-
9	Little River near Quincy	237	1950-75	6.7	45,600	288	16.51	11	14	23	580	150	37
10	Quincy Creek at S-267 at Quincy	16.8	1974-75	3.6	662	27.0	21.90	-	-	-	-	-	-
11	Quincy Creek at Quincy	21.9	1974-75	6.7	1,120	32.5	20.19	-	-	-	-	-	-
12	Rocky Comfort Creek near Quincy	9.46	1964-75	0.86	7,610	16.1	23.05	1.54	1.86	2.84	20	11	4.10
13	Ochlockonee River near Bloxham	1,720	1926-75	1.0	89,400	1,796	14.19	3.99	20	74	3,500	900	120
14	Telogia Creek near Bristol	126	1950-71 1974-75	28	20,600	213	22.96	32	34	42	360	130	55
	Coastal area between Ochlockonee and Apalachicola Rivers, hydrologic unit 03130013												
15	New River near Wilma	81.7	1964-75	no flow	8,810	166	27.59	.02	.04	.22	300	56	2.00

Table 1.--Summary of streamflow data for northwest Florida--Continued

Map number on figure 1	Stream and place of determination	Drainage area (mi^2)	Period of record (years)	Discharge (ft^3/s)		Average annual discharge		Mean low flow 10-year frequency (ft^3/s)			Flow duration (ft^3/s)		
				Minimum	Maximum	ft^3/s	inches	1 day	7 days	30 days	*Q10	Q50	Q90
	Apalachicola River, hydrologic unit 0313001												
16	Apalachicola River at Chattahoochee	17,200	1928-75	4,950	293,000	22,330	-	5,740	6,040	6,340	40,000	15,000	8,200
17	North Mosquito Creek at Chattahoochee	60	1936-42	0.3	1,310	57	12.80	-	-	-	-	-	-
18	Apalachicola River near Blountstown	17,600	1957-75	6,280	162,500	24,560	-	7,040	7,540	8,200	48,000	18,000	10,000
	Chipola River basin, hydrologic unit 03130012												
19	Chipola River near Altha	781	1921-27 1929-31 1943-75	330	25,000	1,490	25.84	385	405	449	2,600	1,100	580
	St. Andrews Bay, inflow and coastal area, hydrologic unit 03140101												
20	Econfina Creek near Compass Lake	40.5	1962-65	10	1,050	76	25.50	-	-	-	-	-	-

Table 1.--Summary of streamflow data for northwest Florida--Continued

Map number on figure 1	Stream and place of determination	Drainage area (mi^2)	Period of record (years)	Discharge (ft^3/s)		Average annual discharge		Mean low flow 10-year frequency (ft^3/s)			Flow duration (ft^3/s)		
				Minimum	Maximum	ft^3/s	inches	1 day	7 days	30 days	*Q10	Q50	Q90
21	Econfina Creek near Fountain	70.2	1965-75	56	1,550	166	32.11	61	63	72	260	140	92
22	Econfina Creek near Bennett	122	1935-75	307	4,860	527	58.55	340	342	355	650	470	380
23	Bear Creek near Youngstown	67.2	1962-65	34	2,810	172	34.76	-	-	-	-	-	-
	Choctawhatchee River below Pea River, hydrologic unit 03140203												
24	Choctawhatchee River at Caryville	3,499	1929-75	604	88,000	5,389	20.91	796	832	974	11,000	3,500	1,300
25	Seven Runs Creek near Redbay	25.8	1968-70	26	1,520	88.6	46.71	-	-	-	-	-	-
26	Holmes Creek at Vernon	386	1950-75	234	10,900	1,049	22.83	259	263	270	1,200	420	290
27	Choctawhatchee River near Bruce	4,384	1930-75	1,290	76,800	7,056	21.86	1,550	1,580	1,710	13,000	4,400	2,100
	Choctawhatchee Bay, inflow and coastal area, hydrologic unit 03140102												
28	Magnolia Creek near Freeport	11.2	1968-75	14	880	36.4	44.14	-	-	-	-	-	-

Table 1.--Summary of streamflow data for northwest Florida--Continued

Map number on figure 1	Stream and place of determination	Drainage area (mi^2)	Period of record (years)	Discharge (ft^3/s)		Average annual discharge		Mean low flow 10-year frequency (ft^3/s)			Flow duration (ft^3/s)		
				Minimum	Maximum	ft^3/s	inches	1 day	7 days	30 days	*Q10	Q50	Q90
29	Alaqua Creek near DeFuniak Springs	65.6	1951-75	27	17,500	164	33.90	37	39	45	250	100	57
30	Rocky Creek near Niceville	67.0	1966-68	102	1,100	185	37.48	-	-	-	-	-	-
31	Turkey Creek near Niceville	25.0	1966-68	56	224	77.8	42.24	-	-	-	-	-	-
32	Juniper Creek near Niceville	29.5	1966-75	39	1,110	83.8	38.56	39	42	46	110	76	53
	Escambia Bay, inflow and coastal area, hydrologic unit 03140105												
33	East Bay River near Wynnehaven Beach	62.0	1966-68	119	1,140	208	45.54	-	-	-	-	-	-
	Yellow River basin, hydrologic unit 03140103												
34	Yellow River at Milligan	624	1938-75	131	38,600	1,150	25.03	164	171	198	2,200	700	310
35	Baggett Creek near Milligan	7.77	1964-75	6.3	384	20.7	36.18	6.7	7.0	7.9	30	17	10
36	Shoal River near Mossy Head	123	1951-75	39	10,500	233	25.72	45	46	54	400	140	74

Table 1.--Summary of streamflow data for northwest Florida--Continued

Map number on figure 1	Stream and place of determination	Drainage area (mi^2)	Period of record (years)	Discharge (ft^3/s)		Average annual discharge		Mean low flow 10-year frequency (ft^3/s)			Flow duration (ft^3/s)		
				Minimum	Maximum	ft^3/s	inches	1 day	7 days	30 days	*Q10	Q50	Q90
37	Pond Creek near Dorcas	94.8	1966-68	25	2,500	100	14.32	-	-	-	-	-	-
38	Titi Creek near Crestview	62.9	1966-68	69	1,450	142	30.67	-	-	-	-	-	-
39	Shoal River near Crestview	474	1938-75	240	25,200	1,070	30.71	269	279	316	1,800	800	410
40	Yellow River near Holt	1,210	1934-41	885	6,030	2,230	24.80	-	-	-	-	-	-
	Blackwater River basin, hydrologic unit 03140104												
41	Blackwater River near Baker	205	1950-75	60	26,200	324	21.46	62	63	68	530	170	85
42	Big Juniper Creek near Munson	36	1958-67	13	3,900	70	26.40	-	-	-	-	-	-
43	West Fork Big Coldwater Creek at Cobbtown	39.5	1958-62	30	6,250	83.5	28.70	-	-	-	-	-	-
44	Big Coldwater Creek near Milton	237	1938-75	156	32,000	523	29.96	190	196	210	750	350	250
45	Pond Creek near Milton	58.7	1958-75	26	4,580	74.3	17.19	30	30	32	100	60	39
46	Hurricane Branch near Milton	2.95	1960-62	2.5	514	5.2	24.12	-	-	-	-	-	-

Table 1.--Summary of streamflow data for northwest Florida--Continued

Map number on figure 1	Stream and place of determination	Drainage area (mi^2)	Period of record (years)	Discharge (ft^3/s)		Average annual discharge		Mean low flow 10-year frequency (ft^3/s)			Flow duration (ft^3/s)		
				Minimum	Maximum	ft^3/s	inches	1 day	7 days	30 days	*Q10	Q50	Q90
	Escambia River, hydrologic unit 03140305												
47	Escambia River near Century	3,817	1934-75	578	92,300	6,171	21.95	677	710	804	13,000	3,400	1,200
48	Pine Barren Creek near Barth	75.3	1952-75	51	24,000	147	26.51	58	59	62	210	100	71
49	Bayou Marcus Creek near Pensacola	11.2	1958-60	14	225	44	52.99	-	-	-	-	-	-
	Perdido River basin, hydrologic unit 03140106												
50	Brushy Creek near Walnut Hill	49	1958-75	36	9,680	102	28.27	40	41	44	140	68	46
51	Perdido River at Barrineau Park	394	1941-75	188	39,000	742	25.58	208	212	225	1,300	490	280
52	Jacks Branch near Muscogee	23.2	1958-62	2.9	4,230	26	15.32	-	-	-	-	-	-

*Q10 is discharge equalled or exceeded that shown 10 percent of time.

Table 2.--Stage data for four major lakes in northwest Florida

Lake and place of determination	County	Drainage area (mi^2)	Surface area (mi^2)	Period of record (years)	Daily elevations (feet above sea level) Minimum	Maximum	Daily low stage, 10-year frequency (ft) 1 day	7 days	30 days	Daily stage duration (ft) *S_{10}	S_{50}	S_{90}
Ochlockonee River basin, hydrologic unit 03120003												
Lake Jackson near Tallahassee	Leon	43.2	6.25 at 87 ft	1950-53 1954-57 1958-75	75.68	96.53	[1]83.83	[1]83.88	[1]84.02	94.00	88.00	85.00
Lake Talquin near Bloxham	Leon	1,720	10.7 at 60 ft	1930-75	48.70	69.05	58.20	58.57	59.21	69.00	68.00	65.00
Lower Chattahoochee, hydrologic unit 03130004												
Lake Seminole at Chattahoochee	Jackson	17,100	58.6 at 77 ft	1954-75	74.44	78.66	[2]75.29	[2]75.48	[2]75.98	78.00	77.00	76.00
St. Andrews Bay, inflow and coastal areas, hydrologic unit 03140101												
Deer Point Lake near Panama City	Bay	435	7.34 at 4.5 ft	1962-75	4.82	8.03	[3]4.86	[3]4.90	[3]4.92	5.30	5.10	4.90

*S_{10} is elevation equalled or exceeded that shown 10 percent of time.

[1]Based on daily stage from 1961-75.

[2]Based on daily stage from 1958-75; reservoir was filling behind dam 1954-1957.

[3]Based on daily stage from 1963-75.

St. Marks and Wakulla Rivers and Coastal Areas Between Aucilla and Ochlockonee Rivers

The St. Marks River basin lies between the Aucilla River and Ochlockonee River basins and includes parts of Leon, Jefferson, and Wakulla Counties. The basin contains 1,161 mi^2 of which 1,047 mi^2 are in Florida. Its major population center is Tallahassee, whose population was 71,897 in 1970 (Bur. of the Census, 1970).

The channel of the St. Marks River is well defined from its mouth upstream about 15 mi to Natural Bridge. Upstream from Natural Bridge, the channel is poorly defined and surface flow occurs only during extended rainy seasons. Numerous springs in the vicinity of Natural Bridge sustain the low flow of the river. The 7-day low-flow for a 10-year recurrence is 326 ft^3/s at station 2 (fig. 1, table 1); a discharge of 370 ft^3/s is equalled or exceeded 90 percent of the time (table 1). Runoff from the basin averages 16.85 in per year or 1.24 $(ft^3/s)/mi^2$ at station 2. The St. Marks River's largest tributary, the Wakulla River, flows 9 mi southeast from its origin at Wakulla Springs to the confluence of the two rivers at the town of St. Marks.

Ochlockonee River Basin

The Ochlockonee River flows south from Georgia for 116 mi from the Florida-Georgia State line to Ochlockonee Bay. The river drains 2,270 mi^2 of which 1,277 mi^2 are in Florida, including parts of Leon, Gadsden, Wakulla, Liberty, and Franklin Counties. The basin is mostly rural; it includes most of the Apalachicola National Forest and part of the Tates Hell Swamp. Population is concentrated around Quincy in Gadsden County in the northern part of the basin. The 1970 population of Quincy was 8,334 (Bur. of the Census, 1970).

Runoff from the streams in the basin is highly variable, ranging from 27.33 in per year or 2.01 $(ft^3/s)/mi^2$ in the Sopchoppy River (station 3, fig. 1) to 12.20 in or 0.89 $(ft^3/s)/mi^2$ in the Ochlockonee River near Havana (station 4). Quincy Creek (station 10), the principal source of water for the city of Quincy, had an average discharge of 27 ft^3/s during the 1975 water year. Its minimum instantaneous discharge was 3.6 ft^3/s or 2.3 Mgal/d.

Major lakes in the Ochlockonee River basin include Lake Jackson, Lake Talquin, and Lake Iamonia. Lake Jackson is about 7 mi north of the center of Tallahassee. It occupies part of a natural closed depression that is non-contributing to the Ochlockonee basin (Hughes, 1969). Stage data in table 2 show that the extreme range in stage of the lake has been about 20 ft. It has been virtually dry at times. Lake Talquin is a 10.7 mi^2 reservoir on the Ochlockonee River and is about 65 mi upstream from the river's mouth. Its extreme range in stage has been 20 ft. Lake Iamonia is about 10 mi northeast of the center of Tallahassee. Until late 1976 when a dam was constructed at the outlet, water flowed between the Ochlockonee River and Lake Iamonia according to the relative stage of each. Sparse stage data are available for the lake.

Coastal Area Between Ochlockonee and Apalachicola Rivers

The coastal basin between the Ochlockonee and Apalachicola Rivers is in Liberty and Franklin Counties and includes 557 mi^2. Tates Hell Swamp is the prominent feature of the area and the largest town is Carrabelle, whose population was 1,044 in 1970 (Bur. of the Census, 1970). The principal stream is the New River, which drains 320 mi^2 and is 56 mi long. The average annual runoff at station 15 (fig. 1, table 1) is 27.59 in or 2.03 $(ft^3/s)/mi^2$.

Apalachicola River and Chipola River Basins

The Apalachicola River and Chipola River basins in Florida include parts of Gulf, Franklin, Liberty, Calhoun, Bay, Washington, Jackson, and Gadsden Counties.

Florida's largest stream in terms of average flow, the Apalachicola River, is formed by the confluence of the Flint and Chattahoochee Rivers at the Georgia-Florida line. The Apalachicola River drains 19,600 mi^2, of which 2,400 mi^2 are in Florida and the remainder in Alabama and Georgia. Jim Woodruff dam forms Lake Seminole (about 37,500 acres) at the confluence of the Flint and Chattahoochee Rivers. From Lake Seminole, the Apalachicola River flows south 106 mi to Apalachicola Bay. Near Jim Woodruff dam (station 16, fig. 1 and table 1), the average flow of the Apalachicola River is 22,330 ft^3/s.

The Chipola River, as part of the Apalachicola basin, drains an area of 1,237 mi^2 of which 1,020 mi^2 are in Florida and flows into the Apalachicola River about 20 mi above Apalachicola Bay. The average runoff from the basin at station 19 (fig. 1, table 1) is 25.84 in per year or 1.91 $(ft^3/s)/mi^2$.

St. Andrews Bay, Inflow and Coastal Area

The coastal basin between the Apalachicola and Choctawhatchee Rivers extends from the city of Apalachicola west to Grayton Beach and includes the coastal parts of Gulf, Bay, and Walton Counties and 1,351 mi^2. Econfina Creek is the principal stream. It drains 435 mi^2, mostly in Bay County, and discharges into Deer Point Lake, which is the source of water for Panama City--the largest community in the area, whose population in 1970 was 32,096 (Bur. of the Census, 1970). Runoff from the basin averages 58.55 in per year or 4.32 $(ft^3/s)/mi^2$ at station 22 (fig. 1, table 1) and is the highest runoff for any gaged stream in the study area. This high runoff is a result of artesian springflow to the lower reach of the creek (Musgrove, Foster, and Toler, 1965, p. 16).

Deer Point Lake, a freshwater lake, was formed in 1961 by construction of a saltwater barrier (or dam) across North Bay (Musgrove, Foster, and Toler, 1965, p. 45; Hughes, 1970). The lake stores approximately 32,000 acre-ft of water at a level of 4.5 ft above sea level. It has an extreme range in stage of about 3 ft since 1962 (table 2); but the stage is within 0.2 ft of 5.10 ft about 80 percent of the time.

Choctawhatchee River Below Pea River

The Choctawhatchee River, the fourth largest stream in Florida in terms of average flow, is joined by the Pea River about 1 mi, or 2.5 river miles north of the Alabama-Florida border, outside the area shown in figure 1. It then flows southwesterly about 87 mi from the border to the east end of Choctawhatchee Bay. Of the 4,646 mi^2 in the basin about 1,538 mi^2 are in Florida. Parts of Washington, Walton, Holmes, and Jackson Counties are in the basin. The two largest towns are Bonifay and Chipley (populations 2,068 and 3,347, respectively, in 1970, Bur. of the Census, 1970).

Runoff from the basin averages 21.86 in per year or 1.61 $(ft^3/s)/mi^2$ at station 27 (fig. 1, table 1). Holmes Creek is the river's largest tributary in Florida and it has an average runoff of 22.83 in per year or 2.71 $(ft^3/s)/mi^2$ at station 26 (fig. 1, table 1).

Choctawhatchee Bay, Inflow and Coastal Area

The coastal basins between the Choctawhatchee and Yellow Rivers lie principally in the southern half of Walton and Okaloosa Counties and in a part of Santa Rosa County. Fort Walton Beach is the largest city. Its population in 1970 was 19,994. The adjacent cities, Niceville and Valparaiso, were next largest--their combined population was 10,528 in 1970 (Bur. of the Census, 1970). The area includes Magnolia, Alaqua, Rocky, Turkey, and Juniper Creeks. The largest stream is Alaqua Creek, which drains 125 mi^2 in southern Walton County. Runoff at station 29 (fig. 1, table 1), averages 33.90 in per year or 2.50 $(ft^3/s)/mi^2$. Juniper Creek (station 32, fig. 1, table 1), has an average runoff of 39.56 in per year or 2.84 $(ft^3/s)/mi^2$. The high base flow of these streams is attributed to ground-water seepage from the sand-and-gravel aquifer. Magnolia Creek (station 28, fig. 1, table 1) has an average annual runoff of 44.14 in per year or 3.25 $(ft^3/s)/mi^2$. The subsurface return flow of irrigation water may account for its higher runoff (Pascale, 1974, p. 39).

Yellow River Basin

The Yellow River flows south from Alabama to the center of Okaloosa County, then southwest through Santa Rosa County into Blackwater Bay. The Yellow River basin covers 1,365 mi^2, of which about 865 mi^2 are in Florida. Shoal River, the largest tributary, drains 499 mi^2 and flows west from Walton County to the Yellow River near the center of Okaloosa County. The Yellow River basin is a sparsely populated rural area. The largest city is Crestview; its population in 1970 was 7,952 (Bur. of the Census, 1970). Discharge data collected at major streams in the Yellow River basin indicate that average annual runoff ranges from 30.71 in per year or 2.26 $(ft^3/s)/mi^2$, for Shoal River (station 39, fig. 1, table 1) to 25.03 in per year or 1.84 $(ft^3/s)/mi^2$, for Yellow River at station 34.

Blackwater River Basin

The Blackwater River lies northwest of and parallel to the Yellow River. It flows south about 50 mi from Alabama through the northwest corner of Okaloosa County and then southwest in Santa Rosa County to Blackwater Bay near Milton. The Blackwater River drains 860 mi^2, of which about 700 mi^2 are in Florida. Big Coldwater Creek, draining 241 mi^2, is the largest tributary. The basin is a rural area, largely forested and sparsely populated; most of the population is in or near Milton, whose population was 5,360 in 1970 (Bur. of the Census, 1970).

Average runoff from the Blackwater River basin ranges from 29.96 in per year or 2.21 $(ft^3/s)/mi^2$ for Big Coldwater Creek to 17.19 in per year or 1.27 $(ft^3/s)/mi^2$ for Pond Creek (stations 44 and 45, fig. 1 and table 1). Base flow to the streams is derived from seepage from the sand-and-gravel aquifer.

Escambia River

In terms of average flow, the Escambia River is the fifth largest river in Florida. It flows south from Alabama for 59 mi into Escambia Bay near Pensacola, and is the boundary between Santa Rosa and Escambia Counties. The river drains 4,233 mi^2; about 425 mi^2 are in Florida. The largest tributary to the Escambia River within Florida is Pine Barren Creek, which drains 98 mi^2. Large paper and chemical companies are in the basin, both in Florida and in Alabama. The population is centered in the southern part near Pensacola, which has 59,507 residents (Bur. of the Census, 1970) and is the second largest city in the study area. The average runoff from the basin at Escambia River near Century (station 47, fig. 1, table 1) is 21.95 in per year or 1.62 $(ft^3/s)/mi^2$.

Perdido River Basin

The Perdido River flows south in Florida for 58 mi to Perdido Bay near Pensacola and forms part of the boundary between Florida and Alabama. The part of its basin in Florida lies in a narrow band, 5 to 10 mi wide, along the western edge of Escambia County. The Perdido River drains 925 mi^2 of hilly terrain, of which 252 mi^2 are in Florida. The four major tributaries to the river in Florida are Brushy Creek, Boggy Creek, McDavid Creek, and Jacks Branch. The Perdido basin in Florida is largely rural and sparsely populated. Runoff from the basin averages 25.58 in per year or 1.88 $(ft^3/s)/mi^2$ at station 51 (fig. 1, table 1).

Floods

Northwest Florida has numerous flooding and drainage problems, many affecting urban and developing areas. Flood damage from inundation occurs along rivers, in coastal areas, near lakes, as a result of sheet flow, and from ponding in depressions. Flood energy causes damage, too, in areas where riverine or coastal flood-water velocities are great.

It is beyond the scope of this report to identify all areas of known flooding in the northwest Florida urban areas. Instead, the intent in this section is to identify some of the flood-plain management activities and flood studies, past, present, and future.

The city and county communities in northwest Florida have taken various approaches toward managing flood-prone areas. In Leon County, a "Master Drainage Plan" is being considered. Under provisions of this plan, runoff from some areas would be slowed or retained, thereby reducing the flooding problems. Some of the other communities have restricted or regulated development in known flood-prone areas.

The major recent development in flood studies and flood-plain management has been through the national flood insurance program, administered by the Federal Insurance Administration (FIA) an agency of the Department of Housing and Urban Development (HUD). Upon entry of a community into the program, flood insurance is available through the National Flood Insurance Act of 1968, as amended, and the Flood Disaster Act of 1973.

Flood-prone area maps prepared by "approximate methods" are based on topographic quadrangle maps. They show an approximation of the areas subject to flooding from the 100-year flood, derived from available streamflow records, topography, and areas known to be subject to flooding. They are prepared for areas of low population density and as preliminary flood studies of other areas, under provisions of the emergency phase of the flood-insurance program. Almost all of northwest Florida has been mapped by "approximate methods" (fig. 3).

The flood-prone area map for Gadsden County has been compiled from topographic quadrangles (Rumenik and others, 1975). A part of this map is shown in figure 4 for the Quincy area. These maps are available at the Tallahassee offices of the U.S. Geological Survey.

FIA plans to have Type 15 flood studies made of all northwest Florida communities that enter the flood-insurance program. These are detailed studies of the existence and severity of flood hazards in urban and developing areas where flooding problems exist. They delineate zones according to flood hazard for insurance purposes and are used by planners in their efforts to promote sound flood-plain management. The status of these studies is shown in figure 5. A flood study of Wakulla County was in progress in 1976, except for the coastal areas which were to be completed later. Part of the coastal areas west of Bay County are completed, but the riverine part is not. Flood studies of Bay County and the town of Callaway began in the summer of 1976.

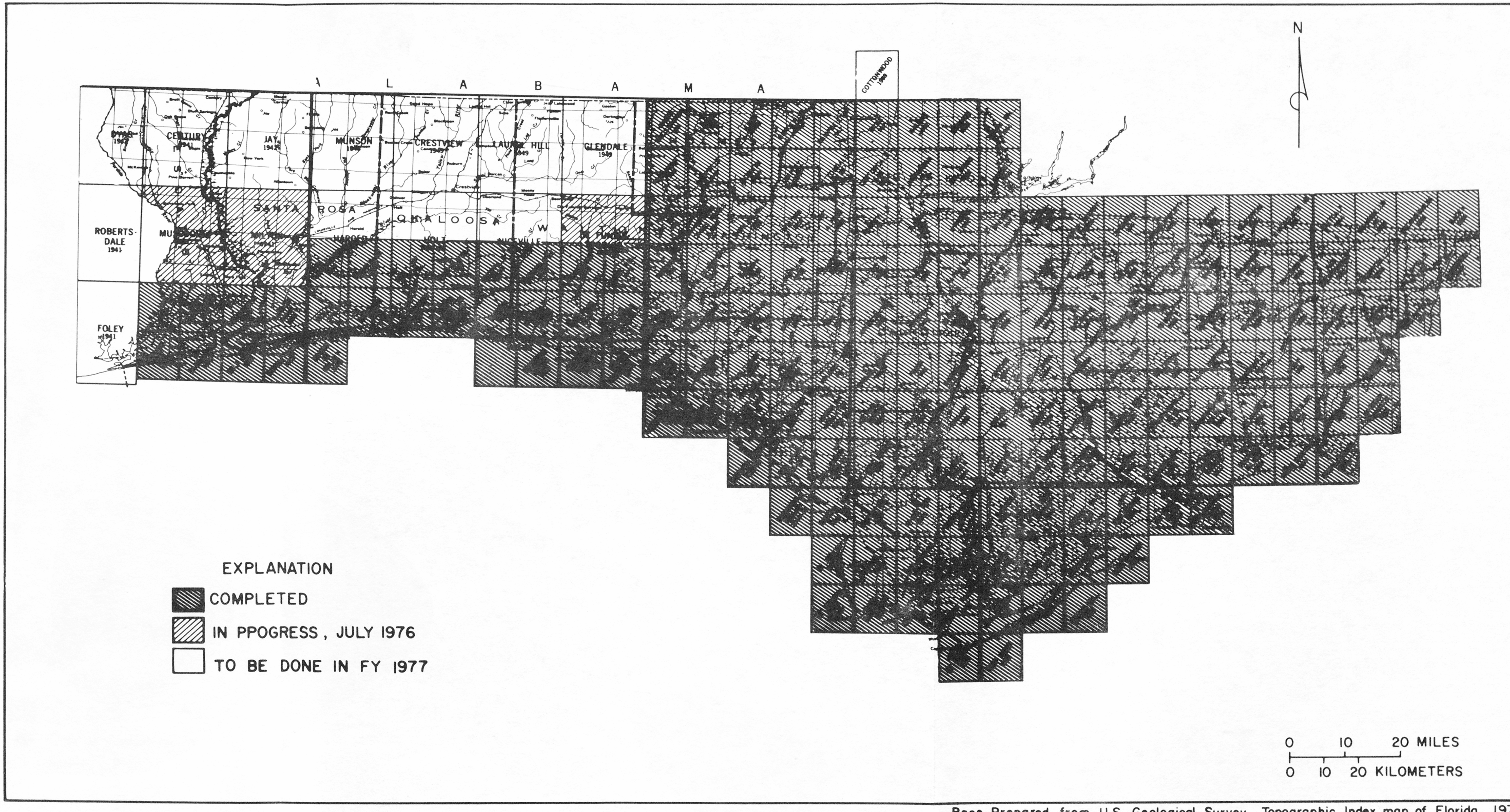


FIGURE 3.--Index of flood-prone area maps of northwest Florida.

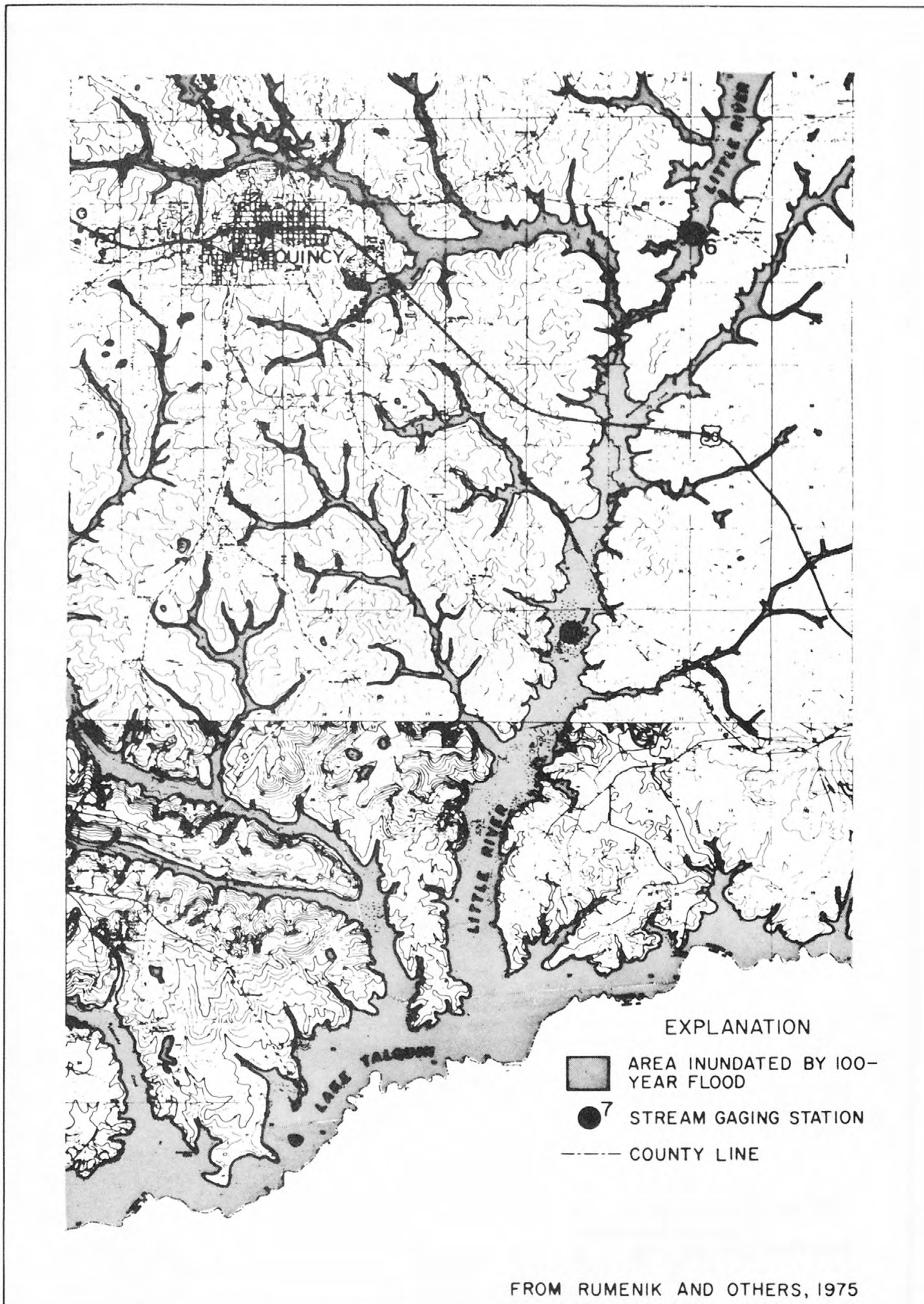


FIGURE 4.--A section of the Gadsden County flood prone area map.

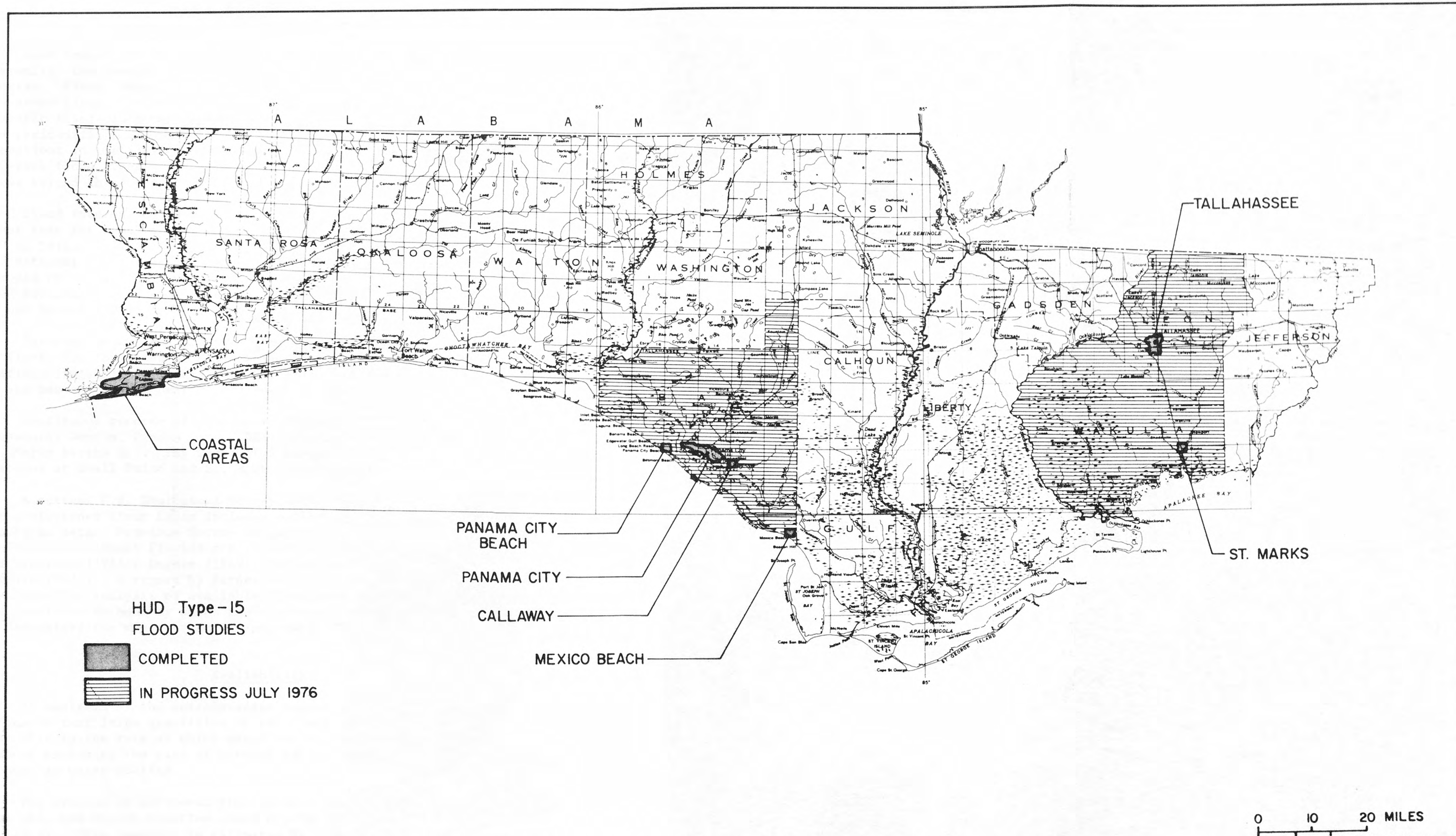


FIGURE 5.--Location of Type 15 Federal Insurance Administration flood studies in northwest Florida.

Upon completion of a detailed study of the flood-prone areas of a community, the community enters the regular phase of the insurance program. Flood insurance rates are then fixed for property according to its probability of flooding. The community must at this time enact specific flood-plain management regulations which prohibit new commercial and residential building in floodways and velocity zones. First-floor elevations in the flood plain must be at least as high as the expected 100-year flood event. The community can restrict use of flood-prone areas beyond these requirements.

Flood information available for northwest Florida from sources other than FIA studies includes reports of U.S. Army Corps of Engineers (1970, 1971a, 1971b, 1971c, 1972, 1975a, 1975b, 1975c). Personnel of the National Oceanic and Atmospheric Administration (NOAA) have developed a model to simulate storm surge in coastal areas. The model has been used for storm surge analyses in northwest Florida (Ho and Tracey, 1975; Ho and Meyers, 1975; and Overland, 1975).

Information on peak stages, discharges, and flood statistics is available for the sites of U.S. Geological Survey continuous-recording stations (fig. 1). At other stations that record only peak stages, the Survey has calculated peak discharges from stage-discharge relationships.

Continuous records of stage are obtained at coastal stations near Pensacola, Destin, Panama City, Apalachicola, Carrabelle, McIntyre, and St. Marks by the U.S. Army Corps of Engineers. NOAA operates tidal stations at Shell Point and St. Marks lighthouse.

A current U.S. Geological Survey water-resources investigation of the Ochlockonee River basin includes collecting peak-stage and peak-discharge data. Previous Survey investigations containing flood information for northwest Florida are reports by Musgrove, Barraclough, and Grantham (1965); Hughes (1969); Bridges and Davis (1972); and Pascale (1974). A report by Barnes and Golden (1966) also presents the results of an analysis of available flood data through September 1961 and describes methods by which the magnitude and frequency of floods can be determined for most streams in northwest Florida.

Availability

An analysis of the surface-water resources of northwest Florida indicates that large quantities of water are available. The water available is the rate at which water can be continuously withdrawn without exceeding the rate of natural replenishment or causing undesirable changes in water quality.

The streams in northwest Florida exclusive of Escambia, Santa Rosa, Okaloosa, and Walton Counties could provide at least 5,600 Mgal/d of water (table 3). This quantity is estimated by summing the 7-day 10-year low flow computed for streams in the 12 counties.

The streams in Escambia, Santa Rosa, Okaloosa, and Walton Counties receive a major portion of their base flow from the sand-and-gravel aquifer which underlies the four counties (fig. 6). In this report, therefore, the streams and the sand-and-gravel aquifer in these counties are considered as one unit for water-availability analyses. The streams and aquifer combined could provide a minimum of about 2,200 Mgal/d of water, estimated by adding 7-day 10-year low flows of streams (table 3).

These estimates are conservative because low flows are computed only for those streams with a minimum of 10 years of record and the estimates do not include all surface waters of the 16 counties.

Although adequate water supplies are available in the study area, localized problems do exist and they are explained later in this report.

It should also be pointed out that all the major rivers in northwest Florida originate in either Georgia or Alabama and in some instances large parts of the basins lie outside Florida. The Aucilla River basin has 20 percent of the basin in Georgia, 13 percent of the St. Marks River and 44 percent of the Ochlockonee River basins are in Georgia, 88 percent of the Apalachicola River basin is in Georgia and Alabama, 68 percent of the Choctawhatchee River, 37 percent of the Yellow River, 19 percent of the Blackwater River, 90 percent of the Escambia River, and 73 percent of the Perdido River basins are in Alabama. For the purpose of this study, it was assumed that all water flowing in the streams regardless of where it originated was available for use in Florida.

GROUND WATER

Geohydrology

Northwest Florida is underlain by sediments that range in age from Paleozoic to Holocene. The marine sediments of late Eocene age, together with younger formations of Oligocene and Miocene age, constitute the Floridan aquifer, which underlies all of northwest Florida (fig. 6), and is the deepest known freshwater aquifer. The sand-and-gravel aquifer consists of deposits of Miocene to Pleistocene age and generally is limited to the area west of the Choctawhatchee River. Elsewhere in northwest Florida, unnamed shallow aquifers consisting of unconsolidated to weakly consolidated sediments yield small quantities of water to wells, adequate for domestic and stock use.

Figure 7 illustrates geohydrologic conditions in the westernmost part of northwest Florida, showing the relative positions of the Floridan aquifer, the overlying confining beds of clay, and the sand-and-gravel aquifer as well as zones of saline and brackish water and freshwater. In general, the upper parts of the Floridan and sand-and-gravel aquifers contain freshwater.

Table 3.--Estimate of water available in northwest Florida

Source	Water available (Mgal/d)
Floridan aquifer	220
Streams east of Walton County	[1]5,600
Sand-and-gravel aquifer (both ground and surface water for Escambia, Santa Rosa, Okaloosa, and Walton Counties)	[2]2,200 - [3]3,600
TOTAL	8,020 - 9,420

[1]Sum of 7-day 10-year low flows for stations 1-3, 13, 14, 15, 18, 19, and 22 on figure 1 and listed on table 2.

[2]Sum of 7-day 10-year low flows for stations 27, 29, 32, 34, 35, 39, 41, 44, 45, 47, 48, and 51 on figure 1 and listed on table 2.

[3]Product of unit base runoff and land area of aquifer (p. 61).

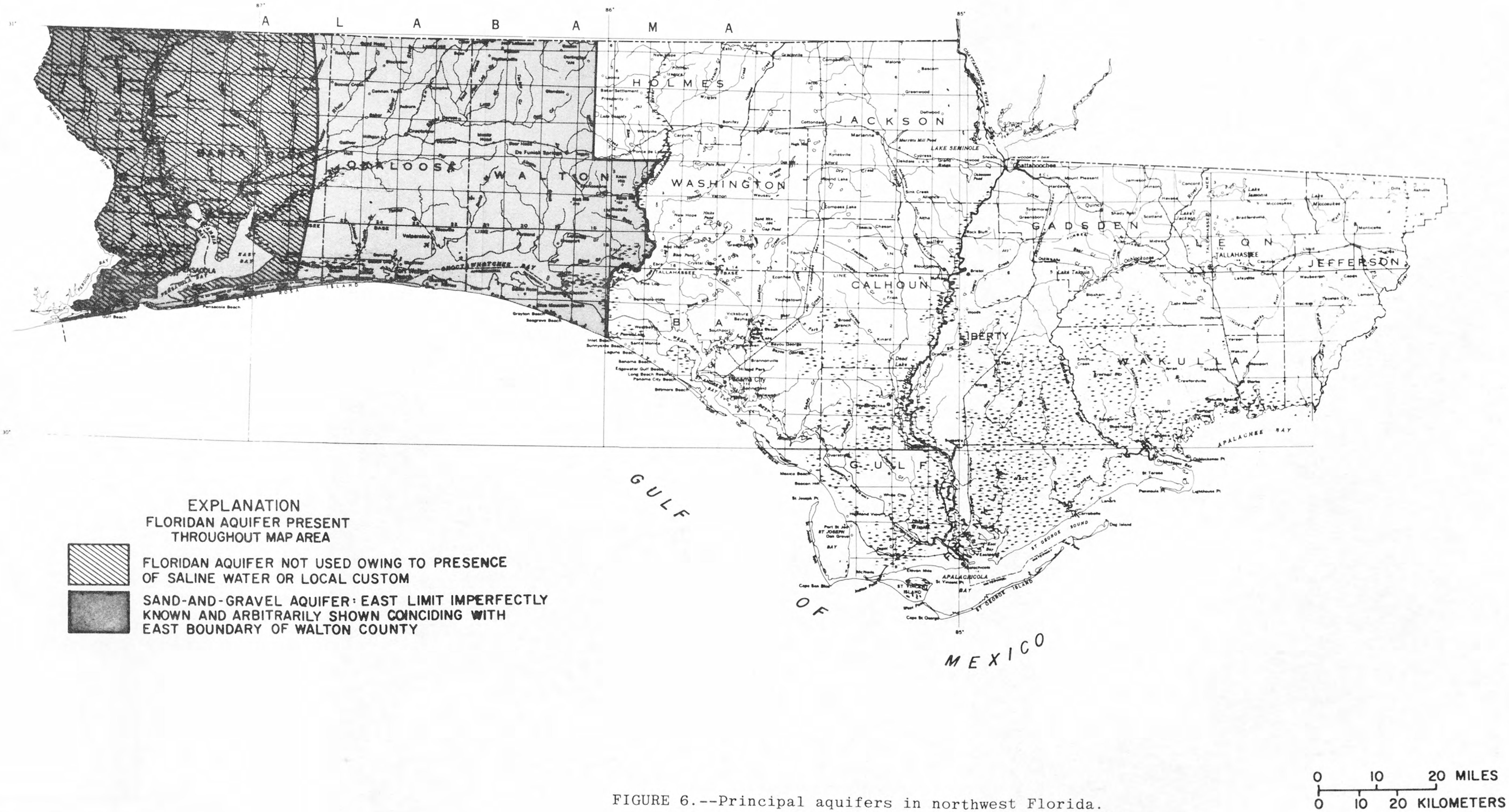


FIGURE 6.--Principal aquifers in northwest Florida.

MODIFIED FROM *NORTWEST FLORIDA WATER MANAGEMENT DISTRICT*, 1975.

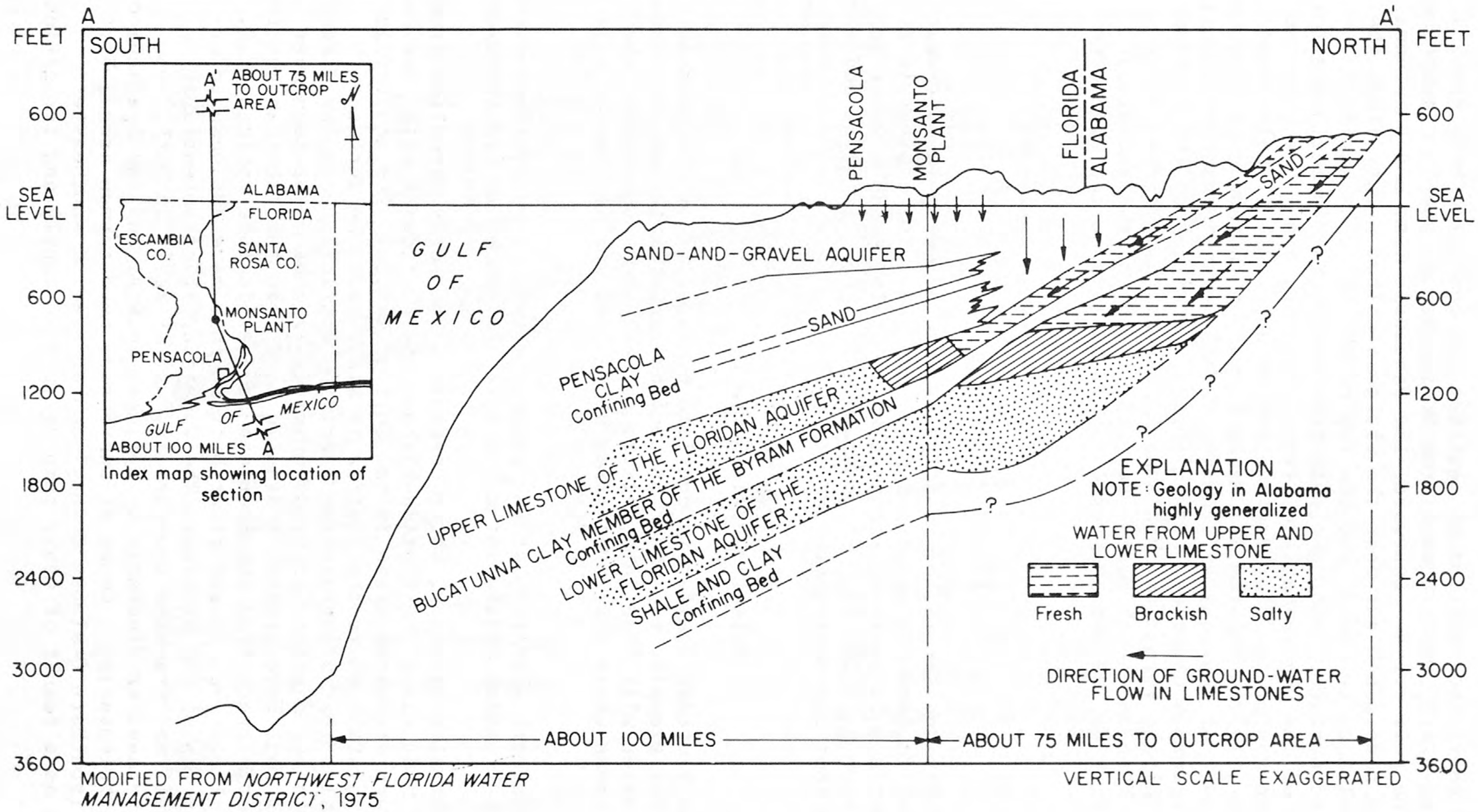


FIGURE 7.--Diagrammatic geologic section across Escambia and Santa Rosa Counties.

Figure 8 shows the relation of aquifers and confining beds along a section running nearly west to east from Mobile Bay to the Choctawhatchee River along the gulf coast. Eastward, the Pensacola Clay and Bucatunna clay confining beds pinch out near the Okaloosa-Walton County line, the sand-and-gravel aquifer thins, and the top of the Floridan aquifer approaches land surface. Hydrogeologic information is discontinuous for the area east of the Choctawhatchee River. However, along the coast at Panama City the top of the Floridan aquifer is about 250 ft below land surface (Foster, 1972), and the St. Marks Formation and Suwannee Limestone that make up part of the aquifer crop out further east in eastern Wakulla and southern Jefferson Counties. Other formations making up the Floridan aquifer--the Chipola Formation, Marianna Limestone, and Crystal River Formation and "Duncan Church beds"--crop out in the north-central part of northwest Florida (Vernon and Puri, 1964), but are buried elsewhere in the area.

The Floridan Aquifer

The Floridan aquifer is the principal source of water in northwest Florida, except in Escambia and Santa Rosa Counties. The aquifer is at or near the surface in parts of the area and contains potable water to depths of as much as 1,200 ft. It consists chiefly of limestone and dolomite beds that dip southwesterly.

Potentiometric Surface

Where the Floridan aquifer is overlain by material of low permeability, clay for example, the water is confined under artesian pressure--that is, the water will rise in a well to a level above the top of the aquifer. In areas where the level rises above land surface, wells will flow.

The approximate elevation of the potentiometric or water-level surface of the Floridan aquifer at midyear 1974 is shown in figure 9.

Under natural conditions, water moves in a southerly direction from areas of high head along the Florida-Alabama and Florida-Georgia line, generally toward discharge areas in the Gulf of Mexico. The aquifer is recharged by rainfall where the aquifer is at or near the surface--through sinkholes that penetrate the overlying confining beds, by direct infiltration to the aquifer, or by downward leakage of water from overlying aquifers that have greater hydraulic head than the Floridan aquifer. Natural discharge areas from the Floridan aquifer include springs (U.S. Geol. Survey, 1975, fig. 7) and river bottoms that have cut down to or just above the top of the aquifer. The wide spacing of potentiometric contours in Gulf and Franklin Counties is due, at least in part, to loss of head by aquifer discharge to springs, swamps, and the Apalachicola River and its tributaries. Cones of depression have formed around Fort Walton Beach (southern Okaloosa County) and an area of southeastern Walton County as a result of heavy pumping (public supply and irrigation, respectively).

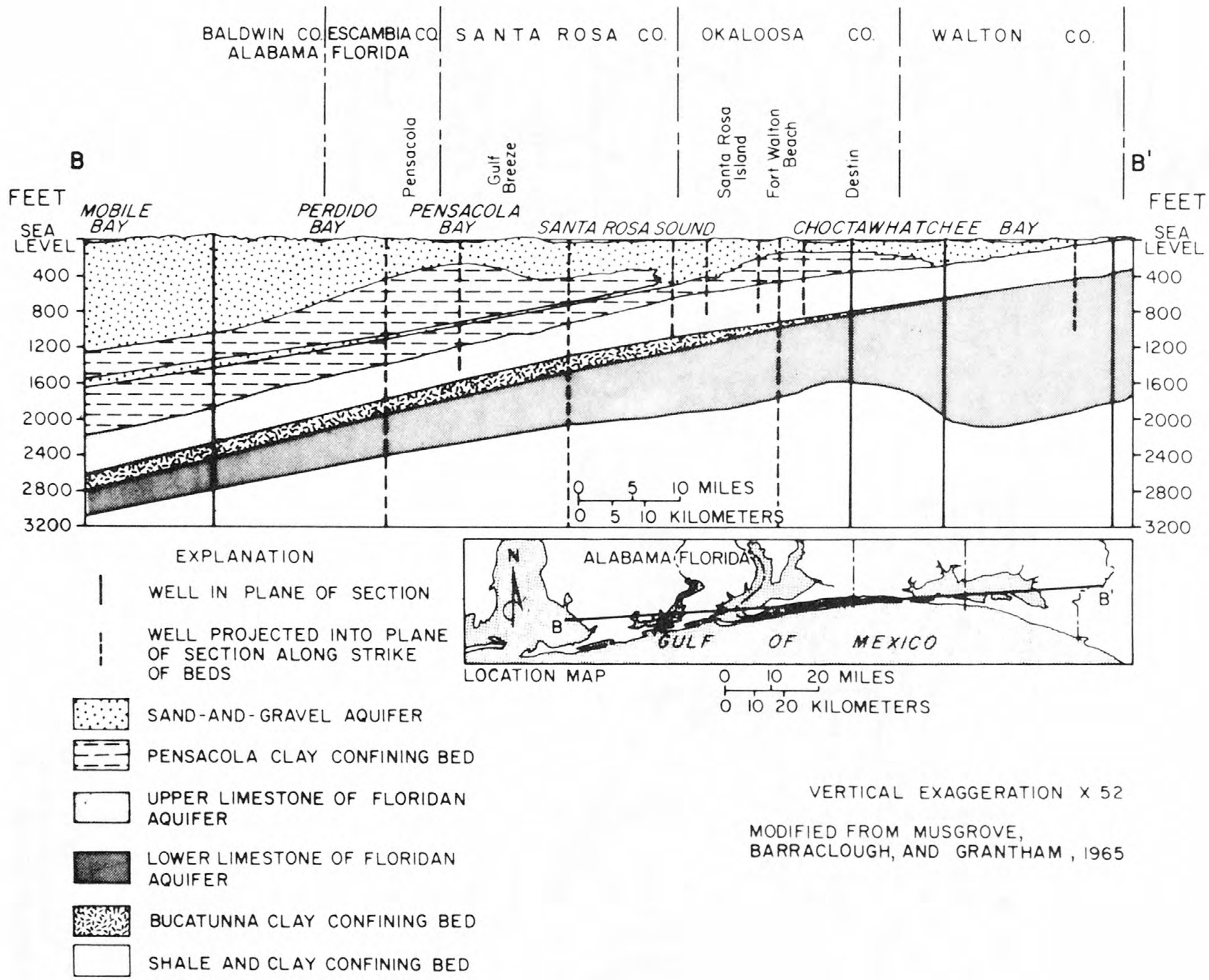


FIGURE 8.--Geologic section along the Gulf Coast from Mobile Bay to the Choctawhatchee River showing aquifers and confining beds.

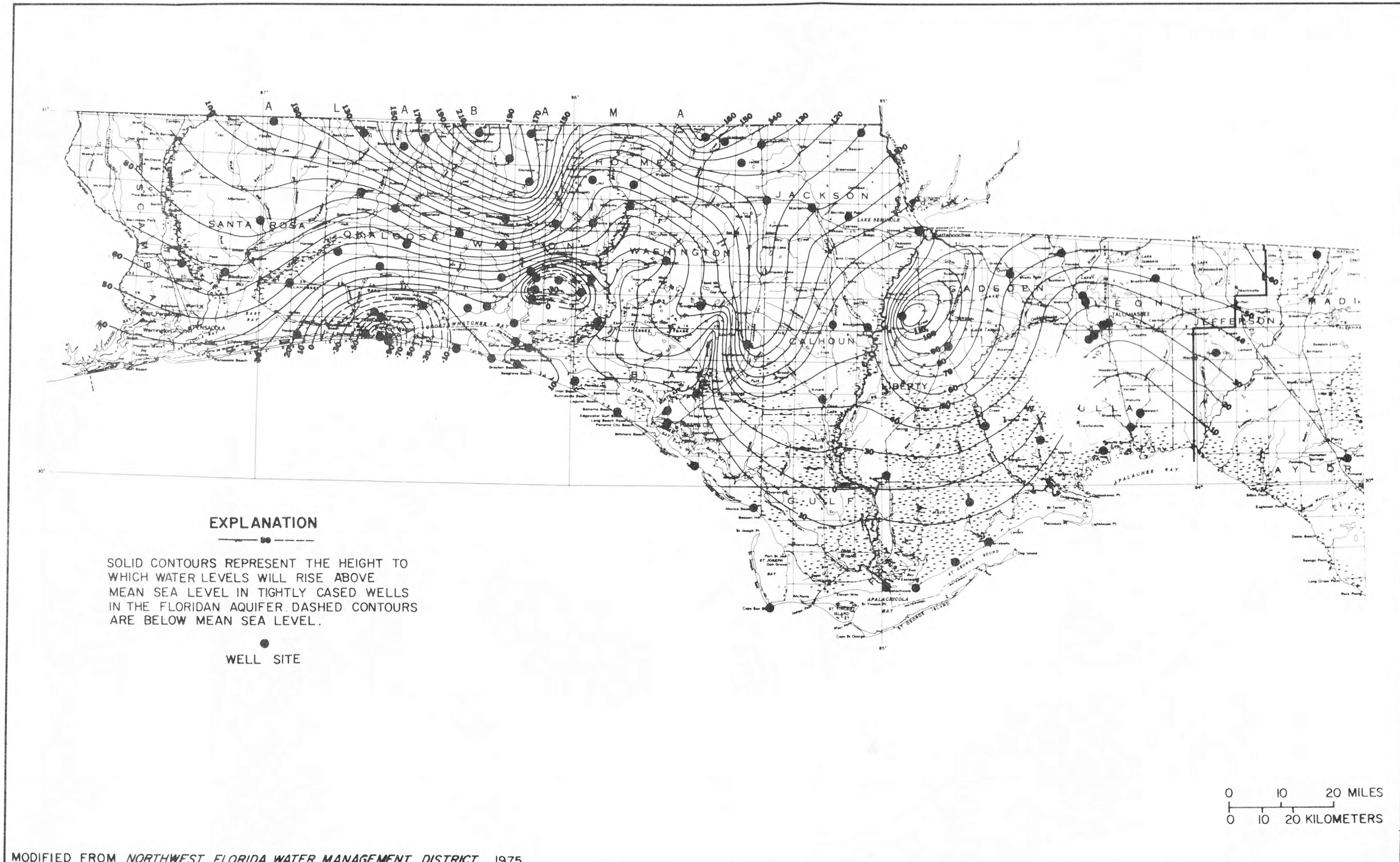


FIGURE 9.--Generalized potentiometric surface of the upper part of the Floridan aquifer, May - June 1974.

Recharge and Discharge Areas

Figure 10 shows the distribution of areas of recharge and discharge of the Floridan aquifer, as interpreted from sparse data. The boundaries of areas of artesian flow and areas in which the limestone of the aquifer is at or near land surface generally are better known than the boundaries of major recharge areas. Data on the relative positions of the water table, the head in the uppermost part of the aquifer, and on the vertical hydraulic conductivity of confining beds are lacking throughout much of northwest Florida, and these are the factors that determine the rate of recharge.

Aquifer Characteristics

Pascale (1974, p. 27-30) reported the transmissivity of the Floridan aquifer in Walton County to range from 535 to 24,000 ft^2/d and storage coefficients of from 1.6×10^{-4} to 5.6×10^{-4}. Specific capacities of wells suggest a similar range of transmissivity for Okaloosa County (Trapp and others, 1977, p. 77) and southern Bay County (Foster and others, 1968, table 8; Musgrove, Foster, and Toler, 1965, p. 24). In all 3 counties, the lowest values of transmissivity appear to be concentrated along the coast. Gadsden County has some of the least transmissive sections of the Floridan aquifer, with values ranging from 270 to 1,340 ft^2/d for the freshwater-saturated section of the aquifer (C. A. Pascale, U.S. Geol. Survey, oral commun. June 1976); Leon County, on the other hand, may have the most transmissive Floridan aquifer section in northwest Florida, with values indicated on the order of 134,000 ft^2/d (Hendry and Sproul, 1966, p. 129).

Typical yields of large-capacity Floridan aquifer wells are as follows:

	<u>Bay County</u>
Panama City	200-300 gal/min
	<u>Gadsden County</u>
Quincy	50 gal/min
Havana	100-150 gal/min
	<u>Leon County</u>
Tallahassee	2,000-3,000 gal/min
	<u>Okaloosa County</u>
Crestview	750 gal/min
Fort Walton Beach	500 gal/min
	<u>Wakulla County</u>
Panacea	150 gal/min
	<u>Walton County</u>
DeFuniak Springs	500 gal/min
First American Farms	800-1,000 gal/min

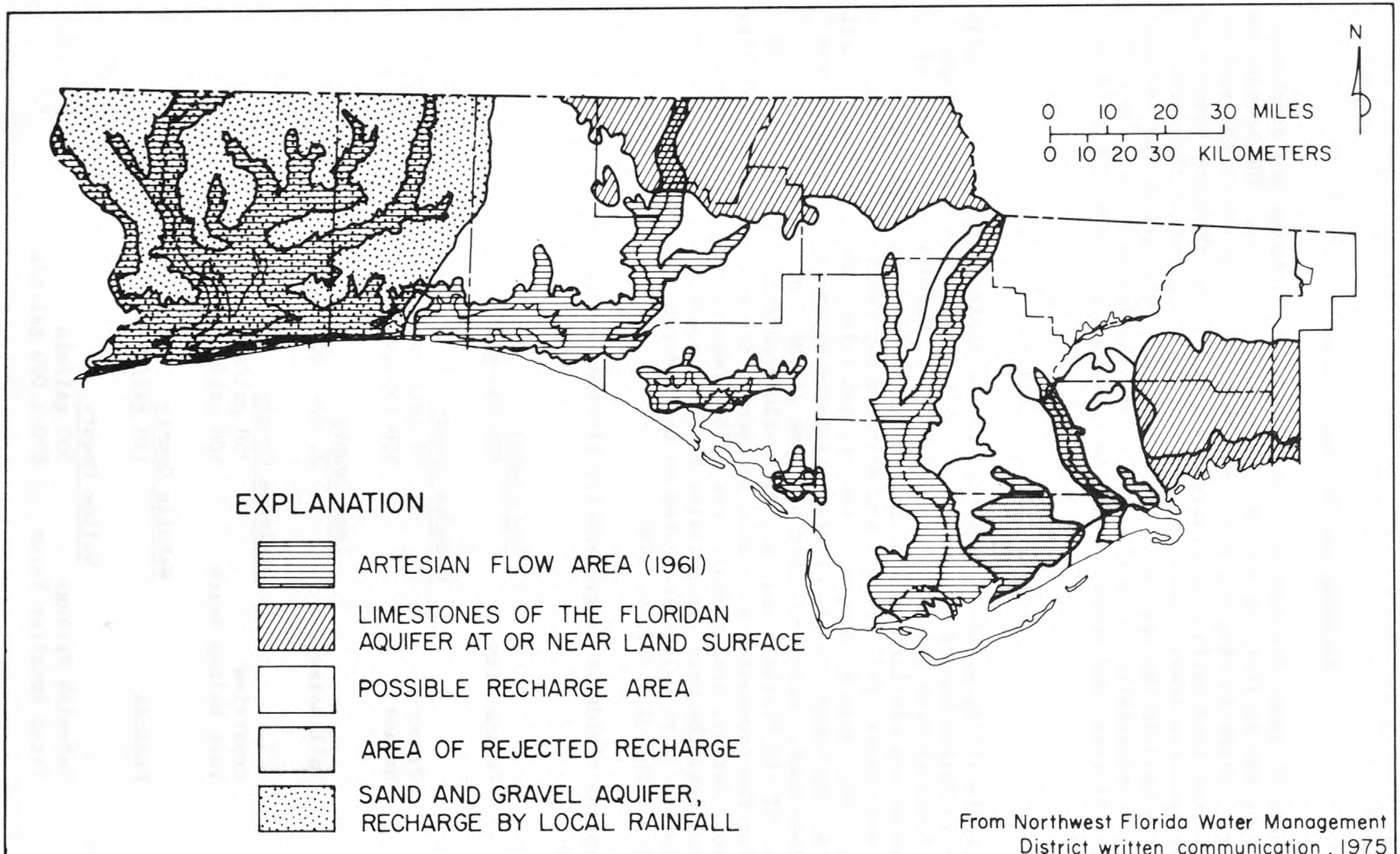


FIGURE 10.--Recharge and discharge areas of major aquifers.

Safe Yield

The determination of safe yield of an aquifer depends first on the definition of the acceptable limits of the effects of pumping. Lohman (1972, p. 62) defined safe yield as

> The amount of ground water one can withdraw without getting into 'trouble.' ...'Trouble' may mean anything under the sun, such as (1) running out of water, (2) drawing in saltwater, or other undesirable water, (3) getting shot, or shot at, by an irate nearby wellowner or landowner, (4) getting sued by a less irate neighbor, or (5) getting sued for depleting the flow of a nearby stream.

In estimating the safe yield of the Floridan aquifer in northwest Florida from eastern Santa Rosa County to the Ochlockonee River, the following simplifying assumptions are made:

(1) The pumping rate for 1975 (19.0 Mgal/d) in Okaloosa County (table 5) approached the safe yield for that part of the aquifer underlying Okaloosa County. Southern Okaloosa County (Fort Walton Beach area) is the site of the most prominent cone of depression on the Floridan aquifer's potentiometric surface in northwest Florida. Water levels were locally 100 ft below sea level in 1975, with a net lowering of more than 160 ft along the coast since 1940.

(2) It is assumed that water enters the aquifer along the northern boundary of Florida, moves south and generally at right angles to the coastline, and whatever is not intercepted by wells is discharged in the gulf. Other areas of recharge and discharge are ignored. Therefore, aquifer discharge can be expressed in terms of distance along the coast, not counting bays and minor irregularities.

(3) Okaloosa County has about 23 mi of coastline. Therefore, its safe yield is 19.0 Mgal/d divided by 23 mi, or about 0.83 Mgal/d per mile of coastline.

(4) Freshwater can be withdrawn from the Floridan aquifer everywhere east of longitude 87°, which intersects the coast west of Navarre in Santa Rosa County.

The distance along the coast from longitude 87° to Ochlockonee Bay is about 171 mi. Multiplying 171 mi by 0.83 Mgal/d per mile gives about 142 Mgal/d as the safe yield for the Floridan aquifer west of the Ochlockonee River.

A different approach from that applied to the western panhandle must be used to estimate the safe yield of the area from the Ochlockonee Bay to the eastern border of Jefferson County, because the transmissivity of the aquifer is considerably higher in this area than in the panhandle, and no local examples of withdrawals approaching safe yield are available.

The transmissivity of the Floridan aquifer around Tallahassee is about 134,000 ft^2/d, (Hendry and Sproul, 1966, p. 129). Figure 9 shows little evidence of a cone of depression around Tallahassee despite pumpage of about 15.6 Mgal/d, and a generally wide potentiometric-contour spacing extending from Tallahassee east into Jefferson County.

The method used to estimate the safe yield from the Floridan aquifer in the eastern part of the area of investigation is based on the assumption that all the water passing through a segment of the aquifer in a given time is available for withdrawal and that withdrawal in excess of this amount would result in continual lowering of the potentiometric surface--a form of "trouble." Darcy's Law in the form:

$$
\begin{aligned}
Q &= TIL \\
\text{where } Q &= \text{flow, or discharge } (L^3/t) \\
T &= \text{transmissivity } (L^2/t) \\
I &= \text{gradient } (L/L) \\
\text{and } L &= \text{length } (L)
\end{aligned}
$$

may be applied to estimate the flow of water through a segment of aquifer of length L (perpendicular to flow). The same assumptions about recharge and discharge are made as for the western part of the area. Transmissivity T is assumed to be 134,000 ft^2/d. The gradient I is taken from the contour spacing northeast of Tallahassee, 20 ft in 7.8 mi, or 0.000486 ft/ft. L is the distance along the coast from Ochlockonee Bay to the eastern border of Jefferson County, about 29 mi, or 155,000 ft.

$$Q = 134{,}000\ ft^2/d \times .000486\ ft/ft \times 155{,}000\ ft = 10{,}094{,}220\ ft^3/d$$
or about 75.5 Mgal/d.

The aquifer was probably receiving recharge in the area when the gradient was measured, and so the gradient used in the above calculation is probably lower than if no recharge (or leakage) were taking place. Local recharge would mean additional water potentially available for withdrawal. The transmissivity used in the calculation also may be low, which would make the estimate of safe yield low. The average transmissivity was estimated from specific capacities of partially penetrating wells (Hendry and Sproul, 1966, table 7). A few reported specific capacities suggested transmissivity of about 318,000 ft^2/d, but this figure, perhaps locally valid, may not apply throughout the area. Better estimates of safe yield for Leon and Jefferson Counties would require better information on transmissivity and recharge than is now available.

The sum of the available yields from the Floridan aquifer for the area from the western border of Okaloosa County to the eastern border of Jefferson County from the above calculations is about 220 Mgal/d (table 3).

Saltwater Intrusion

In northwest Florida, the potentiometric surface in the upper part of the Floridan aquifer has been drawn down below sea level along the gulf in at least three areas: the Fort Walton Beach area (Trapp, Pascale, and Foster, 1977, p. 77), southeastern Walton County (Pascale, 1974, fig. 9), and the Panama City area (Foster, 1972). The potential for saltwater intrusion from a surface saltwater body exists at each of these (except for Panama City, where pumping has been curtailed), yet there is no evidence that a saltwater front has migrated inland to any well.

Chlorides, sulfate, and dissolved solids tend to increase with depth in the Floridan aquifer (Klein, 1975; Pascale, 1974, p. 36; Hendry and Sproul, 1966, p. 141). Pumping could induce upward movement of saline water where the bottoms of wells are close to the base of potable water.

The Sand-and-Gravel Aquifer

The sand-and-gravel aquifer underlies Walton, Okaloosa, Santa Rosa, and Escambia Counties (fig. 8) but is the principal source of water only in Santa Rosa and Escambia Counties. The aquifer is composed of quartz sand and gravel interbedded with discontinuous layers of clay. It extends from land surface to depths ranging from 200 to 1,000 ft in Escambia and Santa Rosa Counties (Musgrove, Barraclough, and Grantham, 1965, p. 11). It thins eastward from Santa Rosa County, with a thickness range of 0 to 270 ft in Walton County (Pascale, 1974, figs. 5-7).

Potentiometric Surface

Potentiometric maps for the sand-and-gravel aquifer are not available except for southern Escambia County. In Escambia County, multiple water levels have been observed, with local perched water tables, a true water table, and one or more semi-confined potentiometric levels. The complexity of the water levels has discouraged the preparation of potentiometric maps except where fairly detailed information is available.

The water-table map of southern Escambia County (Trapp, 1973, fig. 2) shows a ground-water divide trending north-northwest, with water on the west side of the divide moving toward Perdido River and Perdido Bay, and water on the east side moving toward Escambia River and Escambia Bay. The altitude of the water table exceeds 100 ft above mean sea level in the central part of the county. The configuration of the average potentiometric surface for the interval 100 to 300 ft below land surface in the aquifer before development (Trapp, 1975, fig. 8) was generally similar to the water table except lower for the most part and more subdued. This potentiometric surface was higher than the water table in some low areas along the bays and streams, indicating areas of ground-water discharge. In some low areas the potentiometric surface was higher than the land surface, which meant that wells would flow. The potentiometric map for the same part of the aquifer in spring-summer 1973 (Trapp, 1975, fig. 7) is similar except that it shows cones of depression from pumping. A trough, or reversal of gradient of the potentiometric surface trending east-west north of Cantonment is attributed to the combined effects of natural discharge along stream valleys and heavy pumping around Cantonment.

This trough prevents movement of ground water from areas of high potentiometric head in the northern part of the county to areas of low head in the south. Thus, practically all the ground water pumped from wells in the area of Escambia County south of Cantonment comes from local recharge (Trapp, 1975, p. 20-21).

Recharge Areas

Most of the land area in Escambia County constitutes a recharge area for the sand-and-gravel aquifer. Exceptions are low areas where the potentiometric surface is above the water table. Discontinuous layers of hardpan and clay may locally limit recharge to the aquifer, and man has modified areas of recharge by paving, construction, and excavation of drainage ditches and ponds.

Aquifer Characteristics

Available data on hydraulics of the sand-and-gravel aquifer are largely limited to southern Escambia County. Aquifer tests by Jacob and Cooper (1940, p. 33-49) in the Pensacola and Warrington areas indicated an average transmissivity of about 10,000 ft^2/d and an average storage coefficient of 5.5×10^{-4}. Methods of analysis are described by Theis (1935). Aquifer tests at the Monsanto plant near Gonzalez indicated an average transmissivity of 20,000 ft^2/d and a storage coefficient of 1×10^{-3}. Specific capacities of large-capacity wells suggest (Theis, 1963) a transmissivity range of 7,000 to 20,000 ft^2/d in the southern half of the county, but test-hole data and records of unsuccessful wells indicate that 7,000 ft^2/d is not necessarily the minimum transmissivity for this area. Transmissivity data from aquifer tests and specific capacities applies to the screened sections of wells, which are generally 80 to 120 ft long in large-capacity wells in southern Escambia County. The aquifer appears to be vertically anisotropic, so that these transmissivity values are probably substantially lower than the transmissivity of the full thickness of the aquifer (Musgrove, Barraclough, and Grantham, 1965, p. 73-76; Trapp, 1972, p. 13, table 1; Trapp, 1973, p. 14, 17).

Large-capacity wells in southern Escambia County typically yield 1,000-2,000 gal/min.

Safe Yield

The yield of the sand-and-gravel aquifer cannot be considered separate from that of the surfacewater bodies. Some of the aquifer's recharge comes from surface-water bodies and the aquifer's discharge makes up the base runoff of streams. The unit base runoff of a stream basin represents the average net discharge per unit area of the underlying aquifers to the stream. The average unit base runoff of tributaries to the Escambia River is about 1.4 $(ft^3/s)/mi^2$, (Musgrove, Barraclough, and Grantham, 1965, p. 38-45). The sand-and-gravel aquifer is the aquifer underlying the basins of these streams and the water resources of most of the basins are almost undeveloped. The average unit base runoff represents the theoretical rate per unit area at which water can be withdrawn from the aquifer without continually removing water from storage. (Continued removal from storage would mean eventually running out of water.) If all the water destined for base runoff in streams were intercepted by wells, the streams would be dry between storm events. Complete interception is not possible in practice without also removing water from storage. This practical limitation probably would be only partly offset by a decrease in evapotransporation loss as pumping lowered the water table. Therefore, the unit base runoff can be used only as an upper limit for safe yield, in which running out of water is the only "trouble" considered, and the drying up of strams is acceptable.

Another assumption in using unit base runoff of a stream as a measure of safe yield for an aquifer is that the stream and aquifer are not hydraulically connected to other aquifers. In parts of northwest Florida, the Floridan aquifer is hydraulically connected to the sand-and-gravel aquifer, or both may be hydraulically connected to the same stream. Detailed hydrologic analysis may succeed in isolating the effects on each aquifer in its relation to a stream, but for purposes of this estimate of the safe yield of the sand-and-gravel aquifer, the Floridan aquifer is ignored.

Using the above assumptions, the safe yield may be approximated by multiplying the unit base runoff by the land area of the aquifer. The areas of the sand-and-gravel aquifer, the value used for unit base runoff, and the safe yield are listed below for each of the counties in which the aquifer is recognized:

County:	Area[1] (mi^2)	Unit base runoff $[(ft^3/s)/mi^2]$	Safe yield (ft^3/s)	Safe yield (Mgal/d)
Escambia	745	1.4	1,040	672
Santa Rosa	1,140	1.4	1,596	1,030
Okaloosa	980	[2]1.48	1,450	937
Walton	1,055	[3]1.46	1,540	996
TOTAL[4]	3,900		[4]5,600	[4]3,600

[1]The areas of Santa Rosa Island and of other unfavorable areas for ground-water development have been subtracted from the total county areas.

[2]Weighted average computed by Trapp, Pascale, and Foster (1977).

[3]Average flow per square mile from Pascale (1974, table 2), multiplied by 75 percent. Magnolia Creek excluded.

[4]Numbers are shown to 2 significant figures.

Earlier in this report, it was estimated that, in the area of the sand-and-gravel aquifer, 2,200 Mgal/d of water was available from the streams and aquifer combined. This quantity was estimated by adding the 7-day 10-year low flows computed for streams in the four counties. Combining results from both methods, the water available from streams and the sand-and-gravel aquifer combined in the four counties is estimated to be between 2,200 and 3,600 Mgal/d (table 3).

Saltwater Intrusion

Jacob and Cooper (1940, p. 60-70) described local saltwater intrusion caused by pumping at two adjoining sites (former Navy well field and Newport Industries) along Bayou Chico, near Pensacola. Musgrove, Barraclough, and Grantham (1965, p. 89-93) restated Jacob and Cooper's findings about the intrusion at Newport Industries. The Navy well field had already been abandoned. They described a later occurrence of saltwater intrusion at the Monsanto plant on the Escambia River near Gonzalez, induced by pumping near a surface body of saline water, and a 20 to 40 ft lateral saltwater intrusion into the sand-and-gravel aquifer on the peninsula at Gulf Breeze (Santa Rosa County), which they attributed to low ground-water levels caused by low rainfall. The saltwater fronts at the Newport Industries and at the Monsanto Company plants do not appear to have advanced significantly in recent years. No further data on the position of the saltwater front at Gulf Breeze are available.

QUALITY OF WATER

In the study area, the U.S. Geological Survey has sampled streams, lakes, reservoirs, springs, and wells. The sampling period, type of water property, and total number of samples collected are shown for representative surface-water/quality stations in table 4. An index to water-quality data available to May 1976 from the U.S. Geological Survey is given in Supplement A.

Purpose of Surface-Water Quality Stations

All of the quality-of-water stations in table 4 and shown on figure 1 are Areal Assessment stations. They were selected to provide basic water-quality data on a basinwide or regional basis in various hydrologic environments. Seven of the stations are also operated as part of the National Stream Water-Quality Accounting Network, for which the objectives are: (1) to determine long-term trends in water quality; (2) to determine variations of water quality with streamflow and season; (3) to provide an accounting of the chemical loads leaving the basin; and (4) to provide input to water-quality simulation models and baseline data for river-quality assessments. One station is a hydrologic benchmark station, operated to determine baseline quality of water in undeveloped "pristine" areas and to provide a data base for subsequent investigations of changes in water quality with time. The remaining stations are operated in co-operation with interested state, county and other federal agencies.

Table 4.--Purpose of stations and chemical type and general characteristics of water collected at selected surface-water stations in northwest Florida

Map no. on figure 1	Station name	Station number	Purpose of station[1]	Chemical type[2]	General characteristics[3]
1A	Aucilla River near Aucilla	02326250	AA	D	J
1	Aucilla River at Lamont	02326500	AA	A and E	F, G, H, I
2A	Wacissa River near Wacissa	02326526	AA	A	H
2	St. Marks River near Newport	02326800	AA	A	-
3A	Sopchoppy River near Arran	02327050	AA	D	H, J
3	Sopchoppy River near Sopchoppy	02327100	AA, BM, WQA	A and E	F, G, H, J
4	Ochlockonee River near Havana	02329000	AA, WQA	B, C, and E	F, G
10	Quincy Creek at SR-267	02329534	AA	A	-
13	Ochlockonee River near Bloxham	02330000	AA	C	-
13A	Ochlockonee River near Smith Creek	02330150	AA	C	-
16	Apalachicola River near Chattahoochee	02358000	AA, WQA	A	F, G
18	Apalachicola River near Blountstown	02358700	AA	-	-
19	Chipola River near Altha	02359000	AA, WQA	A	-
22	Econfina Creek near Bennett	02359500	AA	A	-
24	Choctawhatchee River at Caryville	02365500	AA	A	F, G

27	Choctawhatchee River near Bruce	02366500	AA, WQA	A	-
28	Magnolia Creek near Freeport	02366900	AA	E	I
28A	Lafayette Creek at Freeport	02366911	AA	E	I
34	Yellow River at Milligan	02368000	AA, WQA	A	F
41	Blackwater River near Baker	02370000	AA	D	J
47	Escambia River near Century	02375500	AA, WQA	A	F, G
47A	Escambia River near Floridatown	02376052	AA	D	K
51A	Elevenmile Creek near Ensley	02376108	AA	A	F, G, H, L
51	Perdido River at Barrineau Park	02376500	AA	C	I

[1] AA--Areal Assessment
BM--Hydrologic Benchmark
WQA--Water-Quality Accounting

[2] Chemical type of water is:
A--calcium and magnesium bicarbonate
B--sodium bicarbonate and chloride
C--mixed
D--sodium chloride
E--magnesium sulfate

[3] The following letters refer to the fact that:
F--dissolved iron occasionally exceeds the recommended upper limit of 300 ug/l for public water supply sources (National Academy of Sciences and National Academy of Engineering, 1973, p. 69).
G--dissolved manganese occasionally exceeds the recommended upper limit of 50 ug/l for public supply sources (National Academy of Sciences and National Academy of Engineering, 1973, p. 71).
H--color occasionally exceeds 200 units.
I--water is occasionally acidic and pH may be less than 6.0.
J--water is occasionally acidic and pH may be less than 5.0.
K--chloride occasionally exceeds 1,000 mg/L.
L--total organic carbon and biochemical oxygen demand are high.

Surface-Water Quality

The quality of surface water in northwest Florida is generally such that the water could be utilized for many purposes. However, concentrations of certain constituents sometimes exceed desirable limits for certain specific uses. For example, many surface waters in the area occasionally have high concentrations of dissolved iron or manganese. Also, except for the larger streams, such as the Apalachicola and Ochlockonee Rivers, surface water is at times highly colored and distinctly acidic, with pH values below 5.0.

The quality of surface water in northwest Florida varies areally and temporally in relative and absolute concentrations of the major ions. Kaufman (1972) showed chemical types of water in Florida streams and also discussed variations in the major ions under changing conditions of streamflow. The water at a particular station may be characterized by more than one chemical type (table 4) because of changes in chemical quality associated with changes in streamflow conditions.

Calcium and magnesium bicarbonate-type water predominates in the Apalachicola, Chipola, Choctawhatchee, and Yellow Rivers, and in several other streams of northwest Florida. Waters collected from different stations on the Ochlockonee, Escambia, Sopchoppy, and Aucilla Rivers show variations in chemical type either due to changes in quality of inflow from one station to another or to the conditions of streamflow.

Ground-Water Quality

Floridan Aquifer

The quality of the ground water from the Floridan aquifer in northwest Florida is generally such that the water could be utilized for many purposes; however, as is the case with the area's surface water, concentrations of certain constituents sometimes exceed desirable limits for certain specific uses. The dissolved-solids concentration of water in the upper limestone of the Floridan aquifer ranges from about 30 mg/L in areas of outcrop to as much as 4,000 mg/L in the coastal areas of northwest Florida.

Outside of these areas, dissolved solids generally range from 100 to 500 mg/L (Trapp and others, 1977; Pascale, 1974, fig. 17; Barraclough and Marsh, 1962, p. 21). Corresponding to the increase in dissolved solids is a change from a calcium magnesium-bicarbonate type water to a sodium-chloride type.

Shampine (1965a) reported that water from the Floridan aquifer in northwest Florida has a noncarbonate (permanent) hardness of less than 20 mg/L and, except for the coastal areas from Bay to Jefferson Counties, generally has a total hardness of less than 180 mg/L. Shampine (1965b) further reported that water from the upper part of the Floridan aquifer in northwest Florida generally contains less than 50 mg/L chloride, except in coastal areas and southern Escambia County, where chloride locally exceeds 1,000 mg/L.

Floridan-aquifer water in the study area is generally low in fluoride (less than 0.6 mg/L) except for the southern half of Escambia and Santa Rosa Counties, the coastal areas, and an approximately 30-mile-wide band extending roughly from Apalachicola to Bristol (Toler, 1966).

Generally, water in the uppermost Floridan aquifer is nearly neutral, having a pH of 7 to 9.

Dissolved-iron concentrations in the Floridan aquifer are generally less than 300 ug/L (micrograms per liter). Locally, in areas of recharge or where overlying sands and clay contain substantial concentrations of iron, dissolved-iron concentrations may exceed 300 ug/L.

Sand-and-Gravel Aquifer

Because the unconsolidated quartz materials which make up the sand-and-gravel aquifer are practically insoluble, the dissolved-solids concentration in water from that aquifer is usually low. Chloride and dissolved-solids concentrations are usually highest in water from wells adjacent to the coast, probably because of seawater contamination of that part of the aquifer. Rainfall along the coast also contains small amounts of chloride acquired from the air over the gulf. In wells affected by the mixing of ground water with seawater, the dissolved solids may exceed 500 mg/L.

Water in the upper sand-and-gravel aquifer contains dissolved carbon dioxide. Some of this gas may come from the atmosphere and be carried by rain into the aquifer, but most of it originates from the aerobic decomposition of organic matter. Carbon dioxide, when dissolved in water, forms carbonic acid. This is a weak acid, but its presence can make the water corrosive to metals. When carbonate or bicarbonate ions are present in a solution with carbon dioxide and carbonic acid, they tend to buffer the solution or decrease the acid effect by raising the pH (Hem, 1970, p. 92-93). In water from the sand-and-gravel aquifer, which is low in dissolved mineral matter, including bicarbonate and carbonate, buffering is minimized, the pH is low (generally 4.0 to 6.9), and corrosive effects are strong.

Hydrogen sulfide is locally present in trace amounts in water from the sand-and-gravel aquifer. The gas probably results from the anaerobic decomposition of organic material buried in the aquifer. The presence of the gas can usually be detected by its characteristic "rotten eggs" odor.

Except for specific problem areas the quality of water in the sand-and-gravel aquifer is generally of good quality and generally meets the recommended criteria for drinking water (National Academy of Sciences and National Academy of Engineering, 1973).

Problem Areas

Pensacola.--Concentrations of dissolved iron in water from the sand-and-gravel aquifer in the Pensacola area locally exceed the limit of 300 ug/L recommended for drinking water (National Academy of Sciences and National Academy of Engineering, 1973, p. 69).

Although iron may occur naturally in the ground water, much of the iron in some water systems may originate from the corrosion of the casing and other metallic well parts. Factors affecting iron concentrations in water samples may be differences in well construction, age of the well, corrosiveness of the water, and length of pumping before sampling, as well as the natural iron concentration in the ground water. Trapp (1975) reported that whatever the origin of iron in water, the concentrations can vary substantially in water from wells within a short distance of each other, or from different depths at the same location.

Okaloosa County.--Years of pumping at Fort Walton Beach and Eglin Air Force Base has resulted in the formation of cones of depressions along the gulf and Choctawhatchee Bay in which the potentiometric surface of the upper Floridan aquifer is below sea level. Water moves from high to low points on the potentiometric surface within an aquifer, moving toward the centers of the cones from underneath the bays and the gulf as well as from inland. Under these conditions, the eventual appearance of saline water in the centers of the cones of depression is probable. However, a 19-year record of chloride concentrations in the water from two wells on Santa Rosa Island offshore from the Fort Walton Beach area does not show any significant increase. The probable reasons that saline water from the gulf has not appeared in the wells are the southward decrease in the upper limestone's transmissivity and the evidently effective seal provided by the overlying Pensacola Clay confining bed. These factors do not preclude the eventual encroachment of saline water; the probability of encroachment increases with the growth of the cone of depression (Trapp and others, 1977.)

Walton County.--Pascale (1974, p. 30-36, fig. 18) reported that water from wells tapping the Floridan aquifer is of acceptable chemical quality except in an area in southeastern Walton County adjacent to Choctawhatchee Bay, where the water is highly mineralized. Chloride concentration in one well sampled there increased from 2,040 mg/L at a sampling depth of 130 ft below sea level to 4,200 mg/L at 303 ft below.

WATER USE

The amount of water available for use in northwest Florida remains substantially unchanged while population growth and urban and industrial development continue to place increased demands on the available supply. Estimates of water use have been compiled only for recent years.

This section includes water-use summaries by counties for the years 1970 and 1975, estimates of water consumed in 1975, estimates of the water available, and projections of water demands to the year 2020.

Terminology

The terms and units used in this section of the report are similar to those used by other U.S. Geological Survey investigators (Pride, 1973; Murray and Reeves, 1972; and Murray, 1968).

"Water use" means withdrawal use (the amount of water withdrawn from its source). The water is taken from a ground-water or a surface-water source and conveyed to the place of use. In this report, water which is used more than once by recycling is counted only each time it is withdrawn from a source, rather than each time it is re-used.

"Water consumed" refers to that part of the water withdrawals that is no longer available because it has been either evaporated, transpired, incorporated into products and crops, consumed by man or livestock, or otherwise removed from sources accessible to man.

"Saline water" means water with more than 1,000 mg/L of dissolved solids.

Water-Use Summaries

Water-use data for northwest Florida was collected by the U.S. Geological Survey in 1970 and by the Survey and the Northwest Florida Water Management District in 1975; summaries for 1970 (Pride, 1973) and 1975 (Northwest Florida Water Management District, 1976; J. B. Martin, U.S. Geol. Survey, written commun., 1976) are shown in table 5.

The total volume of water withdrawn daily in the study area was about 1,145 Mgal/d in 1970 and decreased to about 1,050 Mgal/d in 1975. The decrease in water withdrawn in 1975 as compared to 1970 was caused partly by the effects of economic recession on industrial use. This effect may also be reflected in thermoelectrical power generation water use which decreased from about 800 to about 722 Mgal/d. Self-supplied industrial water use decreased from about 214 to 191 Mgal/d and withdrawals for public water supplies increased from about 88 Mgal/d in 1970 to about 100 Mgal/d in 1975. Changes in withdrawals for rural use in 1970 and 1975 were not considered because the volumes tabulated in 1970 did not include water used for livestock. Other differences between use in 1970 and 1975 were small.

Table 5.--Summary of total water use, in million gallons per day, by counties in northwest Florida for 1970 and 1975

County	Public water supplies		Thermo-electric power		Rural[1]		Irrigation		Industrial self-supplied		Total with-drawals	
	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975
Bay[2]	38.1	34.3	274.1	229.7	2.1	1.1	0.3	0.1	2.0	1.3	316.6	266.5
Calhoun	0.2	0.3	-	-	0.9	0.6	0.2	2.6	-	0.4	1.3	3.9
Escambia	20.3	27.8	220.8	267.5	3.9	3.2	0.1	0.9	90.8	79.2	335.9	378.6
Franklin	0.5	1.0	-	-	0.5	0.1	-	-	-	-	1.0	1.1
Gadsden	2.0	2.1	-	-	2.8	2.3	2.6	2.4	2.2	2.0	9.6	8.8
Gulf	0.5	[3]0.8	-	-	0.7	0.6	-	0.7	70.8	46.7	72.0	48.3
Holmes	0.3	0.2	-	-	1.3	1.3	-	0.1	-	-	1.6	1.6
Jackson	1.6	1.6	145.4	120.3	3.0	2.9	0.7	6.0	1.2	0.8	151.9	131.6
Jefferson	0.4	0.4	-	-	1.0	1.0	0.4	0.7	0.2	-	2.0	2.1
Leon	12.0	15.1	-	1.0	3.0	3.4	-	0.6	27.9	34.6	42.9	54.7

Footnotes appear at end of table.

Table 5.--Summary of total water use, in million gallons per day, by counties in northwest Florida for 1970 and 1975--Continued

County	Public water supplies		Thermo-electric power		Rural[1]		Irrigation		Industrial self-supplied		Total with-drawals	
	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975
Liberty	0.2	0.1	-	-	0.4	0.2	-	-	1.3	0.3	1.9	0.6
Okaloosa	7.9	9.9	-	-	3.3	2.4	-	0.7	4.7	6.0	15.9	19.0
Santa Rosa	2.4	3.9	-	-	2.8	1.3	0.2	0.3	10.3	17.7	15.7	23.2
Wakulla	0.2	0.3	160.3	104.3	0.8	0.5	-	-	1.1	1.2	162.4	106.3
Walton	0.7	1.1	-	-	1.3	1.0	10.1	0.6	1.2	0.4	13.3	3.1
Washington	0.4	0.6	-	-	1.0	1.0	-	-	-	-	1.4	1.6
TOTAL	87.7	99.5	800.6	[4]722.8	28.8	22.9	14.6	15.2	213.7	[5]190.6	1,145.4	1,051.0

[1]1970 figures do not include livestock use.

[2]1975 figures for Bay County differ from those of the Northwest Florida Water Management District (1976), which classified about 25.4 Mgal/d of water supplied to industry by the Bay County Water System as "Industrial Self-Supplied."

[3]Includes about 0.27 Mgal/d supplied to industry.

[4]Includes about 229 Mgal/d saline water used in Bay County.

[5]Includes about 16 Mgal/d saline water (13 Mgal/d Gulf County and 3 Mgal/d Escambia County).

Note.--All data were rounded to one place after decimal point.

Table 6.--Partial summary of water use and water consumed in northwest Florida, 1970 and 1975

	Water Use (Mgal/d)[1]				
	Public water supplies	Irrigation	Thermoelectric	Industrial self-supplied	Total[7]
Withdrawals, 1970	88	15	801	214	1,118
Consumed, 1970	[2]22	[3]11	[4]12	[5]46	91
Withdrawals, 1975	100	15	723	191	1,029
Consumed[6], 1975	25	11	11	41	84

[1]Numbers are rounded to the nearest million gallons.

[2]Pride, 1973, table 2.

[3]Upper limit applied (Pride, 1973, p. 14).

[4]Pride, 1973, table 7.

[5]Pride, 1973, table 6, includes only freshwater consumed.

[6]Estimated by using the percent consumed in 1970.

[7]Does not include rural domestic or livestock use.

Table 7.--Water use and source for 1975

Use of water withdrawn	Source of water withdrawn (Mgal/d)[2]			
	Floridan aquifer	Surface water	Sand-and-gravel aquifer	Total
Public water supplies	33	34	33	100
Thermoelectric power	1	[1]719	3	723
Irrigation	9	5	1	15
Industrial self-supplied	45	83	63	191
Rural	17	1	4	22
Total	105	842	104	1,051

[1] Amount includes 229 Mgal/d of saline water.

[2] Numbers are rounded to the nearest million gallons per day.

Projections of Water Use

A projection of water use for the 16 counties shows that the use in 1970 of 1,145 Mgal/d could increase to a maximum projected rate of 4,130 Mgal/d in 2020 (table 8).

Minimum Rates

Minimum values were computed using as a base the total withdrawals for the 16 counties in 1970 (table 5). The withdrawals of 1,145 Mgal/d in 1970 with a population of 664,720 (census 1970) yields a total use per capita of about 1,720 gal/d.

It was then assumed that the total use rate per capita remained constant at 1,720 gal/d and <u>only</u> increases in population in the 16 counties would influence the change in total water use.

$$\underline{W}_n = hP_n \times 10^{-6} \qquad (1)$$

in which $\underline{W}_n$ = minimum rate of water use, million gallons per day, in the 16 counties for n^{th} year,

h = 1,720 gallons per capita per day,

P_n = projected population for n^{th} year.

Using equation 1, estimates of minimum water withdrawal in the 16 counties range from 1,480 Mgal/d in 1980 to 2,520 Mgal/d in 2020 (table 8).

Maximum Rates

Computations of maximum water use consider <u>both</u> increases in population of the 16 counties and increases in the total use rate per capita during 1980-2020. It is assumed that the total per capita use in the 16 counties equals the projected total use rate per capita for the State. A regression equation in the form of total use rate per capita as a f
of year was determined. The form of this equation is

$$k_n = A + B \log(n-1$$

in which k_n = per capita use
per day,

n = year.

Table 8.--Projections of water use in northwest Florida for selected years

Year	Projected population[1]	Total water use Mgal/d — All uses: Minimum[2]	Maximum[3]
1980	862,500	1,480	1,970
1990	1,035,800	1,780	2,550
2000	1,186,900	2,040	3,090
2010	1,327,100	2,280	3,620
2020	1,463,400	2,520	4,130

[1]Projections of Florida Population for 1978-2020, August 1976, Bulletin 38, Div. of Population Studies, Univ. of Florida.

[2]Computed using equation 1, Projections of water use.

[3]Computed using equations 3 and 4, Projections of water use.

The constants A and B in equation 2 were determined by the regression analysis using statewide inventories of water use (Pride, 1973, table 9) for 1950, 1956, 1960, 1965, and 1970. The result is equation 3, which was used to project total use per capita to the year 2020.

$$k_n = 30.48 + 1508.6 \log(n-1949) \tag{3}$$

Maximum estimates of water use in the 16 counties were then computed using equation 4:

$$\underline{W_n} = k_n P_n \times 10^{-6} \tag{4}$$

in which $\underline{W_n}$ = maximum rate of water use, million gallons per day, in the 16 counties for n^{th} year,

k_n = total per capita use, gallons per day, for n^{th} year from equation 3,

P_n = population for n^{th} year.

Using equations 3 and 4, maximum estimates of water use in the 16 counties range from 1,970 Mgal/d in 1980 to 4,130 Mgal/d in 2020 (table 8).

Public Water Supplies

Estimates of water use in northwest Florida by public supply systems range from about 115 Mgal/d in 1990 to about 195 Mgal/d in 2020 (table 9). The estimated water use by public supply systems within each county in the study area ranges from a high of 35.3 and 50.3 Mgal/d for 1990 and 2020 respectively, in Escambia County to a low of 0.17 and 0.49 Mgal/d in Liberty County. In the study area four counties, Bay, Escambia, Leon, and Okaloosa, account for about 80 percent of the estimated water use by public supply systems in 1990 and 2020 (table 9).

The estimated total water use by public supply systems in the 16-county study area can be determined by assuming that the increase in the rate of per capita use for public supply systems in the study area equals the increase in per capita use for public supply systems in the entire state. A regression equation in the form of the increase in the rate of per capita use for public supply systems in the study area as a function of the increase in the rate of per capita use for public supply systems in the entire state was determined. The form of this equation is:

$$k_n = A + B \log(n-1949) \tag{5}$$

in which k_n = per capita use, gallons per day, and

n = year

The constants A and B in equation 5 were determined by the regression analysis using statewide inventories of water use (Pride, 1973, table 10) for 1950, 1956, 1960, 1965 and 1970. The result is equation 6 which was used to project per capita use by public supplies to the year 2020.

$$k_n = 56.6 + 51.4 \log(n-1949) \tag{6}$$

The estimate for any year is then the product of the per capita use for public supply systems in the study area (equation 6) and the projected population served by the public supply systems for that year. The form of this equation is:

$$PW_n = K_n P_n \times 10^{-6} \tag{7}$$

in which PW_n = public supply system use, Mgal/d,

K_n = per capita use, gallons per day, from equation 6, and

P_n = projected population served by public supply systems for the n^{th} year

Table 9.--Summary of public water supply use

County		Actual		Projected			
		1975		1990		2020	
code	name	Population served (thousands)	Water use (Mgal/d)	Population served (thousands)	Water use (Mgal/d)	Population served (thousands)	Water use (Mgal/d)
005	Bay	82.7	8.9	124.174	15.5	190.414	28.5
013	Calhoun	2.961	0.27	4.0	0.44	5.085	0.76
033	Escambia	195.474	27.8	247.296	35.3	335.620	50.3
037	Franklin	6.576	0.93	8.333	1.2	10.440	1.6
039	Gadsden	19.365	2.12	24.310	3.1	31.560	4.7
045	Gulf	6.658	0.75	11.360	0.92	12.780	2.0
059	Holmes	3.992	0.17	6.360	0.6	9.250	1.4
063	Jackson	15.534	1.43	23.850	2.7	34.925	5.2
065	Jefferson	3.000	0.43	3.850	0.57	5.625	0.84
073	Leon	101.123	15.1	175.100	26.3	307.170	46.1
077	Liberty	1.530	0.09	2.340	0.17	3.250	0.49

Table 9.--Summary of public water supply use--Continued

County		Actual		Projected			
		1975		1990		2020	
code	name	Population served (thousands)	Water use (Mgal/d)	Population served (thousands)	Water use (Mgal/d)	Population served (thousands)	Water use (Mgal/d)
091	Okaloosa	81.542	9.92	125.190	16.8	202.174	30.3
113	Santa Rosa	37.788	3.34	60.660	6.9	93.688	14.1
129	Wakulla	4.587	0.26	13.120	1.5	26.550	4.0
131	Walton	10.529	1.07	13.560	1.6	17.225	2.6
133	Washington	6.352	0.58	10.200	1.3	17.460	2.6
	Totals	579.711	73.16	853.703	114.90	1303.216	195.49

The water-use data for the public-supply systems plant and source capacities as of 1975 for each county and the estimated water use for 1990 and 2020 are given in Supplement B.

For the purpose of estimating future public supply system water use on a county-by-county basis, it was assumed that the per capita use in each county would increase from that determined in the 1975 water-use inventory to 150 gallons per capita per day in 2020 and the per capita use by 1990 was then determined from this straightline plot.

The population in each county served by these public supply systems in 1990 and 2020 was estimated from the increase in the percent served from 1970 to 1975.

The estimated water use by public supply systems in 1990 and 2020 was then computed from the per capita use and the population served estimated for that year.

The public supply systems plant capacities determined from the 1975 water-use inventory were also compared with the estimated water use for 1990 and 2020 to determine the adequacy of 1975 plant size to meet the estimated future needs. Estimated water use in only two counties, Leon and Wakulla, exceeds present public supply system capacities before 2020. In Leon County, the public supply system in the City of Tallahassee will be expanded to a total capacity of about 46 Mgal/d by the summer of 1977. This will be sufficient for projected needs to the year 2020. The Wakulla County system will require doubling in size to meet projected need to 2020.

The estimated source capacity or the safe yield was also determined for each county using methods described earlier in this report. These data indicate that with the exception of Okaloosa County the present source of water used by each public supply system will provide for the estimated water use until at least about 2020 if the resource is managed properly. In Okaloosa County the data indicate that the present source capacity will be exceeded between 1990 and 2000 if the stress on the resource continues to be applied in the same manner and at the same increasing rate.

SUMMARY

The estimate of future water needs and the estimate of water available from both the surface- and ground-water resources in the study area indicate that ample supplies are available until at least the year 2020.

The Floridan aquifer is capable of supplying as much as 220 Mgal/d of water suitable for most uses. The withdrawals of water from the Floridan aquifer were estimated to be 105 Mgal/d in 1975.

The streams, exclusive of Escambia, Santa Rosa, Okaloosa, and Walton Counties, could provide at least 5,600 Mgal/d of water suitable for most uses. The withdrawals of water from surface-water sources were estimated to be 842 Mgal/d in 1975, which includes about 229 Mgal/d of saline water. It should be pointed out that all the major rivers in northwest Florida originate in either Alabama or Georgia and in some instances large portions of a drainage basin may lie outside Florida. For the purpose of this study it was assumed that all water flowing in the streams, regardless of where it originated, was available for use in Florida.

In Escambia, Santa Rosa, Okaloosa and Walton Counties, the sand-and-gravel aquifer and the streams were considered as one unit. This unit could provide between 2,200 and 3,600 Mgal/d of water suitable for most uses. The withdrawals of water from the aquifer in 1975 were estimated to be 104 Mgal/d. Withdrawals of surface water from above the tidal reaches of streams in the above four counties were estimated at less than 4 Mgal/d.

The quality of the surface and ground water in the study area is such that it can be utilized for many purposes. Water from the sand-and-gravel aquifer may, locally, contain high concentrations of dissolved iron and is acidic, ranging in pH from 4.0 to 6.9. Water from the uppermost Floridan aquifer in northwest Florida generally has dissolved-solids concentrations ranging from 100 to 500 mg/L, except in southern Escambia County and the coastal areas, where it is saline. The concentrations tend to increase with depth. Surface-water quality varies throughout the area. Occasionally, some streams have high concentrations of dissolved iron or manganese. Some streams are also highly colored and distinctly acidic with pH values less than 5.0. The larger streams generally have low color values and are not acidic.

In the Fort Walton Beach-Eglin Air Force Base area, years of pumping have resulted in the formation of cones of depression in which the potentiometric surface is below sea level. The eventual appearance of saline water in the centers of the cones of depression is to be expected and the probability of this occurring increases with the growth of the cones of depression. However, a 19-year record of chloride concentrations in the water from two wells on offshore Santa Rosa Island does not show any significant increase.

The estimate of total water available in the study area ranges from 8,020 to 9,420 Mgal/d and the total projected water needs in this area to the year 2020 range from 2,520 to 4,130 Mgal/d. Except near the major population centers and in some irrigated areas, only a small part of the water available in the study area is being used.

Water-use data for 1975 indicate that the present capacities of existing public supply systems inventoried are adequate to meet projected needs to the year 2020, except in Leon and Wakulla Counties. The public supply system in Leon County will be expanded to a total capacity of about 46 Mgal/d by the summer of 1977, which will be sufficient for projected needs to 2020. The Wakulla County system will require doubling in size to meet projected needs to the year 2020.

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Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey

Explanation.--The supplement is a listing of selected surface- and ground-water sites where water-quality data have been collected. The number of analyses for groups of water properties or individual properties are shown by water year. "Sum" indicates total number of analyses by parameter available to May 1976.

The codes listed below are to be used to identify the counties having water-quality data shown in this table.

Code	County	Code	County
005	Bay	065	Jefferson
013	Calhoun	073	Leon
033	Escambia	077	Liberty
037	Franklin	091	Okaloosa
039	Gadsden	113	Santa Rosa
045	Gulf	129	Wakulla
059	Holmes	131	Walton
063	Jackson	133	Washington

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02326250 AUCILLA RIVER NR AUCILLA FLA LAT=30 29 31 LONG=083 43 53 STREAM STATE=12 COUNTY=065 DIST.=12																						
1956	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
SUM	7	5	5	5	6	0	3	1	5	5	0	6	4	5	0	0	5	0	0	0	0	0
02326494 BEASLEY CREEK NR LAMONT FL LAT=30 33 33 LONG=083 48 41 STREAM STATE=12 COUNTY=065 DIST.=12																						
1956	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1957	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	0	0	2	2	0	2	0	0	0	0	2	0	0	0	0	0
02326526 WACISSA RIVER NR WACISSA FLA LAT=30 18 04 LONG=083 58 47 STREAM STATE=12 COUNTY=065 DIST.=12																						
1971	9	2	2	2	3	0	0	0	2	2	0	3	1	6	0	0	4	0	0	0	0	0
1972	18	6	6	6	6	0	0	0	6	6	6	6	2	12	0	0	12	0	0	0	0	0
1973	18	4	4	4	6	2	2	2	4	4	6	6	4	10	6	0	9	0	0	0	0	0
1974	10	2	2	2	2	2	2	2	3	2	5	5	5	5	5	0	4	0	0	0	0	0
1975	5	3	3	3	3	2	3	3	3	3	5	5	5	5	3	0	5	0	0	0	0	0
1976	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0
SUM	61	18	18	18	21	7	8	8	19	18	23	26	18	39	15	0	35	0	0	0	0	0
02326529 11B WELAUNEE CR NR CAPPS FLA LAT=30 20 25 LONG=083 54 50 STREAM STATE=12 COUNTY=065 DIST.=12																						
1956	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	0	0	0	0	2	0	0	0	0	0
02326598 CANEY CREEK NR MONTICELLO FL LAT=30 30 52 LONG=083 56 24 STREAM STATE=12 COUNTY=065 DIST.=12																						
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	5	2	2	2	3	0	0	0	2	2	0	3	2	4	0	0	2	0	0	0	0	0
02326600 11B LAKE MICCOSUKEE NR MICCOSUKEE FLA LAT=30 36 14 LONG=084 00 15 LAKE/RESERVOIR STATE=12 COUNTY=065 DIST.=12																						
1965	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1966	2	2	2	2	2	0	2	0	2	2	0	2	2	0	0	0	2	0	0	0	0	0
1967	3	2	2	2	1	0	2	2	3	2	0	2	2	1	0	0	2	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
02326600 11B LAKE MICCOSUKEE NR MICCOSUKEE FLA LAT=30 36 14 LONG=084 00 15 LAKE/RESERVOIR STATE=12 COUNTY=065 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	16	7	7	7	7	0	6	2	8	7	0	8	8	5	0	0	7	0	0	0	0	0
02326700 LLOYD CR AT LLOYD FLA LAT=30 28 41 LONG=084 00 31 STREAM STATE=12 COUNTY=065 DIST.=12																						
1964	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	7	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	3	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	9	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	2	1	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
SUM	33	5	5	5	6	0	3	2	5	5	0	6	4	6	0	0	5	0	0	0	0	0
02326800 11B COPELAND SINK DRAIN AT LLOYD FLA LAT=30 28 40 LONG=084 00 51 STREAM STATE=12 COUNTY=065 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
SUM	3	1	1	1	2	0	1	0	1	1	0	2	2	3	0	0	1	0	0	0	0	0
02326887 11B NATURAL BRIDGE SPRING NR WOODVILLE FLA LAT=30 17 06 LONG=084 08 50 SPRING STATE=12 COUNTY=073 DIST.=12																						
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1972	3	1	1	1	1	0	0	0	1	1	1	1	1	0	0	0	1	0	0	0	0	0
SUM	4	2	2	2	2	0	0	0	2	2	1	2	1	0	0	0	2	0	0	0	0	0
02326900 ST. MARKS RIVER NEAR NEWPORT, FLA. LAT=30 16 00 LONG=084 09 00 STREAM STATE=12 COUNTY=129 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1973	2	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
1974	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	15	5	5	5	7	0	4	2	5	5	0	7	7	6	0	0	5	0	0	0	0	0

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WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	SEDMT BED
02326997 RIVER SINK SPRING NR IVAN FLA										LAT=30 16 36 LONG=084 20 28					SPRING		STATE=12 COUNTY=129 DIST.=12					
1956	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1972	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1973	6	3	3	4	4	1	3	3	5	3	4	4	4	0	4	3	5	0	0	0	0	0
1974	4	1	4	4	0	0	3	3	4	1	4	4	4	0	4	4	3	0	0	0	0	0
1975	3	2	2	2	2	2	2	2	3	2	3	3	3	0	2	1	3	0	0	0	0	0
1976	2	0	0	2	0	0	0	0	2	0	0	2	2	0	0	0	1	0	0	0	0	0
SUM	18	9	12	15	9	3	8	8	17	9	11	16	13	0	10	8	15	0	0	0	0	0
02327000 WAKULLA SPRING NR CRAWFORDVILLE FLA										LAT=30 14 05 LONG=084 18 05					SPRING		STATE=12 COUNTY=129 DIST.=12					
1907	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1917	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	9	1	1	1	1	0	1	0	1	1	0	0	1	0	0	0	1	0	1	0	0	0
1955	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1956	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02327000 WAKULLA SPRING NR CRAWFORDVILLE FLA										LAT=30 14 05 LONG=084 18 05					SPRING		STATE=12 COUNTY=129 DIST.=12					
1963	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	7	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	9	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	9	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	8	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	8	2	2	2	2	2	2	2	2	2	1	2	2	2	2	0	2	0	0	0	0	0
1971	11	2	2	2	2	0	2	2	2	2	2	2	2	2	2	0	3	0	0	0	0	0
1972	12	3	3	3	3	0	2	2	3	3	2	3	2	4	2	0	5	1	0	0	0	0
1973	13	4	5	5	5	2	4	4	6	4	5	5	5	2	4	3	6	0	0	0	0	0
1974	15	2	5	5	1	1	4	4	5	2	5	5	5	1	4	4	4	0	0	0	0	0
1975	3	2	2	2	2	2	2	2	3	2	3	3	3	1	1	1	3	0	0	0	0	0
1976	3	2	2	3	2	0	1	1	3	2	1	3	3	1	0	0	2	0	0	0	0	0
SUM	313	22	26	27	22	7	22	19	29	22	19	27	27	16	15	8	30	1	1	0	0	0
02327010 11B LK BRADFORD NR TALLAHASSEE FLA										LAT=30 24 10 LONG=084 20 05 LAKE/RESERVOIR							STATE=12 COUNTY=073 DIST.=12					
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	5	0	0	0	1	0	0	0	0	0	0	1	1	5	0	0	0	0	0	0	0	0
SUM	9	4	4	4	5	0	3	1	4	4	0	5	5	8	0	0	4	0	0	0	0	0
02327015 11B LK MUNSON NR TALLAHASSEE FLA										LAT=30 22 10 LONG=084 18 20 LAKE/RESERVOIR							STATE=12 COUNTY=073 DIST.=12					
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	2	0	2	2	0	2	2	0	0	0	2	0	0	0	0	0
02327050 11C SOPCHOPPY R NR ARRAN FLA										LAT=30 13 50 LONG=084 32 20					STREAM		STATE=12 COUNTY=129 DIST.=12					
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
SUM	5	3	3	3	4	0	1	1	3	3	0	4	3	5	0	0	3	0	0	0	0	0
02327100 SOPCHOPPY RIVER NR SOPCHOPPY FLA										LAT=30 07 45 LONG=084 29 40					STREAM		STATE=12 COUNTY=129 DIST.=12					
1964	2	2	2	2	2	0	0	0	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1965	6	4	6	5	4	0	4	0	6	4	0	4	0	0	0	0	6	0	0	0	0	0

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WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_ OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_ TRO-GEN	PHOS_ PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_ IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02327100 SOPCHOPPY RIVER NR SOPCHOPPY FLA										LAT=30 07 45 LONG=084 29 40					STREAM		STATE=12 COUNTY=129 DIST.=12					
1966	8	8	8	8	8	0	8	0	8	8	0	8	6	0	0	0	8	0	0	0	0	0
1967	10	10	10	10	10	0	10	1	10	10	0	10	4	3	0	0	10	0	0	0	0	0
1968	15	14	13	13	13	1	13	4	13	13	0	13	13	5	11	0	13	2	1	11	0	0
1969	14	13	12	12	12	0	11	0	12	12	1	12	11	12	9	0	12	1	2	9	0	0
1970	12	12	12	12	12	1	6	3	12	12	1	12	12	12	12	0	12	1	0	11	0	0
1971	28	15	14	14	14	1	2	2	14	14	2	14	13	22	6	0	22	2	1	7	0	0
1972	27	13	12	12	12	0	2	2	12	12	5	12	12	20	10	0	24	1	2	9	3	0
1973	24	11	11	11	11	2	2	2	11	10	11	11	11	18	10	0	15	1	0	6	12	0
1974	13	12	11	11	11	0	2	2	11	11	10	11	11	9	11	0	10	1	2	7	11	0
1975	11	11	11	11	11	0	5	2	11	11	4	11	11	10	3	0	11	0	0	9	11	0
1976	7	5	5	5	5	0	1	0	5	5	1	6	6	5	0	0	6	0	0	5	7	0
SUM	177	130	127	126	125	5	66	18	127	124	35	126	110	116	72	0	151	9	8	74	44	0
02329000 OCHLOCKONEE RIVER NR HAVANA FLA										LAT=30 33 14 LONG=084 23 03					STREAM		STATE=12 COUNTY=073 DIST.=12					
1957	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1958	7	7	7	7	7	0	0	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1959	7	7	7	7	7	0	0	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1960	6	6	6	6	6	0	6	0	6	6	0	6	0	0	0	0	6	0	0	0	0	0
1961	8	8	8	8	8	0	7	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1962	7	7	7	7	7	0	7	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1965	2	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	4	4	4	4	4	0	4	1	4	4	0	4	1	1	0	0	4	0	0	0	0	0
1968	14	6	6	6	6	0	6	1	6	6	0	10	5	1	0	0	13	0	0	0	0	0
1969	18	6	6	6	6	0	5	0	6	6	0	18	14	2	0	0	16	0	0	0	0	0
1970	17	6	6	6	6	1	2	2	6	6	1	16	13	7	2	0	7	0	0	0	0	0
1971	12	8	8	8	8	0	2	2	8	8	2	8	8	6	2	0	9	0	0	0	0	0
1972	10	5	5	5	6	0	2	2	6	5	3	6	6	6	3	0	9	0	0	0	0	0
1973	10	1	1	1	5	1	1	1	5	1	5	5	5	8	5	0	10	0	0	0	0	0
1974	12	2	2	2	2	2	2	2	5	2	5	6	6	5	6	0	6	0	0	0	0	0
1975	9	8	8	8	8	0	3	3	8	8	4	9	9	8	3	0	8	0	0	8	8	0
1976	7	4	4	4	4	0	1	1	4	4	3	7	7	7	2	0	7	0	0	6	6	0
SUM	152	88	88	88	93	4	50	16	96	88	23	127	75	51	23	0	127	0	0	14	14	0
02329200 LAKE JACKSON NEAR TALLAHASSEE FLA										LAT=30 31 43 LONG=084 21 30					LAKE/RESERVOIR		STATE=12 COUNTY=073 DIST.=12					
1965	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1966	2	2	2	2	2	0	2	0	2	2	0	2	2	0	0	0	2	0	0	0	0	0
1967	3	2	2	2	1	0	2	2	3	2	0	2	2	1	0	0	2	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02329700 ROCKY COMFORT CREEK NEAR QUINCY, FLA.									LAT=30 32 44 LONG=084 38 09					STREAM			STATE=12 COUNTY=039 DIST.=12					
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0
SUM	12	6	6	6	7	0	4	2	6	6	1	8	7	7	0	0	7	0	0	0	0	0
02329900 LAKE TALQUIN NEAR BLOXHAM FLA									LAT=30 23 15 LONG=084 38 45					STREAM			STATE=12 COUNTY=073 DIST.=12					
1965	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	2	1	1	1	0	0	1	1	2	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	11	0	0	0	1	0	0	0	0	0	0	1	1	11	0	0	0	0	0	0	0	0
SUM	16	4	4	4	4	0	3	1	5	4	0	5	5	12	0	0	4	0	0	0	0	0
02330000 OCHLOCKONEE RIVER NEAR BLOXHAM, FLA.									LAT=30 22 59 LONG=084 39 18					STREAM			STATE=12 COUNTY=077 DIST.=12					
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	2	1	1	1	1	0	1	0	1	1	2	2	2	2	0	0	2	0	0	0	0	0
SUM	14	6	6	6	7	0	5	2	6	6	2	8	8	8	0	0	7	0	0	0	0	0
02330050 TELOGIA CREEK NR GREENSBORO FLA									LAT=30 33 44 LONG=084 43 36					STREAM			STATE=12 COUNTY=039 DIST.=12					
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0
1975	5	2	2	2	2	0	2	0	2	2	5	5	5	4	0	0	5	0	0	0	0	0
1976	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0
SUM	9	5	5	5	5	0	4	2	5	5	5	9	8	8	0	0	9	0	0	0	0	0
02330100 TELOGIA CREEK NEAR BRISTOL, FLA.									LAT=3[illegible] 25 34 LONG=084 55 39					STREAM			STATE=12 COUNTY=077 DIST.=12					
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
02329200 LAKE JACKSON NEAR TALLAHASSEE FLA LAT=30 31 43 LONG=084 21 30 LAKE/RESERVOIR STATE=12 COUNTY=073 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	2	2	2	2	2	1	2	2	2	2	1	2	2	1	2	0	2	0	0	0	0	0
1971	9	2	2	2	2	0	2	2	2	2	2	2	2	9	2	0	4	0	0	0	0	0
1972	4	2	2	2	2	0	2	2	2	2	2	2	2	4	2	0	4	0	0	0	0	0
1973	17	1	1	1	2	1	1	1	1	1	1	2	2	15	2	0	3	0	0	0	0	0
1974	21	2	2	2	2	2	2	2	2	2	3	3	3	20	3	0	3	0	0	0	0	0
1975	24	2	2	2	2	2	2	2	2	2	3	3	3	24	3	0	3	0	0	0	0	0
1976	15	2	2	2	2	0	1	1	2	2	2	2	2	15	2	0	2	0	0	0	0	0
SUM	99	19	19	19	19	6	18	14	20	19	14	22	22	90	16	0	27	0	0	0	0	0
02329500 LITTLE RIVER NEAR QUINCY, FLA. LAT=30 35 14 LONG=084 29 48 STREAM STATE=12 COUNTY=039 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0
1974	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	2	1	1	1	1	0	1	0	1	1	2	2	2	1	0	0	2	0	0	0	0	0
SUM	12	5	5	5	5	0	4	2	5	5	2	6	5	4	0	0	6	0	0	0	0	0
02329542 QUINCY CREEK AT QUINCY FLA. LAT=30 35 32 LONG=084 33 49 STREAM STATE=12 COUNTY=039 DIST.=12																						
1956	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1975	5	2	2	2	2	0	2	0	2	2	5	5	5	4	0	0	5	0	0	0	0	0
1976	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0
SUM	8	4	4	4	4	0	3	0	4	4	5	8	6	5	0	0	8	0	0	0	0	0
02329600 LITTLE RIVER NR MIDWAY FLA LAT=30 30 44 LONG=084 31 25 STREAM STATE=12 COUNTY=039 DIST.=12																						
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1975	5	2	2	2	2	0	2	0	2	2	5	5	5	5	0	0	5	0	0	0	0	0
1976	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0
SUM	12	6	6	6	7	0	4	2	6	6	5	11	10	12	0	0	10	0	0	0	0	0
02329700 ROCKY COMFORT CREEK NEAR QUINCY, FLA. LAT=30 32 44 LONG=084 38 09 STREAM STATE=12 COUNTY=039 DIST.=12																						
1956	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02330100 TELOGIA CREEK NEAR BRISTOL, FLA. LAT=30 25 34 LONG=084 55 39 STREAM STATE=12 COUNTY=077 DIST.=12																						
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1975	4	1	1	1	1	0	1	0	1	1	4	4	4	4	0	0	3	0	0	0	0	0
1976	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0
SUM	12	6	6	6	7	0	4	2	6	6	4	11	10	11	0	0	9	0	0	0	0	0
02330150 OCHLOCKONEE R NR SMITH CREEK FLA LAT=30 10 35 LONG=084 40 05 STREAM STATE=12 COUNTY=129 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1975	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0
SUM	5	2	2	2	3	0	1	0	2	2	1	4	4	5	0	0	3	0	0	0	0	0
02330200 11D NEW RIVER AT VILAS FLA LAT=30 13 08 LONG=084 53 28 STREAM STATE=12 COUNTY=077 DIST.=12																						
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	3	3	3	3	3	0	3	2	3	3	0	3	3	2	0	0	3	0	0	0	0	0
02330300 NEW RIVER NEAR WILMA, FLA. LAT=30 07 40 LONG=084 53 45 STREAM STATE=12 COUNTY=077 DIST.=12																						
1956	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0
1974	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	10	5	5	5	5	0	3	2	5	5	0	5	2	3	0	0	5	0	0	0	0	0
02330400 11D NEW RIVER NR SUMATRA FLA LAT=30 02 19 LONG=084 50 38 STREAM STATE=12 COUNTY=077 DIST.=12																						
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
SUM	6	4	4	4	5	0	3	2	4	4	0	5	5	5	0	0	4	0	0	0	0	0

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WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02358000 APALACHICOLA RIVER AT CHATTAHOOCHEE FLA LAT=30 42 03 LONG=084 51 33 STREAM STATE=12 COUNTY=063 DIST.=12																						
1925	1	1	1	1	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
1952	1	1	1	1	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1961	5	4	4	4	4	0	4	4	4	4	0	4	3	0	0	0	4	0	3	0	0	0
1964	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	23	12	11	11	11	0	11	0	11	11	0	11	1	0	0	0	11	0	22	0	0	0
1966	23	15	12	12	12	0	12	4	12	12	0	12	11	0	0	0	12	0	19	0	0	0
1967	23	20	15	15	15	0	14	1	17	15	0	14	2	1	0	0	17	0	14	0	0	0
1968	30	16	15	15	15	0	15	1	15	15	0	15	4	1	0	0	15	0	12	0	12	0
1969	25	12	12	12	12	0	12	0	12	12	0	12	10	1	0	0	12	0	20	0	0	0
1970	14	8	7	7	7	1	3	2	7	7	1	7	3	6	2	0	7	0	9	0	0	0
1971	21	10	8	8	8	0	2	2	8	8	0	8	8	4	2	0	10	0	11	0	0	0
1972	20	5	5	5	6	0	2	2	5	5	2	6	6	6	3	0	8	0	12	0	0	0
1973	18	2	1	1	5	1	1	1	4	1	5	5	5	7	5	0	8	0	8	0	0	0
1974	21	7	5	5	6	1	4	4	7	6	6	7	7	5	7	0	7	0	10	4	5	0
1975	7	6	6	6	6	0	4	4	6	6	4	6	6	5	4	0	5	0	4	5	6	0
1976	7	5	5	5	5	0	2	2	5	5	2	7	7	7	3	0	7	0	1	5	6	0
SUM	240	125	109	109	115	3	89	28	116	109	20	117	74	43	26	0	125	0	145	14	29	0
02358508 11E GLEN JULIA SPRINGS AT MT PLEASANT FLA LAT=30 39 05 LONG=084 42 27 SPRING STATE=12 COUNTY=039 DIST.=12																						
1956	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1973	2	1	1	1	1	0	0	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0
SUM	3	2	2	2	2	0	0	0	2	1	0	2	0	2	0	0	3	0	0	0	0	0
02358600 FLAT CREEK NR CHATTAHOOCHEE FLA LAT=30 37 43 LONG=084 50 06 STREAM STATE=12 COUNTY=039 DIST.=12																						
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0
1975	5	2	2	2	2	0	2	0	2	2	5	5	5	4	0	0	5	0	0	0	0	0
1976	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0
SUM	9	5	5	5	5	0	4	2	5	5	5	9	8	8	0	0	9	0	0	0	0	0
02358700 APALACHICOLA RIVER NEAR BLOUNTSTOWN FLA LAT=30 25 30 LONG=085 01 53 STREAM STATE=12 COUNTY=013 DIST.=12																						
1957	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1958	7	7	7	7	7	0	0	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1959	7	7	7	7	7	0	0	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1960	6	6	6	6	6	0	6	0	6	6	0	6	0	0	0	0	6	0	0	0	0	0
1961	7	7	7	7	7	0	7	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1962	7	7	7	7	7	0	7	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0

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WATER YEAR	NO. SAMPL	D.S.	HARDNESS	MAJOR CATIONS	SILICA	ALUMINUM	IRON	MANGANESE	MAJOR ANIONS	FLUORIDE	CARBON	NITROGEN	PHOSPHOROUS	D.O.	BOD	COD	PH	PESTICIDES	RADIOCHEMICAL	BIOLOGIC	SEDMT SUS	BED
02358700 APALACHICOLA RIVER NEAR BLOUNTSTOWN FLA LAT=30 25 30 LONG=085 01 53 STREAM STATE=12 COUNTY=013 DIST.=12																						
SUM	35	35	35	35	35	0	20	0	35	35	0	35	0	0	0	0	35	0	0	0	0	0
02358795 11E BLUE SPRING NEAR MARIANNA FLA LAT=30 47 25 LONG=085 08 27 SPRING STATE=12 COUNTY=063 DIST.=12																						
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1972	3	1	1	1	1	0	0	0	1	1	1	1	1	2	1	0	2	1	0	0	0	0
SUM	4	2	2	2	2	0	0	0	2	2	1	2	1	2	1	0	3	1	0	0	0	0
02358800 11E CHIPOLA RIVER AT OAKDALE FLA LAT=30 43 02 LONG=085 12 01 STREAM STATE=12 COUNTY=063 DIST.=12																						
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0
SUM	3	3	3	3	3	0	2	2	3	3	0	3	2	3	0	0	3	0	0	0	0	0
02358998 11E HOLLIMAN BRANCH NR ALTHA FLA LAT=30 32 43 LONG=085 09 33 STREAM STATE=12 COUNTY=013 DIST.=12																						
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
SUM	4	2	2	2	3	0	0	0	2	2	0	3	2	4	0	0	2	0	0	0	0	0
02359000 CHIPOLA RIVER NR ALTHA, FLA. LAT=30 32 02 LONG=085 09 [illegible]5 STREAM STATE=12 COUNTY=013 DIST.=12																						
1957	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1958	7	7	7	7	7	0	0	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1959	7	7	7	7	7	0	0	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1960	6	6	6	6	6	0	6	0	6	6	0	6	0	0	0	0	6	0	0	0	0	0
1961	7	7	7	7	7	0	7	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1962	7	6	7	7	7	0	7	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1965	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	3	3	3	3	3	0	3	1	3	3	0	3	1	1	0	0	3	0	0	0	0	0
1968	8	7	7	7	7	0	7	1	7	7	0	8	3	1	0	0	7	0	0	0	0	0
1969	16	6	6	6	6	0	5	0	6	6	0	16	12	2	0	0	6	0	0	0	0	0
1970	17	6	6	6	6	2	2	2	6	6	1	16	13	7	2	0	7	0	0	0	0	0
1971	11	8	8	8	8	0	2	2	8	8	1	8	8	3	2	0	10	0	0	0	0	0
1972	11	6	6	6	7	0	2	2	6	6	3	7	7	6	3	0	9	0	0	0	0	0
1973	11	1	1	1	5	1	1	1	4	1	5	5	4	8	5	0	8	0	0	0	0	0
1974	8	2	2	2	2	2	2	2	3	2	5	5	5	3	5	0	4	0	0	0	0	0
1975	8	8	8	8	8	0	4	4	8	8	4	8	8	7	3	0	8	0	0	7	8	0
1976	7	6	6	6	6	0	2	2	6	6	3	7	7	6	3	0	7	0	0	6	7	0
SUM	137	89	90	90	95	5	52	17	94	90	22	120	69	44	23	0	106	0	0	13	15	0

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
02359100 11E DEAD LAKE NR WEWAHITCHKA FLA									LAT=30 11 40 LONG=085 11 50 LAKE/RESERVOIR STATE=12 COUNTY=045 DIST.=12													
1965	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1966	2	2	2	2	2	0	2	0	2	2	0	2	2	0	0	0	2	0	0	0	0	0
1967	3	2	2	2	1	0	2	2	3	2	0	2	2	1	0	0	2	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	7	0	0	0	1	0	0	0	0	0	0	1	1	7	0	0	0	0	0	0	0	0
1974	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	23	8	8	8	8	0	7	3	9	8	0	9	9	10	0	0	8	0	0	0	0	0
02359285 WETAPPO CREEK NEAR WEWAHITCHKA FLA									LAT=30 03 00 LONG=085 18 20 STREAM STATE=12 COUNTY=045 DIST.=12													
1936	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	7	4	5	4	4	0	3	0	5	4	0	4	0	0	0	0	5	0	0	0	0	0
1963	10	2	2	1	2	0	1	0	2	1	0	1	0	0	0	0	2	0	0	0	0	0
1964	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	25	6	7	5	6	0	4	0	7	5	0	5	0	0	0	0	7	0	0	0	0	0
02359300 SANDY CREEK NR PANAMA CITY FLA									LAT=30 08 27 LONG=085 24 26 STREAM STATE=12 COUNTY=005 DIST.=12													
1962	2	1	2	1	1	0	1	0	2	1	0	1	0	0	0	0	2	0	0	0	0	0
1963	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	10	6	7	6	7	0	4	2	7	6	0	7	5	5	0	0	7	0	0	0	0	0
02359320 11F N BAY AT LYNN HAVEN FLA									LAT=30 15 20 LONG=085 38 30 STREAM STATE=12 COUNTY= DIST.=12													
1962	3	2	2	2	2	0	1	0	3	2	0	2	0	0	0	0	2	0	0	0	0	0
1963	2	1	1	1	1	0	1	0	2	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	5	3	3	3	3	0	2	0	5	3	0	3	0	0	0	0	3	0	0	0	0	0
02359350 ECONFINA C NR COMPASS LK FLA									LAT=30 33 20 LONG=085 26 05 STREAM STATE=12 COUNTY=005 DIST.=12													
1962	3	2	3	2	2	0	0	0	3	2	0	2	0	0	0	0	3	0	0	0	0	0
1963	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
02359350 ECONFINA C NR COMPASS LK FLA									LAT=30 33 20 LONG=085 26 05					STREAM			STATE=12 COUNTY=005 DIST.=12					
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1971	1	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
SUM	8	6	7	6	7	0	3	2	7	6	0	7	4	2	0	0	7	0	0	0	0	0
02359478 GAINER SPRINGS NO. 3 NR BENNETT, FLA.									LAT=30 25 38 LONG=085 32 55					STREAM			STATE=12 COUNTY=005 DIST.=12					
1962	2	2	2	1	1	0	0	0	2	1	0	1	1	0	0	0	2	0	0	0	0	0
1972	2	1	1	1	1	0	0	0	1	1	0	1	0	2	0	0	2	0	0	0	0	0
SUM	4	3	3	2	2	0	0	0	3	2	0	2	1	2	0	0	4	0	0	0	0	0
02359479 GAINER SPRINGS NO.2 NEAR BENNETT FLA									LAT=30 25 36 LONG=085 32 54					SPRING			STATE=12 COUNTY=005 DIST.=12					
1962	2	2	2	1	1	0	0	0	2	1	0	1	1	0	0	0	2	0	0	0	0	0
1972	2	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	2	1	0	0	0	0
SUM	4	3	3	2	2	0	1	1	3	2	1	2	2	1	1	0	4	1	0	0	0	0
02359480 GAINER SPRINGS NO.1 NR BENNETT FLA									LAT=30 25 35 LONG=085 32 52					SPRING			STATE=12 COUNTY=005 DIST.=12					
1962	4	2	2	1	1	0	0	0	2	1	0	1	1	0	0	0	2	0	0	0	0	0
1972	2	1	1	1	1	0	0	0	1	1	0	1	0	2	0	0	2	0	0	0	0	0
SUM	6	3	3	2	2	0	0	0	3	2	0	2	1	2	0	0	4	0	0	0	0	0
02359500 ECONFINA CREEK NEAR BENNETT, FLA.									LAT=30 23 04 LONG=085 33 24					STREAM			STATE=12 COUNTY=005 DIST.=12					
1962	35	24	24	31	31	0	23	0	27	24	0	24	0	0	0	0	27	0	0	0	0	0
1963	45	37	40	38	42	0	32	0	40	32	0	31	0	0	0	0	40	0	0	0	0	0
1964	16	11	14	11	11	0	8	0	15	11	0	10	0	0	0	0	15	0	0	0	0	0
1965	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	3	2	2	2	2	0	2	0	3	2	0	2	2	2	1	0	2	0	0	1	0	0
1970	14	7	6	7	7	0	7	0	12	7	1	7	2	14	6	0	9	0	0	5	0	0
1971	9	3	3	3	4	0	3	0	3	3	4	3	3	8	3	0	6	0	0	0	0	0
1972	8	4	4	4	4	0	3	0	4	4	3	4	2	8	4	0	8	0	0	0	0	0
1974	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	142	92	97	100	105	0	82	2	108	87	8	85	12	34	14	0	111	0	0	6	0	0
02359550 BEAR C NR YOUNGSTOWN FLA									LAT=30 19 10 LONG=085 27 20					STREAM			STATE=12 COUNTY=005 DIST.=12					
1962	5	4	5	4	4	0	0	0	5	4	0	4	0	0	0	0	5	0	0	0	0	0

02359550 BEAR C NR YOUNGSTOWN FLA LAT=30 19 10 LONG=085 27 20 STREAM STATE=12 COUNTY=005 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ-OR AN-IONS	FLU-O-RIDE	CAR-BON	NI-TRO-GEN	PHOS-PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD-IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1963	3	3	3	1	3	0	1	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	15	11	12	9	12	0	4	2	12	8	0	9	5	5	0	0	12	0	0	0	0	0

02359600 LITTLE BEAR CREEK AT YOUNGSTOWN FLA LAT=30 32 00 LONG=085 26 40 STREAM STATE=12 COUNTY=005 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ-OR AN-IONS	FLU-O-RIDE	CAR-BON	NI-TRO-GEN	PHOS-PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD-IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1962	10	4	5	4	4	0	0	0	5	4	0	4	0	0	0	0	5	0	0	0	0	0
1963	9	2	2	0	2	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0
1964	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	28	6	7	4	6	0	0	0	7	4	0	4	0	0	0	0	7	0	0	0	0	0

02359604 JUNIPER CR NR YOUNGSTOWN FL LAT=30 21 03 LONG=085 29 56 STREAM STATE=12 COUNTY=005 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ-OR AN-IONS	FLU-O-RIDE	CAR-BON	NI-TRO-GEN	PHOS-PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD-IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1962	2	1	2	1	1	0	0	0	2	1	0	1	0	0	0	0	2	0	0	0	0	0
1963	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	3	2	3	2	2	0	0	0	3	2	0	2	0	0	0	0	3	0	0	0	0	0

02359650 BIG CEDAR CREEK NR BENNETT,FLA LAT=30 22 10 LONG=085 37 20 STREAM STATE=12 COUNTY=005 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ-OR AN-IONS	FLU-O-RIDE	CAR-BON	NI-TRO-GEN	PHOS-PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD-IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1962	10	4	5	4	4	0	0	0	5	4	0	4	0	0	0	0	5	0	0	0	0	0
1963	9	3	3	2	3	0	2	0	3	2	0	2	0	0	0	0	3	0	0	0	0	0
1964	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	27	7	8	6	7	0	2	0	8	6	0	6	0	0	0	0	8	0	0	0	0	0

02359660 DEER POINT LAKE NEAR PANAMA CITY FLA LAT=30 17 45 LONG=085 34 55 LAKE/RESERVOIR STATE=12 COUNTY=005 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ-OR AN-IONS	FLU-O-RIDE	CAR-BON	NI-TRO-GEN	PHOS-PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD-IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1966	3	3	3	3	3	0	2	0	3	3	0	3	3	0	0	0	3	0	0	0	0	0
1967	2	2	2	2	2	0	2	1	2	2	0	2	2	1	0	0	2	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	2	2	2	2	2	1	2	2	2	2	1	2	2	1	2	0	2	0	0	0	0	0
1971	7	2	2	2	2	0	2	2	2	2	2	2	2	7	2	0	4	0	0	0	0	0
1972	4	2	2	2	2	0	2	2	2	2	2	2	2	4	2	0	4	0	0	0	0	0
1973	10	1	1	1	2	1	1	1	1	1	2	2	2	8	2	0	3	0	0	0	0	0
1974	27	2	2	2	2	2	2	2	2	2	3	3	3	19	3	0	3	0	0	0	0	0
1975	28	2	2	2	2	2	2	2	2	2	3	3	3	28	3	0	3	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARDNESS	MAJOR CATIONS	SILICA	ALUMINUM	IRON	MANGANESE	MAJOR ANIONS	FLUORIDE	CARBON	NITROGEN	PHOSPHOROUS	D.O.	BOD	COD	PH	PESTICIDES	RADIOCHEMICAL	BIOLOGIC	SEDMT SUS	BED
02359660 DEER POINT LAKE NEAR PANAMA CITY FLA LAT=30 17 45 LONG=085 34 55 LAKE/RESERVOIR STATE=12 COUNTY=005 DIST.=12																						
1976	9	1	1	1	1	1	1	1	1	1	1	1	1	9	1	0	1	0	0	0	0	0
SUM	94	19	19	19	20	7	18	14	19	19	14	22	22	78	15	0	27	0	0	0	0	0
02359675 BURNT MILL CR NR SOUTHPORT FL LAT=30 22 46 LONG=085 43 42 STREAM STATE=12 COUNTY=005 DIST.=12																						
1962	4	3	4	3	3	0	0	0	4	3	0	3	0	0	0	0	4	0	0	0	0	0
1963	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	5	4	5	4	4	0	0	0	5	4	0	4	0	0	0	0	5	0	0	0	0	0
02359680 BIG CROOKED CR NR WEST BAY FL LAT=30 20 12 LONG=085 49 43 STREAM STATE=12 COUNTY=005 DIST.=12																						
1962	3	3	3	3	3	0	0	0	3	3	0	3	0	0	0	0	3	0	0	0	0	0
1963	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	4	4	4	4	4	0	0	0		4	0	4	0	0	0	0	4	0	0	0	0	0
02359683 PIGEON CR NR WEST BAY FL LAT=30 20 10 LONG=085 49 29 STREAM STATE=12 COUNTY=005 DIST.=12																						
1962	3	3	3	3	3	0	0	0	3	3	0	3	0	0	0	0	3	0	0	0	0	0
1963	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	4	4	4	4	4	0	0	0	4	4	0	4	0	0	0	0	4	0	0	0	0	0
02364620 EIGHTMILE CREEK NR GASKIN FLA LAT=30 58 50 LONG=086 10 45 STREAM STATE=12 COUNTY=131 DIST.=12																						
1968	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	16	3	3	3	3	0	1	0	3	3	0	3	1	1	0	0	3	0	0	0	0	0
1970	13	2	2	2	2	0	0	0	2	2	0	2	1	0	0	0	2	0	0	0	0	0
SUM	30	5	5	5	5	0	1	0	5	5	0	5	2	1	0	0	5	0	0	0	0	0
02364769 12A SPRING BRANCH NEAR GASKIN, FLA. LAT=30 58 18 LONG=086 05 53 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	2	0	0	2	0	0	0	0	0
02364781 12A LIMESTONE CREEK NEAR GASKIN, FLA. LAT=30 59 10 LONG=086 02 41 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	2	0	0	2	0	0	0	0	0
02365726 BRUCE CREEK NR DEFUNIAK SPRINGS FLA LAT=30 41 53 LONG=086 04 50 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	2	0	0	2	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ-OR AN-IONS	FLU-O-RIDE	CAR-BON	NI-TRO-GEN	PHOS-PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD-IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02365728 12A DEFUNIAK LAKE AT DEFUNIAK SPRINGS, FLA LAT=30 43 09 LONG=086 06 42 LAKE/RESERVOIR STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	2	0	0	2	0	0	0	0	0
02365758 BRUCE CREEK NEAR REDBAY FLA LAT=30 36 51 LONG=086 00 50 STREAM STATE=12 COUNTY=131 DIST.=12																						
1968	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	14	2	2	2	2	0	2	0	2	2	0	2	1	1	0	0	2	0	0	0	0	0
1970	14	2	2	2	2	0	0	0	2	2	0	2	1	0	0	0	2	0	0	0	0	0
SUM	30	4	4	4	4	0	2	0	4	4	0	4	2	1	0	0	4	0	0	0	0	0
02365800 12A SEVEN RUNS CREEK NEAR RED BAY, FLA. LAT=30 32 18 LONG=085 55 14 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	2	2	2	2	2	0	2	0	2	2	0	2	1	1	0	0	2	0	0	0	0	0
1970	2	2	2	2	2	0	0	0	2	2	0	2	1	0	0	0	2	0	0	0	0	0
SUM	4	4	4	4	4	0	2	0	4	4	0	4	2	1	0	0	4	0	0	0	0	0
02366500 CHOCTAWHATCHEE RIVER NR BRUCE FLA LAT=30 27 03 LONG=085 53 54 STREAM STATE=12 COUNTY=131 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	9	9	9	9	9	0	4	4	9	9	4	9	9	7	3	0	9	0	0	6	9	0
1976	7	6	6	6	6	0	3	2	6	6	2	7	7	7	0	0	7	0	0	6	7	0
SUM	30	20	20	20	21	0	11	8	20	20	6	22	22	19	3	0	21	0	0	12	16	0
02366836 12A BLACK CREEK NEAR BRUCE, FLA. LAT=30 28 26 LONG=085 59 20 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	2	0	0	2	0	0	0	0	0
02366859 12A PATE BRANCH NR FREEPORT FLA LAT=30 28 44 LONG=086 04 25 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
SUM	4	2	2	2	3	0	1	0	2	2	0	3	3	3	0	0	2	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
02366900 MAGNOLIA CREEK NEAR FREEPORT, FLA. LAT=30 31 48 LONG=086 05 15 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	4	3	3	3	3	0	2	0	3	3	0	3	1	2	0	0	4	1	0	0	0	0
1970	4	3	3	3	3	0	0	0	3	3	1	3	1	0	0	0	3	1	0	0	0	0
1971	4	1	1	1	2	0	0	0	1	1	0	2	2	4	0	0	2	0	0	0	0	0
1972	4	2	2	2	2	0	0	0	3	2	0	2	2	2	0	0	4	1	0	0	0	0
1973	4	2	2	2	2	0	0	0	4	2	0	2	2	4	0	0	4	1	0	0	0	0
1974	8	2	2	2	2	0	0	0	2	2	0	3	3	3	0	0	3	1	0	0	0	0
1975	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	1	0	0	0	0
1976	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	30	15	15	15	16	0	3	0	18	15	1	17	13	16	0	0	22	6	0	0	0	0
02366911 LAFAYETTE CREEK AT FREEPORT FLA LAT=30 29 35 LONG=086 07 33 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1972	2	1	1	1	1	0	0	0	2	1	0	1	1	2	0	0	2	1	0	0	0	0
1973	4	1	1	1	1	0	0	0	2	1	0	1	1	2	0	0	2	3	0	0	0	0
1974	3	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	2	0	0	0	0
1975	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	1	0	0	0	0
SUM	12	6	6	6	6	0	2	0	8	6	0	6	6	8	0	0	8	7	0	0	0	0
02367000 ALAQUA CREEK NEAR DE FUNIAK SPRINGS, FLA. LAT=30 37 00 LONG=086 09 50 STREAM STATE=12 COUNTY=131 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	14	5	5	5	6	0	4	2	5	5	0	6	6	5	0	0	5	0	0	0	0	0
02367165 BASIN CREEK NR PORTLAND FL LAT=30 31 02 LONG=086 14 09 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	2	0	0	2	0	0	0	0	0
02367242 128 LITTLE ROCKY CREEK NR NICEVILLE FLA LAT=30 36 34 LONG=086 25 31 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0

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WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02367242 128 LITTLE ROCKY CREEK NR NICEVILLE FLA LAT=30 36 34 LONG=086 25 31 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
1974	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	6	2	2	2	3	0	1	0	2	2	0	3	3	3	0	0	2	0	0	0	0	0
02367250 ROCKY CREEK NEAR NICEVILLE FLA LAT=30 32 07 LONG=086 22 55 STREAM STATE=12 COUNTY=131 DIST.=12																						
1965	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	3	2	2	2	2	0	3	1	2	2	0	3	1	1	0	0	3	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
SUM	8	7	7	7	7	0	6	2	7	7	0	8	5	3	0	0	8	0	0	0	0	0
02367300 128 SWIFT CR NR NICEVILLE FLA LAT=30 31 40 LONG=086 28 00 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	3	3	3	3	3	0	3	2	3	3	0	3	3	2	0	0	3	0	0	0	0	0
02367305 128 TURKEY CR NR NICEVILLE FLA LAT=30 33 43 LONG=086 32 10 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	3	2	2	2	2	0	3	1	2	2	0	3	1	1	0	0	3	0	0	0	0	0
1968	2	2	2	2	2	0	2	1	2	2	0	2	1	1	0	0	2	0	0	0	0	0
SUM	6	5	5	5	5	0	6	2	5	5	0	6	3	2	0	0	6	0	0	0	0	0
02367310 JUNIPER CREEK AT STATE HIGHWAY 85, NR. NIC LAT=30 33 26 LONG=086 31 10 STREAM STATE=12 COUNTY=091 DIST.=12																						
1966	2	2	2	2	2	0	2	0	2	2	0	2	1	0	0	0	2	0	0	0	0	0
1967	2	1	1	1	1	0	2	1	1	1	0	2	1	1	0	0	2	0	0	0	0	0
1968	2	2	2	2	2	0	2	1	2	2	0	2	1	1	0	0	2	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	17	7	7	7	8	0	7	2	7	7	0	9	6	5	0	0	8	0	0	0	0	0
02367320 128 EAST BAY R NR WYNNEHAVEN BCH FLA LAT=30 25 53 LONG=086 46 20 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	2	2	2	2	2	0	2	1	2	2	0	2	1	1	0	0	2	0	0	0	0	0
1968	2	2	2	2	2	0	2	1	2	2	0	2	1	1	0	0	2	0	0	0	0	0

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WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02367320 12C EAST BAY R NR WYNNEHAVEN BCH FLA LAT=30 25 53 LONG=086 46 20 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
SUM	5	5	5	5	5	0	5	2	5	5	0	5	3	2	0	0	5	0	0	0	0	0
02367900 12C YELLOW R NR OAK GROVE FLA LAT=30 55 30 LONG=086 33 34 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	3	3	3	3	3	0	3	2	3	3	0	3	3	2	0	0	3	0	0	0	0	0
02367940 12C KARRICK L NR BLACKMAN FLA LAT=30 54 00 LONG=086 38 40 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	2	0	2	2	0	2	2	0	0	0	2	0	0	0	0	0
02368000 YELLOW RIVER AT MILLIGAN FLA LAT=30 45 10 LONG=086 37 45 STREAM STATE=12 COUNTY=091 DIST.=12																						
1957	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1958	9	9	9	9	9	0	0	0	9	9	0	9	0	0	0	0	9	0	0	0	0	0
1959	9	9	9	9	9	0	0	0	9	9	0	9	0	0	0	0	9	0	0	0	0	0
1960	8	8	8	8	8	0	8	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1961	6	6	6	6	6	0	6	0	6	6	0	6	0	0	0	0	6	0	0	0	0	0
1962	6	6	6	6	6	0	4	0	6	6	0	6	0	0	0	0	6	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	8	7	7	7	7	0	0	0	7	7	0	7	1	0	0	0	7	0	0	0	0	0
1968	9	6	6	6	6	0	6	1	6	6	0	8	4	1	0	0	6	0	0	0	0	0
1969	20	8	8	8	8	0	6	0	8	8	0	18	12	3	0	0	8	0	0	0	0	0
1970	17	6	6	6	6	1	2	2	6	6	1	16	12	7	2	0	7	0	0	0	0	0
1971	12	5	5	5	6	0	1	1	5	5	1	8	6	2	1	0	6	0	0	0	0	0
1972	11	6	6	6	7	0	2	2	6	6	2	7	7	6	3	0	10	0	0	0	0	0
1973	12	2	2	2	6	2	2	2	6	2	6	6	6	10	6	0	10	0	0	0	0	0
1974	10	1	1	1	1	1	1	1	2	1	6	6	6	5	6	0	4	0	0	0	0	0
1975	11	10	10	10	10	0	4	4	10	10	6	11	11	10	6	0	11	0	0	10	10	0
1976	9	7	7	7	7	0	2	2	7	7	3	8	8	8	3	0	8	0	0	7	8	0
SUM	159	98	98	98	104	4	45	15	103	98	25	135	74	52	27	0	117	0	0	17	18	0
02368300 BAGGETT CREEK NEAR MILLIGAN, FLA. LAT=30 43 40 LONG=086 39 35 STREAM STATE=12 COUNTY=091 DIST.=12																						
1966	2	2	2	2	2	0	2	0	2	2	0	2	1	0	0	0	2	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0

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WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
02368300 BAGGETT CREEK NEAR MILLIGAN, FLA. LAT=30 43 40 LONG=086 39 35 STREAM STATE=12 COUNTY=091 DIST.=12																						
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	12	6	6	6	7	0	5	2	6	6	0	7	6	6	0	0	6	0	0	0	0	0
02368337 12C CANEY CREEK NR GORDON FLA LAT=30 52 46 LONG=080 13 11 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	2	0	0	2	0	0	0	0	0
02368450 12C GUM CREEK NR DE FUNIAK SPRINGS FLA LAT=30 48 06 LONG=086 11 42 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	2	0	0	2	0	0	0	0	0
02368500 SHOAL RIVER NR. MOSSY HEAD LAT=30 47 45 LONG=086 18 25 STREAM STATE=12 COUNTY=131 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	2	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	4	4	4	4	4	0	4	1	4	4	0	4	1	1	0	0	4	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	18	8	8	8	9	0	7	2	8	8	0	9	6	5	0	0	8	0	0	0	0	0
02368700 12C LAKE JACKSON NEAR PAXTON FLA LAT=30 59 13 LONG=086 19 40 LAKE/RESERVOIR STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	1	0	0	2	0	0	0	0	0
02368800 12C POND CR NR DORCAS FLA LAT=30 50 02 LONG=086 25 43 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
1966	2	2	2	2	2	0	2	0	2	2	0	2	1	0	0	0	2	0	0	0	0	0
1967	2	2	2	2	2	0	2	1	2	2	0	2	1	1	0	0	2	0	0	0	0	0
1968	3	3	3	3	3	0	3	1	3	3	0	3	1	1	0	0	3	0	0	0	0	0
SUM	7	7	7	7	7	0	7	2	7	7	0	7	3	2	0	0	7	0	0	0	0	0
02368817 12C PINE LOG CREEK NEAR FLOWERSVILLE FLA LAT=30 52 43 LONG=086 21 42 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02368817 12C PINE LOG CREEK NEAR FLOWERSVILLE FLA LAT=30 52 43 LONG=086 21 42 STREAM STATE=12 COUNTY=131 DIST.=12																						
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	2	0	0	2	0	0	0	0	0
02368836 12C LONG CREEK NEAR MOSSY HEAD, FLA. LAT=30 49 42 LONG=086 20 26 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	2	0	0	2	0	0	0	0	0
02368850 12C SHOAL R NR DORCAS FLA LAT=30 47 27 LONG=086 25 14 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	3	3	3	3	3	0	3	2	3	3	0	3	3	2	0	0	3	0	0	0	0	0
02368900 12C SHOAL R AT US HWY 90 NR CRESTVIEW FLA LAT=30 45 10 LONG=086 30 33 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
SUM	5	3	3	3	4	0	3	1	3	3	0	4	4	3	0	0	3	0	0	0	0	0
02368944 12C TITI CREEK NR MOSSY HEAD FLA LAT=30 42 07 LONG=085 23 16 STREAM STATE=12 COUNTY=131 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	1	0	2	2	0	2	2	2	0	0	2	0	0	0	0	0
02368990 12C TITI CR NR CRESTVIEW FLA LAT=30 42 05 LONG=086 29 28 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12																						
1966	2	2	2	2	2	0	2	0	2	2	0	2	1	0	0	0	2	0	0	0	0	0
1967	2	2	2	2	2	0	2	1	2	2	0	2	1	1	0	0	2	0	0	0	0	0
1968	3	3	3	3	3	0	3	1	3	3	0	3	1	1	0	0	3	0	0	0	0	0
SUM	7	7	7	7	7	0	7	2	7	7	0	7	3	2	0	0	7	0	0	0	0	0
02369000 SHOAL RIVER NEAR CRESTVIEW, FLA. LAT=30 41 48 LONG=086 34 17 STREAM STATE=12 COUNTY=091 DIST.=12																						
1966	1	1	1	1	1	0	0	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	2	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	5	5	5	5	5	0	5	1	5	5	0	5	1	1	0	0	5	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02369000 SHOAL RIVER NEAR CRESTVIEW, FLA.									LAT=30 41 48		LONG=086 34 17			STREAM			STATE=12	COUNTY=091		DIST.=12		
SUM	17	9	9	9	10	0	7	2	9	9	0	10	6	6	0	0	9	0	0	0	0	0
02369500 YELLOW R NR HOLT FLA									LAT=30 40 25		LONG=086 44 50			STREAM			STATE=12	COUNTY=091		DIST.=12		
1958	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	3	3	3	3	3	0	0	0	3	3	0	3	0	0	0	0	3	0	0	0	0	0
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
SUM	12	10	10	10	11	0	4	2	10	10	0	11	5	5	0	0	10	0	0	0	0	0
02369600 12C YELLOW RIVER NEAR MILTON, FLA.									LAT=30 34 10		LONG=086 55 25			STREAM			STATE=12	COUNTY=113		DIST.=12		
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
SUM	3	1	1	1	2	0	1	0	1	1	0	2	2	3	0	0	1	0	0	0	0	0
02369920 12D BLACKWATER R NR GOOD HOPE FLA									LAT=30 59 20		LONG=086 43 12			LAKE/RESERVOIR			STATE=12	COUNTY=091		DIST.=12		
1966	2	2	2	2	2	0	2	0	2	2	0	2	1	0	0	0	2	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	4	4	4	4	4	0	4	2	4	4	0	4	3	2	0	0	4	0	0	0	0	0
02369930 12D BLACKWATER R NR BLACKMAN FLA									LAT=30 56 00		LONG=086 44 09			LAKE/RESERVOIR			STATE=12	COUNTY=091		DIST.=12		
1966	2	2	2	2	2	0	2	0	2	2	0	2	1	0	0	0	2	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	3	3	3	3	3	0	3	1	3	3	0	3	2	1	0	0	3	0	0	0	0	0
02370000 BLACKWATER RIVER NR. BAKER									LAT=30 50 00		LONG=086 44 05			STREAM			STATE=12	COUNTY=091		DIST.=12		
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	4	4	4	4	4	0	4	1	4	4	0	4	1	1	0	0	4	0	0	0	0	0
1968	3	3	3	3	3	0	3	1	3	3	0	3	1	1	0	0	3	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	2	2	2	2	2	1	2	2	2	2	1	2	2	2	2	0	2	0	0	0	0	0
1971	4	2	2	2	2	0	2	2	2	2	2	2	2	4	2	0	4	0	0	0	0	0
1972	4	2	2	2	2	0	2	2	2	2	2	2	2	4	2	0	4	0	0	0	0	0
1973	4	2	2	2	2	2	2	2	2	2	2	2	2	4	2	0	2	0	0	0	0	0

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02370000 BLACKWATER RIVER NR. BAKER LAT=30 50 00 LONG=086 44 05 STREAM STATE=12 COUNTY=091 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
1974	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0
1975	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	3	0	0	0	0	0
1976	1	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	1	0	0	0	0	0
SUM	34	21	21	21	21	7	21	14	22	21	12	22	17	22	13	0	26	0	0	0	0	0

02370015 12D MUDDY BRANCH NEAR BEAVER CREEK FLA LAT=30 51 01 LONG=086 46 54 LAKE/RESERVOIR STATE=12 COUNTY=091 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
SUM	4	2	2	2	3	0	1	0	2	2	0	3	3	4	0	0	2	0	0	0	0	0

02370100 BLACKWATER RIVER NEAR HOLT,FLA LAT=30 43 26 LONG=086 47 34 STREAM STATE=12 COUNTY=091 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
1958	7	6	6	6	6	0	0	0	6	6	0	6	0	0	0	0	5	0	0	0	0	0
1959	10	8	8	8	8	0	0	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1960	9	8	8	8	8	0	8	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1961	74	38	42	71	68	0	68	0	42	39	0	39	0	0	0	0	42	0	0	0	0	0
1962	2	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
1965	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	2	2	2	2	2	0	2	0	2	2	0	2	1	0	0	0	2	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	2	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	108	65	70	99	95	0	81	2	70	66	0	66	3	2	0	0	69	0	0	0	0	0

02370200 BIG JUNIPER C NR MUNSON FLA LAT=30 51 50 LONG=086 54 20 STREAM STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
1958	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	3	3	3	3	3	0	0	0	3	2	0	3	0	0	0	0	3	0	0	0	0	0
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
SUM	7	7	7	7	7	0	1	0	7	6	0	7	1	0	0	0	7	0	0	0	0	0

02370227 12D BEAR LK NR BAKER FLA LAT=30 51 40 LONG=086 49 50 LAKE/RESERVOIR STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	2	0	2	2	0	2	2	0	0	0	2	0	0	0	0	0

02370230 SWEETWATER CREEK NEAR MUNSON FLA LAT=30 51 20 LONG=086 51 06 STREAM STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
1958	2	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	8	3	3	3	3	0	0	0	3	2	0	3	0	0	0	0	3	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

02370230 SWEETWATER CREEK NEAR MUNSON FLA LAT=30 51 20 LONG=086 51 06 STREAM STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ-OR AN-IONS	FLU-O-RIDE	CAR-BON	NI-TRO-GEN	PHOS-PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD-IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1960	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	4	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	2	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	21	6	6	6	6	0	0	0	6	5	0	6	0	0	0	0	6	0	0	0	0	0

02370270 BIG JUNIPER CREEK NR HAROLD, FLA LAT=30 43 46 LONG=086 53 56 STREAM STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ-OR AN-IONS	FLU-O-RIDE	CAR-BON	NI-TRO-GEN	PHOS-PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD-IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1958	8	7	7	7	7	0	0	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1959	10	8	8	8	8	0	0	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1960	8	8	8	8	8	0	8	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1961	9	6	6	6	6	0	6	0	6	6	0	6	0	0	0	0	6	0	0	0	0	0
1962	3	2	2	2	2	0	0	0	2	2	0	2	0	0	0	0	2	0	0	0	0	0
SUM	38	31	31	31	31	0	14	0	31	31	0	31	0	0	0	0	31	0	0	0	0	0

02370280 EAST FORK BIG COLDWATER CREEK NR MUNSON,FL LAT=30 52 56 LONG=086 57 28 STREAM STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ-OR AN-IONS	FLU-O-RIDE	CAR-BON	NI-TRO-GEN	PHOS-PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD-IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1958	2	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	8	3	3	3	3	0	0	0	3	2	0	3	0	0	0	0	3	0	0	0	0	0
1960	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	5	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	2	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	23	6	6	6	6	0	0	0	6	5	0	6	0	0	0	0	6	0	0	0	0	0

02370300 WF BIG COLDWATER C AT COBTOWN FL LAT=30 53 00 LONG=087 06 30 STREAM STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ-OR AN-IONS	FLU-O-RIDE	CAR-BON	NI-TRO-GEN	PHOS-PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD-IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1958	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	3	3	3	3	3	0	0	0	3	2	0	3	0	0	0	0	3	0	0	0	0	0
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	6	6	6	6	6	0	0	0	6	5	0	6	0	0	0	0	6	0	0	0	0	0

02370500 BIG COLDWATER CREEK NEAR MILTON, FLA. LAT=30 42 30 LONG=086 58 20 STREAM STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ-OR AN-IONS	FLU-O-RIDE	CAR-BON	NI-TRO-GEN	PHOS-PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD-IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1958	6	6	6	6	6	0	0	0	6	6	0	6	0	0	0	0	6	0	0	0	0	0
1959	8	8	8	8	8	0	0	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1960	45	40	42	45	44	0	42	0	42	41	0	40	0	0	0	0	42	0	0	0	0	0
1961	6	6	6	6	6	0	6	0	6	6	0	6	0	0	0	0	6	0	0	0	0	0
1962	4	4	4	4	4	0	2	0	4	4	0	4	0	0	0	0	4	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0

02370500 BIG COLDWATER CREEK NEAR MILTON, FLA. LAT=30 42 30 LONG=086 58 20 STREAM STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1974	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	1	1	0
SUM	81	69	71	74	74	0	54	2	71	70	1	71	7	7	0	0	72	0	0	1	1	0

02370700 POND CREEK NEAR MILTON, FLA. LAT=30 40 50 LONG=087 07 55 STREAM STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1958	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	3	3	3	3	3	0	0	0	3	2	0	3	0	0	0	0	3	0	0	0	0	0
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	19	11	11	11	12	0	4	2	11	10	0	12	6	6	0	0	11	0	0	0	0	0

02370750 120 HURRICANE BRANCH NR MILTON FLA LAT=30 40 32 LONG=087 08 17 STREAM STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
SUM	3	3	3	3	3	0	3	2	3	3	0	3	3	3	0	0	3	0	0	0	0	0

02375500 ESCAMBIA RIVER NEAR CENTURY, FLA. LAT=30 57 25 LONG=087 14 00 STREAM STATE=12 COUNTY=113 DIST.=12

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
1952	25	25	25	25	25	0	25	0	25	25	0	25	0	0	0	0	25	0	0	0	0	0
1953	40	39	40	40	39	0	39	0	40	39	0	40	0	0	0	0	40	0	0	0	0	0
1954	10	10	10	10	10	0	10	0	10	10	0	10	0	0	0	0	10	0	0	0	0	0
1955	7	7	7	7	7	0	7	0	7	5	0	7	0	0	0	0	7	0	0	0	0	0
1956	9	9	9	9	9	0	9	0	9	9	0	9	0	0	0	0	9	0	0	0	0	0
1957	7	7	7	7	7	0	7	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1958	9	9	9	9	9	0	9	0	9	9	0	9	0	0	0	0	9	0	0	0	0	0
1959	37	37	37	37	37	0	36	0	37	37	0	37	0	0	0	0	37	0	0	0	0	0
1960	8	8	8	8	8	0	8	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1961	6	6	6	6	6	0	6	0	6	6	0	6	0	0	0	0	6	0	0	0	0	0
1962	4	4	4	4	4	0	4	0	4	4	0	4	0	0	0	0	4	0	0	0	0	0
1966	11	11	11	11	11	4	11	4	11	11	0	11	9	0	0	0	11	0	0	0	0	0
1967	20	18	20	20	20	0	20	1	20	20	0	20	19	4	0	0	20	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geolgoical Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	SEDMT BED
02375500 ESCAMBIA RIVER NEAR CENTURY, FLA. LAT=30 57 25 LONG=087 14 00 STREAM STATE=12 COUNTY=113 DIST.=12																						
1968	19	17	17	17	17	0	16	2	17	17	0	17	13	1	0	0	17	0	0	0	0	0
1969	15	15	15	15	15	0	15	0	15	15	0	15	14	2	0	0	15	0	0	0	0	0
1970	9	7	7	7	7	1	3	2	7	7	0	7	7	8	4	0	9	0	0	2	0	0
1971	11	6	6	6	6	0	2	2	6	6	2	6	3	10	2	0	10	0	0	0	0	0
1972	6	2	2	2	3	0	2	2	2	2	1	3	3	6	3	0	5	0	0	0	0	0
1973	14	2	2	2	7	2	2	2	7	2	7	7	7	10	7	0	11	0	0	0	0	0
1974	10	1	1	1	1	1	1	1	2	1	6	6	6	5	6	0	3	0	0	0	0	0
1975	12	4	4	4	4	0	4	4	5	4	7	9	9	11	7	0	11	0	0	10	4	0
1976	9	7	7	7	7	0	2	2	7	7	3	8	7	8	3	0	7	0	0	8	8	0
SUM	298	251	254	254	259	8	238	22	261	251	26	271	97	65	32	0	281	0	0	20	12	0
02375780 12E CHUMUKLA SPRINGS NEAR BOGIA FLA LAT=30 50 00 LONG=087 17 50 SPRING STATE=12 COUNTY=113 DIST.=12																						
1969	1	1	1	1	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1972	2	1	1	1	1	0	0	0	1	1	1	1	1	0	1	0	2	1	0	0	0	0
SUM	3	2	2	2	2	0	1	1	2	2	1	2	2	0	1	0	3	1	0	0	0	0
02375800 MOORE CREEK NR CHUMUCKLA FLA LAT=30 48 35 LONG=087 15 14 STREAM STATE=12 COUNTY=113 DIST.=12																						
1958	2	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	6	3	3	3	3	0	0	0	3	2	0	3	0	0	0	0	3	0	0	0	0	0
1960	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	3	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	2	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	17	6	6	6	6	0	0	0	6	5	0	6	0	0	0	0	6	0	0	0	0	0
02376000 PINE BARREN CREEK NEAR BARTH, FLA. LAT=30 47 55 LONG=087 22 05 STREAM STATE=12 COUNTY=033 DIST.=12																						
1953	9	9	9	9	9	0	9	0	9	9	0	9	0	0	0	0	9	0	0	0	0	0
1954	9	9	9	9	9	0	9	0	9	9	0	9	0	0	0	0	9	0	0	0	0	0
1955	8	8	8	8	8	0	8	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1956	8	8	8	8	8	0	8	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1957	7	7	7	7	7	0	7	0	7	7	0	7	0	0	0	0	7	0	0	0	0	0
1958	10	10	10	10	10	0	10	0	10	10	0	10	0	0	0	0	10	0	0	0	0	0
1959	8	8	8	8	8	0	0	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1960	8	8	8	8	8	0	7	0	8	8	0	8	0	0	0	0	8	0	0	0	0	0
1961	6	6	6	6	6	0	0	0	6	6	0	6	0	0	0	0	6	0	0	0	0	0
1962	5	5	5	5	5	0	3	0	5	5	0	5	0	0	0	0	5	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02376000 PINE BARREN CREEK NEAR BARTH, FLA. LAT=30 47 55 LONG=087 22 05 STREAM STATE=12 COUNTY=033 DIST.=12																						
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	91	83	83	83	84	0	65	1	83	83	0	84	6	5	0	0	83	0	0	0	0	0
02376033 ESCAMBIA RIVER NR MOLINO FLA LAT=30 40 05 LONG=087 16 00 STREAM STATE=12 COUNTY=033 DIST.=12																						
1958	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	3	3	3	3	3	0	0	0	3	2	0	3	0	0	0	0	3	0	0	0	0	0
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1972	2	0	0	0	1	0	0	0	0	0	0	1	1	2	1	0	2	0	0	0	0	0
1973	14	0	0	0	7	0	0	0	6	0	7	7	7	12	7	0	12	0	0	0	0	0
1974	6	0	0	0	0	0	0	0	2	0	6	6	6	5	6	0	3	0	0	0	0	0
1975	7	0	0	0	0	0	0	0	2	0	6	7	7	5	6	0	5	0	0	1	0	0
1976	1	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	1	0	0	0	0	0
SUM	36	6	6	6	14	0	0	0	17	5	20	28	22	25	21	0	29	0	0	1	0	0
02376052 ESCAMBIA RIVER NEAR FLORIDATOWN FLA LAT=30 35 58 LONG=087 14 48 STREAM STATE=12 COUNTY=033 DIST.=12																						
1973	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	3	0	0	0	0	0
1974	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0
1975	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	3	0	0	0	0	0
SUM	8	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0	7	0	0	0	0	0
02376100 BAYOU MARCUS CR NR PENSACOLA FL LAT=30 26 53 LONG=087 17 26 STREAM STATE=12 COUNTY=033 DIST.=12																						
1958	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	3	3	3	3	3	0	0	0	3	2	0	3	0	0	0	0	3	0	0	0	0	0
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	6	6	6	6	6	0	0	0	6	5	0	6	0	0	0	0	6	0	0	0	0	0
02376108 ELEVENMILE CREEK NR ENSLEY FLA LAT=30 32 52 LONG=087 19 49 STREAM STATE=12 COUNTY=033 DIST.=12																						
1958	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	3	3	3	3	3	0	0	0	3	3	0	3	0	0	0	0	3	0	0	0	0	0
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1970	3	2	2	2	2	1	1	2	2	2	1	2	2	3	2	0	3	0	0	0	0	0
1971	3	2	2	2	2	0	2	2	2	2	2	2	2	2	2	0	3	0	0	0	0	0

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02376108 ELEVENMILE CREEK NR ENSLEY FLA									LAT=30 32 52 LONG=087 19 49						STREAM		STATE=12 COUNTY=033 DIST.=12					
1972	3	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	2	0	0	0	0	0
1973	7	2	2	2	3	2	3	2	3	2	3	3	3	6	3	0	5	0	0	0	0	0
1974	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0
1975	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	3	0	0	0	0	0
1976	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0
SUM	27	18	18	18	19	8	12	12	19	18	12	19	13	18	13	0	24	0	0	0	0	0
02376300 BRUSHY CREEK NEAR WALNUT HILL, FLA.									LAT=30 53 21 LONG=087 32 24						STREAM		STATE=12 COUNTY=033 DIST.=12					
1958	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	3	3	3	3	3	0	0	0	3	2	0	3	0	0	0	0	3	0	0	0	0	0
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	18	11	11	11	12	0	4	2	11	10	0	12	6	6	0	0	11	0	0	0	0	0
02376400 MCDAVID CREEK NEAR BARRINEAU PARK FLA									LAT=30 44 22 LONG=087 26 54						STREAM		STATE=12 COUNTY=033 DIST.=12					
1958	2	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	7	3	3	3	3	0	0	0	3	2	0	3	0	0	0	0	3	0	0	0	0	0
1960	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	4	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	3	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	22	6	6	6	6	0	0	0	6	5	0	6	0	0	0	0	6	0	0	0	0	0
02376500 PERDIDO RIVER AT BARRINEAU PARK, FLA.									LAT=30 41 25 LONG=087 26 25						STREAM		STATE=12 COUNTY=033 DIST.=12					
1958	27	27	27	27	27	0	27	0	27	27	0	27	0	0	0	0	27	0	0	0	0	0
1959	15	14	15	15	15	0	15	0	15	15	0	15	0	0	0	0	15	0	0	0	0	0
1960	8	8	8	8	8	0	8	0	8	8	0	7	0	0	0	0	8	0	0	0	0	0
1961	6	6	6	6	6	0	6	0	6	6	0	6	0	0	0	0	6	0	0	0	0	0
1962	4	4	4	4	4	0	3	0	4	4	0	4	0	0	0	0	4	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1967	2	1	2	1	1	0	1	1	2	1	0	1	1	1	0	0	2	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
02376500 PERDIDO RIVER AT BARRINEAU PARK, FLA. LAT=30 41 25 LONG=087 26 25 STREAM STATE=12 COUNTY=033 DIST.=12																						
1968	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1969	3	1	3	1	1	0	1	0	3	1	0	1	1	1	0	0	3	0	0	0	0	0
1970	2	2	2	2	2	1	2	2	2	2	1	2	2	2	2	0	2	0	0	0	0	0
1971	4	2	2	2	2	0	2	2	2	2	2	2	2	4	2	0	4	0	0	0	0	0
1972	20	9	9	9	9	0	9	9	15	8	2	9	2	11	2	0	15	0	0	0	0	0
1973	24	11	12	12	12	3	11	12	18	12	2	12	2	12	2	0	10	0	0	0	0	0
1974	17	12	12	12	12	1	11	11	12	12	1	12	4	12	1	0	11	0	0	0	0	0
1975	13	13	13	13	13	3	13	13	13	13	3	13	3	13	3	0	13	0	0	0	0	0
1976	2	2	2	2	2	0	2	2	2	2	0	2	0	2	0	0	2	0	0	0	0	0
SUM	149	114	119	116	116	8	113	53	131	115	11	115	19	59	12	0	124	0	0	0	0	0
02376551 12F CHURCHHOUSE BRANCH NR BARRINEAU PK FLA LAT=30 40 27 LONG=087 23 53 STREAM STATE=12 COUNTY=033 DIST.=12																						
1969	1	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0
1970	2	1	1	1	1	0	0	0	1	1	0	1	1	2	0	0	1	0	0	0	0	0
1971	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0
1974	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	6	2	2	2	3	0	1	0	2	2	0	3	3	5	0	0	2	0	0	0	0	0
02376700 JACKS BRANCH NR MUSCOGEE FL LAT=30 38 13 LONG=087 23 10 STREAM STATE=12 COUNTY=033 DIST.=12																						
1958	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	3	3	3	3	3	0	0	0	3	2	0	3	0	0	0	0	3	0	0	0	0	0
1961	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	6	6	6	6	6	0	0	0	6	5	0	6	0	0	0	0	6	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
300147085323001 05S13W21 001532213 442 LAT=30 01 47 LONG=085 32 30 WELL STATE=12 COUNTY=005 DIST.=12																						
1962	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1972	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1973	3	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	3	0	0	0	0	0
SUM	6	5	5	5	5	0	3	2	5	5	0	5	0	0	0	0	6	0	0	0	0	0
300347085345501 05S13W07 003534113 144 LAT=30 03 47 LONG=085 34 55 WELL STATE=12 COUNTY=005 DIST.=12																						
1960	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1961	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1963	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1964	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1974	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	11	7	7	7	7	0	7	4	7	7	0	7	0	0	0	0	7	0	0	0	0	0
300358085353901 05S14W12 003535121 223 LAT=30 03 58 LONG=085 35 39 WELL STATE=12 COUNTY=005 DIST.=12																						
1950	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1954	2	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1956	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1957	2	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1958	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1960	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1961	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1963	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1964	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	2	2	2	2	2	0	2	0	2	2	0	2	0	0	0	0	2	0	0	0	0	0
SUM	14	14	14	14	14	0	14	11	14	14	0	14	0	0	0	0	14	0	0	0	0	0
300404085351701 05S13W07 004535434 113 LAT=30 04 04 LONG=085 35 17 WELL STATE=12 COUNTY=005 DIST.=12																						
1950	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1953	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1954	2	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1956	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1957	2	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1958	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0

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WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
300404085351701 05S13W07 004535434 113									LAT=30 04 04 LONG=085 35 17					WELL			STATE=12 COUNTY=005 DIST.=12					
1960	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1961	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1963	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1964	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1971	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	19	16	16	16	15	0	15	13	16	16	0	16	0	0	0	0	16	0	0	0	0	0
300407085355501 05S14W12 004535333 12									LAT=30 04 07 LONG=085 35 55					WELL			STATE=12 COUNTY=005 DIST.=12					
1950	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1954	2	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1956	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1957	2	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1958	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1960	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1961	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1963	1	1	1	1	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1964	2	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	13	12	12	12	12	0	12	9	12	12	0	12	1	0	0	0	12	0	0	0	0	0
301942087172401 FT.PICKENS ESC.66									LAT=30 19 42 LONG=087 17 24					WELL			STATE=12 COUNTY=033 DIST.=12					
1961	2	0	2	2	0	0	0	0	2	2	0	0	0	0	0	0	2	0	0	0	0	0
1962	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	3	1	3	3		0	1	0	3	3	0	1	0	0	0	0	3	0	0	0	0	0
301946086095701 03S19W17 0196091 221									LAT=30 19 46 LONG=086 09 57					WELL			STATE=12 COUNTY=131 DIST.=12					
1963	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0
1968	2	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1974	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	14	1	1	1	1	0	0	0	1	2	0	1	1	0	0	0	2	0	0	0	0	0
302033087202801 TH 23 WEST GATE NAS									LAT=30 20 33 LONG=087 20 28					WELL			STATE=12 COUNTY=033 DIST.=12					
1972	1	1	1	1	1	0	0	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1973	2	1	1	1	1	0	0	0	2	1	1	1	1	0	0	0	2	0	0	0	0	0
SUM	3	2	2	2	2	0	0	0	3	2	1	2	2	0	0	0	3	0	0	0	0	0

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WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ OR AN-IONS	FLU-O-RIDE	CAR-BON	NI TRO-GEN	PHOS PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	SEDMT BED
302056084214901 HENRY BRATCHER LAT=30 20 56 LONG=084 21 49 WELL STATE=12 COUNTY=073 DIST.=12																						
1972	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
1974	2	1	2	2	0	0	1	1	2	1	1	1	1	0	1	1	1	0	0	0	0	0
1975	3	1	1	1	1	1	1	1	3	1	1	3	3	0	1	1	2	0	0	0	0	0
1976	2	0	0	2	0	0	0	0	2	0	0	2	2	0	0	0	1	0	0	0	0	0
SUM	9	2	3	5	1	1	2	2	9	2	2	6	6	0	2	2	5	0	0	0	0	0
302229086154401 02S20W28 333 LAT=30 22 29 LONG=086 15 44 WELL STATE=12 COUNTY=131 DIST.=12																						
1963	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0
1968	2	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	3	1	1	1	1	0	0	0	1	2	0	1	1	0	0	0	2	0	0	0	0	0
302303086265001 B-8973 EGLIN AFB FL LAT=30 23 03 LONG=086 26 50 WELL STATE=12 COUNTY=091 DIST.=12																						
1961	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1970	3	2	2	2	2	0	1	1	2	2	0	3	0	0	0	0	2	0	0	0	0	0
SUM	10	6	6	6	6	0	4	4	6	6	0	7	0	0	0	0	6	0	0	0	0	0
302305086502101 02S26W27 414 LAT=30 23 05 LONG=086 50 21 WELL STATE=12 COUNTY=113 DIST.=12																						
1965	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1972	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	9	7	7	7	7	0	3	3	7	7	0	7	0	0	0	0	7	0	0	0	0	0
302317086313001 02S23W26 121 LAT=30 23 17 LONG=086 31 30 WELL STATE=12 COUNTY=091 DIST.=12																						
1956	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1960	2	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1969	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1972	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1973	2	1	1	1	1	0	0	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	10	7	7	7	7	0	4	3	7	7	0	7	0	0	0	0	7	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
302322084192000 TOM SMITH WASTEWATER RENOV PLANT LAT=30 23 22 LONG=084 19 20SPECIFIC SOURCE STATE=12 COUNTY=073 DIST.=12																						
1972	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0	0	0	0	0
1973	6	5	5	5	5	3	4	4	6	5	5	6	6	0	5	0	6	0	0	0	0	0
1974	6	2	6	6	0	1	3	3	6	1	5	5	5	0	5	0	5	0	0	0	0	0
1975	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0
SUM	14	9	13	13	7	6	9	9	14	8	11	12	12	0	11	0	13	0	0	0	0	0
302325086332901 02S23W21 343 LAT=30 23 25 LONG=086 33 29 WELL STATE=12 COUNTY=091 DIST.=12																						
1961	4	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1962	2	1	1	1	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1965	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1969	3	2	2	2	2	0	1	1	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1972	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	18	11	11	11	11	0	7	7	11	11	0	11	1	0	0	0	11	0	0	0	0	0
302329086480901 02S26W25 224 LAT=30 23 29 LONG=086 48 09 WELL STATE=12 COUNTY=113 DIST.=12																						
1961	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	2	1	1	1	1	0	0	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	2	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1968	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	11	6	6	6	6	0	4	4	6	6	0	6	0	0	0	0	6	0	0	0	0	0
302348086390001 02S24W21 421 LAT=30 23 48 LONG=086 39 00 WELL STATE=12 COUNTY=091 DIST.=12																						
1961	4	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1962	2	1	1	1	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1963	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1969	3	2	2	2	2	0	1	1	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	19	11	11	11	11	0	8	8	11	11	0	11	1	0	0	0	11	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD-NESS	MAJ-OR CAT-IONS	SIL-ICA	ALU-MI-NUM	IRON	MAN-GA-NESE	MAJ_OR AN-IONS	FLU-O-RIDE	CAR-BON	NI_TRO-GEN	PHOS_PHO-ROUS	D.O.	BOD	COD	PH	PES-TI-CIDES	RAD_IO-CHEM-ICAL	BIO-LOG-IC	SEDMT SUS	BED
302354087210501 02S31W23 USGS 9 131 LAT=30 23 54 LONG=087 21 05 WELL STATE=12 COUNTY=033 DIST.=12																						
1971	2	1	1	1	1	1	1	1	1	1	0	2	1	0	0	0	1	0	0	0	0	0
1973	2	0	0	0	1	0	1	1	2	0	0	1	1	0	0	0	1	0	0	0	0	0
SUM	4	1	1	1	2	1	2	2	3	1	0	3	2	0	0	0	2	0	0	0	0	0
302357086415101 02S25W24 243 LAT=30 23 57 LONG=086 41 51 WELL STATE=12 COUNTY=091 DIST.=12																						
1950	2	2	2	2	2	0	2	1	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1953	2	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1955	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1957	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1960	2	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1961	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1962	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1963	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1969	3	2	2	2	2	0	1	1	2	2	0	3	0	0	0	0	2	0	0	0	0	0
1972	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	27	18	18	18	18	0	15	13	18	18	0	19	0	0	0	0	18	0	0	0	0	0
302725085330202 01N13W28 0275334228 323 LAT=30 27 25 LONG=085 33 02 WELL STATE=12 COUNTY=133 DIST.=12																						
1962	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1963	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	2	2	2	2	2	0	2	0	2	2	0	2	0	0	0	0	2	0	0	0	0	0
303049086203701 01S21W09 242 LAT=30 30 49 LONG=086 20 37 WELL STATE=12 COUNTY=131 DIST.=12																						
1965	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1969	3	2	2	2	2	0	1	1	2	2	0	3	0	0	0	0	2	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	11	7	7	7	7	0	4	4	7	7	0	8	0	0	0	0	7	0	0	0	0	0
303209086483701 01S26W01 10 132 LAT=30 32 09 LONG=086 48 37 WELL STATE=12 COUNTY=113 DIST.=12																						
1950	2	2	2	2	2	0	2	1	2	2	0	2	0	0	0	0	2	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARD- NESS	MAJ- OR CAT- IONS	SIL- ICA	ALU- MI- NUM	IRON	MAN- GA- NESE	MAJ_ OR AN- IONS	FLU- O- RIDE	CAR- BON	NI_ TRO- GEN	PHOS_ PHO- ROUS	D.O.	BOD	COD	PH	PES- TI- CIDES	RAD_ IO- CHEM- ICAL	BIO- LOG- IC	SEDMT SUS	BED
303209086483701 01S26W01 10 132 LAT=30 32 09 LONG=086 48 37 WELL STATE=12 COUNTY=113 DIST.=12																						
1951	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1953	2	2	2	2	2	0	2	2	2	2	0	1	0	0	0	0	2	0	0	0	0	0
1955	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1957	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1960	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	14	10	10	10	10	0	10	9	10	10	0	9	0	0	0	0	10	0	0	0	0	0
303216086483001 01S26W01 11 123 LAT=30 32 16 LONG=086 48 30 WELL STATE=12 COUNTY=113 DIST.=12																						
1950	2	2	2	2	2	0	2	1	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1951	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1953	2	2	2	2	2	0	2	2	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1955	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1957	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1959	2	1	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1960	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1968	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1969	3	2	2	2	2	0	1	1	2	2	0	3	0	0	0	0	2	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1973	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	24	17	17	17	17	0	14	12	17	17	0	18	0	0	0	0	17	0	0	0	0	0
303254083520901 02N05E30 114 LAT=30 32 54 LONG=083 52 09 WELL STATE=12 COUNTY=065 DIST.=12																						
1963	1	1	1	1	1	0	0	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1971	3	2	2	2	2	0	0	0	2	2	0	3	0	0	0	0	2	0	0	0	0	0
1976	1	1	1	1	1	0	1	0	1	1	1	1	0	0	0	0	1	0	0	0	0	0
SUM	5	4	4	4	4	0	1	0	4	4	1	5	1	0	0	0	4	0	0	0	0	0
303443086193901 01N21W15 441 LAT=30 34 43 LONG=086 19 39 WELL STATE=12 COUNTY=131 DIST.=12																						
1960	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1961	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1963	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1965	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1966	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1967	2	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0

Supplement A.--Index to water-quality data available to May 1976 from the U.S. Geological Survey--Continued

WATER YEAR	NO. SAMPL	D.S.	HARDNESS	MAJOR CATIONS	SILICA	ALUMINUM	IRON	MANGANESE	MAJOR ANIONS	FLUORIDE	CARBON	NITROGEN	PHOSPHOROUS	D.O.	BOD	COD	PH	PESTICIDES	RADIOCHEMICAL	BIOLOGIC	SEDMT SUS	SEDMT BED
303443086193901 01N21W15						441				LAT=30 34 43		LONG=086 19 39			WELL			STATE=12	COUNTY=131	DIST.=12		
1968	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1969	2	2	2	2	2	0	1	1	2	2	0	2	0	0	0	0	2	0	0	0	0	0
1970	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
1972	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
SUM	17	11	11	11	11	0	7	7	11	11	0	11	0	0	0	0	11	0	0	0	0	0
303538087145501 SHALLOW MONITOR										LAT=30 35 38		LONG=087 14 55			WELL			STATE=12	COUNTY=033	DIST.=12		
1968	4	1	1	2	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0
1970	4	2	2	2	2	0	1	1	2	2	0	4	2	0	0	0	2	0	0	0	0	0
1971	20	4	2	9	6	2	6	4	4	4	2	18	5	0	0	0	4	0	0	0	0	0
1972	27	2	8	12	7	0	4	0	10	2	11	16	5	0	0	0	10	0	0	0	0	0
1973	29	2	14	15	11	0	2	0	23	2	9	14	3	0	0	0	16	0	0	0	0	0
1974	11	2	11	11	2	0	2	0	11	2	11	11	11	0	0	0	9	0	0	0	0	0
1975	12	2	11	12	3	0	2	0	12	4	12	12	12	0	0	0	12	0	0	0	0	0
1976	7	1	7	7	1	0	1	0	7	1	7	7	7	0	0	0	7	0	0	0	0	0
SUM	114	16	56	70	33	2	19	6	70	18	52	83	46	0	0	0	61	0	0	0	0	0
303554084344801 CITY OF QUINCY NO. 2										LAT=30 35 54		LONG=084 34 48			WELL			STATE=12	COUNTY=039	DIST.=12		
1970	3	2	2	2	2	0	0	0	2	2	0	3	0	0	0	0	2	0	0	0	0	0
1971	2	1	1	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0
1975	8	8	8	8	1	0	8	0	8	8	1	1	1	0	0	0	8	0	0	0	0	0
1976	2	2	2	2	2	1	2	1	2	2	0	0	0	0	0	0	1	0	0	0	0	0
SUM	15	13	13	13	5	1	10	1	13	13	1	5	1	0	0	0	11	0	0	0	0	0

Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties

Explanation of Supplement B follows.

WATER DEMAND FACTORS

Total population.--

Actual and projected figures were taken directly from Doolittle and Schiro (1976, Projections of Florida Population for 1978-2020: Univ. of Florida Div. of Population Studies Bull. 38).

Population served.--

1970: From Pride (1973, table 2, p. 8).

1975: From unpublished U.S. Geol. Survey 1975 water-use data.

1990: Percent served x Total population = Population served.

2020: Percent served x Total population = Population served.

Percent served.--

1970: $\frac{\text{Population served}}{\text{Total population}} = \text{Percent served}$

1975: $\frac{\text{Population served}}{\text{Total population}} = \text{Percent served}$

1990: Estimated, based on total population trends.

2020: Estimated, based on total population trends.

Per capita use.--

Computation based on following equations:

Total water demand - Industrial public supply = Public supply use

$$\text{Per capita use} = \frac{\text{Public supply use}}{\text{Population served}}$$

Public supply use.--

Total water demand - Industrial public supply = Public supply use

1970: Computations based on Pride (1973, table 2, p. 8).

1975: Computations based on unpublished U.S. Geol. Survey 1975 water-use data.

1990: Computed from straight-line graph from data provided for 1975 and assumed data for 2020.

2020: Computed from assumed value of per capita use (150 gal/d).

150 x Population served = Public supply use

Industrial public supply.--

1970: Data from Pride (1973, table 2, p. 8).

1975: Data from unpublished U.S. Geol. Survey 1975 water-use data.

1990: No projection made.

2020: No projection made.

Plant capacity.--

Plant capacity is based on a summation of individual capacities within each county. These capacities have been divided into three types based on the source of the water: the Floridan aquifer, the sand-and-gravel aquifer, or surface water.

1970: Based on unpublished U.S. Geol. Survey 1970 water-use data.

1975: Based on unpublished U.S. Geol. Survey 1975 water-use data.

1990 and 2020: No projections made.

Only 1975 plant capacity has been plotted on graph.

Estimated source capacity.--

Source is subdivided into three types; (a) sand-and-gravel aquifer, (b) Floridan aquifer, and (c) surface water.

(a) Sand-and-gravel aquifer: Escambia, Santa Rosa, Okaloosa, Walton Counties--Total source capacity = 2,200 Mgal/d.
(2) Percent of total area x 2,200 Mgal/d = Source capacity for each county.

(b) Floridan aquifer: Okaloosa County--Source capacity = 19.0 Mgal/d, which equals 1975 pumpage and is assumed safe yield.

Walton County--Source capacity = 0.83 Mgal/d x the length of shoreline of county.

Holmes, Washington, Bay Counties--(1) 0.83 Mgal/d x length of Bay County shoreline = Total source capacity.
(2) Percent of total area x Total source capacity = Source capacity for each county.

Jackson, Calhoun, Gulf Counties--(1) 0.83 Mgal/d x length of Gulf County shoreline = Total source capacity.
(2) Percent of total area x Total source capacity = Source capacity for each county.

Gadsden, Liberty, Franklin County--(1) 0.83 Mgal/d x length of Franklin County shoreline = Total source capacity.
(2) Percent of total area x Total source capacity = Source capacity for each county.

Leon, Wakulla Counties--(1) 2.6 Mgal/d x length of Wakulla County shoreline = Total source capacity.
(2) Percent of total area x Total source capacity = Source capacity for each county. These are considered minimum values.

Jefferson County--2.6 x length of shoreline = Total source capacity.

(c) Surface water: Bay County--7-day, 10-year low-flow frequency for Econfina Creek near Bennett.

Gulf County--7-day, 10-year low-flow frequency for Chipola River near Altha.

Gadsden County--Minimum discharge for the period of record for Quincy Creek at Hwy. 267, Quincy, Fla.

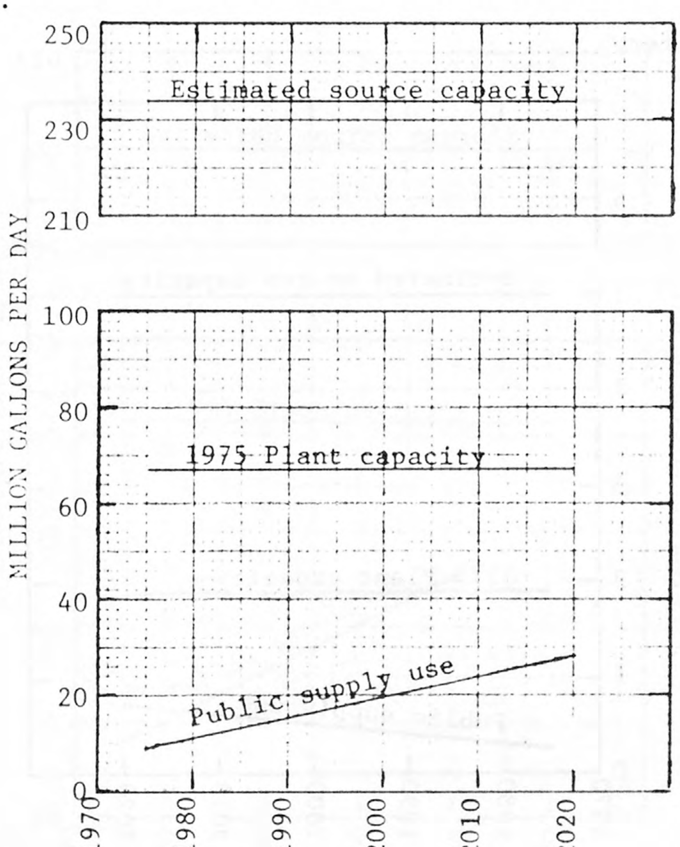
Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

BAY COUNTY

Water demand factors	1970	1975	1990	2020
Total population	75,283	91,606	132,100	194,300
Population served	38,800	82,700	124,174	190,414
Percent served	51.5	90.3	94	98
Per capita use (gal/d)	168	107	125	150
Public supply use [1] [2] (Mgal/d)	6.5	8.9	15.5	28.5
Industrial public supply (Mgal/d)	31.6	25.4	--	--
Plant capacity (Mgal/d)	[2]52 [1]3.9	[2]58.5 [1]8.5	--	--
Estimated source capacity (Mgal/d)	[2]220 , [1]15			

[1] Floridan aquifer.

[2] Surface water--Econfina Creek--87.3 percent of public supply is from surface water.

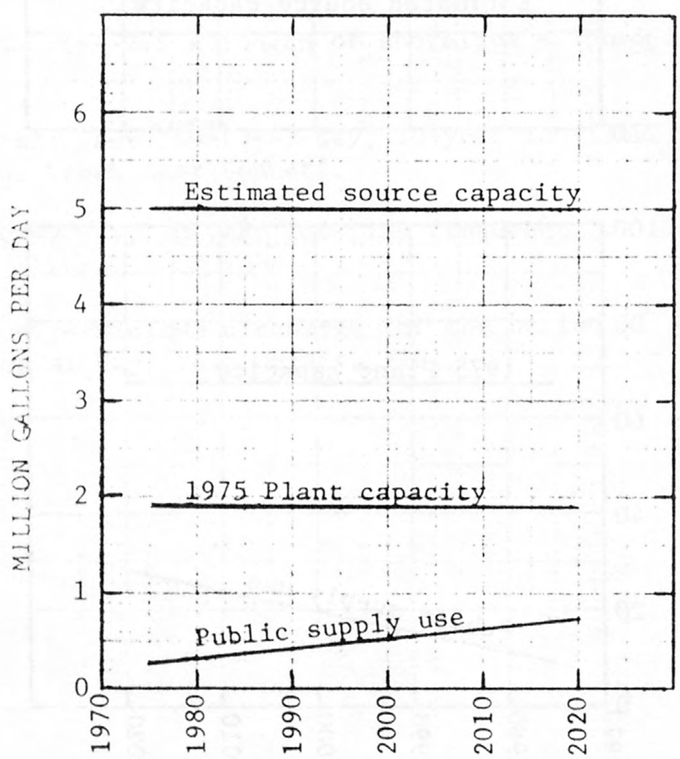


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

CALHOUN COUNTY

Water demand factors	1970	1975	1990	2020
Total population	7,624	8,328	10,000	11,300
Population served	3,200	2,961	4,000	5,085
Percent served	42.0	35.6	40	45
Per capita use (gal/d)	62	91	110	150
Public supply use [1] (Mgal/d)	0.2	0.27	0.44	0.76
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1]1.5	[1]1.9	--	--
Estimated source capacity (Mgal/d)	[1]5			

[1] Floridan aquifer.

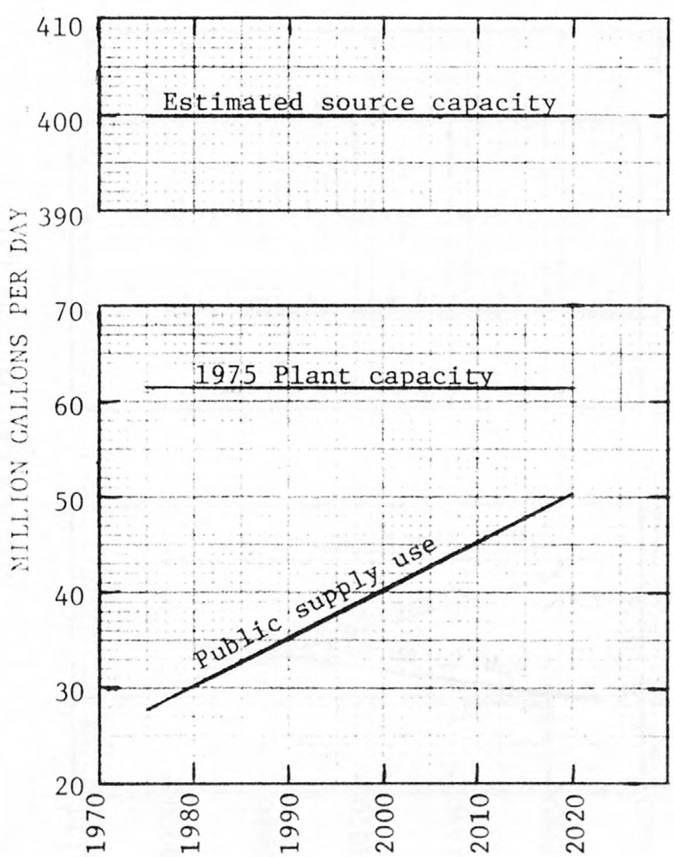


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

ESCAMBIA COUNTY

Water demand factors	1970	1975	1990	2020
Total population	205,334	224,893	268,800	346,000
Population served	158,400	195,474	247,296	335,620
Percent served	77.1	86.9	92	97
Per capita use (gal/d)	128	142	143	150
Public supply use [1] (Mgal/d)	20.3	27.8	35.3	50.3
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1] 43.6	[1] 61.5	--	--
Estimated source capacity (Mgal/d)	[1] 400			

[1] Sand-and-gravel aquifer.

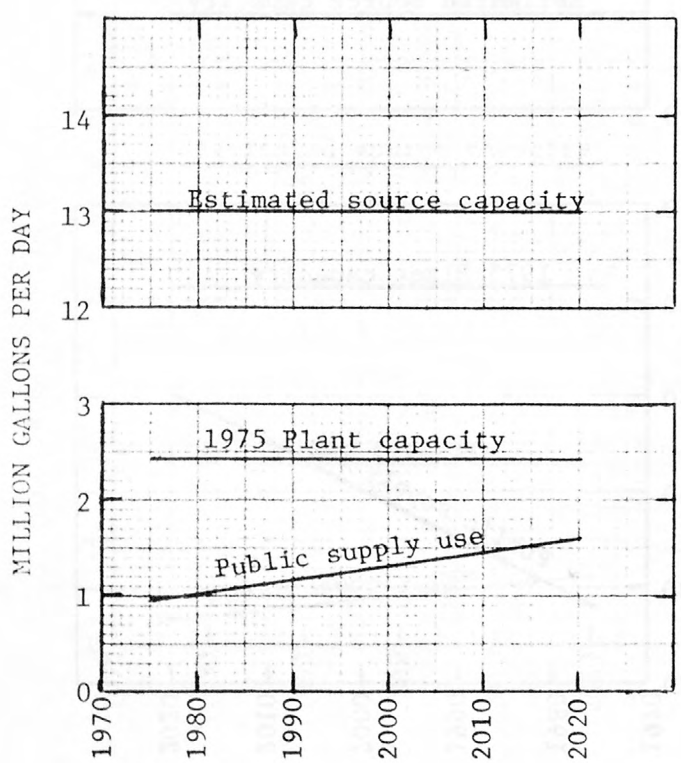


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

FRANKLIN COUNTY

Water demand factors	1970	1975	1990	2020
Total population	7,065	7,855	9,500	11,600
Population served	4,000	6,576	8,333	10,440
Percent served	56.6	83.7	88	90
Per capita use (gal/d)	125	149	144	150
Public supply use [1] (Mgal/d)	0.5	0.98	1.2	1.6
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1]1.37	[1]2.43	--	--
Estimated source capacity (Mgal/d)	[1]13			

[1] Floridan aquifer.

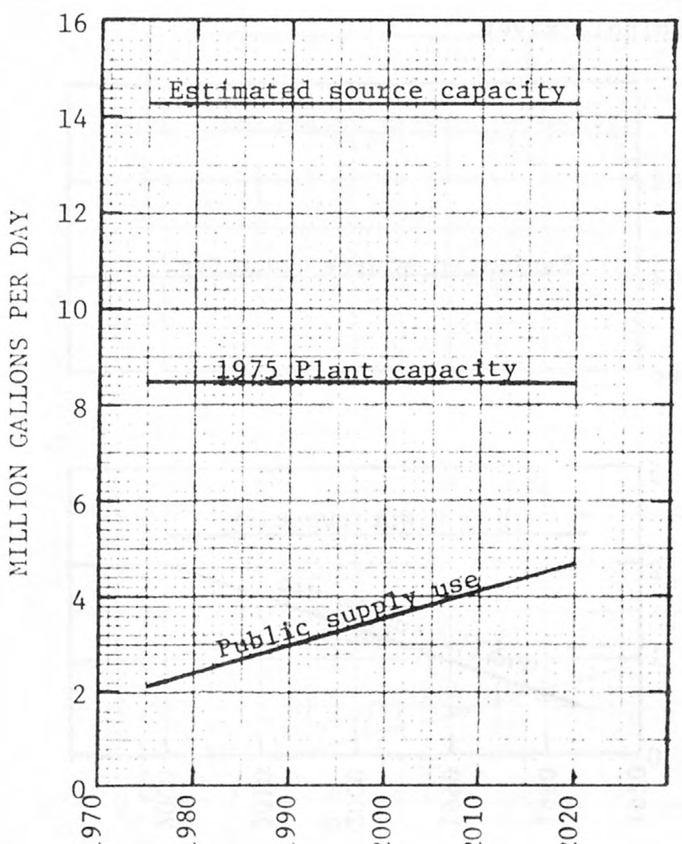


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

GADSDEN COUNTY

Water demand factors	1970	1975	1990	2020
Total population	39,184	39,068	44,200	52,600
Population served	17,000	19,365	24,310	31,560
Percent served	43.4	49.6	55	60
Per capita use (gal/d)	118	110	128	150
Public supply use [2] [1] (Mgal/d)	2.0	2.12	3.1	4.7
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[2]2.04 [1]0.57	[2]2.5 [1]5.92	--	--
Estimated source capacity (Mgal/d)	[1]12 [2]2.3			

[1] Floridan aquifer.
[2] Surface water--Quincy Creek.

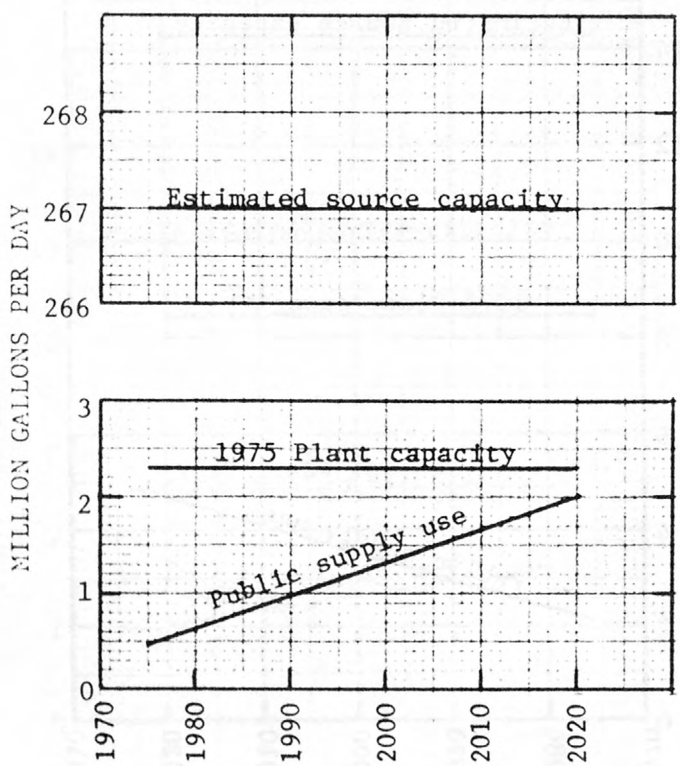


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

GULF COUNTY

Water demand factors	1970	1975	1990	2020
Total population	10,096	10,920	14,200	18,300
Population served	6,000	6,658	11,360	12,780
Percent served	59.4	61.0	80	90
Per capita use (gal/d)	83	72	81	150
Public supply use [1] [2] (Mgal/d)	0.5	0.48	0.92	2.0
Industrial public supply (Mgal/d)	0	0.27	--	--
Plant capacity (Mgal/d)	[2]1.24	[1]1.1 [2]1.2	--	--
Estimated source capacity (Mgal/d)	[1]5, [2]262			

[1] Floridan aquifer.
[2] Surface water--Chipola River.

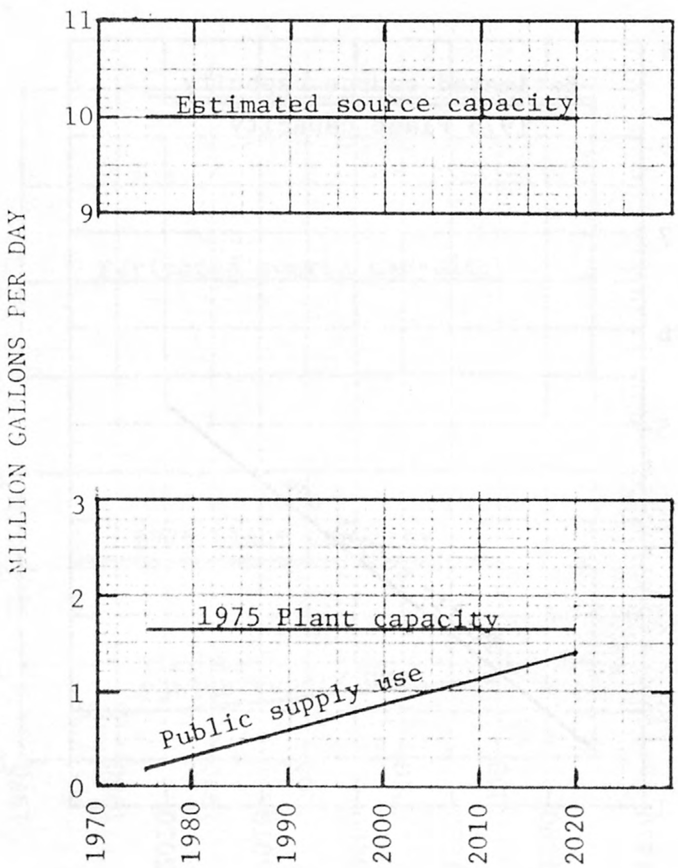


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

HOLMES COUNTY

Water demand factors	1970	1975	1990	2020
Total population	10,720	12,518	15,900	18,500
Population served	3,000	3,992	6,360	9,250
Percent served	28.0	31.9	40	50
Per capita use (gal/d)	100	50	94	150
Public supply use [1] (Mgal/d)	0.3	0.2	0.6	1.4
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1] 1.02	[1] 1.66	--	--
Estimated source capacity (Mgal/d)	[1] 10			

[1] Floridan aquifer.

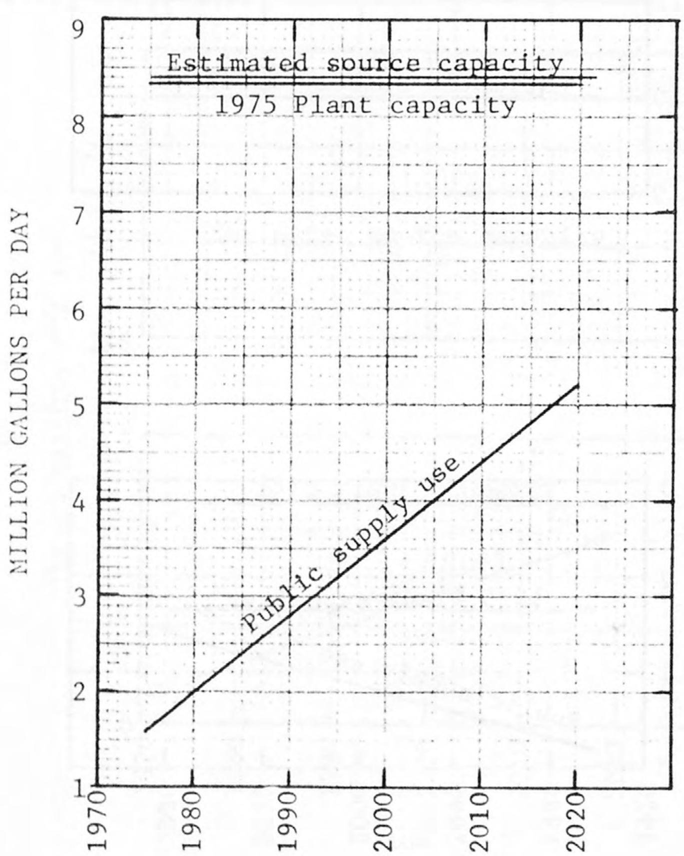


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

JACKSON COUNTY

Water demand factors	1970	1975	1990	2020
Total population	34,434	41,224	53,000	63,500
Population served	15,000	15,534	23,850	34,925
Percent served	43.6	37.7	45	55
Per capita use (gal/d)	107	102	113	150
Public supply use [1] (Mgal/d)	1.6	1.59	2.7	5.2
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1] 3.75	[1] 8.36	--	--
Estimated source capacity (Mgal/d)	[1] 8.4			

[1] Floridan aquifer.

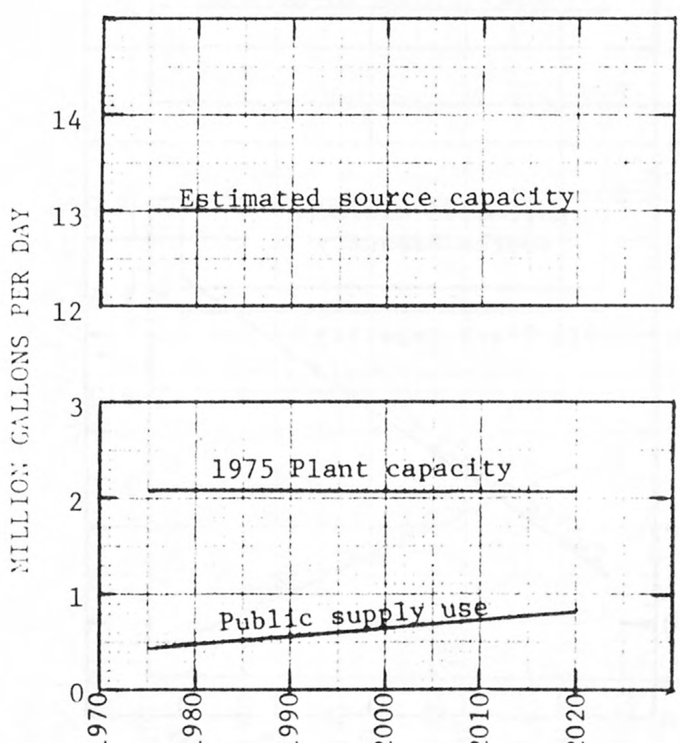


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

JEFFERSON COUNTY

Water demand factors	1970	1975	1990	2020
Total population	8,778	9,442	11,000	12,500
Population served	2,700	3,000	3,850	5,625
Percent served	30.8	31.8	35	45
Per capita use (gal/d)	148	147	148	150
Public supply use 1 (Mgal/d)	0.4	0.44	0.57	0.84
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1]0.8	[1]2.09	--	--
Estimated source capacity (Mgal/d)	[1]13			

[1] Floridan aquifer.

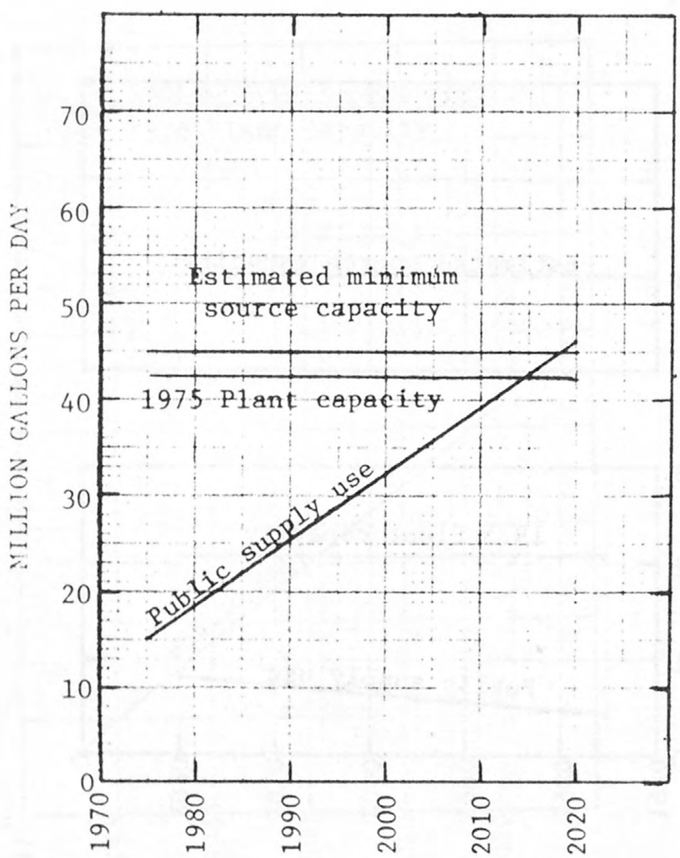


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

LEON COUNTY

Water demand factors	1970	1975	1990	2020
Total population	103,047	133,204	206,000	341,300
Population served	77,700	101,123	175,100	307,170
Percent served	75.4	75.9	85	90
Per capita use (gal/d)	154	150	150	150
Public supply use [1] (Mgal/d)	12.0	15.1	26.3	46.1
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1] 33.6	[1] 42.3	--	--
Estimated source capacity (Mgal/d)	IN EXCESS OF 45			

[1] Floridan aquifer.

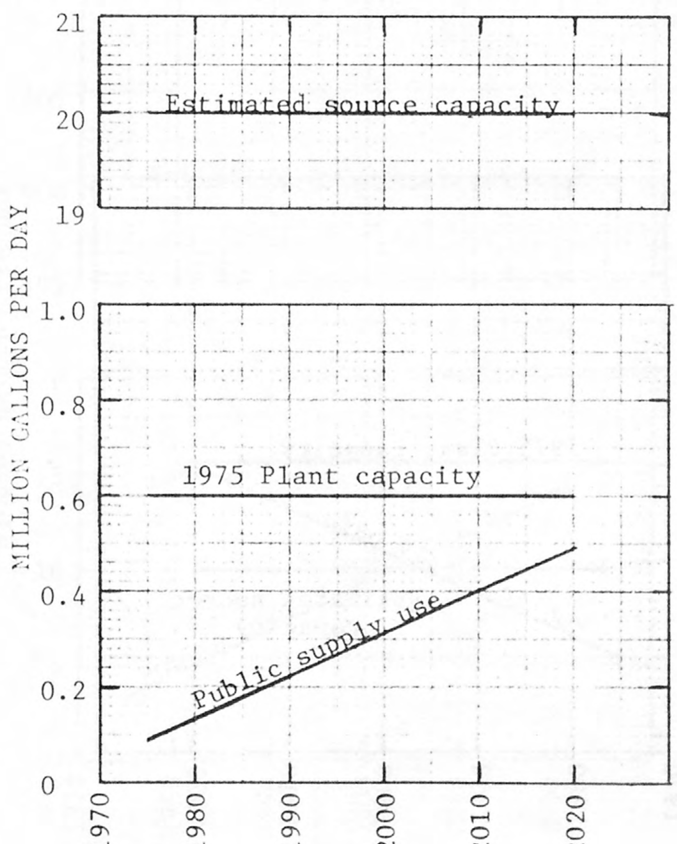


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

LIBERTY COUNTY

Water demand factors	1970	1975	1990	2020
Total population	3,379	3,925	5,200	6,500
Population served	1,600	1,530	2,340	3,250
Percent served	47	39	45	50
Per capita use (gal/d)	125	59	73	150
Public supply use 1 (Mgal/d)	0.2	0.09	0.17	0.49
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1]0.2	[1]0.6	--	--
Estimated source capacity (Mgal/d)	[1]20			

[1] Floridan aquifer.

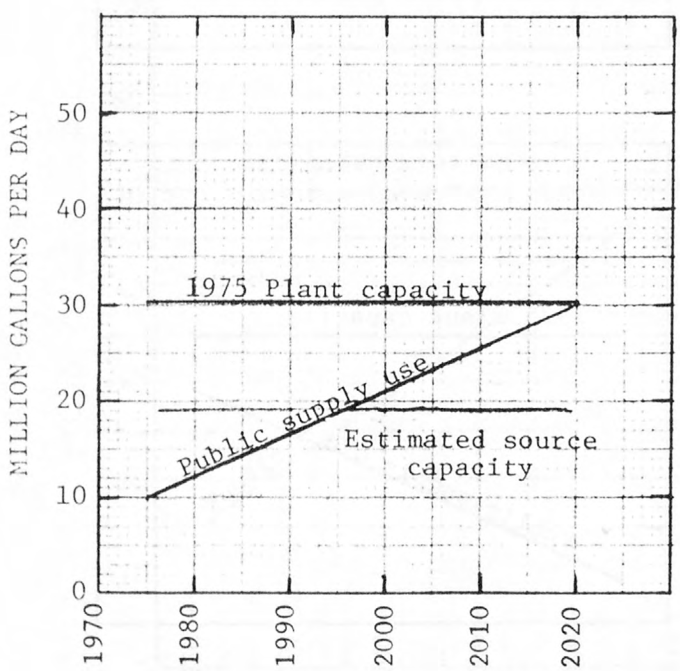


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

OKALOOSA COUNTY

Water demand factors	1970	1975	1990	2020
Total population	88,187	102,017	139,100	206,300
Population served	60,800	81,542	125,190	202,174
Percent served	68.9	79.9	90	98
Per capita use (gal/d)	130	131	134	150
Public supply use 1 (Mgal/d)	7.9	9.92	16.8	30.3
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1] 15.9	[1] 30.4	--	--
Estimated source capacity (Mgal/d)	[1] 18			

[1] Floridan aquifer (sand-and-gravel aquifer and surface-water supplies are also available).

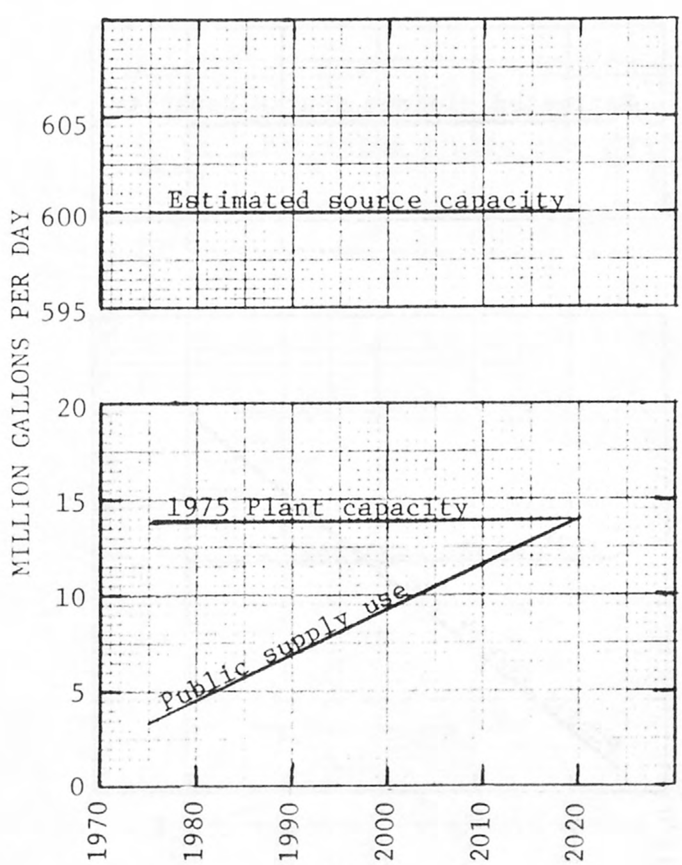


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

SANTA ROSA COUNTY

Water demand factors	1970	1975	1990	2020
Total population	37,741	46,892	67,400	95,600
Population served	14,800	37,788	60,660	93,688
Percent served	39	80	90	98
Per capita use (gal/d)	162	90	114	150
Public supply use [1] (Mgal/d)	2.4	3.42	6.9	14.1
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1]6.41	[1]13.84	--	--
Estimated source capacity (Mgal/d)	[1]610			

[1] Sand-and-gravel aquifer.

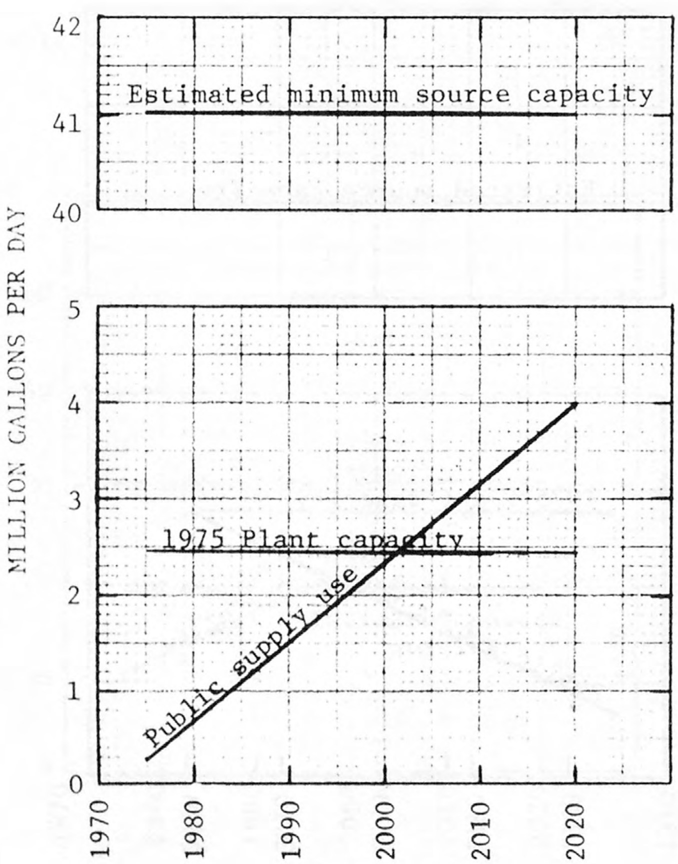


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

WAKULLA COUNTY

Water demand factors	1970	1975	1990	2020
Total population	6,308	8,837	16,400	29,500
Population served	2,400	4,587	13,120	26,550
Percent served	38.0	51.9	80	90
Per capita use (gal/d)	83	60	114	150
Public supply use [1] (Mgal/d)	0.2	0.26	1.5	4.0
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1] 1.1	[1] 2.43	--	--
Estimated source capacity (Mgal/d)	IN EXCESS OF 41			

[1] Floridan aquifer.

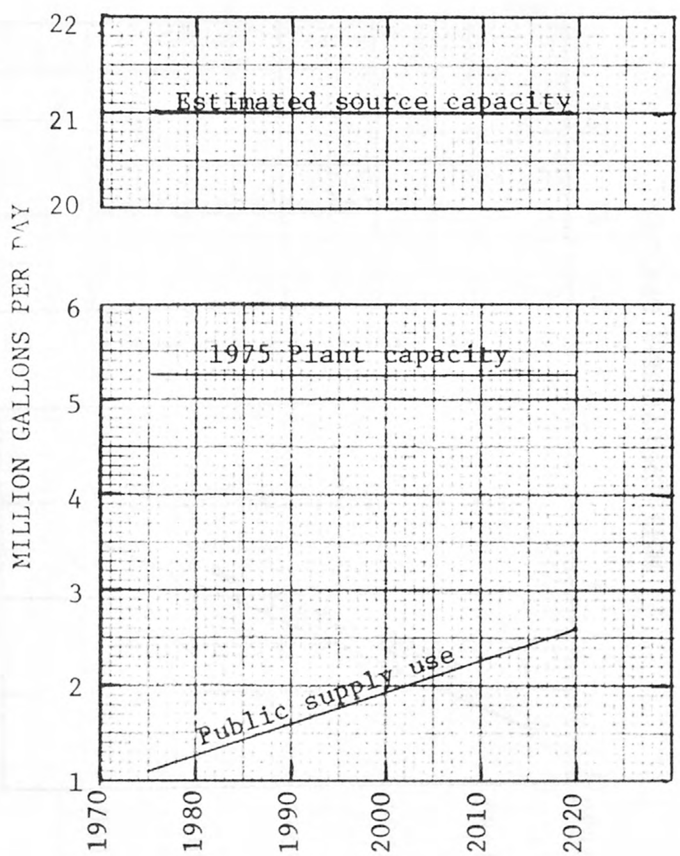


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

WALTON COUNTY

Water demand factors	1970	1975	1990	2020
Total population	16,087	18,043	22,600	26,500
Population served	9,200	10,529	13,560	17,225
Percent served	57.2	58.4	60	65
Per capita use (gal/d)	75	104	118	150
Public supply use [1] (Mgal/d)	0.69	1.09	1.6	2.6
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1] 3.84	[1] 5.25	--	--
Estimated source capacity (Mgal/d)	[1] 21			

[1] Floridan aquifer.

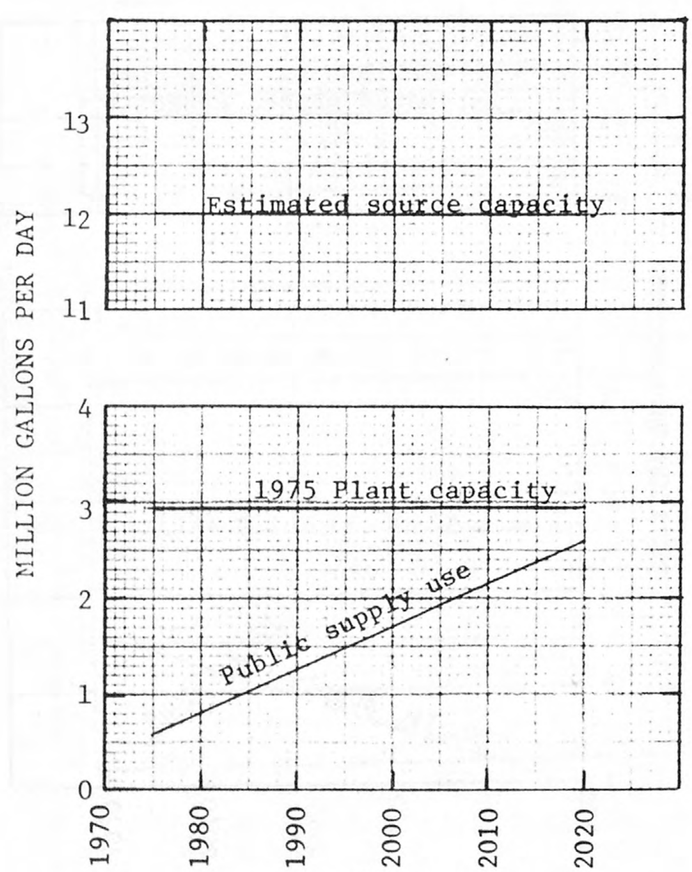


Supplement B.--Projected public water-supply demand, and plant and source capacities, as of 1975 by counties--Continued

WASHINGTON COUNTY

Water demand factors	1970	1975	1990	2020
Total population	11,453	14,072	20,400	29,100
Population served	3,800	6,352	10,200	17,460
Percent served	33.0	45.0	50	60
Per capita use (gal/d)	105	92	127	150
Public supply use [1] (Mgal/d)	0.4	0.58	1.3	2.6
Industrial public supply (Mgal/d)	0	0	--	--
Plant capacity (Mgal/d)	[1]1.73	[1]2.95		
Estimated source capacity (Mgal/d)	[1]12			

[1] Floridan aquifer.



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UNITED STATES DEPARTMENT OF THE INTERIOR
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