AD-A149 944 WATER QUALITY MANAGEMENT STUDIES POSTIMPOUNDMENT STUDY OF RE 'BOB' WOODRU..(U) GEOLOGICAL SURVEY OF ALABAMA UNIVERSITY M F METTEE ET AL. AUG 84 COESAM/PDEE-84/005 1/6

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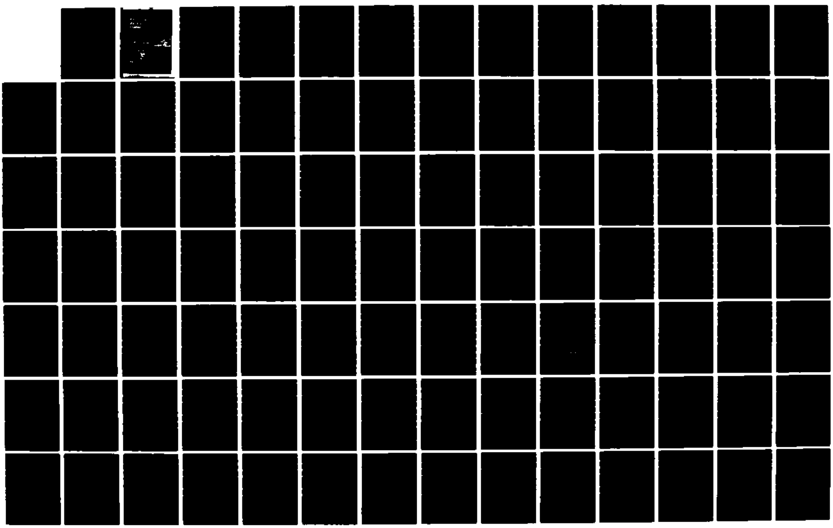

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MICROCOPY RESOLUTION TEST CHART
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COESAM/PDEE-84/005

Water Quality Management Studies

POSTIMPOUNDMENT STUDY OF R. E. "BOB" WOODRUFF LAKE

ALABAMA RIVER, ALABAMA

AUGUST - DECEMBER 1977 AND APRIL - SEPTEMBER 1978

US Army Corps of Engineers
Mobile District

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Water, biological, and sediment samples were collected from 46 major stations on the R. E. "Bob" Woodruff, William "Bill" Dannelly and Claiborne Reservoirs on the Alabama, Coosa and Tallapoosa Rivers during Phase I (August 9, 1977 through December 8, 1977) and 47 stations during Phase II (April 10, 1978 through September 18, 1978). This report covers the presentation and interpretation of data for the R. E. "Bob" Woodruff Reservoir--Phase II. Reports on William "Bill" Dannelly and Claiborne Reservoirs are presented in separate texts. Data for the 1977 phase of the study can be found in a

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered) separate report (Geological Survey of Alabama (GSA), 1983).

Water, biological, and sediment samples were collected during five sampling runs from 18 stations above and one station immediately below Robert F.Henry Lock and Dam. Eighteen stations were located in the R. E. "Bob" Woodruff Reservoir (between river miles 0.5 and 4.4 on the Coosa River, between river miles 0.0 and 0.5 on the Tallapoosa River, and between river miles 302.0 and 236.0 on the Alabama River). Additionally, three tributary stations were sampled for dissolved oxygen, conductivity, pH, temperature, oxidation reduction potential, and turbidity to determine how tributaries influenced the reservoir. Also, selected parameters were examined for stratification and mixing within the reservoir at chosen stations. Water samples from the [redacted] main samples stations were analyzed for 43 water-quality parameters, including nutrients, minerals, physical characteristics, heavy metals, bacterial populations, chlorophylls a, b and c, adenosine triphosphate, and algal growth potential. Sediments were tested twice during the two ~~study periods~~ at all major stations for concentrations of heavy metals, nutrients, physical characteristics, organics, and pesticides. Biological sampling included plankton, benthic macroinvertebrates, and macrophyte communities. Selected chemical and biological data were plotted for each of the five sampling runs and were placed on the EPA STORET computer system.

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WATER QUALITY MANAGEMENT STUDIES

POSTIMPOUNDMENT STUDY OF R. E. "BOB" WOODRUFF LAKE
ALABAMA RIVER
ALABAMA
AUGUST-DECEMBER 1977 AND APRIL-SEPTEMBER 1978

Prepared under Contract Number DACW01-78-C-0122

BY

M. F. Mettee, S. C. Harris and A. M. Malatino
Geological Survey of Alabama
Tuscaloosa, Alabama

FOR

U. S. Army Corps of Engineers
Environmental Quality Section
P. O. Box 2288
Mobile, Alabama 36628-0001

August 1984

EXPLANATORY NOTE

Throughout this report R. E. "Bob" Woodruff Lake is referred to as Jones Bluff Reservoir. Additionally, in late 1982, the name of Jones Bluff Lock and Dam was changed to Robert F. Henry Lock and Dam.

CONTENTS

CONTENTS--Continued

Illustrations

Illustrations (Continued)

Illustrations (Continued)

Illustrations (Continued)

Illustrations (Continued)

Illustrations (Continued)

Illustrations (Continued)

Illustrations (Continued)

Illustrations (Continued)

Illustrations (Continued)

Illustrations (Continued)

Illustrations (Continued)

Illustrations (Continued)

Illustrations (Continued)

Tables

Tables (Continued)

Tables (Continued)

Tables (Continued)

ABSTRACT

Water, biological, and sediment samples were collected from 46 major stations on the Jones Bluff, William "Bill" Dannelly and Claiborne Reservoirs on the Alabama, Coosa and Tallapoosa Rivers during Phase I (August 9, 1977 through December 8, 1977) and 47 stations during Phase II (April 10, 1978 through September 18, 1978). This report covers the presentation and interpretation of data for the Jones Bluff Reservoir--Phase II. Reports on William "Bill" Dannelly and Claiborne Reservoirs are presented in separate texts. Data for the 1977 phase of the study can be found in a separate report (Geological Survey of Alabama (GSA), 1983).

Water, biological, and sediment samples were collected during five sampling runs from 18 stations above and one station immediately below Jones Bluff Lock and Dam. Eighteen stations were located in the Jones Bluff Reservoir (between river miles 0.5 and 4.4 on the Coosa River, between river miles 0.0 and 0.5 on the Tallapoosa River, and between river miles 302.0 and 236.0 on the Alabama River). Additionally, three tributary stations were sampled for dissolved oxygen, conductivity, pH, temperature, oxidation reduction potential, and turbidity to determine how tributaries influenced the reservoir. Also, selected parameters were examined for stratification and mixing within the reservoir at chosen stations. Water samples from the 47 main samples stations were analyzed for 43 water-quality parameters, including nutrients, minerals, physical characteristics, heavy metals, bacterial populations, chlorophylls *a*, *b* and *c*, adenosine triphosphate, and algal growth potential. Sediments were tested twice during the two study periods at all major stations for concentrations of heavy metals, nutrients, physical characteristics, organics, and pesticides. Biological sampling included plankton, benthic macroinvertebrates, and macrophyte communities. Selected chemical and biological data were plotted for each of the five sampling runs and were placed on the EPA STORET computer system.

I. INTRODUCTION

During the period of August 9 to December 8, 1977, the Geological Survey of Alabama (GSA) conducted a water-quality management study of the Jones Bluff, William "Bill" Dannelly, and Claiborne Reservoirs on the Alabama River for the U.S. Army Corps of Engineers, Mobile District (COE) (fig. 1). The data for the Phase I study can be found in the appendix of the combined Jones Bluff, William "Bill" Dannelly, and Claiborne Reservoir report (GSA, 1983). References in this report that pertain to the 1977 data may be referred to as "Phase I study," "previous study," or "1977 study." The purpose of the study was to document baseline environmental conditions along the river, which would assist the COE in instituting management practices in the reservoirs. Involved in the study was the collection of water, sediment, and biological samples.

In April 1978, a second phase of this study was initiated on the same section of the Alabama and Coosa Rivers with the addition of a Tallapoosa River station. Samples were collected during five runs on the river made between April 10 and September 18, 1978. Most of the parameters included in the 1978 study were similar to those tested in the 1977 study. A comparison of major differences in the two studies is highlighted in the discussion section of this report. One change was made in the method of data reporting between the 1977 and 1978 studies. Rather than prepare one report, as for the 1977 data, the COE requested that three separate reports (one per reservoir) be submitted. This particular report concerns the results of studies conducted above and immediately below Jones Bluff Reservoir from river miles 0.5 to 4.4 on the Coosa River, river miles 0.0 to 0.5 on the Tallapoosa River, and river miles 302.0 to 236.0 on the Alabama River. The second and third reports will include the results of the William "Bill" Dannelly and Claiborne Reservoir studies. Additional parameters involved in the 1978 study were tests for adenosine triphosphate (ATP), analyses of *Corbicula* (mollusk) tissue for the presence of heavy metals and pesticides, dry biomass, analyses for several additional water-quality parameters including dissolved sulfate, dissolved organic carbon, and chlorophyll *a* with pheophytin correction and generalized mapping of large concentrations of macrophytes. In addition to the 18 stations in the Jones Bluff Reservoir, data from one sampling station below the dam are reported to define the characteristics of release water from the reservoir. Three tributary stations were sampled within the reservoir during each sampling run. These tributary stations were Autauga Creek, Catoma Creek, and Big Swamp Creek.

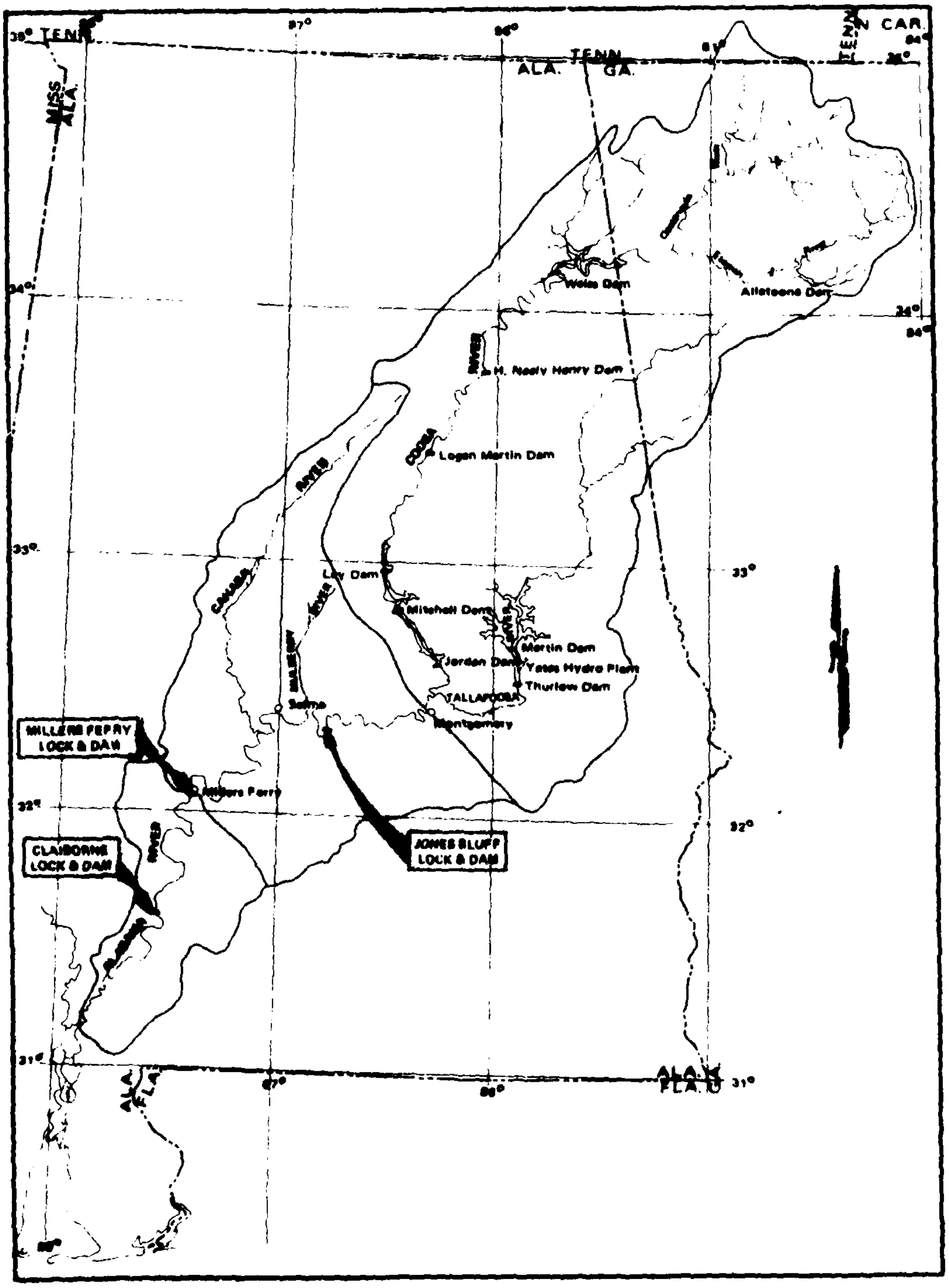


Figure 1.--Map of Alabama, Coosa and Tallapoosa River systems.

The Coosa River originates at Rome, Georgia, in northwest Georgia at the junction of the Oostanaula and Etowah Rivers, which have their sources in southeastern Tennessee and northern Georgia (fig. 1). From Rome, the Coosa River flows 286 miles southwesterly through Georgia and Alabama and unites with the Tallapoosa River 18 miles above Montgomery, Alabama, to form the Alabama River. The Alabama River flows 318 miles southwesterly to the northeastern corner of Mobile County where it joins the lower Tombigbee River. The total drainage area of the Alabama River in Alabama, Georgia, and Tennessee is 22,500 square miles (U.S. Army Corps of Engineers, 1976a).

Jones Bluff Lock and Dam, located at Alabama River mile 236.13, consists of earthen dikes and a power plant on the west bank. The 77.9 mile-long Jones Bluff Reservoir has a surface area of 12,300 acres at normal pool elevation of 125.0 feet and a total capacity of 234,210 acre-feet. The average flow of the river for the period of 1929-70 was 25,100 cubic feet per second (cfs), and the estimated 7-day low flow was 5,330 cfs (U.S. Army Corps of Engineers, 1976b). The maximum monthly flow in the period of record was 149,000 cfs; the minimum daily flow was 3,340 cfs.

II. OBJECTIVES

The objectives of the study as stated in the contractual agreement between the U.S. Army Corps of Engineers and the Alabama Geological Survey are as follows:

"A. Document general post-impoundment conditions of the reservoirs;

B. Establish base-line conditions for future comparisons;

C. Identify water quality-environmental problems;

D. Collect data to allow guidance to reservoir regulation elements concerning reservoir control discharge water quality relationships;

E. Collect data that will provide an adequate data base and understanding of project conditions to facilitate coordination with state agencies to implement watershed pollution control."

III. MATERIALS AND METHODS

A. Chemical

1. Water

Water samples were collected from 19 main river and three tributary stations on the Alabama-Coosa-Tallapoosa River system over a one-week period during five runs between April 10 and September 18, 1978. A list of station numbers, U.S. Environmental Protection Agency (EPA) STORET station numbers, and location of each of the 19 main river and three tributary stations are given in table 1. Geographical locations of the stations are shown in figure 2. The collection schedule and a list of analyses performed at each station by the GSA, Geochemistry-Water Quality Laboratory in Tuscaloosa during the 1977 and the 1978 studies are given in table 2.

Water samples, except those analyzed for the biochemical parameters (algal growth potential, adenosine triphosphate, bacteria, and the chlorophylls) and total and dissolved organic carbon, were collected with a Kemmerer 1.2-liter plastic sampler at midstream, 5 feet below the water surface or at a mid-depth where the river was less than 10 feet deep. Samples analyzed for total organic carbon and dissolved organic carbon were collected in a 1-gallon glass bottle supported by a metal cage. Samples analyzed for bacteria were collected in a sterilized Wheaton 300-milliliter (ml) bottle. A beta-type water sampler was used to collect depth-integrated whole water samples for the biochemical parameters (Section III.B).

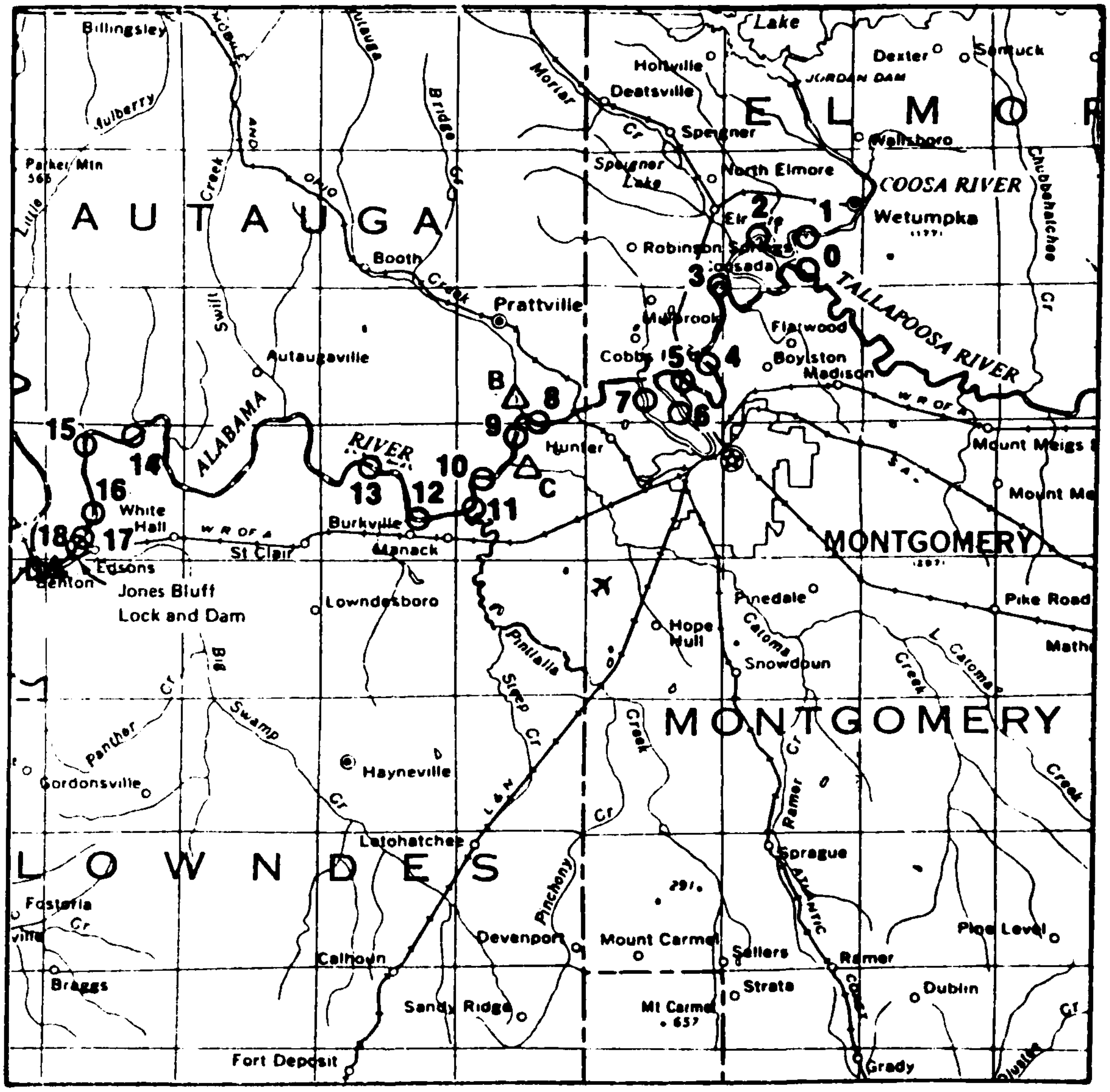
Water samples were collected and preserved according to approved EPA (1974) or American Public Health Association (APHA) (1975) procedures. Water-quality parameters tested, associated units, EPA STORET codes, test procedures, and preservation techniques used throughout the 1977 and 1978 studies are given in table 3. Parameters, methods, or techniques that differed between the 1977 and 1978 studies are indicated by asterisks that correspond to footnotes in the table.

Three tributary stations (Autauga, Catoma and Big Swamp Creeks) were selected for in situ measurements. Parameters included

Table 1.--Identification of the 18 sampling stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August through December 1977 (Phase I) and April through September 1978 (Phase II)

Station number	STORET identification number	Location	River mile
0[1]	02419892	Tallapoosa River 0.5 miles from mouth	0.5
1	02411605	Coosa River at Wetumpka, Alabama	6.4
2	02419965	Coosa River below Mortar Creek near Elmore, Alabama	4.4
3	02419980	Alabama River at Coosada Ferry at Coosada, Alabama	302.0
4	02419983	Alabama River near Chisolm, Alabama	298.1
5	02419986	Alabama River at L&N Railroad near Millbrook, Alabama	293.2
6	02419987	Alabama River at Alabama Highway 143 near Montgomery, Alabama	288.2
7	02419989	Alabama River near Maxwell Air Force Base near Montgomery, Alabama	282.9
8	02420045	Alabama River near Prattville, Alabama	277.6
9	02420600	Alabama River below Autauga Creek near Prattville, Alabama	274.2
10	02421060	Alabama River below Catoma Creek near Prattville, Alabama	271.7
11	02421090	Alabama River above Pintlalla Creek near Prattville, Alabama	269.8
12	02421195	Alabama River near Burkville, Alabama	267.1
13	02421220	Alabama River below Rocky Branch near Lowndesboro, Alabama	260.3
14	02421290	Alabama River below Beaver Creek near Autaugaville, Alabama	244.7
15	02421315	Alabama River below Ivy Creek near Mulberry, Alabama	240.7
16	02421325	Alabama River at Days Bend near Benton, Alabama	238.7
17	02421349	Alabama River just above Jones Bluff Lock and Dam near Benton, Alabama	236.4
18	02421355	Alabama River just below Jones Bluff Lock and Dam near Benton, Alabama	236.0
B	None	Autauga Creek	275.2
C	None	Catoma Creek	273.2
D	None	Big Swamp Creek	234.0

[1]Station was added for Phase II of the study.



O River stations

△ Tributary stations

10 0 10 Miles

10 0 10 Kilometers

Figure 2.--Sampling stations above and below Jones Bluff Lock and Dam.

Table 2.--Collection schedule for water, sediment and biological samples from the Alabama, Coosa and Tallapoosa Rivers, August through December 1977 and April through September 1978

Parameter	Collection periods										
	1977						1978				
	8/9-8/16	8/29-9/1	9/19-9/22	10/11-10/14	10/31-11/3	11/21-11/29	4/10-4/18	5/22-5/29	7/6-7/11	8/1-8/7	9/12-9/18
Water quality											
Hydrogen ion (pH)	x	x	x	x	x	x	x	x	x	x	x
Temperature	x	x	x	x	x	x	x	x	x	x	x
Conductivity	x	x	x	x	x	x	x	x	x	x	x
Oxidation-reduction potential (ORP)	x	x	x	x	x	x	[1]x	[1]x	x	x	x
Color (apparent)	x	x	x	x	x	x					
Color (true)							x	x	x	x	x
Hardness (calculated)	x	x	x	x	x	x	x			x	
Chloride	x	x	x	x	x	x	x			x	
Alkalinity as $CaCO_3$	x	x	x	x	x	x	x	x	x	x	x
Carbon dioxide (Calc.)							x			x	
Calcium, total	x	x	x	x	x	x	x			x	
Magnesium, total							x			x	
Potassium, total							x			x	
Sodium, total							x			x	
Dissolved silica	x	x	x	x	x	x					
Zinc, total							x	x	x	x	x
Total iron (Fe)	x	x	x	x	x	x	x	x	x	x	x
Dissolved iron (Fe)	x	x	x	x	x	x	x	x	x	x	x
Total manganese (Mn)	x	x	x	x	x	x	x	x	x	x	x
Dissolved manganese							x	x	x	x	x
Total organic carbon (TOC)	x	x	x	x	x	x	x	x	x	x	x
Dissolved organic carbon							x	x	x	x	x
Total Kjeldahl nitrogen (N)	x	x	x	x	x	x	x			x	
Nitrite (NO_2) + Nitrate (NO_3) as Nitrogen (N)	x	x	x	x	x	x	x	x	x	x	x

[1]No measurements were taken during April and May sampling trips.

Table 2.--Continued

Parameter	Collection periods 1977 8/9-8/16	8/29-9/1	9/19-9/22	10/11-10/14	10/31-11/3	11/21-11/29	1978 4/10-4/18	5/22-5/29	7/6-7/11	8/1-8/7	9/12-9/18
Total ammonia (NH_3 + NH_4) as N	x	x	x	x	x	x	x	x	x	x	x
Total phosphorus	x	x	x	x	x	x	x	x	x	x	x
Ortho, phosphorus	x	x	x	x	x	x	x	x	x	x	x
Sulphate, dissolved	x	x	x	x	x	x	x	x	x	x	x
Total coliform	x	x	x	x	x	x					
Fecal coliform	x	x	x	x	x	x	x	x	x	x	x
Streptococci	x	x	x	x	x	x	x	x	x	x	x
Fecal/Strep. ratio							x	x	x	x	x
Dissolved oxygen	x	x	x	x	x	x	x	x	x	x	x
Biochemical oxygen demand, 5 day (BOD_5)	x	x	x	x	x	x					
Chemical oxygen demand	x	x	x	x	x	x					
Residue, total filterable	x	x	x	x	x	x	x	x	x	x	x
Residue, total non-filterable	x	x	x	x	x	x	x	x	x	x	x
Turbidity	x	x	x	x	x	x	x	x	x	x	x
Inorganic nitrogen (calculated)							x				
Organic nitrogen (calculated)							x				
Dry biomass							x	x	x	x	x
Chlorophyll *a*	x	x	x	x	x	x	x	x	x	x	x
Chlorophyll *b*	x	x	x	x	x	x	x	x	x	x	x
Chlorophyll *c*	x	x	x	x	x	x	x	x	x	x	x
Adenosine triphosphate							x	x	x	x	x
Total carotenoids	x	x	x	x	x	x					
Secchi disc (transparency)	x	x	x	x	x	x	x	x	x	x	x
Algal growth potential		x					x			x	x
Total nitrogen (N)							x			x	

Table 2.--Continued

Parameter	Collection periods										
	1977						1978				
	8/9-8/16	8/29-9/1	9/19-9/22	10/11-10/14	10/31-11/3	11/21-11/29	4/10-4/18	5/22-5/29	7/6-7/11	8/1-8/7	9/12-9/18
Polychlorinated biphenyls (PCB) (AR 1242)		x									
PCB (AR 1254)		x									
PCB (AR 1260)		x									
Percent light transmission									x	x	x
Sediment											
Volatile solids		x								x	
Total organic carbon		x								x	
Chemical oxygen demand		x									
Total Kjeldahl nitrogen		x								x	
Oil and grease		x								x	
Total phosphorus		x								x	
Phosphorus soluble		x									
Ammonia (NH_3) as N		x									
Nitrite (NO_2) + Nitrate (NO_3) as N		x									
Copper, total		x								x	
Iron, total		x								x	
Lead, total		x								x	
Manganese, total		x								x	
Zinc, total		x								x	
Cadmium, total		x								x	
Arsenic, total		x								x	
Chromium, total		x								x	
Nickel, total		x								x	
Hexachlorocyclohexane (BHC)		x									

Table 2.--Continued

Parameter	Collection periods										
	1977						1978				
	8/9-8/16	8/29-9/1	9/19-9/22	10/11-10/14	10/31-11/3	11/21-11/29	4/10-4/18	5/22-5/29	7/6-7/11	8/1-8/7	9/12-9/18
Lindane		x									
Heptachlor		x									
Aldrin		x									
Endosulfan		x									
1, 1-Dichloro-2, 2-Bis (p-chlorophenyl) ethylene (DDE)		x									
Dieldrin		x									
Endrin		x									
Mercury, total		x								x	
2,2-Bis (chlorophenyl)-1,1-dichlorethane compounds (DDD)		x									
Dichloro diphenyl trichloroethane (DDT)		x									
Mirex		x									
Methoxychlor		x									
2,2-Dichlorovinyl dimethyl phosphate (DDVP)		x									
Phosdein		x									
Phorate		x									
Diazinon		x									
Disulfoton		x									
Methyl parathion		x									
Ronnel		x									
Malathion		x									
Parathion		x									
S,S,S-tributyl ester Phosphorotrithioic acid (DEF)		x									

Table 2.--Continued

Parameter	Collection periods										
	1977						1978				
	8/9-8/16	8/29-9/1	9/19-9/22	10/11-10/14	10/31-11/3	11/21-11/29	4/10-4/18	5/22-5/29	7/6-7/11	8/1-8/7	9/12-9/18
Ethion		x									
Chlordane		x									
Toxaphene		x									
Guthion		x									
PCB (AR 1242)		x									
PCB (AR 1254)		x									
PCB (AR 1260)		x									
Mechanical analyses		x								x	
Biological											
Benthos											
Hester-Dendy	x		x		x		x	x		x	
Ponar	x		x		x		x	x		x	
Plankton	x		x		x		x	x	x	x	x
Macro vegetation			x					x		x	
Corbicula Tissue (clams)											
Mercury, total							x			x	
Arsenic, total							x			x	
Cadmium, total							x			x	
Chromium, total							x			x	
Lead, total							x			x	
Selenium, total							x			x	
Zinc							x			x	
Aldrin, total							x			x	
Dieldrin							x			x	

Table 2.--Continued

Parameter	Collection periods 1977 8/9-8/16	8/29-9/1	9/19-9/22	10/11-10/14	10/31-11/3	11/21-11/29	1978 4/10-4/18	5/22-5/29	7/6-7/11	8/1-8/7	9/12-9/18
Chlordane							x			x	
Endosulfur sulfate							x			x	
Heptachlor							x			x	
BHC, Alpha							x			x	
BHC, Beta							x			x	
BHC, Gamma (Lindane)							x			x	
Polychlorinated biphenyls (AR 1242)							x			x	
Polychlorinated bi-phenyls (AR 1248)							x			x	
Polychlorinated biphenyls (AR 1260)							x			x	
Toxaphene							x			x	
Pentachlorophenol							x			x	
Heptachlor epoxide							x			x	
1,1-Bis (p-chlorophenyl) 2,2-dichloroethane							x			x	
1,1-Bis (p-chlorophenyl) 2,2-dichloroethylene							x			x	
1,1-Bis (p-chlorophenyl) 2,2,2-trichloroethane							x			x	
1-(o-chlorophyenl), 1-(p-chlorophenyl), 2,2,2-trichloroethane							x			x	
Mirex							x			x	
Methoxychlor							x			x	

Table 3.--Water-quality, sediment, and biological parameters, associated units, EPA STORET codes, container type, preservative and methods used for the samples collected from the Alabama, Coosa and Tallapoosa Rivers, August through December 1977 and April through September 1978

Parameter	Unit	STORET number	Methodology	Maximum holding time	Sample analysis or preparation	Method
Water quality						
Temperature	Degrees Celsius (°C)	00010	p.286 (EPA, 1974)	No holding	In situ	Electrometry thermometer
Dissolved oxygen	Milligrams per liter	00299	p.56 (EPA, 1974)	No holding	In situ	Electrode probe
Carbon dioxide	Milligrams per liter	00405	p.301 (APHA, 1975)	No holding	In situ	Calculation
pH	Standard units	00400	p.239 (EPA, 1974)	No holding	In situ	Buffered electrodes
Conductivity	Micromhos per centimeter at 25°C	00094	p.275 (EPA, 1974)	No holding	In situ	Wheatstone bridge
Oxidation reduction potential	Millivolts	00090	Manufacturer's manual (Orion)	No holding	In situ	Electrode
Turbidity	Formazin turbidity units	00076	p.295 (EPA, 1974)	7 days	Plastic jug, 4°C	Nephelometric, Hach
Residue, total nonfilterable	Milligrams per liter	00530	p.537 (APHA, 1975)	7 days	Plastic jug, filtered 4°C	Glass fiber filtration, 103-105°C
Residue, total filterable	Milligrams per liter	70300	p.266 (EPA, 1974)	7 days	Plastic jug, filtered 4°C	Glass fiber filtration, 180°C
Nitrate + Nitrite (NO_3+NO_2) as N	Milligrams per liter	00630	p.207 (EPA, 1974)	24 hours	Plastic jug, H_2SO_4, 4°C	Automated cadmium reduction
Ammonia (NH_3 + NH_4) as N	Milligrams per liter	00610	p.168 (EPA, 1974)	24 hours	Plastic jug, H_2SO_4, 4°C	Automated colorimetric phenate
Total organic carbon	Milligrams per liter	00680	p.236 (EPA, 1974)	24 hours	Glass bottle, H_2SO_4, 4°C	Combustion infrared method
Phosphorus, total as P	Milligrams per liter	00665	p.258 (EPA, 1974)	7 days	Plastic jug, H_2SO_4, 4°C	Persulfate digestion followed by automated ascorbic acid reduction
Orthophosphorus dissolved as P	Milligrams per liter	00671	p. 251 (EPA, 1974)	24 hours	Plastic jug, filtered, 4°C	Automated, colorimetric ascorbic acid reduction
Alkalinity as $CaCO_3$	Milligrams per liter	00410	p.3 (EPA, 1974)	24 hours	In situ	Electrometric titration to pH 4.5
Color, true* (apparent)**	Platinum-Cobalt units	00080	p.36 (EPA, 1974)	24 hours	Plastic jug, 4°C	Platinum-Cobalt centrifuged*, (shaken)**

*Parameter determined during 1978 study period only.
**Parameter determined during 1977 study period only.

Table 3.--Continued

Parameter	Unit	STORET number	Methodology	Maximum holding time	Sample analysis or preparation	Method
Zinc, total	Milligrams per liter	01092	p.155 (EPA, 1974)	6 months	Plastic jug, HNO_3 (<2.0 pH)	Atomic absorption
Dissolved organic carbon*	Milligrams per liter	00681	p.236 (EPA, 1974)	24 hours	Glass bottle, filtered, 4°C	Combustion infrared method
Biochemical oxygen demand, 5-day**	Milligrams per liter	00310	p.11 (EPA, 1974)	24 hours	Glass bottle, 4°C	Probe method
Chemical oxygen demand**	Milligrams per liter	00335	p.550 (APHA, 1975)	24 hours	Glass bottle, 4°C	Dichromate reflux
Nickel, total**	Micrograms per liter	01067	p.141 (EPA, 1974)	7 days	Plastic jug, HNO_3	Atomic absorption
Silica**	Milligrams per liter	00955	p.274 (EPA, 1974)	7 days	Plastic jug, filtered	Atomic absorption direct
Sulfate, dissolved	Milligrams per liter	00946	p.279 (EPA, 1974)	7 days	Plastic jug, filtered, 4°C	Automated chloranilate
Iron, total	Micrograms per liter	01045	p.110 (EPA, 1974)	6 months	Plastic jug, HNO_3 to pH 2.0	Atomic absorption
Iron, dissolved	Micrograms per liter	01046	p.110 (EPA, 1974)	6 months	Plastic jug, HNO_3, filtered	Atomic absorption
Manganese, total	Micrograms per liter	01055	p.116 (EPA, 1974)	6 months	Plastic jug, HNO_3 to pH 2.0	Atomic aborption
Manganese, dissolved	Micrograms per liter	01056	p.116 (EPA, 1974)	6 months	Plastic jug, HNO_3 to pH 2.0, filtered	Atomic absorption
Calcium, total	Milligrams per liter	00916	p.103 (EPA, 1974)	6 months	Plastic jug, HNO_3, pH 2.0	Atomic absorption
Magnesium, total	Milligrams per liter	00927	p.114 (EPA, 1974)	6 months	Plastic jug, HNO_3, pH 2.0	Atomic absorption
Streptococci*, fecal	Colonies per 100 milliliters	31673	p.944 (APHA, 1975)	8 hours	Filter, in situ	MF-KF-AGAR, 48 hours, 35°C
Fecal coliform	Colonies per 100 milliliters	31616	p.937 (APHA, 1975)	8 hours	Sterile BOD bottle	MFM-FCBR, 44.5°C,
Fecal coliform/fecal streptococci ratio*				No holding	Sterile BOD bottle	Calculation
Algal growth potential tests*	Milligrams per liter dry weight algae selenastum		(EPA, 1978)	3 days	Plastic jug, 4°C	EPA, Corvallis, Oregon, Coulter ZBI particle counter

Table 3.--Continued

Parameter	Unit	STORET number	Methodology	Maximum holding time	Sample analysis or preparation	Method
Algal growth potential tests**	Milligrams per liter as dry weight algae selenastum	--	(USGS, Greeson, 1977)	3 days	Plastic jug, 4°C	Coulter ZBI particle counter
Adenosine triphosphate, (ATP, plankton)	Nanograms per liter	70996	p.1163, pt. 31 (ASTM, 1978)	6 months after extraction	Boil tris extract on filter paper, 0°C	Luciferin-luciferase
Dry biomass	Milligrams per liter	70947	p.751 (APHA, 1975)	7 days	Plastic jug, 4°C	Gravimetric, 105°C centrifuge
Total hardness as $CaCO_3$	Milligrams per liter	00900	p.68 (EPA, 1974)	6 months	Plastic jug, HNO_3 to pH 2.0	EDTA, titrimetric or atomic absorption
Sodium, total	Milligrams per liter	00929	p.147 (EPA, 1974)	6 months	Plastic jug, HNO_3 to pH 2.0	Atomic absorption
Potassium, total	Milligrams per liter	00937	p.143 (EPA, 1974)	6 months	Plastic jug, HNO_3 to pH 2.0	Atomic absorption
Chloride	Milligrams per liter	00940	p. 31 (EPA, 1974)	7 days	Plastic jug	Automated (mercury thiocyanate)
Transparency (Secchi disc)	Meters	00078	Manufacturer's manual	No holding	In situ	
Chlorophyll *a* (pheophytin corrected)*	Micrograms per liter	32211	p.1030 (APHA, 1975)	30 days after extraction	Plastic jug, 4°C	Spectrophotometric
Chlorophyll *a* (uncorrected)**	Micrograms per liter	32230	p.1030 (APHA, 1975)	30 days after extraction	Plastic jug, 4°C	Spectrophotometric
Chlorophyll *b*	Micrograms per liter	32212	p.1030 (APHA, 1975)	30 days after extraction	Plastic jug, 4°C	Spectrophotometric
Chlorophyll *c*	Micrograms per liter	32214	p.1030 (APHA, 1975)	30 days after extraction	Plastic jug, 4°C	Spectrophotometric
Inorganic nitrogen total (calculated)	Milligrams per liter	00640	p.407 (APHA, 1975)	No holding	--	Calculation
Percent light transmission	Depth-feet 1 percent light remains	00034	(Manufacturer Kahl instruction manual)	No holding	In situ	Irradiometer
Total nitrogen (calculated)	Milligrams per liter	00600	p.437 (APHA, 1975)	No holding	--	Calculation
Polychlorinated biphenyls**	Micrograms per liter	--	(USDHEW-FDA, 1977)	1 month	Glass bottle, 4°C	Gas chromatography
Organic nitrogen as N	Milligrams per liter	00605	p.437 (APHA, 1975)	24 hours	Plastic jug, 4°C	Digestion, automated phenolate
Total Kjeldahl nitrogen	Milligrams per liter	00625	p.437 (APHA, 1975)	7 days	Plastic jug, 4°C	Digestion, automated phenolate

Table 3.--Continued

Parameter	Unit	STORET number	Methodology	Maximum holding time	Sample analysis or preparation	Method
Sediment						
Volatile solids	Milligrams per kilogram (dry weight basis)	00496	(COE, 1976a)	14 days	Plastic jug, 4°C	Gravimetric
Oil and grease	Milligrams per kilogram (dry weight basis)	00553	(COE, 1976a)	14 days	Plastic jug, 4°C	Partition-gravimeter
Total organic carbon	Milligrams per kilogram (dry weight basis)	00687	(COE, 1976a)	14 days	Plastic jug, 4°C	Combustion infrared
Total phosphorus	Milligrams per kilogram (dry weight basis)	00668	(COE, 1976a)	14 days	Plastic jug, 4°C	Phosphomolybdate method with persulfate digestion
Total Kjeldahl nitrogen*	Milligrams per kilogram (dry weight basis)	00627	(COE, 1976a)	14 days	Plastic jug, 4°C	Automated digestion automated phenolate
Total Kjeldahl nitrogen**	Milligrams per kilogram (dry weight basis)	00627	(COE, 1976a)	14 days	Plastic jug, 4°C	Distillation and nesslerization
Copper, total	Milligrams per kilogram (dry weight basis)	01043	p.108 (EPA, 1974)	3 months	Plastic jug, 4°C	Atomic absorption
Lead, total	Milligrams per kilogram (dry weight basis)	01052	p.112 (EPA, 1974)	3 months	Plastic jug, 4°C	Atomic absorption
Manganese, total	Milligrams per kilogram (dry weight basis)	01053	p.116 (EPA, 1974)	3 months	Plastic jug, 4°C	Atomic absorption
Cadmium, total	Milligrams per kilogram (dry weight basis)	01028	p.101 (EPA, 1974)	3 months	Plastic jug, 4°C	Atomic absorption
Arsenic, total	Milligrams per kilogram (dry weight basis)	01003	p. 95 (EPA, 1974)	3 months	Plastic jug, 4°C	Gaseous anhydride
Chromium, total	Milligrams per kilogram (dry weight basis)	01029	p.105 (EPA, 1974)	3 months	Plastic jug, 4°C	Atomic absorption
Mercury, total	Milligrams per kilogram (dry weight basis)	71921	p.134 (EPA, 1974)	3 months	Plastic jug, 4°C	Atomic absorption
Nickel, total	Milligrams per kilogram (dry weight basis)	01068	p.141 (EPA, 1974)	3 months	Plastic jug, 4°C	Atomic absorption
Zinc, total	Milligrams per kilogram (dry weight basis)	01093	p.155 (EPA, 1974)	3 months	Plastic jug, 4°C	Atomic absorption
Iron, total	Milligrams per kilogram (dry weight basis)	01170	p.110 (EPA, 1974)	3 months	Plastic jug, 4°C	Atomic absorption
Pesticides**	Micrograms per kilogram	--	(DHEW, FDA, 1977)	6 months	Glass, teflon lined lid	Gas chromatography, electron capture detector
Grain size	ASTM units	--	(ASTM, 1977)	6 months	Plastic jug, 4°C	ASTM sieve sizing

were depth, estimated flow, temperature, pH, turbidity, conductance, oxidation-reduction potential (ORP) and dissolved oxygen.

To determine the extent of mixing and stratification within the river, in situ measurements were made at each station for dissolved oxygen (DO), temperature, pH, alkalinity, conductivity, oxidation-reduction potential, secchi disc readings and percent light transmission. These measurements (except percent light transmission and secchi disc) were made 1 foot below the water's surface and 3 feet above the river bed at midstream and within the littoral zones of both river banks during the first and fifth sampling runs only. Additional measurements taken at varying depth intervals of the same parameters, plus ORP, were conducted at five equally spaced intervals (right bank, right middle, midstream, left middle, and left bank) at river stations 8 and 16 during the fifth sampling run. Data obtained from these samples were used to develop isopleths for the various parameters and to determine possible stratification in the river.

The GSA laboratory quality-assurance program, including a description of sampling methods, sample containers, sample preservation, transportation, sample storage periods, field and laboratory analytical procedures, detection limits, quality control, and biological sampling and identification procedures, was submitted to COE and approved prior to sample collection.

The Geochemical-Water Quality Research (GWQR) Division of GSA coordinated the quality control procedures followed in this study with the COE. Manuals describing the laboratory procedures to be followed were sent to the COE offices and approved prior to sample collection. A representative from the COE South Atlantic Division Laboratory (SADL) inspected the GSA laboratory to assure that the analytical techniques and procedures to be followed were acceptable. In addition, three members of the SADL and two representatives of the COE office accompanied GSA's field crew on their initial sampling trip to observe sampling methods and sample preservation techniques. Overall quality of the project was examined by the COE office through a review of monthly progress reports, through periodic field and laboratory inspections, and through recommendations furnished them by SADL.

As part of the quality-control program, the GSA laboratory analyzed several duplicate samples. Water samples were split in the field by filling two separate containers from the same grab samples. Two split samples were shipped to SADL for quality control analysis. The results obtained by SADL and GSA were then compared by the COE for acceptability. A standard reference sample program administered by the U.S. Geological Survey (USGS) Water Resources Division, Denver, Colorado, was also included as part of the quality-control program. In this program, the USGS furnished the GSA with "unknown" samples that were analyzed in October 1977 and June 1978. A total of 34 parameters (including trace metals, nutrients, and physical and chemical constituents) were determined as part of GSA's participation in the USGS program. All of the determinations made by the GSA laboratory in this program were within one standard deviation of the mean concentration as determined by over 50 participating private, state, and federal laboratories (which included the EPA, Athens, Georgia, Environmental Laboratory). The GSA laboratory also analyzed four "unknown" samples provided by the COE office.

For 50 percent of all duplicate samples analyzed for metals, an additional sample was spiked in the field with double the expected metal concentration. A glass ampule containing a known concentrate of specific metals was added to those acidified sample containers used for metal determinations and appropriately acidified. This was done to check the accuracy and precision of the GSA laboratory's metal-extraction procedures. The results showed that 99 percent of the metal spiked in the field was recovered.

For calibration purposes, the GSA also ran known internal water standards (USGS or EPA certified) with each set of samples to provide each analyst with an immediate check on the reliability of their determinations. Field meters were calibrated at each sampling station according to manufacturer's instruction manuals.

All samples collected by GSA were held for 60 days after submitting the monthly progress report until the results of the sampling data had been reviewed and verified.

2. Sediment

Sediment samples were collected at nine sampling stations within the Jones Bluff Reservoir and at one station below the Lock and Dam (fig. 1 and table 1) from August 1-7, 1978, according to the schedule shown on table 2.

The sediment samples were collected with an epoxy-painted Ponar dredge at four equally spaced locations across the width of the river. These four locations were at the right bank, right of midstream, left of midstream, and at the left bank.

The four (cross-sectional) sediment samples were poured into a 5-gallon polyethylene container, well mixed, and a 1-liter aliquot of the homogeneous sample was taken. The sediment samples were analyzed for grain size, nutrients, oil and grease, total organic carbon (TOC), volatile solids, and 10 heavy metals (arsenic, cadmium, copper, lead, manganese, mercury, zinc, iron, chromium, and nickel). Procedures and methods used to analyze sediment samples are given in table 3.

On the basis of the mechanical analysis, the sediment samples were classified according to the U.S. Bureau of Soils textural classification system (American Society for Testing and Materials (ASTM), 1978).

As part of the quality control program, sediment samples collected at stations 13 and 17 were split in the field and returned to the GSA laboratory for analysis. The GSA laboratory ran internal reference standards on each sample as part of the quality-control program. Split analysis results were provided to the COE staff in a monthly progress report.

3. *Corbicula* Tissue

The stations chosen for collecting the *Corbicula* for the 1978 study were based on the distribution of benthic organisms found during the 1977 study. However, no (or at least very few) *Corbicula* were found at some of the stations originally chosen. After extensive searching, composite samples from two or more stations were used to obtain the minimum tissue weight required for the analyses. It was assumed that the composited samples were representative of the general area. *Corbicula* samples were collected using an epoxy-coated dredge at individual stations during the April 10-18, 1978, and August 11-18, 1978, runs for stations 8 and 17. Composited *Corbicula* samples were obtained at stations 7 and 8 for one representative sample and at stations 10, 11, and 12 for a second representative sample during the August 1-7, 1978, run. The tissue samples were analyzed for the parameters shown in table 2 using the procedures shown in table 3.

B. Biochemical

1. Adenosine Triphosphate

Samples used for determination of adenosine triphosphate (ATP) were collected at each station (fig. 1; table 1) during each of the five sampling trips during 1978 (table 2). Using a beta-type water sampler, a 1-liter grab sample of water was taken at the surface and at 1-meter (m) intervals until the lower limit (1 m above bottom) was reached. These samples were mixed and an aliquot was taken. If the water depth at the sampling station exceeded 7 m, only eight grab samples were collected at the required sampling interval, including the surface samples. These samples were then well mixed and aliquots taken.

The initial ATP extractions were performed in the field at the time each aliquot sample was taken, as required by the ASTM (1977) method (table 3). The aliquot was filtered on Gelman 0.45 micron filter paper and the residue on the filter paper was extracted by tris buffer solution. The extracted filter paper with the ATP residue was rolled and placed in a screw cap test tube and placed in an ice chest with dry ice. The frozen sample was returned to the laboratory where it was stored in a freezer until the time of the analysis. The time element for freezer storage from sample collection to analysis was no longer than 5 months.

As part of the quality-control program and ASTM procedure, the GSA laboratory ran triplicate samples along with duplicate split and internally prepared ATP samples. The split samples comprised 10 percent of all samples collected for the entire 1978 study period.

2. Algal Growth Potential

Algal growth potential (AGP) tests were conducted at stations 0, 1, 8 and 16 during the April, August and September runs (table 2). Procedures for collecting AGP samples were identical to those used for collecting the ATP samples, except for the extraction procedure. (See previous section, Adenosine Triphosphate.) The AGP data is reported as the maximum standing crop in milligrams dry weight algae per liter. A Coulter model ZBI electronic particle counter and mean cell volume accessory was used to determine the concentration of algal particles (cells or colonies of cells). The following equation (Greeson, 1977) was used to calculate the milligrams of dry weight per liter (mg (dry wt)/1):

$$\text{mg (dry wt)/liter} = \frac{\text{cells}}{\text{ml}} \times \frac{\mu m^3}{\text{cell}} \times \frac{2.5 \times 10^{-7}\ \mu g \text{ dry wt}}{\mu m^3} \times \begin{matrix}\text{dilution}\\ \text{factor}\end{matrix}$$

$$= \frac{\mu g \text{ dry wt}}{\text{ml}}$$

where cells/ml is the coincident corrected cell count per milliliter (determined by electronic particle counter); μm^3/cell is the volume of cells in cubic micrometers (determined by mean cell volume accessory); and μg dry wt/μm^3 is the dry weight (gravimetric) cells per cubic micrometer. Dilution factor is the dilution of algal cells from pure culture with particle free saline solution for proper counting range.

The EPA (Corvallis, Oregon) AGP procedure (EPA, 1978) was followed (table 3), and the alternative method of manually shaking the samples once a day was used instead of mechanical shaking. *Selenastrum capricornutum* was the test organism as per the EPA procedure. The waters used for the AGP tests were analyzed for total Kjeldahl nitrogen (TKN), nitrate + nitrite as nitrogen, ammonia as nitrogen, total phosphorus as phosphorus, dissolved ortho-phosphate as phosphorus, conductivity, and pH before and after autoclaving.

3. Dry Biomass

The dry biomass of plankton was determined for all 18 stations within the Jones Bluff Reservoir and the release-water station below the Jones Bluff Lock and Dam for all collection periods (table 2).

The collection procedure was identical to that for ATP, except for the extraction procedure. An aliquot of the composited, well-mixed sample was placed in a 2-liter bottle, placed in an ice chest, and chilled to 4 degrees Celsius (°C). The samples were then transported to the GSA laboratory and refrigerated at 4°C until time of analysis.

The APHA (1975) procedures for dry biomass were followed (table 3). Duplicate analyses were performed for 10 percent of all samples collected, as part of the quality-control program for the dry biomass determination.

4. Chlorophyll

Water samples for the determination of chlorophylls *a*, *b* and *c* were collected during every sampling period at each of the 18 stations within the Jones Bluff Reservoir and at the one release-water station below Jones Bluff Lock and Dam during the 1978 study (table 2). The collection procedures for these parameters were identical to those procedures followed in collecting ATP samples, except for the extraction procedures. An aliquot of the composited, well-mixed sample was placed in a 2-liter bottle, stored in an ice chest and chilled to 4°C. The samples were then transported to the GSA laboratory, filtered through Gelman 0.45 micron paper, placed in a petri dish, and frozen until the time of analysis, which was within 30 days of the initial extraction procedure.

The APHA (1975) manual was followed for determining the concentrations of chlorophylls *a* (pheophytin correction), *b* and *c* (table 3). For comparisons of 1977 and 1978 data, it should be noted that the pheophytin correction was not used in the 1977 study (table 3).

Duplicate analyses were performed for 10 percent of all samples collected, as part of the quality-control program.

5. Bacteria

Water samples for fecal coliform and fecal streptococci bacteria determinations were collected every sampling period at each of the 18 stations within the Jones Bluff Reservoir and at the one release-water station below Jones Bluff Lock and Dam during the 1978 study (table 2).

Samples for these two bacteria parameters were collected 1 foot below the water surface using a calibrated rod with an attached metal cage. The cage held a sterile ground glass-stoppered Wheaton 200-ml glass bottle.

Following sample collection, the bottle was placed in an ice chest. The APHA (1975) membrane filter technique was used for performing the analyses in situ. Fresh bacteria media was made up daily. Through a mobile laboratory shuttle process, the person receiving the samples at the end of a sampling day filtered the samples on a 0.45 micron filter in the field. Filtered bacteria samples in sterilized petri dishes were immediately placed in a portable Millipore incubator which was connected to the DC current of the shuttle vehicle. After reaching the GSA laboratory, the incubator was plugged into a 110-volt receptacle and the incubation period continued without any interruption with the same constant temperature incubator.

As part of the quality-control program, a minimum of five aliquots were diluted to cover suspected low and high ranges of bacteria counts for each parameter at each station. Average values of the ideal colony counts were tabulated and reported for each parameter. All media supplies and glassware used for bacteria determination were inspected daily for contamination. Blank autoclaved distilled water samples were subjected to all the procedures in the APHA method; no contamination was detected.

C. Biological

1. Phytoplankton

During the 1977 phase of this study, phytoplankton and zooplankton were collected as one sample with a Wisconsin-style plankton net having a 12.7-cm mouth, a Nitex net throat with 80-micron apertures, and a brass bucket containing 58.1 square cm of filter net. Information relative to sample preservation, treatment in the laboratory and organism identification and tabulation is given in GSA (1983).

During the 1978 phase of this study, sam e taken at the surface and at 1-m depth intervals with a Kemm 2-liter plastic sampler and composited. If water depth at mpling site exceeded 7 m, a total of eight samples at 1-m intervals were collected and composited. From this well-mixed composited sample, a 1-liter phytoplankton sample was extracted, immediately preserved with a merthiolated iodine solution, and the following data were recorded: date of collection, number of samples from which the composited sample was taken, and the station number. The merthiolated iodine solution for phytoplankton preservation was prepared according to Weber (1973). Thirty-six ml of this preservative was added to each 1-liter sample bottle.

After the samples were transferred to the laboratory, a portion of each sample was examined by using an Utermöhl-type sedimentation apparatus (fig. 3). A tube length of 20 mm was chosen because this depth seemed to be the maximum column of water through which phytoplankton cells could be observed without becoming too distorted.

Initially, each sample was thoroughly mixed by inverting it a minimum of 20 times. The sedimentation tube and its 2.5-cm-long extension were then filled with the sample by pipetting with a seriological pipette and the sample was allowed to settle at a rate of 4 hours per cm of tube height. After settling had occurred, the water column was separated from the concentrate by extracting the water with a pipette to below the extension tube, and then the extension tube was removed. The concentrated sample was subsequently examined using an inverted compound microscope at a magnification of either 600X or 625X, depending upon the scope which was used for that particular sample. All cells or organisms larger than 6 micrometers in length or width were scored.

To make the phytoplankton counts, the entire slide was examined and each individual cell or organism was scored. A minimum of 300 units (cells for unicellular forms and organisms for colonial or filamentous forms) were counted in each sample. If a large number of colonies or filaments appeared in the field, the average number of cells present in an average-size colony or filament was determined and this factor was multiplied by the colony number. The number of organisms and number of cells of each taxon were recorded for each sample. When a small number of colonies was observed, the number of cells was counted for each colony.

Certain samples contained an unusually small number of organisms and high concentrations of inorganic particles. In an attempt to prevent expenditure of time in examining these samples, a 60 percent confidence factor was used. That is, if 300 organisms were not found on one slide, then a second slide was prepared. The

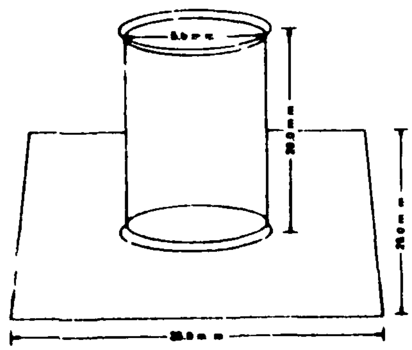


Figure 3.--Utermöhl-type phytoplankton sedimentation tube.

counting was terminated after the second slide was examined if fewer than 40 percent new genera were scored. At no time was a third slide required.

The number of organisms per liter was calculated by two procedures. The first procedure was used for the April, May-June, and July runs, and the second procedure for the August and September runs.

Procedure I. An "x" value was calculated for each sample by the following formula:

$$x = \frac{\dfrac{1000 \text{ ml}}{(\text{total volume} - \text{volume of preservative})}}{\text{total volume}}$$

To determine the cells per liter, the following formula was used:

$$\text{cells/liter} = x \left(\frac{\text{cells counted}}{\text{sample volume}} \right)$$

where sample volume is total number of ml settled in the Utermöhl chamber.

Procedure II. The total sample was allowed to settle for several weeks. Then without any shaking, 36 ml of supernatent (the volume of preservative added) was extracted. Since the sample was then equivalent to a whole water sample, no "x" value had to be calculated. Instead, the following formula was used:

$$\text{cells/liter} = 1000 \left(\frac{\text{cells counted}}{\text{sample volume}} \right)$$

where sample volume is total number of ml settled in Utermöhl chamber.

The second procedure was employed since it made calculations much easier--1 ml of sample was equivalent to 1 ml of river water.

Identification of phytoplankton was to the generic level when practical, and the two dominant taxa in each sample were identified to the specific level when practical.

The processing of diatoms for identification of dominant species was done in accordance with USGS procedures (Greeson, 1977). From each sample, a 1-ml plankton suspension was withdrawn by pipetting with a seriological pipette and was placed on a glass slide. The slide was placed on a special high-temperature hotplate where it was incinerated at 1000°F. Diatom frustules remained intact and were mounted in Hyrax rather than Cadex as specified by Greeson (1977). Permanent slides obtained from this process were examined at magnifications of both 400X and 1000X, and the dominant species were identified.

References used to identify phytoplankton included Desikachary (1959), Edmondson (1959), Patrick and Reimer (1966), Pennak (1953), Prescott (1970), Smith (1950), Weber (1971), and Whitford and Schumacher (1973). As a quality-control measure, selected phytoplankton samples were split and one-half of the sample was submitted to the COE, which had the samples analyzed by an outside consultant. Comparison of sample analyses indicated that GSA biologists usually found more taxa and organisms than the outside consultants, which was due in part to more specialized instrumentation and higher magnifications of the microscopes used during the study.

Selected phytoplankton data (table 4) were entered into the EPA STORET system for future retrieval.

2. Zooplankton

During the 1977 phase of this study, zooplankton samples were collected with a small Wisconsin-style plankton net which had a 12.7-cm mouth, a throat constructed of 80-micron aperture Nitex net and a brass collection bucket containing 58.1 square cm of filter net. Samples were preserved and transported to the laboratory for analysis. A summary of sample treatment during this phase of the study is found in GSA (1983).

Zooplankton samples were collected during the 1978 phase with a larger Wisconsin-type plankton net that had a mouth diameter of 49 cm. A small General Oceanics, Inc., flowmeter was suspended in the mouth of the net by two pieces of monofilament line that were attached to opposite sides of the steel hoop located around the net mouth.

In order to obtain as nearly a vertical tow as possible, a 22.5-kg weight was attached to the second and larger steel bridle of the net. In a vertical position, the entire net and weight apparatus was approximately 3 meters long and consisted of, from top to bottom: a bridle, the net and collection bucket, and the 22.5-kg weight. Because of the extreme velocity of the Alabama River, even during periods of normal flow, it was impossible while the boat was at anchor on site to make a strictly vertical tow with the net and associated weight. At the request of the contracting officer, therefore, zooplankton samples were collected with the net while drifting with the current at each station rather than at anchor.

Table 4.--EPA STORET data codes utilized for storage of biological data collected from the Alabama, Coosa and Tallapoosa Rivers, 1977 and 1978

Category	STORET number	STORET parameter	Concentration
Phytoplankton	71300	Division Chlorophyta	number per liter
	71302	Order Volvocales	. . .
	71308	Order Tetrasporales	. . .
	71311*	Order Ulotrichales	. . .
	71320*	Order Cladophorales	. . .
	71322*	Order Chlorococcales	. . .
	71335	Order Zygnematales	. . .
	71379*	Order Euglenales	. . .
	71383*	Order Dinokontae	. . .
	71393	Division Chrysophyta	. . .
	71394	Class Chrysophyceae	. . .
	71395*	Order Chrysomonadales	. . .
	71400	Class Bacillariophyceae	. . .
	71401*	Order Centrales	. . .
	71408*	Order Pennales	. . .
	71432	Division Cyanophyta	. . .
	71434	Order Chroococcales	. . .
	71438	Order Chamaesiphonales	. . .
	71440	Order Hormogonales	. . .
	71377	Division Euglenophyta	. . .
	71381	Division Pyrrophyta	. . .
Zooplankton	71261*	Phylum Protozoa	number per liter
	71263	Class Sarcodina	. . .
	71269	Class Ciliata	. . .
	71270	Phylum Rotifera	. . .
	71287	Phylum Arthropoda	. . .
	71289	Larvae Crustacea	. . .
	71291*	Order Cladocera	. . .
	71295	Subclass Ostracoda	. . .
	71297*	Order Copepoda	. . .
	60990*	Zooplankton other	. . .
Benthos	00571*	Benthic biomass	grams per square meter
	75003	Sponges	number per square meter
	75006	Bryozoa	. . .
	75009*	Caddis	. . .
	75012	Snails	. . .
	75015	Leeches	. . .
	75018*	*Chaoborus*	. . .
	75021*	Chironomidae	. . .
	75024*	*Corbicula*	. . .
	75027*	*Hexagenia*	. . .

*Parameters used August through December 1977.

No allowances were made during the 1977 work phase for the collection of velocity data at each station. This oversight was a handicap in accurately calculating the number of organisms present in each liter of river water sampled. Velocity measurements were made at each station during the 1978 phase as follows: The area of the plankton net mouth was first calculated using the following formula:

$$\text{area} = \pi r^2$$

where area equals square centimeters, $\pi = 3.14$ and $r = 24.5$ centimeters. The area obtained (1884.8 square centimeters) was then multiplied by a water depth (height) of 1 cm. This calculation yielded a standard volume of 1884.8 cubic cm or 1.8 liters (1000 cubic cm = 1 liter) of water entering the net per cm of water depth sampled.

At each station, the reading obtained from the flowmeter attached to the net was used to determine the number of centimeters of water that entered the net per second of tow time. This value was multiplied by the number of seconds required by the tow to give the total number of centimeters that entered the net, which was then multiplied by 1.8 liters to give the total volume of water that passed through the net.

In addition to calculating the actual volume, an ideal tow volume was derived by multiplying the water depth (in cm) at the site by 1.8 liters, the volume of water entering the net per 1 cm of depth. Percent net efficiency in sampling the water column was obtained by dividing the actual flow computation by the ideal estimate. Most values obtained by this procedure were less than 100 percent, which indicated clogging of the net. In those cases where net efficiency was less than 60 percent, a second shorter tow was made in order to more completely sample the entire water column.

Once it reached the surface, the net was immediately washed from the outside and the organisms that were collected in the plankton bucket were placed in a bottle and preserved. Beginning in August 1978 at those stations where water depth was too shallow to sample with a tow, 40 liters of water were poured through the plankton net. During the 1977 phase of the study and initially during the 1978 phase, zooplankton samples were preserved with a merthiolated iodine solution. This preservative, however, did not completely preserve the zooplankton samples and its use was discontinued in favor of 12 ml of 37-percent aqueous formalin. The date of collection and station number were recorded on the bottle for future reference.

In the laboratory, a 1-ml aliquot was withdrawn from a thoroughly agitated sample with a Hensen-Stempel pipette and placed in a Sedgwick-Rafter counting cell. All organisms contained within were identified to the generic level and enumerated. A minimum of 300 organisms or five 1-ml aliquots were examined and tabulated from each sample. The two dominant zooplankters in each sample were identified to the species level, when possible. Tabulated data were used to calculate the number of organisms per taxon per liter of river water sampled (organisms/liter for each taxon) according to the following formula:

$$\frac{\text{organisms in taxon}}{\text{liters of river } H_2O} = \frac{(\text{organisms in taxon})\,\dfrac{(\text{ml of } H_2O \text{ in sample})}{(\text{ml used in sample count})}}{\text{liters of river } H_2O \text{ that passed through net}}$$

When encountered, eggs were enumerated and nauplii were identified to order and enumerated. In the case of colonial forms, the entire colony was counted as a single individual within a taxon. References used in the identification process included Edmondson (1959), Goodey (1963) and Pennak (1953). Representative zooplankton samples were also submitted to the COE for verification by an outside laboratory. Selected zooplankton data were entered into the EPA STORET system (table 4) for future retrieval.

3. Benthic Macroinvertebrates--Ponar

Benthic macroinvertebrates were collected during the August 1977 sampling run with a 15-cm by 15-cm Ekman dredge. Beginning with the September 1977 trip and continuing through the end of the project, samples were collected with a 23-cm by 23-cm epoxy-coated Ponar dredge. The Ponar dredge was substituted because its heavier weight obtained larger samples of substrate and associated organisms. At each sampling station, one sample was taken near each bank (littoral zone) and one was collected in midstream (profundal zone) for a total of three samples per station. Each sample was immediately washed through a U.S. Standard No. 30 sieve and the suspension preserved with 70-percent aqueous ethanol with rose bengal stain added. Samples were numbered and the collection date recorded.

Samples were transported to the laboratory where the benthic organisms were hand-picked from the substrate and detrital materials. The organisms from each sampling station were weighed wet to the nearest 0.1 gram using the technique of Weber (1973). The biomass measurement for the two littoral samples and for the profundal sample at each station were averaged to give an average cross-sectional biomass in grams per square meter for each sampling station. Average benthic biomass data and densities of selected benthic organisms were placed on the EPA STORET system (table 4).

Macroinvertebrates were identified to generic level, whenever possible, with the exception of the Nematoda, which were identified to class, and Annelida, which were identified to family; they were tabulated as number per square meter. General references as well as specific taxa references were used in identifying the macroinvertebrates. General references included Pennak (1953), Usinger (1956), Peterson (1951), Edmondson (1959), Parrish (1975), and Merritt and Cummins (1978). Specific taxa references included:

Turbellaria--Kenk (1976)

Crustacea--Holsinger (1976) and Williams (1976)

Acarina--Cook (1974)

Insecta, Ephemeroptera--Edmunds, Jensen, and Berner (1976)

Odonata--Needham and Westfall (1954)

Trichoptera--Wiggins (1977)

Diptera--Beck (1976), Beck and Beck (1966, 1969), Chernovskii (1949), Dendy and Sublette (1959), Johannsen (1937), Mason (1973), Roback (1953, 1957, 1974, 1975, 1976, 1977), Saether (1971a and b, 1977), Steward and Loch (1973).

Mollusca--Burch (1975a and b).

Representative macroinvertebrate samples were also submitted to the COE and an external laboratory for verification of identications.

For each sample collected during 1977 and 1978, a Shannon-Weaver diversity index ($\bar{H}$) was calculated (Pielou, 1969) using the formula:

$$\bar{H} = \Sigma p_i \log_2 p_i$$

where p_i is the proportion of *i*th taxon at each station. Since identifications were carried to different levels depending on the group of organisms, a taxon is taken to mean the lowest level of identification.

Also for each 1978 sample collected, an evenness index (E) (Pielou, 1969) was calculated using the formula

$$E = \frac{\overline{H}}{\log_2 S}$$

where $\overline{H}$ is the Shannon-Weaver diversity index and S is the number of individual taxa.

4. Benthic Macroinvertebrates--Multiplate Sampler

Multiplate samplers, slightly modified from those of Hester and Dendy (1962), were deployed at stations 1 and 3 through 17 during both phases of the study. The samplers, constructed of masonite, used variable spacing between plates instead of the single consistent spacing width (fig. 4). Four of the square plates were spaced at intervals of 3.2 mm, three were spaced at intervals of 6.4 mm, and two were spaced at intervals of 9.6 mm. The total surface area of the multiplate sample was 0.11 m^2.

At each station a multiplate sampler was attached by wire to a buoy or bridge abutment at a depth of approximately 1 m. Multiplate samples were collected twice during the 1977 phase and three times during the 1978 study (table 2). All samplers remained in place for approximately 6 weeks.

At the end of the 6-week interval, the entire multiplate sampler was pulled from the water by its attachment cable and immediately placed in a plastic container. During the 1977 phase, samples were preserved in methanol; however, this preservative partially dissolved the masonite glue and caused partial flaking of the boards. This condition required additional sieving of samples before the organisms could be counted. During the 1978 phase samples were preserved with 10 percent formalin. About 60 percent of all samplers employed in the 1978 study were retrieved.

To our knowledge few organisms were lost during the retrieval of the multiplate samplers. To test this procedure, several of the samplers were retrieved in a large bucket that was placed under the sampler before it was pulled from the water. After the sampler was removed and placed in preservative, the water in the bucket was sieved and found to contain no organisms.

In the laboratory, each multiplate sampler was dismantled and the plates scraped clean with a glass slide. Organisms and materials deposited on the plates were sieved through a U.S. Standard No. 30 sieve. The retained organisms were placed in a shallow white pan and viewed with a magnifying light. Any organisms which appeared to be unusual or uncommon were removed and enumerated. Since the number of specimens remaining was very large, a means of random

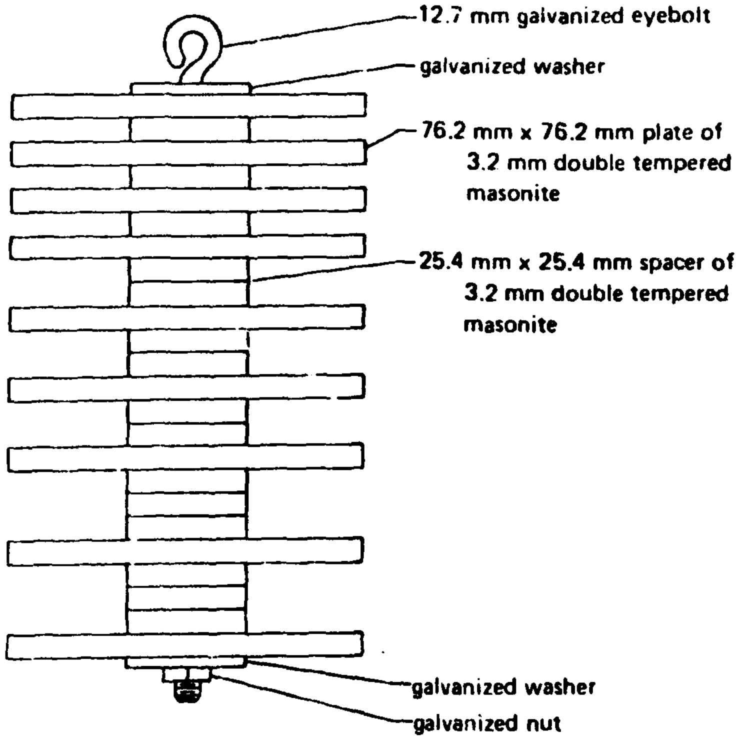


Figure 4.--Modified Hester-Dendy multiplate sampler.

subsampling was utilized (Weber, 1973). The sample was spun in a beaker with a mechanical stirrer until the organisms were evenly distributed in the beaker. A subsample was then removed with a small beaker and preserved in 70 percent aqueous ethanol. Specimens in the subsample were identified and enumerated as were the Ponar collected macroinvertebrates. The numbers of unusual or uncommon specimens were totaled with those of the subsample.

5. Aquatic Macrophytes

One trip during the 1977 phase and three trips during the 1978 phase, each lasting several days, were made to the study area. During each trip, the river or portions of the river were floated and observations were made of the aquatic vegetation along each shore. When a population of plants was sighted, the location was recorded, a list of the species present was made, and, in 1978 for populations which covered a large area, approximate acreages were determined. The only species included were ones which either were, or apparently would be, in the water during the normal level of the river. No attempt was made to compile a detailed list of all the species bordering the river since those species stand in water only during flood stage and cannot withstand prolonged flooding. Species were identified using keys and descriptions found in Beal (1977) and classified as to emergent (E), free-floating (Fl), floating-leaved (Fl-lv), or submersed (S).

During the 1978 phase, two sets of voucher specimens were taken for most species. One set has been deposited at the University of Alabama Herbarium (UNA), and the second set was supplied to the COE. Some species were observed only during the first survey of the river, a time at which most were without reproductive structures. In an attempt to prepare high-quality specimens, sterile plants were not collected, but it was planned to collect them during the second survey when they, hopefully, would be fertile. However, some of the species were not observed during the second survey. A few specimens from the 1977 phase are deposited at UNA; none were supplied to the COE.

Sketches of communities of noxious species that were abundant enough to possibly infringe upon the recreational and navigational uses of the river and approximate acreages were made during the 1978 phase. Acreage estimates were made by approximating in feet the length and width of a community and multiplying these values to obtain the square feet of each community. The square feet were then converted to acres. Estimates are in acres at the request of the COE. No acreages were estimated in 1977.

IV. RESULTS

A. Chemical

1. Water

The study area is located in the temperate region, with short, mild winters and long, hot summers. Extreme ambient air temperatures approach 37.7°C (100°F) in summer and -12°C (10°F) in winter. Total rainfall for the Montgomery weather station was 49.36 inches in 1978 and 44.48 inches in 1977 (table 5). These amounts are about 0.5 inches (1978) and 5.4 inches (1977) below the average annual precipitation rate for the area (U.S. National Oceanic and Atmospheric Administration (NOAA), 1978). Maximum, minimum and mean discharge rates for the Alabama River below Millers Ferry Lock and Dam for 1977 and 1978 (fig. 5) demonstrate the effect of monthly rainfall on discharge during the various sample runs.

Water samples collected from April through September 1978 at 19 Alabama River stations in the Jones Bluff reservoir were analyzed for 43 chemical, biological and bacteriological parameters (table A-1). The value ranges for many of these parameters were little changed between 1977 and 1978 (table 6). Higher range values did occur in 1977 for turbidity, apparent color, conductance, dissolved oxygen, total alkalinity, ammonia as nitrogen, total Kjeldahl nitrogen, nitrite plus nitrate as nitrogen, total and dissolved phosphorus, total organic carbon, total hardness, total chloride, total iron, total and dissolved manganese, fecal streptococci, chlorophylls *b* and *c*, and filtered residues. Values for water temperature, secchi disc, oxidation-reduction potential, pH, dissolved sulfate, dissolved iron, nonfilterable residue and fecal coliform were higher in 1978 than 1977. Higher values for selected parameters in 1977 could have resulted from differences in average rainfall and resulting river discharges (fig. 5). This conclusion, however, is only speculative since the data were collected during four months (August through November) in 1977 and six months (April through September) in 1978 with a four-month interval between studies. Fourteen water parameters sampled in 1978 (table 6) were not measured in 1977 and six measured in 1977 were not included in 1978. Eight water-quality parameters were also measured in situ at three tributary stations (B through D) in the study area (table 7). The water-quality of the Jones Bluff reservoir is influenced by at

Table 5.--Total monthly precipitation (inches) and departure from normal for the Montgomery Weather Station for 1977 and 1978 (From NOAA, 1977, 1978)

Month	1977	1978
January		
Precipitation	4.87	6.95
Departure	.85+	2.93+
February		
Precipitation	3.19	2.29
Departure	1.11-	2.01-
March		
Precipitation	7.16	2.61
Departure	1.14+	3.41-
April		
Precipitation	1.53	4.57
Departure	2.92-	.12+
May		
Precipitation	1.62	12.01
Departure	1.85-	8.54+
June		
Precipitation	1.82	3.87
Departure	2.21-	.16-
July		
Precipitation	6.62	4.02
Departure	1.53+	1.07-
August		
Precipitation	3.55	3.52
Departure	.08+	.05+
September		
Precipitation	5.64	2.18
Departure	1.23+	2.23-
October		
Precipitation	2.60	.01
Departure	.36+	2.23-
November		
Precipitation	2.78	3.09
Departure	.65-	.34-
December		
Precipitation	3.10	4.24
Departure	1.83-	.69-
Annual		
Precipitation	44.48	49.36
Departure	5.38-	.50-

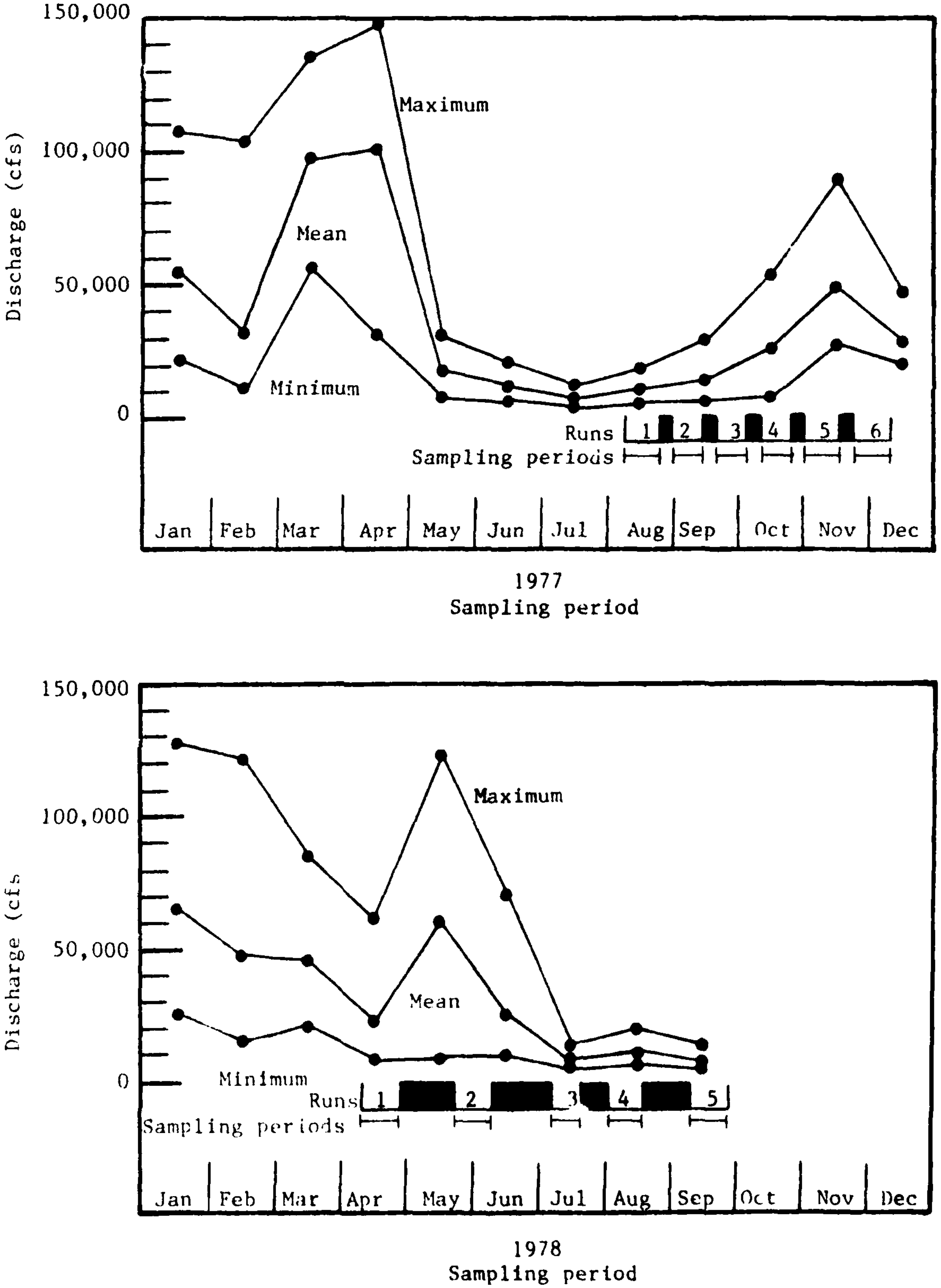


Figure 5.--Maximum, minimum, and mean discharge of the Alabama River below Millers Ferry Lock and Dam, 1977 through 1978 (U.S. Geological Survey, 1978).

Table 6.--Comparison of 1977 and 1978 parameter ranges for 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers

Parameter	STORET number	Ranges 1977	Ranges 1978
Water temperature, °C	00010	8.0-30.0	8.5-31.0
1% Light transmission, ft	00034	(a)	2.1-12.2
Turbidity, FTU	00076	10-65	2.0-10.0
Secchi disc, m	00078	0.1-1.8	0.5-2.2
Color, Pt-Co (apparent)	00080	15-150	10-40
Oxidation-reduction potential mv+	00090	0-250	200-290
Conductance, μmhos/cm	00094	81-205	44-152
Dissolved oxygen, mg/l	00299	6.5-13.4	4.8-12.4
pH	00400	6.1-7.9	5.7-8.8
Carbon dioxide, mg/l	00405	(a)	0.4-96
Total alkalinity, mg/l	00410	27.9-98.4	11-52
Total nitrogen, mg/l	00600	(a)	0.12-0.59
Organic nitrogen, mg/l	00605	(a)	0.0-0.28
Ammonia as nitrogen, mg/l	00610	0.0-1.6	0.0-0.39
Total Kjeldahl nitrogen, mg/l	00625	0.04-0.96	0.03-0.38
Nitrite/nitrate as nitrogen, mg/l	00630	0.01-0.63	0.04-0.56
Total inorganic nitrogen, mg/l	00640	(a)	0.05-0.59
Total phosphorus, mg/l	00665	0.01-0.78	0.01-0.09
Dissolved phosphorus, mg/l	00671	0.0-0.15	0.0-0.06
Total organic carbon, mg/l	00680	0.6-36	0.1-8.6
Dissolved organic carbon, mg/l	00681	(a)	0.0-8.4
Total hardness, mg/l	00900	0-65	13-45
Total calcium, mg/l	00916	(a)	2.8-14.0
Total magnesium, mg/l	00927	(a)	1.4-3.6
Total sodium, mg/l	00929	(a)	3.2-6.5
Total potassium, mg/l	00937	(a)	1.1-1.6
Total chloride, mg/l	00940	0.1-9.8	3-6
Dissolved sulfate, mg/l	00946	0.1-18.0	1.0-23.0
Total iron, μg/l	01045	<5-3600	140-1500
Dissolved iron, μg/l	01046	0-250	0-940
Total manganese, μg/l	01055	3-600	21-190
Dissolved manganese, μg/l	01056	1-220	0-140
Total zinc, μg/l	01092	(a)	5-640
Fecal coliform, n/100 ml	31616	0-2900	0-8800
Fecal streptococci, n/100 ml	31673	8-TNTC[b]	0-1900
Chlorophyll *a* (corr), μg/l	32211	(a)	0.0-140.0
Chlorophyll *b*, μg/l	32212	0.0-36.0	0.0-3.9
Chlorophyll *c*, μg/l	32214	0.4-120.0	0.0-26.0
Nonfilterable residue, mg/l	00530	0-49	4-77
Residue (filterable), mg/l	70300	51-129	31-122
Zooplankton (dry wt), g/m^3	70947	(a)	1.0-114.0
ATP, ng/l	70996	(a)	50-3450

[a]Parameter not measured in 1977.
[b]Too numerous to count.

Table 7.--In situ water-quality measurements at tributary sampling stations above Jones Bluff Lock and Dam, April through September 1978

Sampling station	Date	Depth (feet)	Estimated flow (cfs)	Temperature (°C)	pH (units)	Turbidity (FTU)	Conductance (μmhos/cm)	Oxidation-reduction potential (+mv)	Dissolved oxygen (mg/l)
Autauga Creek (Site B, River mile 275.2)	780413	20	360	10.0	5.7	50	54	130	9.6
	780525	20	400	24.5	5.1	50	38	210	7.0
	780707	20	0	27.8	6.9	15	73	230	7.2
	780803	20	0	28.0	7.1	30	80	230	7.4
	780914	10	0	27.5	7.0	60	118	230	6.5
Catoma Creek (Site C, River mile 273.2)	780413	11	587*	13.0	7.2	60	306	60	9.4
	780525	11	40*	24.5	9.2	55	228	220	3.1
	780710	12	9.4*	29.0	8.4	25	202	240	5.0
	780803	20	7.8*	29.0	8.5	30	200	240	4.2
	780914	15	6.0*	28.0	8.2	40	202	230	4.2
Big Swamp Creek (Site D, River mile 234)	780418	6	26*	11.5	7.2	190	295	60	9.5
	780525	**	3.7*						
	780711	8	9.6*	30.0	7.2	25	109	230	5.5
	780808	**	2.6*						
	780915	**							

*USGS Records, 1978
**Water too shallow to sample on the sampling date.

least 85 industrial, municipal, mining, semi-public and private dischargers into the Alabama River (table A-3).

Dissolved oxygen, conductivity, water temperature, ORP and pH were measured at 2-m intervals at stations 14 through 17 during August (run 4) and September (run 5) and values were used to construct vertical profiles (figs. 6 through 9). Dissolved oxygen, water temperature, pH, conductivity and ORP measured at stations 8 and 16 during September (run 5) were used to construct isopleth graphs (figs. 10 and 11). Both the vertical profiles and isopleths indicated no stratification at the stations sampled which was not unexpected considering the turbulence of the flow in the Alabama River.

2. Sediment

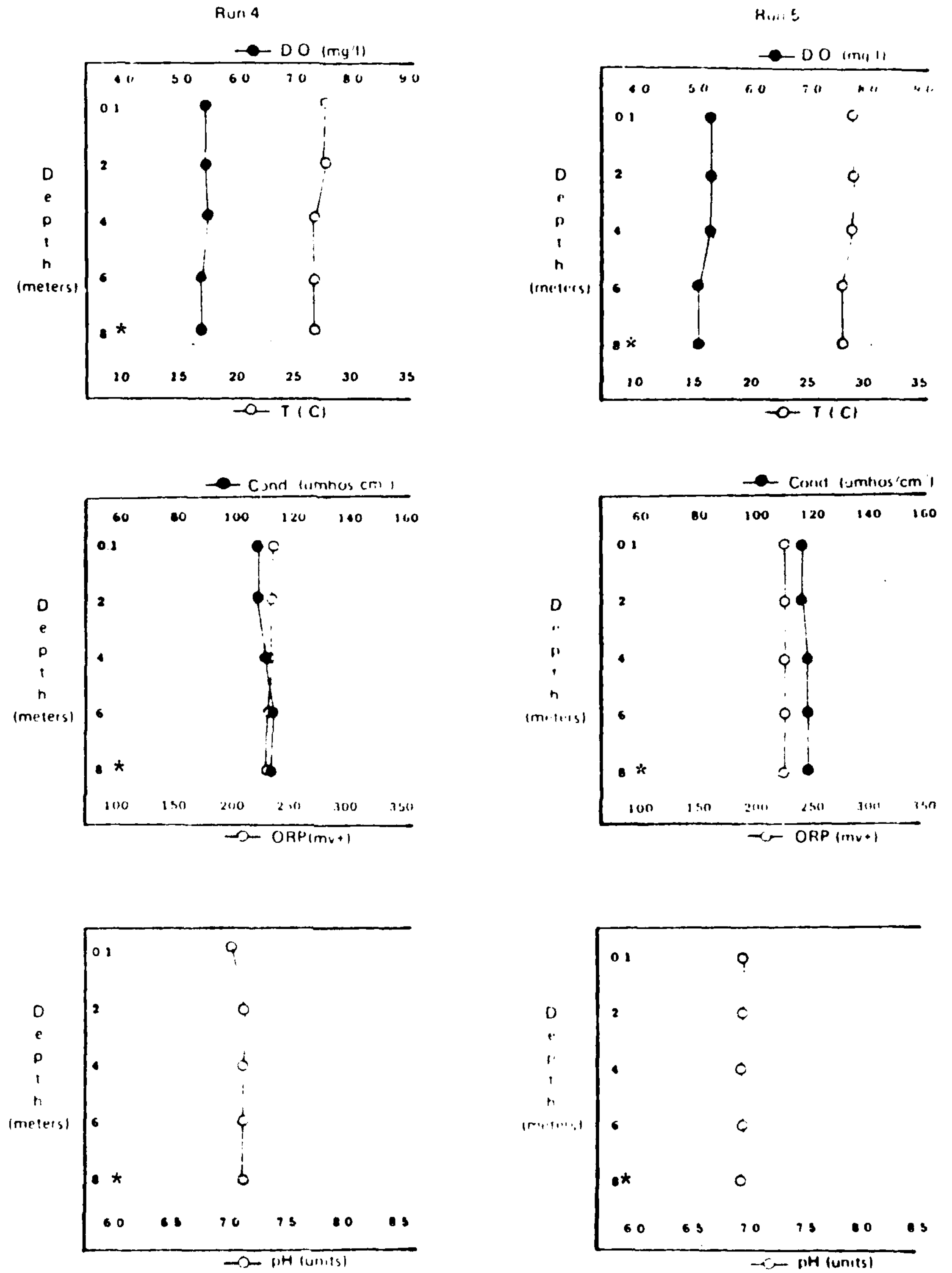
Most of the river bottom was composed of sand and clay, although several stations (0, 1 and 8) had large quantities of gravel in the substrate (table 8). Because of differences in sampling techniques, very little comparison can be made between 1977 and 1978 sediment data (table 9). Sediment samples were collected only in midstream at each station in 1977 and as such did not provide the variability that existed with the collection of four samples across the channel as in 1978. In addition, grain size analyses were performed only on samples from stations 7 and 17 in 1977, while samples were collected and analyzed for all stations during 1978. During the 1977 study, sediment samples were analyzed for 29 pesticides; however, these analyses were not continued in the 1978 study.

Of the ten metals analyzed during 1978, only iron exceeded the background levels of 40 to 1,300 mg/kg as determined by the USGS (1978) in the same river segment. In the study area, iron values ranged from 6,200 mg/kg dry weight (station 9) to 24,000 mg/kg dry weight (station 5). A comparison of sediment parameters for 1977 and 1978 (table 9) revealed higher levels of oil and grease, total Kjeldahl nitrogen, and zinc in 1978. Additional sediment results are contained in table A-2.

3. *Corbicula* Tissue

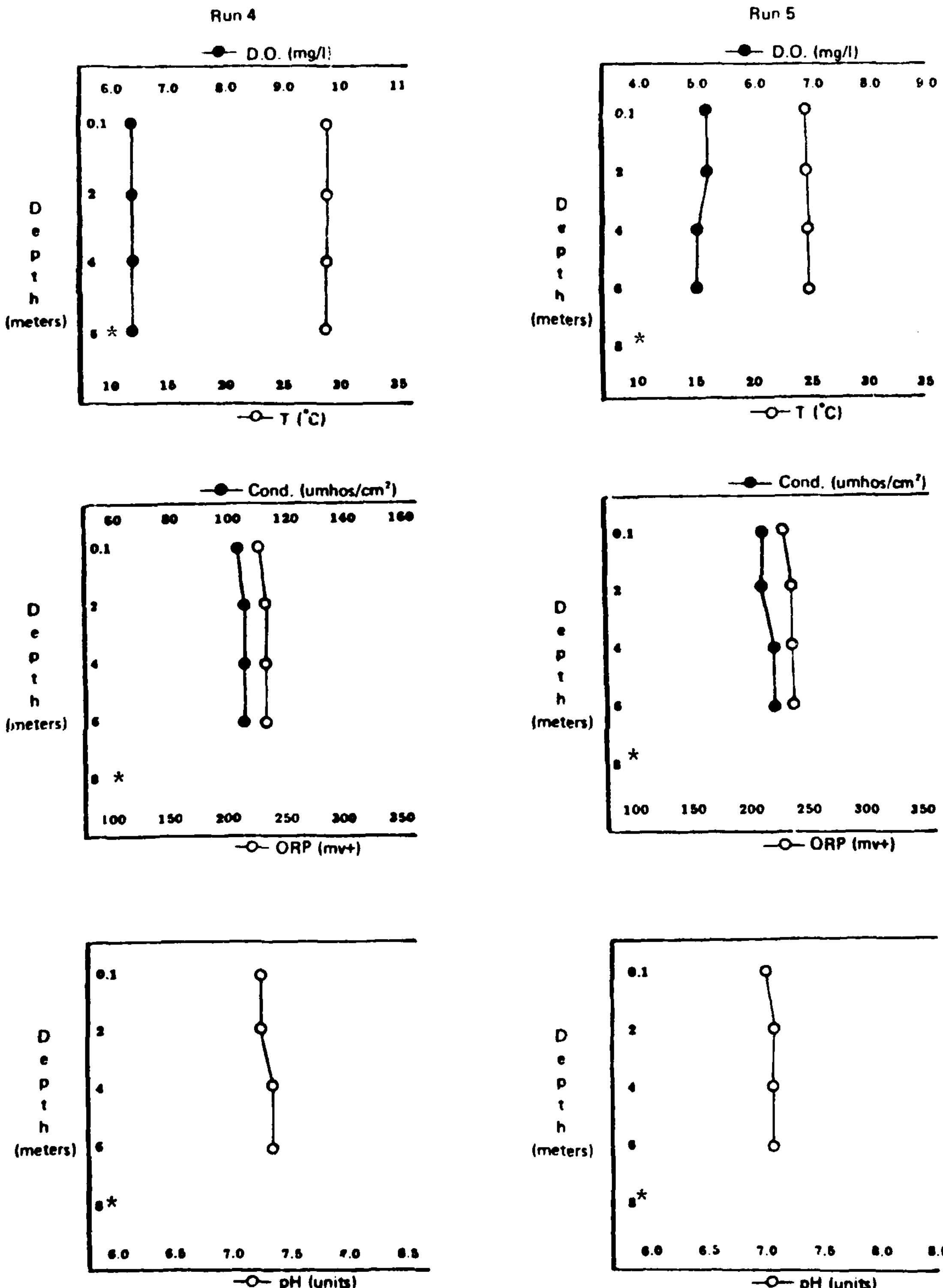
Although its origin is unknown, zinc was the metal found in largest concentration in mollusk tissues (tables 10 and 11). Since *Corbicula* are filter feeders and can concentrate selected substances in their tissues, the presence of this element could reflect either short- or long-term accumulation.

Small to large concentrations of 12 of the 29 pesticides included in the study were found during the *Corbicula* tissue



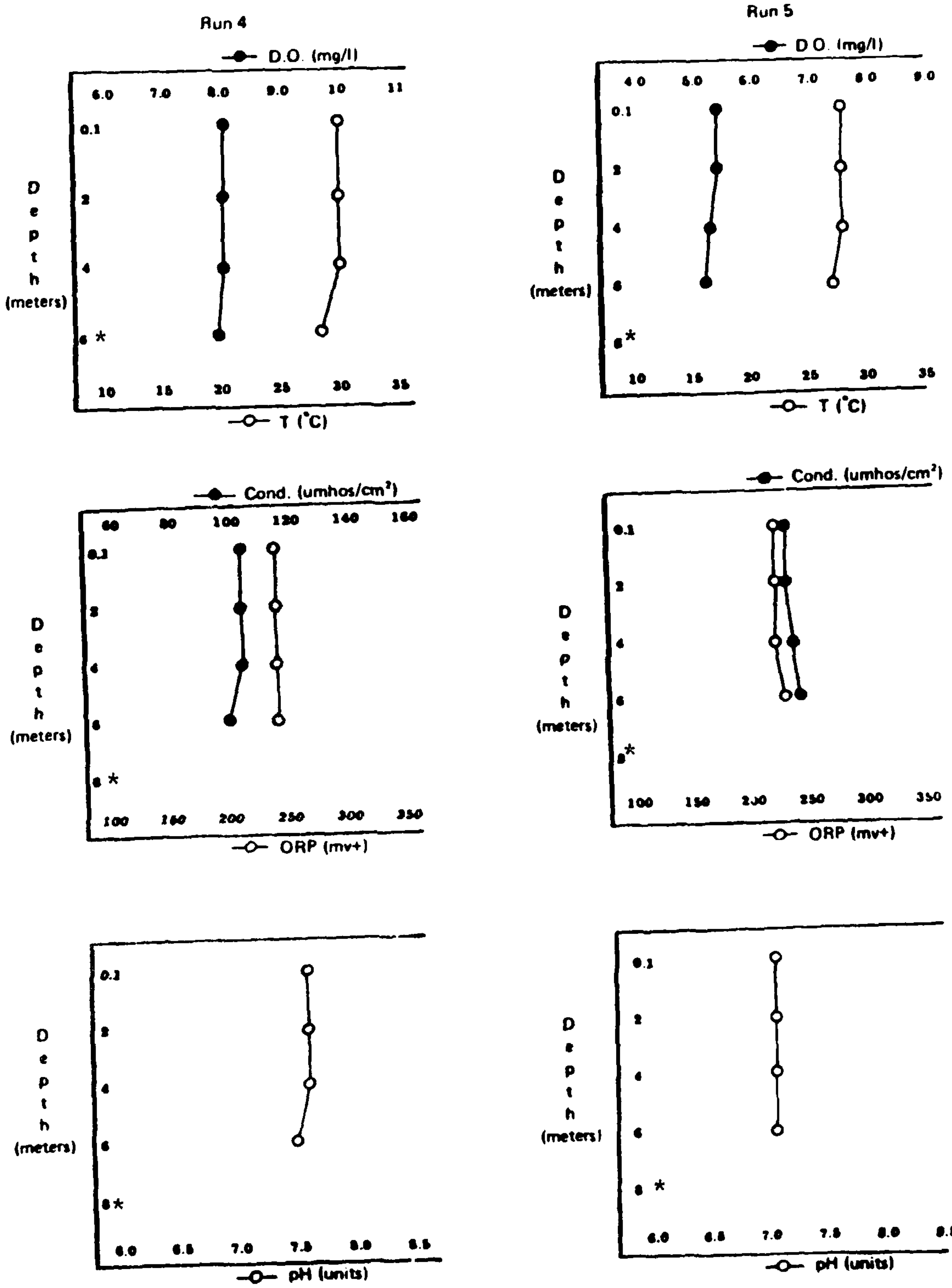
*bottom depth

Figure 6.--Vertical profiles of dissolved oxygen (DO), temperature (T), conductivity (Cond.), oxidation-reduction potential (ORP), and pH at station 14 on the Alabama River during run 4 (August 1-7, 1978) and run 5 (September 12-18, 1978).



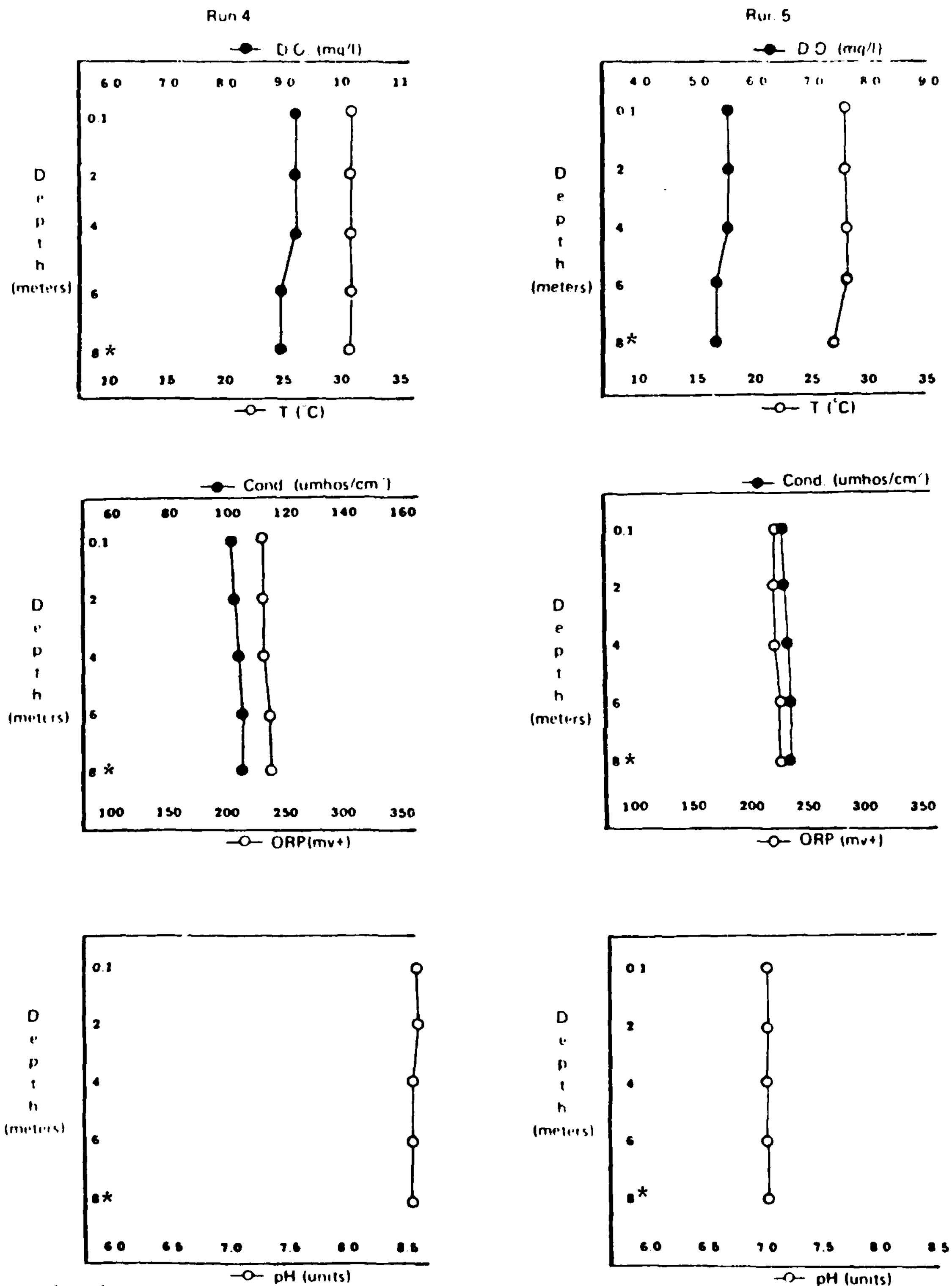
*bottom depth

Figure 7.--Vertical profiles of dissolved oxygen (DO), temperature (T), conductivity (Cond.), oxidation-reduction potential (ORP), and pH versus depth at station 15 on the Alabama River during run 4 (August 1-7, 1978) and run 5 (September 12-18, 1978).



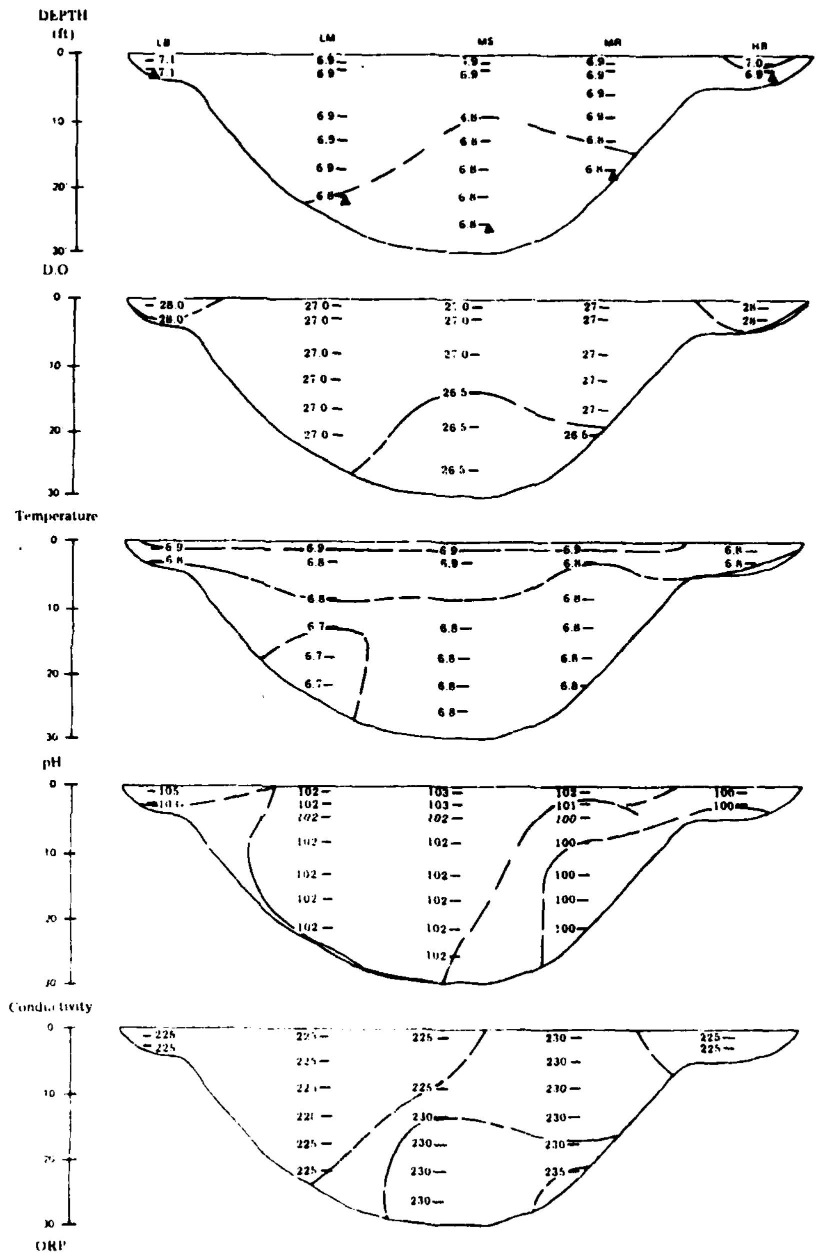
*bottom depth

Figure 8.--Vertical profiles of dissolved oxygen (DO), temperature (T), conductivity (Cond.), oxidation-reduction potential (ORP), and pH versus depth at station 16 on the Alabama River during run 4 (August 1-7, 1978) and run 5 (September 12-18, 1978).



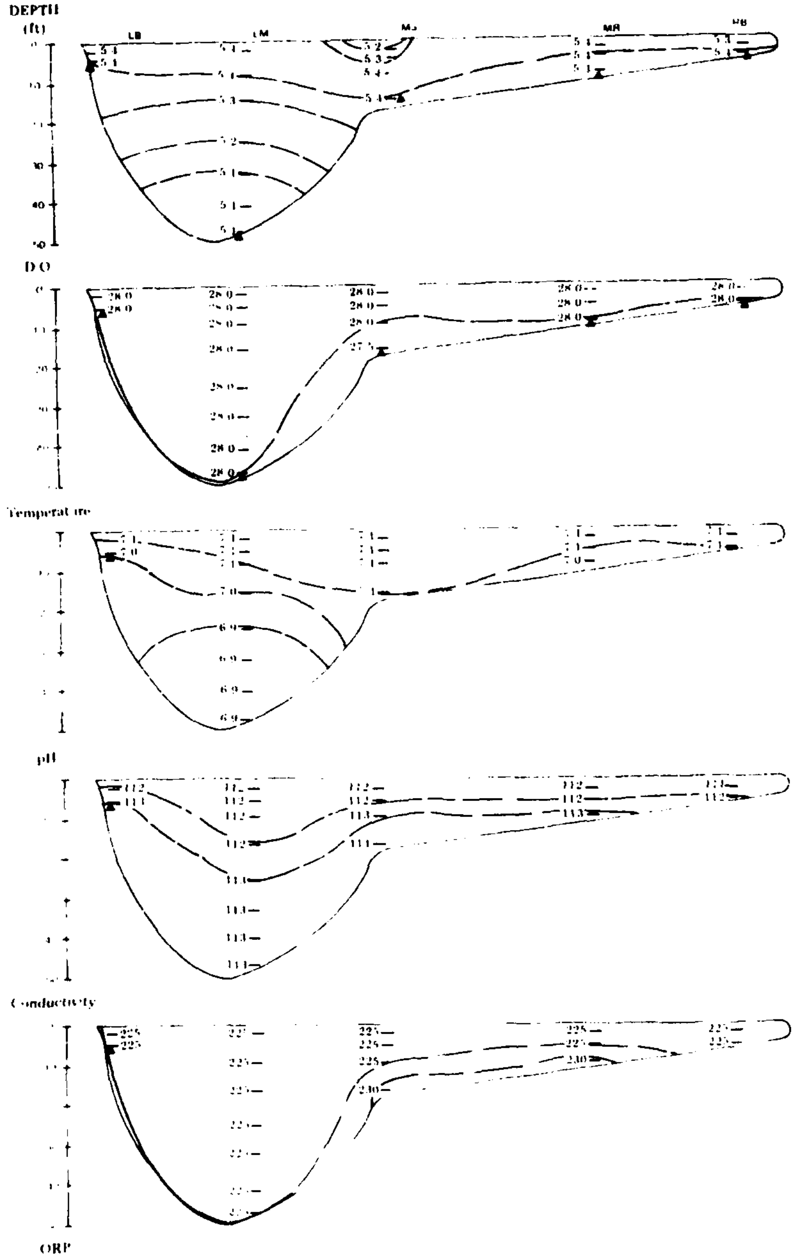
*bottom depth

Figure 9.--Vertical profiles of dissolved oxygen (DO), temperature (T), conductivity (Cond.), oxidation-reduction potential (ORP), and pH versus depth at station 17 on the Alabama River during run 4 (August 1-7, 1978) and run 5 (September 12-18, 1978).



Legend: LB--Left bank; LM--Left of midstream; MS--Midstream; MR--Middle right; RB--Right bank; ▲--River bottom for all 5 parameters; —— --sampling depth.

Figure 10.--Isopleth graphs of DO (mg/l), temperature (°C), pH (SU), conductivity (μmhos) and ORP (mv) versus depth (ft) at station 8 on the Alabama River, September 14, 1978.



Legend: LB--Left bank; LM--Left of midstream; MS--Midstream; MR--Middle right; RB--Right bank; ▲ --River bottom for all 5 parameters; —— --sampling depth.

Figure 11.--Isopleth graphs of DO (mg/l), temperature (°C), pH (SU), conductivity (µmhos) and ORP (mv) versus depth (ft) at station 16 on the Alabama River, September 15, 1978.

Table 8.--Mechanical analyses of sediment samples collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7, 1978
(Values reported in percent.)

Station number	Gravel 3"-#4	Sand Coarse #4-#10	Sand Medium #10-#40	Sand Fine #40-#200	Silt 0.074 mm to 0.005 mm	Clay 0.005 mm to 0.001 mm	Colloids 0.001 mm
0	50.7	15.1	7.5	10.8	14.9	0.7	0.3
1	47.7	6.1	1.0	23.6	15.6	4.8	1.2
2	39.7	10.2	4.9	18.4	22.6	3.1	1.1
3	3.2	20.5	60.1	7.5	6.2	2.1	0.4
4	27.1	24.2	15.8	18.7	10.2	3.4	0.6
5	0.0	0.0	35.1	30.6	14.3	17.9	2.1
6	5.5	26.4	2.1	28.2	17.8	17.3	2.7
7	4.4	13.3	15.8	16.0	15.5	29.5	5.5
8	69.3	3.1	2.1	18.7	3.3	2.1	1.4
9	0.6	15.6	16.2	50.5	15.3	1.1	0.7
10	0.0	0.0	3.7	52.6	28.7	11.6	3.4
11	31.1	13.0	7.5	41.9	3.5	2.3	0.7
12	0.0	3.7	19.8	27.4	30.1	14.7	4.3
13	20.6	0.2	0.9	35.7	17.6	22.6	2.4
14	1.7	2.0	1.1	46.7	11.5	35.5	1.5
15	1.2	0.9	0.7	69.6	15.1	11.8	0.7
16	0.0	0.0	1.4	51.2	17.4	26.2	3.8
17	0.0	0.0	11.9	61.5	10.6	17.3	1.7
18	0.0	0.0	1.8	58.6	32.1	3.9	3.6

" inches
ASTM sieve size number

Table 9.--Concentration ranges (mg/kg) of chemical parameters in bottom sediments from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, 1977-1978

Parameter	1977	1978
Volatile solids	2,150-60,700	6,730-49,100
Oil and grease	27-340	61-640
Total Kjeldahl nitrogen	10-370	45-740
Phosphorus	(a)	0.4-3.1
Total organic carbon	(a)	6.9-51.0
Arsenic	1.0-11.0	1.3-7.6
Cadmium	<10	<10
Chromium	<50	<50
Copper	<20-40	<20
Lead	<50	<50
Manganese	240-2,300	140-940
Nickel	<50	<50-50
Zinc	40-190	30-1,300
Iron	150-32,000	6,200-24,000
Mercury	<0.2-0.5	<0.2-0.3
Total PO_4 as phosphorus	1.3-40.0	(a)
Chemical oxygen demand	9,200-1,600,000	(a)
Magnesium	100-1,900	(a)

[a] Parameter not measured during this study period.

analysis (tables 10 and 11). Pentachlorophenol was found in largest concentration in April samples collected at stations 8 and 17; however, it was not detected in tissues collected from any stations in August. A similar pattern existed for Arochlor 1248. Other pesticides detected in decreasing order of concentration were Endrin, Arochlor 1254, p-p[1]-DDD, p-p[1]-DDT, Dieldrin, Aldrin, Heptachlor epoxide, p-p[1]-DDE, Heptachlor, and Mirex. Because only one collection was made per station during the study, the significance of these data is unknown at this time.

B. Biochemical

1. Adenosine Triphosphate

Adenosine triphosphate (ATP) concentrations in 1978 ranged from 50 to 3,450 nannograms per liter (ng/l) (tables 6 and A-1). Highest ATP values were obtained from station 17 above Jones Bluff Lock and Dam (3,450 ng/l) and at stations 0 (1,950 ng/l), 11 (1,650 ng/l) and 12 (2,400 ng/l). Lowest values occurred at stations 7, 8 and 16 which measured 50 ng/l. Lowest ATP values were generally observed in May while highest readings were generally obtained in April and July.

2. Algal Growth Potential

Water samples for algal growth potential (AGP) tests were collected during April, August and September (runs 1, 4 and 5) at stations 1, 8 and 16 and at station 0 in September (run 5). Nutrient data on sample water before and after autoclaving and before inoculation with *Selenastrum* are shown in table A-4. The results of the analyses by sampling period and station are found in tables A-5 through A-24.

The greatest growth of *Selenastrum* (109,600 cells per 0.05 ml or 38.36 mg/l dry weight) occurred in water from station 8 (run 5) on the fourteenth day after inoculation. This sample was spiked with 0.5 mg/l P plus 1.0 mg/l N.

Very little consistency could be seen in maximum growth data for April samples. In the August samples, greatest growth occurred with 0.05 mg/l P plus 1.0 mg/l EDTA and 0.5 mg/l P plus 1.0 mg/l N plus 1.0 mg/l EDTA. In the September samples, maximum growth occurred in samples inoculated with 0.5 mg/l P plus 1.0 mg/l N and 0.5 mg/l P plus 1.0 mg/l N plus 1.0 mg/l EDTA.

3. Dry Biomass

Dry biomass of zooplankton in the study area in 1978 ranged from 1 to 114 grams per cubic meter (g/m^3) (table 6). In general, lowest values were observed in July and September samples and

Table 10--Heavy-metal concentrations (mg/kg dry weight) and pesticide concentrations (µg/kg dry weight) in *Corbicula* collected at two stations above Jones Bluff Lock and Dam on the Alabama River, April 10-18, 1978

Parameter	Station number		Quality Control Results-- Bovine Liver Standard	
	8	17	GWQR Lab[1]	NBS value[2]
Heavy metals				
Arsenic	0.03	0.08	0.06	0.055
Selenium	ND	ND	0.91	1.1
Zinc	23.0	23.0	121.0	130.0
Lead	0.77	0.66	0.88	.84
Cadmium	0.59	0.46	0.22	.27
Chromium	1.4	1.0	0.06	.08
Mercury	< .1	< .1	< .1	.016
Pesticides				
Aldrin	14.8	1.2	NA	NA
AR 1242	ND	ND	NA	NA
AR 1248	3,075	244	NA	NA
AR 1254	ND	ND	NA	NA
AR 1260	ND	ND	NA	NA
BHC, Alpha	ND	ND	NA	NA
BHC, Beta	ND	ND	NA	NA
BHC, Gamma (Lindane)	ND	ND	NA	NA
Chlordane	ND	ND	NA	NA
Dieldrin	10.6	8.2	NA	NA
Endosulfur sulfate	ND	ND	NA	NA
Heptachlor	2.8	3.5	NA	NA
Heptachlor epoxide	8.7	5.7	NA	NA
Methoxychlor	ND	ND	NA	NA
Mirex	ND	ND	NA	NA
p, p' - DDD	119	77.0	NA	NA
p, p' - DDE	ND	ND	NA	NA
p, p' - DDT	106	83.4	NA	NA
Pentachlorophenol	1,770	1,437	NA	NA
o, p' - DDT	ND	ND	NA	NA
Toxaphene	ND	ND	NA	NA

[1]Geological Survey of Alabama, Geochemical/Water-quality Research Laboratory
[2]National Bureau of Standards
ND--Not detectable
NA--Not applicable

Table 11--Heavy-metal concentrations (mg/kg dry weight) and pesticide concentrations (µg/kg dry weight) in *Corbicula* collected at stations above Jones Bluff Lock and Dam on the Alabama River, August 1-7, 1978

Parameter	Station number					Quality Control Results--Bovine Liver Standard	
	7 & 8*	8	9	10, 11, & 12*	17	GWQR Lab[1]	NBS value[2]
Heavy metals							
Cadmium	0.50	0.36	0.38	0.17	IC	0.19	0.27
Arsenic	.01	.01	.02	.02	IC	.033	.055
Selenium	ND	ND	ND	ND	IC	1.0	1.1
Zinc	11	124	35	33	IC	93	130
Lead	0.48	0.63	0.0	0.48	IC	0.61	0.84
Chromium	1.3	1.3	1.2	0.94	IC	0.05	0.08
Mercury	< .1	< .1	< .1	< .1	IC	.1	0.16
Pesticides							
Aldrin	ND	ND	ND	ND	IC	NA	NA
AR 1248	ND	ND	ND	ND	IC	NA	NA
AR 1254	70.7	495.5	62.4	92.0	IC	NA	NA
AR 1260	ND	ND	ND	ND	IC	NA	NA
BHC, Alpha	ND	ND	ND	ND	IC	NA	NA
BHC, Beta	ND	ND	ND	ND	IC	NA	NA
BHC, Gamma (Lindane)	ND	ND	ND	ND	IC	NA	NA
Chlordane	ND	ND	ND	ND	IC	NA	NA
Dieldrin	ND	ND	ND	ND	IC	NA	NA
Endrin	219.6	402.3	108.6	34.4	IC	NA	NA
Endrin aldehyde	ND	ND	ND	ND	IC	NA	NA
Heptachlor	ND	ND	ND	ND	IC	NA	NA
Heptachlor epoxide	2.2	8.2	0.7	1.1	IC	NA	NA
Methoxychlor	ND	ND	ND	ND	IC	NA	NA
Mirex	1.3	ND	ND	1.9	IC	NA	NA

Table 11 --Continued

Parameter	Station number					Quality Control Results--Bovine Liver Standard	
	7 & 8*	8	9	10, 11, & 12*	17	GWQR Lab	NBS value
p, p' - DDD	41.5	429.4	29.8	57.6	IC	NA	NA
p, p' - DDE	ND	0.5	ND	ND	IC	NA	NA
p, p' - DDT	ND	578.0	ND	ND	IC	NA	NA
Pentachlorophenol	ND	ND	ND	ND	IC	NA	NA
Toxaphene	ND	ND	ND	ND	IC	NA	NA

*Combined stations.

[1]Geological Survey of Alabama, Geochemical/Water-quality Research Laboratory.

[2]National Bureau of Standards.

ND--Not detectable.

NA--Not applicable.

IC--Insufficient Corbicula for analysis found after extensive sampling at this station during the sampling run.

highest values were encountered in the April and May samples (table A-1). These results were not unexpected since zooplankton feed on phytoplankton and their density is dependent upon and usually slightly lags spring peaks in phytoplankton density. Highest values for zooplankton dry biomass occurred during run 1 at station 2 (114 g/m^3) and at stations 0 and 3 (112 g/m^3). Lowest values occurred during run 5 at stations 0 (1.0 g/m^3) and 2 (2.0 g/m^3). This parameter was not included in the 1977 phase of the study.

4. Chlorophyll

Samples for chlorophylls *a*, *b* and *c* analyses were collected at all stations during each run (table A-1). In 1978, chlorophyll *a* values were pheophytin corrected; however, in 1977, this correction was not made. Therefore, these data are not comparable. Chlorophyll *a* values in 1977 ranged from 2.8 to 26.0 μg/l and in 1978, pheophytin corrected values ranged from 0.0 to 140.00 μg/l (table 6). Maximum values for chlorophylls *b* and *c* were higher in 1977 (36.0 and 120.0 μg/l, respectively) than 1978 (3.9 and 26.0 μg/l, respectively). The largest concentrations of chlorophylls *a*, *b* and *c* in 1978 were observed at stations 12 (140 μg/l, run 3), 6 (3.9 μg/l, run 1), and 10 (26 μg/l, run 4), respectively. Chlorophyll *a* values were higher above Jones Bluff Dam in April, July and August than below. Higher values occurred below Jones Bluff Dam in May and September.

5. Bacteria

Fecal coliform counts ranged from 0 to 2,900 colonies per 100 milliliters (CT/100 ml) in 1977 and from 0 to 8,800 CT/100 ml in 1978 (table 6). Violations of the State of Alabama limit, 2,000 CT/100 ml, occurred in April at station 1 (8,800 CT/100 ml) and station 7 (2,900 CT/100 ml). Elevated counts that did not exceed the State limit also occurred in April samples at stations 8 and 11 (table A-1).

Fecal streptococci bacteria ranged from 8 to too numerous to count (TNTC) in 1977 and from 0 to 1,900 CT/100 ml in 1978 (table 6). None of the samples collected in 1978 exceeded the State criteria for fecal streptococci; however, elevated counts of 1,900 (station 7) and 1,700 CT/100 ml (stations 8 and 12) were measured in April (run 1).

Fecal coliform/fecal streptococci ratios (table 12) ranged from 0 to 1,760. Maximum monthly ratios occurred at station 1 (1,760) in April, station 7 (7.87) in August, station 15 (50) in July, station 15 (60) in August, and station 5 (30) in September.

Table 12.--Fecal coliform to fecal streptococci ratios for 18 stations above and one station below the Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, 1978

Station number	April	May	July	August	September
0	0.78	0.73	0.31	0.19	0.40
1	1760.00	0.70	1.60	0.50	9.00
2	2.82	0.50	0	0.75	6.25
3	4.20	0	0.61	0.25	2.33
4	2.37	0	3.44	1.75	6.00
5	0.80	0.31	2.00	0.30	30.00
6	0.59	1.56	6.00	2.00	10.00
7	1.53	4.00	2.71	7.87	(a)
8	0.59	3.29	2.71	1.33	(a)
9	0.81	0.68	0	16.00	0.70
10	2.00	0.30	2.67	1.88	0
11	5.60	1.22	0.63	0	0.30
12	0.15	0.78	20.00	0.20	0.33
13	1.80	1.56	10.00	0	0
14	1.08	1.50	43.75	0	0.25
15	0.74	0	50.00	60.00	0
16	9.83	1.50	0.10	0	0
17	22.00	0	0	0.50	0

[a]No data.

C. Biological

1. Phytoplankton

Phytoplankton samples collected during the 1978 phase from 18 stations above and one station below Jones Bluff Lock and Dam were found to include 78 genera representing 31 families. Phytoplankton taxa and the number of cells per liter of river water sampled are tabulated by divisions in table B-1. Fifty-eight genera representing 35 families were collected in the 17 stations above and one station below the dam in the 1977 phase. The two dominant taxa for each phytoplankton sample taken at the 18 stations above and one below Jones Bluff Lock and Dam during the 1978 phase of the study are given in table B-2. No dominant taxa were determined during the 1977 phase. Selected STORET data for phytoplankton studies are located in table B-3 for the 1978 phase and table A-4 in GSA (1983) for the 1977 phase.

There is considerable difference in the phytoplankton counts between the 1977 phase and the 1978 phase. The 1977 phase ranged from a low of 0 organisms per liter at station 1 of run 1 to a high of 30.87 organisms per liter at station 4, run 3. In comparison, the 1978 phase had a low of 290,249 cells per liter at station 18 during run 2 to a high of 27,936,000 cells per liter at station 15 during run 4. Part of this difference is undoubtedly due to the different methodologies employed in 1977 and 1978, but variations in phytoplankton counts are reviewed in the Discussion section.

The phytoplankton community was found to be composed principally of Chlorophyta, Chrysophyta and Cyanophyta. The Chlorophyta, represented by 38 genera during the 1978 phase and by 29 genera during the 1977 phase, contained the greatest generic richness throughout the study period of all groups analyzed. *Melosira* was the dominant genus during the early sampling periods but was replaced by *Merismopedia* and *Monoraphidium* during August and September (table B-2). However, in the 1977 data, *Melosira* again became dominant in November.

2. Zooplankton

Zooplankton samples collected from 18 stations above and one station below Jones Bluff Lock and Dam were found to contain 77 taxa, principally genera, during the 1978 phase of the study and 54 taxa, principally genera, during the 1977 phase. Zooplankton density as number of organisms per liter of river water sampled are tabulated in table B-4 for the 1978 phase and in GSA (1983) for the 1977 phase. The two dominant zooplankton species found at each station are given in table B-5 for the 1978 phase and in GSA (1983)

Table 13.--Liters of river water sampled during the collection of zooplankton samples at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through September 1978

Station number	Collection periods				
	Run I April 10-18	Run II May 22-29	Run III July 6-11	Run IV August 1-7	Run V September 12-18
0	0[1]	2,742	703	40[2]	40
1	1,462	1,096	731	40[2]	775
2	1,316	840	639	40[2]	628
3	329	695	1,096	40[2]	345
4	1,462	1,352	1,169	549	589
5	1,133	1,389	1,023	1,215	863
6	950	1,441	823	1,200	1,118
7	1,215	1,096	1,206	981	824
8	1,371	455	1,096	1,255	1,083
9	1,344	1,024	959	706	549
10	1,042	834	1,371	1,118	1,942
11	1,371	658	1.900	1,373	1,098
12	1,755	2,040	1,462	1,569	1,844
13	1,448	914	1,170	1,334	589
14	1,572	1,197	1,918	1,099	628
15	1,937	663	1,572	824	604
16	950	925	1,389	496	412
17	1,744	1,050[3]	2,523	2,530	2,708
18	1,462	0[1]	731	1,236	40[2]

[1]Water too shallow to use plankton net.

[2]Beginning in August, 40 liters of water were poured through the plankton net at any station where the water was too shallow to sample with the net.

[3]Winch broken--volume estimated.

for the 1977 phase. Water volume data used to calculate the number of organisms sampled with the net are given in table 13. Selected STORET data for zooplankton are located in table B-3.

Zooplankters most commonly encountered in all samples in both the 1977 and 1978 phases of the study were crustaceans (Cladocera and Copepoda) and rotifers. Minor contributors during the 1978 phase included Protozoa (8 genera), Insecta (6 orders), Annelida (2 families), Bryozoa, Tardigrada, Nematoda, Coelenterata, Mollusca, Ostracoda, and Acarina. During the 1977 phase, minor contributors included Protozoa (4 genera), Insecta (2 orders), Nematoda, and Pelecypoda. The Rotifera contained the greatest number of taxa (32 genera); the Cladocera had the second greatest number (15 genera); the Protozoa the third greatest (8 genera); and the Copepoda the fourth (6 genera) during the 1978 phase. Similar results were found for the 1977 phase with the Rotifera having the greatest number of taxa (19 genera), the Cladocera had the second greatest number (9 genera); the Protozoa, the third greatest (4 genera); and the Copepoda, the fourth (2 genera).

3. Benthic Macroinvertebrates--Ponar

In 1978, the section of the Alabama River from the confluence of the Coosa and Tallapoosa Rivers to the outflow of the Jones Bluff Reservoir (stations 0 through 18) contained 90 taxa, principally genera, of macroinvertebrates (table C-1). Ninety-six genera of invertebrates were collected during the 1977 phase. The insects contained the greatest number of taxa during both phases of study with 57 genera in 1978 and 44 in 1977. In 1977, Chironomidae were the most abundant group of insects collected in the Jones Bluff reservoir. *Corbicula* clams and tubificids were also commonly collected. In 1978, Chironomidae were also abundant, comprising 54 percent of the insect fauna. Other taxa collected in large numbers included the Annelida, primarily the Tubificidae, and the Mollusca, comprised almost entirely of *Corbicula* clams. Data on several taxa enumerated in the above tables for 1978 were placed on the STORET retrieval system (table B-3). Similar data for 1977 is located in table A-4 in GSA (1983).

Shannon-Weaver diversity indices and evenness indices calculated for 1978 data from each station are listed in table 14. Benthic biomass data are tabulated in table 15. Shannon-Weaver diversity indices for 1977 are found in table C-5 in GSA (1983).

4. Benthic Macroinvertebrates--Multiplate Sampler

The multiplate samplers recovered from stations 0 through 18 collected 41 taxa, principally genera, of macroinvertebrates (table

Table 14.--Shannon-Weaver diversity ($\bar{H}$) and evenness (E) indices for three composited Ponar samples collected at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April, May, and August, 1978

Station number	Collection periods					
	Run I April 10-18		Run II May 22-29		Run IV August 1-7	
	$\bar{H}$	E	$\bar{H}$	E	$\bar{H}$	E
0	2.92	0.84	1.22	0.77	1.27	0.37
1	1.64	0.52	2.39	0.80	1.52	0.37
2	2.98	0.70	1.77	0.56	1.32	0.30
3	3.09	0.89	1.91	0.60	1.47	0.52
4	3.33	0.75	2.59	0.78	2.32	0.62
5	1.15	0.31	1.23	0.39	2.52	0.60
6	2.15	0.58	1.95	0.59	2.20	0.66
7	1.86	0.54	1.14	0.41	2.67	0.70
8	1.65	0.50	1.23	0.41	3.19	0.72
9	2.64	0.76	1.17	0.45	2.43	0.62
10	2.31	0.61	2.03	0.64	3.27	0.78
11	2.19	0.57	1.23	0.41	2.56	0.69
12	2.24	0.67	1.00	0.33	2.62	0.61
13	3.56	0.82	1.86	0.52	2.39	0.67
14	2.97	0.71	0.65	0.33	2.77	0.66
15	2.79	0.73	1.32	0.38	3.44	0.77
16	2.78	0.84	2.40	0.67	3.44	0.77
17	2.36	0.62	1.21	0.43	3.25	0.74
18	2.86	0.95	2.45	0.87	2.22	0.79

Table 15.--Average benthic biomass (grams per square meter) for three composited Ponar samples collected at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April, May, and August, 1978

Station number	Collection periods Run I April 10-18	Run II May 22-29	Run IV August 1-7
0	.67	1.36	2.97
1	.61	4.77	4.84
2	1.07	7.75	4.59
3	6.81	7.02	3.42
4	5.53	3.73	3.95
5	10.10	3.84	4.93
6	9.00	623.16	3.92
7	164.61	1,855.26	11.60
8	2,216.92	563.76	157.37
9	249.52	2,221.84	152.87
10	1,193.60	205.67	377.25
11	1,055.34	2,152.74	176.28
12	228.31	900.73	737.21
13	256.04	565.68	100.36
14	100.31	190.70	58.70
15	11.58	346.61	8.83
16	127.50	522.86	4.35
17	588.82	637.97	127.90
18	3.15	6.11	.47

C-2). In general, the fauna inhabiting the multiplate samplers was similar to the benthos I sects made up the bulk of the fauna inhabiting the multiplate samplers, comprising all but eight of the genera ncountered. Of the insec_s, the Chironomidae made up 39 percent of the genera collected. Although organisms collected during 1977 were not quantified or identified beyond family level, chironomids were the most common taxon collected. (See table C-7, GSA, 1983).

5. Aquatic Macrophytes

The aquatic macrophytes of the Alabama River were studied between the confluence of the Coosa and Tallapoosa Rivers and one station below the Jones Bluff Lock and Dam. A total of 70 species representing 41 families during the 1978 phase and 29 species representing 17 familes during the 1977 phase was encountered. A list of species encountered during this study is given in table D-1. The approximate distribution of each species noted in 1978 was mapped on a reduced copy of the COE Project Map for Jones Bluff Reservoir (figs. D-1 through D-55). The maps were prepared with one dot per river mile. A dot, as a result, may represent one population or many populations of the species that occurred in that river mile. Noxious species present in large numbers, which could infringe on the recreational and/or navigational uses of the river, are noted in the discussion.

During the 1977 phase, each sampling site was assigned a number and that number was plotted on the COE navigation charts. The distribution of each species was indicated in the annotated list by listing the sample site at which the species was found. The techniques used for the 1978 phase were employed to illustrate the entire distribution within the reservoir on one page.

V. DISCUSSION

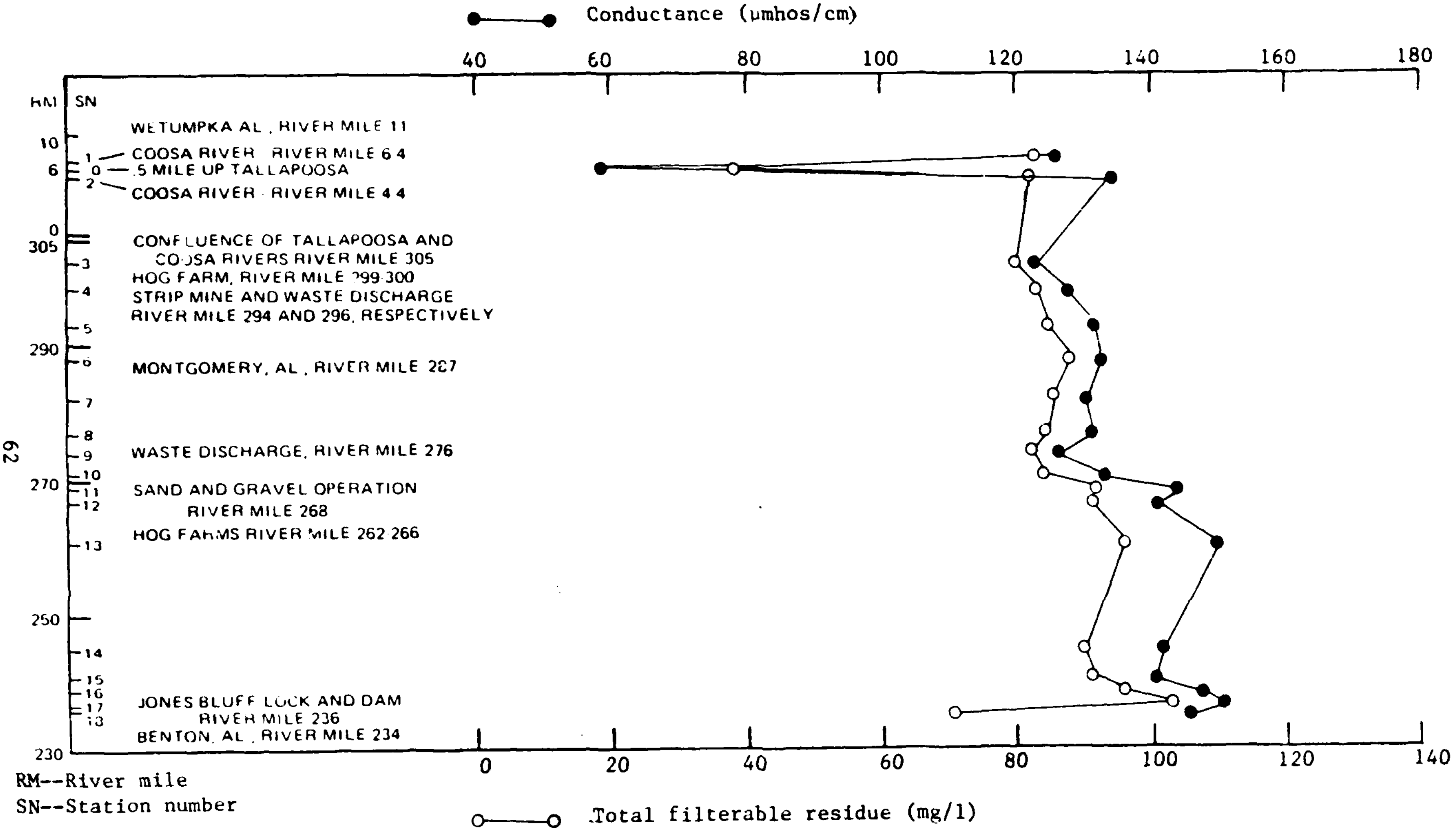
A. Chemical

1. Water

A comparison of the water-quality data obtained in this study to state and federal water-quality standards indicates that the water quality of the Jones Bluff Reservoir was generally good. Those parameters that periodically exceeded the recommended limits and therefore warrant further discussion include fecal coliform, fecal streptococci, iron, manganese, zinc and ammonia. The remaining 37 water-quality parameters were within acceptable established limits and will be discussed only briefly.

Specific conductance as the measure of ionic dissolved solids in water can be an effective means of detecting changes in water quality due to natural or manmade discharges. Such changes would be expected to occur downstream from point sources; increases from nonpoint sources could also be present, especially after periods of rainfall and runoff.

During the 1978 study, specific conductance readings for all stations during every run were graphed versus total filterable residue (figs. 12 through 16). The overall pattern of specific conductance indicated very low dissolved mineral content and dissolved solids at station 0 with values gradually increasing downstream. Highest conductance readings were recorded during the April sampling trip (fig. 12). Readings were above 140 μmhos/cm for eight of the 19 sampling stations. Discharge in the river was low during this sampling period and the resulting concentration of dissolved solids probably accounts for the increased conductivity values. While specific conductance was always low at station 0 (Tallapoosa River), readings were often high at stations 1 and 13 and the stations adjacent to the Jones Bluff Lock and Dam (16, 17 and 18). Station 1 drains the city of Wetumpka, which has a municipal discharge point at its sewage treatment plant. During the 1977 study, high conductance readings were also consistently recorded at station 1. Station 13 is downstream from a hog farm discharge. This portion of the river also had high conductance readings in 1977. Stations 16 and 17 are located in the lacustrine area above the dam where dissolved solids appear to be trapped. Much of these trapped dissolved solids apparently flow out of the reservoir as well which would account for high conductance values at station 18 below the Jones Bluff Lock and Dam.



RM--River mile
SN--Station number

Figure 12--Conductance and total filterable residue concentration versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April 10-18, 1978.

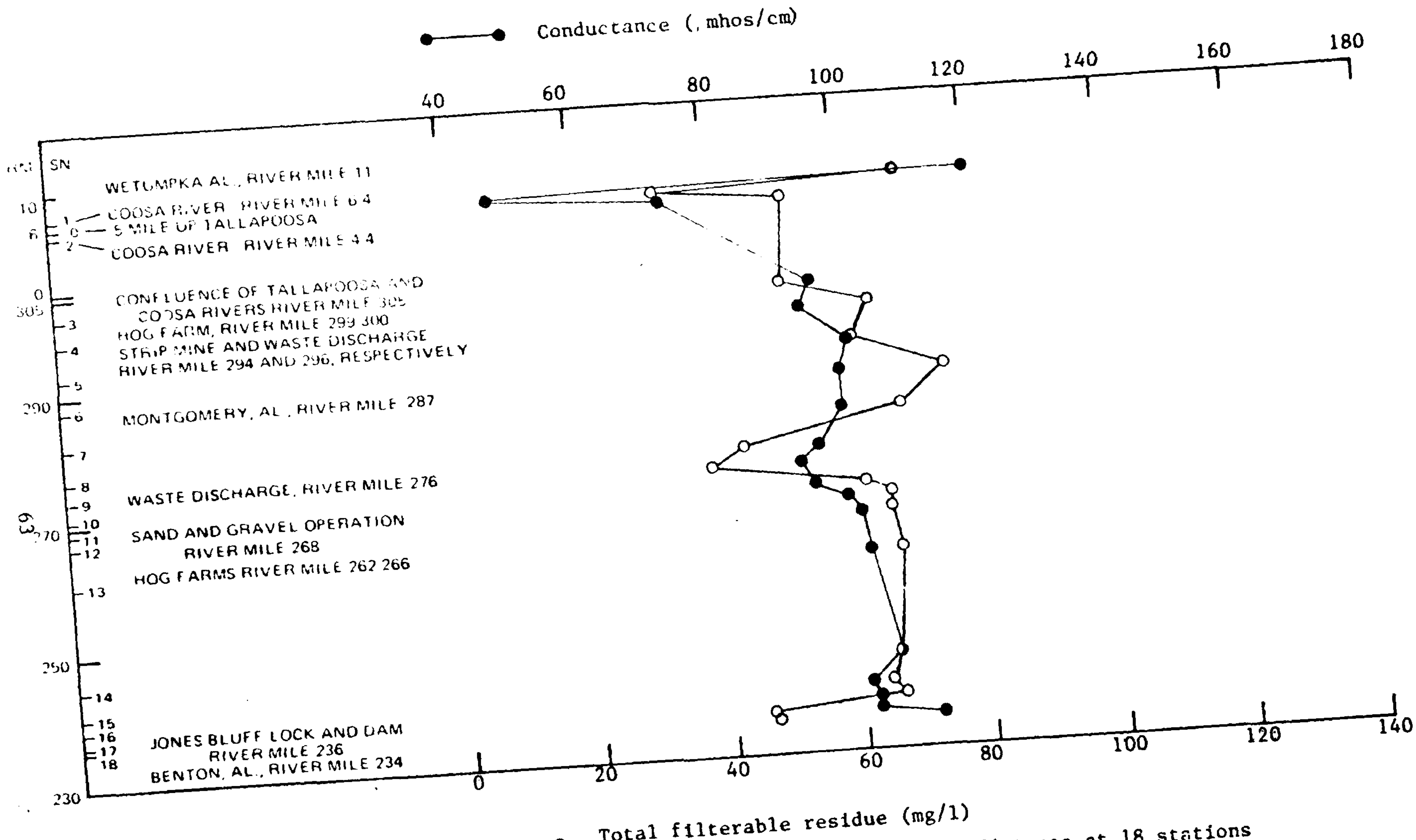


Figure 13.--Conductance and total filterable residue concentration versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, May 22-29, 1978.

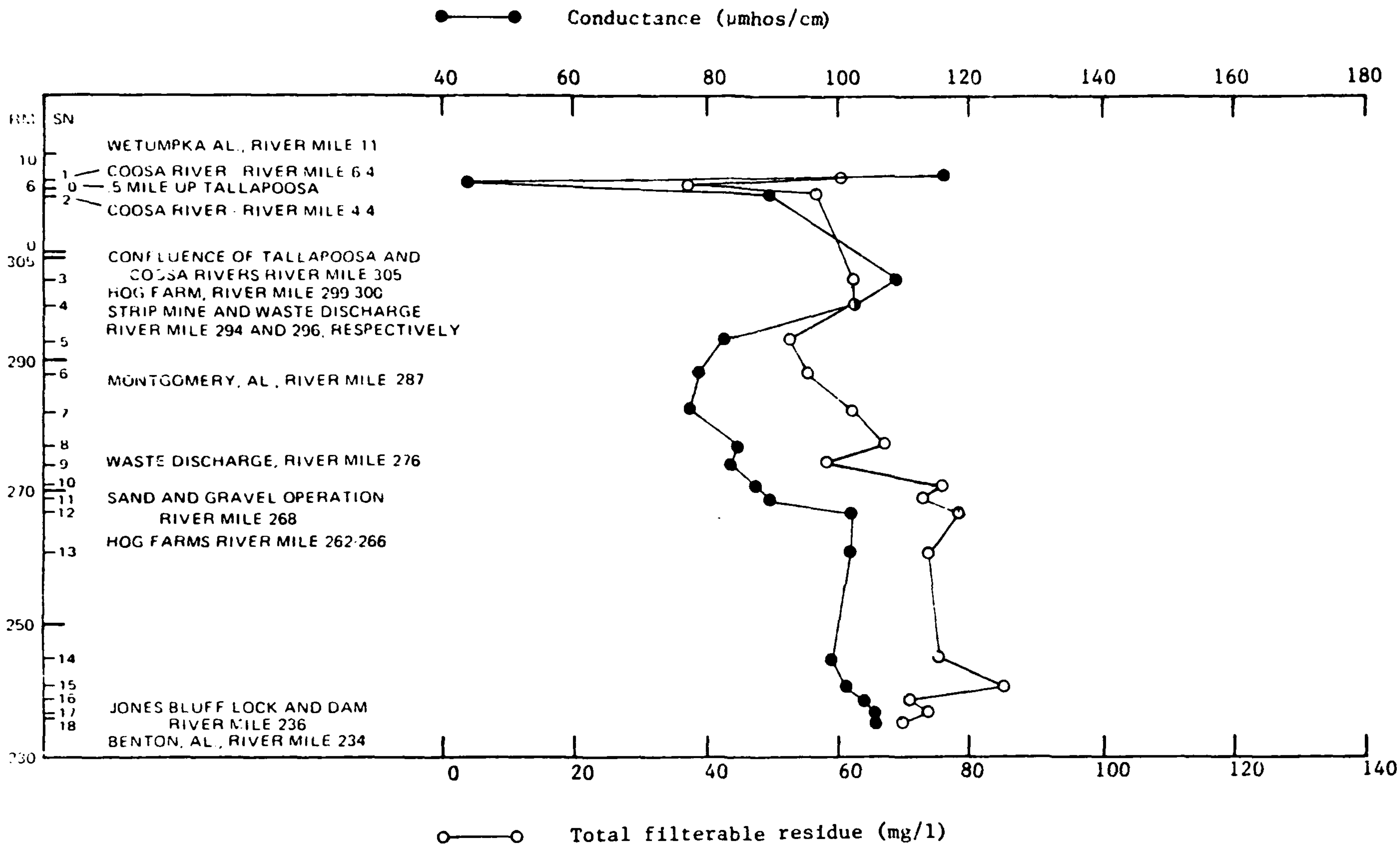


Figure 14--Conductance and total filterable residue concentration versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, July 6-11, 1978.

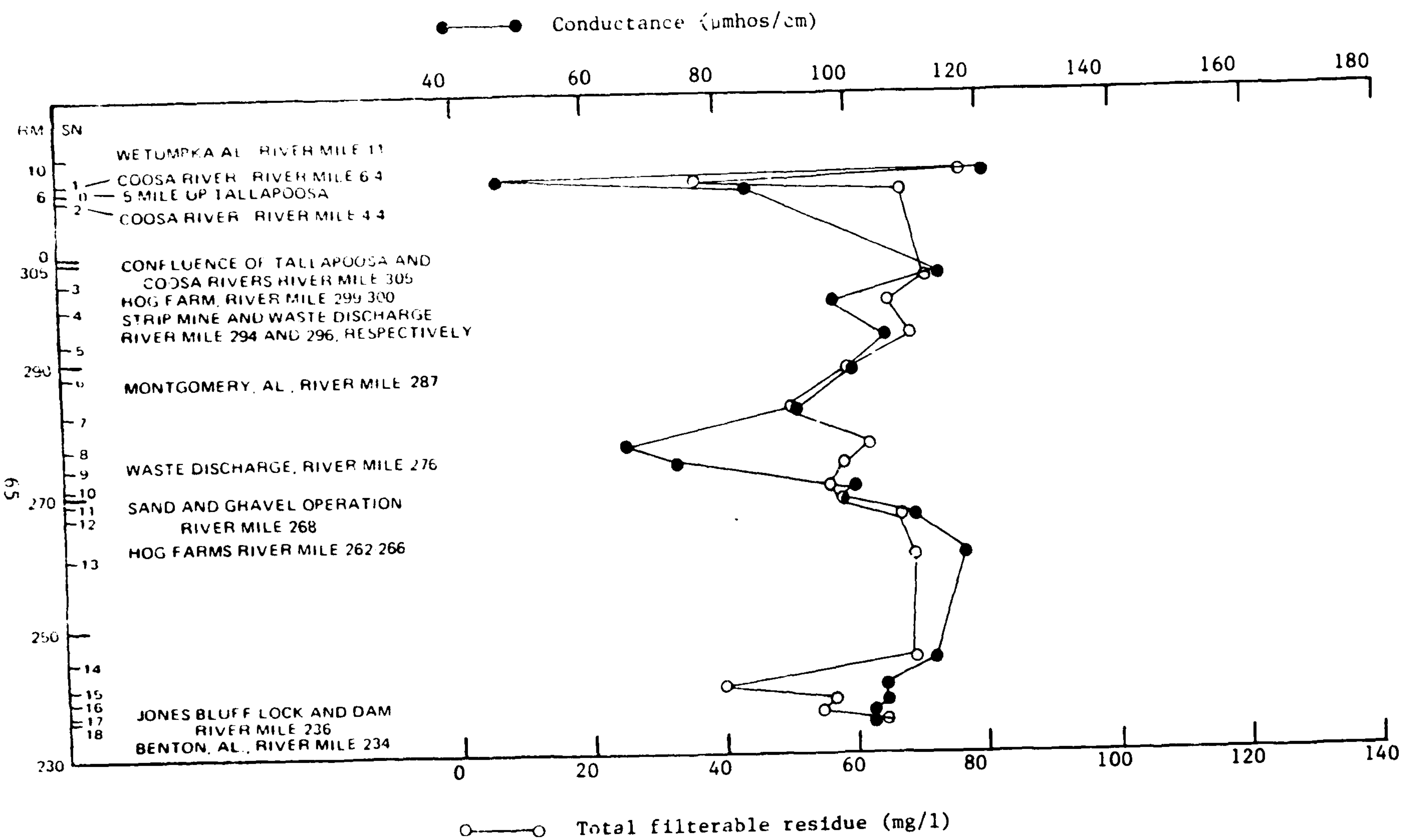


Figure 15.--Conductance and total filterable residue concentration versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7, 1978.

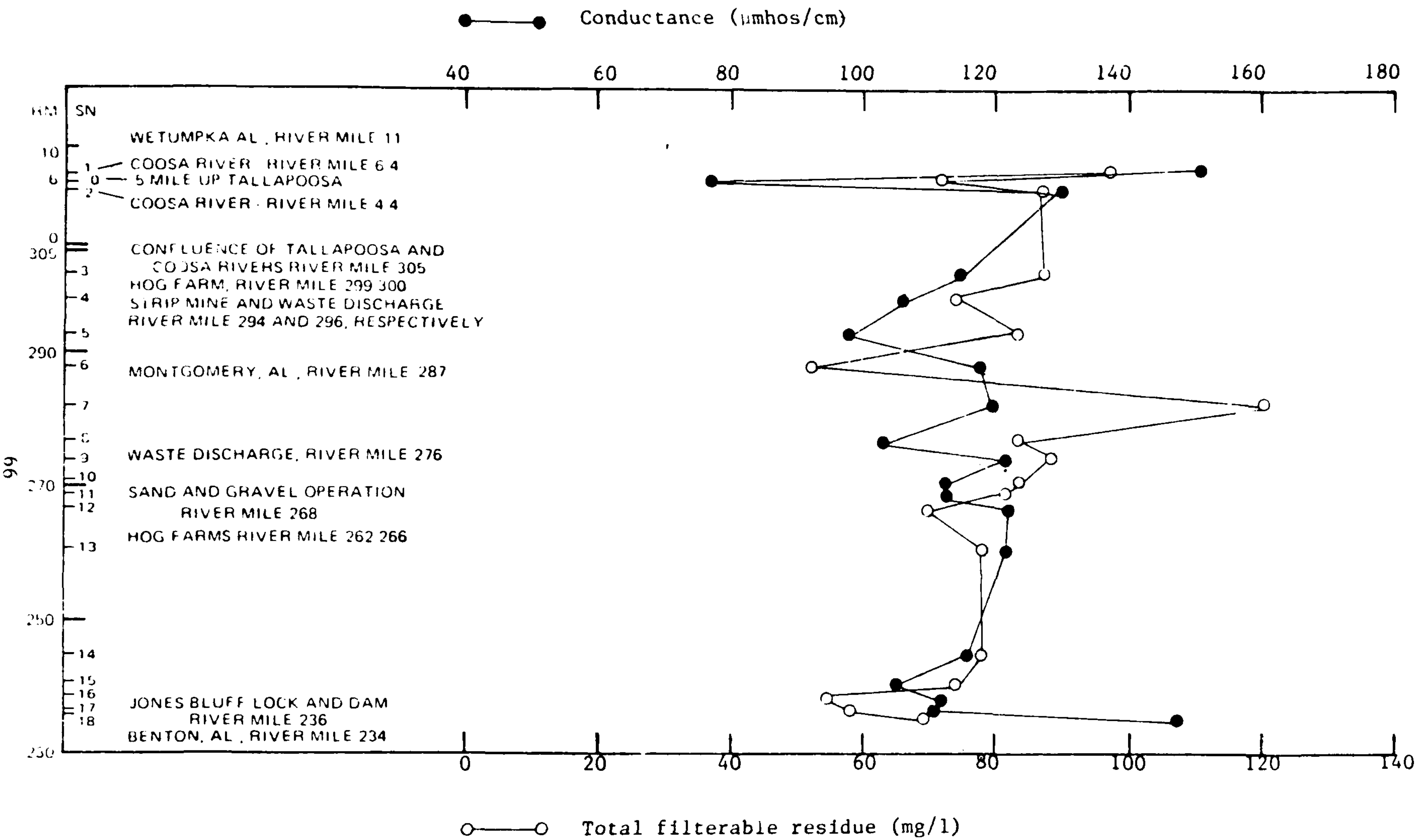


Figure 16--Conductance and total filterable residue concentration versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, September 12-18, 1978.

An interesting backflow of water was detected in the Tallapoosa River (station 0). In vertical profiles, conductance values of surface waters were near 45 µmhos/cm and in general were 12 to 30 µmhos/cm less than readings near the bottom which ranged from 57 to 75 µmhos/cm. Multiple conductivity readings during run 1 from surface to bottom showed a definite conductance wedge in the Tallapoosa River. The conductivity of the less mineralized Tallapoosa River (ranging from 32 to 42 µmhos/cm) as compared to the more mineralized Coosa and Alabama Rivers (ranging from 72 to 127 µmhos/cm) provides the basis for this backflow. The backflow of water was visually evident as far as 0.5 mile up the Tallapoosa River, and on several occasions when the phytoplankton net was lowered into the river at station 0, it was carried upstream.

At stations immediately upstream from the Jones Bluff Lock and Dam (stations 14 through 17), where specific conductance was measured at 1-m intervals, little stratification was detected (figs. 6 through 9). Only slight increases in conductance were detected at stations 14 (run 4) and 15 (run 5) near the bottom. A conductance isopleth at station 8 in the riverine portion of the reservoir also revealed a lack of stratification (fig. 10). This lack of stratification is expected in light of the amount of flow in the Alabama River (fig. 5).

Overall conductance readings were slightly lower in 1978 in comparison to 1977 (table 6). Flow data from the U.S. Geological Survey records for the Alabama River (fig. 5) indicate the 1978 study began during high-flow conditions on the river, whereas the 1977 study began during a low-flow period.

Total filterable residue was strongly correlated with specific conductance during this study (figs. 12 through 16). Values were generally slightly higher in the lacustrine area near the dam where solids would be expected to settle. The highest peak, however, occurred at station 7 during run 5 (fig. 16). No explanation is evident in the data; however, several tributaries from Montgomery enter the river upstream from station 7.

Most increases in nonfilterable residues along the Jones Bluff reservoir corresponded to increases in conductivity. Overall values were highest during runs 2 and 5. Although no station displayed consistently high values of nonfilterbale residues from run to run, the readings at stations 1 (run 3), 5 and 6 (run 2), 8 (run 5), 10 (runs 1 and [illegible]), and 14 and 18 (run 5) were unusually high (table A-1).

Although turbidity and color readings for the Jones Bluff reservoir were fairly consistent from station to station and from run to run, several general trends were evident. Readings for both parameters increased during the second run, when the river flow was its highest (fig. 5). Although turbidity and color values were highest in the wettest part of the year (table A-1), there was no corresponding increase in nonfilterable residue. The highest readings for turbidity and color occurred at the lacustrine stations upstream from the dam (table A-1).

The percent light transmission readings by an irradiometer and transparency by a secchi disc were determined in situ. The shallowest depth readings by secchi disc (deeper light transmission being indicative of clearer, less turbid water) may indicate the effect of tributaries, waste discharges, and recreational areas. Secchi disc readings were lowest during run 2 (averaging 0.7 m), which corresponds to the high turbidity and color values recorded during this run. As turbidity and color tended to be highest upstream from the dam, light transparency was lowest at these stations (table A-1). The values of nonfilterable residues were also consistently higher at the station above the dam indicating a trapping of suspended materials above the dam. Overall in the Jones Bluff reservoir secchi disc readings varied from 2.2 m (station 1, runs 4 and 5) to 0.45 m (station 4, run 2).

Storm events and their short-term effects on the reservoir as far as sedimentation and turbidity are concerned offer an interesting subject for future study. Runoff from rainfall, particularly large storms that follow extended periods of dry weather, can transport large quantities of soil particles and organic litter into rivers. Some areas are naturally prone to erosion because of inherent physical characteristics (for example, steep slopes, poorly consolidated soils, and lack of cover). Man's land-use activities, primarily those which cause widespread removal of tree cover and soil disturbance, can increase erosion. Once the eroded material enters the river, it is moved downstream. Depending upon the hydraulic regime, defined largely by channel characteristics, and the volume and velocity of streamflow, transported sediments will either stay in suspension, move along the stream bed (bedload) or be deposited in pooled reaches. High flow conditions can cause smaller sized particles to stay in suspension, leading to persistent turbidity problems.

The temperature of stream water is a measure of the actions and interactions of a wide variety of factors. One of the major factors in the warming of stream waters is direct solar radiation (Reid and Wood, 1976). Other factors include stream velocity and volume, substrate type, tributary inflows, and extent of vegetational cover. Temperature readings were uniformly within 5°C from the uppermost stations to the release-water station in the Jones Bluff reservoir (figs. 17 through 21). At least six days were required to sample all stations within the reservoir; therefore, a change of 5°C covers almost a week of changing weather conditions.

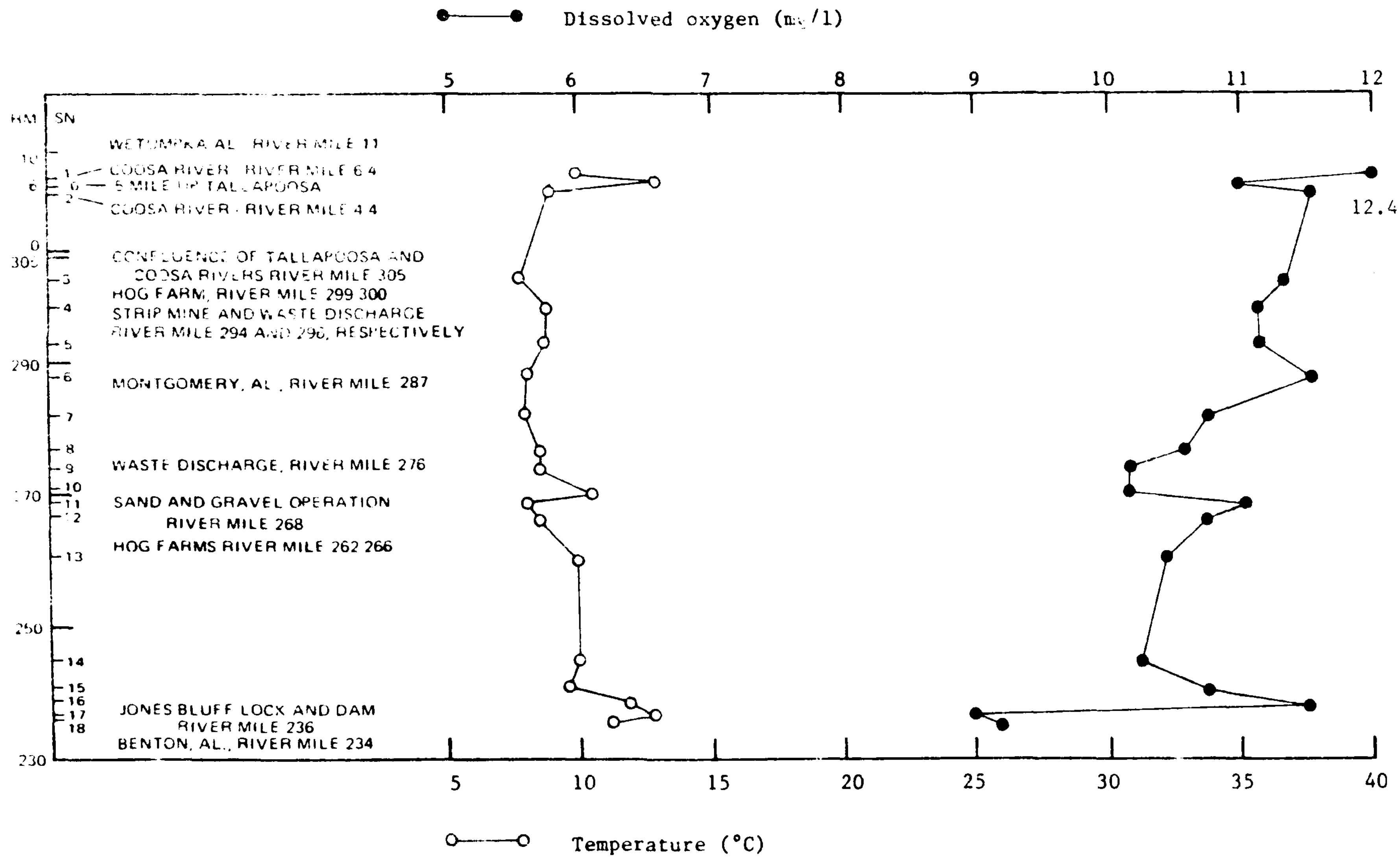


Figure 17.--Dissolved oxygen and temperature versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April 10-18, 1978.

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OF RE 'BOB' WOODRU..(U) GEOLOGICAL SURVEY OF ALABAMA
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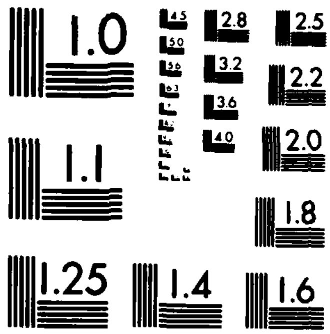

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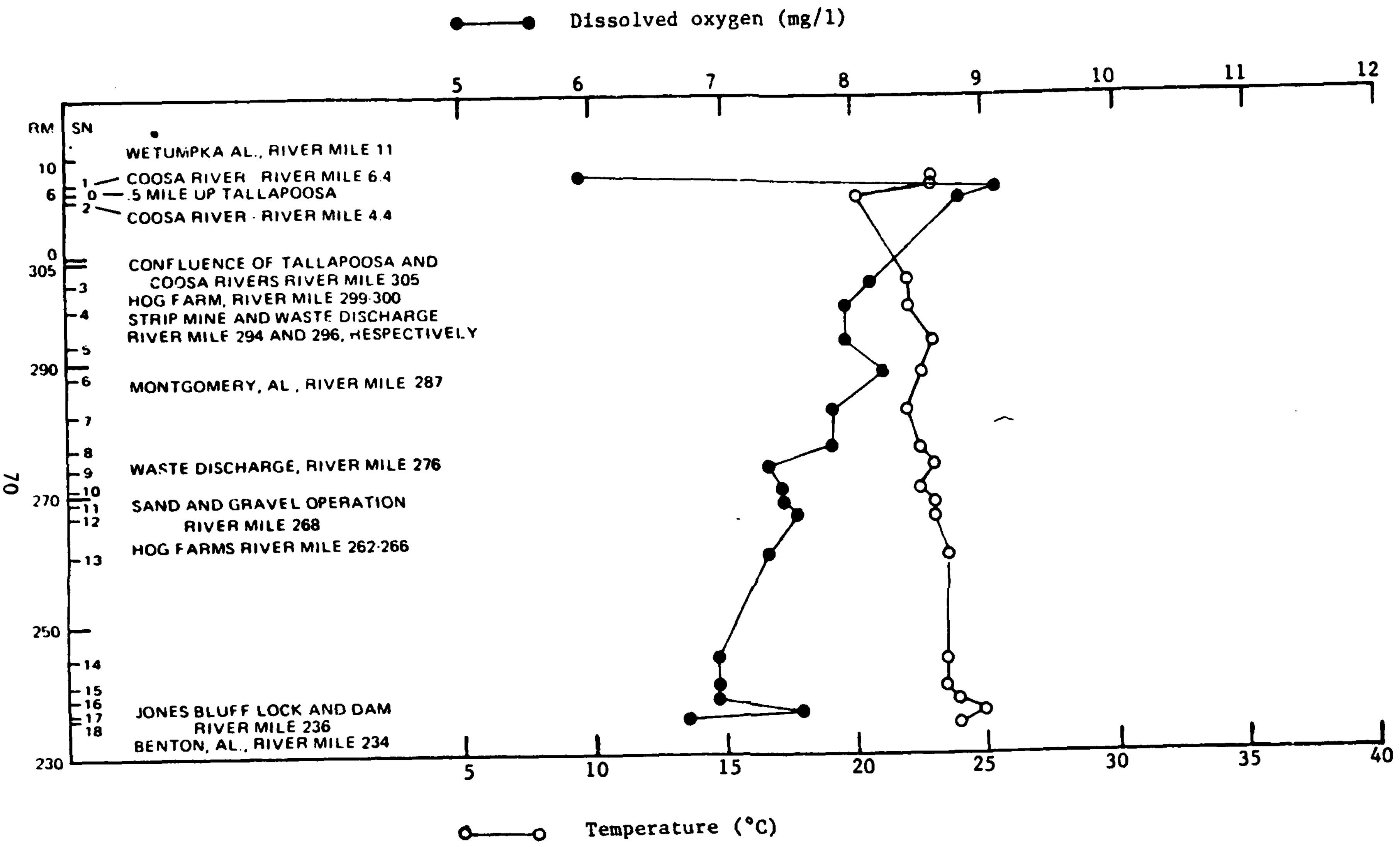


Figure 18.--Dissolved oxygen and temperature versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, May 22-29, 1978.

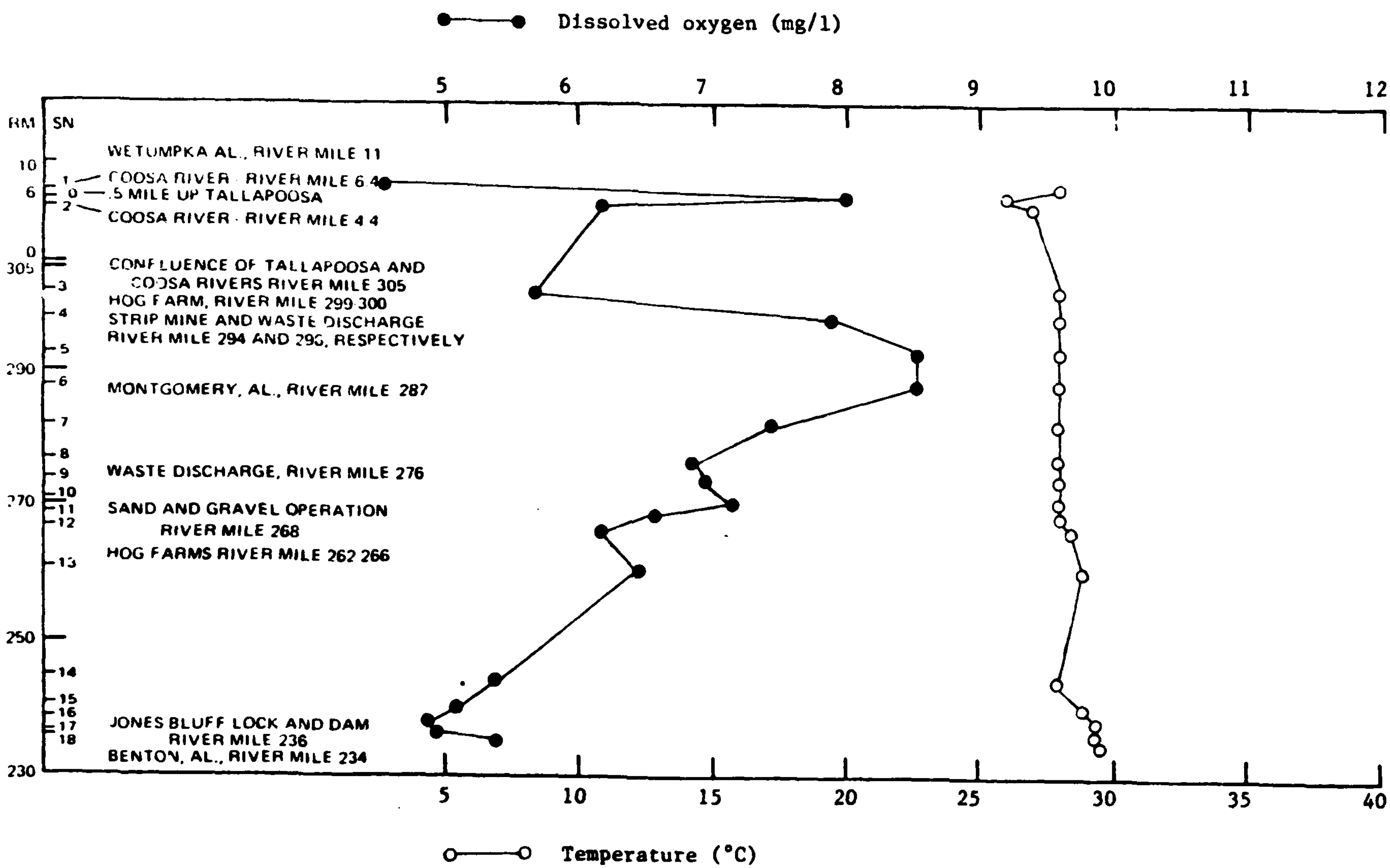


Figure 19.--Dissolved oxygen and temperature versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, July 6-11, 1978.

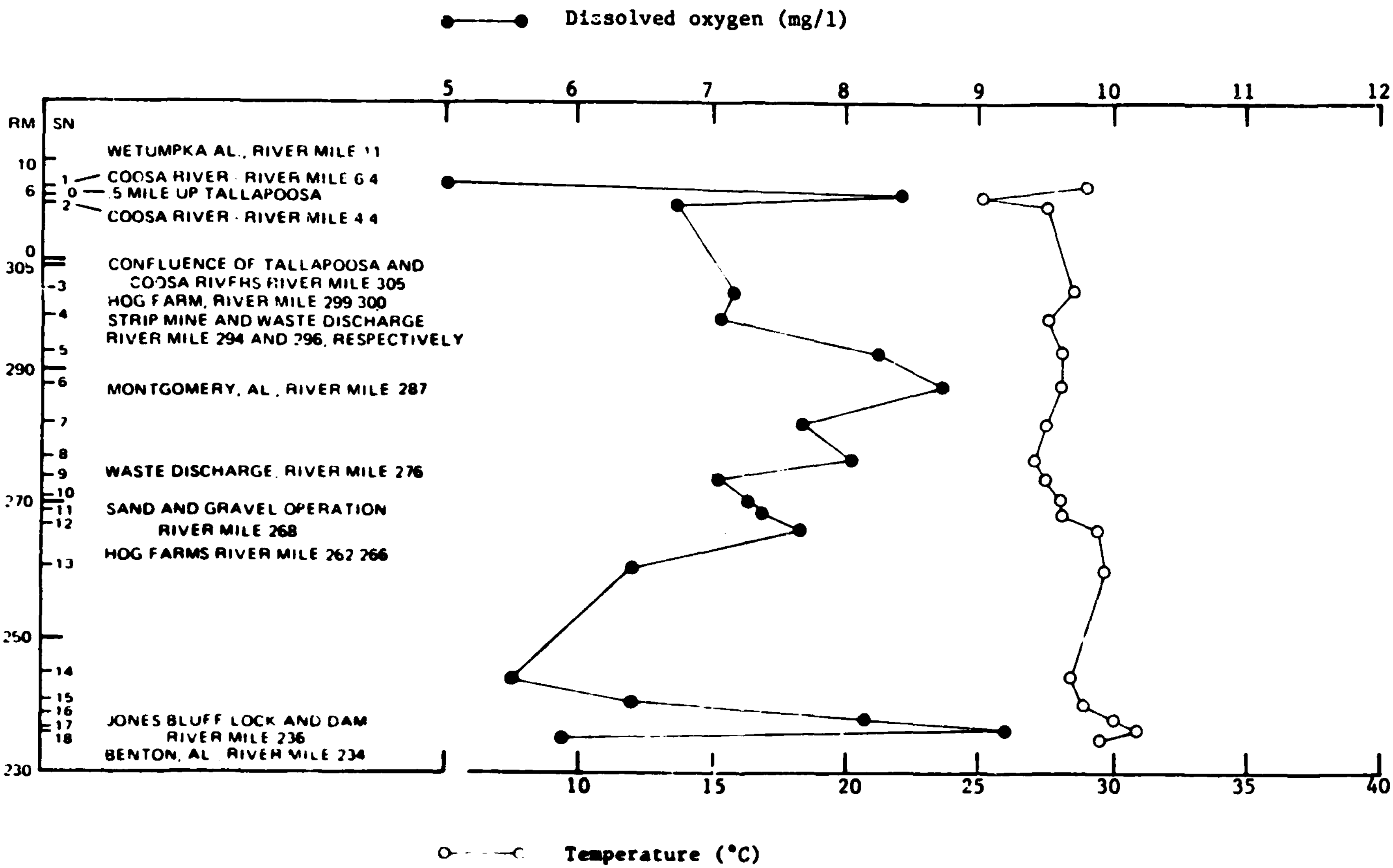


Figure 20.--Dissolved oxygen and temperature versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7, 1978.

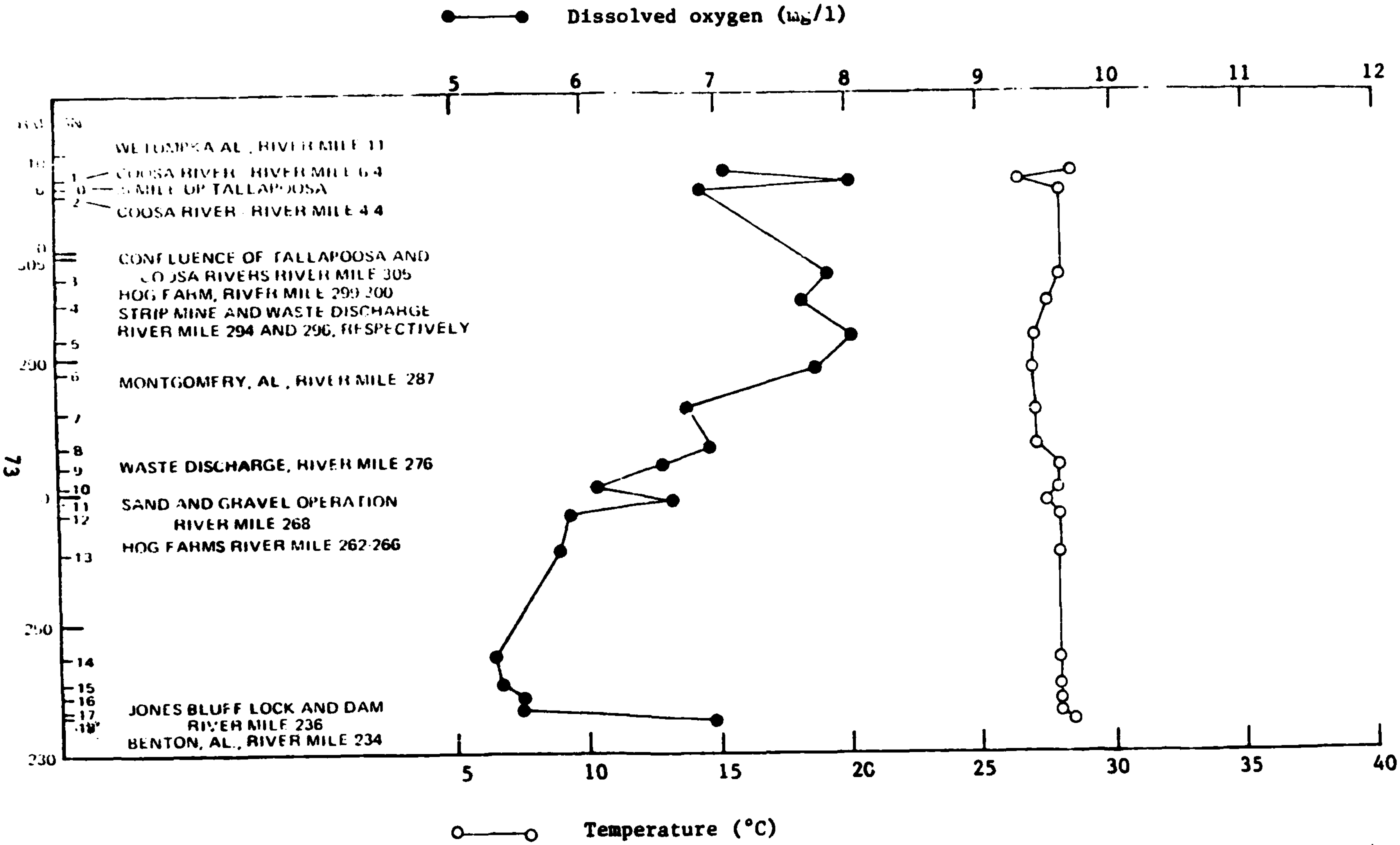


Figure 21.--Dissolved oxygen and temperature versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, September 12-18, 1978.

On a given day, the water temperature was consistently within 0.5 to 1°C from station to station. This is likely due to the large volume of water in the river which tends to maintain a fairly uniform temperature.

Overall temperatures in the river reflected seasonal changes in air temperature, with lowest readings in the spring and highest readings in the summer (figs. 17 through 21). The general pattern in the river was for fairly uniform temperatures at all sites with slight increases in the lacustrine area above the dam, with the exception of generally lower water temperature at station 0.

The temperature regime of a river system is important to resource planners in assessing its assimilative capacity in breaking down incoming discharges, whether manmade or natural. In addition to affecting assimilative capacity, temperature has several other influences in aquatic systems including:

1. dissolved oxygen content
2. dissolved oxygen saturation values
3. deoxygenation and reoxygenation rates
4. biological activity and bacteriological die-off rates

The effect of water temperature on dissolved oxygen (DO) is clearly illustrated in figures 17 through 21. As water temperatures decrease, the dissolved oxygen content increases. As would be expected then, dissolved oxygen content in the Jones Bluff reservoir was highest during the April run when water temperatures were lowest, and lowest during the July run when water temperatures were highest (figs. 17 through 21).

At station 0 (Tallapoosa River) where water temperatures were generally cooler than the rest of the reservoir, dissolved oxygen levels were noticeably higher. Oxygen levels were also generally higher during each run at stations 5 and 6, located upstream of Montgomery, and at stations 16 and 17 just above the Jones Bluff Lock and Dam (figs. 17 through 21). Lowest dissolved oxygen levels (less than 5 mg/l) occurred at riverine station 1 and at lacustrine stations 16 and 17 (figs. 17 through 21). Station 1 is located below Wetumpka, which likely contributes organic wastes to the river. Water below the dam varied in oxygen content; during April, July and September oxygen levels increased compared to the station just upstream of the dam, while in May and August levels decreased. On only three occasions during July did dissolved oxygen levels in the reservoir fall below 5.0 mg/l which is considered the lower limit for diverse fish faunas (EPA, 1976). During the 1978 study, dissolved oxygen levels were slightly higher overall than in 1977. However, calculated mean values for each station generally fell within 1 mg/l of the 1978 readings.

Very little stratification of oxygen or temperature with depth was detected for the Jones Bluff reservoir during the study (figs. 6 through 9). The only detectable difference was a general decrease of less than 0.5 mg/l dissolved oxygen and 0.5°C near the bottom at several of the stations. Evidently, the high amount of discharge in the Alabama River prevents the normal late summer stratification typical of river impoundments.

Oxidation-reduction potential (ORP) measurements ranged from +200 to +290 mv (table 6). These readings indicate the entire reservoir was an oxidizing environment. Only slight stratification of ORP with depth was detected in the reservoir (figs. 6 through 9).

In streams, the occurrence and abundance of components of the hydrogen ion (pH) and bicarbonate buffer system are determined primarily by current, biological processes, and the chemical nature of bottom materials. The role of flow, as in the case of the Alabama River, is that of ameliorating the chemical climate of the stream but usually within a relatively restricted segment. This is usually accomplished through the mixing and moving of concentrations of substances. Over a considerable distance and depending upon the volume of introduced materials (such as sewage or industrial wastes), the pH of a stream is subject to considerable change. The biological processes acting to influence the nature of the water include photosynthesis and respiration. The chemical composition of rocks in the stream valley and channel and also the drainage nature of the valley, may act in a major way to determine the water composition. Under certain conditions, these factors may somewhat offset the influence of biological processes.

During the first two runs, pH was similar from run to run (averaging 6.7 and 6.5, respectively) and from station to station (figs. 22 and 23). These runs occurred during periods of substantial rainfall (table 5) when river flow was high (fig. 5). Possibly, runoff from the rain washing decomposed and decomposing organics into the river resulted in the high CO_2 content of the river during runs 1 and 2 (table A-1). These CO_2 values were two to three times higher than values recorded during runs 3, 4 and 5. The higher pH readings (averaging 7.2) recorded during runs 3, 4 and 5 likely reflect the increasing phytoplankton activity during the summer months as free CO_2 is utilized (figs. 24, 25 and 26).

Although pH did not vary greatly from run to run, there was a wide variation in readings from station to station, particularly in runs 4 and 5. During run 4, pH varied from a high of 8.8 at station 17 to a low of 6.9 at station 0; pH also varied 1.9 units during run 5 from 5.7 at station 11 to 7.6 at station 5. At those stations with low pH (stations 11 and 13; run 5), high values of CO_2 were

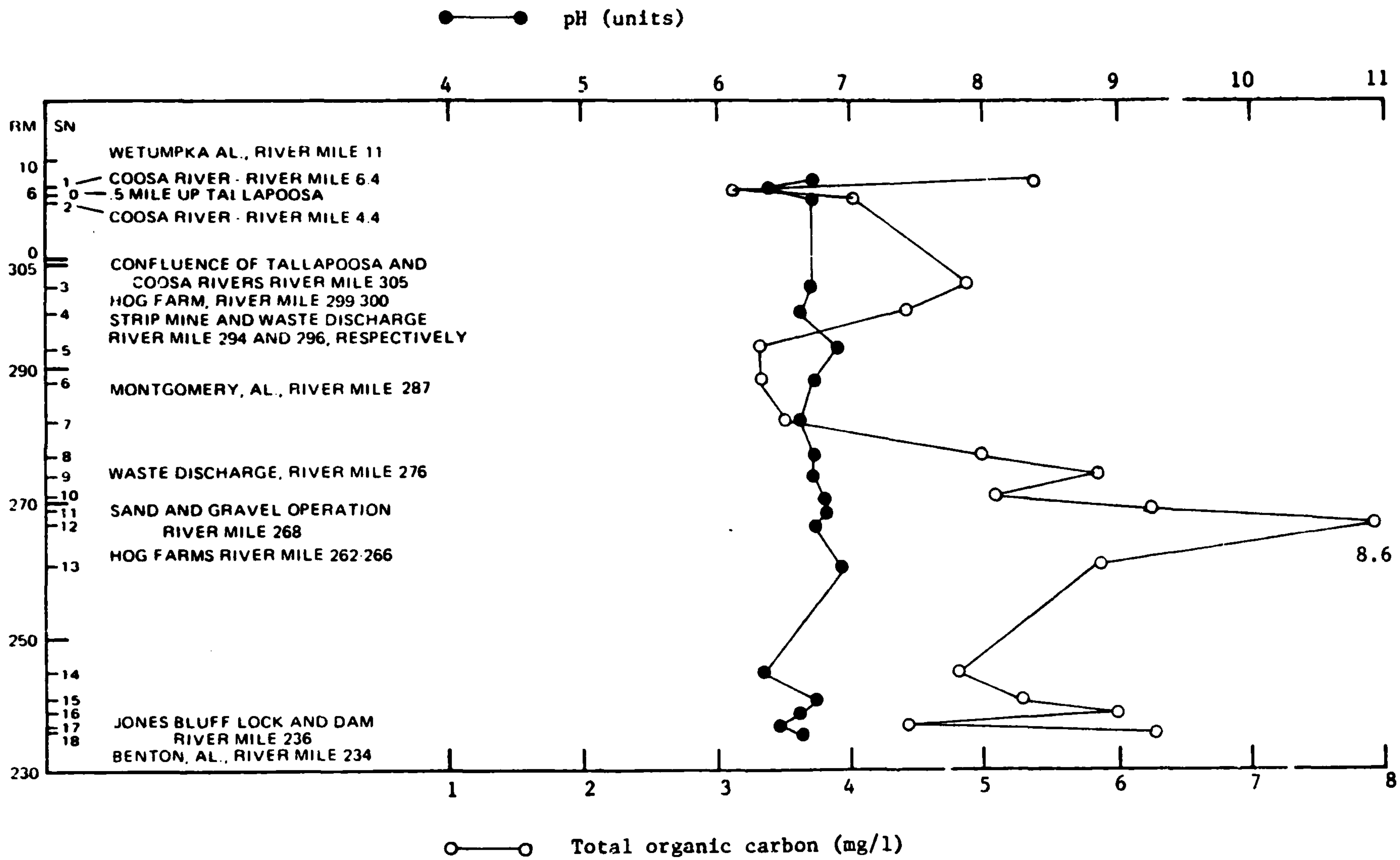


Figure 22.--Total organic carbon and pH versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April 10-18, 1978.

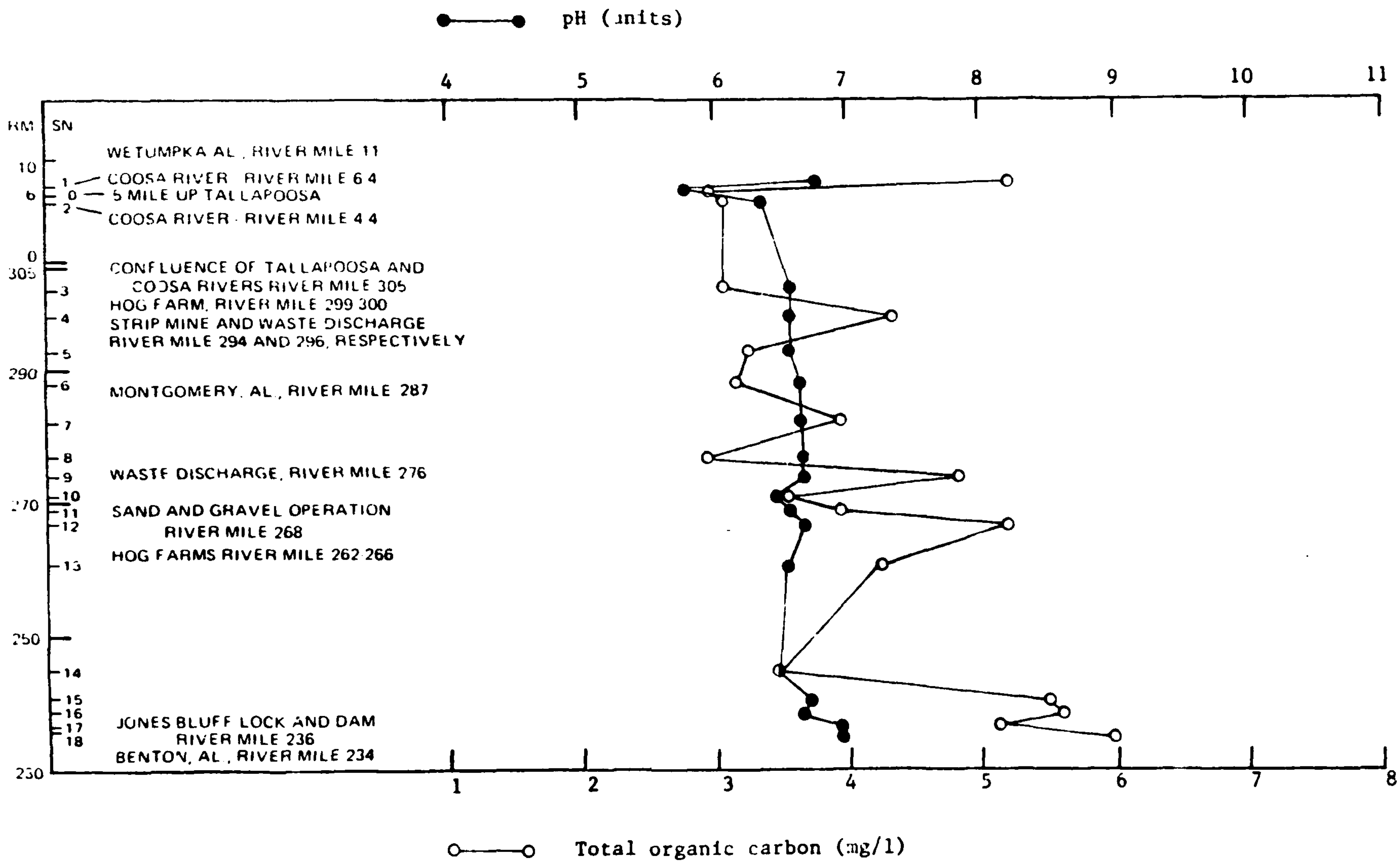


Figure 23.--Total organic carbon and pH versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, May 22-29, 1978.

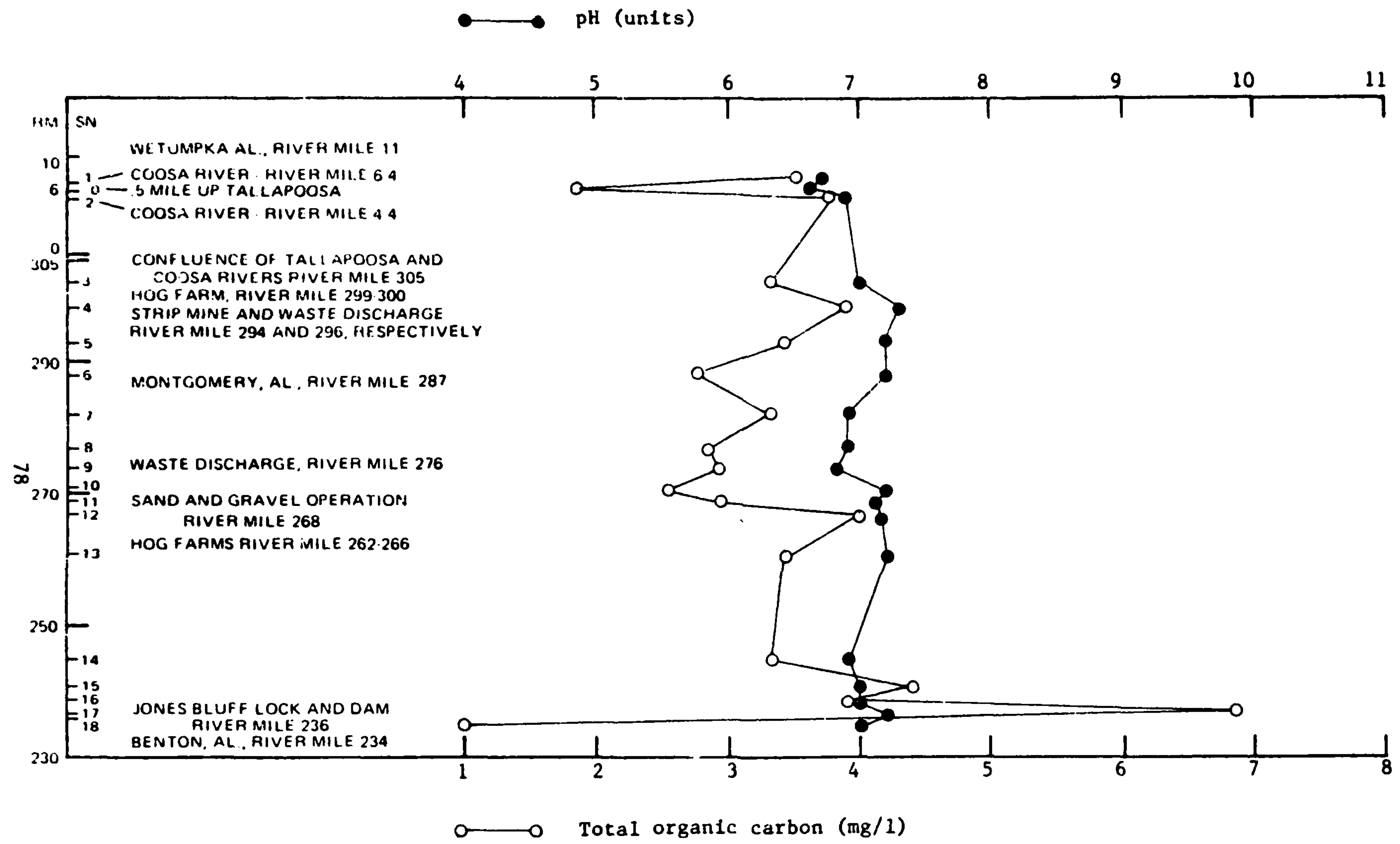


Figure 24.--Total organic carbon and pH versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, July 6-11, 1978.

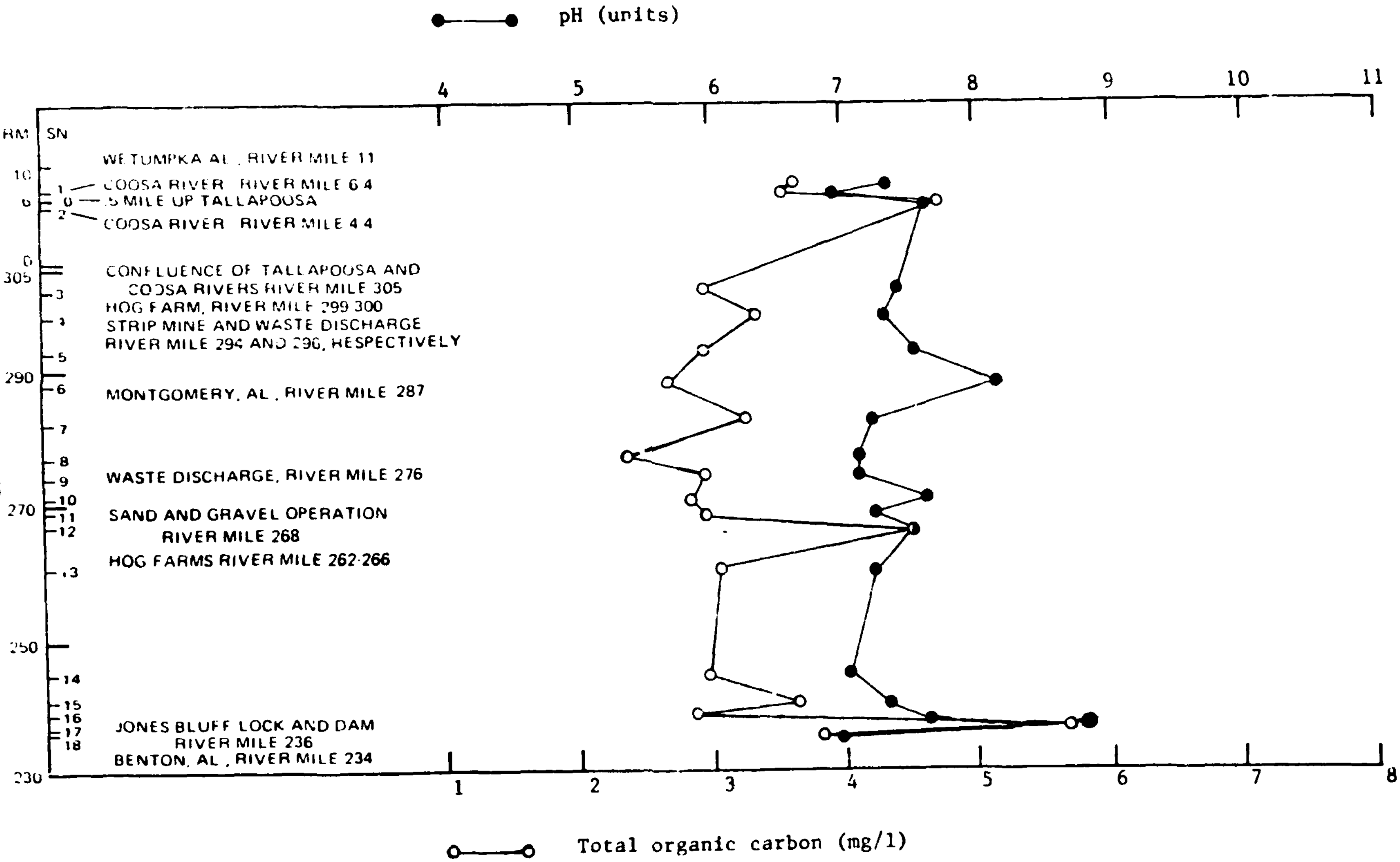


Figure 25.--Total organic carbon and pH versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7, 1978.

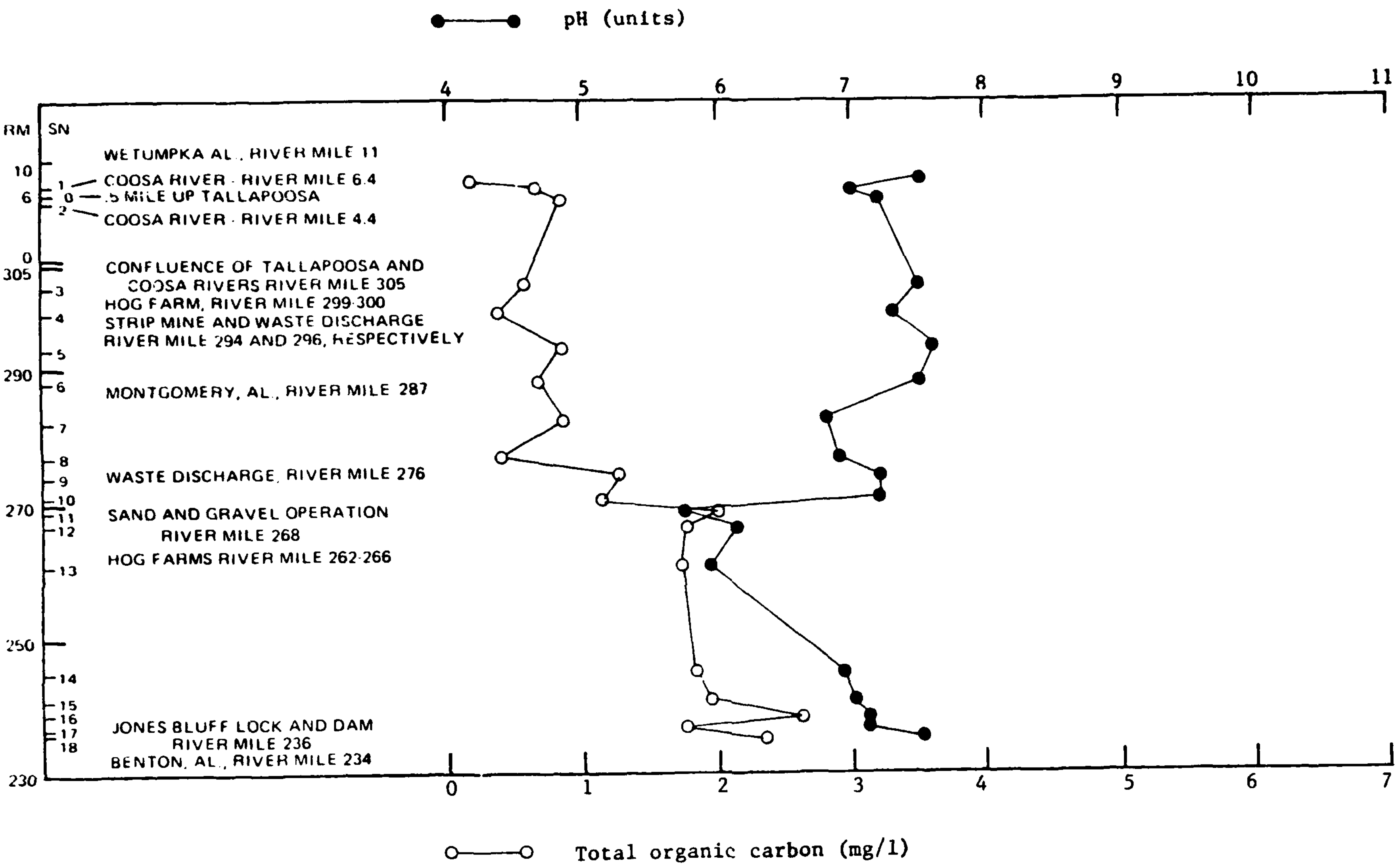


Figure 26.--Total organic carbon and pH versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, September 12-18, 1978.

recorded indicating the possibility of organic materials being decomposed. Station 13 is located below a hog farm which contributed organic wastes to the river.

Alkalinity, as calcium carbonate ($CaCO_3$) was low in the reservoir (ranging from 11 to 52 mg/l) and does not account for the wide shifts in pH recorded during runs 4 and 5. With alkalinity at such low levels, the water of the reservoir is suitable for irrigation purposes. A diel and/or diurnal study in the reservoir would be useful for a better understanding of the effects of photosynthesis, decomposition, temperature, and rainfall on pH changes, both seasonal and daily.

Although there was some variation in pH, particularly in the summer, there was little change in pH at each station with regard to depth (figs. 6 through 9). At those stations where pH was measured at 2-m intervals, values varied less than 0.2 units from top to bottom. It is believed that the pH of bottom sediments and possibly that of the water/sediment interface may have accounted for this fluctuation in readings. To confirm this observation, it would be necessary to measure the pH of the bottom sediment at the same time the water pH was being measured.

Total organic carbon concentration, although not given a specific water-quality criteria limit, is used to indicate probable organic contamination within a water system. Total organic carbon (TOC), the carbon oxidized by dichromate or other strong oxidizing agent, is frequently found in polluted waters and benthic deposits. Large amounts of leaves, pollen and carbonaceous debris washing into rivers as well as the decaying of aquatic vegetation can also account for high levels of TOC. The levels of TOC in the Alabama River and its tributaries were within the range determined by the U.S. Geological Survey as normal for other naturally flowing rivers in the state (USGS, 1980).

Levels of TOC tended to be somewhat higher in the reservoir during the spring collections, possibly as a result of rainfall runoff, in comparison to later runs. Another general trend was for TOC levels to be somewhat higher in the lacustrine stations, possibly indicating the trapping of organic material by the dam (figs. 22 through 26). TOC levels were also high at station 13 which is located below a hog farm. Overall levels of TOC in the Jones Bluff reservoir were lower in 1978 than in 1977.

Dissolved organic carbon (DOC) constituted the major portion of TOC in the reservoir. Concentrations in the reservoir were four to seven times higher during run 1 than in following runs. The high rainfall and subsequent runoff during run 1 probably accounts for much of this difference. Overall DOC values ranged from 0 to 8.4 mg/l and TOC from 0.1 to 8.6 mg/l in the reservoir (table 6).

Total iron concentrations exceeded the drinking water criteria (300 μg/l) established by the EPA (1976) in 88 of the 95 samples collected in the Jones Bluff reservoir (figs. 27 through 31). This limit is not based on toxicity but on aesthetic and taste considerations. Iron tends to stain laundry and porcelain and may foster the growth of micro-organisms in reservoir systems. Concentrations of iron greater than 200 μg/l in water is objectionable for public supplies due to taste considerations. It should be noted, however, that only 3 miles of the Alabama River and the mouth of the Tallapoosa River are classified as public water supply. Iron levels greater than 1,000 μg/l can be harmful to aquatic life (EPA, 1976) and good fish faunas are supported at iron levels less than 700 μg/l (Ellis, 1937).

Total iron concentrations exceeded 1,000 μg/l at most of the stations in the Jones Bluff reservoir at some point during the study, but only at stations 0, 4 and 10 were high concentrations fairly consistent from run to run (figs. 27 through 31). Overall, during run 3, total iron concentrations were generally high throughout the reservoir, but highest individual readings were recorded at station 16 during run 1 and at stations 4 and 5 (1,500 μg/l) during run 4. Those stations where iron concentrations were highest appear to be receiving runoff from waste discharges, agriculture or from mining activities along the channel.

Although levels of total iron exceeded 1,000 μg/l at several stations during the course of the study, dissolved iron levels were only occasionally high (figs. 27 through 31). At stations 4 and 11, during run 2 dissolved iron readings of 700 μg/l and 940 μg/l were recorded, respectively. Both of these stations have mining activity in the immediate area which possibly accounts for the high readings. Dissolved iron levels were consistently high at station 0 and in the lacustrine stations upstream from the dam. Possibly the impounded water upstream from the dam and the waters of the Tallapoosa River backed up by the Jones Bluff reservoir acts as an iron trap.

The source of much of the iron present in the Jones Bluff reservoir is likely derived from the weathering of rocks and soils in the basin. These rocks are predominately composed of silica with minor amounts of iron. That most of the iron in the reservoir is derived primarily from runoff is evidenced by the relationship between total iron and dissolved iron. Total iron, present in high levels, was determined on a raw acidified sample, while dissolved iron, present in low levels, was determined on a filtered acidified

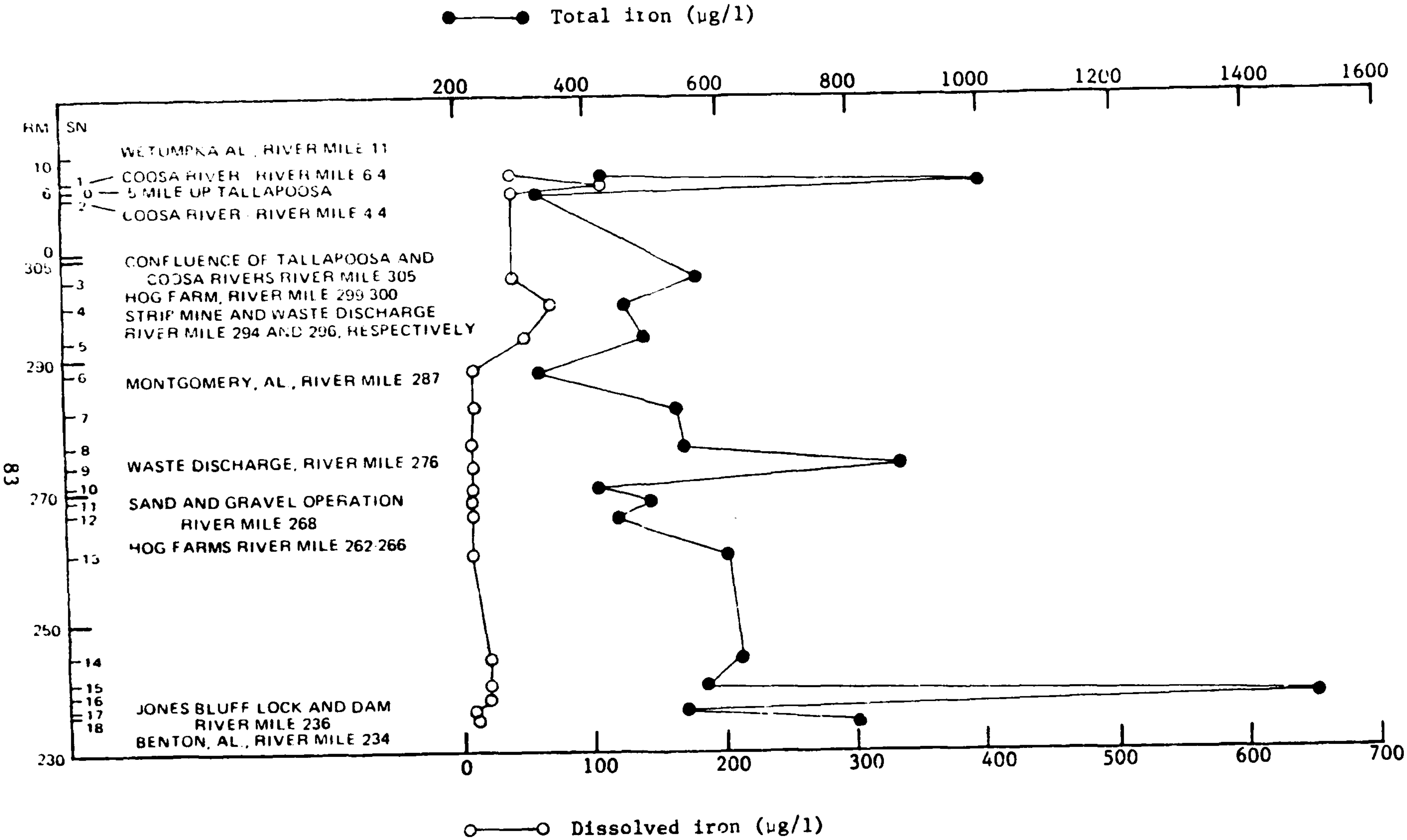


Figure 27.--Total iron and dissolved iron concentration versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April 10-18, 1978.

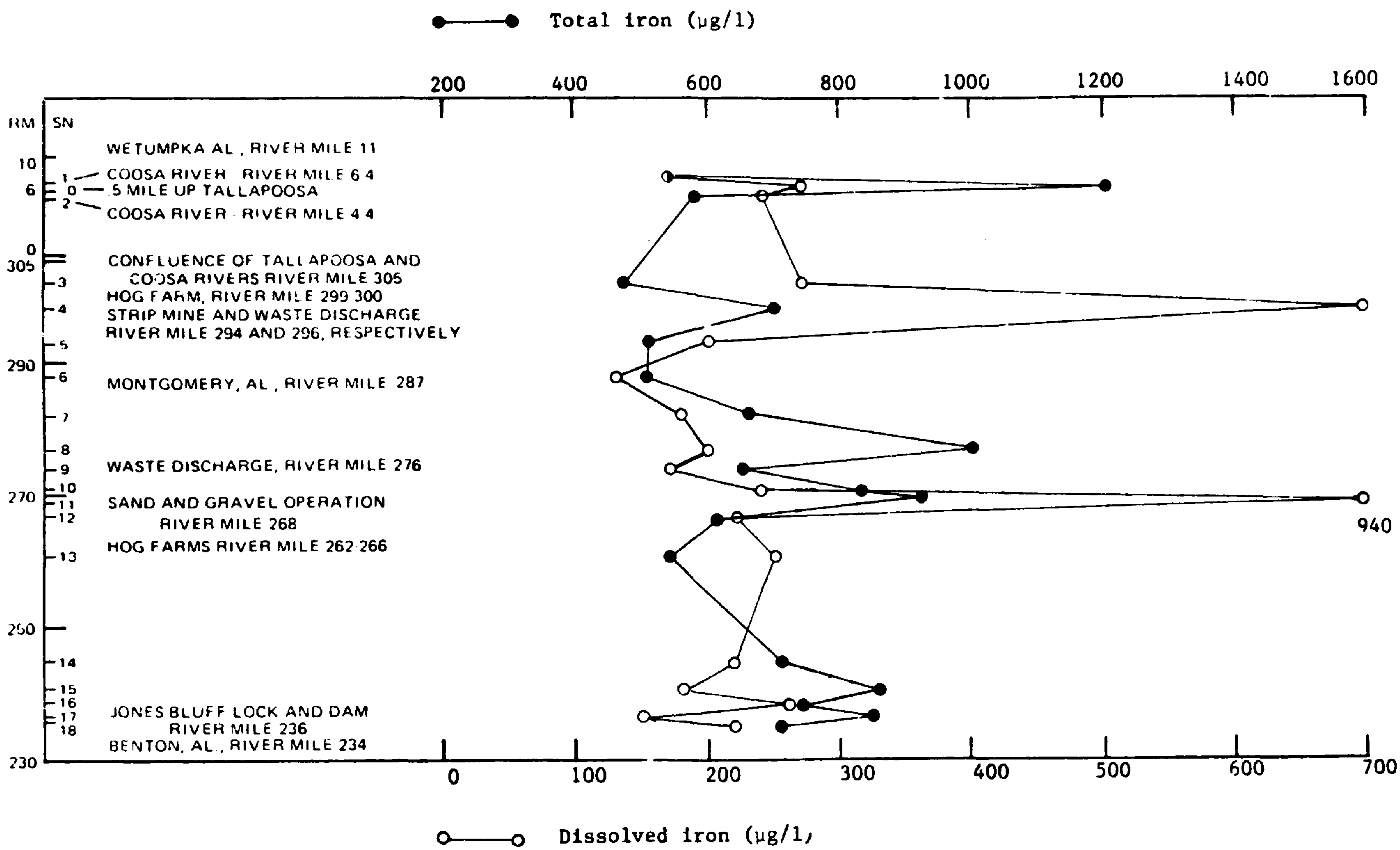


Figure 28.--Total iron and dissolved iron concentration versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, May 22-29, 1978.

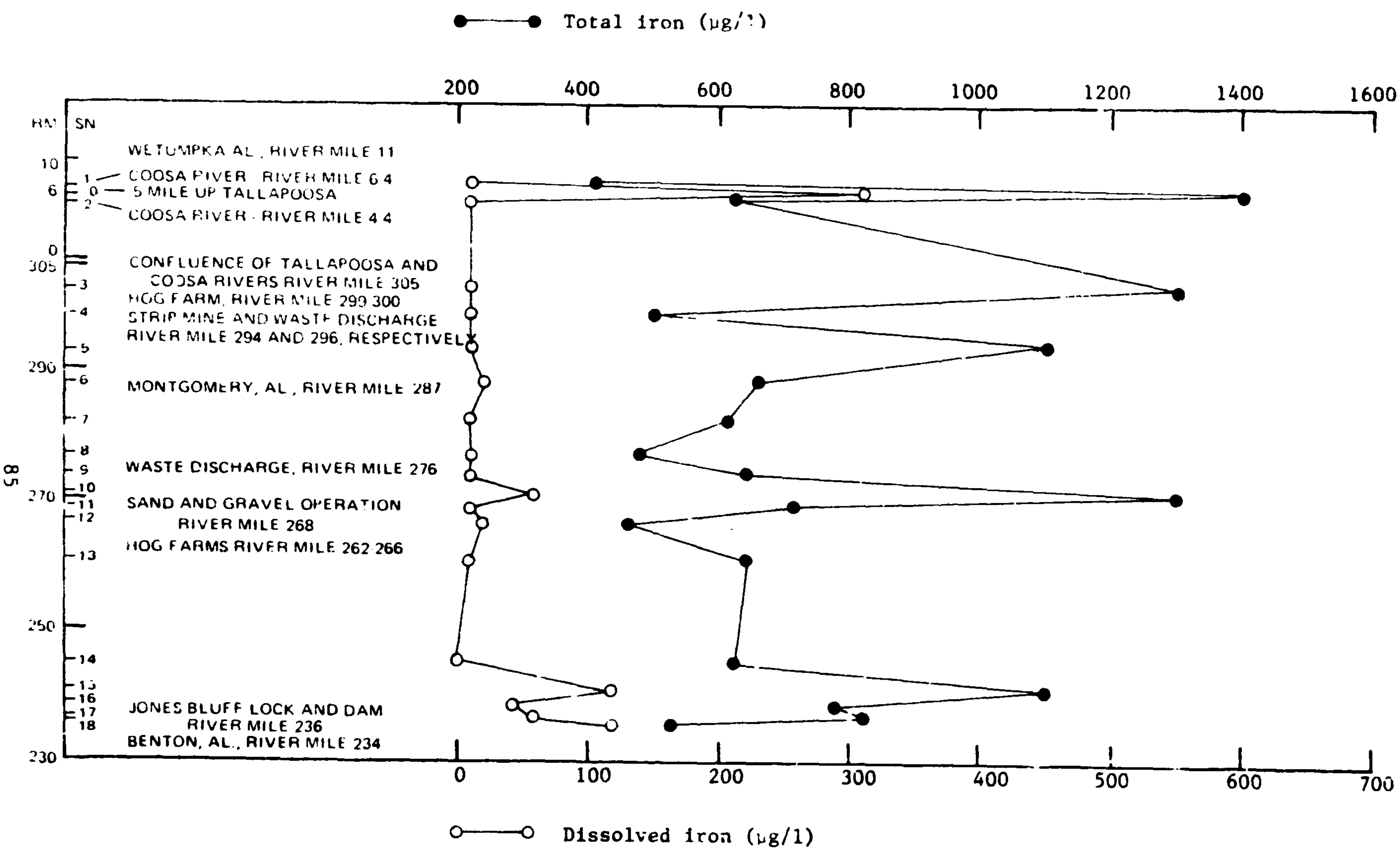


Figure 29 --Total iron and dissolved iron concentration versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, July 6-11, 1978.

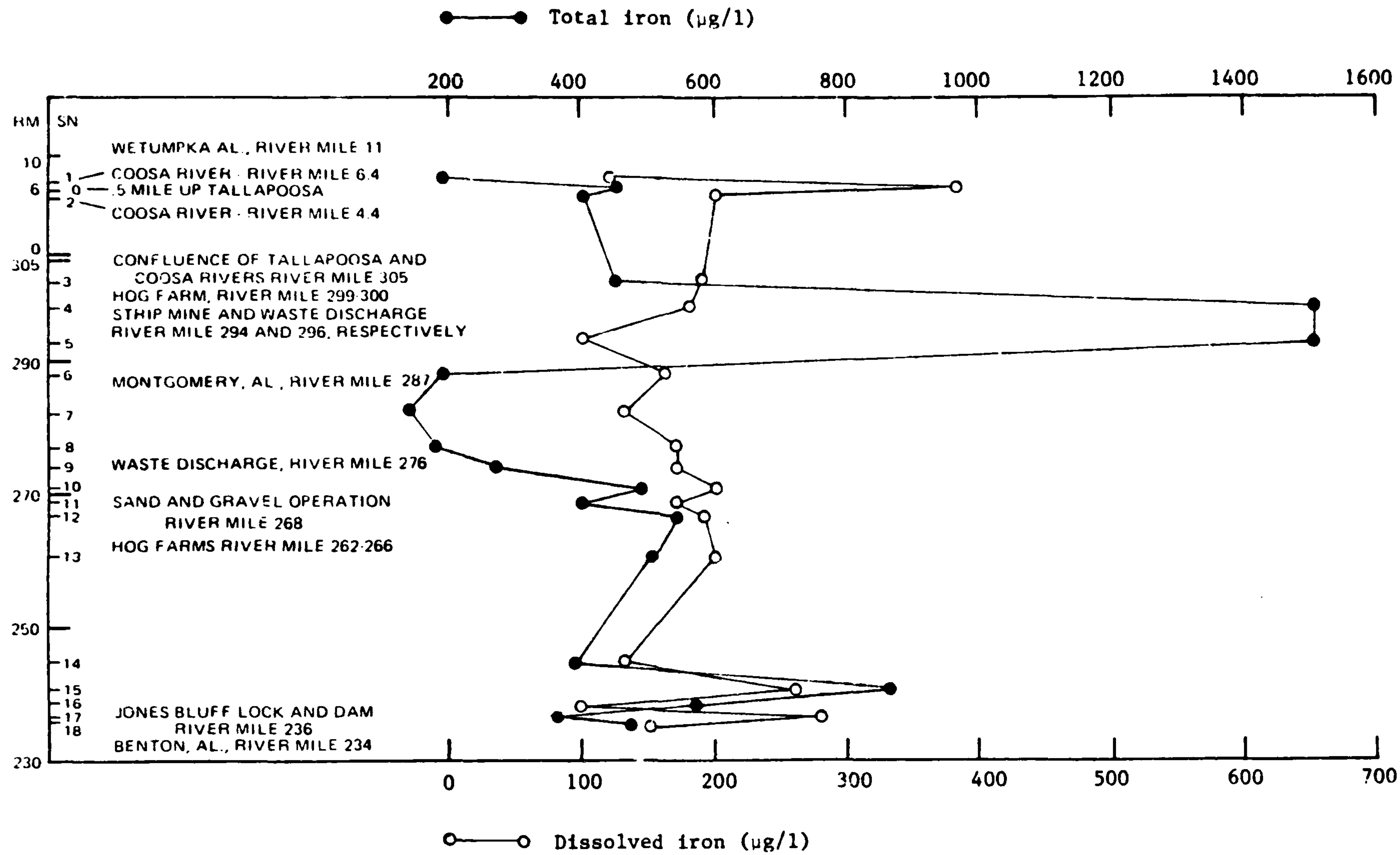


Figure 30.--Total iron and dissolved iron concentration versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7, 1978.

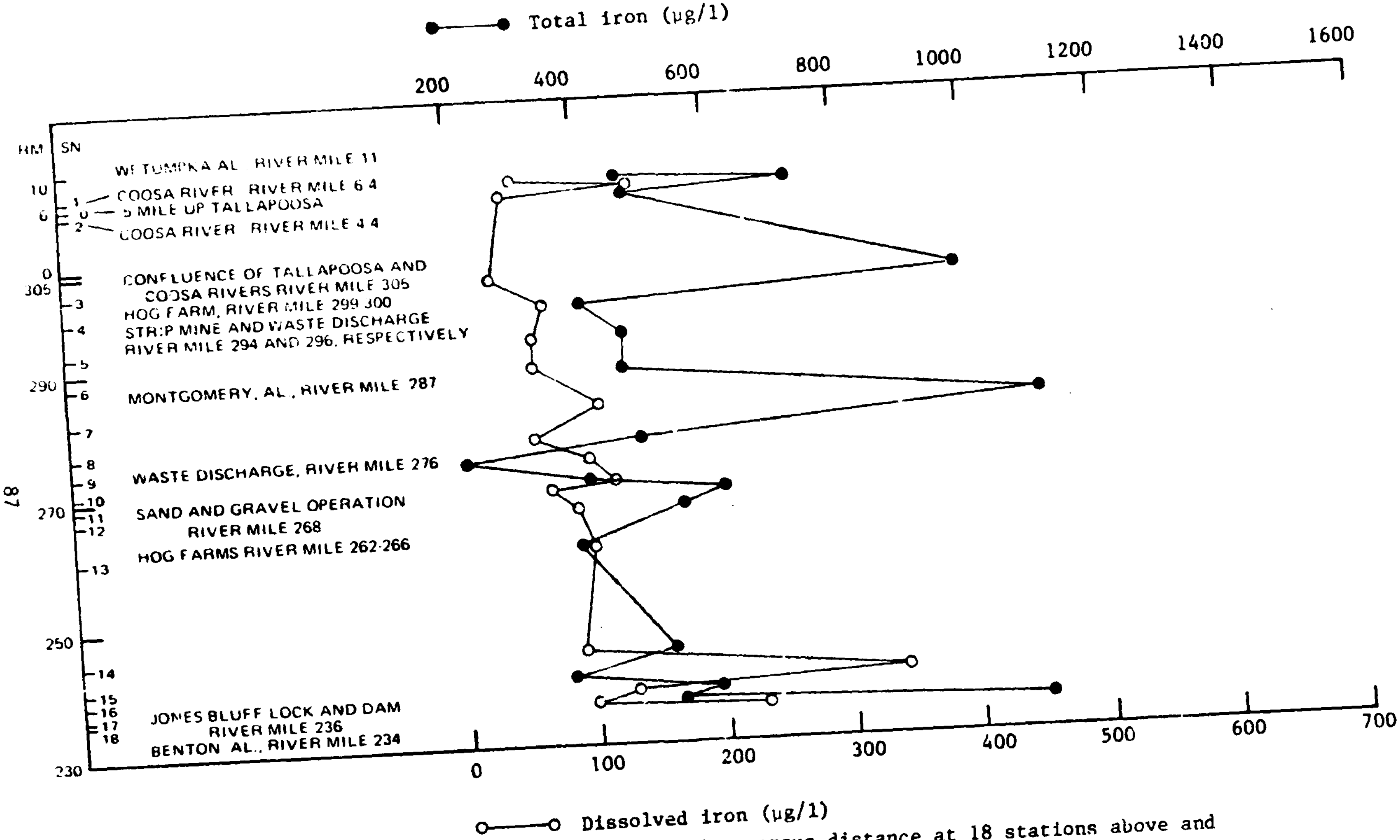


Figure 31.--Total iron and dissolved iron concentration versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, September 12-18, 1978.

sample. That filtering removes much of the iron present in the water indicates suspended solids or sediments in the water column are transporting significant amounts of iron. Further evidence of the effect of runoff on iron levels is implied by a comparison of iron levels in figures 27 through 31 with that of streamflow in figure 5. Following periods of high rainfall and high streamflow, iron levels in the river tended to be high, implying iron-bearing sediments are entering the river.

Total manganese concentrations nearly always exceeded the EPA (1976) criteria (50 μg/l) for domestic water supplies at stations in the Jones Bluff reservoir. At all but eight of the stations, manganese values were two to four times higher than the EPA standards (table A-1). Dissolved manganese concentrations exceeded the EPA criteria for domestic waters at 13 of the 19 stations at some time during the study. These 13 stations were 0, 1, 2, 6, 8 through 14, 16 and 17. However, as previously stated, only 3 river miles within this reservoir are classified for public water-supply use. Total manganese concentrations over 50 μg/l may affect the taste of drinking water, stain plumbing fixtures and laundry, and foster the growth of micro-organisms in reservoirs and other water systems. Tolerances for manganese in industrial water supplies are generally low (less than 200 μg/l), particularly for textile dyeing, food processing, distilling, brewing, paper making, plastics and photography (EPA, 1976). Crop tolerances to manganese differ widely, ranging from 0.5 to 500 mg/l, when grown in culture solutions (McKee and Wolf, 1963).

Highest concentrations of total manganese (120 to 240 μg/l) occurred at stations 1, 2, 8, 10, 11, 13, 16 and 17 primarily during runs 1, 2 and 3 (table A-1). These runs occurred during the wettest time of the study when streamflow was at its highest (fig. 5). It seems likely that runoff from the areas adjacent to the reservoir at these sites accounts in part for the high total manganese readings. The reason for the overall high manganese values in the reservoir is probably due to the weathering of manganese in the soils and rocks of Piedmont geologic area in the reservoir basin. Levels of dissolved manganese were rarely high in the reservoir, varying from 0 to 140 μg/l, with most values well below 50 μg/l (table A-1).

Nitrogen and phosphorus have long been considered to be primary elements contributing to accelerated eutrophication of lakes and reservoirs. The concentrations of these two nutrients are vitally important in controlling the rate of biological production; however, many other elements, some in trace quantities, are necessary for plant growth.

Total nitrogen (N) includes all forms of organic and inorganic nitrogen. Average total N concentrations for this study (0.36 mg/l) were almost exactly the same average as obtained in the 1977 study (0.37 mg/l). The TKN (which includes all nitrogenous organic compounds) averaged 0.10 mg/l for the 18 reservoir sampling stations during the 1978 study.

The major portion of the nitrogen in the Jones Bluff reservoir was in the inorganic form. Inorganic nitrogen includes that from nitrate, nitrite and ammonia. Both ammonia and nitrate plus nitrite concentrations fluctuated within a fairly narrow range (0 to 0.39 mg/l and 0.04 to 0.56 mg/l, respectively) throughout the reservoir (figs. 32 through 36). The low levels of ammonia as well as low levels of nitrate plus nitrite are very apparent at most stations in runs 3 through 5. In runs 1 and 2, levels of inorganic nitrogen were higher (figs. 32 through 36), likely reflecting increased runoff. The high rainfall during this period likely washed some of the spring fertilizer applied along the watershed into the reservoir.

In surface waters, ammonia concentration is normally 0.1 mg/l or less, as higher levels are usually indicative of sewage or industrial contamination (McKee and Wolf, 1963). Pollution raises the concentration of ammonium compounds and this, within limits, increases biological productivity. In excess, certain compounds of ammonium can be toxic to stream organisms. During run 1, ammonia levels were at their highest (figs. 32 through 36), with stations 1, 3, 12, 13 and 16 having levels above 0.18 mg/l. These levels are likely attributed to organic wastes entering the river (stations 1, 3 and 13) and from agricultural runoff.

Following rainfall, ammonia may change rapidly to nitrites and nitrates, thus accounting for a major source of nitrogen fertilization to a stream. The amount of nitrate and nitrite-nitrogen is influenced to a great degree by surface runoff and associated stream level and discharge. During runs 1 and 2, nitrite and nitrate-nitrogen levels were at their highest. This period of time was characterized by high amounts of rainfall (table 5) and high discharge (fig. 5). During runs 3, 4 and 5, nitrite and nitrate-nitrogen levels were considerably lower. At the time of these runs, discharge was low and phytoplankton populations were high leading to decreases in nitrogen levels.

Phosphorus is prevalent in nature both in the organic and inorganic form. In most analyses, phosphorus is separated into particulate phosphorus and dissolved inorganic phosphorus. Particulate phosphorus, which comprises over 90 percent of the total phosphorus in natural waters, includes phosphorus found in organisms, mineral phases of rock and soil, and phosphorus adsorbed

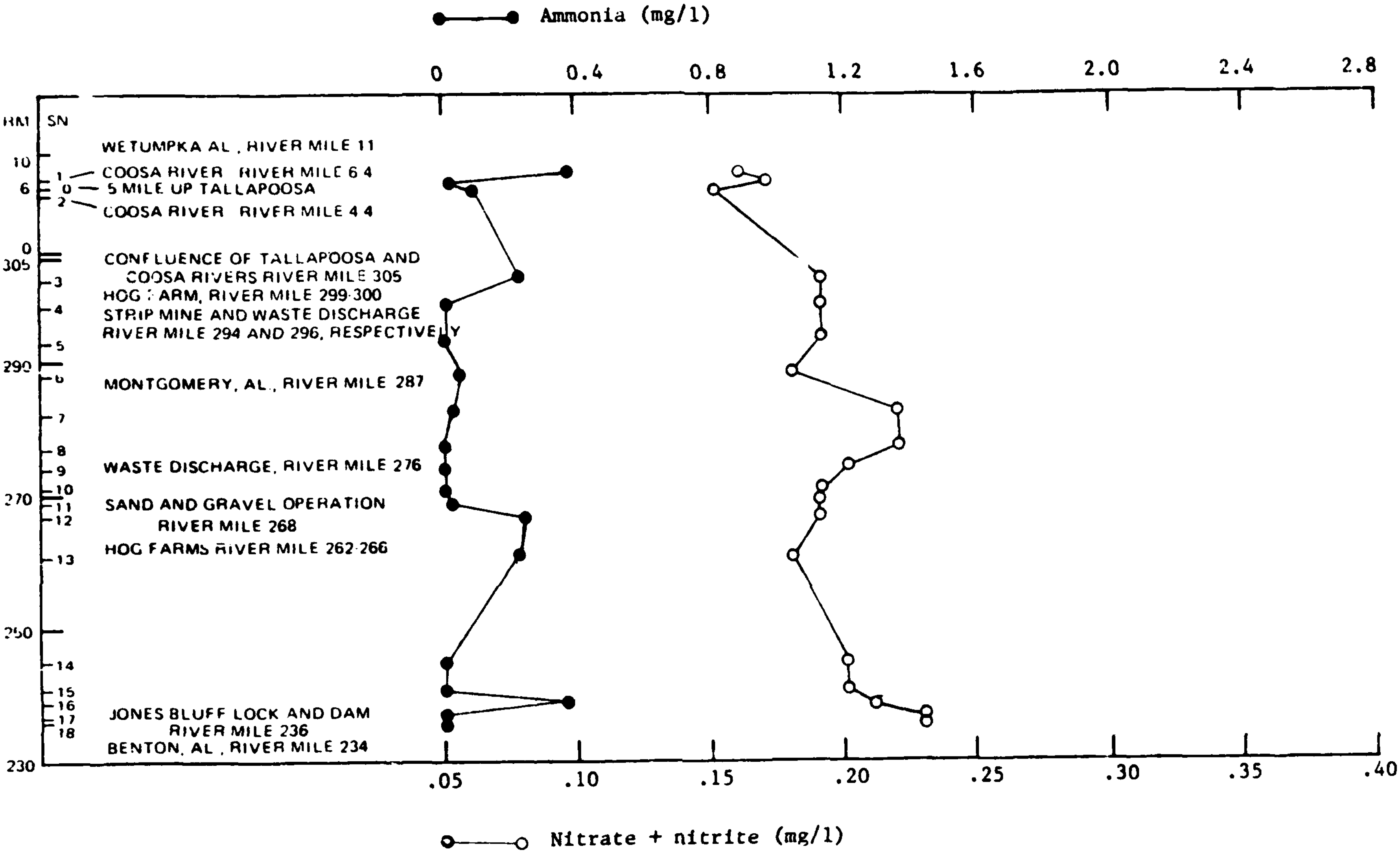


Figure 32.--Ammonia and nitrate-nitrite as N concentrations versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April 10-18, 1978.

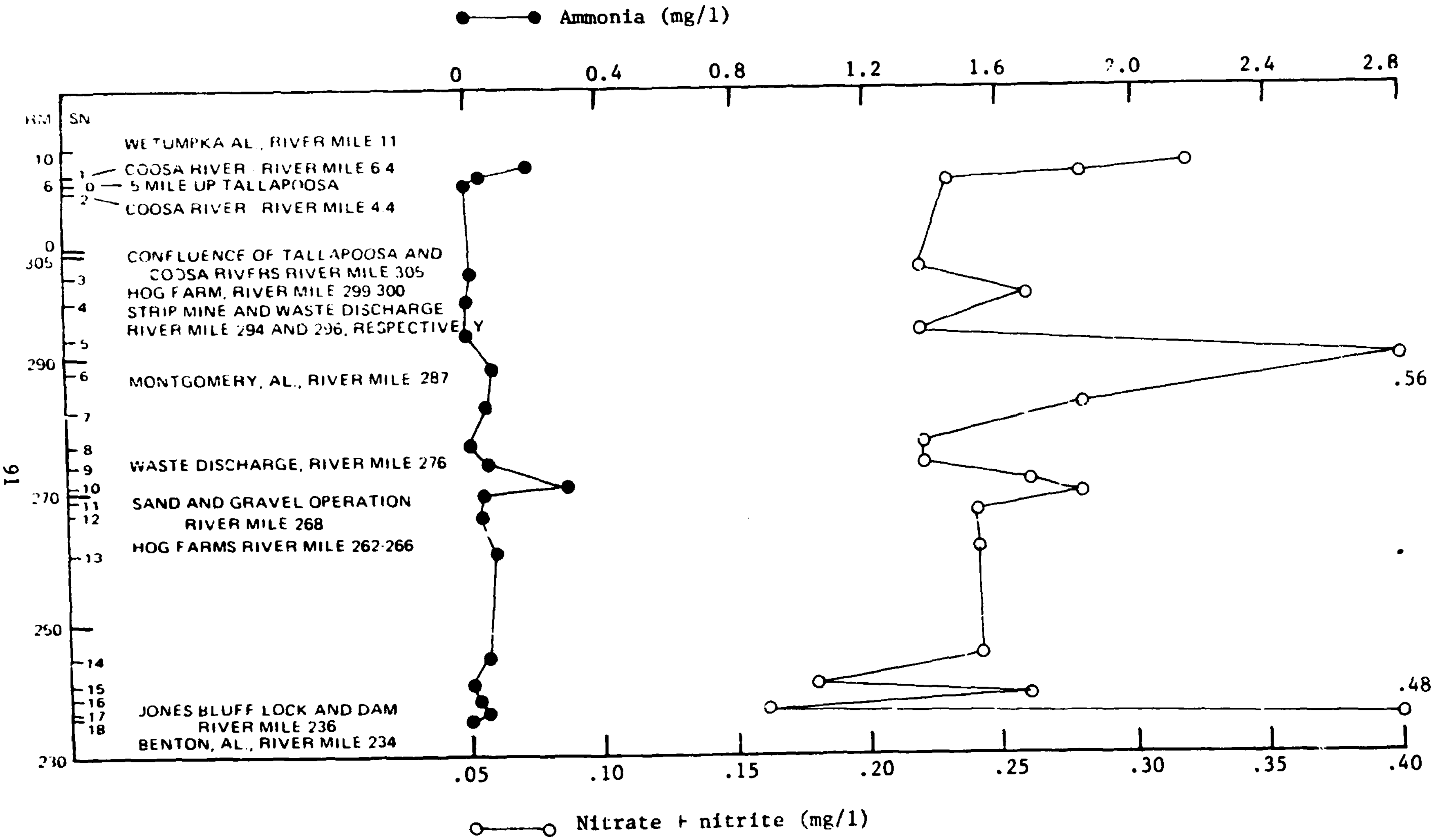


Figure 33.--Ammonia and nitrate-nitrite as N concentrations versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, May 22-29, 1978.

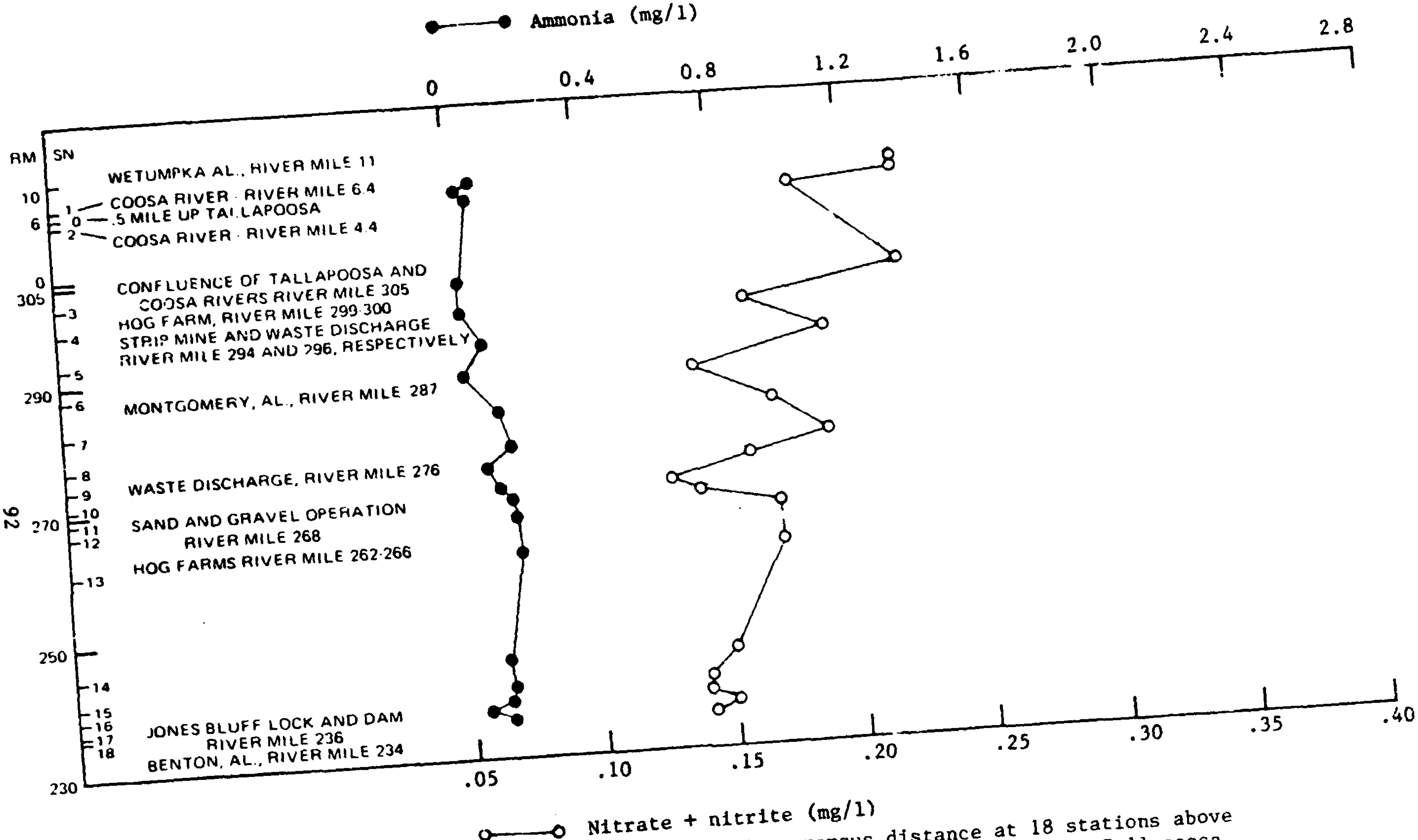


Figure 34.--Ammonia and nitrate-nitrite as N concentrations versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, July 6-11, 1978.

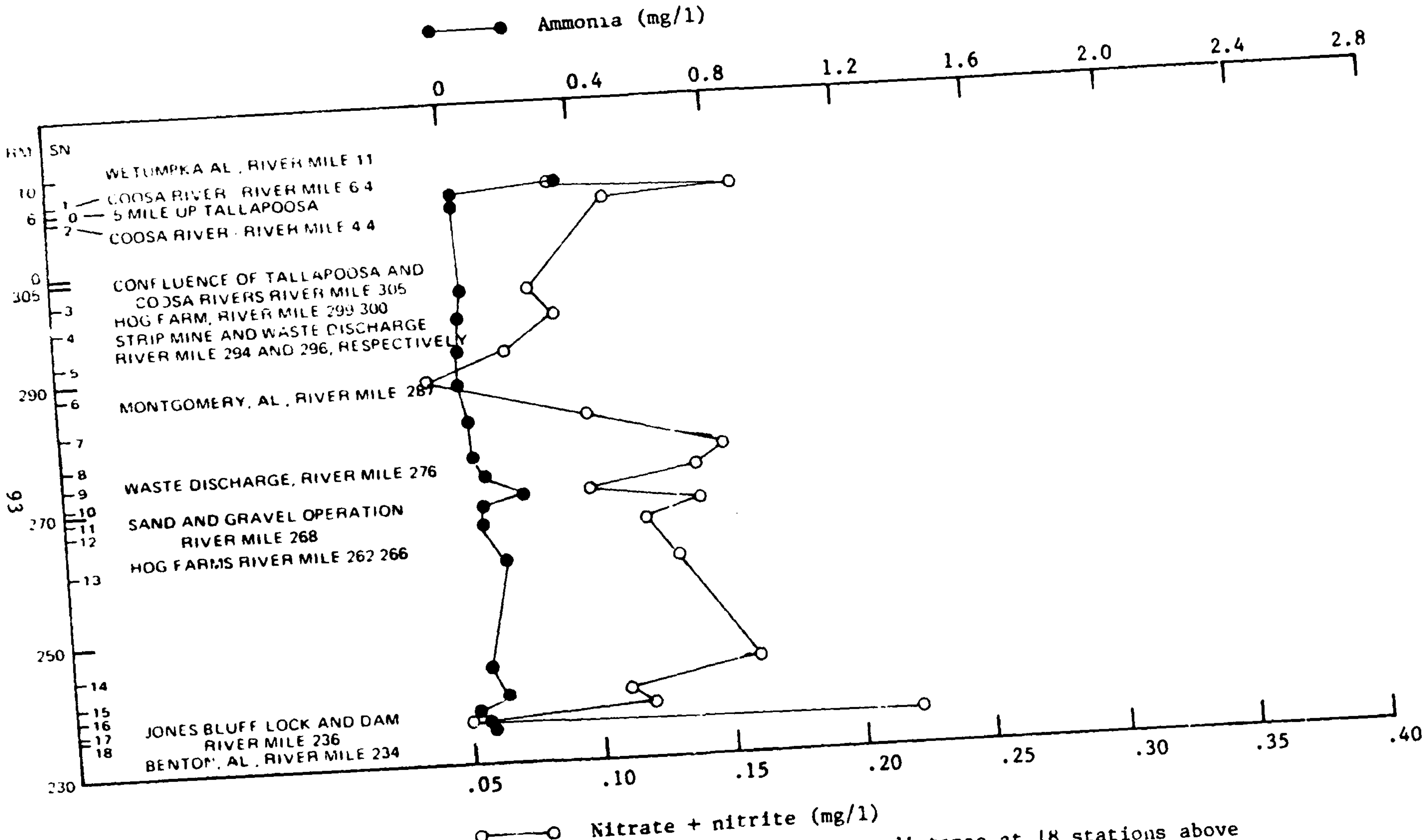


Figure 35.--Ammonia and nitrate-nitrite as N concentrations versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7, 1978.

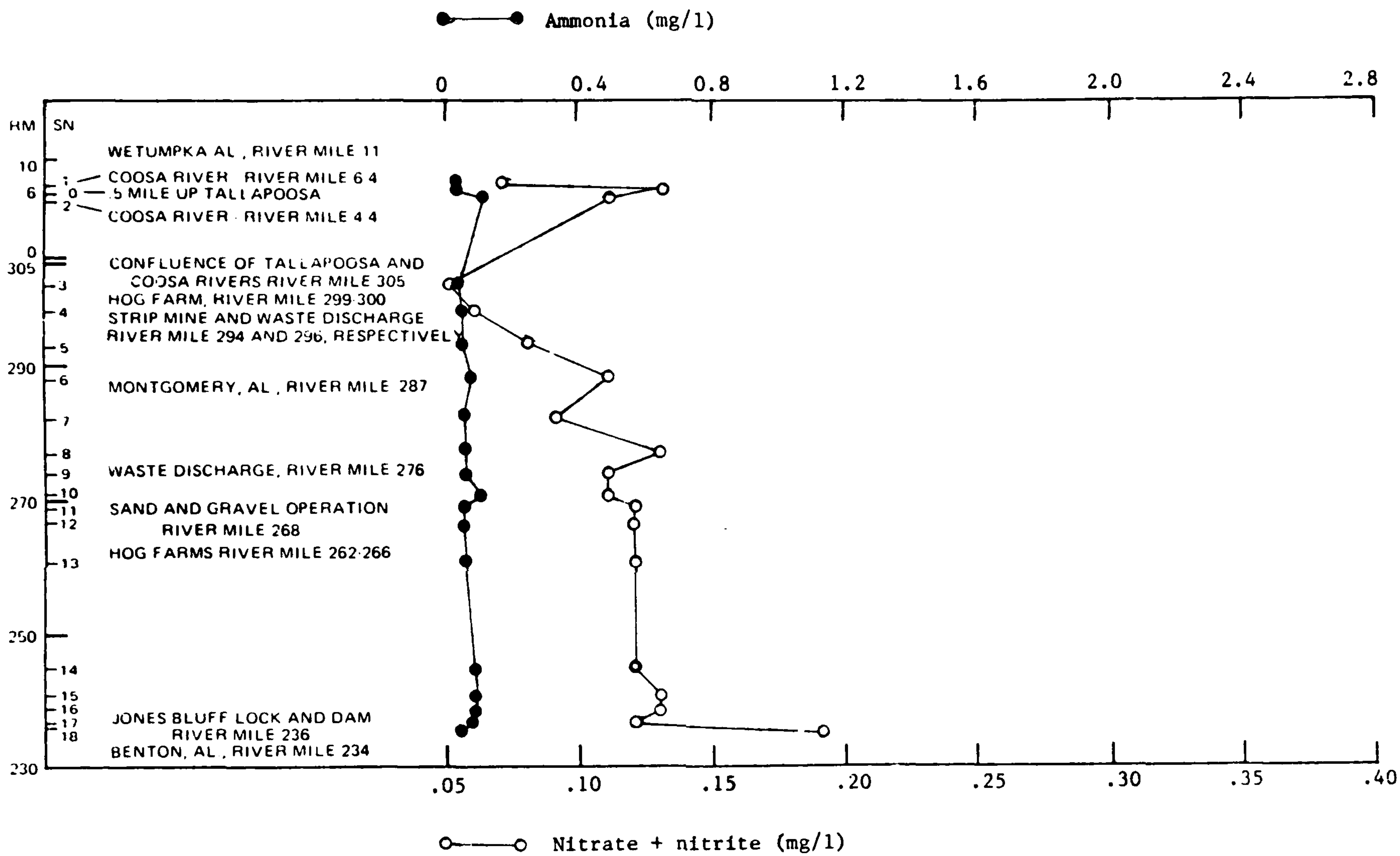


Figure 36.--Ammonia and nitrate-nitrite as N concentrations versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, September 12-18, 1978.

into organic debris (Wetzel, 1975). Dissolved inorganic phosphorus is primarily orthophosphate. Because of its role in animal and plant metabolism, phosphorus is a cyclic element, similar to nitrogen, in that the combined form is continually changing by decomposition and synthesis. In concentrations found in natural waters, phosphorus is not reported to be toxic to man, animals or fish. However, increased phosphorus levels often stimulate the growth of aquatic vegetation leading to eutrophication.

Although exact criteria for the limits of phosphorus in natural waters are not yet possible, several generalizations have been established (EPA, 1976). Within lakes and reservoirs, total phosphorus levels between 25 μg/l and 50 μg/l may occasionally stimulate excessive or nuisance growths of algae and other aquatic plants. Most lakes characterized as being unpolluted have total phosphorus levels ranging from 10 to 30 μg/l. In flowing waters higher levels of phosphorus (>100 μg/l) are not uncommon and cause little concern (Wetzel, 1975).

While total phosphorus in the river was at moderate levels (figs. 37 through 41), concentrations of orthophosphate, available for plant growth, were low. Total phosphorus levels varied from run to run and from station to station with no obvious pattern. Overall levels were somewhat higher during run 3 and at stations 10, 14, 17 and 18. Most of this phosphorus was likely particulate and the elevated readings during run 3 likely were a result of runoff during the high water. Station 10 possibly receives much of the phosphorus via a waste discharge point located upstream. The high levels upstream and immediately downstream from the dam seem to indicate phosphorus is being trapped to some degree.

Orthophosphate concentrations were generally low throughout the reservoir varying little from station to station. Values were usually below 0.4 mg/l, although readings of 0.05 mg/l and 0.06 mg/l were recorded at stations 10 (run 4) and 17 (run 1), respectively.

Calculated total hardness concentrations, based on the sum of calcium and magnesium ions, showed no apparent trends within the reservoir. The hardness values showed a very soft and low mineralized water in the Jones Bluff reservoir. This is expected because of the associated siliceous sands within the Piedmont area of the Alabama River basin in the Jones Bluff reservoir. In this area, no appreciable amounts of calcium or carbonaceous materials are readily available.

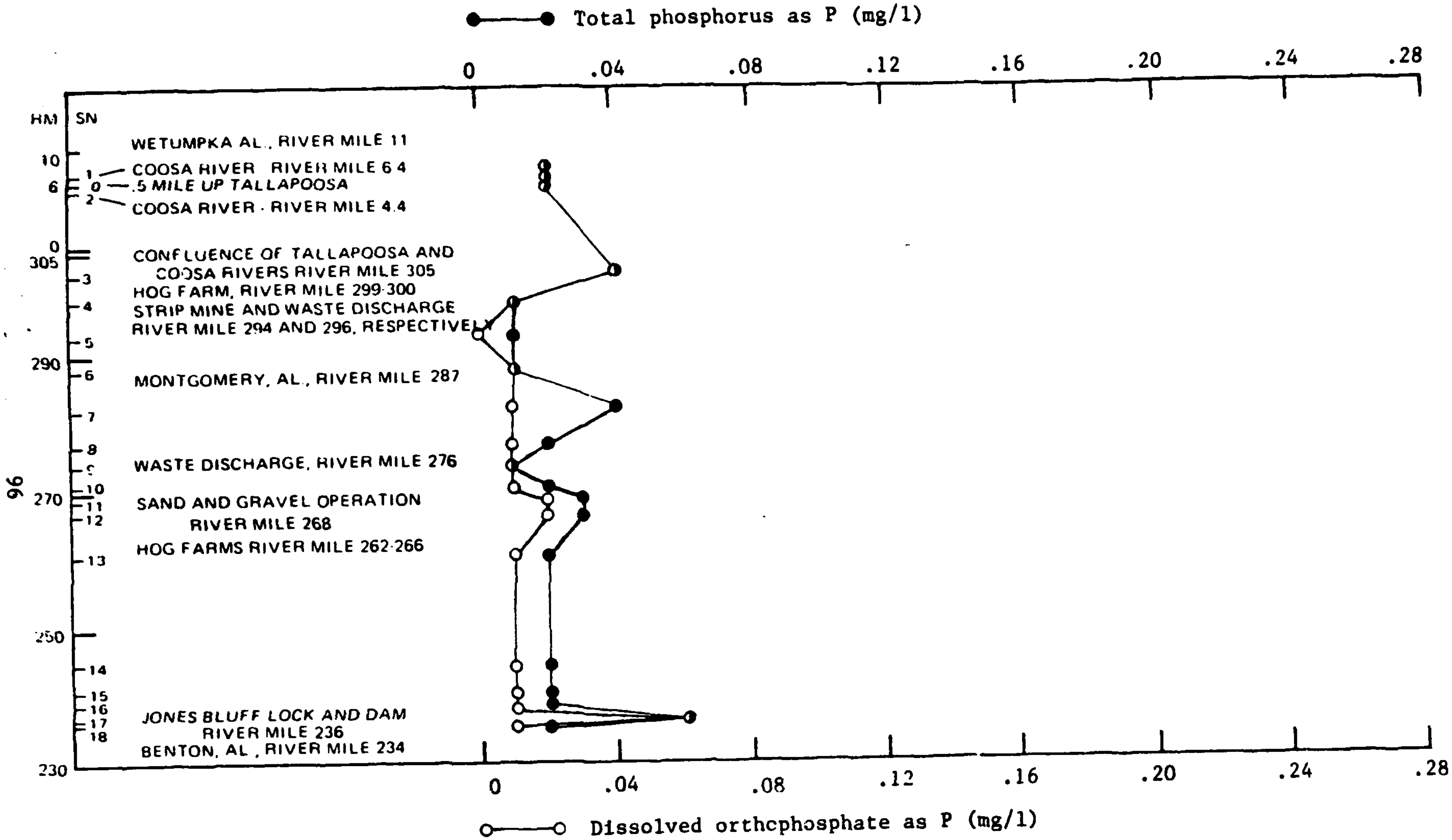


Figure 37.--Total phosphorus and dissolved orthophosphate as P concentrations versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April 10-18, 1978.

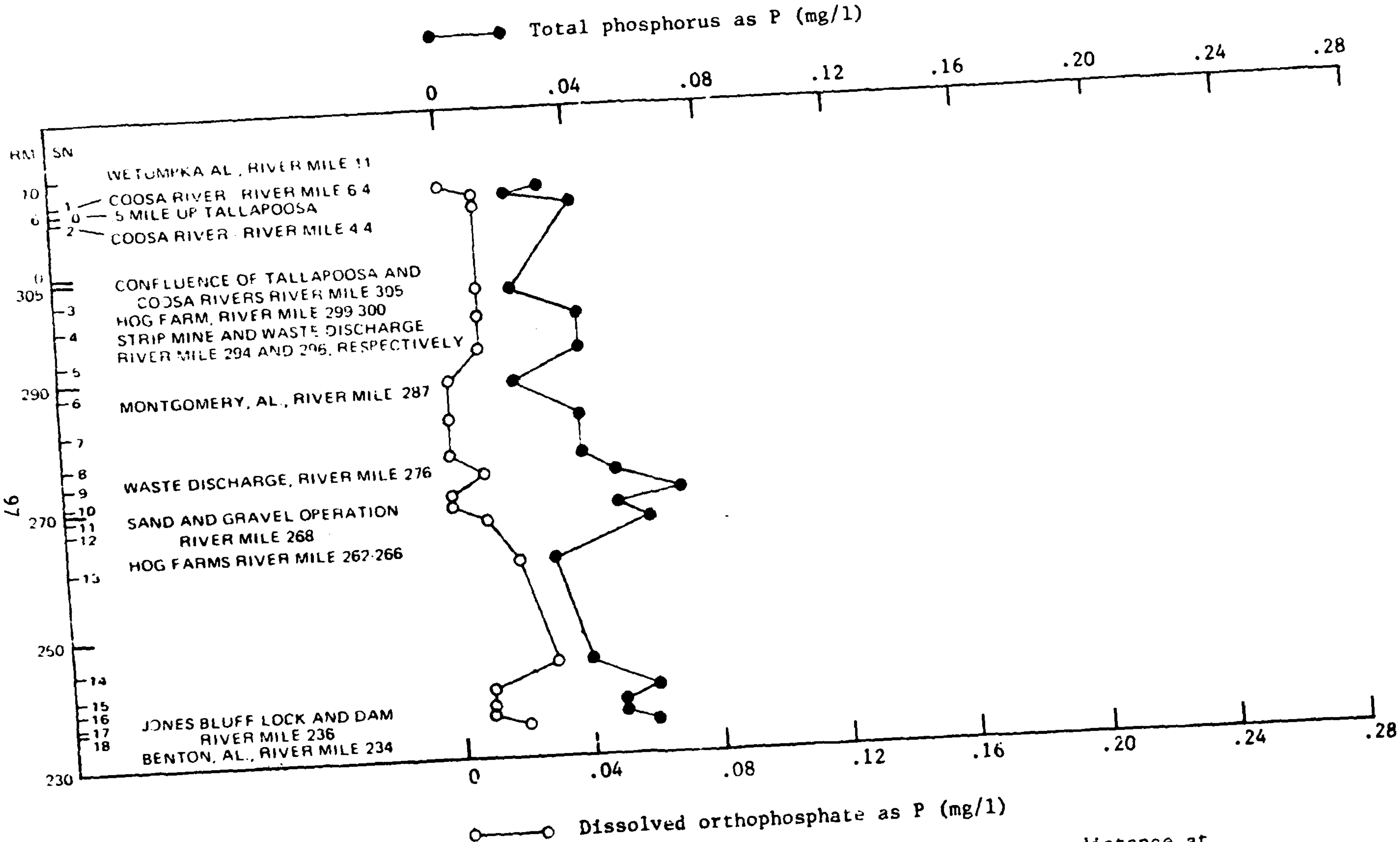


Figure 38.--Total phosphorus and dissolved orthophosphate as P concentrations versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, May 22-29, 1978.

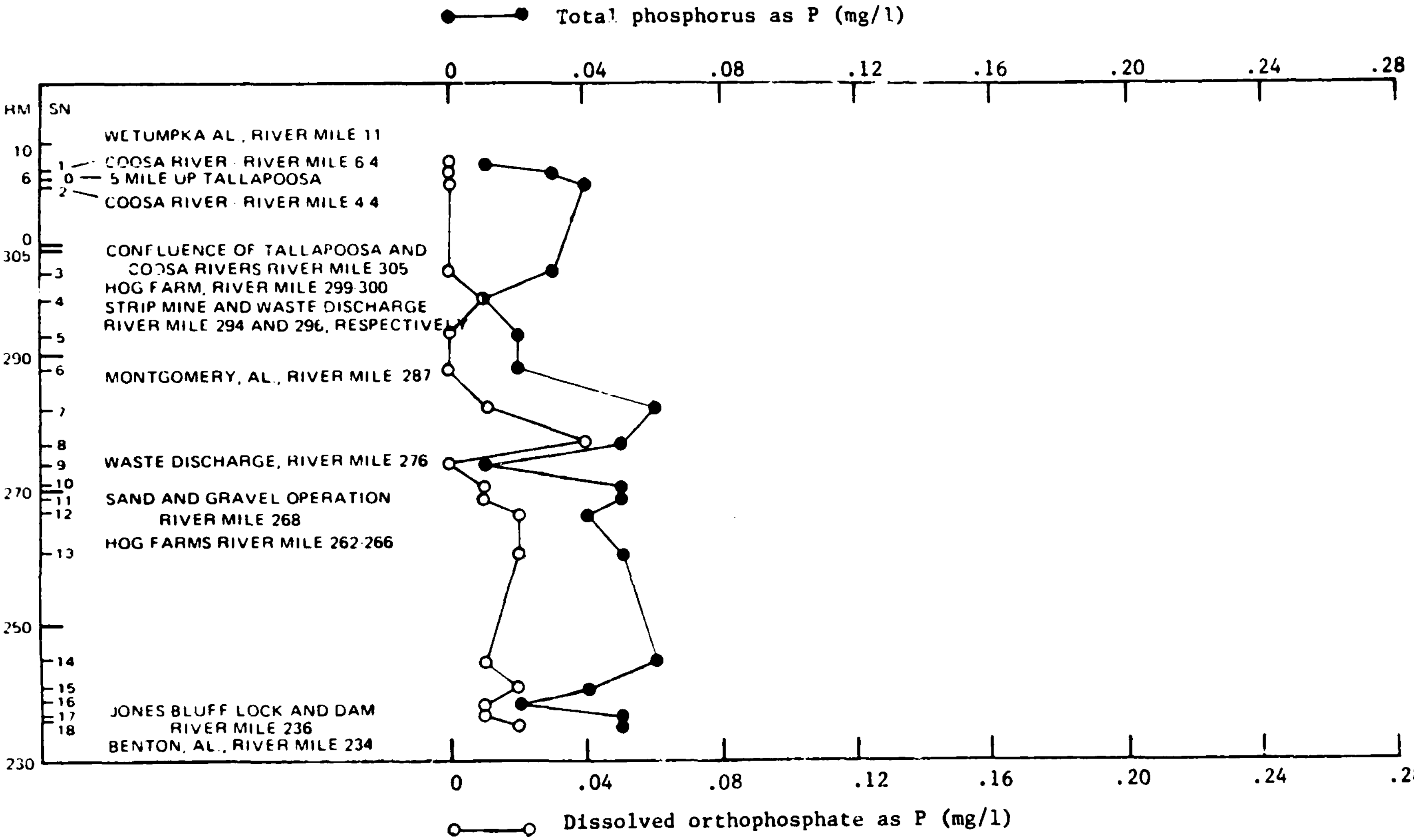


Figure 39.--*Total phosphorus and dissolved orthophosphate as P concentrations versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, July 6-11, 1978.*

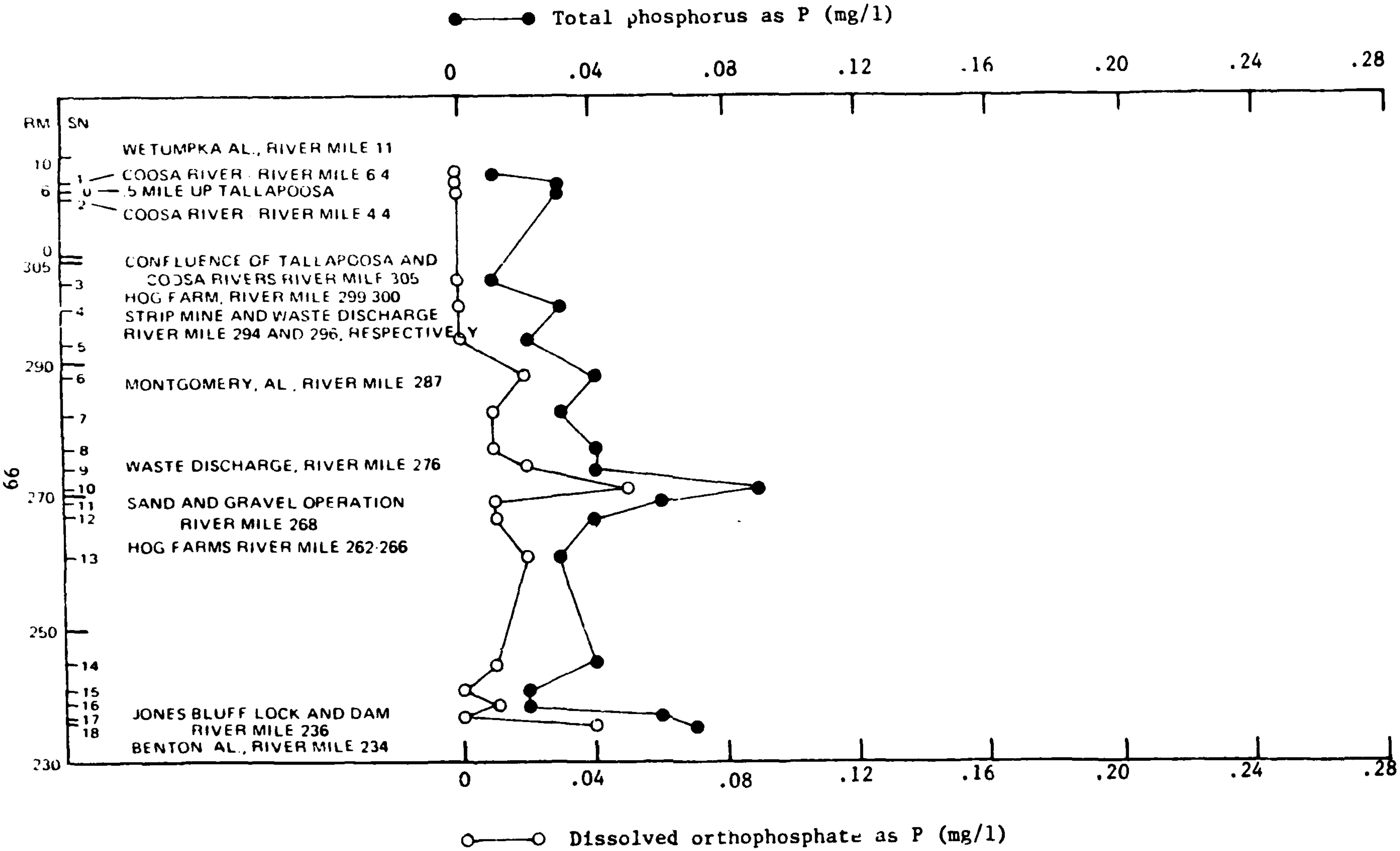


Figure 40.--Total phosphorus and dissolved orthophosphate as P concentrations versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7,1978.

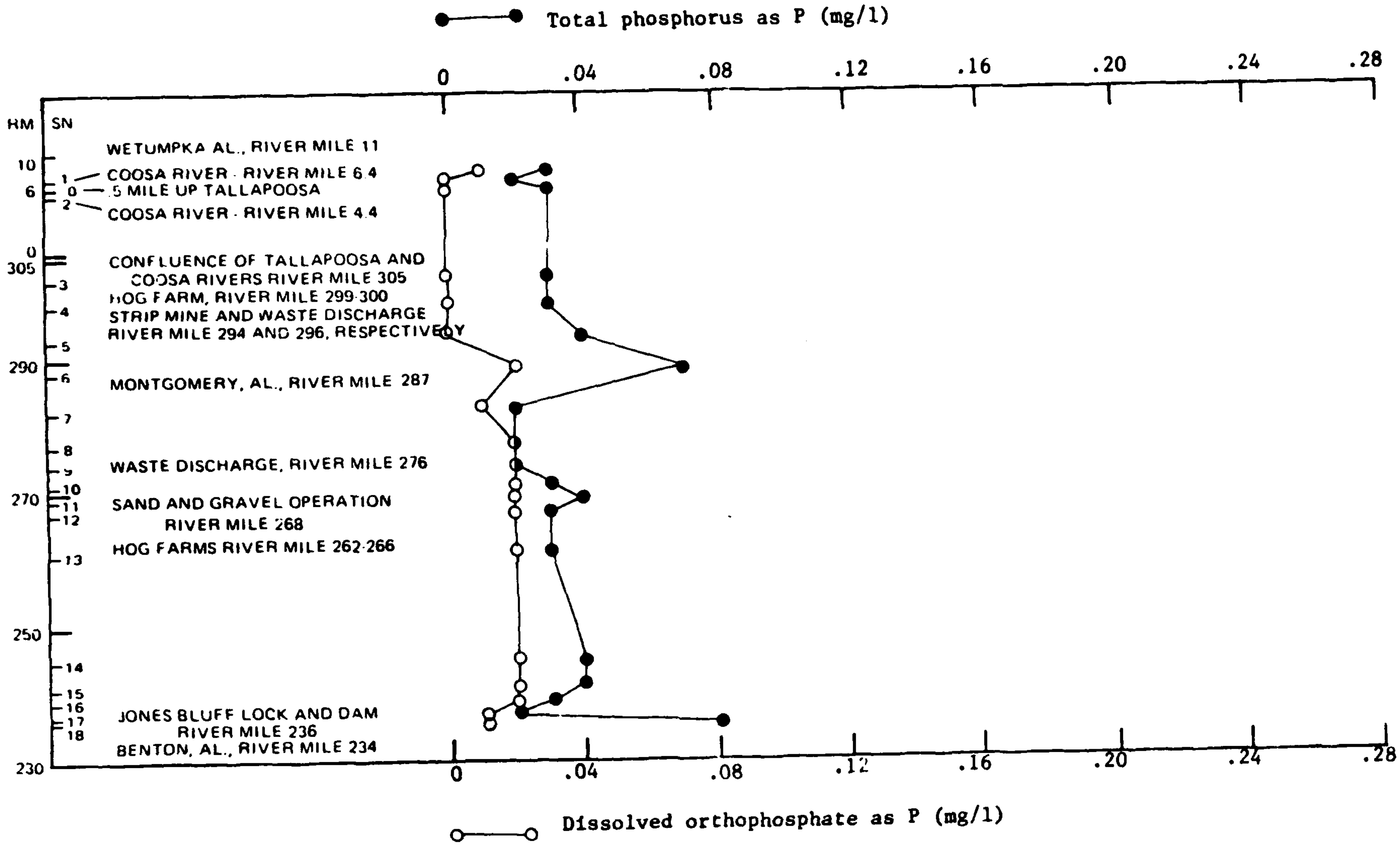


Figure 41.--Total phosphorus and dissolved orthophosphate as P concentrations versus distance at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, September 12-18, 1978.

Although total hardness values were low throughout the reservoir, calcium ions were three to four times more prevalent than magnesium ions. Calcium values averaged 9.2 mg/l, while magnesium averaged 2.7 mg/l.

Total sodium and potassium concentrations found in the river fell within normal background limits (less than 10 mg/l) (USGS, 1978). No established "fish and wildlife" or "safe drinking water" criteria limits have been established for these two parameters. Within the Jones Bluff reservoir, no trends were noted for either sodium or potassium concentrations (table A-1).

Sulfate and chloride concentrations in the river for both 1977 and 1978 were below acceptable limits for established federal or state criteria (250 mg/l) for "fish and wildlife" and "safe drinking water." No apparent trends either spatially or chronologically were noted.

The total zinc concentrations in the Jones Bluff reservoir during the 1978 study were generally well below the EPA criteria of 500 μg/l and present no problem. Only stations 1 and 14 during run 2 exceeded this criteria with concentrations of 640 μg/l. Zinc is abundant in rocks and minerals of the basin but is only a minor constituent of the river water.

2. Sediment

The river bottom was composed primarily of sand and clay, although several stations (0, 1 and 8) had noticeable quantities of gravel in the substrate (table 8). Silt constituted a sizeable percentage of the substrate at stations 9, 12 and 18. Because of differences in sampling techniques, comparisons with the 1977 data are not possible.

Most of the materials discharged into streams and rivers, including trace metals and organic compounds such as insecticides, polychlorinated biphenyls (PCB), herbicides, and certain industrial compounds, are released at subtoxic levels. Even though discharged at low concentrations, such materials are often concentrated in the sediments where they enter the aquatic food chain through benthic fauna and flora.

Of the 10 metals selected for sediment analysis, only concentrations of iron, manganese, and zinc were high (tables 9 and A-2) based on USGS background information (USGS, 1980). Total iron reached highest concentrations at station 5 (24,000 mg/kg), but values of at least 11,000 mg/kg were recorded at all but stations 0 and 9. Station 5 was located below a strip mining operation which may account for high levels of iron in the sediments. Most of the high concentrations of iron were, however, probably derived from the weathering of soils and rocks in the area rather than from manmade sources. Iron levels were also high in the water column (figs. 27 through 31); and, undoubtedly, much of the iron either settles or precipitates into the sediments.

Zinc was the second highest occurring metal in the sediments with high readings of 1,000 mg/kg and 1,300 mg/kg at stations 16 and 17, respectively. Zinc levels were never very high in the water column, but the high concentrations in the sediments above the Jones Bluff dam would seem to indicate a "trapping" of zinc by the impoundment. Zinc is abundant in rocks and minerals of the basin and likely enters the system via runoff.

Manganese levels in the sediments ranged from 140 mg/kg at station 9 to 940 mg/kg at station 14 (table A-2). Levels of manganese were also high in the water column, so high levels in the sediments were not unexpected. As with iron and zinc, most of the manganese enters the system via runoff from the manganese-bearing rocks and soil of the region.

Both iron and manganese levels in the sediments were higher in the 1977 study, but zinc levels were noticeably higher during the 1978 phase. Other heavy metals in the sediments were detected at low levels and concentrations varied little from year to year, with possibly the exception of arsenic, which was present at slightly higher concentrations in 1977.

Maximum concentrations of oil and grease in bottom sediments increased from a maximum of 340 mg/kg in 1977 to 640 mg/kg in 1978 (table 9). This may indicate that some organic pollution is being broken down at a slower rate as it enters the system. Sampling methods, however, differed in the two years and may account for much of the difference. No clear pattern of total volatile solids was present in the sediments. The highest value (49,100 mg/kg) was recorded at station 0, but high readings were also found at stations 5 (41,500 mg/kg), 10 (43,900 mg/kg), 12 (44,700 mg/kg), 14 (36,100 mg/kg), and 18 (36,200 mg/kg). Stations 5 and 10 are located below waste discharges which may account for high levels of organics in the sediments, but reasons for other high readings are not clear. It should be emphasized that sediment and nonfilterable residue analyses, which might elucidate concentrations of organics in the river, were only conducted at one time during the study. Additional collections over several seasons might clarify the relationship of organic material in the water column and sediments.

3. *Corbicula* Tissue

Analysis for heavy metals and pesticide components in mollusk (*Corbicula*) tissue revealed several significant facts about the ecology of the Jones Bluff reservoir. Since mollusks feed by filtering plankton and fine sediments near the bottom, their tissue concentrates the chemicals and pollutants that are present in the water column and sediments.

Of the heavy metals detected in the tissue analyses, zinc was present in largest concentrations (tables 10 and 11). Zinc levels were high in the sediments, so it is not too surprising that there is zinc uptake by *Corbicula*. That chromium was also detected in the tissues may be significant because of its toxicity and its tendency to move up the food chain. Since no previous measurements of trace elements in *Corbicula* are available for the study area, it is impossible to evaluate the level of chromium.

In addition to heavy metals, residues of several pesticides and industrial chemicals were detected in mollusk tissue. Aldrin, arochlor 1248 and 1254, dieldrin, endrin, heptachlor and heptachlor epoxide, mirex, p,p'-DDD, DDE and DDT, and pentachlorophenol residues were present in the tissues. Of these, pentachlorophenol and arochlor 1248 occurred at greatest concentrations, particularly at station 8, but only in the April collections. Pentachlorophenol (PCP) may be used as a fungicide, herbicide or wood preservative. Possibly the PCP in the river was derived from wood preservative used in construction of piers and boat houses near the river banks. It is also possible that tributaries entering the river may contain industrial discharges. Station 8 is located below Montgomery, Alabama, where industrial discharges occur. The area around Montgomery is also a heavily farmed region so agricultural runoff of PCP into the river is a possibility. Agricultural runoff might also account for a more seasonal pattern of PCP abundance in mollusks tissue. This compound, although detected in higher levels than other residues, was present in amounts far below animal toxicity levels (oral LD_{50}: 200 mg/kg in rats) (Christensen, 1973).

Arochlor 1248 which was often used in electrical transformers was also present at levels far below animal toxicity standards (oral LD_{50}: 500 mg/kg in rats) (Christensen, 1973). As with pentachlorophenol, arochlor 1248 was only detected in the mollusks tissue during April collections. During the August collections, however, arochlor 1254 was the only form of arochlor detected. Reasons for such a pattern of arochlor uptake are not known. There were several other residues with seasonal patterns of mollusk uptake. Dieldrin and heptachlor were only detected in April, while endrin and mirex were only detected in August. These are insecticide residues and their occurrence in mollusk tissue is probably related to their seasonal use in agriculture.

B. Biochemical

1. Adenosine Triphosphate

As adenosine triphosphate (ATP) occurs in the living cells of all plants and animals, measuring its concentration in the water column determines the total viable plankton biomass. In combination with dry biomass, chlorophylls *a*, *b* and *c*, and direct plankton counts, ATP helps clarify plankton dynamics within an aquatic system. As these relationships are considered in Chapter V, Subpart C, Water-Quality/Biological Density Relationships, ATP trends in the reservoir will only be briefly considered here.

ATP levels in the reservoir varied from station to station as well as from run to run. Highest values were recorded at station 12, run 3 (2,400 ng/l), and station 17, run 5 (3,450 ng/l). Overall, stations 0 and 12 appeared to have fairly consistent high readings of ATP during the study (table A-1).

2. Algal Growth Potential

Algal growth potential (AGP) was implemented to determine algal growth in river water under optimum conditions, such as optimum sunlight, optimum nutrients, and absence of heavy metals. AGP tests are utilized in determining the possibilities of algal blooms occurring in a system if growth conditions were ideal. Such blooms, particularly if primarily composed of blue-green algae, have several deleterious effects on an aquatic system. Their growth spurts and subsequent die-offs result in oxygen depletions and several species produce substances toxic to fish, birds and domestic animals (EPA, 1973).

Although only limited interpretation of algal growth potential tests is possible since data was collected only during runs 1, 4 and 5 at select stations, several generalizations are evident. AGP test results varied greatly from station to station and run to run. During run 1, phosphorus appeared to be limiting in the lotic portion of the reservoir, with nitrogen being more limiting in the lacustrine portion. In runs 4 and 5, AGP tests indicated that phosphorus and nitrogen were limited to some degree throughout the reservoir (tables A-5 through A-24).

3. Dry Biomass

No comparison of dry biomass concentration can be made for the 1977 and 1978 study periods since the parameter was not measured during 1977. In the 1978 study, the highest dry biomass concentrations occurred during run 1 at the riverine-like station 2 on the Coosa River below Mortar Creek near Elmore, Alabama (table A-1). The reason or reasons for the high dry biomass concentration at this station is unknown.

4. Chlorophyll

Chlorophyll *a* is the primary photosynthetic pigment of algae and its measurement estimates algal density. These measurements if calculated on an areal basis give an estimate of the productivity of the system. Most of the green algae and euglenophytes also contain the accessory pigment, chlorophyll *b* (Wetzel, 1975). Another category of aquatic algae, the Pyrrophyta, or dinoflagellates, Chrysophyta, particularly the diatoms, contain chlorophyll *c* as well as chlorophyll *a*. Ratios of the various forms of chlorophyll in an aquatic system give some indication of the community composition and production dynamics.

Concentrations of chlorophylls *a*, *b* and *c* recorded in the Jones Bluff reservoir during this study were considerably lower than values recorded during the 1977 study (table 6). In 1978, chlorophyll *a* values were pheophytin corrected, which may account for some of the difference in the two years.

The highest reading of chlorophyll *a* (140 µg/l) was at station 12 during run 3. Chlorophyll *b* values were usually about half of the chlorophyll *a* values at most stations. Values of chlorophyll *c* were fairly high in the reservoir, particularly during runs 1 and 3, often surpassing chlorophyll *a* values (table A-1). These values likely reflect the dominance of the diatom *Melosira* in the algal flora during much of the year. The interrelations of chlorophylls *a*, *b* and *c* in the algal dynamics of the reservoir will be considered in more detail in Chapter V, Subpart C, Water-quality/ Biological Density Relationships.

5. Bacteria

Both fecal coliform and fecal streptococci are utilized as indicators of animal wastes in water, as both groups occur in the intestines of warm-blooded animals. While fecal coliforms may survive in water for weeks or months, fecal streptococci survive only short periods. Because of this short survival time, their presence usually indicates recent pollution. Fecal streptococci are also host specific so it is possible to biochemically isolate the pollution source. Fecal coliform/fecal streptococci ratios are often used to provide information on possible pollution sources. A ratio greater than 4.1 is considered indicative of pollution from domestic sources composed of human feces, whereas ratios less than 0.7 suggest pollution from nonhuman sources. Ratios between 0.7 and 4.4 usually indicate wastes of mixed human and animal sources (APHA, 1980).

Two stations in the Jones Bluff reservoir during run 1 showed concentrations of fecal coliforms in excess of the state water-quality criteria of 2,000 CT/100 ml: station 1 (8,800 CT/100 ml) and station 7 (2,900 CT/100 ml) (table A-1). During the 1977 study, stations 6 and 7 exceeded this criteria limit in the September collections. Fecal streptococci levels at all stations were within the state criteria of 2,000 CT/100 ml. These limits were approached, however, at stations 7 (1,900 CT/100 ml), 8 (1,700 CT/100 ml), and 12 (1,700 CT/100 ml) during run 1 (table A-1). During the 1977 study, the fecal streptococci limits were exceeded at stations 5, 7, 8, 9, 11, 12 and 13. Most of the stations exceeding state bacteria limits were located near Montgomery and probably receive some urban drainage.

Ratios of fecal coliform to fecal streptococci (table 12) indicated that much of the fecal wastes entering the river was of mixed human and animal sources; however, during certain periods all stations, except 0 and 10, displayed ratios indicative of human waste contamination.

C. Biological

1. Phytoplankton

To illustrate fluctuations in population densities, total cells per liter of Chlorophyta (green algae), Chrysophyta (golden-brown algae), and Cyanophyta (blue-green algae) were plotted by river miles, station numbers and effluents for each sampling period (figs. 42 through 46). Also, to illustrate changes in the dominant divisions, the percentages of Chlorophyta, Chrysophyta, and Cyanophyta in each sample were plotted by river miles, station numbers, and effluents in figures 47 through 51 for each sampling period. For the latter set of graphs, the Pyrrophyta (dinoflagellates) and Euglenophyta (euglenoids) were omitted from the percentage calculations, as these two divisions usually represented only a small percentage of the total phytoplankton community.

Conclusions cannot be drawn about the entire ecosystem because of limited data; however, several trends can be detected for the 1978 sampling period.

1. The total phytoplankton biomass consistently increased from the first through the last collecting period (April through September) (figs. 42 through 46).

2. The dominant groups generally changed from diatoms in the spring and early summer to blue-greens in late summer (figs. 47 through 51).

3. Samples collected at station 0 on the Tallapoosa River often had a greater number of Chlorophyta and Chrysophyta

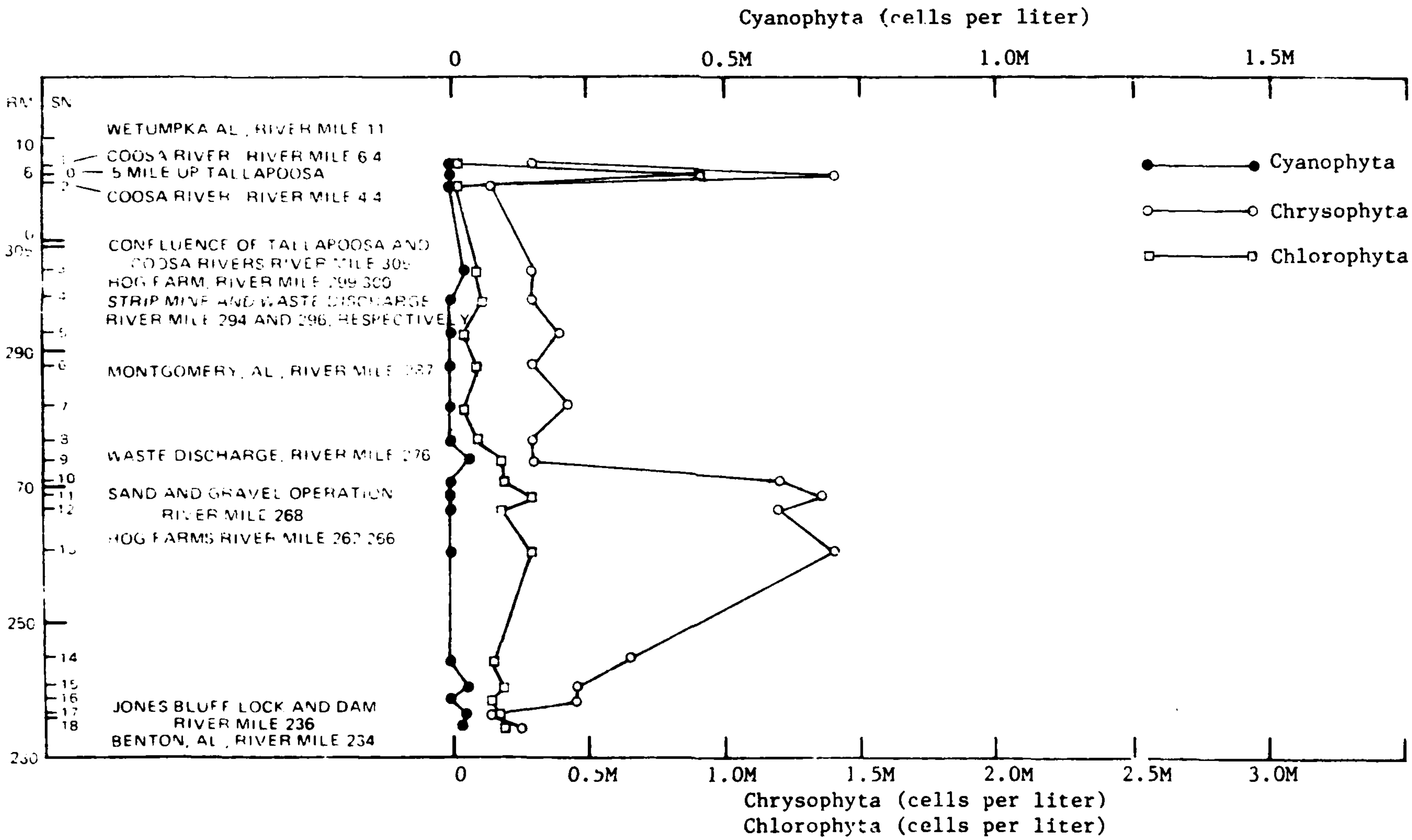


Figure 42.--Total cells per liter of Chlorophyta, Chrysophyta and Cyanophyta collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April 10-18, 1978.

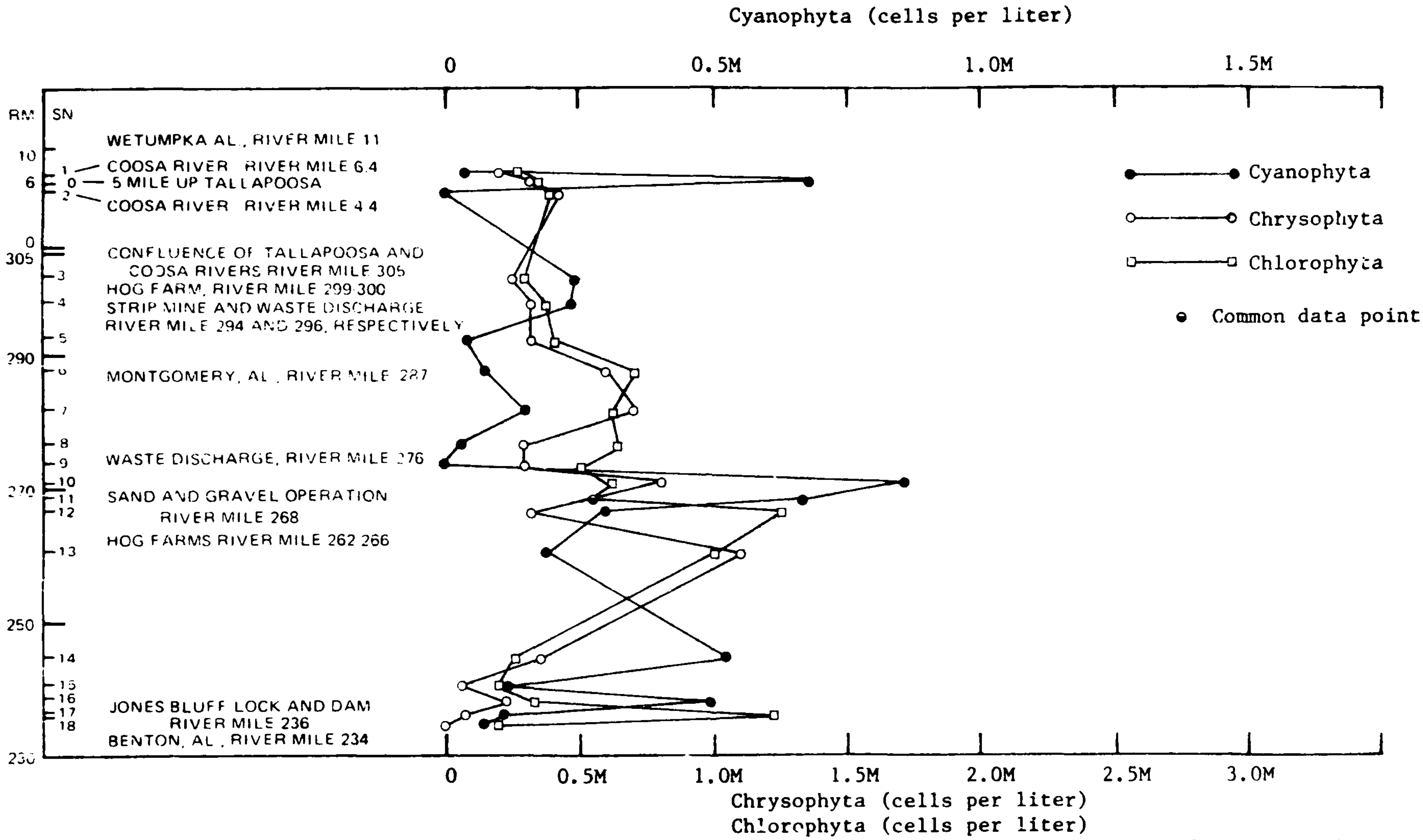


Figure 43.--Total cells per liter of Chlorophyta, Chrysophyta and Cyanophyta collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, May 22-29, 1978.

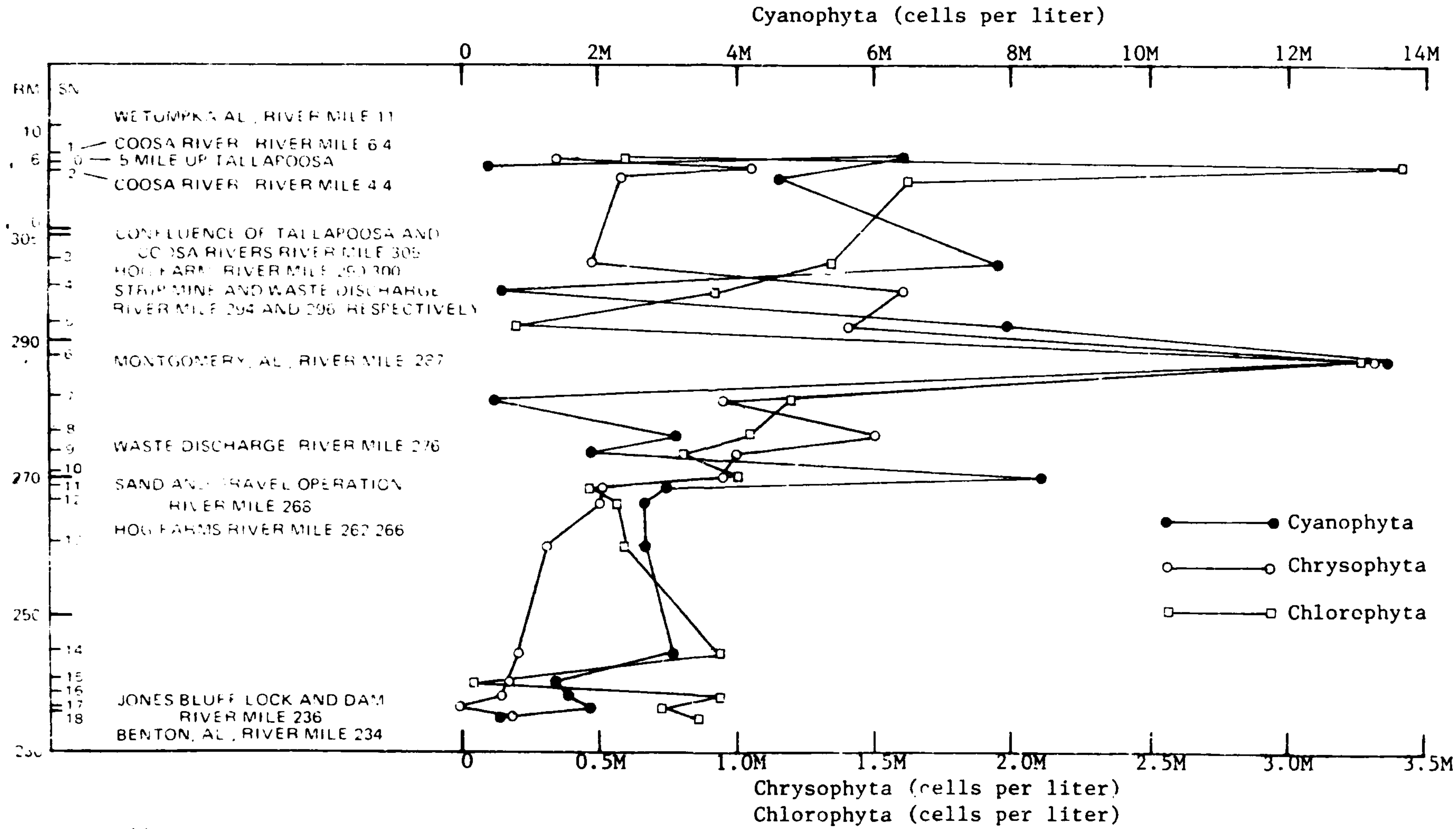


Figure 44.--Total cells per liter of Chlorophyta, Chrysophyta and Cyanophyta collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, July 6-11, 1978.

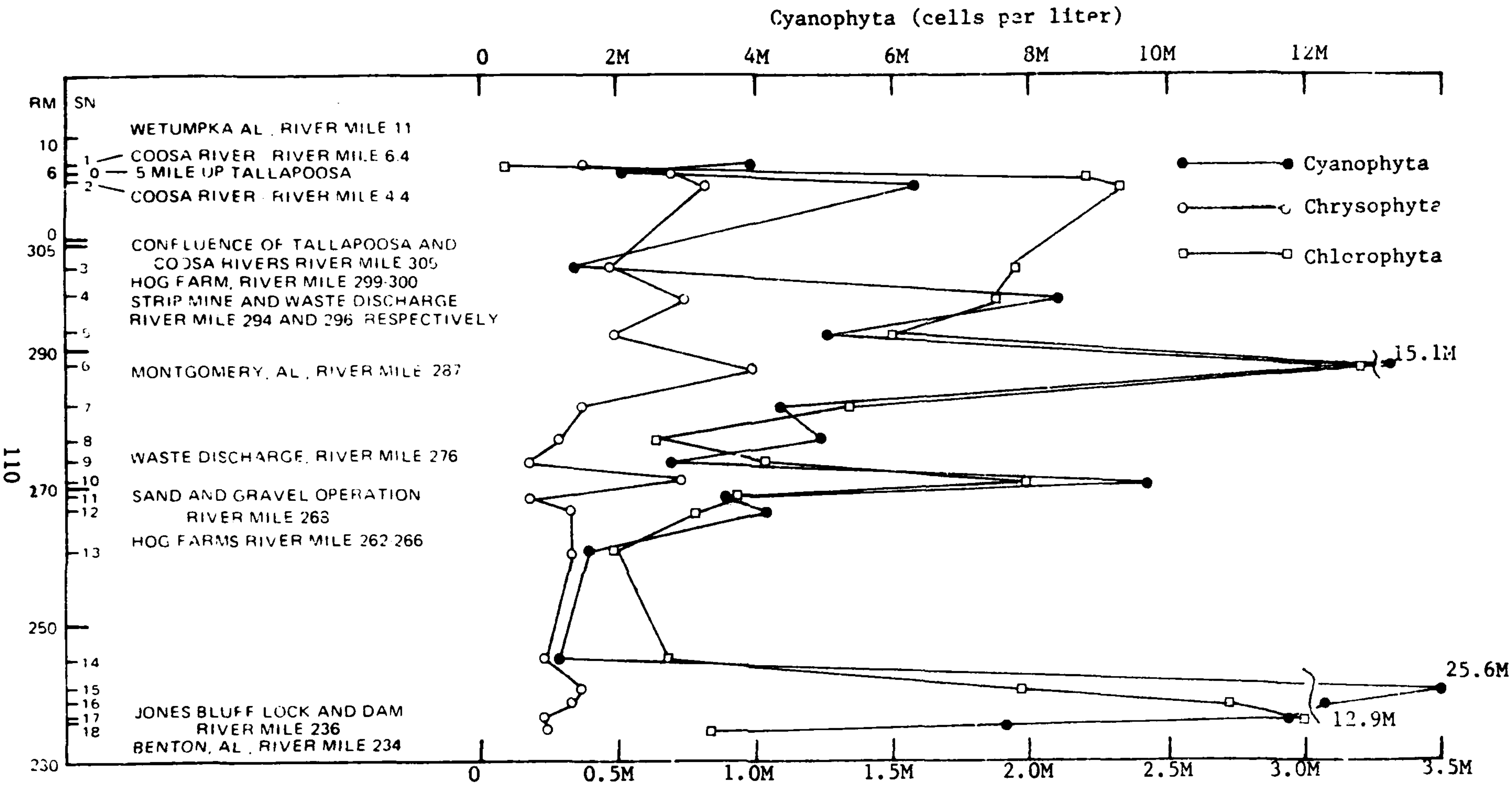


Figure 45.--Total cells per liter of Chlorophyta, Chrysophyta and Cyanophyta collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7, 1978.

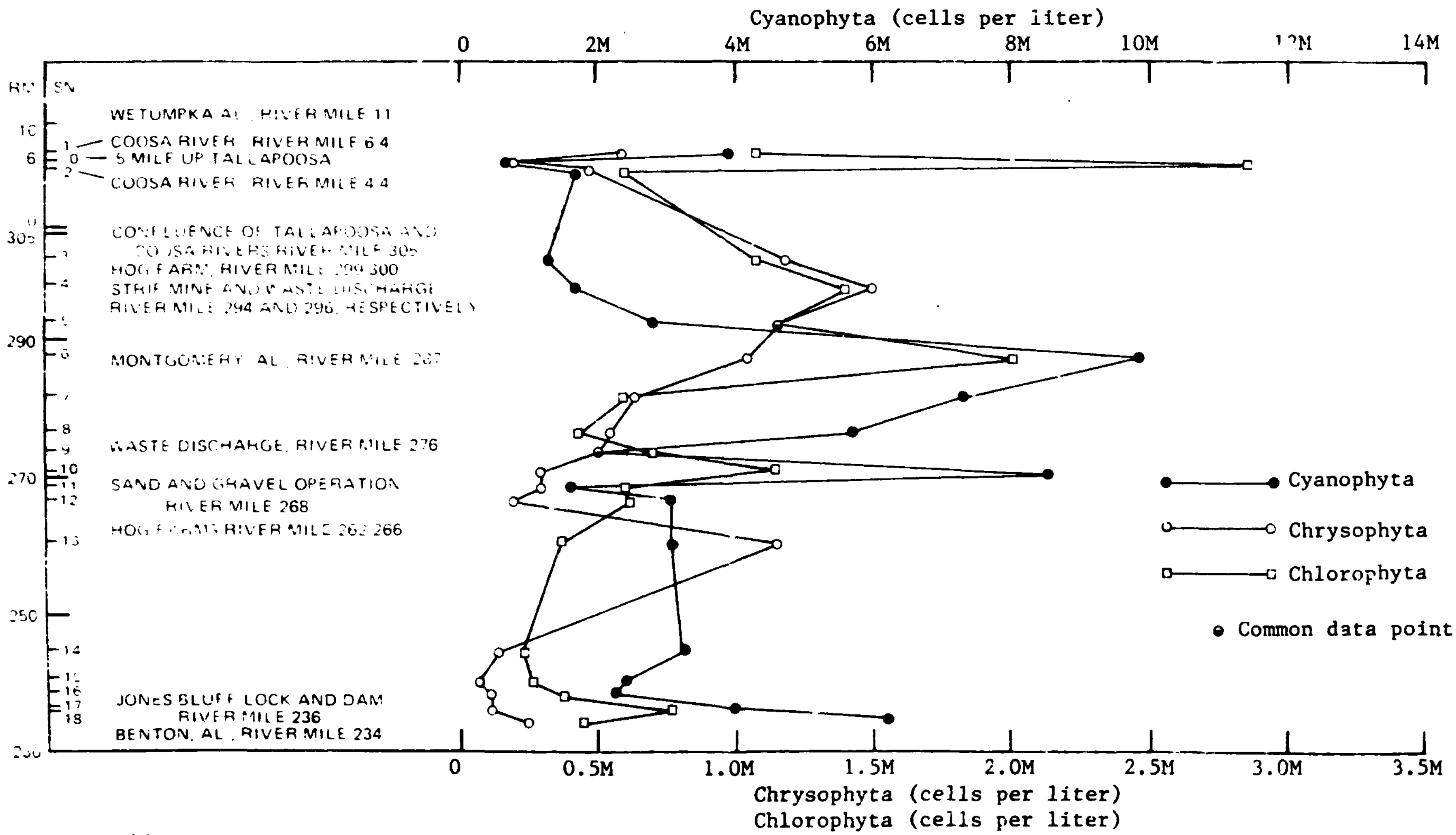


Figure 46.--Total cells per liter of Chlorophyta, Chrysophyta and Cyanophyta collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, September 12-18, 1978.

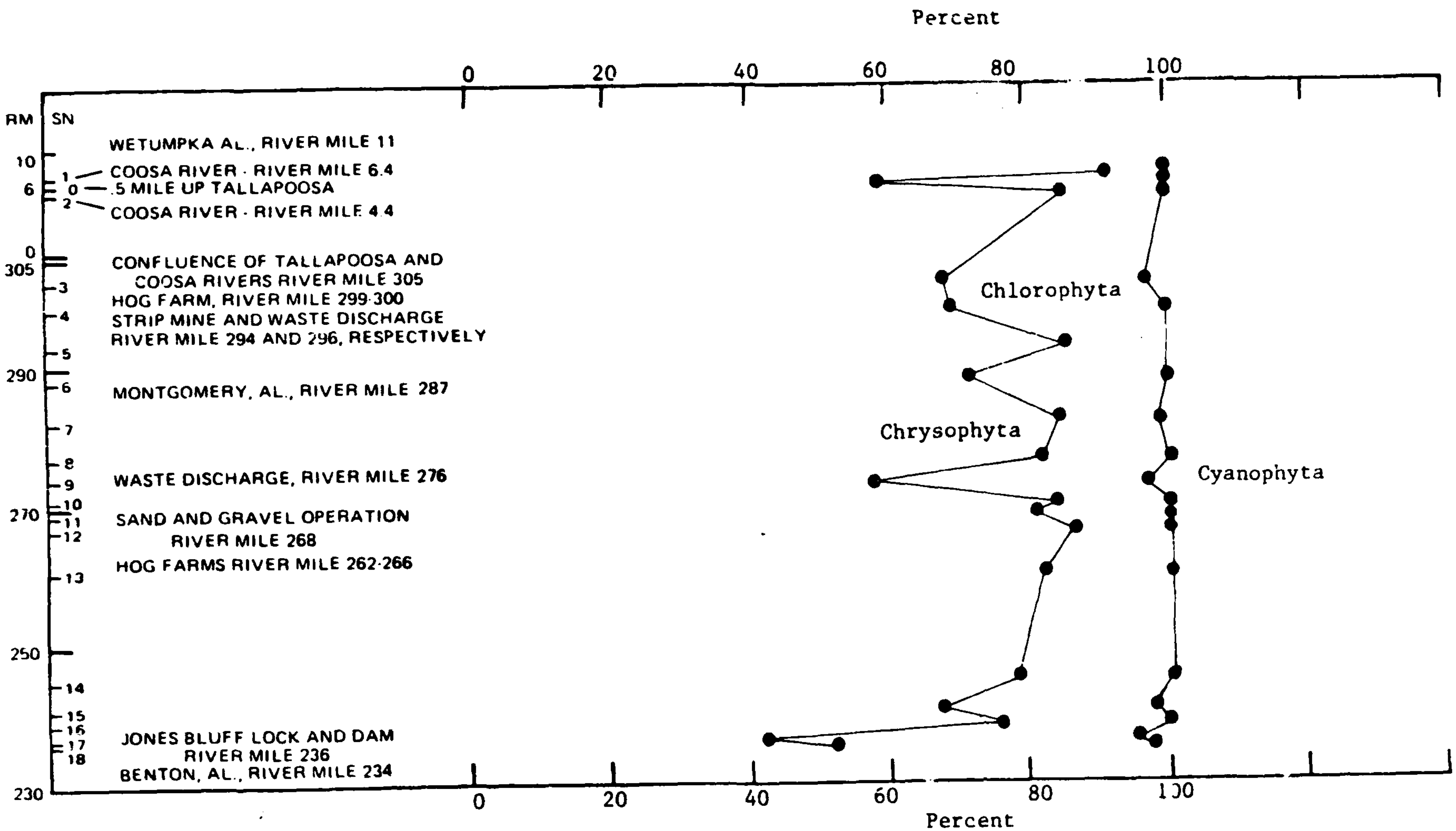


Figure 47.--Percentages of Chlorophyta, Chrysophyta and Cyanophyta collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April 10-18, 1978.

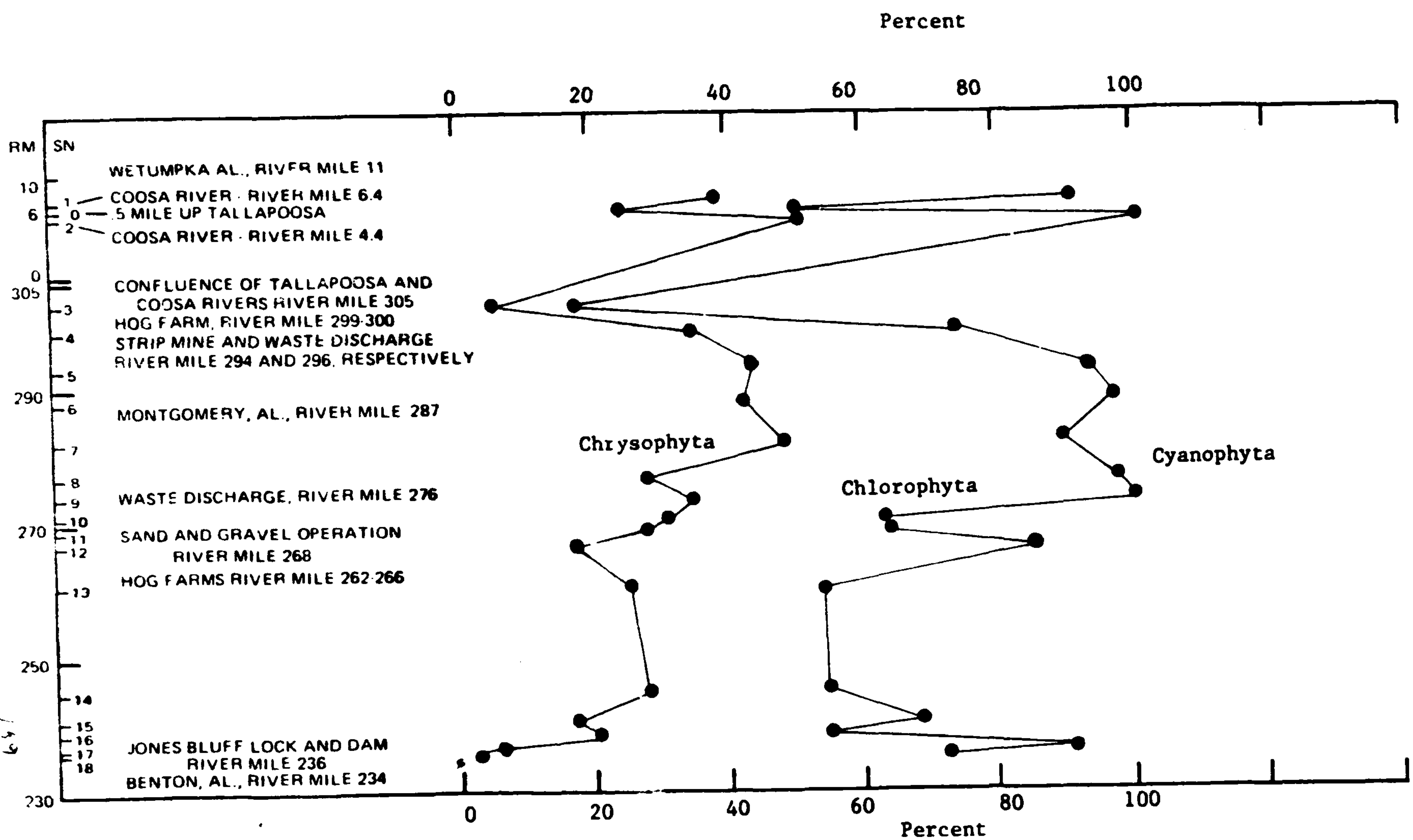


Figure 48.--Percentages of Chlorophyta, Chrysophyta and Cyanophyta collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, May 22-29, 1978.

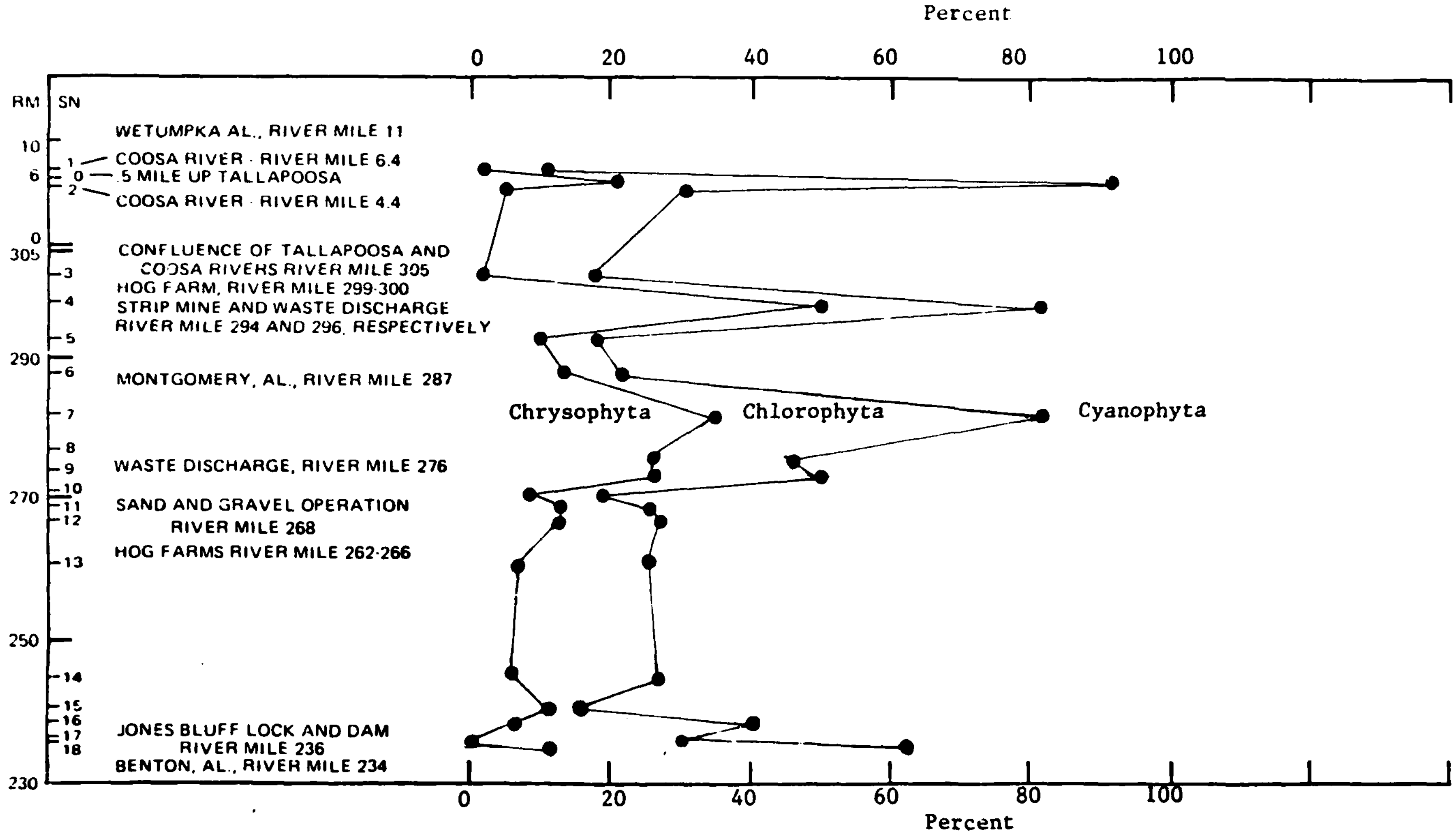


Figure 49.--Percentages of Chlorophyta, Chrysophyta and Cyanophyta collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, July 6-11, 1978.

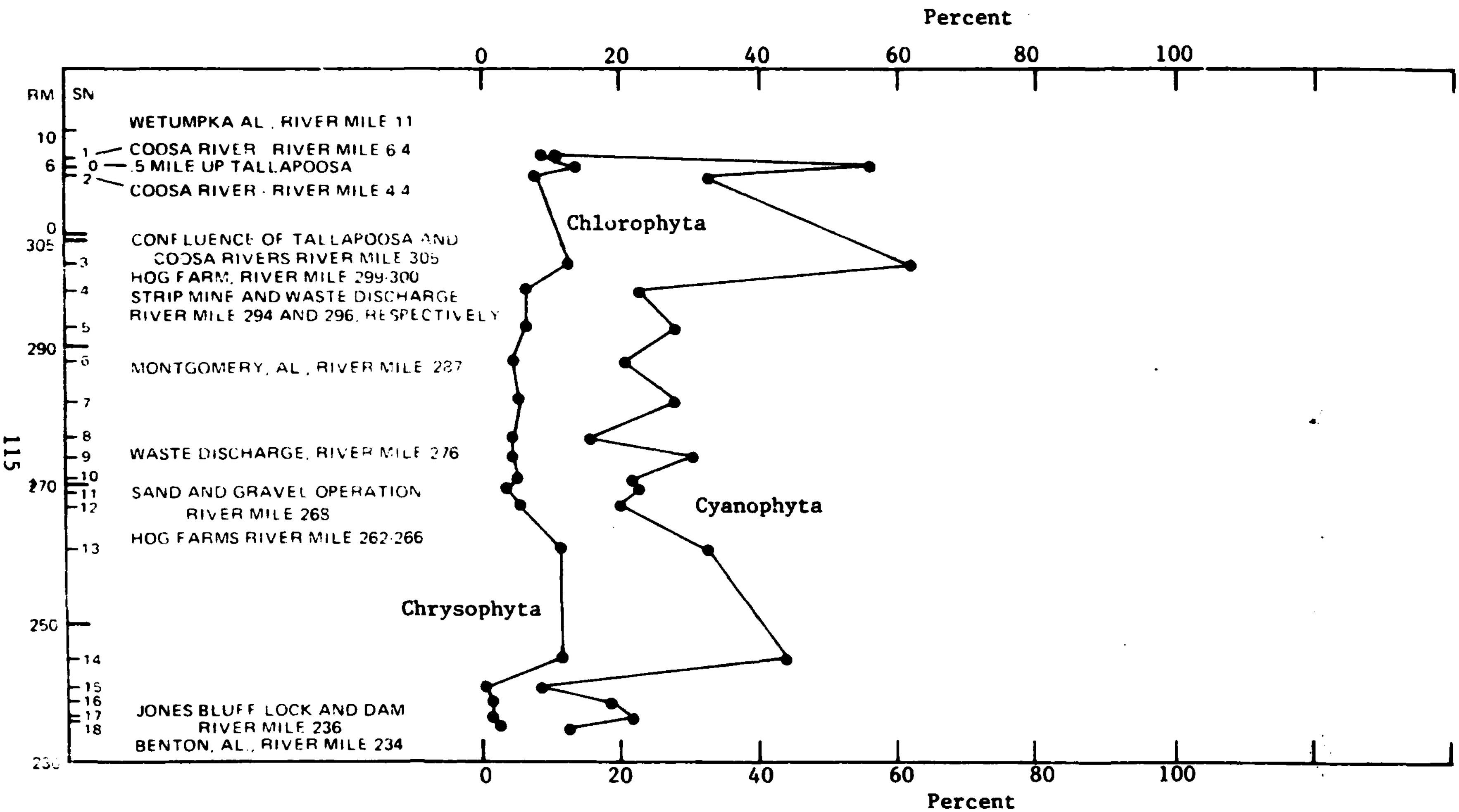


Figure 50.--Percentages of Chlorophyta, Chrysophyta and Cyanophyta collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7, 1978.

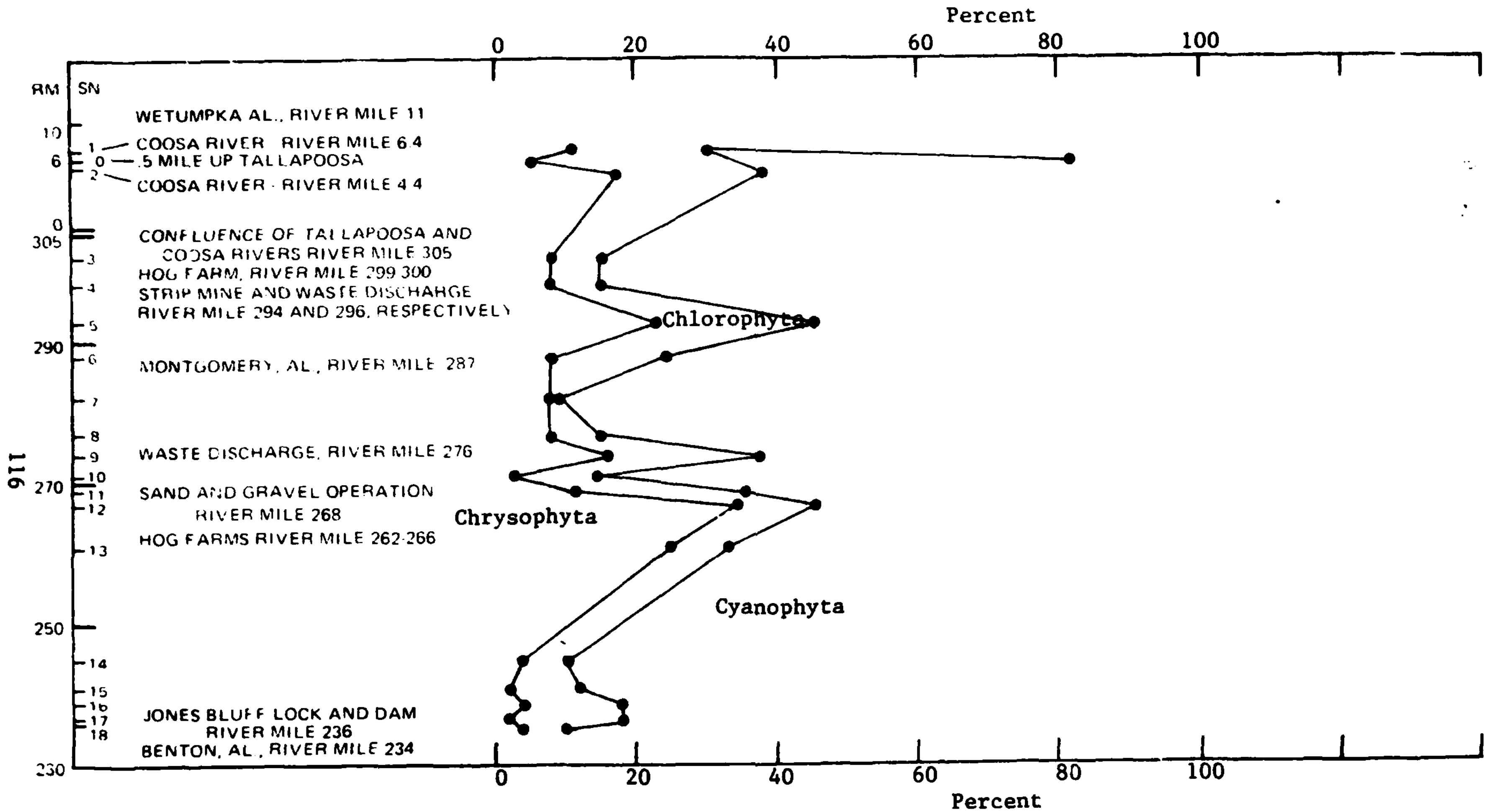


Figure 51.--Percentages of Chlorophyta, Chrysophyta and Cyanophyta collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, September 12-18, 1978.

than did most other stations on the river, but the Cyanophyta were usually lower at station 0 than at other river stations (figs. 42 through 46).

4. Of all the stations on the river, station 6 at Montgomery often had the greatest number of cells per liter of all three groups (figs. 42 through 46).

5. Except for station 6, the total number of phytoplankton cells generally decreased in number from station 0 to station 17. The only exception to the above mentioned trend was during sampling run 4 in which the Cyanophyta increased dramatically in the reservoir pool just above the dam (fig. 45).

6. Station 18, for the most part, had considerably fewer cells than those stations above the dam (figs. 42 through 46). Chlorophyll values were fairly high at this station, however, perhaps indicating algal cells are being damaged by turbulent waters below the dam.

Several general trends can also be detected for the 1977 sampling period. These trends, however, do not always correspond with those for the 1978 sampling period in part because of different sample collection and analysis procedures. One can refer to GSA (1983) for the figures and data.

1. No one station consistently had higher phytoplankton counts than all other stations.

2. The Chlorophyta were represented by the greatest number of organisms during the August and September sampling periods and the Cyanophyta during the November through December sampling period.

3. The Cyanophyta were not very abundant anytime during the 1977 phase of the study. Cyanophytes were found at more stations during the second collecting period. The largest numbers of individuals per sample were observed during the August sampling period than at those same stations during the October through November and November through December sampling periods.

In comparing data from 128 stations on selected North American rivers and the Great Lakes, Williams (1962) noticed that the highest phytoplankton counts were observed throughout the United States during the period of February to May. Counts obtained during this study, however, differed in that they consistently increased in samples collected from April through August (figs. 42 through 46).

Since samples were not taken in February or March, it is uncertain whether a condition similar to that observed by Williams (1962) existed in the Alabama River. The data obtained from this study, however, do not indicate that to be the case for the Alabama River.

Williams (1962) also observed that high water temperatures and impounded waters promoted the production of dense populations of blue-green algae in the late summer. The 1978 phase of the study supports his observation in that the greatest concentrations of Cyanophyta were found in the late summer and early fall (figs. 47 through 51), a time at which water temperatures in the river were higher and the dissolved oxygen values were lower (figs. 17 through 21).

The highest phytoplankton count obtained during the study was approximately 26 million cells per liter. Initially, this seemed unusually high; however, Williams (1962) reported counts of upwards of 100 million organisms per liter in some northern United States rivers. Williams (1962) also emphasized that systems in which many genera (e.g., 10 or more) comprise the majority of the cells of phytoplankton were desirable, whereas systems with fewer than five genera comprising the majority of cells of phytoplankton were undesirable. In other words, the greater the generic richness, the more desirable the ecosystem. Generic richness was quite low (usually three dominant genera or fewer) in the Jones Bluff Reservoir, especially during the late summer and early fall (table B-1). While the total number of cells was highest during the last two sampling trips of 1978 (figs. 45 and 46), the overall generic richness was lower (table B-1). These data indicate, therefore, that the system was less desirable during late summer because there was less diversity of genera.

Total phytoplankton counts were often higher near sewage ducts; for example, at Montgomery (station 6) and at river mile 276 (station 9). No single phytoplankton group, however, was dominant at these locations. Increases in total numbers were probably due to the level of nutrients that entered the river at these stations.

It is impossible to accurately compare the phytoplankton data collected during the 1977 and 1978 surveys for several reasons.

1. Net samples were taken during the 1977 survey and whole water samples were collected during the present study.

2. During the 1977 study, velocity measurements were not obtained for each station on each collection date; consequently, the number of organisms collected in the net samples had to be estimated.

3. The 1977 project was designed so that field sampling and enumeration quality control were not adequate.

4. A general comparison of 1977 and 1978 phytoplankton organism counts indicates that the 1977 estimates were extremely conservative.

5. A final problem involved the actual units that were counted during the two studies. Organisms per liter were scored during 1977 as suggested by Weber (1973) and required by the scope of work; cells per liter were tabulated during 1978. Because of the differences in collection methods employed during the two studies, the number of organisms would not be comparable.

2. Zooplankton

Zooplankton communities respond rather quickly to stresses by shifting in structure, such as changes in the kinds and numbers of species present and the numbers of individuals per species (Hynes, 1971). An unstressed community is likely to have a great number of species with relatively few individuals per species. When a community is under stress, the number of species is likely to decrease and the number of individuals of the remaining species is likely to increase (Hynes, 1971). This increase in individual density is especially obvious with such stresses as sewage effluents or other factors causing organic enrichment. Other stresses such as thermal, heavy metal, or organophosphate stresses may cause a drastic reduction in zooplankton species richness and density. Such changes are easy to see if stresses are severe. However, subtle stresses can result in subtle changes in community structure that are often masked by normal variation (Hynes, 1971).

Since zooplankters are consumers, much of their variation could also be dependent on changes in their food. Most zooplankters eat phytoplankton while a few are predaceous on other zooplankton or are particulate feeders. Therefore, some stresses, especially nutrient enrichment, may affect phytoplankton population densities and thus indirectly affect zooplankton densities. Unless the stresses are very severe, such effects are usually difficult to determine.

The Rotifera and the Cladocera were the dominant groups of the zooplankton collected during this study during both the 1977 and 1978 phases of this study. The Rotifera were represented by the most genera and the greatest density at most stations.

Graphs of the densities of Cladocera, Copepoda and Rotifera for all five runs (figs. 52 through 56) are given to illustrate differences in densities among the major components of the zooplankton along the study area from April through September 1978. Graphs of the densities of Cladocera and Rotifera for three runs during August through October 1977 are given in GSA (1983). It is interesting to note that during run 1 all three groups showed approximately the same densities at each of the stations (fig. 52) except station 3, which had the highest numbers of all three groups. The other four runs (figs. 53 through 56), however, had no large increase in Cladocera or Copepoda at station 3. During run 1, stations 4 through 18 had low densities of the three groups, but during later runs the Rotifera and Cladocera increased tremendously in densities at many of these stations. Except for the first run (August 1977), there were very low densities of Cladocera and Rotifera during the 1977 phase as compared to the last two runs of the 1978 Jones Bluff study. Comparing the August collections of the two phases indicates that Rotifera had high densities at the first few stations during the 1978 phase but not in 1977 where the Rotifera were high in the last few stations. This is not unexpected since zooplankton populations can change on a daily basis or in response to flow rate, rainfall, or other environmental parameters.

Total zooplankton densities compared to total phytoplankton densities are illustrated graphically (figs. 57 through 61). During all of the runs to some extent, and especially during the first two runs, the variation in zooplankton densities is similar to phytoplankton densities at each of the stations. During the last three runs, the data show a large increase in zooplankton densities in the reservoir pool with a depression of phytoplankton densities in the same area. The low phytoplankton densities in the reservoir pool from July through September 1978 are probably a response to increased grazing pressure from the large zooplankton population. More detailed discussions of the phytoplankton population changes are given in the previous section of this report. Total zooplankton data were not given for the 1977 study.

Seasonal changes in densities of the zooplankton from run to run at the same station are probably due, to a large part, to life history variation and, to some extent, in response to phytoplankton densities. The data from the tables and figures indicate that phytoplankton densities in the reservoir pool are likely being controlled by zooplankton grazing. Factors affecting the densities of zooplankton seasonally could include changing water quality and decreasing flow during mid- to late summer. (See Section VI of this report for a more detailed discussion.) Except for the increased zooplankton densities and the decreased phytoplankton densities in the reservoir pool during the last three runs, there were no consistent patterns noted in the river, reservoir pool, or below the dam. Similar, though not very pronounced, patterns were found in the 1977 phase for Jones Bluff Reservoir.

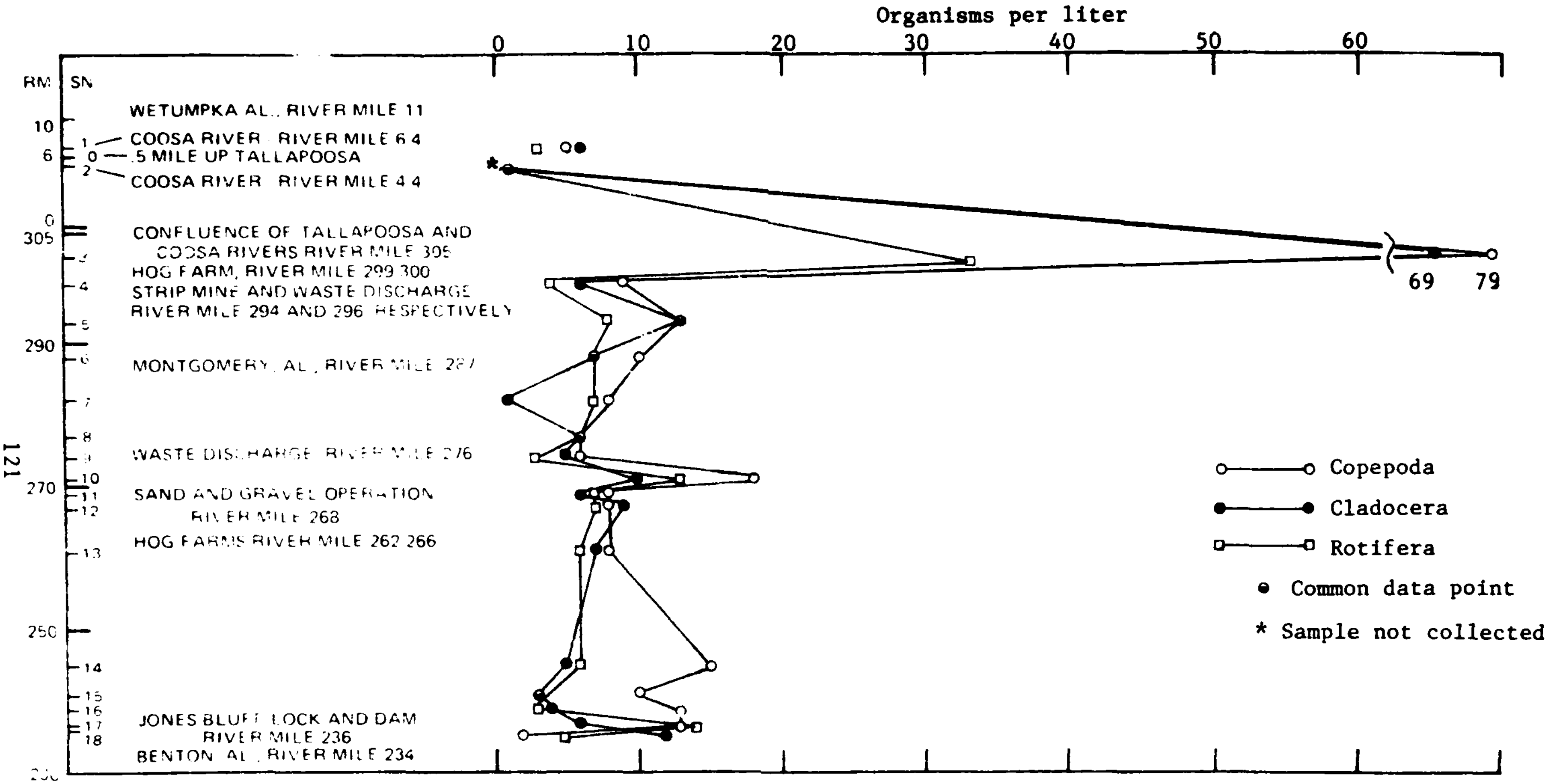


Figure 52.--Organisms per liter of Cladocera, Copepoda and Rotifera collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April 10-18, 1978.

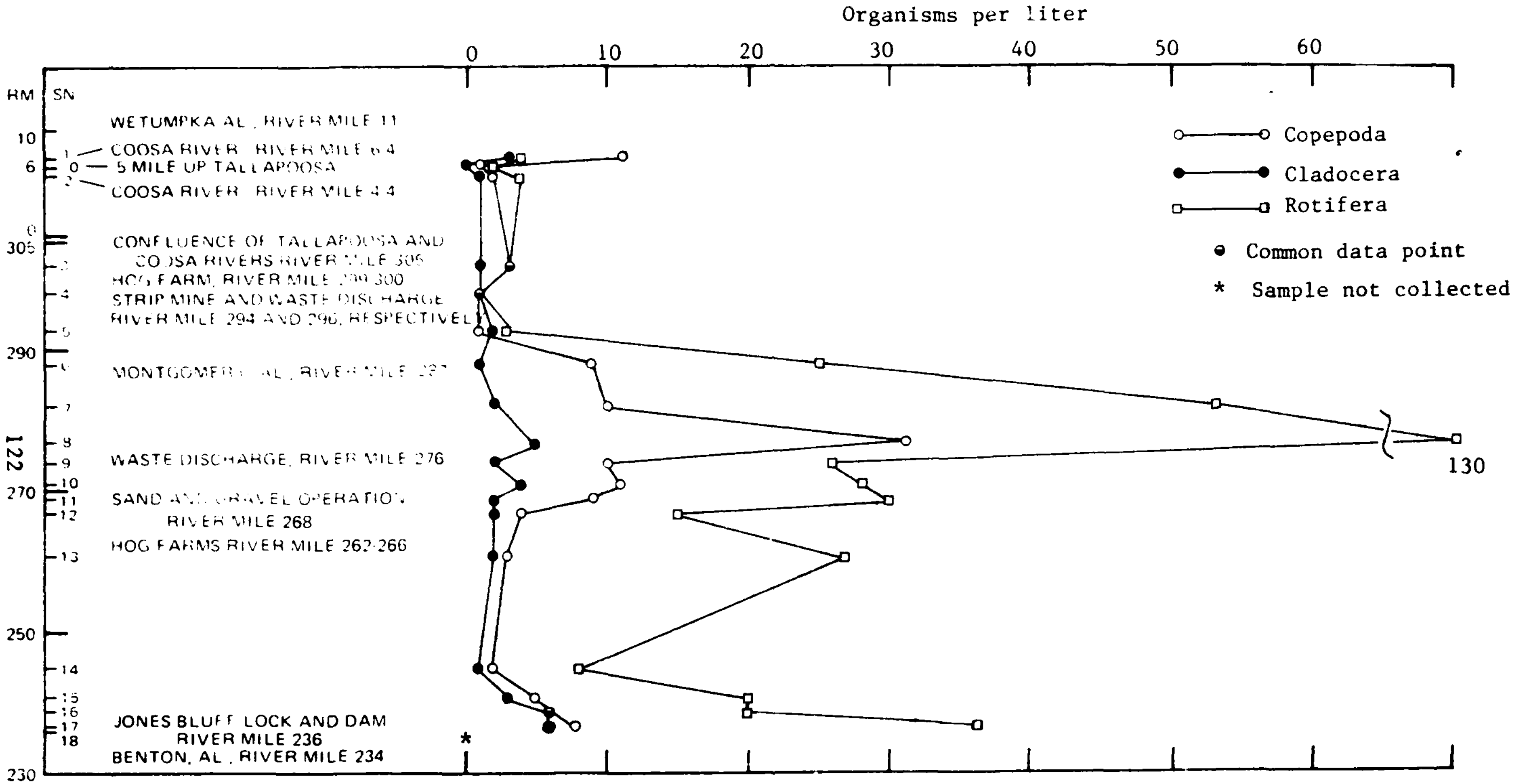


Figure 53.--Organisms per liter of Cladocera, Copepoda and Rotifera collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, May 22-29, 1978.

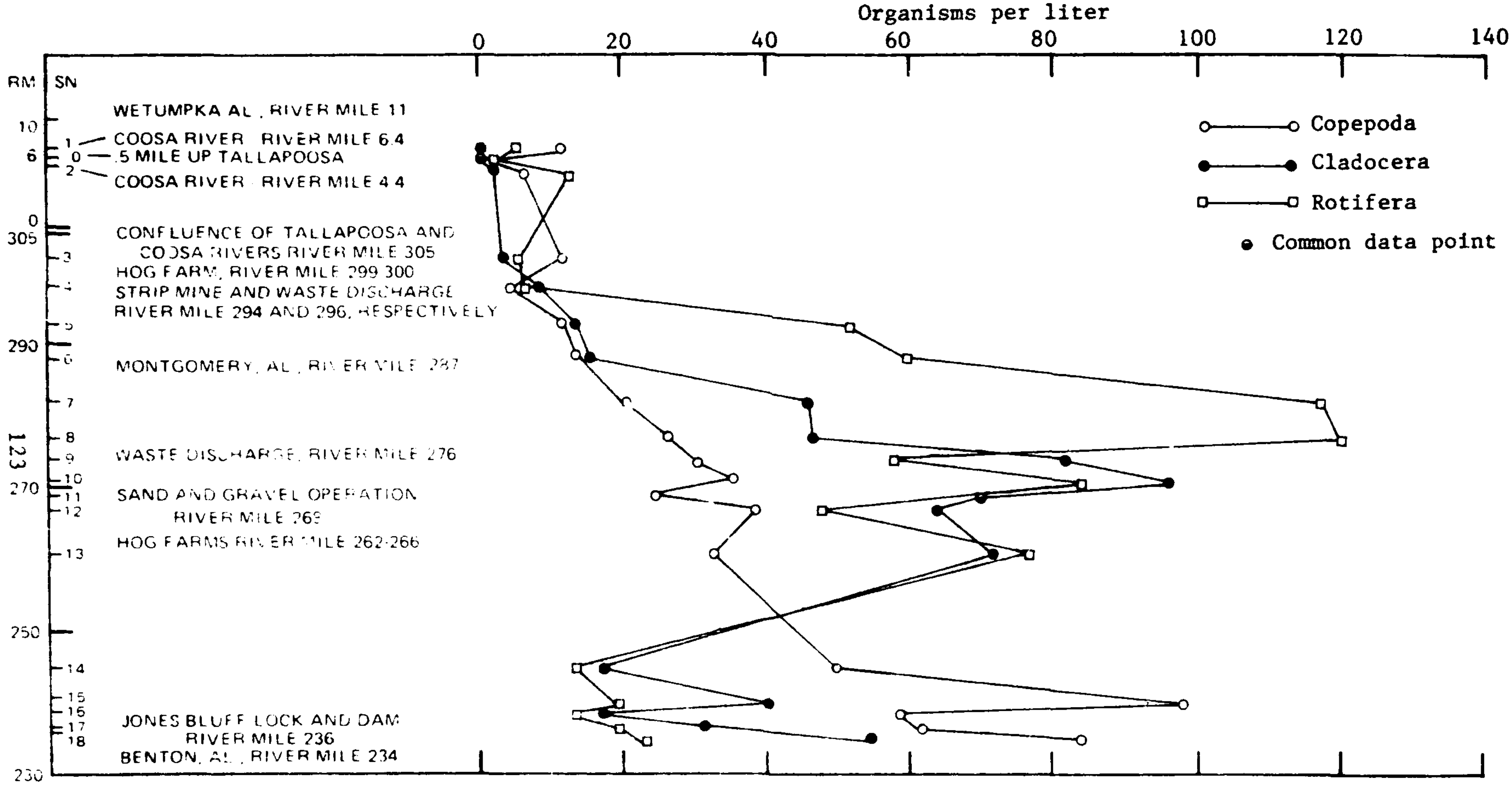


Figure 54.--Organisms per liter of Cladocera, Copepoda and Rotifera collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, July 6-11, 1978.

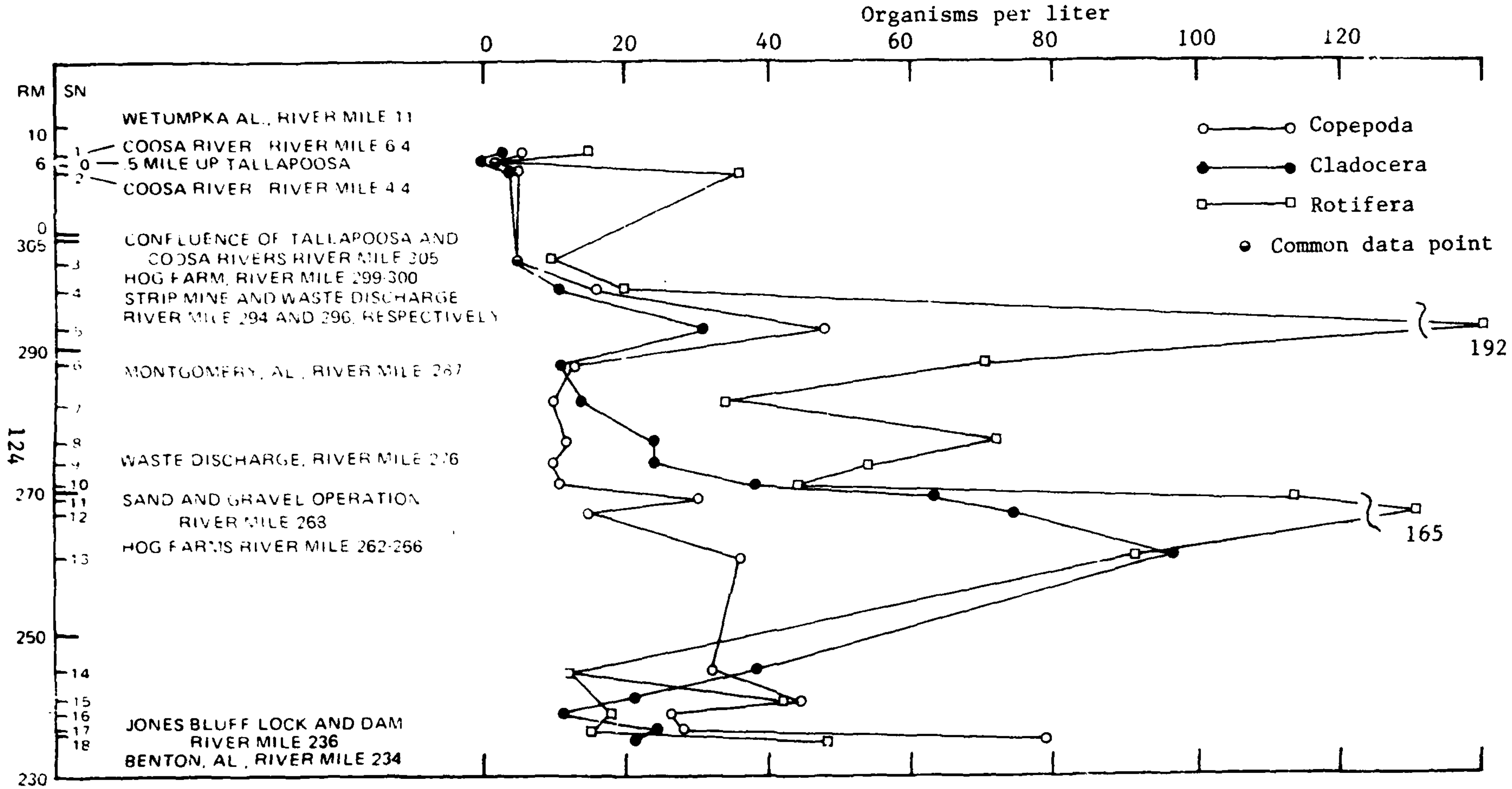


Figure 55.--Organisms per liter of Cladocera, Copepoda and Rotifera collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7, 1978.

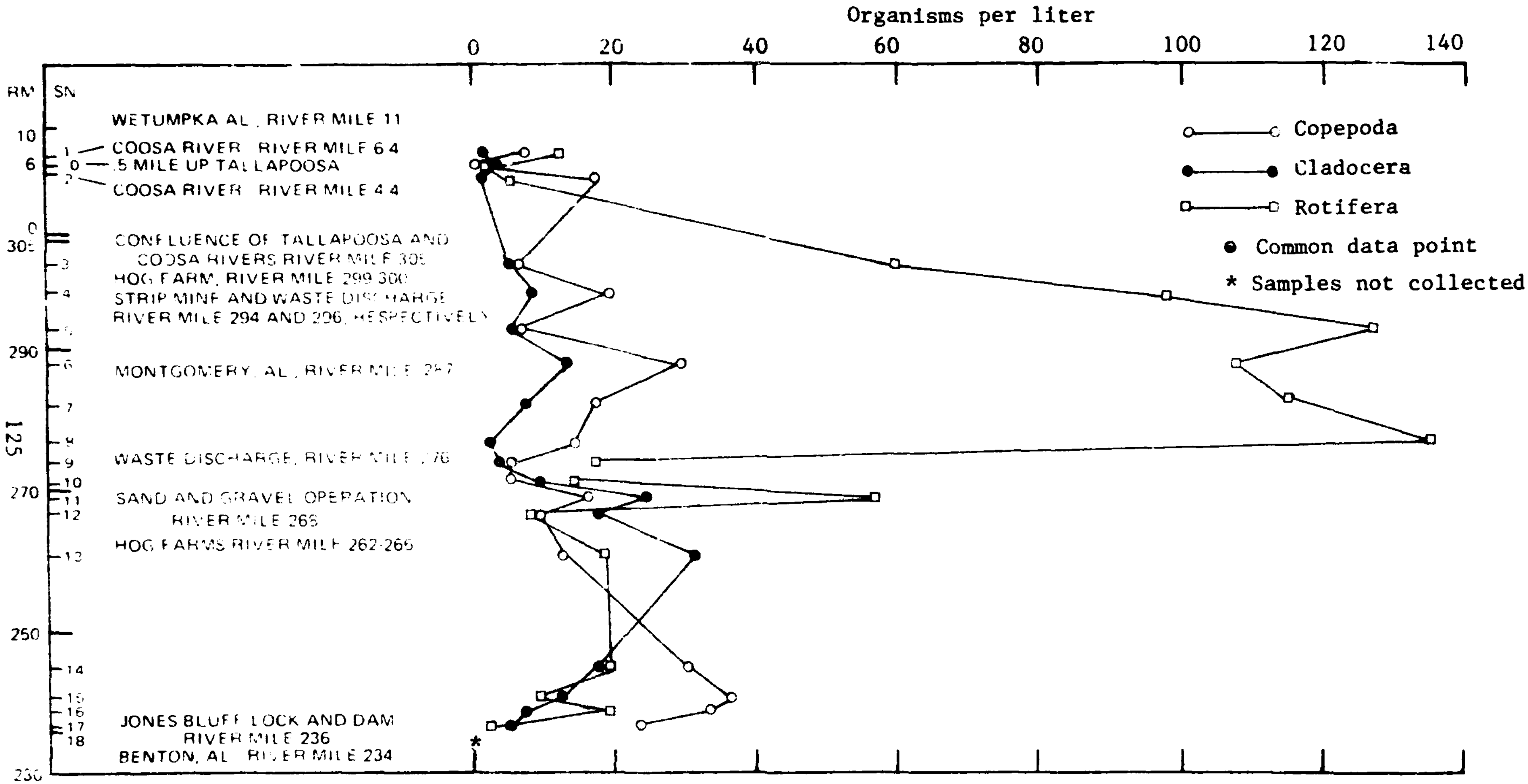


Figure 56.--Organisms per liter of Cladocera, Copepoda and Rotifera collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, September 12 18, 1978.

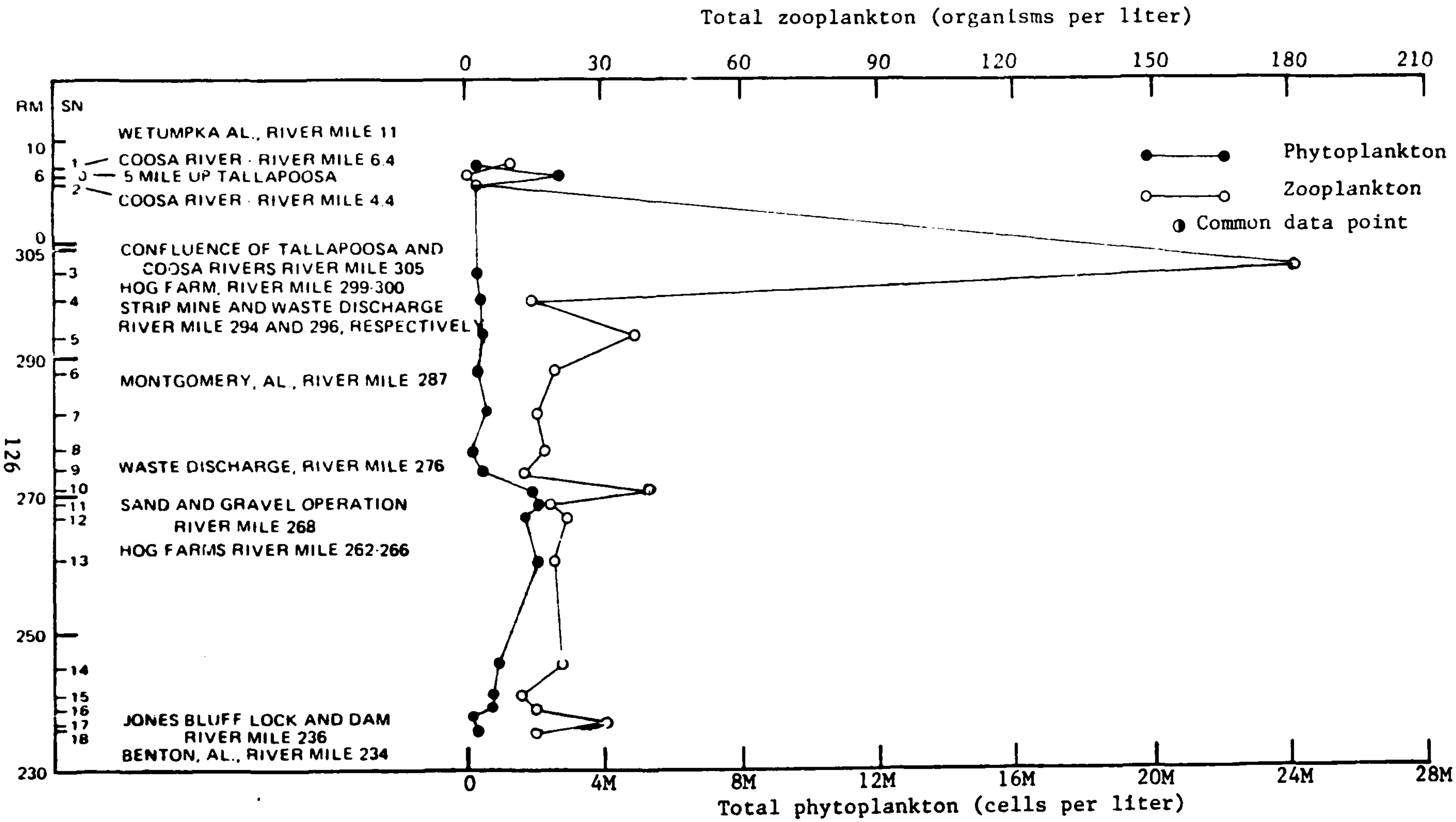


Figure 57.--Total zooplankton (organisms per liter) and phytoplankton (million cells per liter) collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April 10-18, 1978.

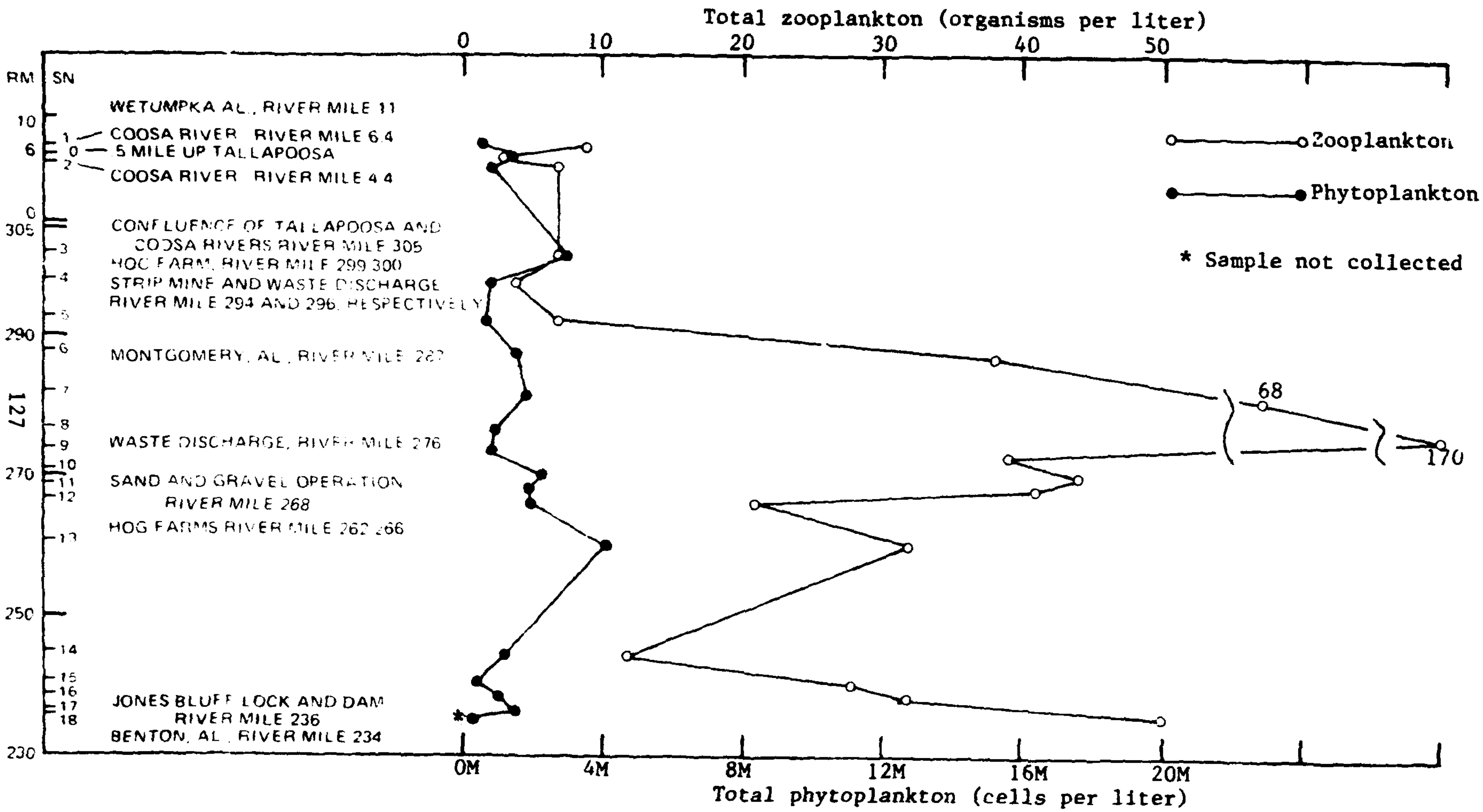


Figure 58.--Total zooplankton (organisms per liter) and phytoplankton (million cells per liter) collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, May 22-29, 1978.

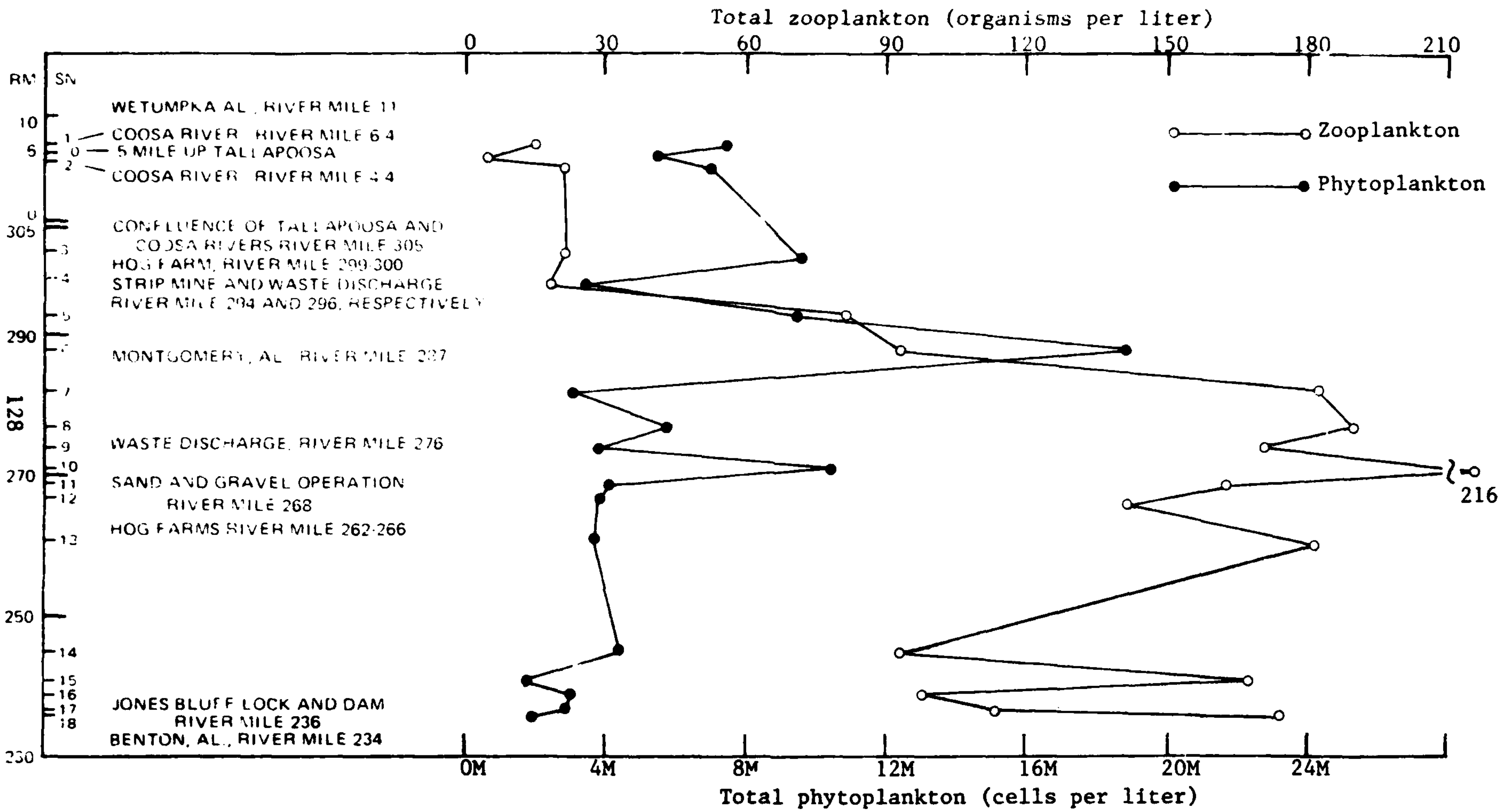


Figure 59.--Total zooplankton (organisms per liter) and phytoplankton (million cells per liter) collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, July 6-11, 1978.

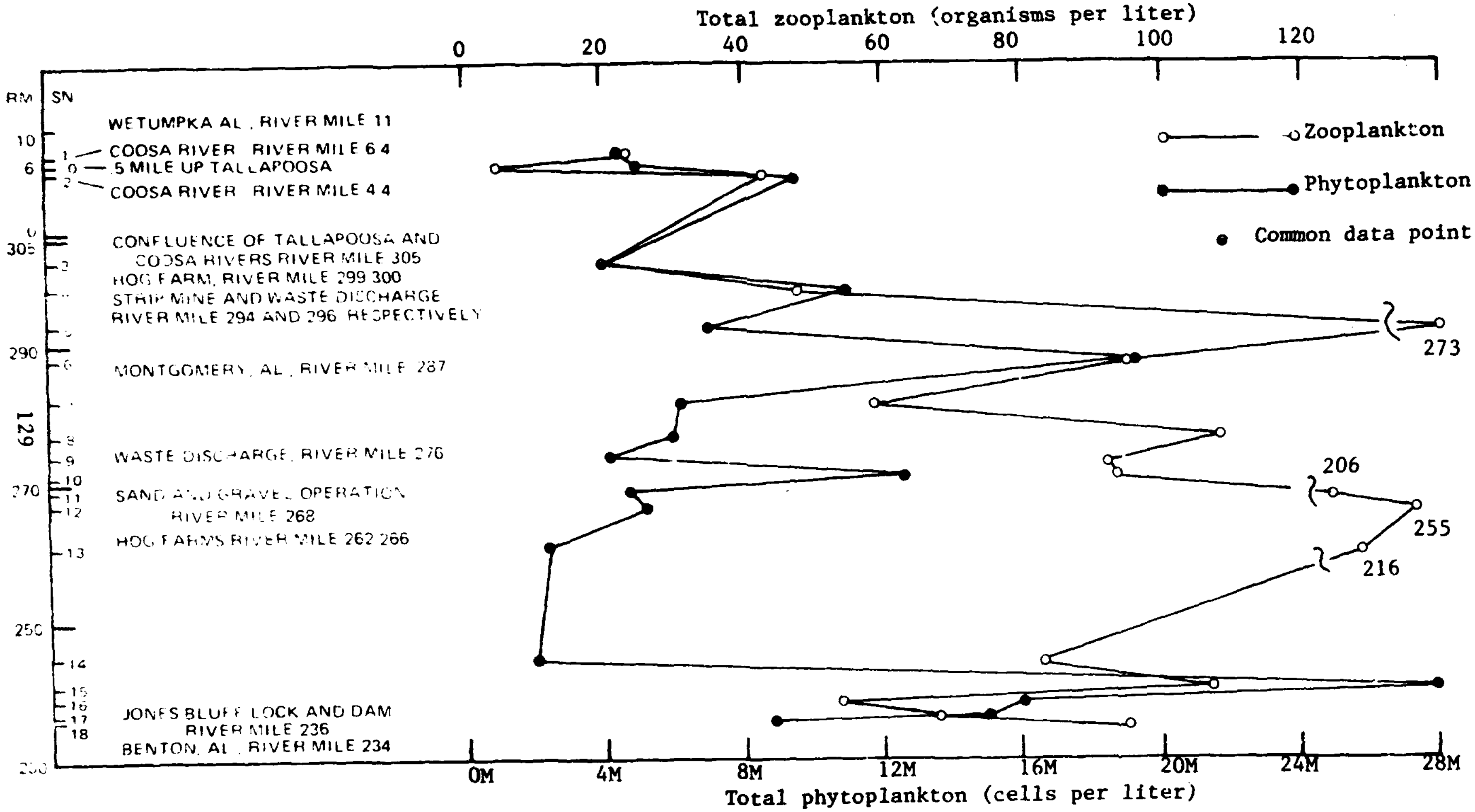


Figure 60.--Total zooplankton (organisms per liter) and phytoplankton (million cells per liter) collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7, 1978.

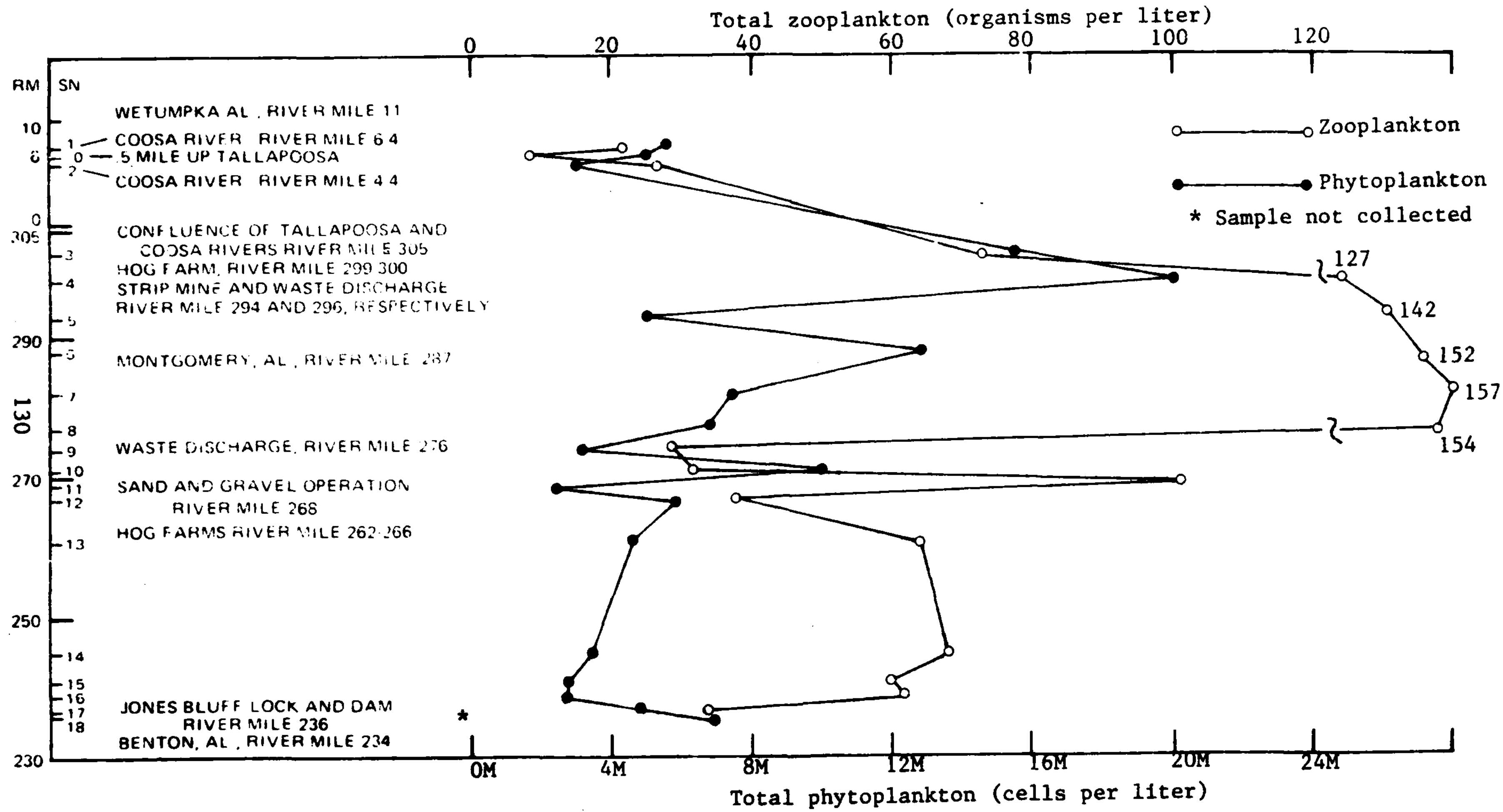


Figure 61.--Total zooplankton (organisms per liter) and phytoplankton (million cells per liter) collected from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, September 12-18, 1978.

It is unwise, however, to conclude too much from this study. To determine how much of the variation of zooplankters is due to normal seasonal population trends and how much is due directly or indirectly to environmental stresses, a much longer study must be undertaken.

3. Benthic Macroinvertebrates--Ponar

The sampling regime for the benthos of the Jones Bluff reservoir--that is, three runs in both 1977 and 1978 each consisting of a three-sample transect from 18 locations over about 80 miles of river--was probably adequate for observing general trends in faunal distribution. However, while adequate for detecting general faunal patterns, a sampling program collecting so few samples in so short a period of time with no estimate of variability in samples is wholly inadequate for interpretation of faunal patterns in relation to environmental factors.

Based on the distribution of benthic fauna, the Jones Bluff reservoir can be divided into two reasonably distinct areas. A riverine portion extending from stations 0 through 13 and a lacustrine portion immediately above the Jones Bluff Lock and Dam extending from stations 14 through 17. Station 18, immediately below the dam, would be categorized as riverine.

Since the insects constituted such a significant portion of the macroinvertebrate fauna of the Alabama River, the patterns of noninsect macroinvertebrate distribution (fig. 62) and insect macroinvertebrate distribution (fig. 63) were considered separately. Total numbers of noninsect macroinvertebrates, in general, increased downstream from the confluence of the Coosa and Tallapoosa Rivers. For all three Ponar sampling runs, the general pattern of distribution was high numbers of noninsect macroinvertebrates from stations 3 through 9 and from stations 11 through 17. For reasons not evident in the data, there seemed to be a sharp decline in this portion of the fauna at stations 10 and 16 (fig. 62). There was also a marked decrease in noninsect macroinvertebrates at station 18 (fig. 62), immediately downstream from the Jones Bluff Dam. In this region the water is very swift and turbid resulting in an unstable environment for most benthic organisms.

The noninsect portion of the macroinvertebrates was made up primarily of Oligochaeta, mainly the Tubificidae and Naididae, and the *Corbicula* clams (table C-1). Tubificidae were the most abundant macroinvertebrates in the Jones Bluff reservoir. The tubificids are a pollution tolerant group (Weber, 1973) and are generally indicators of organic pollution (Hynes, 1971). The distribution pattern of the tubificids (fig. 64) closely mirrors that of the

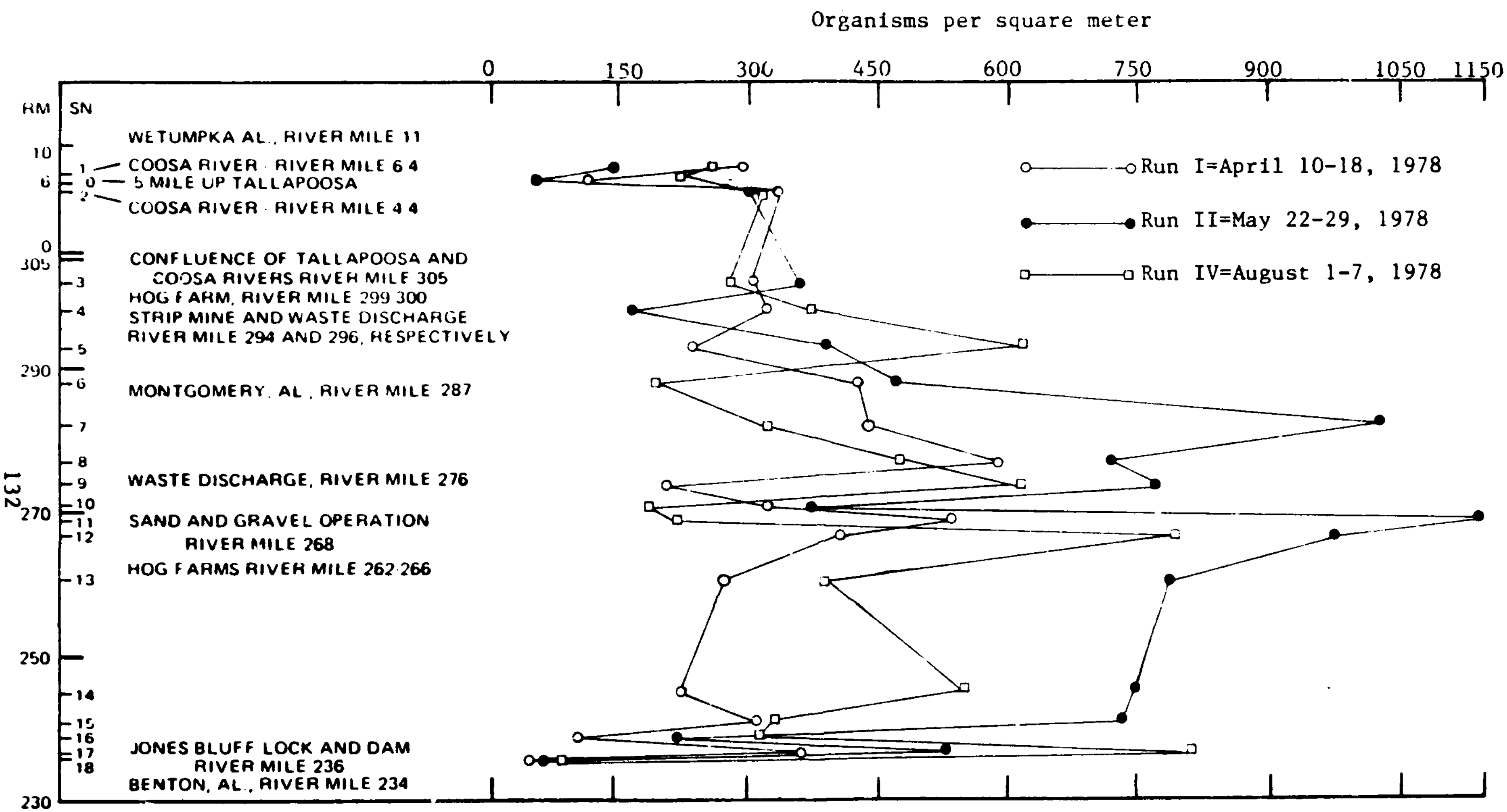


Figure 62--Noninsect macroinvertebrates (number per square meter) collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August 1978.

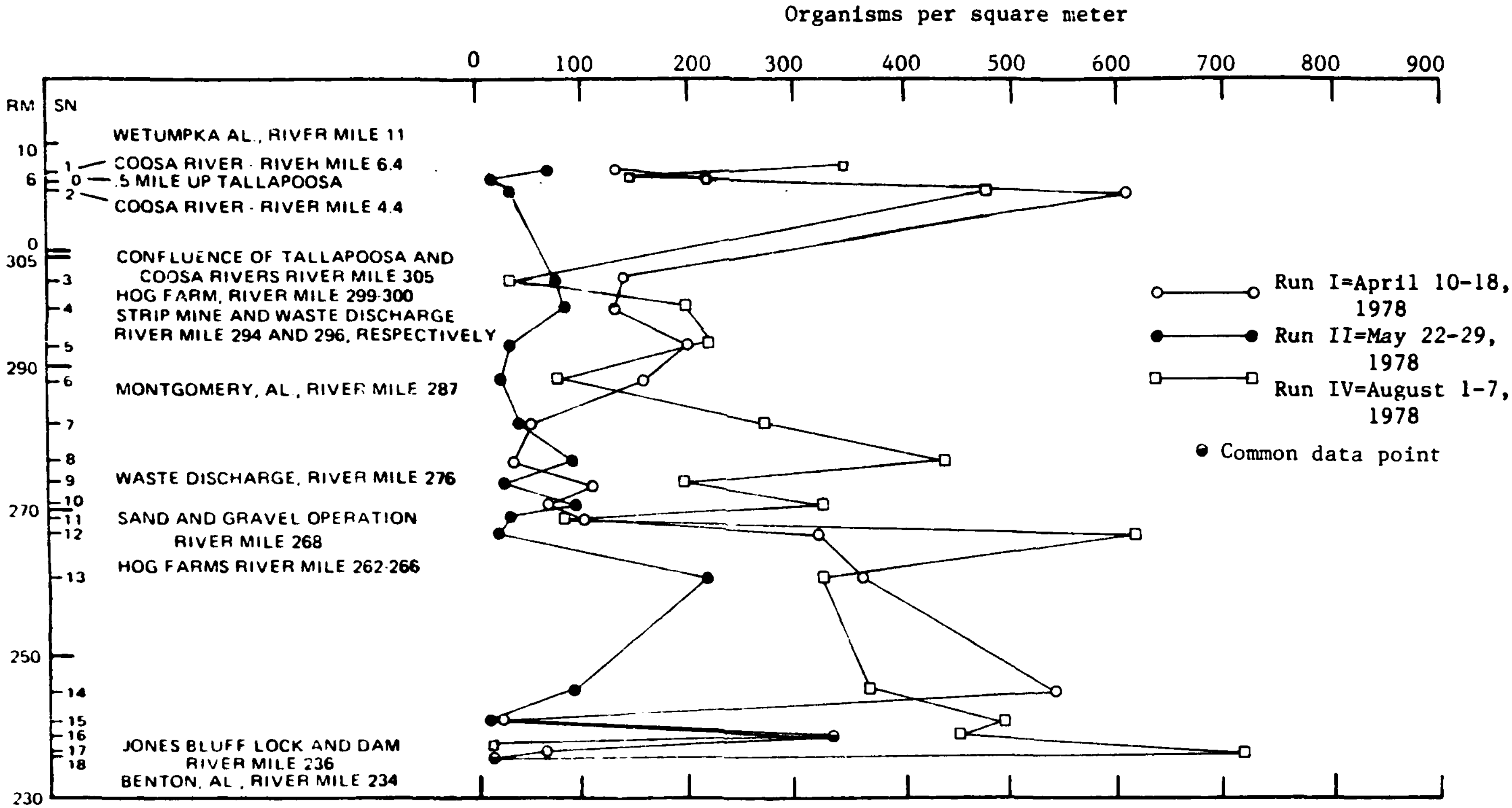


Figure 63.--Insects (number per square meter) collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August, 1978.

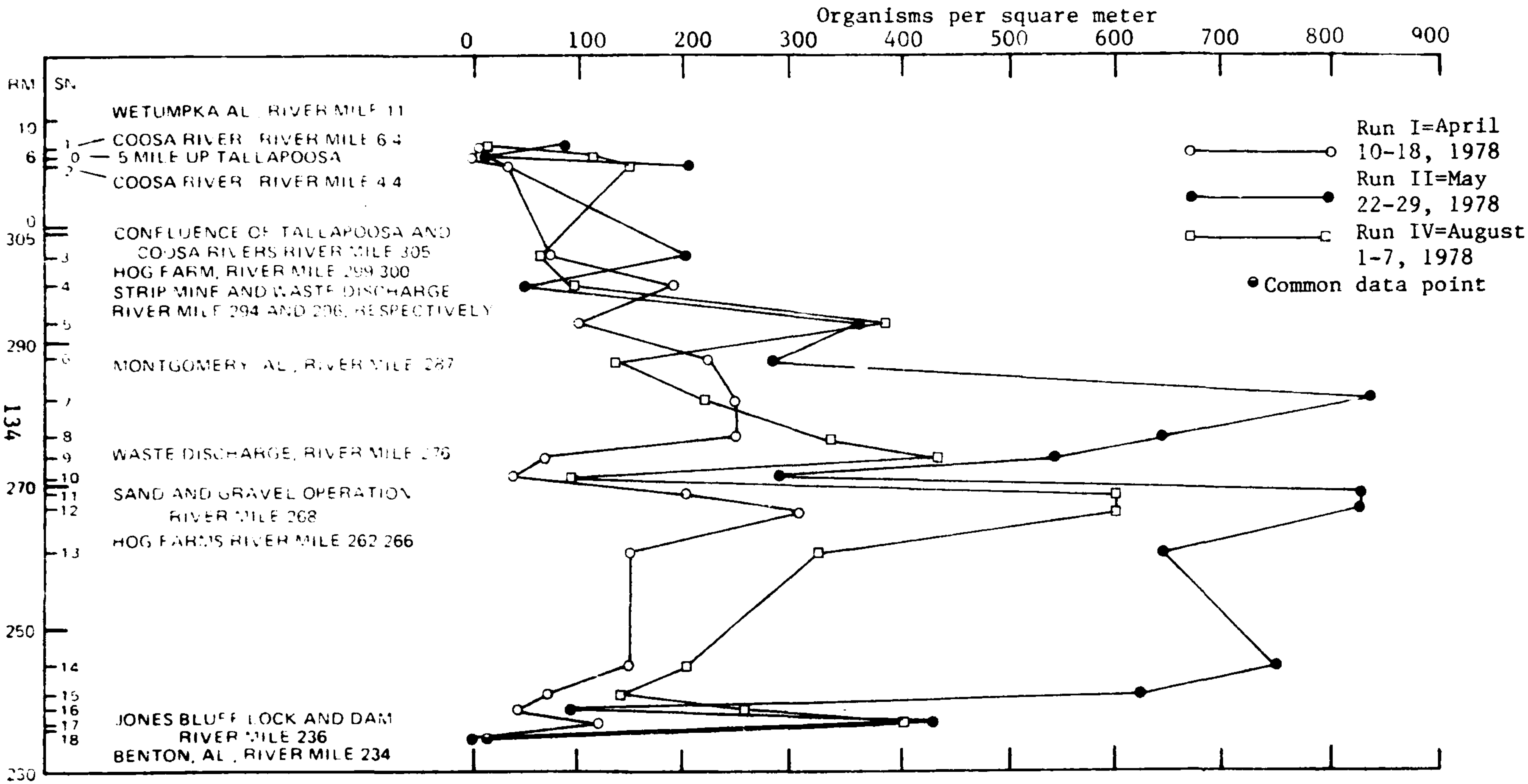


Figure 64.--Tubificidae (number per square meter) collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August, 1978.

noninsects considered collectively (fig. 62). Numbers of tubificids varied from run to run, but, in general, the pattern of distribution remained the same. Numbers of Tubificidae were highest south of Montgomery, Alabama, where sewage outflows are present, and in the lacustrine area immediately upstream from the Jones Bluff Dam.

The distribution of Naididae (fig. 65) exhibited no set pattern. Naidids were most numerous during run 2, when they reached greatest population size at stations 2 and 13. During run 1, naidids were also common with populations peaking at station 7. Reasons for such a distribution are obscure and perhaps several species are involved.

The distribution of *Corbicula* clams (fig. 66), in general, had population peaks at stations 0 through 4, stations 7 through 12, and stations 14 through 17. In 1977, essentially this same distribution pattern was detected. The available data, however, give no clear explanation for such a distributional pattern. The population peaks also varied from sampling run to sampling run, in part due to life history aspects, as indicated by the biomass measurements (table 15). In run 4, *Corbicula* reached their highest density in the lacustrine area when much of the population was comprised of juveniles. During runs 1 and 2, *Corbicula* densities were lower in the lacustrine region, but adults and subadults constituted much of the population. Weber (1973) reported that *Corbicula* are fairly sensitive to pollution, but their distribution in the Jones Bluff Reservoir would suggest they have a wide tolerance, occurring south of Montgomery as well as in the Coosa and Tallapoosa Rivers in large numbers (fig. 66).

Total numbers of the insect portion of the macroinvertebrate fauna of the Jones Bluff reservoir were generally highest in the Coosa and Tallapoosa Rivers (stations 0 through 2) and in the lacustrine area near the Jones Bluff Dam (fig. 63). Chironomidae (midges), as in 1977, comprised the bulk of the insect fauna, but a number of other taxa had interesting distribution patterns in the river. As was noted for the other macroinvertebrates, the insect portion of the benthos drastically declined at station 18 immediately below the Jones Bluff Dam. The swift, turbid water probably makes the substrate unstable for all but a few aquatic insects. In order to consider distribution patterns of individual insect taxa, numbers were combined for all three runs (figs. 67 through 73). In many cases, this was necessary because of the uneven seasonal occurrence of the various insect groups.

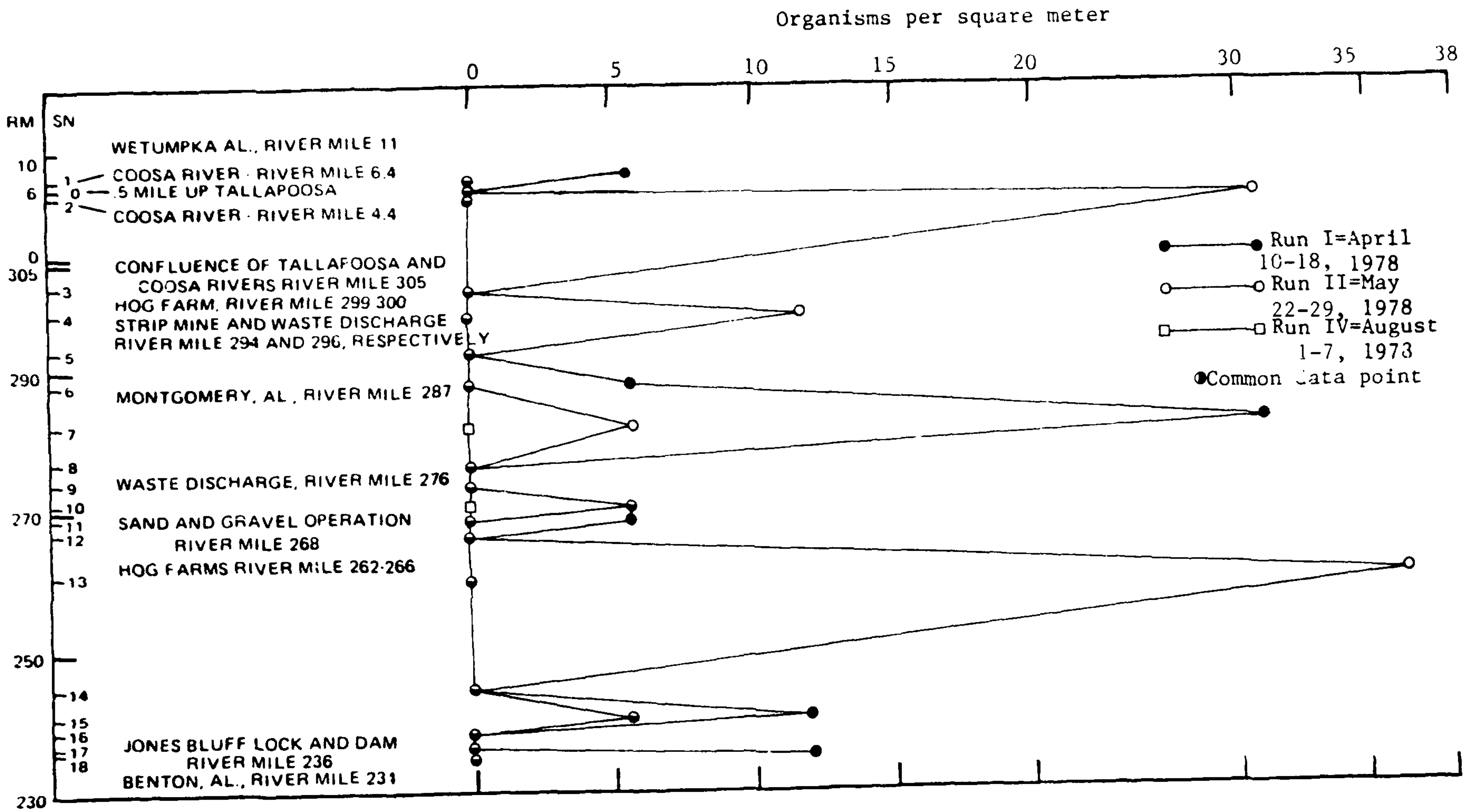


Figure 65.--Naididae (number per square meter) collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August, 1978.

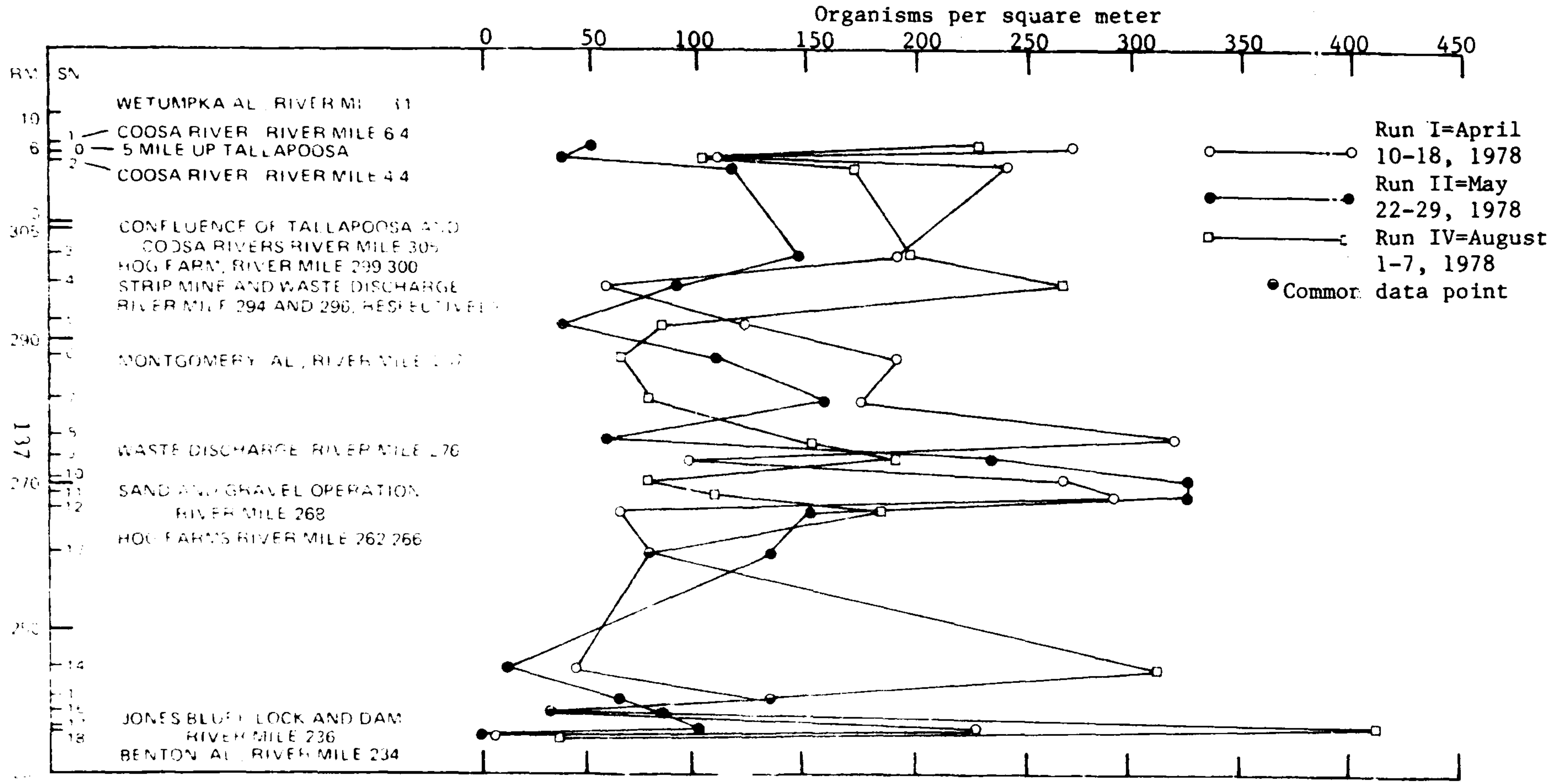


Figure 66.--*Corbicula* clams (number per square meter) collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August, 1978.

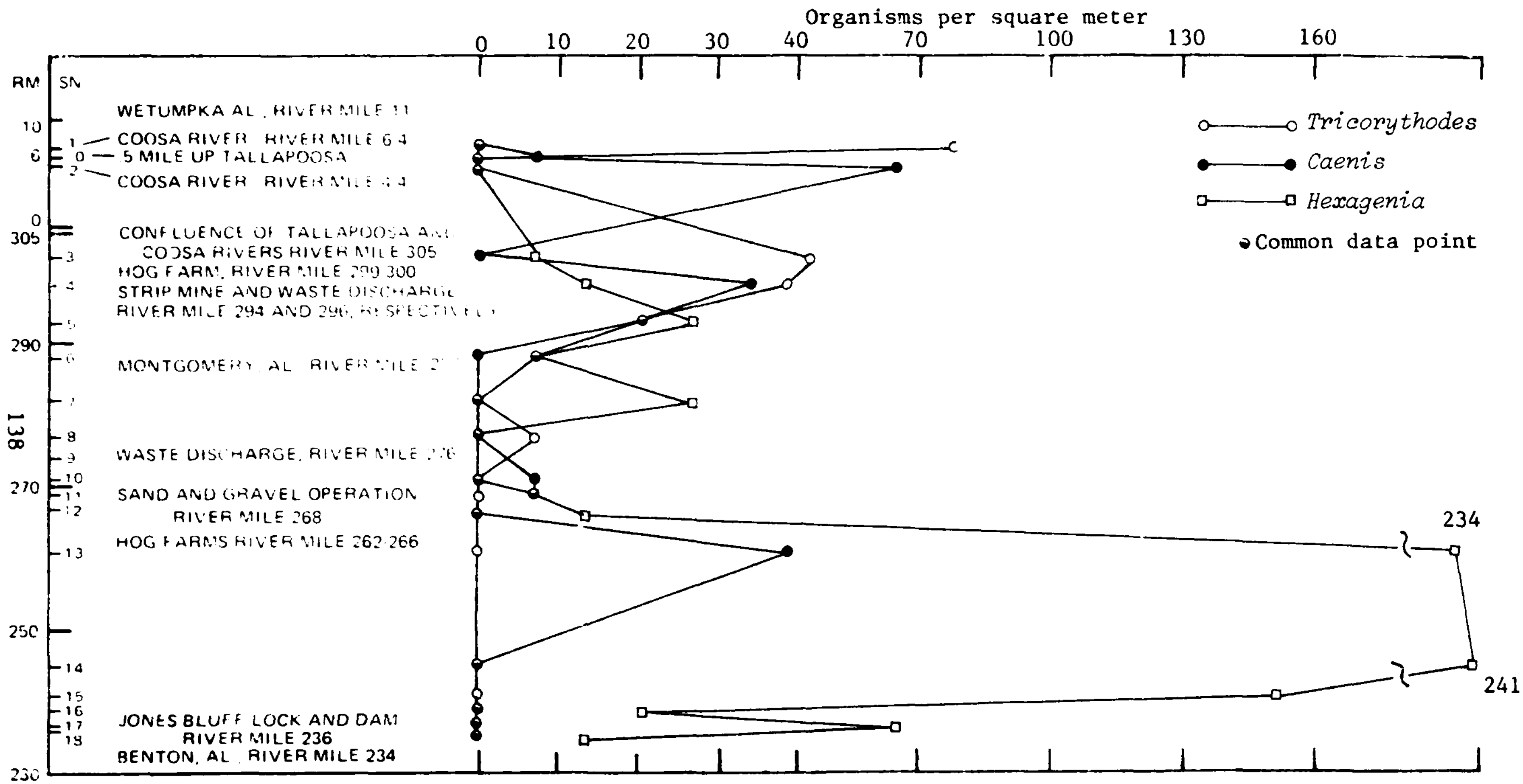


Figure 67.--Common genera (number per square meter) of Ephemeroptera collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August, 1978.

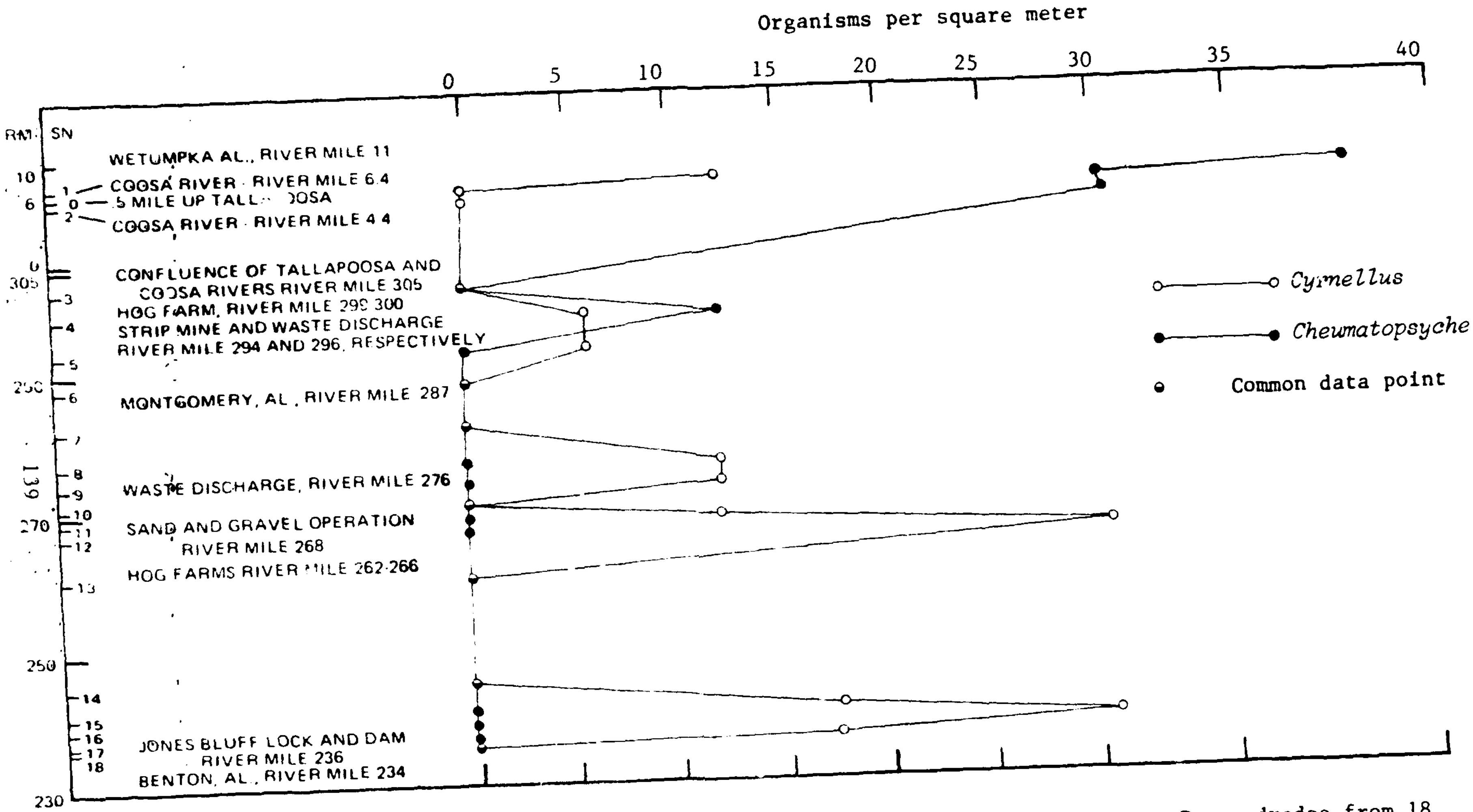


Figure 68.--Common genera (number per square meter) of Trichoptera collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August, 1978.

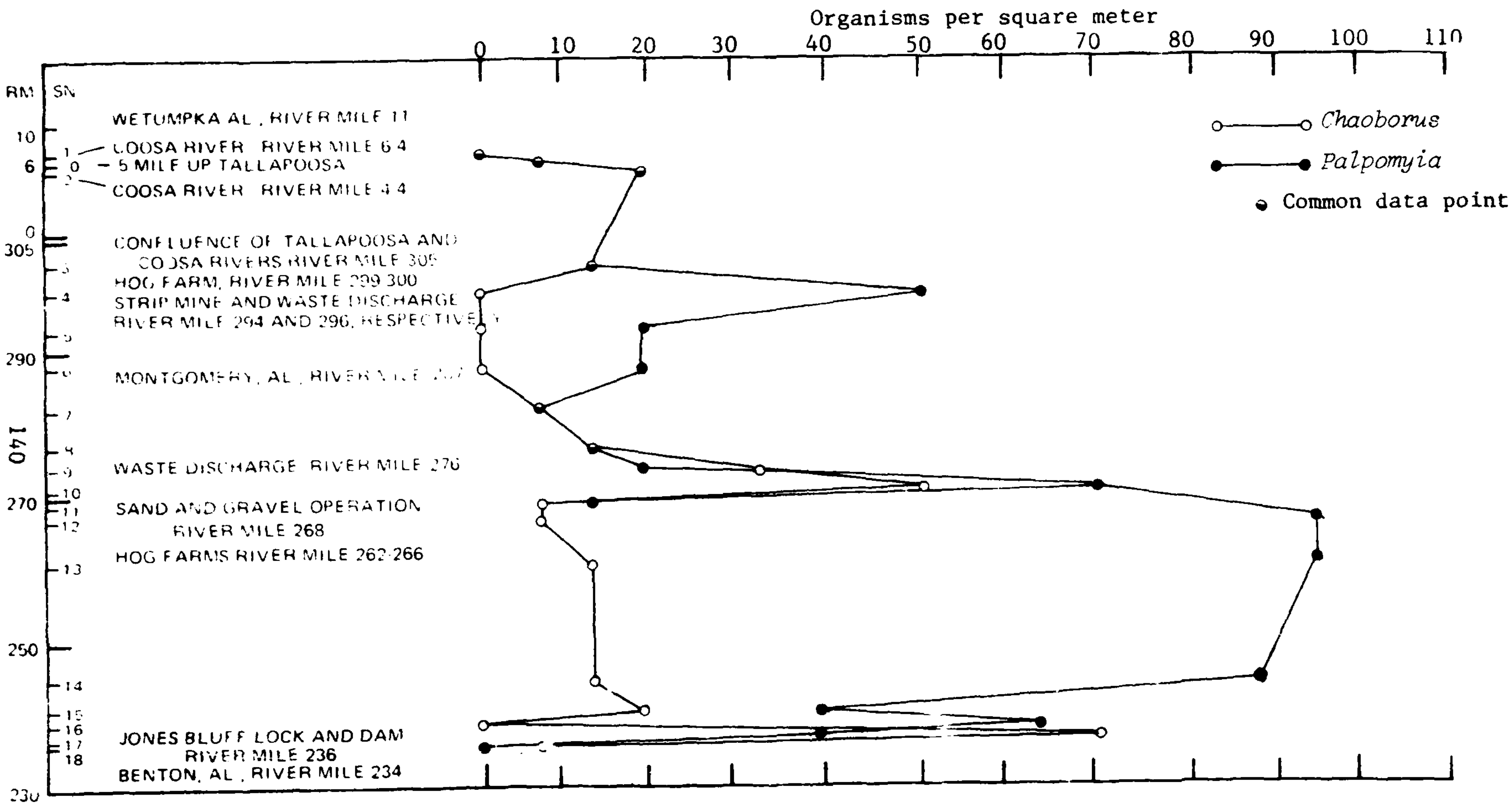


Figure 69.--Common genera (number per square meter) of Ceratopogonidae and Chaoboridae (Diptera) collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August, 1978.

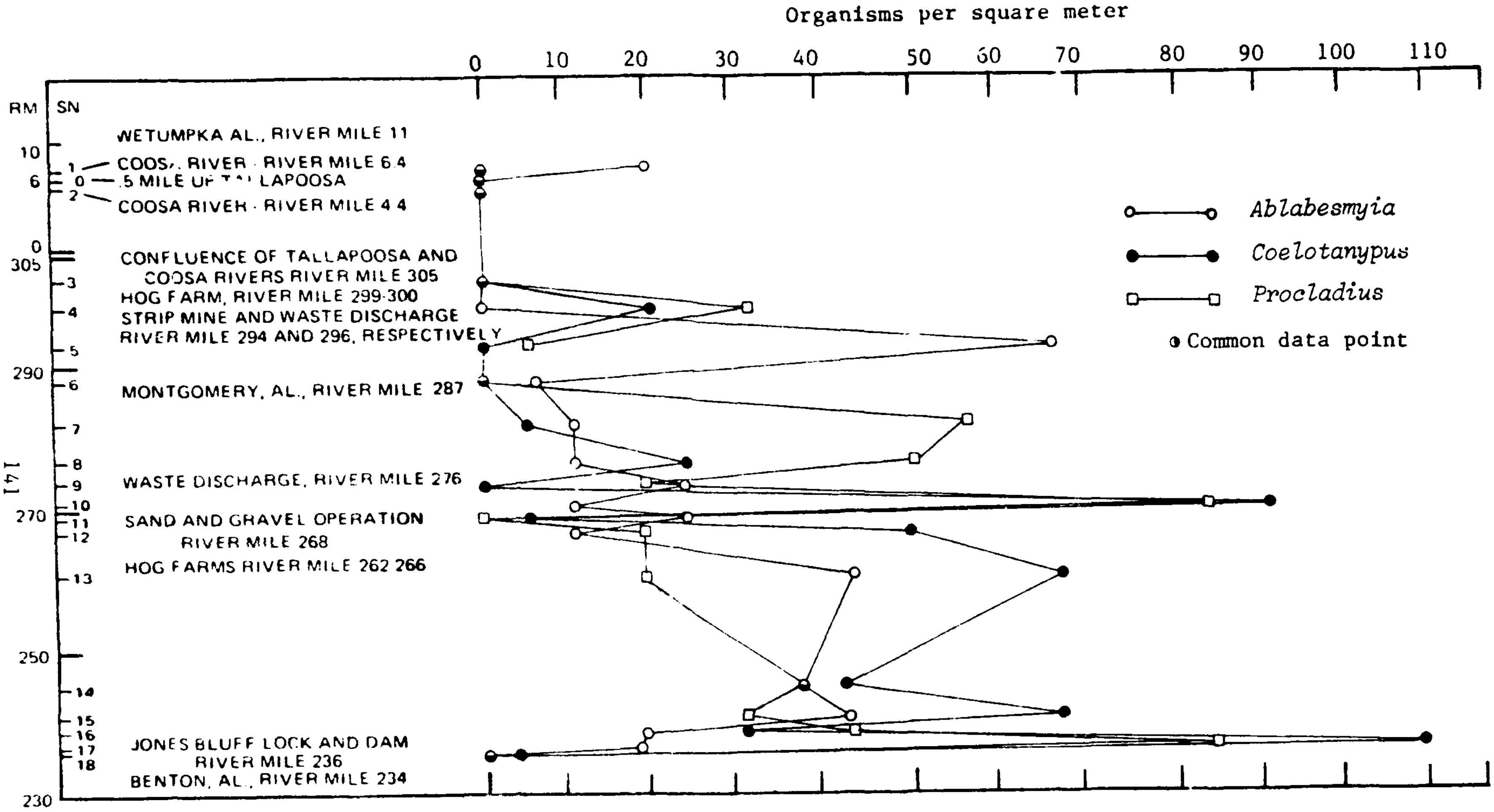


Figure 70.--Common genera (number per square meter) of Tanypodinae (Chironomidae:Diptera) collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August, 1978.

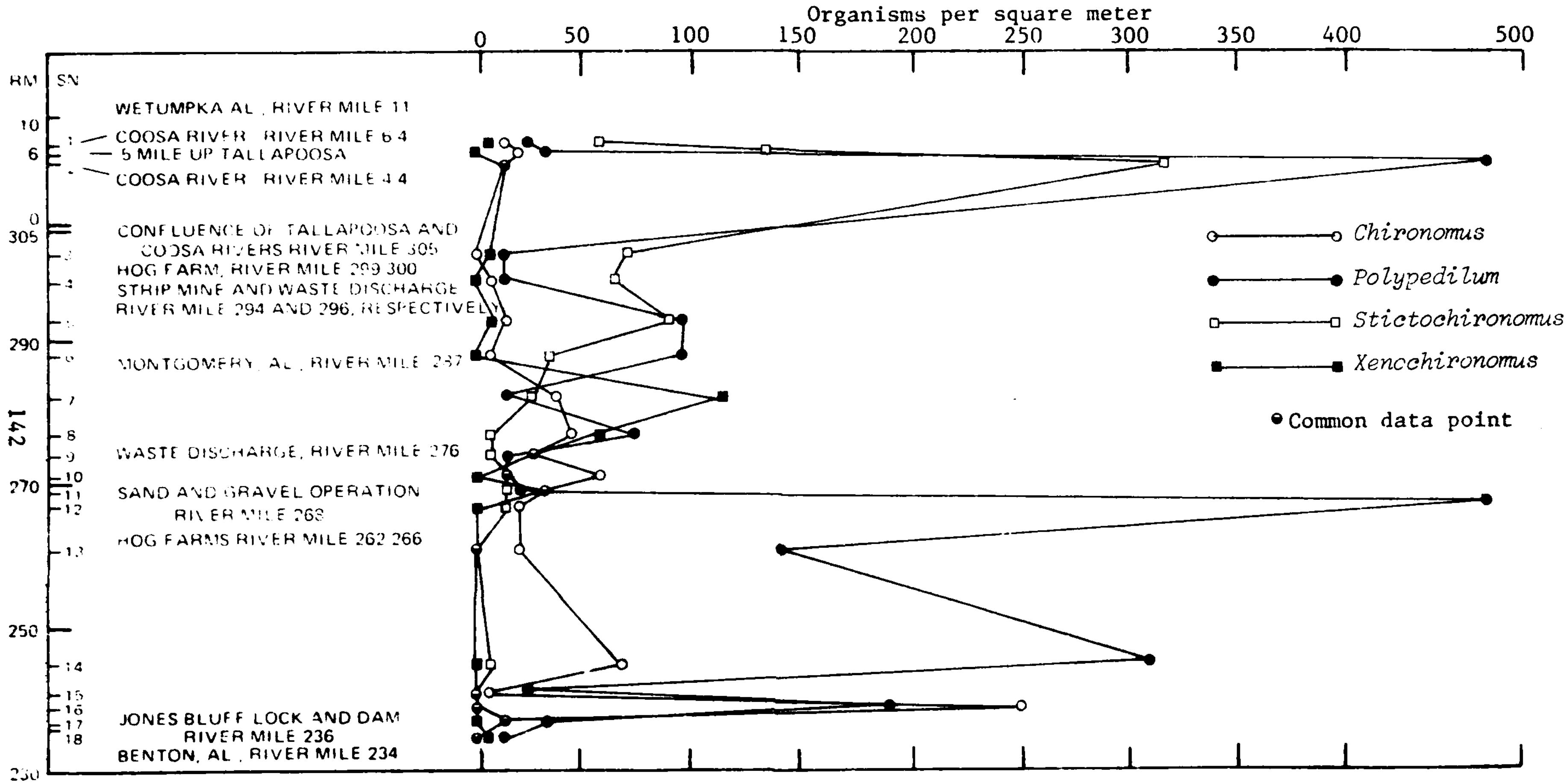


Figure 71.--Common genera (number per square meter) of Chironomini (Chironomidae: Diptera) collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August, 1978.

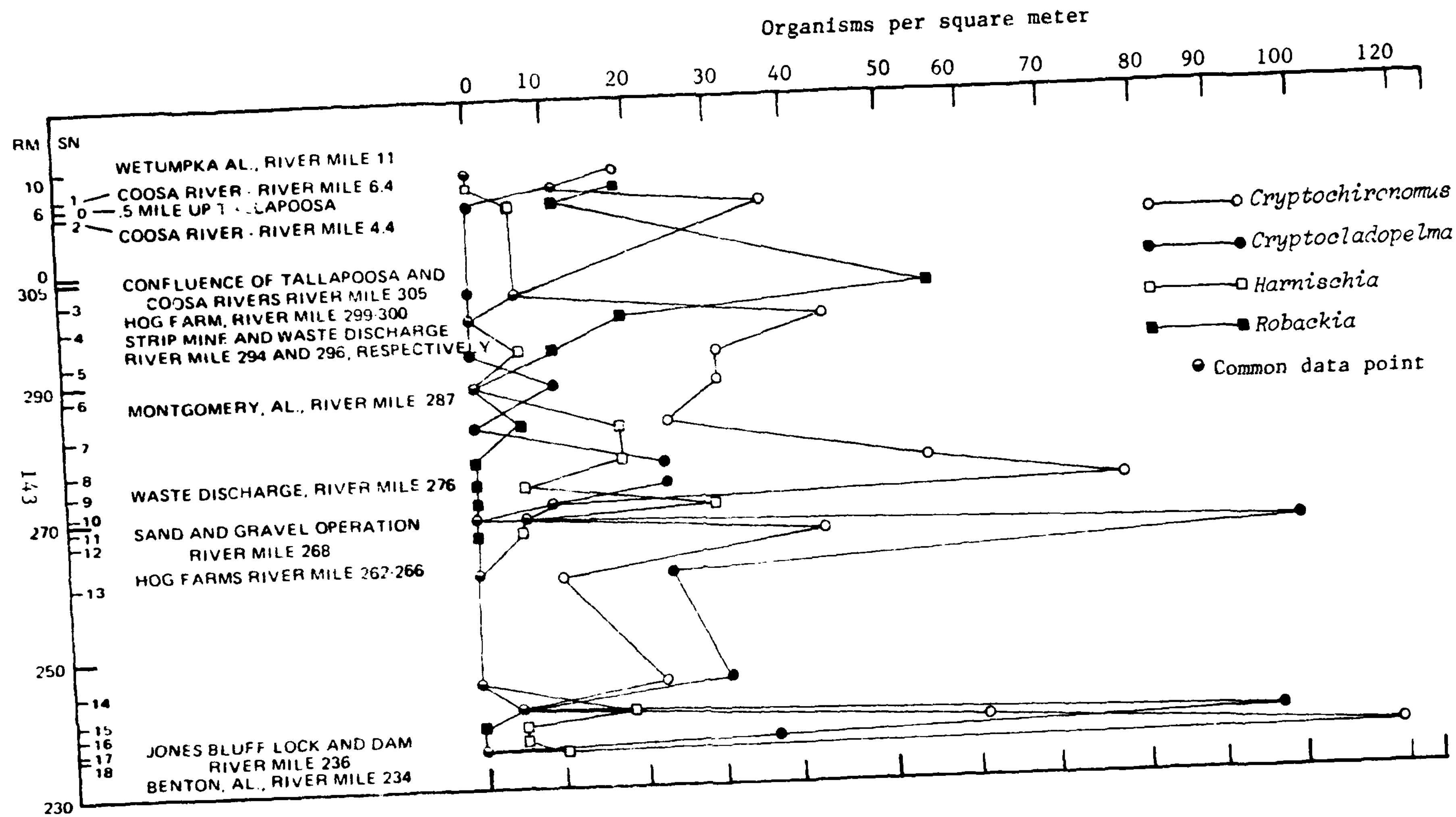


Figure 72.--Common genera (number per square meter) of the *Harnischia* complex (Chironomidae:Diptera) collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August, 1978.

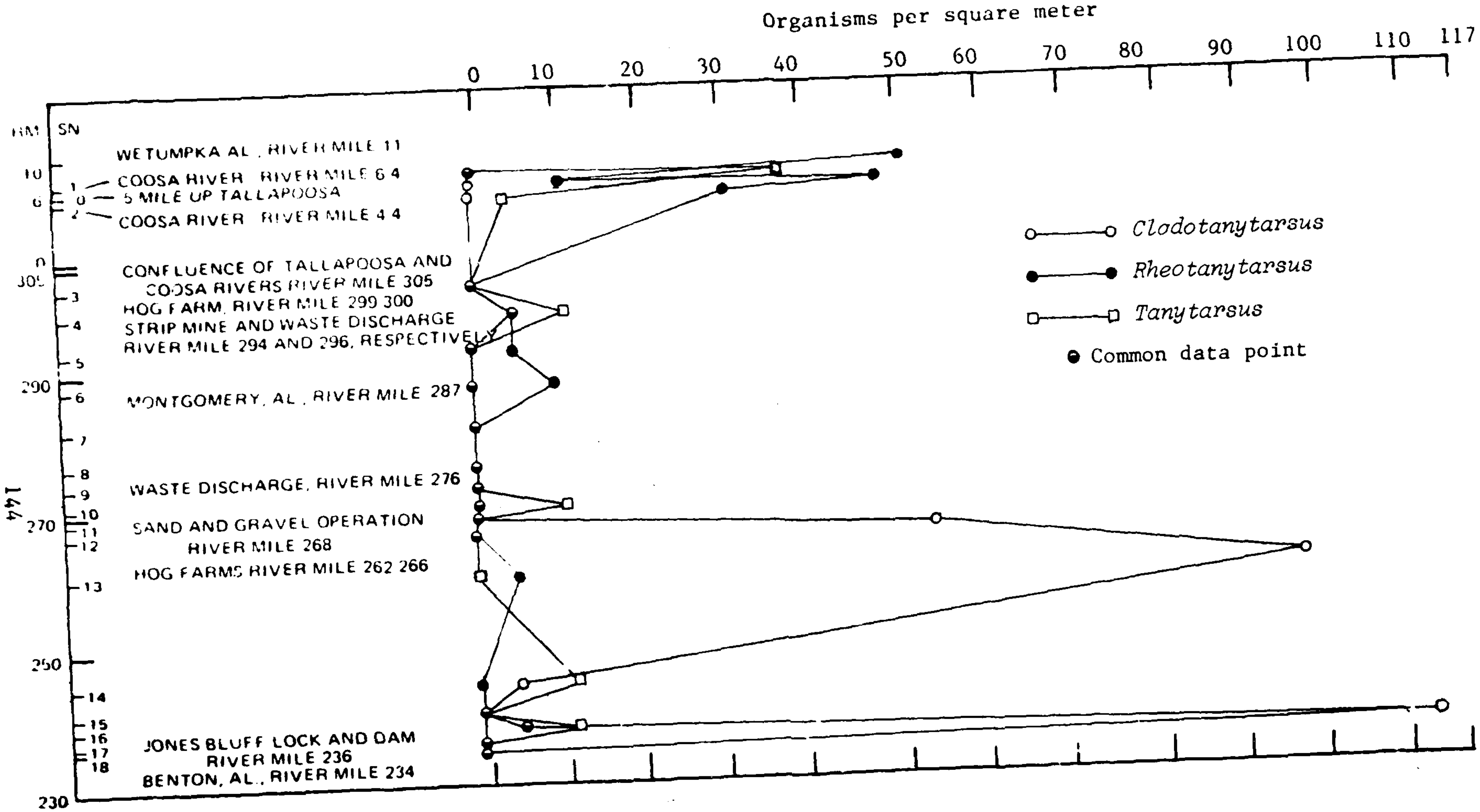


Figure 73.--Common genera (number per square meter) of Tanytarsini (Chironomidae:Diptera) collected with a Ponar dredge from 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April through August, 1978.

In the Ephemeroptera (mayflies), three genera were frequently encountered: *Caenis*, *Hexagenia* and *Tricorythodes*. In general, *Caenis* and *Tricorythodes* were most abundant in the Coosa and Tallapoosa Rivers (fig. 67). Both of these genera are fairly tolerant of pollution and occur in slow-moving waters (Edmunds, Jensen and Berner, 1976); so any reason for their lower numbers in the Alabama River is unknown. *Hexagenia* nymphs were only collected in the Alabama River, reaching their greatest densities in the lacustrine area (fig. 67). In 1977, *Hexagenia* was also commonly collected just above the Jones Bluff Lock and Dam. *Hexagenia*, which are considered to be pollution intolerant (Weber, 1973), frequently inhabit rivers and lakes where substrates are soft (Edmunds, Jensen and Berner, 1976). The soft substratum of the impounded area, where silt would accumulate, probably accounts for the large numbers of *Hexagenia*. *Hexagenia* was also fairly abundant at stations 4 through 7 for reasons not evident in the data.

In the Trichoptera (caddisflies), a similar pattern to that of the mayflies was noted (fig. 68). In the caddisflies, *Cheumatopsyche*, as well as *Hydropsyche*, was generally restricted to the Coosa and Tallapoosa Rivers (fig. 68; table C-1). The Hydropsychidae are fairly pollution tolerant, but their distribution is generally current related (Hynes, 1971). It is likely that the faster currents of the Coosa and Tallapoosa Rivers result in the frequency of occurrence of both hydropsychids. *Cyrnellus*, a Polycentropidae, is, on the other hand, a common inhabitant of larger rivers and reservoirs (Wiggins, 1977). In the Jones Bluff reservoir, *Cyrnellus* was commonly collected at several points along the river as well as in the lacustrine area (fig. 68). *Cyrnellus* also tends to be fairly pollution tolerant (Weber, 1973).

Dipterans (flies) were the most frequently collected insects in the Jones Bluff reservoir (table C-1). *Chaoborus*, which is often planktonic, was most abundant at station 17 in the lacustrine area (fig. 69), which might be expected since members of this genus generally prefer to inhabit eutrophic lakes or ponds (Brinkhurst, 1974). The same observation was made in the 1977 report (GSA, 1983). *Chaoborus* was also frequently collected at stations 9 and 10 (fig. 69) for reasons not evident from available data.

Palpomyia, although collected all along the Jones Bluff reservoir, reached greatest population densities in the lacustrine region and the area immediately upstream (fig. 69). According to Merritt and Cummins (1978), *Palpomyia* is often abundant in reservoirs where it occurs in both littoral and profundal zones, usually in association with vegetation.

As was the case in 1977, the Chironomidae were the most commonly collected insects in the Jones Bluff reservoir. The Tanypodinae were comprised primarily of *Ablabesmyia*, *Coelotanypus* and

Procladius. All of these genera were frequently encountered in the Jones Bluff reservoir but were most common in the lacustrine area and at station 10 (fig. 70). These three genera are considered to be fairly pollution tolerant (Weber, 1973). *Coelotanypus* is thought to be primarily a lake or reservoir inhabitant, while *Ablabesmyia* and *Procladius* occur in lentic as well as lotic environments (Merritt and Cummins, 1978). With the exception of the large numbers of *Coelotanypus* at station 11, such is the case in the Jones Bluff reservoir (fig. 70). The distribution patterns for several invertebrate groups were unusual at stations 10 and 11. The available data, both biological and chemical, give no clear explanation for the patterns and more intensive collecting in this area is needed.

In the Chironominae, two groups of Chironomini were singled out for observation. The first group included *Chironomus*, *Polypedilum*, *Stictochironomus* and *Xenochironomus*. These were the most frequently collected chironomids in the Jones Bluff reservoir. *Polypedilum* was very common in the Jones Bluff reservoir, occurring in large numbers in the Coosa River as well as in the lacustrine area (fig. 71). *Polypedilum* is generally pollution tolerant (Weber, 1973). The other three genera had very specific distribution patterns (fig. 71). *Chironomus* reached high population levels only at station 16 in the lacustrine area. *Chironomus* is generally considered to be a lake or reservoir inhabitant and is pollution tolerant (Merritt and Cummins, 1978). *Stictochironomus*, on the other hand, is considered to be pollution intolerant and an inhabitant of lotic environments (Merritt and Cummins, 1978). *Stictochironomus* was almost entirely limited to the Coosa and Tallapoosa Rivers (fig. 71). *Xenochironomus* is also primarily a river inhabitant and is generally considered to be pollution intolerant (Weber, 1973). In the Jones Bluff reservoir, *Xenochironomus* was only collected in large numbers at stations 7 and 8 for reasons not evident from the available data (fig. 71).

The other group of Chironomini looked at in detail was the members of the *Harnischia* group. With the exception of the *Robackia*, genera in the *Harnischia* group, including *Cryptochironomus*, *Cryptocladopelma* and *Harnischia*, were encountered all along the Jones Bluff reservoir (fig. 72). *Robackia* was most abundant near the confluence of the Coosa and Tallapoosa Rivers (fig. 72). *Robackia* was unusual in that almost all larvae occurred at the stream center in the profundal zone. *Cryptochironomus* reached greatest population densities in the lacustrine area, but members of the genus were also collected frequently at stations 4, 8 and 9 (fig. 72) for reasons not evident from available data. *Cryptocladopelma* also seemed to be primarily an inhabitant of the lacustrine area and the stretch of river immediately upstream (fig. 72). *Harnischia* did not demonstrate any specific distribution pattern in the river, occurring in small numbers in the lacustrine as well as riverine area of the river (fig. 72). With the exception of the *Robackia*, the members of the *Harnischia* group are fairly pollution tolerant (Weber, 1973).

Representatives of the Tanytarsini showed definite distribution patterns in the Jones Bluff reservoir (fig. 73). *Tanytarsus* and particularly *Rheotanytarsus* were collected in large numbers in the Coosa and Tallapoosa Rivers (fig. 73). *Rheotanytarsus* is primarily an inhabitant of swifter waters (Hynes, 1972). *Cladotanytarsus*, on the other hand, is often encountered in lakes and reservoirs (Merritt and Cummins, 1978). In the Jones Bluff reservoir, *Cladotanytarsus* reached very high population densities in and immediately upstream from the lacustrine area (fig. 73). The Tanytarsini are generally fairly pollution tolerant (Weber, 1973).

Any pattern in the diversity and evenness indices was obscure (table 14). Diversity did seem to be lower overall during run 2; perhaps, this was a reflection of season. Most insects, which were the most diverse taxa, had probably emerged during this run, resulting in a general drop in diversity. Diversity indices for runs 1 and 4 were similar.

The biomass data are primarily a reflection of *Corbicula* abundance. High biomass readings shown in table 15 generally correspond to the population peaks in figure 66. The low biomass readings during run 4 correspond to the presence of the juvenile stages of *Corbicula*.

In general, the observations made concerning macroinvertebrates in the 1977 project report (GSA, 1983) are applicable to the 1978 study. In both years, the insects were the most diverse group collected with the Chironomidae being the most abundant. In both years, the fauna was comprised primarily of those organisms considered by Weber (1973) to be pollution tolerant. Since only run 1 of 1977 and run 4 of 1978 were conducted during the same season, it is difficult to make comparisons on the distribution of individual taxa. During these periods of overlapping collections, however, the distributions of *Chaoborus* and *Corbicula* were essentially the same in the Jones Bluff reservoir. Based on an overview of the macroinvertebrate data for 1977 and 1978, it is likely that the fauna of the Jones Bluff reservoir has not changed appreciably.

4. Benthic Macroinvertebrates--Multiplate Sampler

In general, the macroinvertebrate fauna collected on the multiplate samplers was similar to that of the river bottom. The most notable difference was that the multiplate samples tended to collect more organisms which, according to Hynes (1972), either require or favor stable substrates. Trichoptera, particularly the net-spinning Hydropsychidae and Polycentropidae, were much more frequently encountered on the multiplate samples than in the benthos. Of the Diptera, *Rheotanytarsus*, which also requires a stable substrate and swift currents (Hynes, 1972), was extremely common particularly in the Coosa and Tallapoosa Rivers (table C-2). Odonata, which prefer solid substrates (Needham and Westfall, 1954), were more frequently collected with the multiplate samplers than with Ponar dredges (table C-2). In general, chironomids, caddisflies, and naidid worms were the most abundant taxa encountered on the multiplate samplers (table C-2). In addition, the distribution patterns of the benthic fauna seemed to hold for the fauna of the multiplate samplers. The multiplate samplers gave a more complete view of the fauna of the Jones Bluff reservoir as a number of insects were only collected on the multiplate samplers (table C-2).

5. Aquatic Macrophytes

The vegetation bordering the Alabama River is mostly deciduous forest with *Quercus* (oak), *Planera* (water-elm), *Carya* (hickory) and *Taxodium* (bald-cypress) being the dominant genera. In general, the river proper is not infested with aquatic macrophytes. However, an area from Jones Bluff Lock and Dam to mile 249 does have large concentrations of macrophytes. Dominant species include *Alternanthera philoxeroides* (alligatorweed), *Justicia americana* (water-willow), and *Ludwigia peploides* (water-primrose). All of these occur in extensive colonies which could detrimentally affect recreation in the future. In the Alabama River, there probably is no need for concern that these species will affect navigation. In the channel area the river is deep and all of these species are rooted; consequently, they cannot survive in deep turbid waters similar to those of the river.

Alternanthera philoxeroides, *Justicia americana* and *Ludwigia peploide* (also often called *Jussiaea repens*) all root in shallow waters along the edges of the Alabama River. Their decumbent stems float outward from shore forming floating mats, which often cover very large areas in protected bays and backwaters. These species are the major components in the two areas cited as having large infestations of aquatic plants. Canals in Florida and Louisiana have been completely clogged by *A. philoxeroides* (Sculthorpe, 1967) and in various parts of the world by *L. peploide* (Chomchalow and Pongpangan, 1976). This clogging of canals is possible because the channels are relatively narrow and the decumbent stems growing from each side can come into contact in the middle forming a floating mat over the entire canal. Such clogging is unlikely in the Alabama River because of its width. Although navigation will probably be unaffected by *A. philoxeroides* and *L. peploids*, the species does affect recreation in the river as their massive colonies in the bays make fishing difficult. *J. americana* has not been considered to directly affect navigation or recreation. However, Penfound (1940) indicates that large populations of the species can serve as breeding grounds for noxious insects, and, therefore, indirectly affect recreation.

Approximately twice the number of species were located in 1978 (70) than in 1977 (29) for the Jones Bluff Reservoir. There are two major reasons to account for this difference. First, the 1977 survey was conducted during late summer and autumn whereas the 1978 survey was conducted during spring and summer. Several species flower and fruit early in the summer and die back during late summer months. These species were located in 1978 but were not located in 1977 as they had died back before the 1977 survey. Also, the small free-floating species, such as Lemnaceae (duckweed) and *Azolla caroliniana* (water fern), do not commonly occur in flowing water. These species were abundant during the first survey of the river this year but were rare during the second survey. None of these species was found in 1977. These taxa are abundant in backwater sloughs and probably had been washed into the river by the high water of the spring. By late summer, the species had been flushed from the river and were found only in a few floating islands of plants.

Secondly, during 1977, the Alabama River was surveyed from its origin downstream. As a result, additional species were added to the list for the lower reservoirs but were omitted from Jones Bluff, although the species actually grew in that reservoir. These species were included in the 1977 report but were not noted for Jones Bluff Reservoir.

There are only two areas on the Jones Bluff Reservoir where aquatic vegetation poses potential water-use problems. These areas are between river miles 237 and 238 and river miles 238.5 and 240. (River miles given are those of the COE Navigation Charts but do not correspond to the COE Project Location Maps.) These two areas have been illustrated (figs. 74, 75 and 76). The former community covers an area of about 1 acre; the latter covers an area of about 8 acres. The two populations of plants are located behind islands and will only interfere with fishing in those small bays and not with other water sports or navigation.

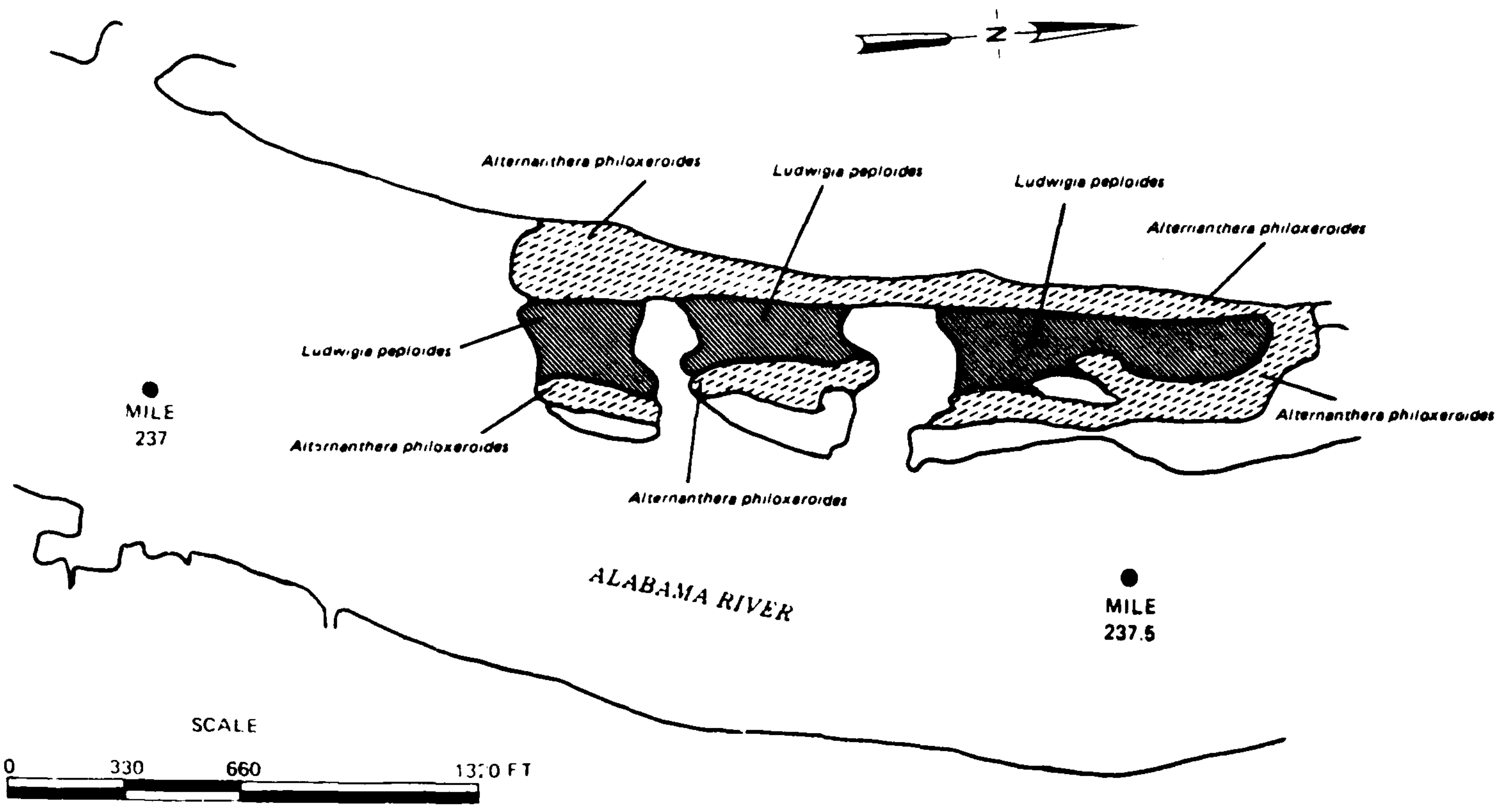


Figure 74.--Concentrations of macrophytes in Jones Bluff Lake from river mile 237.0 to 237.6.

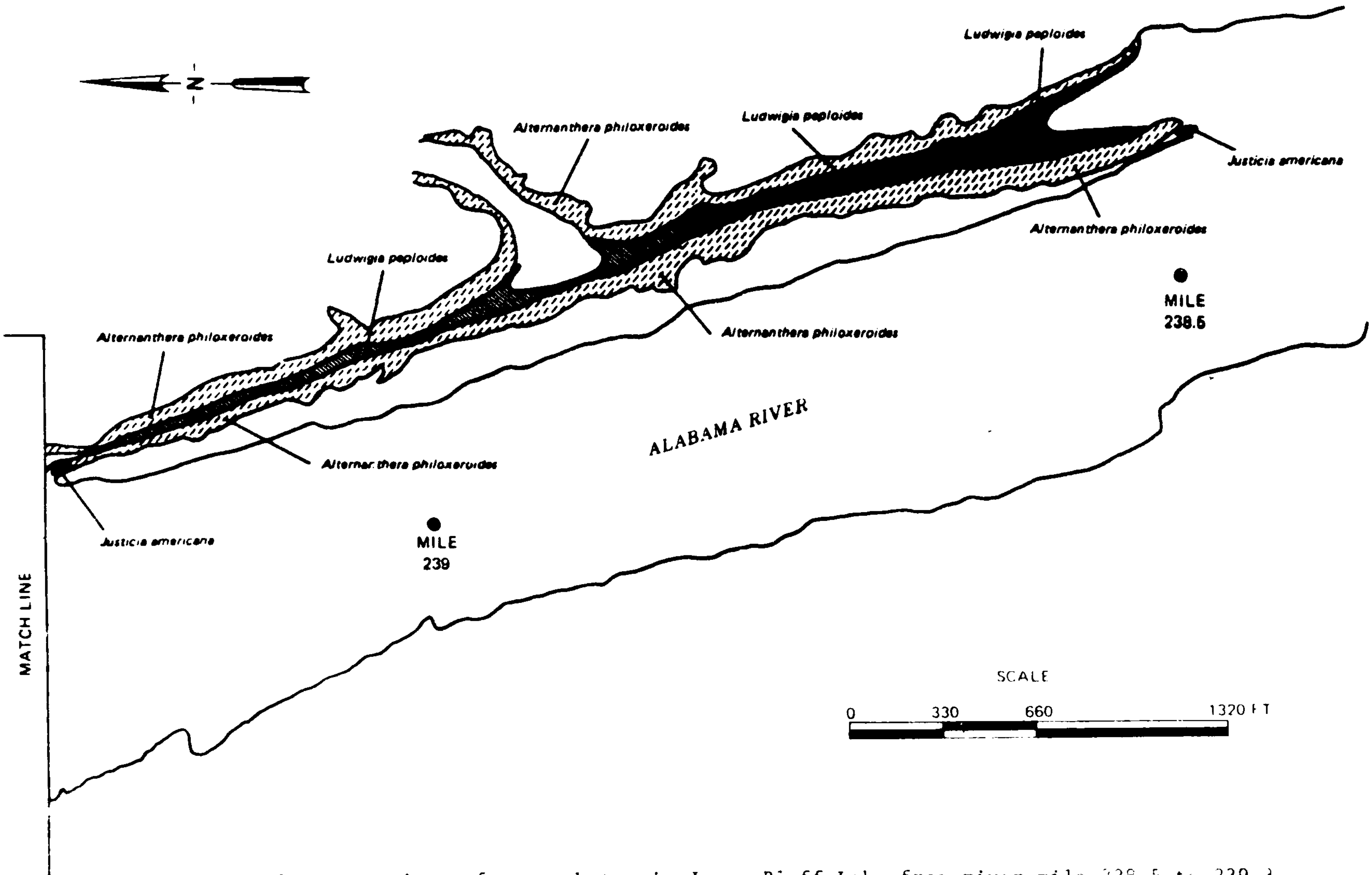


Figure 75.--Concentrations of macrophytes in Jones Bluff Lake from river mile 238.5 to 239.3.

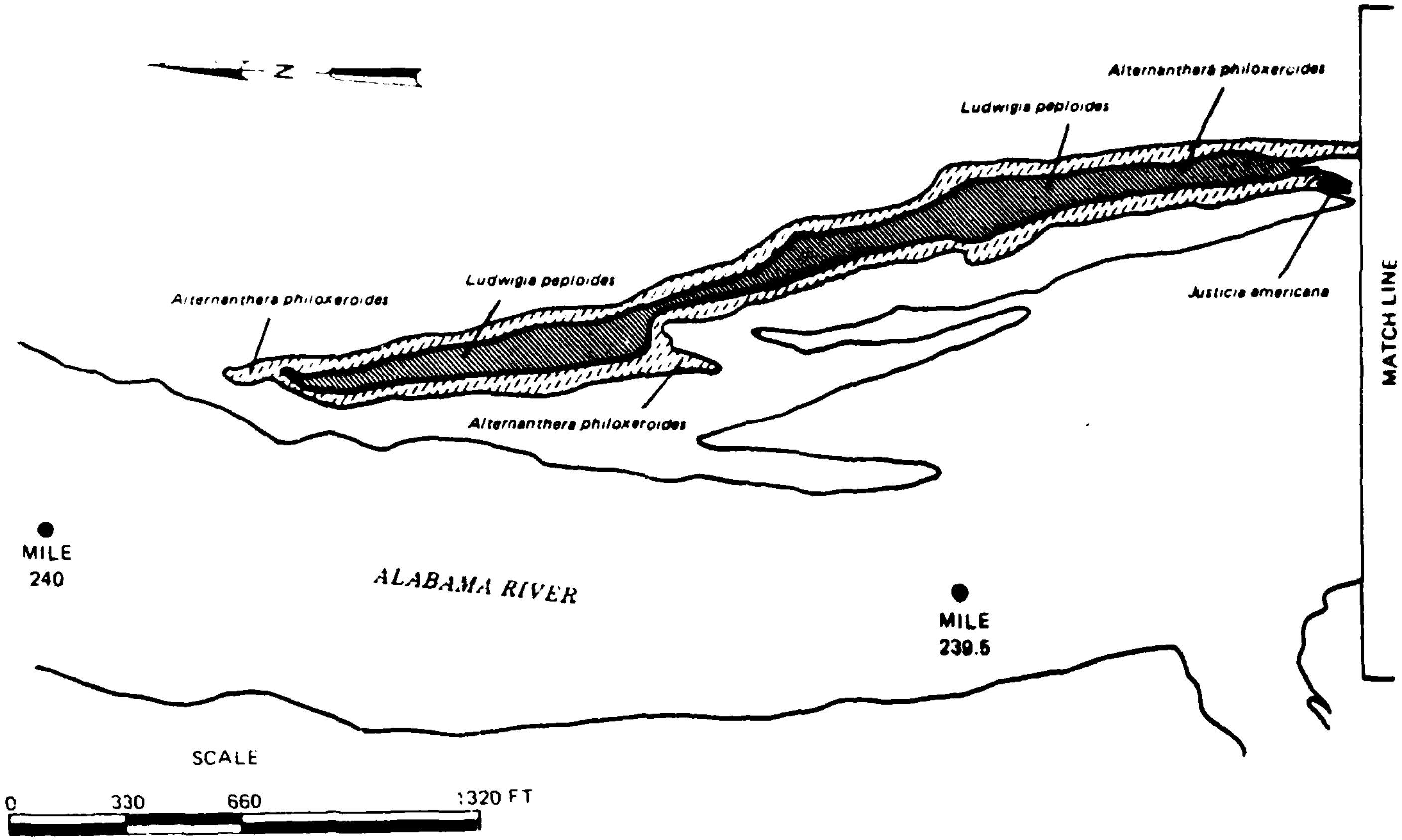


Figure 76 .--Concentrations of macrophytes in Jones Bluff Lake from river mile 239.3 to 240.0.

VI. Water-Quality/Biological Density Relationships

Although densities of aquatic biological communities are not entirely regulated by water quality, water-quality interactions are of major importance. In the 1977 and 1978 phases of the Alabama River study, water-quality data was not obtained for a full year, making biological trend comparisons difficult. In addition, during the 1977 and 1978 study phases, different phytoplankton collection and analytical procedures were utilized. During the 1977 study, phytoplankton were collected with a Wisconsin-style plankton net with 80-micron mesh. Phytoplankton were counted as organisms rather than cells and, owing to the lack of accurate flow data, the number of organisms had to be estimated rather than accurately calculated. In the 1978 study, whole-water phytoplankton samples were collected from depth-integrated samples. An aliquot was removed from each integrated sample and analyzed using the Utermöhl method. Cells rather than organisms were counted. Adenosine triphosplate, chlorophylls *a*, *b* and *c*, algal growth potential, and dry biomass were also determined during 1978 to better quantify plankton dynamics in the reservoir. Since the information gathered during the second year of the study is more complete and accurate, discussion will be primarily centered on the 1978 phase of the study.

Overall, the water quality of the Jones Bluff reservoir was good. Of the parameters measured, only iron and manganese at various times of the year reached levels which could possibly inhibit plant productivity. The high discharge of the Alabama River prevented any summer stratification and kept the system well mixed.

The overall trend detected in phytoplankton populations was an increase in total cells from lows in the spring to highs in the summer and fall (figs. 77 through 81). In the April collections (run 1), the total number of phytoplankton cells never exceeded 4 million cells per liter and generally averaged between 1 and 2 million cells per liter (fig. 77). Water temperature was at its lowest, ranging from 8 to 13°C. Nitrogen (NO_3 + NO_2 as N) averaged 0.2 mg/l and total phosphorous averaged 0.02 mg/l. Tests of algal growth potential at selected stations during this run indicated both phosphorous and nitrogen were limiting. In the lotic portion of the reservoir, phosphorous appeared to be the more limiting factor while in the lacustrine portion of the reservoir where algal populations were higher (fig. 77), nitrogen was more limiting (tables A-5 through A-10). ATP concentrations were low at stations 3 and 18, but values were similar at all other stations. ATP values were also, on the average, higher during run 1 than during the following runs. Concentrations of chlorophyll *a* during run 1 were very low at all

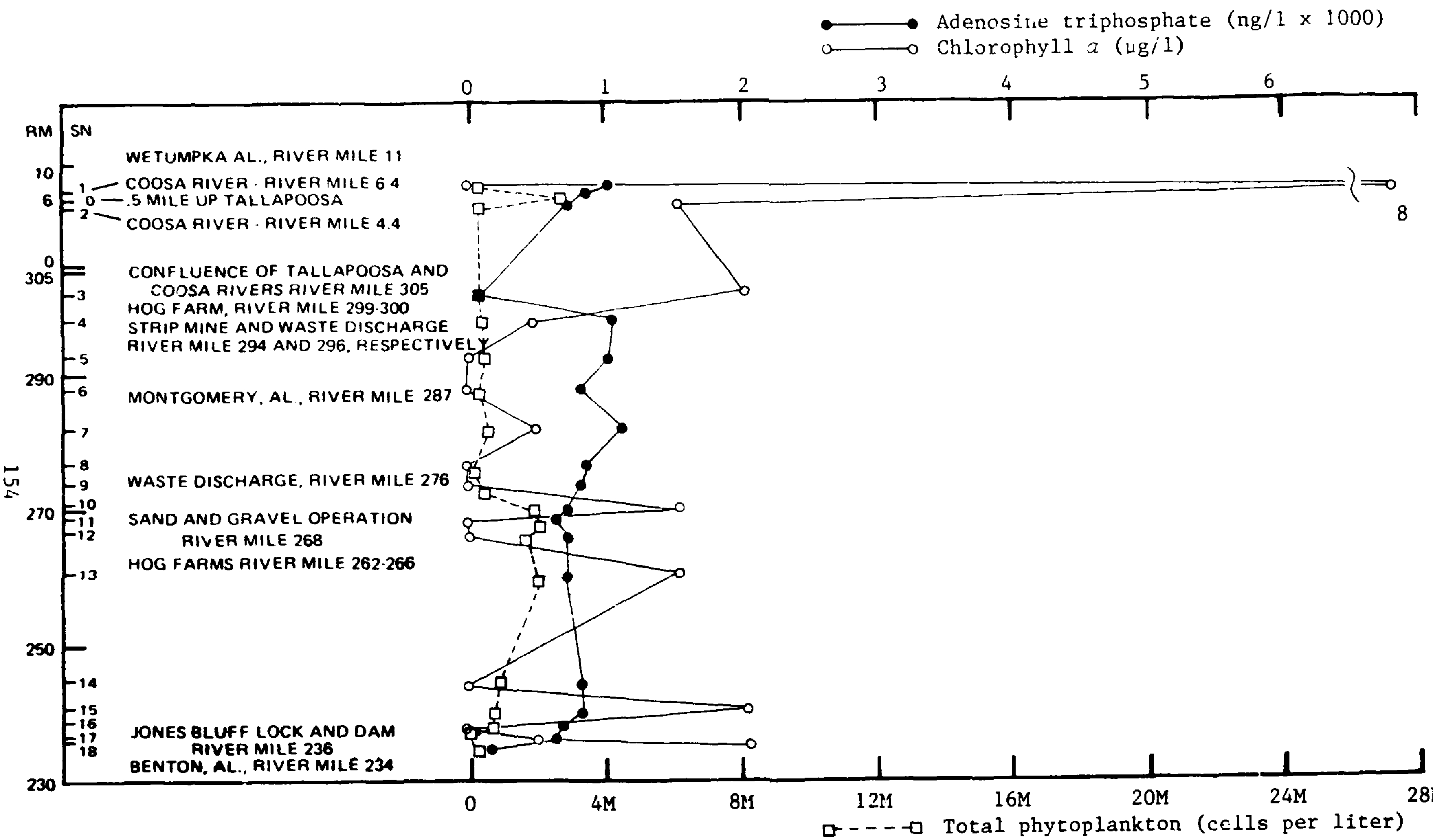


Figure 77.--Total cells (cells/liter) versus ATP concentrations found at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, April 10-18, 1978.

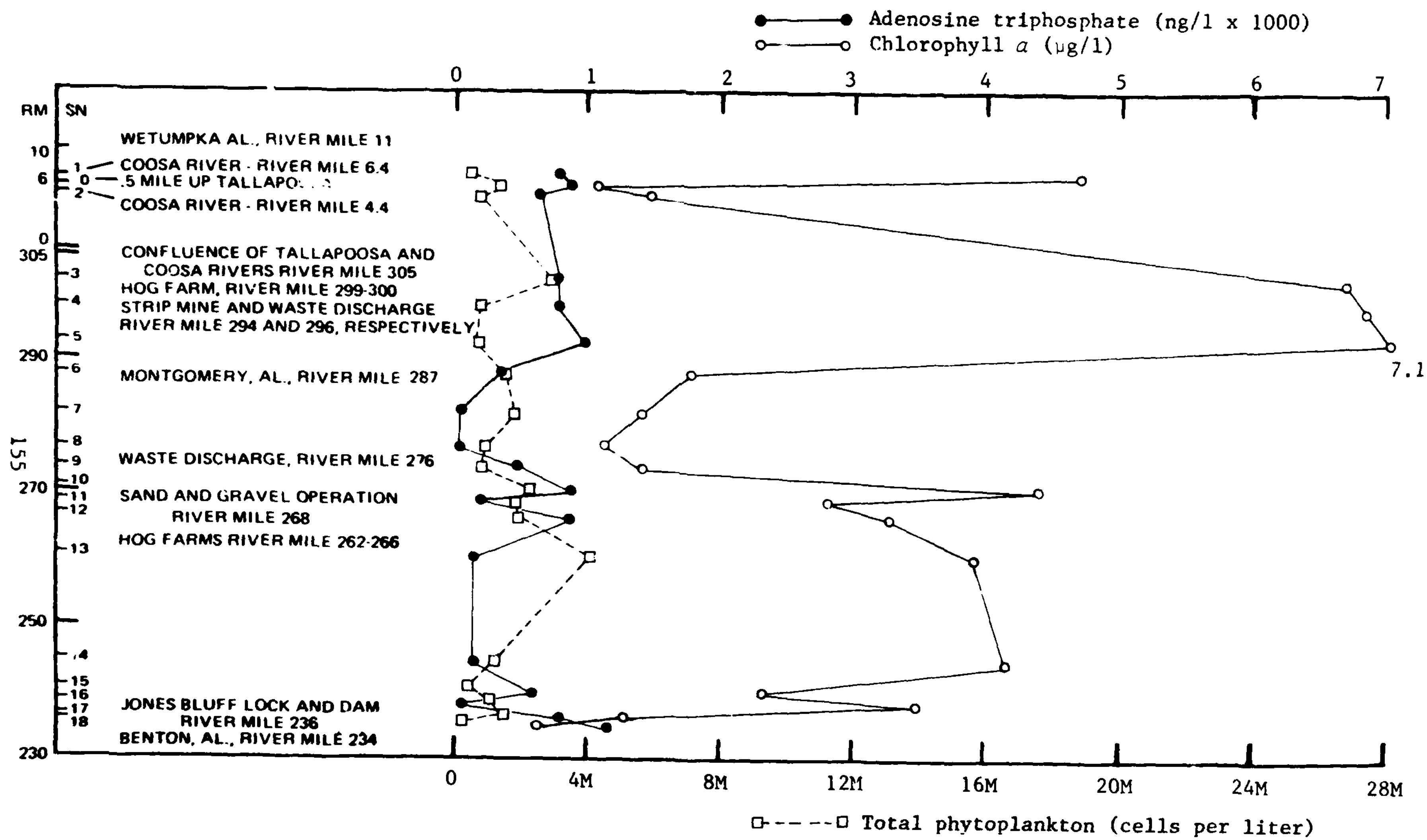
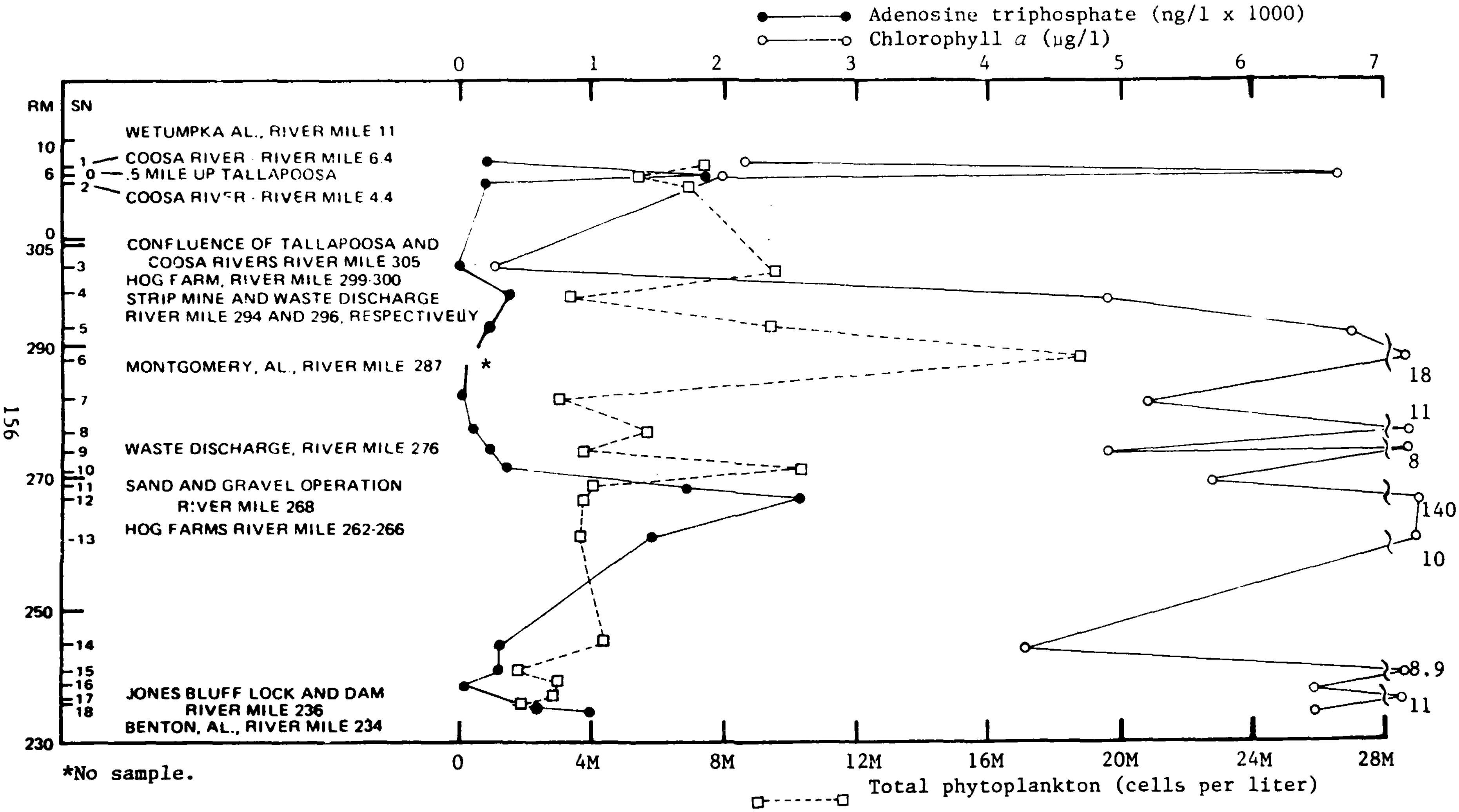
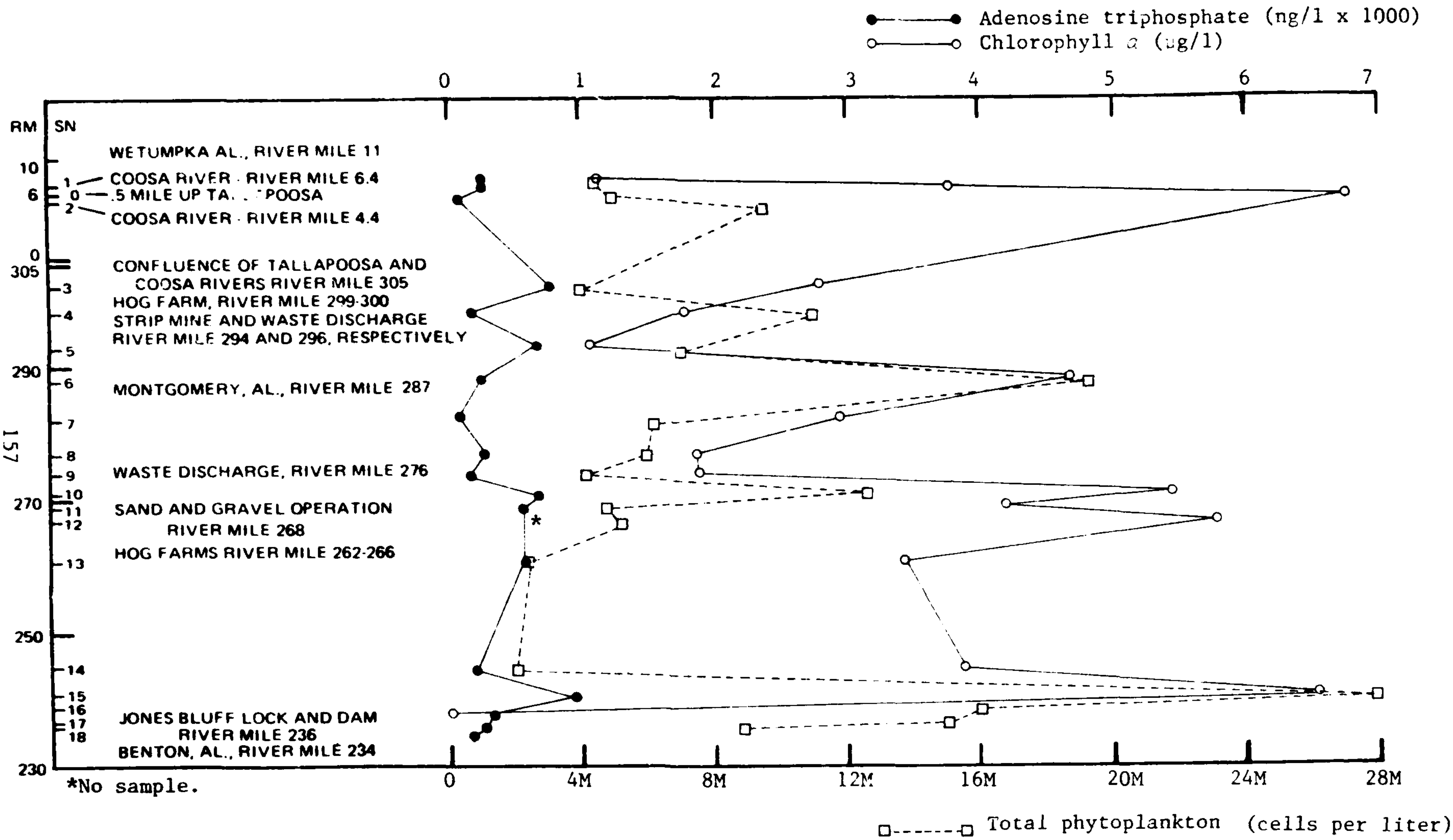


Figure 78.--Total cells (cells/liter) versus ATP concentrations found at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, May 22-29, 1978.



*No sample.

Figure 79.--Total cells (cells/liter) versus ATP concentrations found at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, July 6-11, 1978.



*No sample.

Figure 80.--Total cells (cells/liter) versus ATP concentrations found at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, August 1-7, 1978.

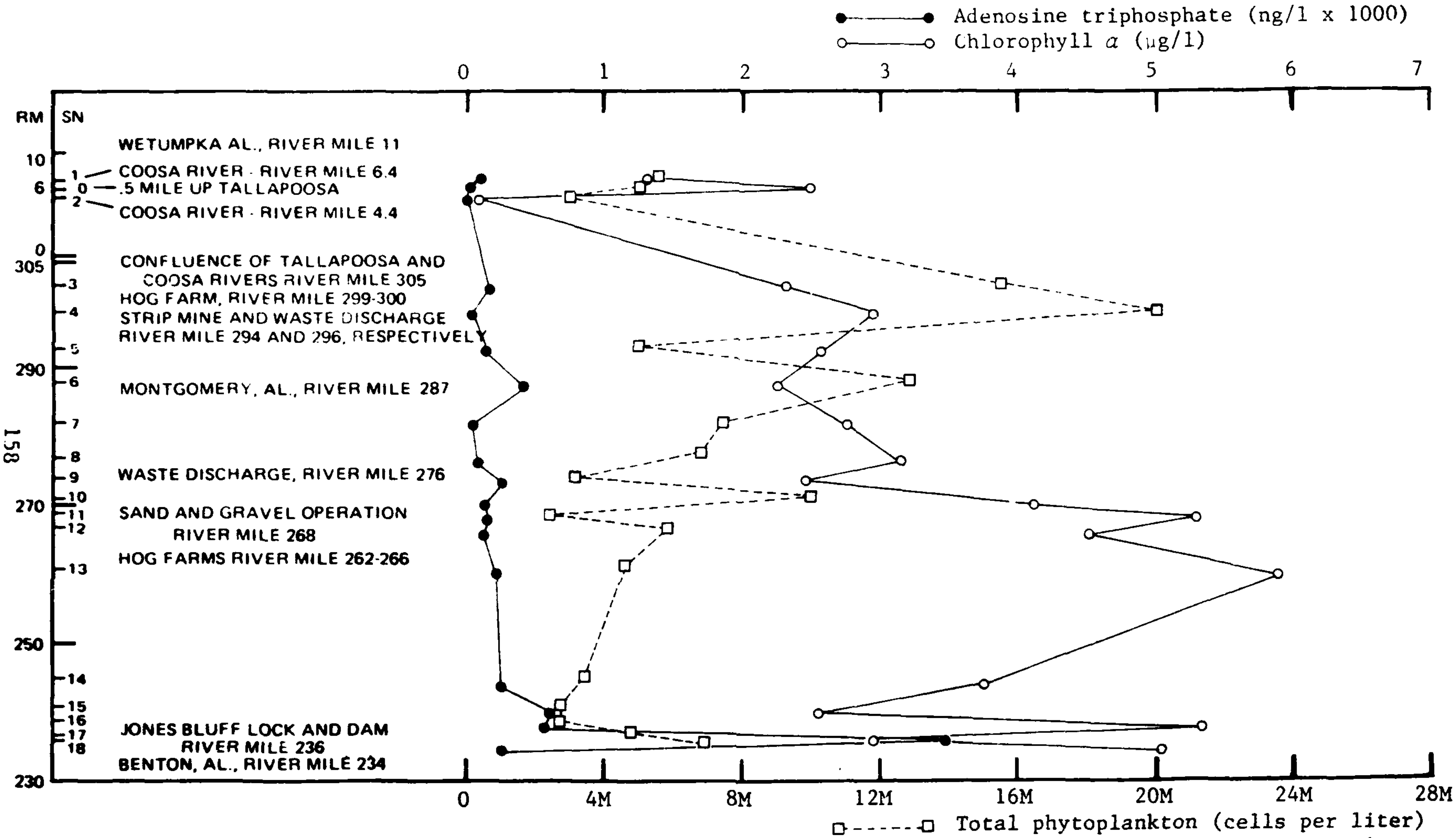


Figure 81.--Total cells (cells/liter) versus ATP concentrations found at 18 stations above and one station below Jones Bluff Lock and Dam on the Alabama, Coosa and Tallapoosa Rivers, September 12-18, 1978.

stations except the Tallapoosa River station (station 0). The green alga *Monoraphidium contortum* was the dominant at this station. At all other stations, the dominant was *Melosira italica* (table B-2). This abundance of diatoms is reflected in the high concentrations of chlorophyll *c* at all stations with the exception of station 0 (table A-1).

In the second collection run (May 22-29, 1978), total numbers of phytoplankton in the Jones Bluff reservoir were very similar to the April run, values again being generally below 4 million cells per liter (fig. 78). Water temperature had warmed to between 20 and 24°C; nitrogen (NO_3 + NO_2 as N) concentrations averaged 0.3 mg/l and total phosphorous averaged 0.04 mg/l. Concentrations of both these nutrients had increased over the April levels suggesting that water temperature and season are still primarily influencing algal growth. ATP values fluctuated with high readings at stations 0 through 5, 10, 12, 15, 17 and 18. Since neither phytoplankton or zooplankton numbers showed increases at these stations, these increases in ATP may be reflecting other viable organisms, perhaps bacterial or fungal. Although, as in run 1, *Melosira italica* was the dominant phytoplankter at most stations, the green algae, *Monoraphidium contortum* and an unidentified coccoid green were often the dominants (table B-2). The phytoplankton population during this run would appear to be shifting from the spring predominance of *Melosira* to the summer predominance of green and blue-green algae. This shift is also reflected in the chlorophyll concentrations. Chlorophyll *c* concentrations while high at several stations (0, 3, 7, 8, 17 and 18) were usually lower than concentrations of chlorophyll *a* (table A-1).

Phytoplankton density was markedly increased during run 3 (July 6-11, 1978), with a high reading of near 19 million cells per liter at station 6 (fig. 79). Two diatoms *Synedra ulna* and *Melosira italica* were the dominants at this station (table B-2), but the high ratio of chlorophyll *a* to *c* at this station suggests a sizeable population of green algae as well (table A-1). Diatoms still dominated the plankton flora, particularly in the lotic portion of the reservoir, but *Melosira italica* was only dominant at three stations (4, 8 and 10) being replaced by *Synedra ulna* and *Cyclotella stelligera* (table B-2). In the lacustrine portion of the Jones Bluff reservoir, diatoms were replaced by green (*Monoraphidium*) and blue-green (*Merismopedia*) algae (table B-2). As in the preceding collection runs, no clear relationship between phytoplankton densities and ATP concentrations was detected (fig. 79). In general during run 3, ATP levels peaked at stations 0 and 12. The peak at station 12 had a corresponding peak in the chlorophyll *a* concentration, but no increase in phytoplankton densities at this station was detected. Alga growth potential tests were not conducted during run 3, but concentrations of nitrogen (NO_3 + NO_2 as N) and phosphorous were essentially the same as determined during run 2.

Phytoplankton populations were at their highest levels during run 4 (August 1-7, 1978), reaching a peak of 28 million cells per liter at station 15 (fig. 80). The dominants at this station were *Merismopedia* *tenuissima* and *Monoraphidium contortum.* In the previous collection runs, diatoms were dominant in the upper portion of the Jones Bluff reservoir, being replaced in the lower reservoir by green and blue-green algae. In this collection run, it can be seen in table B-2 that blue-greens (*Raphidiopsis, Merismopedia* and an unidentified coccoid) and green algae (*Scenedesmus, Carteria, Monoraphidium* and an unidentified coccoid) predominated the phytoplankton in the reservoir. Diatoms were dominant at only stations 0 and 10. Both chlorophyll *a* and ATP concentrations also peaked at station 15 (fig. 80). Of the other peaks in ATP at stations 3, 5 and 10, only station 10 had a corresponding peak in phytoplankton and chlorophyll *a*. With the increases in green and blue-green algae during this run, the trend curves of chlorophyll *a* and total phytoplankton density illustrated in figure 80 were similar. The addition of a chelating agent (EDTA) in conjunction with phosphorous and/or nitrogen resulted in greatest algal production in the algal growth potential tests (tables A-11 through A-16). The increased production with the addition of a chelating agent suggests that heavy metals, most likely iron and manganese, which were high throughout the reservoir (table A-1), are inhibiting production rather than a shortage of soluble forms of the minerals.

In run 5 (September 12-18, 1978), the phytoplankton community of the Jones Bluff reservoir is in decline (fig. 81). Total phytoplankton densities were generally below 8 million cells per liter (fig. 81) with the exception of stations 3, 4, 6 and 10. At station 4, a high total phytoplankton count of 20 million cells per liter was reached. The diatom *Melosira italica* was again the dominant at most stations in the lotic portion of the reservoir. In the lacustrine portion blue-green and green algae continued their floral dominance. Chlorophyll *a* concentrations remained high throughout the reservoir, particularly in the lacustrine portion, indicating the abundance of the now declining populations of green and blue-green algae throughout the reservoir. ATP levels were overall at their lowest during run 5, except a very high peak at station 17. These low levels of ATP would seem to suggest a plankton community in decline. The high reading at station 17 is not reflected in phytoplankton or zooplankton densities and is possibly a reflection of an unusually high concentration of bacteria and/or fungi. Results of the algal growth potential tests during run 5 were essentially duplicates of run 4 (tables A-17 through A-24).

Zooplankton populations in the Jones Bluff reservoir did not seem to fluctuate in response to water quality. Rather zooplankton density appeared to be related to phytoplankton density. Beginning with the May collection run and extending through the summer, zooplankton numbers increased sharply in response to phytoplankton production. As phytoplankton populations began to decline in August and September, zooplankton numbers remained high. Since zooplankton population increases generally lag phytoplankton increases to some extent, zooplankton numbers should decline sharply in the fall. The increased grazing of phytoplankton by zooplankton during the summer is likely an important component in the phytoplankton dynamics in the reservoir. The cladocerans, *Bosmina* and *Diaphanosoma*, and rotifers, primarily *Conochilus*, *Synchaeta* and *Polyarthra*, were the most common zooplankters collected in the reservoir (table B-5).

The sampling regime for benthic macroinvertebrates was such that it is not possible to relate distribution to water quality. It seems unlikely, however, that the small changes in water quality detected in Jones Bluff reservoir affected benthic invertebrates. Distribution was more likely influenced by substrate characteristics, both chemically and physically, and by streamflow in the river. Too few samples were collected to detect any relationship between benthic distribution and substrate, but a relatively distinct lotic and lacustrine fauna was evident. A predominately riverine fauna occurred from stations 0 through 13, characterized by *Cheumatopsyche*, *Hydropsyche*, *Stictochironomus* and *Rheotanytarsus*. The reservoir from stations 14 through 17 was inhabited by a typical lacustrine fauna including *Hexagenia*, *Palpomyia* and *Chironomus*. Most increases or decreases in faunal numbers could be attributed to life history patterns rather than water quality. Insect numbers were low during May as adults emerged. Noninsect densities were high during run 4, in part due to a large number of juvenile *Corbicula*.

The aquatic macrophytes in the Jones Bluff reservoir were probably little affected by subtle changes in water quality. Distribution was primarily in response to streamflow and river depth, with macrophytes restricted to the river margin or to protected backwaters and bays.

VII. Summary

The Coosa and Tallapoosa Rivers, at upper end, and the area just below the Jones Bluff Lock and Dam, at lower end, form the study area. During phase II of the study, water-quality, biological and sediment samples were collected at 18 stations above and one station immediately below Jones Bluff Lock and Dam between April 10 and September 18, 1978. Biological, water-quality, and sediment samples were collected from these same stations at 3-week intervals between August 8 and December 8, 1977, during Phase I of the study. On the basis of water-quality analysis and distribution of fauna and flora the Jones Bluff reservoir could be roughly segregated into a riverine section (stations 0 through 13 and 18) and a lacustrine section near the dam (stations 14 through 17).

Overall, the water-quality of the Jones Bluff reservoir was good. Of the 43 water-quality parameters measured, only iron, manganese, zinc, ammonia, fecal coliform and fecal streptococci periodically exceeded state and federal criteria at certain stations and times. Some tributaries to the reservoir, including Catoma Creek and Big Swamp Creek, as well as municipal, industrial, and agricultural discharges, had a detrimental effect on the water quality of the reservoir.

Typically, the water of the Jones Bluff reservoir was fairly low in dissolved solids; pH, in general, varied between 6 and 8; oxygen was sufficient to support a diverse fish fauna; phosphorus and nitrogen concentrations were below levels likely to lead to eutrophication; and turbidity was high with low light penetration. While slight variations in parameter values were observed between station and sampling periods, no consistently significant differences were detected. The water-quality of the river also varied little in the 1977 and 1978 phases of the study.

The principal factor that is likely creating fairly consistent results is discharge. The Alabama River is a fast-flowing river even during low flow. The combined effects of flow and turbulence served to keep the water column thoroughly mixed and influenced the water quality at each station. No stratification was detected in the Jones Bluff reservoir even at stations adjacent to the dam.

The river bottom was primarily medium to fine sand and silt. Stations in the upper part of the reservoir, notably 0 through 3 and 8, had sizeable percentages of gravel in the substrate. In the sediments, of the 10 metals analyzed, only concentrations of iron, manganese and zinc were high. Heavy metals, as well as pesticide residues, were also detected in the tissues of *Corbicula* clams. Trace amounts of chromium as well as residues of pentachlorophenol and arochlor 1248 were detected in the tissues. Since the metals and pesticide residues are concentrated as they move through the food chain, sediments need close monitoring.

Biological organisms identified during the study included 78 phytoplankton genera, 77 zooplankton and 90 benthic macroinvertebrate taxa (principally genera), and 70 macrophyte species. Phytoplankters most commonly encountered, in order of decreasing abundance, were green algae, diatoms, and blue-green algae. Diatoms tended to dominate the reservoir flora during the spring with green and blue-green algae becoming more numerous during the summer. The division Chlorophyta contained the highest diversity (38 genera) of any plankton group encountered. Zooplankters most commonly encountered, in order of decreasing abundance, were crustaceans (Cladocera and Copepoda) and rotifers. Zooplankton densities in the reservoir fluctuated with increases or decreases in phytoplankton numbers.

The insects were the dominant group of benthic macroinvertebrates found in both the Ponar and multiplate samples. In the Ponar samples, insects were represented by 57 genera of which 54 percent (31 genera) were members of the family Chironomidae. *Corbicula* clams and Tubificidae were the most common noninsect macroinvertebrates encountered in the Jones Bluff reservoir. The macroinvertebrate fauna collected on the multiplate samples was similar to that of the river bottom with insects predominating. Insects were represented by 33 of the 41 genera encountered. Trichoptera, represented by 7 genera, Chironomidae, also represented by 7 genera, and naidid worms were the most abundant taxa encountered.

Collections of aquatic macrophytes conducted between the confluence of the Coosa and Tallapoosa Rivers and Jones Bluff Lock and Dam revealed the presence of 70 species of aquatic plants in 41 families. Dominant species included *Alternanthera philoxeroides* (alligatorweed), *Justicia americana* (water-willow) and *Ludwigia peploides* (water-primrose). All of these occur in extensive colonies which could detrimentally affect recreation along the river. There is probably no need for concern that these species will affect navigation since the river is deep and all of these species are rooted at the stream margin. The portion of the river between river miles 237 and 240 supported heavy concentrations of aquatic macrophytes which could interfere with fishing.

VIII. RECOMMENDATIONS

Based upon our experiences on the Alabama and Coosa Rivers in 1977 and 1978, we submit the following recommendations for future studies:

1. Plankton are a very important biological constituent in the Alabama River; however, populations of these organisms are subject to a number of short-term fluctuations depending upon time of collection during the day, the time of the year, seasonal variation, rainfall and associated flooding, and water quality. One additional factor which significantly affected the outcome of our analyses was the rapid flow of the Alabama River. For these reasons and due to some duplication of data obtained at consecutive stations, the total number of stations for plankton studies could be reduced by 20 percent.

2. The fish fauna of any reservoir is an important biological component and needs to be investigated in future studies. Fishes feed upon both plankton and benthic macroinvertebrates; therefore, drastic long-term fluctuations in the supply of these food sources should be seen in a decrease in diversity of the ichthyofauna. Fishes may also indicate the quality of water in a stream.

3. The pesticide residues showed up more significantly in the sediment and *Corbicula* tissue as opposed to the water phase. More emphasis needs to be placed on selected pesticides based on usage in the area and long-term lives of metabolites. We recommend that three or four cross-sectional benthic bed-material samples be collected and tested at selected stations, such as stations 1, 7, 8, 17 and 18, throughout the study area with special emphasis on tributaries draining agricultural, industrial, and urban areas.

4. We recommend that tributary sites on the Alabama River be incorporated into additional studies. Field parameters such as dissolved oxygen, temperature, conductivity, and pH should be performed at mid-depth at the sites. Selected parameters should also be tested in areas affected by agricultural, industrial and urban effluents.

5. Although collections were made in 1977 and 1978, methodology differed in the plankton collections, making comparisons impossible. Such problems should be avoided in future multiyear studies.

6. Samples were collected during four months (August through November) in 1977 and six months (April through September) in 1978. The four-month interval separating the two collection periods made data interpretation difficult. In future studies, consecutive sampling would be advisable.

7. *Corbicula* (clam) tissue, which is present at most stations on the river, needs to be examined for heavy metals and pesticide residues during future studies. Fish tissues should also be examined during future studies.

8. Studies of diel patterns of several parameters, including dissolved oxygen and temperature, should be monitored at least twice during the study period (once at low-flow and once at high-flow conditions) to better understand the dynamics of the river system.

9. Nutrient studies of tributaries and sites above and below urbanized areas might also be considered for future post-impoundment projects. The parameter ammonia nitrogen especially needs to be looked at for future studies.

10. Fecal coliform and fecal streptococci bacteria need further investigative studies to determine their major source of entry into the waterways.

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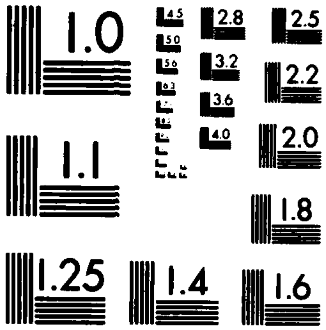

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IX. PARTICIPATING STAFF

Geological Survey of Alabama
University, Alabama 35486

Anthony M. Malatino, Chemical Manager
Dr. N. A. Lloyd, Operations Chief
Dr. Maurice F. Mettee, Biological Manager
Juanita Hardy, Chemist I
Phillip F. Dark, Chemist
Dolores Burroughs, Chemist
Mattie McCaa, Laboratory Aide II
Gloria Watkins, Bacteriologist
Randall Gibson, Laboratory Aide I
Joe Beasley, Field Operations Chief, Scientific Aide III
Elizabeth Long, Clerk Typist I
Juanita Simpson, Laborer
Jerry Wise, Gas Chromatographer I
Irene Thompson, Clerk Typist I

University of Alabama
Biology Department
University, Alabama 35486

Dr. Robert Haynes, Biological Consultant
Dr. Joseph Scheiring, Biological Consultant
Dr. Steven Harris, Biological Consultant

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APPENDIX A

Water-quality and Sediment STORET Data

and Discharger and Nutrient Data

Explanation of format for station header information which appears on each page of the retrieval:

STORET STATION NUMBER (8 digit)   GSA STATION NUMBER (2 digit)
LATITUDE/LONGITUDE PRECISION CODE
STATION LOCATION
STATE/COUNTY CODE STATE NAME COUNTY NAME
MAJOR BASIN NAME MAJ/MIN/SUB BASIN CODE
MINOR BASIN NAME
AGENCY CODE   HYDROLOGIC UNIT CODES
STA. STORED DATE   ARCHIVE CLASS   CSN-RSP

STORET Abbreviations:

- B: Results based on bacterial colony count outside the acceptable range (non-ideal colony count).
- E: Exponential notation. Phytoplankton data often in exponential notation (decimal value +06 would indicate the actual value is obtained by multiplying by 1,000,000).
- K: Actual value is known to be less than the value shown.
- U: Material specifically analyzed but not detected.

Table A-1.--Water-quality data entered into the EPA STORET retrieval system, 1978

STORET RETRIEVAL DATE 82/07/21
02419892 GSA00
32 35 00.0 086 15 30.0 4
TALLAPOOSA RIVER 0.5 MILES FROM MOUTH
01051 ALABAMA ELMORE
SOUTHEAST 033400
ALABAMA RIVER BASIN
11MOH4 03150107000
781215 DEPTH 3 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX 0341110 000700 02780
MILES 0045.00 0314.40 000.50

	INITIAL DATE			78/04/11	78/05/24	78/07/06	78/08/01	78/09/12
	INITIAL TIME-DEPTH-BOTTOM			0845	0845	0910	1215	1530
00010	WATER	TEMP	CENT	13.0	23.0	26.0	25.0	26.5
00034	DEPTH-FT	1% LIGHT	REMAINS			5.3	2.1	
00076	TURB	TRBIDMTR	HACH FTU	10.0	7.0	7.0	10.0	4.0
00078	TRANSP	SECCHI	METERS	0.90	0.50	0.60	0.80	1.00
00080	COLOR	PT-CO	UNITS	30	40	20	30	10
00090	REDOX	ORP	MV			280	245	220
00094	CNDUCTVY	FIELD	MICROMHO	57	47	44	47	76
00299	DO	PROBE	MG/L	11.0	9.1	8.0	5.4	8.0
00400	PH		SU	6.40	5.70	6.60	6.90	7.00
00405	CO2		MG/L	22.0	41.0	5.2	3.0	4.8
00410	T ALK	CACO3	MG/L	28	15	11	12	25
*70299	RESIDUE	DISS-105	C MG/L	15	24	44	15	25
00600	TOTAL N	N	MG/L	0.25			0.21	
00605	ORG N	N	MG/L	0.070			0.030	
00610	NH3+NH4-	N TOTAL	MG/L	0.010	0.050	0.010	0.020	0.010
00625	TOT KJEL	N	MG/L	0.080			0.050	
00630	NO2&NO3	N-TOTAL	MG/L	0.17	0.28	0.22	0.16	0.13
00640	T INORG.	NITROGEN	MG/L N	0.18	0.33	0.23	0.18	0.14
00665	PHOS-TOT		MG/L P	0.020 K	0.020	0.030	0.030	0.020
00671	PHOS-DIS	ORTHO	MG/L P	0.020	0.010	0.000	0.000	0.000
00680	T ORG C	C	MG/L	3.1	2.9	1.8	3.5	0.6
00681	D ORG C	C	MG/L	2.5	0.9	0.0 U	0.0	0.0
00900	TOT HARD	CACO3	MG/L	19			13	
00916	CALCIUM	CA-TOT	MG/L	4.7			2.8	
00927	MGNSIUM	MG,TOT	MG/L	1.7			1.4	
00929	SODIUM	NA,TOT	MG/L	3.20			3.60	
00937	PTSSIUM	K,TOT	MG/L	1.30			1.30	
00940	CHLORIDE	TOTAL	MG/L	4		3	3	
00945	SULFATE	SO4-DISS	MG/L	3.6	3.6	3.4	2.1	4.5
01045	IRON	FE,TOT	UG/L	1000	1200	1400	450	720
01046	IRON	FE,DISS	UG/L	110	270	310	380	140
01055	MANGNESE	MN	UG/L	50.0	76.0	94.0	63.0	82.0
01056	MANGNESE	MN,DISS	UG/L	4.0	35.0	92.0	31.0	34.0
01092	ZINC	ZN,TOT	UG/L	50	60	80	5 K	20
31615	FEC COLI	MPN-FCBR	/100ML	110	110	260	50	20
31673	FECSTREP	MFKFAGAR	/100ML	140	660	500	270	50
32211	CHLRPHYL	A UG/L	CORRECTD	8.00	1.10	5.60	3.80	2.51
32212	CHLRPHYL	B	UG/L	1.60	2.15	0.37	3.50	0.01
32214	CHLRPHYL	C	UG/L	2.60	2.14	1.53	0.08	0.00
70300	RESIDUE	DISS-180	C MG/L	37	31	36	36	72
70947	ZOOPLANK	DRY WT.	G/CU.M.	112.0	26.0	48.0	25.0	1.3
70946	ATP	PLANKTON	NG/L	400.000	900.000	1950.00	300.000	40.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02411005 GSA01
32 30 28.0 086 15 13.0 2
COOSA RIVER AT WETUMPKA ALA
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11AUG4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/10	78/05/22	78/07/06	78/08/01	78/09/12
INITIAL DATE				78/04/10	78/05/22	78/07/06	78/08/01	78/09/12
INITIAL TIME-DEPTH-BOTTOM				1450	1700	0745	1105	1420
00010	WATER	TEMP	CENT	10.0	23.0	28.0	29.0	26.5
00034	DEPTH-FT	1% LIGHT	REMAINS			10.2	10.9	12.2
00076	TURB	TRBIDMTR	HACH FTU	7.0	7.0	3.0	2.0	2.0
00078	TRANSP	SECCHI	METERS	1.50	1.00	1.50	2.20	2.20
00080	COLOR	PT-CO	UNITS	20	20	20	10	10
00090	REDOX	ORP	MV			280	240	225
00094	CNDUCTVY	FIELD	MICROMHO	126	120	116	121	152
00299	DO	PROBE	MG/L	12.4	5.9	4.4	5.0	7.0
00400	PH		SU	6.70	6.70	6.70	7.30	7.50
00405	CO2		MG/L	15.0	18.0	13.0	4.2	3.3
00410	T ALK	CACO3	MG/L	46	46	33	43	52
*70299	RESIDUE	DISS-105	C MG/L	11	17	4	17	34
00600	TOTAL N	N	MG/L	0.55			0.43	
00605	ORG N	N	MG/L	0.000			0.000	
00610	NH3+NH4-	N TOTAL	MG/L	0.390	0.190	0.060	0.340	0.010
00625	TOT KJEL	N	MG/L	0.280			0.170	
00630	NO2&NO3	N-TOTAL	MG/L	0.16	0.32	0.22	0.09	0.07
00640	T INORG.	NITROGEN	MG/L N	0.55	0.51	0.28	0.43	0.08
00665	PHOS-TOT		MG/L P	0.020	0.030	0.010	0.010	0.030
00671	PHOS-DIS	ORTHO	MG/L P	0.020	0.000	0.000	0.000	0.010
00680	T ORG C	C	MG/L	5.4	5.2	3.5	3.6	0.1
00681	D ORG C	C	MG/L	3.3	2.8	1.3	0.0	0.0
00900	TOT HARD	CACO3	MG/L	42			45	
00916	CALCIUM	CA-TOT	MG/L	11.0			12.0	
00927	MGNSIUM	MG.TOT	MG/L	3.4			3.8	
00929	SODIUM	NA.TOT	MG/L	4.40			5.60	
00937	PTSSIUM	K.TOT	MG/L	1.20			1.40	
00940	CHLORIDE	TOTAL	MG/L	4		4	5	
00945	SULFATE	SO4-DISS	MG/L	8.4	8.2	7.2	5.7	8.1
01045	IRON	FE.TOT	UG/L	420	530	410	190	480
01046	IRON	FE.DISS	UG/L	40	170	10	120	50
01055	MANGNESE	MN	UG/L	35.0	54.0	120.0	120.0	110.0
01056	MANGNESE	MN.DISS	UG/L	4.0	10.0	83.0	83.0	9.0
01092	ZINC	ZN.TOT	UG/L	70	640	180	160	90
31616	FEC COLI	MFM-FCBR	/100ML	6800	20	120	30	40
31673	FECSTREP	MF&FAGAR	/100ML	5	290	75	80	10
32211	CHLRPHYL	A UG/L	CORRECTD	0.00	4.70	2.08	1.17	.28
32212	CHLRPHYL	B	UG/L	3.80	1.04	0.13	0.14	0.46
32214	CHLRPHYL	C	UG/L	11.00	0.90	0.40	0.00	0.00
70300	RESIDUE	DISS-180	C MG/L	83	89	80	77	48
70947	ZOOPLANK	DRY WT.	G/CU.M.	78.0	89.0	10.0	28.0	11.3
70990	ATP	PLANKTON	NG/L	1050.00	800.000	280.000	300.000	170.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE ?2/07/21
02419965 GSA02
32 30 19.0 086 18 06.0 2
COOSA R BELOW MORTANCH NR ELMORE
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/11	78/05/24	78/07/06	78/08/01	78/09/13
INITIAL DATE				78/04/11	78/05/24	78/07/06	78/08/01	78/09/13
INITIAL TIME-DEPTH-BOTTOM				1040	1007	0955	1330	1020
00010	WATER	TEMP	CENT	9.0	20.0	27.0	27.5	28.0
00034	DEPTH-FT	1% LIGHT	REMAINS			8.6	6.6	9.9
00076	TURB	TRBIDMTR	HACH FTU	7.0	7.0	7.0	8.0	3.0
00078	TRANSP	SECCHI	METERS	1.35	0.55	1.20	0.90	1.70
00080	COLOR	PT-CO	UNITS	20	25	20	20	15
00090	REDOX	ORP	MV			290	230	225
00094	CNDUCTVY	FIELD	MICROMHO	135	72	89	84	130
00299	DO	PROBE	MG/L	11.6	8.8	5.2	6.6	6.8
00400	PH		SU	6.70	6.30	5.90	7.60	7.20
00405	CO2		MG/L	16.0	24.0	6.4	1.4	6.4
00410	T ALK	CACO3	MG/L	40	30	26	28	52
*70299	RESIDUE	DISS-105	C MG/L	22	8	26	10	86
00600	TOTAL N	N	MG/L	0.23			0.16	
00605	ORG N	N	MG/L	0.000			0.030	
00610	NH3+NH4-	N TOTAL	MG/L	0.080	0.000	0.040	0.020	0.100
00625	TOT KJEL	N	MG/L	0.060			0.050	
00630	NO2&NO3	N-TOTAL	MG/L	0.15	0.23	0.18	0.11	0.11
00640	T INORG.	NITROGEN	MG/L N	0.23		0.22	0.13	0.21
00665	PHOS-TOT		MG/L P	0.020 K	0.040	0.040	0.030	0.030
00671	PHOS-DIS	ORTHO	MG/L P	0.020	0.000	0.000	0.000	0.000
00680	T ORG C	C	MG/L	4.0	3.0	3.6	4.7	0.8
00681	D ORG C	C	MG/L	4.0	1.0	0.8	0.5	0.5
00900	TOT HARD	CACO3	MG/L	42			41	
00915	CALCIUM	CA-TOT	MG/L	11.0			11.0	
00927	MGNSIUM	MG,TOT	MG/L	3.4			3.6	
00929	SODIUM	NA,TOT	MG/L	4.40			4.90	
00937	PTSSIUM	K,TOT	MG/L	1.20			1.40	
00940	CHLORIDE	TOTAL	MG/L	5		4	5	
00945	SULFATE	SO4-DISS	MG/L	7.4	5.2	7.0	5.2	8.8
01045	IRON	FE,TOT	UG/L	3.0	580	630	400	470
01046	IRON	FE,DISS	UG/L	40	240	10	200	40
01055	MANGNESE	MN	UG/L	48.0	76.0	120.0	75.0	79.0
01056	MANGNESE	MN,DISS	UG/L	0.0 U	33.0	49.0	76.0	3.0
01092	ZINC	ZN,TOT	UG/L	20	220	110	370	370
31616	FEC COLI	MFM-FCBR	/100ML	31	10	30	60	125
31673	FECSTREP	MF KF AGAR	/100ML	11	20	30	90	20
32211	CHLRPHYL	A UG/L	CORRECTD	1.60	1.50	1.90	6.70	0.00
32212	CHLRPHYL	B	UG/L	0.90	1.45	0.05	0.00	0.01
32214	CHLRPHYL	C	UG/L	4.50	0.67	1.70	0.00	0.00
70300	RESIDUE	DISS-180	C MG/L	42	51	56	68	88
70947	ZOOPLANK	DRY WT.	G/CU.M.	114.0	66.0	57.0	18.0	2.0
70996	ATP	PLANKTON	NG/L	750.000	650.000	280.000	100.000	90.000

Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02419960 GS403
32 28 33.0 086 17 43.0 2
ALABAMA RIVER AT COUSADA FERRY AT COUSADA
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11408A 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

	INITIAL DATE			78/04/12	78/05/24	78/07/06	78/08/01	78/09/13
	INITIAL TIME-DEPTH-BOTTOM			0833	1100	1035	1450	1110
00010	WATER	TEMP	CENT	8.0	22.0	28.0	28.5	28.0
00034	DEPTH-FT	1% LIGHT	REMAINS			8.9	8.6	7.3
00076	TURB	TRBIDMTR	HACH FTU	8.0	9.0	4.0	3.0	5.0
00078	TRANSP	SECCHI	METERS	1.25	0.70	1.10	1.30	1.25
00080	COLOR	PT-CO	UNITS	30	25	20	10	15
00090	REDOX	ORP	MV			260	230	225
00094	CNDUCTVY	FIELD	MICROMHO	123	95	109	114	115
00299	DO	PROBE	MG/L	11.4	8.1	5.6	7.1	7.6
00400	PH		SU	6.70	6.50	7.00	7.40	7.50
00405	CO2		MG/L	14.0	18.0	6.0	2.9	2.9
00410	T ALK	CACO3	MG/L	37	30	31	38	46
*70299	RESIDUE	DISS-105 C	MG/L	11	33	29	7	20
00600	TOTAL N	N	MG/L	0.41			0.22	
00605	ORG N	N	MG/L	0.000			0.011	
00610	NH3+NH4-	N TOTAL	MG/L	0.220	0.020	0.010	0.030	0.020
00625	TOT KJEL	N	MG/L	0.140			0.140	
00630	NO2&NO3	N-TOTAL	MG/L	0.19	0.22	0.22	0.08	0.05
00640	T INORG.	NITROGEN	MG/L N	0.41		0.23	0.11	0.07
00665	PHOS-TOT		MG/L P	0.040 K	0.020	0.030	0.010	0.030
00671	PHOS-DIS	ORTHO	MG/L P	0.040	0.010	0.000	0.000	0.000
00680	T ORG C	C	MG/L	4.9	3.0	3.3	2.9	0.5
00681	D ORG C	C	MG/L	4.5	1.4	0.5	0.4	0.4
00900	TOT HARD	CACO3	MG/L	37			28	
00916	CALCIUM	CA-TOT	MG/L	10.0			7.0	
00927	MGNSIUM	MG.TOT	MG/L	2.9			2.5	
00929	SODIUM	NA.TOT	MG/L	4.30			4.20	
00937	PTSSIUM	K.TOT	MG/L	1.20			1.30	
00940	CHLORIDE	TOTAL	MG/L	5 Y		4	5	
00946	SULFATE	SO4-DISS	MG/L	6.8	6.6	7.2	5.2	8.0
01045	IRON	FE.TOT	UG/L	560	470	1300	450	980
01046	IRON	FE.DISS	UG/L	40	270	10	190	30
01055	MANGNESE	MN	UG/L	57.0	75.0	99.0	110.0	76.0
01056	MANGNESE	MN.DISS	UG/L	28.0	44.0	7.0	40.0	0.0 U
01092	ZINC	ZN.TOT	UG/L	60	100	120	5 K	220
31616	FEC COLI	MFM-FCBR	/100ML	920	30	55	50	140
31673	FECSTREP	MFKFAGAR	/100ML	220	30	90	220	50
32211	CHLRPHYL	A UG/L	CORRECTD	2.10	5.70	0.32	2.60	2.35
32212	CHLRPHYL	B	UG/L	0.30	2.42	0.50	0.91	0.00
32214	CHLRPHYL	C	UG/L	2.30	5.22	0.05	0.00	0.00
70300	RESIDUE	DISS-180 C	MG/L	80	33	62	72	38
70947	ZOOPLANK	DRY WT.	G/CU.M.	112.0	33.0	38.3	22.0	12.0
70946	ATP	PLANKTON	NG/L	100.000	600.000	200.000	700.000	250.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02419983 GSA04
32 26 37.0 086 19 31.0 2
ALA R NR CHISOLM
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

	INITIAL DATE			78/04/12	78/05/24	78/07/06	78/08/02	78/09/13
	INITIAL TIME-DEPTH-BOTTOM			1100	1315	1155	1000	1155
00010	WATER	TEMP	CENT	9.0	22.0	28.0	27.5	27.5
00034	DEPTH-FT	1% LIGHT	REMAINS			9.2	8.2	7.3
00076	TURB	TRBIDMTR	HACH FTU	8.0	8.0	4.0	8.0	4.0
00078	TRANSP	SECCHI	METERS	1.30	0.45	1.10	0.95	1.25
00080	COLOR	PT-CO	UNITS	30	30	20	20	15
00090	REDOX	ORP	MV			260	230	225
00094	CNDUCTVY	FIELD	MICROMHO	128	93	102	97	106
00299	DO	PROBE	MG/L	11.3	7.9	7.9	7.0	7.6
00400	PH		SU	6.60	6.50	7.30	7.30	7.30
00405	CO2		MG/L	20.0	18.0	3.2	2.9	5.0
00410	T ALK	CACO3	MG/L	42	29	33	30	51
*70299	RESIDUE	DISS-105	C MG/L	5	7	17	10	27
00600	TOTAL N	N	MG/L	0.30			0.28	
00605	ORG N	N	MG/L	0.110			0.170	
00610	NH3+NH4-	N TOTAL	MG/L	0.000	0.000	0.010	0.020	0.020
00625	TOT KJEL	N	MG/L	0.110			0.190	
00630	NO2&NO3	N-TOTAL	MG/L	0.19	0.26	0.16	0.09	0.06
00640	T INORG.	NITROGEN	MG/L N	0.19	0.26	0.17	0.11	0.08
00665	PHOS-TOT		MG/L P	0.016	0.040	0.010	0.030	0.030
00671	PHOS-DIS	ORTHO	MG/L P	0.010 K	0.010	0.010	0.000	0.000
00680	T ORG C	C	MG/L	4.4	4.3	3.9	3.3	0.3
00681	D ORG C	C	MG/L	4.4	0.9	1.4	0.0	0.0
00900	TOT HARD	CACO3	MG/L	40			32	
00916	CALCIUM	CA-TOT	MG/L	11.0			8.2	
00927	MGNSIUM	MG,TOT	MG/L	3.0			2.7	
00929	SODIUM	NA,TOT	MG/L	4.80			4.50	
00937	PTSSIUM	K,TOT	MG/L	1.20			1.30	
00940	CHLORIDE	TOTAL	MG/L	4		4	4	
00945	SULFATE	SO4-DISS	MG/L	11.0	6.8	6.5	4.7	7.0
01045	IRON	FE,TOT	UG/L	450	700	500	1500	400
01046	IRON	FE,DISS	UG/L	70	700	10	180	70
01055	MANGNESE	MN	UG/L	35.0	81.0	54.0	71.0	67.0
01056	MANGNESE	MN,DISS	UG/L	5.0 K	21.0	39.0	45.0	5.0
01092	ZINC	ZN,TOT	UG/L	20	480	90	270	20
31616	FEC COLI	MFM-FCBR	/100ML	160	60	55	70	60
31673	FECSTREP	MFKFAGAR	/100ML	76	60	16	40	10
32211	CHLRPHYL	A UG/L	CORRECTD	0.50	6.90	4.80	1.71	3.00
32212	CHLRPHYL	B	UG/L	1.60	0.39	0.60	0.83	0.52
32214	CHLRPHYL	C	UG/L	5.20	0.87	0.60	0.00	0.00
70300	RESIDUE	DISS-180	C MG/L	83	64	62	66	74
70947	ZOOPLANK	DRY WT.	G/CU.M.	78.0	50.0	19.0	15.0	7.0
70996	ATP	PLANKTON	NG/L	1100.00	500.000	400.000	200.000	90.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02419986 GSA05
32 25 48.0 086 20 17.0 2
ALA R AT L&N RR NR MILLBROOK
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

	INITIAL DATE			78/04/12	78/05/24	78/07/06	78/08/02	78/09/13
	INITIAL TIME-DEPTH-BOTTOM			1312	1420	1230	1120	1320
00010	WATER	TEMP	CENT	9.0	23.0	28.0	28.0	27.0
00034	DEPTH-FT	1% LIGHT	REMAINS			8.5	10.1	7.4
00076	TURB	TRBIDMTR	HACH FTU	8.0	6.0	5.0	5.0	4.0
00078	TRANSP	SECCHI	METERS	1.30	0.85	1.10	1.15	1.30
00080	COLOR	PT-CO	UNITS	40	30	20	20	15
00090	REDOX	ORP	MV			240	235	230
00094	CNDUCTVY	FIELD	MICROMHO	132	100	82	105	98
00299	DO	PROBE	MG/L	11.2	7.9	8.5	8.2	8.0
00400	PH		SU	6.90	6.50	7.20	7.50	7.60
00405	CO2		MG/L	10.0	16.0	3.7	2.3	1.6
00410	T ALK	CACO3	MG/L	43	26	30	37	33
* 70299	RESIDUE	DISS-105	C MG/L	12	55	7	10	31
00600	TOTAL N	N	MG/L	0.33			0.09	
00605	ORG N	N	MG/L	0.140			0.010	
00610	NH3+NH4-	N TOTAL	MG/L	0.000	0.000	0.080	0.010	0.030
00625	TOT KJEL	N	MG/L	0.140			0.200	
00630	NO2&NO3	N-TOTAL	MG/L	0.19	0.22	0.19	0.07	0.08
00640	T INORG.	NITROGEN	MG/L N	0.19		0.27	0.08	0.11
00665	PHOS-TOT		MG/L P	0.010	0.040	0.020	0.020	0.040
00671	PHOS-DIS	ORTHO	MG/L P	0.000	0.010	0.000	0.000	0.000
00680	T ORG C	C	MG/L	3.3	3.2	3.4	2.9	0.8
00681	D ORG C	C	MG/L	3.3	2.3	0.0 U	0.1	0.1
00900	TOT HARD	CACO3	MG/L	40		31	31	
00916	CALCIUM	CA-TOT	MG/L	11.0			8.2	
00927	MGNSIUM	MG,TOT	MG/L	3.0			2.6	
00929	SODIUM	NA,TOT	MG/L	4.60			4.60	
00937	PTSSIUM	K,TOT	MG/L	1.10			1.30	
00940	CHLORIDE	TOTAL	MG/L	5		4	5	
00945	SULFATE	SO4-DISS	MG/L	2.8	7.6	4.8	5.1	5.5
01045	IRON	FE,TOT	UG/L	480	510	1100	1500	400
01046	IRON	FE,DISS	UG/L	50	200	10	100	60
01055	MANGNESE	MN	UG/L	40.0	49.0	79.0	45.0	68.0
01056	MANGNESE	MN,DISS	UG/L	10.0	14.0		23.0	5.0
01092	ZINC	ZN,TOT	UG/L	20	110	90	270	5
31616	FEC COLI	MFM-FCBR	/100ML	68	50	20	30	30
31673	FECSTREP	MFKFAGAR	/100ML	85	160	10	100	0
32211	CHLRPHYL	A UG/L	CORRECTD	0.00	7.10	6.60	1.00	2.60
32212	CHLRPHYL	B	UG/L	1.60	0.28	0.60	1.90	0.38
32214	CHLRPHYL	C	UG/L	5.60	0.11	0.00	2.42	0.00
70300	RESIDUE	DISS-180	C MG/L	65	61	52	69	54
70947	ZOOPLANK	DRY WT.	G/CU.M.	78.0	55.0	33.0	27.0	7.0
70946	ATP	PLANKTON	NG/L	1100.00	1000.00	200.000	600.000	220.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02419987 GS406
32 24 39.0 086 20 28.0 2
ALA R AT HWY 143 NR MONTGOMERY
01101 ALABAMA MONTGOMERY
SOUTHEAST
ALABAMA RIVER BASIN
11NGB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/12	78/05/24	78/07/06	78/08/02	78/09/13
INITIAL DATE				78/04/12	78/05/24	78/07/06	78/08/02	78/09/13
INITIAL TIME-DEPTH-BOTTOM				1545	1620	1315	1300	1420
00010	WATER	TEMP	CENT	8.5	22.5	28.0	28.0	27.0
00034	DEPTH-FT	1% LIGHT	REMAINS			9.8	10.7	7.3
00076	TURB	TRBIDMTR	HACH FTU	4.0	9.0	4.0	4.0	4.0
00078	TRANSP	SECCHI	METERS	1.30	0.65	1.10	1.20	1.25
00080	COLOR	PT-CO	UNITS	15	30	20	20	10
00090	REDOX	ORP	MV			250	240	225
00094	CNDUCTVY	FIELD	MICROMHO	133	99	78	100	118
00299	DO	PROBE	MG/L	11.6	8.2	8.5	8.7	7.7
00400	PH		SU	6.70	6.60	7.20	8.15	7.50
00405	CO2		MG/L	19.0	14.0	3.1	0.4	2.4
00410	T ALK	CACO3	MG/L	48	29	25	34	39
* 70299	RESIDUE	DISS-105 C	MG/L	17	52	27	13	24
00600	TOTAL N	N	MG/L	0.29			0.22	
00605	ORG N	N	MG/L	0.060			0.170	
00610	NH3+NH4-	N TOTAL	MG/L	0.050	0.060	0.010	0.010	0.080
00625	TOT KJEL	N	MG/L	0.110			0.180	
00630	NO2&NO3	N-TOTAL	MG/L	0.18	0.50	0.14	0.04	0.11
00640	T INORG.	NITROGEN	MG/L N	0.23		0.15	0.05	0.19
00665	PHOS-TOT		MG/L P	0.010	0.020	0.020	0.040	0.070
00671	PHOS-DIS	ORTHO	MG/L P	0.010	0.000	0.000	0.020	0.020
00680	T ORG C	C	MG/L	3.3	3.1	2.7	2.6	0.6
00681	D ORG C	C	MG/L	3.2	0.4	0.7	1.4	0.4
00900	TOT HARD	CACO3	MG/L	41			33	
00915	CALCIUM	CA-TOT	MG/L	11.0			8.6	
00927	MGNSIUM	MG,TOT	MG/L	3.2			2.9	
00929	SODIUM	NA,TOT	MG/L	5.00			5.60	
00937	PTSSIUM	K,TOT	MG/L	1.20			1.20	
00940	CHLORIDE	TOTAL	MG/L	6		4	5	
00945	SULFATE	SO4-DISS	MG/L	3.2	6.8	4.9	4.6	7.0
01045	IRON	FE,TOT	UG/L	310	510	660	190	460
01046	IRON	FE,DISS	UG/L	10	130	20	160	60
01055	MANGNESE	MN	UG/L	21.0	75.0	36.0	55.0	52.0
01056	MANGNESE	MN,DISS	UG/L	5.0 K	12.0	29.0	44.0	11.0
01092	ZINC	ZN,TOT	UG/L	30	90	100	120	5 K
31616	FEC COLI	MFM-FCBR	/100ML	35	140	60	20	10
31673	FECSTREP	MFKFAGAR	/100ML	59	90	10	10	0
32211	CHLRPHYL	A UG/L	CORRECTD	0.00	1.80	18.00	4.70	2.20
32212	CHLRPHYL	B	UG/L	3.90	0.80	0.71	0.62	0.68
32214	CHLRPHYL	C	UG/L	11.00	0.69	1.03	1.19	0.00
70300	RESIDUE	DISS-180 C	MG/L	88	75	55	59	52
70947	ZOOPLANK	DRY WT.	G/CU.M.	67.0	55.0	47.0	19.0	11.0
70946	ATP	PLANKTON	NG/L	65.000	350.000		300.000	430.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02419989 GSA07
32 25 03.0 086 22 01.0 2
ALA R NR MAXWELL AFB NR MONT.
01101 ALABAMA MONTGOMERY
SOUTHEAST
ALABAMA RIVER BASIN
11NO84 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

	INITIAL DATE			78/04/13	78/05/25	78/07/07	78/08/03	78/09/14
	INITIAL TIME-DEPTH-BOTTOM			0940	0950	0825	0827	0830
00010	WATER	TEMP	CENT	8.5	22.0	28.0	27.5	27.0
00034	DEPTH-FT	1% LIGHT	REMAINS			9.1	10.2	7.3
00076	TURB	TRBIDMTR	HACH FTU	5.0	9.0	6.0	5.0	5.0
00078	TRANSP	SECCHI	METERS	1.20	0.75	1.05	1.30	1.20
00080	COLOR	PT-CO	UNITS	20	30	20	20	15
00090	REDOX	ORP	MV			230	240	225
00094	CNDUCTVY	FIELD	MICROMHO	131	99	77	91	120
00299	DO	PROBE	MG/L	10.8	7.8	7.4	7.6	6.7
00400	PH		SU	6.60	6.80	6.90	7.20	6.80
00405	CO2		MG/L	19.0	15.0	5.8	3.6	13.0
00410	T ALK	CACO3	MG/L	39	31	24	30	43
*70299	RESIDUE	DISS-105	C MG/L	8	4	17	15	28
00600	TOTAL N	N	MG/L	0.32			0.24	
00605	ORG N	N	MG/L	0.080			0.110	
00610	NH3+NH4-	N TOTAL	MG/L	0.020	0.080	0.150	0.030	0.080
00625	TOT KJEL	N	MG/L	0.100			0.140	
00630	NO2&NO3	N-TOTAL	MG/L	0.22	0.20	0.17	0.10	0.09
00640	T INORG.	NITROGEN	MG/L N	0.24		0.32	0.13	0.15
00665	PHOS-TOT		MG/L P	0.040	0.040	0.080	0.030	0.020
00671	PHOS-DIS	ORTHO	MG/L P	0.010 K	0.000	0.010	0.010	0.010
00680	T ORG C	C	MG/L	3.5	3.9	3.3	3.2	0.8
00681	D ORG C	C	MG/L	3.5	1.2	0.3	0.8	0.8
00900	TOT HARD	CACO3	MG/L	40			30	
00916	CALCIUM	CA-TOT	MG/L	11.0			7.7	
00927	MGNSIUM	MG,TOT	MG/L	3.0			2.7	
00929	SODIUM	NA,TOT	MG/L	5.20			5.20	
00937	PTSSIUM	K,TOT	MG/L	1.30			1.10	
00940	CHLORIDE	TOTAL	MG/L	5		4	5	
00946	SULFATE	SO4-DISS	MG/L	8.0	8.4	5.0	4.8	7.1
01045	IRON	FE,TOT	UG/L	530	880	610	140	1100
01046	IRON	FE,DISS	UG/L	10	180	10	130	110
01055	MANGNESE	MN	UG/L	51.0	72.0	110.0	51.0	86.0
01056	MANGNESE	MN,DISS	UG/L	22.0	41.0	40.0	16.0	9.0
01092	ZINC	ZN,TOT	UG/L	110	480	150	110	40
31616	FEC COLI	MFM-FCBR	/100ML	2400	800	460	1180	
31673	FECSTREP	MFKFAGAR	/100ML	1900	200	170	150	
32211	CHLRPHYL	A UG/L	CORRECTD	0.50	1.40	5.13	2.90	2.70
32212	CHLRPHYL	B	UG/L	0.60	0.54	1.20	0.72	0.00
32214	CHLRPHYL	C	UG/L	1.40	1.10	0.01	0.00	1.30
70300	RESIDUE	DISS-180	C MG/L	86	68	62	50	122
70947	ZOOPLANK	DRY WT.	G/CU.M.	55.0	12.0	23.0	24.0	6.0
70996	ATP	PLANKTON	NG/L	1150.00	50.000	200.000	100.000	110.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02420045 GSA08
32 24 16.0 086 27 10.0 2
ALA R NR PRATTVILLE
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/13	78/05/25	78/07/07	78/08/03	78/09/14
INITIAL DATE				78/04/13	78/05/25	78/07/07	78/08/03	78/09/14
INITIAL TIME-DEPTH-BOTTOM				1100	1130	0900	0940	0940
00010	WATER	TEMP	CENT	9.0	22.5	28.0	27.0	27.0
00034	DEPTH-FT	1% LIGHT	REMAINS			8.6	9.4	7.3
00076	TURB	TRBIDMTR	HACH FTU	5.0	9.0	6.0	8.0	5.0
00078	TRANSP	SECCHI	METERS	1.50	0.70	1.10	1.05	1.20
00080	COLOR	PT-CO	UNITS	20	30	20	20	15
00090	REDOX	ORP	MV			225	240	225
00094	CNDUCTVY	FIELD	MICROMHO	132	95	84	64	103
00299	DO	PROBE	MG/L	10.8	7.8	6.8	6.0	5.9
00400	PH		SU	6.70	6.60	6.90	7.10	6.90
00405	CO2		MG/L	15.0	14.0	64.0	3.1	8.0
00410	T ALK	CACO3	MG/L	39	28	26	20	33
*70299	RESIDUE	DISS-105	C MG/L	16	9	20	18	77
00600	TOTAL N	N	MG/L	0.32			0.35	
00605	ORG N	N	MG/L	0.100			0.160	
00610	NH3+NH4-	N TOTAL	MG/L	0.000	0.000	0.170	0.040	0.050
00625	TOT KJEL	N	MG/L	0.100			0.200	
00630	NO2&NO3	N-TOTAL	MG/L	0.22	0.22	0.19	0.15	0.13
00640	T INORG.	NITROGEN	MG/L N	0.22		0.36	0.19	0.18
00665	PHOS-TOT		MG/L P	0.020	0.040	0.050	0.040	0.020
00671	PHOS-DIS	ORTHO	MG/L P	0.010	0.000	0.040	0.010	0.020
00680	T ORG C	C	MG/L	5.0	2.9	2.8	2.3	8.3
00681	D ORG C	C	MG/L	5.0	1.3	0.4	0.0	0.0
00900	TOT HARD	CACO3	MG/L	39			20	
00916	CALCIUM	CA-TOT	MG/L	11.0			4.7	
00927	MGNSIUM	MG,TOT	MG/L	2.7			1.9	
00929	SODIUM	NA,TOT	MG/L	5.30			4.60	
00937	PTSSIUM	K,TOT	MG/L	1.40			1.20	
00940	CHLORIDE	TOTAL	MG/L	5		5	4	
00946	SULFATE	SO4-DISS	MG/L	7.2	8.0	5.7	4.6	8.2
01045	IRON	FE,TOT	UG/L	540	1000	480	180	480
01046	IRON	FE,DISS	UG/L	10	200	10	170	60
01055	MANGNESE	MN	UG/L	240.0	51.0	67.0	59.0	66.0
01056	MANGNESE	MN,DISS	UG/L	11.0	51.0	33.0	6.0	2.0
01092	ZINC	ZN,TOT	UG/L	50	80	130	5 K	50
31616	FEC COLI	MFM-FCBR	/100ML	1000	230	380	280	
31673	FECSTREP	MFKFAGAR	/100ML	1700	70	160	210	
32211	CHLRPHYL	A UG/L	CORRECTD	0.00	0.12	11.00	1.80	3.10
32212	CHLRPHYL	B	UG/L	0.90	0.27	1.30	0.19	0.04
32214	CHLRPHYL	C	UG/L	3.10	0.78	3.40	0.00	0.08
70300	RESIDUE	DISS-180	C MG/L	85	43	67	62	34
70947	ZOOPLANK	DRY WT.	G/CU.M.	43.0	11.0	23.0	22.0	9.0
70996	ATP	PLANKTON	NG/L	900.000	50.000	90.000	300.000	130.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

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STORET RETRIEVAL DATE 82/07/21
 02420000         USA09
32 23 54.0 086 27 34.0  2
ALA R BELOW AUTAUGA CR NR PRATVL
01001 ALABAMA              AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11NOR4              03150201000
        780103      DEPTH     0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES
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				78/04/13	78/05/25	78/07/07	78/08/03	78/09/14
	INITIAL DATE			78/04/13	78/05/25	78/07/07	78/08/03	78/09/14
	INITIAL TIME-DEPTH-BOTTOM			1345	1630	1000	1245	1030
00010	WATER	TEMP	CENT	9.0	23.0	28.0	27.5	28.0
00034	DEPTH-FT	1% LIGHT	REMAINS			9.2	8.2	7.4
00076	TURB	TRBIDMTR	HACH FTU	4.0	9.0	6.0	8.0	3.0
00078	TRANSP	SECCHI	METERS	1.15	0.70	1.10	0.95	1.22
00080	COLOR	PT-CO	UNITS	25	30	20	20	15
00090	REDOX	ORP	MV			230	235	225
00094	CNDUCTVY	FIELD	MICROMHO	127	92	83	72	122
00299	DO	PROBE	MG/L	10.2	7.3	6.9	7.0	6.5
00400	PH		SU	6.70	6.60	6.80	7.10	7.20
00405	CO2		MG/L	10.0	13.0	8.3	4.4	4.6
00410	T ALK	CACO3	MG/L	41	26	27	26	38
* 70299	RESIDUE	DISS-105	C MG/L	11	31	29	37	23
00600	TOTAL N	N	MG/L	0.12			0.32	
00605	ORG N	N	MG/L	0.100			0.120	
00610	NH3+NH4-	N TOTAL	MG/L	0.000	0.060	0.090	0.000	0.050
00625	TOT KJEL	N	MG/L	0.100			0.180	
00630	NO2&NO3	N-TOTAL	MG/L	0.20	0.22	0.16	0.14	0.11
00640	T INORG.	NITROGEN	MG/L N	0.20		0.25	0.20	0.16
00665	PHOS-TOT		MG/L P	0.010	0.050	0.010	0.040	0.020
00671	PHOS-DIS	ORTHO	MG/L P	0.010 K	0.010	0.000	0.020	0.020
00680	T ORG C	C	MG/L	5.9	4.6	2.9	2.9	1.2
00681	D ORG C	C	MG/L	3.7	0.8	1.3	0.6	0.4
00900	TOT HARD	CACO3	MG/L	33			23	
00916	CALCIUM	CA-TOT	MG/L	8.8			5.7	
00927	MGNSIUM	MG,TOT	MG/L	2.5			2.1	
00929	SODIUM	NA,TOT	MG/L	4.70			4.70	
00937	PTSSIUM	K,TOT	MG/L	1.40			1.20	
00940	CHLORIDE	TOTAL	MG/L	5		4	4	
00945	SULFATE	SO4-DISS	MG/L	6.0	5.4	5.6	3.9	6.8
01045	IRON	FE,TOT	UG/L	870	650	640	270	210
01046	IRON	FE,DISS	UG/L	10	170	10	170	100
01055	MANGNESE	MN	UG/L	100.0	69.0	57.0	63.0	44.0
01056	MANGNESE	MN,DISS	UG/L	4.0	9.0	52.0	16.0	4.0
01092	ZINC	ZN,TOT	UG/L	290	40	120	5 K	50
31616	FEC COLI	MFM-FCBR	/100ML	580	140	10	320	70
31673	FECSTREP	MFKFAGAR	/100ML	720	205	1324	20	100
32211	CHLRPHYL	A UG/L	CORRECTD	0.00	1.40	4.80	1.80	2.40
32212	CHLRPHYL	B	UG/L	0.80	0.02	0.67	0.19	0.30
32214	CHLRPHYL	C	UG/L	1.80	0.45	0.00	0.00	0.03
70300	RESIDUE	DISS-180	C MG/L	83	38	56	58	59
70947	ZOOPLANK	DRY WT.	G/CU.M.	33.0	45.0	29.0	36.0	7.0
70940	ATP	PLANKTON	NG/L	650.000	500.000	240.000	200.000	270.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02421000 GSA10
32 21 56.0 086 28 54.0 2
ALA R BELOW CATOMA CR NR PRATVL
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
114084 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

	INITIAL DATE			78/04/14	78/05/26	78/07/07	78/08/03	78/09/14
	INITIAL TIME-DEPTH-BOTTOM			1605	0725	1045	1410	1130
00010	WATER	TEMP	CENT	11.0	22.5	28.0	28.0	28.0
00034	DEPTH-FT	1% LIGHT	REMAINS			7.6	6.9	7.4
00076	TURB	TRBIDMTR	HACH FTU	5.0	8.0	10.0	9.0	3.0
00078	TRANSP	SECCHI	METERS	0.95	0.70	0.70	0.75	1.22
00080	COLOR	PT-CO	UNITS	30	30	20	25	10
00090	REDOX	ORP	MV			240	240	230
00094	CNDUCTVY	FIELD	MICROMHO	134	94	87	100	113
00299	DO	PROBE	MG/L	10.2	7.4	7.1	7.2	6.0
00400	PH		SU	6.80	6.40	7.20	7.60	7.20
00405	CO2		MG/L	13.0	21.0	3.4	1.6	4.4
00410	T ALK	CACO3	MG/L	41	27	28	33	36
*70299	RESIDUE	DISS-105	C MG/L	15	42	18	18	75
00600	TOTAL N	N	MG/L	0.37			0.48	
00605	ORG N	N	MG/L	0.180			0.190	
00610	NH3+NH4-	N TOTAL	MG/L	0.000	0.300	0.130	0.190	0.100
00625	TOT KJEL	N	MG/L	0.180			0.380	
00630	NO2&NO3	N-TOTAL	MG/L	0.19	0.26	0.13	0.10	0.11
00640	T INORG.	NITROGEN	MG/L N	0.19		0.26	0.29	0.21
00665	PHOS-TOT		MG/L P	0.020	0.070	0.050	0.090	0.030
00671	PHOS-DIS	ORTHO	MG/L P	0.010	0.000	0.010	0.050	0.020
00680	T ORG C	C	MG/L	5.1	3.5	2.5	2.8	1.1
00681	D ORG C	C	MG/L	4.9	1.0	0.5	0.6	0.6
00900	TOT HARD	CACO3	MG/L	42			29	
00916	CALCIUM	CA-TOT	MG/L	12.0			7.8	
00927	MGNSIUM	MG,TOT	MG/L	2.8			2.3	
00929	SODIUM	NA,TOT	MG/L	5.50			5.70	
00937	PTSSIUM	K,TOT	MG/L	1.40			1.30	
00940	CHLORIDE	TOTAL	MG/L	6		5	5	
00946	SULFATE	SO4-DISS	MG/L	8.0	7.2	5.8	6.5	6.9
01045	IRON	FE,TOT	UG/L	410	630	1300	490	460
01046	IRON	FE,DISS	UG/L	10	240	60	200	120
01055	MANGNESE	MN	UG/L	41.0	81.0	190.0	65.0	49.0
01056	MANGNESE	MN,DISS	UG/L	16.0	65.0	106.0	11.0	16.0
01092	ZINC	ZN,TOT	UG/L	60	170	110	5 K	270
31616	FEC COLI	MFM-FCBR	/100ML	560	100	80	150	0
31673	FECSTREP	MFKFAGAR	/100ML	290	385	30	80	90
32211	CHLRPHYL	A UG/L	CORRECTD	1.60	4.50	8.00	5.50	4.20
32212	CHLRPHYL	B	UG/L	1.20	0.17	3.20	0.56	0.20
32214	CHLRPHYL	C	UG/L	2.30	0.05	7.20	20.00	0.30
70300	RESIDUE	DISS-180	C MG/L	85	62	76	56	54
70947	ZOOPLANK	DRY WT.	G/CU.M.	56.0	88.0	19.0	22.0	53.0
70950	ATP	PLANKTON	NG/L	750.000	900.000	460.000	600.000	110.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02421090 GSA11
32 20 41.0 086 29 23.0 2
ALA R AB PINTOLLA CR NR PRATTVIL
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/14	78/05/26	78/07/07	78/08/03	78/09/14
INITIAL DATE				78/04/14	78/05/26	78/07/07	78/08/03	78/09/14
INITIAL TIME-DEPTH-BOTTOM				0730	0857	1115	1025	1255
00010	WATER	TEMP	CENT	8.5	23.0	28.0	28.2	27.5
00034	DEPTH-FT	1% LIGHT	REMAINS			6.5	6.1	5.9
00076	TURB	TRBIDMTR	HACH FTU	4.0	4.0	8.0	7.0	5.0
00078	TRANSP	SECCHI	METERS	1.05	0.70	1.00	0.85	0.95
00080	COLOR	PT-CO	UNITS	25	30	20	20	15
00090	REDOX	ORP	MV			210	235	230
00094	CNDUCTVY	FIELD	MICROMHO	145	99	89	98	113
00299	DO	PROBE	MG/L	11.1	7.4	6.5	7.3	6.6
00400	PH		SU	6.60	6.90	7.10	7.20	5.70
00405	CO2		MG/L	13.0	17.0	4.8	3.3	90.0
00410	T ALK	CACO3	MG/L	41	28	30	27	25
* 70299	RESIDUE	DISS-105	C MG/L	10	29	10	18	21
00600	TOTAL N	N	MG/L	0.37			0.21	
00605	ORG N	N	MG/L	0.150			0.000	
00610	NH3+NH4-	N TOTAL	MG/L	0.030	0.040	0.150	0.070	0.050
00625	TOT KJEL	N	MG/L	0.180			0.030	
00630	NO2&NO3	N-TOTAL	MG/L	0.19	0.28	0.14	0.14	0.12
00640	T INORG.	NITROGEN	MG/L N	0.22	0.28	0.29	0.21	0.17
00665	PHOS-TOT		MG/L P	0.030	0.050	0.050	0.000	0.040
00671	PHOS-DIS	ORTHO	MG/L P	0.020	0.000	0.010	0.010	0.020
00680	T ORG C	C	MG/L	6.3	3.9	2.9	2.9	2.0
00681	D ORG C	C	MG/L	2.0	0.0	0.9	0.3	0.3
00900	TOT HARD	CACO3	MG/L	41			29	
00916	CALCIUM	CA-TOT	MG/L	12.0			7.7	
00927	MGNSIUM	MG,TOT	MG/L	2.7			2.4	
00929	SODIUM	NA,TOT	MG/L	5.70			6.10	
00937	PTSSIUM	K,TOT	MG/L	1.40			1.60	
00940	CHLORIDE	TOTAL	MG/L	8		5	5	
00945	SULFATE	SO4-DISS	MG/L	8.4	12.0	6.0	5.8	6.8
01045	IRON	FE,TOT	UG/L	490	940	710	420	610
01046	IRON	FE,DISS	UG/L	10	400	10	170	70
01055	MANGNESE	MN	UG/L	63.0	150.0	90.0	76.0	66.0
01056	MANGNESE	MN,DISS	UG/L	6.0	54.0	44.0	32.0	12.0
01092	ZINC	ZN,TOT	UG/L	50	110	90	210	100
31616	FEC COLI	MFM-FCBR	/100ML	1400	110	50	200	70
31673	FECSTREP	MFKF AGAR	/100ML	250	90	80	200	270
32211	CHLRPHYL	A UG/L	CORRECTD	0.00	2.90	5.60	4.20	5.30
32212	CHLRPHYL	B	UG/L	1.10	0.28	0.19	0.64	0.45
32214	CHLRPHYL	C	UG/L	1.90	0.41	0.00	0.86	0.09
70300	RESIDUE	DISS-180	C MG/L	93	66	73	58	62
70947	ZOOPLANK	DRY WT.	G/CU.M.	33.0	40.0	13.0	20.0	5.0
70998	ATP	PLANKTON	NG/L	650.000	200.000	1650.00	500.000	120.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02421195 GSA12
32 20 22.0 086 31 21.0 2
ALA R NR BURKVILLE
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MU84 03150201000
760103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/14	78/05/26	78/07/07	78/08/03	78/09/14
	INITIAL DATE			78/04/14	78/05/26	78/07/07	78/08/03	78/09/14
	INITIAL TIME-DEPTH-BOTTOM			0910	1005	1245	1705	1400
00010	WATER	TEMP	CENT	9.0	23.0	28.5	29.5	28.0
00034	DEPTH-FT	1% LIGHT	REMAINS			8.5	7.3	5.9
00076	TURB	TRBIDMTR	HACH FTU	6.0	7.0	4.0	6.0	4.0
00078	TRANSP	SECCHI	METERS	0.90	0.80	1.10	0.95	0.95
00080	COLOR	PT-CO	UNITS	30	30	20	20	15
00090	REDOX	ORP	MV			200	230	230
00094	CNDUCTVY	FIELD	MICROMHO	142	101	102	109	122
00299	DO	PROBE	MG/L	10.8	7.5	6.1	7.6	5.8
00400	PH		SU	6.70	6.60	7.15	7.50	6.10
00405	CO2		MG/L	17.0	14.0	4.2	2.0	41.0
00410	T ALK	CACO3	MG/L	43	30	34	33	26
*70299	RESIDUE	DISS-105	C MG/L	15	22	32	13	11
00600	TOTAL N	N	MG/L	0.42			0.40	
00605	ORG N	N	MG/L	0.000			0.220	
00610	NH3+NH4-	N TOTAL	MG/L	0.230	0.040	0.170	0.080	0.050
00625	TOT KJEL	N	MG/L	0.200			0.280	
00630	NO2&NO3	N-TOTAL	MG/L	0.19	0.24	0.17	0.12	0.12
00640	T INORG.	NITROGEN	MG/L N	0.42	0.28	0.34	0.18	0.17
00665	PHOS-TOT		MG/L P	0.030	0.060	0.040	0.040	0.030
00671	PHOS-DIS	ORTHO	MG/L P	0.020	0.010	0.020	0.010	0.020
00680	T ORG C	C	MG/L	8.6	5.2	4.0	4.5	1.7
00681	D ORG C	C	MG/L	8.4	1.3	1.2	0.5	0.5
00900	TOT HARD	CACO3	MG/L	37			34	
00916	CALCIUM	CA-TOT	MG/L	11.0			9.0	
00927	MGNSIUM	MG,TOT	MG/L	2.2			2.8	
00929	SODIUM	NA,TOT	MG/L	5.80			5.00	
00937	PTSSIUM	K,TOT	MG/L	1.40			1.50	
00940	CHLORIDE	TOTAL	MG/L	5		5	5	
00945	SULFATE	SO4-DISS	MG/L	8.0	13.0	6.7	6.6	7.4
01045	IRON	FE,TOT	UG/L	440	610	460	560	540
01046	IRON	FE,DISS	UG/L	10	220	20	190	90
01055	MANGNESE	MN	UG/L	62.0	78.0	90.0	74.0	62.0
01056	MANGNESE	MN,DISS	UG/L	7.0	35.0	68.0	30.0	32.0
01092	ZINC	ZN,TOT	UG/L	80	260	100	130	90
31616	FEC COLI	MFM-FCBR	/100ML	250	70	20	30	10
31673	FECSTREP	MFKFAGAR	/100ML	1700	90	0	150	30
32211	CHLRPHYL	A UG/L	CORRECTD	0.00	3.30	140.30	5.90	4.60
32212	CHLRPHYL	B	UG/L	3.40	0.27	3.10	0.83	0.88
32214	CHLRPHYL	C	UG/L	10.00	0.79	7.70	0.29	0.00
70300	RESIDUE	DISS-180	C MG/L	92	66	79	67	70
70947	ZOOPLANK	DRY WT.	G/CU.M.	55.0	56.0	32.0	19.0	8.0
70994	ATP	PLANKTON	NG/L	750.000	900.000	2400.00		80.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02421220 GSA13
32 22 10.0 086 34 00.0 2
ALA R BELOW ROCKY BR NR LOWNDSBO
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

	INITIAL DATE			78/04/14	78/05/26	78/07/07	78/08/03	78/09/14
	INITIAL TIME-DEPTH-BOTTOM			1110	1210	1330	1815	1450
00010	WATER	TEMP	CENT	10.0	23.5	29.0	29.0	28.0
00034	DEPTH-FT	1% LIGHT	REMAINS			9.0	6.6	6.6
00076	TURB	TRBIDMTR	HACH FTU	4.0	7.0	4.0	6.0	5.0
00078	TRANSP	SECCHI	METERS	1.20	0.70	1.00	0.90	1.02
00080	COLOR	PT-CO	UNITS	25	30	20	20	15
00090	REDOX	ORP	MV			210	235	230
00094	CNDUCTVY	FIELD	MICROMHO	151	102	102	117	122
00299	DO	PROBE	MG/L	10.5	7.3	6.4	6.3	5.7
00400	PH		SU	6.90	6.50	7.20	7.20	5.90
00405	CO2		MG/L	11.0	19.0	4.0	4.0	72.0
00410	T ALK	CACO3	MG/L	46	30	33	33	30
* 70299	RESIDUE	DISS-105	C MG/L	9	40	18	12	7
00600	TOTAL N	N	MG/L	0.40			0.32	
00605	ORG N	N	MG/L	0.000			0.070	
00610	NH3+NH4-	N TOTAL	MG/L	0.220	0.080	0.180	0.120	0.050
00625	TOT KJEL	N	MG/L	0.150			0.190	
00630	NO2&NO3	N-TOTAL	MG/L	0.18	0.24	0.17	0.13	0.12
00640	T INORG.	NITROGEN	MG/L N	0.40	0.32	0.35	0.25	0.17
00665	PHOS-TOT		MG/L P	0.020	0.030	0.050	0.030	0.030
00671	PHOS-DIS	ORTHO	MG/L P	0.010	0.020	0.020	0.020	0.020
00680	T ORG C	C	MG/L	5.9	4.2	3.4	3.0	1.7
00681	D ORG C	C	MG/L	4.1	1.9	1.1	0.6	0.4
00900	TOT HARD	CACO3	MG/L	42			33	
00916	CALCIUM	CA-TOT	MG/L	14.0			8.7	
00927	MGNSIUM	MG,TOT	MG/L	2.8			2.7	
00929	SODIUM	NA,TOT	MG/L	5.70			6.20	
00937	PTSSIUM	K,TOT	MG/L	1.40			1.60	
00940	CHLORIDE	TOTAL	MG/L	6		5	5	
00945	SULFATE	SO4-DISS	MG/L	7.6	1.0	6.4	7.1	7.2
01045	IRON	FE,TOT	UG/L	800	540	640	500	380
01046	IRON	FE,DISS	UG/L	10	250	10	200	100
01055	MANGNESE	MN	UG/L	53.0	130.0	50.0	81.0	55.0
01056	MANGNESE	MN,DISS	UG/L	2.0	61.0	31.0	33.0	4.0
01092	ZINC	ZN,TOT	UG/L	90	60	130	330	50
31616	FEC COLI	MFM-FCBR	/100ML	270	70	10	0	0
31673	FECSTREP	MFKFAGAR	/100ML	150	45	0	40	40
32211	CHLRPHYL	A UG/L	CORRECTD	1.60	4.00	10.00	3.50	5.90
32212	CHLRPHYL	B	UG/L	0.90	0.33	2.90	0.73	0.78
32214	CHLRPHYL	C	UG/L	0.70	0.14	4.80	0.45	0.00
70300	RESIDUE	DISS-180	C MG/L	97	67	74	69	78
70947	ZOOPLANK	DRY WT.	G/CU.M.	28.0	51.0	24.0	22.0	7.0
70996	ATP	PLANKTON	NG/L	750.000	150.000	1300.00	500.000	210.000

*Chang to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02421290 GSA14
32 23 58.0 086 43 55.0 2
ALA R BELOW BEAVER CR NR AUTAUGA
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

	INITIAL DATE			78/04/15	78/05/27	78/07/11	78/08/04	78/09/15
	INITIAL TIME-DEPTH-BOTTOM			0710	0715	0740	1010	0840
00010	WATER	TEMP	CENT	10.0	23.5	26.0	28.5	28.0
00034	DEPTH-FT	1% LIGHT	REMAINS			6.6	6.6	6.9
00076	TURB	TRBIDMTR	HACH FTU	5.0	8.0	10.0	9.0	8.0
00078	TRANSP	SECCHI	METERS	1.05	0.75	0.85	0.85	1.00
00080	COLOR	PT-CO	UNITS	25	30	20	25	20
00090	REDOX	ORP	MV			290	230	225
00094	CNDUCTVY	FIELD	MICROMHO	143	106	99	112	116
00299	DO	PROBE	MG/L	10.3	6.9	5.3	5.4	5.2
00400	PH		SU	6.30	6.40	6.90	7.00	6.90
00405	CO2		MG/L	40.0	25.0	8.0	6.1	10.0
00410	T ALK	CACO3	MG/L	41	33	33	31	43
*70299	RESIDUE	DISS-105 C	MG/L	37	46	14	11	61
00600	TOTAL N	N	MG/L	0.20			0.36	
00605	ORG N	N	MG/L	0.000			0.120	
00610	NH3+NH4-	N TOTAL	MG/L	0.000	0.040	0.110	0.080	0.080
00625	TOT KJEL	N	MG/L	0.090			0.200	
00630	NO2&NO3	N-TOTAL	MG/L	0.20	0.24	0.15	0.16	0.12
00640	T INORG.	NITROGEN	MG/L N	0.20	0.28	0.26	0.24	0.20
00665	PHOS-TOT		MG/L P	0.020	0.040	0.060	0.040	0.040
00671	PHOS-DIS	ORTHO	MG/L P	0.010	0.030	0.010	0.010	0.020
00680	T ORG C	C	MG/L	4.8	3.4	3.3	2.9	1.8
00681	D ORG C	C	MG/L	4.6	0.9	0.3	0.4	0.4
00900	TOT HARD	CACO3	MG/L	42			32	
00916	CALCIUM	CA-TOT	MG/L	12.0			8.5	
00927	MGNSIUM	MG,TOT	MG/L	2.8			2.6	
00929	SODIUM	NA,TOT	MG/L	5.20			6.40	
00937	PTSSIUM	K,TOT	MG/L	1.60			1.50	
00940	CHLORIDE	TOTAL	MG/L	6		5	6	
00945	SULFATE	SO4-DISS	MG/L	6.8	23.0	5.3	6.1	7.5
01045	IRON	FE,TOT	UG/L	620	710	620	390	520
01046	IRON	FE,DISS	UG/L	20	220	0	130	90
01055	MANGNESE	MN	UG/L	91.0	98.0	61.0	80.0	64.0
01056	MANGNESE	MN,DISS	UG/L	5.0	48.0	54.0	24.0	5.0 K
01092	ZINC	ZN,TOT	UG/L	230	640	150	110	140
31616	FEC COLI	MFM-FCBR	/100ML	27	30	175	40	10
31673	FECSTREP	MFKFAGAR	/100ML	25	20	4	40	40
32211	CHLRPHYL	A UG/L	CORRECTD	0.00	4.10	4.20	4.00	3.70
32212	CHLRPHYL	B	UG/L	0.60	0.10	0.34	1.40	0.38
32214	CHLRPHYL	C	UG/L	2.40	0.72	0.00	0.21	0.00
70300	RESIDUE	DISS-180 C	MG/L	91	66	76	69	78
70947	ZOOPLANK	DRY WT.	G/CU.M.	43.0	46.0	23.0	18.0	10.0
70946	ATP	PLANKTON	NG/L	650.000	150.000	290.000	200.000	270.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02421315 GSA15
32 23 23.0 086 40 55.0 2
ALA R BELOW IVY CR NR MULBERRY
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11NUB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/15	78/05/27	78/07/11	78/08/04	78/09/15
INITIAL DATE				78/04/15	78/05/27	78/07/11	78/08/04	78/09/15
INITIAL TIME-DEPTH-BOTTOM				0830	0805	0920	1120	0930
00010	WATER	TEMP	CENT	9.5	23.5	29.0	29.0	28.0
00034	DEPTH-FT	1% LIGHT	REMAINS			7.0	6.9	6.0
00076	TURB	TRBIDMTR	HACH FTU	5.0	10.0	10.0	8.0	7.0
00078	TRANSP	SECCHI	METERS	0.90	0.75	0.90	0.80	0.95
00080	COLOR	PT-CO	UNITS	25	30	20	20	20
00090	REDOX	ORP	MV			260	220	230
00094	CNDUCTVY	FIELD	MICROMHO	142	101	101	104	105
00299	DO	PROBE	MG/L	10.8	6.9	5.0	6.3	5.2
00400	PH		SU	6.70	6.65	7.00	7.30	7.00
00405	CO2		MG/L	16.0	14.0	6.6	3.2	7.7
00410	T ALK	CACO3	MG/L	40	33	34	33	39
*70299	RESIDUE	DISS-105	C MG/L	9	27	11	11	8
00600	TOTAL N	N	MG/L	0.29		0.40	0.39	
00605	ORG N	N	MG/L	0.090			0.170	
00610	NH3+NH4-	N TOTAL	MG/L	0.000	0.000	0.130	0.110	0.090
00625	TOT KJEL	N	MG/L	0.090			0.280	
00630	NO2&NO3	N-TOTAL	MG/L	0.20	0.18	0.14	0.11	0.13
00640	T INORG.	NITROGEN	MG/L N	0.20	0.18	0.27	0.22	0.22
00665	PHOS-TOT		MG/L P	0.020	0.060	0.040	0.020	0.040
00671	PHOS-DIS	ORTHO	MG/L P	0.010	0.010	0.020	0.000	0.020
00680	T ORG C	C	MG/L	5.3	5.5	4.6	3.6	1.9
00681	D ORG C	C	MG/L	3.8	0.4	0.8	0.3	0.3
00900	TOT HARD	CACO3	MG/L	42			32	
00916	CALCIUM	CA-TOT	MG/L	12.0			8.4	
00927	MGNSIUM	MG,TOT	MG/L	2.8			2.6	
00929	SODIUM	NA,TOT	MG/L	5.30			6.20	
00937	PTSSIUM	K,TOT	MG/L	1.40			1.50	
00940	CHLORIDE	TOTAL	MG/L	5		5	5	
00945	SULFATE	SO4-DISS	MG/L	7.2	7.6	7.0	5.9	7.2
01045	IRON	FE,TOT	UG/L	570	860	1100	860	360
01046	IRON	FE,DISS	UG/L	20	180	120	250	340
01055	MANGNESE	MN	UG/L	91.0	100.0	77.0	77.0	58.0
01056	MANGNESE	MN,DISS	UG/L	7.0	18.0	5.0 K	7.0	2.0
01092	ZINC	ZN,TOT	UG/L	30	210	170	50	200
31616	FEC COLI	MFM-FCBR	/100ML	28	15	50	60	0
31673	FECSTREP	MFKFAGAR	/100ML	38	15	10	10	50
32211	CHLRPHYL	A UG/L	CORRECTD	2.10	2.40	8.90	6.80	2.80
32212	CHLRPHYL	B	UG/L	0.80	1.20	2.40	1.60	0.00
32214	CHLRPHYL	C	UG/L	1.80	0.11	5.50	1.60	0.00
70300	RESIDUE	DISS-180	C MG/L	92	64	80	39	74
70947	ZOUPLANK	DRY WT.	G/CU.M.	34.0	38.0	27.0	26.0	12.0
70946	ATP	PLANKTON	NG/L	850.000	600.000	290.000	890.000	600.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

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STORET RETRIEVAL DATE 82/07/21
 02421325          05A16
32 30 15.0 086 46 33.0  2
ALA R AT DAYS BEND NR BENTON
01001 ALABAMA              AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOH4                 03150201000
        780103      DEPTH     0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES
```

				78/04/15	78/05/21	78/07/11	78/08/04	78/09/15
	INITIAL DATE			78/04/15	78/05/21	78/07/11	78/08/04	78/09/15
	INITIAL TIME-DEPTH-BOTTOM			1530	0930	0955	1300	1030
00010	WATER	TEMP	CENT	11.5	24.0	29.5	30.0	28.0
00034	DEPTH-FT	1% LIGHT	REMAINS			7.0	6.9	6.5
00076	TURB	TRBIDMTR	HACH FTU	5.0	8.0	10.0	8.0	7.0
00078	TRANSP	SECCHI	METERS	0.65	0.75	0.90	0.80	0.92
00080	COLOR	PT-CO	UNITS	25	30	20	25	20
00090	REDOX	ORP	MV				240	225
00094	CNDUCTVY	FIELD	MICROMHO	149	102	104	104	112
00299	DO	PROBE	MG/L	11.5	6.9	4.8	8.1	5.4
00400	PH		SU	6.60	6.60	7.00	7.60	7.10
00405	CO2		MG/L	20.0	15.0	6.7	1.7	6.1
00410	T ALK	CACO3	MG/L	40	30	34	34	38
* 70299	RESIDUE	DISS-105	C MG/L	5	26	22	14	14
00600	TOTAL N	N	MG/L	0.59			0.41	
00605	ORG N	N	MG/L	0.000			0.280	
00610	NH3+NH4-	N TOTAL	MG/L	0.380	0.020	0.110	0.010	0.080
00625	TOT KJEL	N	MG/L	0.090			0.290	
00630	NO2&NO3	N-TOTAL	MG/L	0.21	0.26	0.14	0.12	0.13
00640	T INORG.	NITROGEN	MG/L N	0.59	0.28	0.25	0.13	0.21
00665	PHOS-TOT		MG/L P	0.020	0.050	0.020	0.020	0.030
00671	PHOS-DIS	ORTHO	MG/L P	0.010	0.010	0.010	0.010	0.020
00680	T ORG C	C	MG/L	6.0	5.6	3.9	2.8	2.6
00681	D ORG C	C	MG/L	3.1	1.7	0.5	0.6	6.0
00900	TOT HARD	CACO3	MG/L	42			33	
00916	CALCIUM	CA-TOT	MG/L	12.0			8.9	
00927	MGNSIUM	MG,TOT	MG/L	2.8			2.6	
00929	SODIUM	NA,TOT	MG/L	5.00			6.50	
00937	PTSSIUM	K,TOT	MG/L	1.50			1.60	
00940	CHLORIDE	TOTAL	MG/L	5		5	6	
00946	SULFATE	SO4-DISS	MG/L	8.8	7.8	6.9	6.0	7.0
01045	IRON	FE,TOT	UG/L	1500	740	780	570	590
01046	IRON	FE,DISS	UG/L	20	260	40	100	130
01055	MANGNESE	MN	UG/L	99.0	74.0	130.0	60.0	68.0
01056	MANGNESE	MN,DISS	UG/L	140.0	44.0	29.0	5.0 K	12.0
01092	ZINC	ZN,TOT	UG/L	20	190	200	210	150
31616	FEC COLI	MFM-FCBR	/100ML	59	15	4	10	0
31673	FECSTREP	MFKFAGAR	/100ML	6	10	40	10	10
32211	CHLRPHYL	A UG/L	CORRECTD	0.00	3.50	6.40	0.00	5.40
32212	CHLRPHYL	B	UG/L	0.90	2.30	3.20	1.10	0.02
32214	CHLRPHYL	C	UG/L	3.40	1.10	3.40	5.00	0.66
70300	RESIDUE	DISS-180	C MG/L	97	66	71	56	54
70947	ZOOPLANK	DRY WT.	G/CU.M.	33.0	44.0	26.0	25.0	13.0
70996	ATP	PLANKTON	NG/L	700.000	50.000	900.000	300.000	550.000

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02421349 GSA17
32 19 30.0 086 47 00.0 2
ALA R JONES BLUFF NR BENTON
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/17	78/05/29	78/07/11	78/08/04	78/09/15
	INITIAL DATE			78/04/17	78/05/29	78/07/11	78/08/04	78/09/15
	INITIAL TIME-DEPTH-BOTTOM			1330	1250	1045	1600	1336
00010	WATER	TEMP	CENT	12.5	25.0	29.5	31.0	28.0
00034	DEPTH-FT	1% LIGHT	REMAINS			6.9	6.6	6.5
00076	TURB	TRBIDMTR	HACH FTU	8.0	8.0	10.0	7.0	7.0
00078	TRANSP	SECCHI	METERS	0.96	0.70	0.90	0.80	0.92
00080	COLOR	PT-CO	UNITS	30	40	20	20	20
00090	REDOX	ORP	MV				230	225
00094	CNDUCTVY	FIELD	MICROMHO	152	102	106	102	111
00299	DO	PROBE	MG/L	9.0	7.5	4.8	9.2	5.4
00400	PH		SU	6.40	6.90	7.20	8.80	7.10
00405	CO2		MG/L	26.0	8.0	4.4	0.4	9.6
00410	T ALK	CACO3	MG/L	44	31	36	30	49
* 70299	RESIDUE	DISS-105	C MG/L	16	22	19	21	20
00600	TOTAL N	N	MG/L	0.37			0.21	
00605	ORG N	N	MG/L	0.140			0.110	
00610	NH3+NH4-	N TOTAL	MG/L	0.000	0.050	0.050	0.050	0.070
00625	TOT KJEL	N	MG/L	0.140			0.160	
00630	NO2&NO3	N-TOTAL	MG/L	0.23	0.16	0.15	0.05	0.12
00640	T INORG.	NITROGEN	MG/L N	0.23	0.21	0.20	0.10	0.19
00665	PHOS-TOT		MG/L P	0.060	0.050	0.050	0.060	0.020
00671	PHOS-DIS	ORTHO	MG/L P	0.060	0.010	0.010	0.000	0.010
00680	T ORG C	C	MG/L	4.4	5.1	6.9	5.7	1.7
00681	D ORG C	C	MG/L	4.0	1.4	0.8	0.4	0.4
00900	TOT HARD	CACO3	MG/L	41			30	
00916	CALCIUM	CA-TOT	MG/L	12.0			8.1	
00927	MGNSIUM	MG,TOT	MG/L	2.5			2.4	
00929	SODIUM	NA,TOT	MG/L	5.10			6.10	
00937	PTSSIUM	K,TOT	MG/L	1.50			1.60	
00940	CHLORIDE	TOTAL	MG/L	6		5	6	
00946	SULFATE	SO4-DISS	MG/L	8.0	7.6	6.7	6.0	6.8
01045	IRON	FE,TOT	UG/L	540	650	620	360	530
01046	IRON	FE,DISS	UG/L	10	150	60	280	100
01055	MANGNESE	MN	UG/L	160.0	80.0	67.0	53.0	61.0
01056	MANGNESE	MN,DISS	UG/L	1.0	1.2	22.0	22.0	12.0
01092	ZINC	ZN,TOT	UG/L	320	210	110	60	100
31616	FEC COLI	MFM-FCBR	/100ML	44	10	10	10	0
31673	FECSTREP	MFKFAGAR	/100ML	2	10	10	20	10
32211	CHLRPHYL	A UG/L	CORRECTD	0.50	1.30	11.00	31.00	2.40
32212	CHLRPHYL	B	UG/L	0.20	2.50	2.30	1.80	0.00
32214	CHLRPHYL	C	UG/L	0.30	4.10	4.40	0.00	0.00
70300	RESIDUE	DISS-180	C MG/L	104	45	74	54	58
70947	ZOOPLANK	DRY WT.	G/CU.M.	35.0	28.0	31.0	22.0	
71996	ATP	PLANKTON	NG/L	650.000	400.000	600.000	300.000	3450.00

*Change to 00530 Residue, total nonfilterable

Table A-1.--Continued

STORET RETRIEVAL DATE 82/07/21
02421355 GSA18
32 19 07.0 086 47 18.0 2
ALA RIVER NR BENTON
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/18	78/05/29	78/07/11	78/08/07	78/09/18
	INITIAL DATE			78/04/18	78/05/29	78/07/11	78/08/07	78/09/18
	INITIAL TIME-DEPTH-BOTTOM			0810	1445	1300	1305	1330
00010	WATER	TEMP	CENT	11.0	24.0	29.8	29.5	28.5
00034	DEPTH-FT	1% LIGHT	REMAINS			6.4	8.6	6.6
00076	TURB	TRBIDMTR	HACH FTU	7.0	6.0	10.0	9.0	6.0
00078	TRANSP	SECCHI	METERS	0.50	0.70	0.85	0.70	0.95
00080	COLOR	PT-CO	UNITS	40	40	20	25	30
00090	REDOX	ORP	MV			210	230	230
00094	CNDUCTVY	FIELD	MICROMHO	147	110	106	102	148
00299	DO	PROBE	MG/L	9.2	6.6	5.3	5.8	6.9
00400	PH		SU	6.60	6.90	7.00	7.00	7.50
00405	CO2		MG/L	20.0	6.0	7.0	6.4	3.1
00410	T ALK	CACO3	MG/L	42	25	36	33	49
* 70299	RESIDUE	DISS-105	C MG/L	16	22	17	14	66
00600	TOTAL N	N	MG/L	0.47			0.34	
00605	ORG N	N	MG/L	0.240			0.050	
00610	NH3+NH4-	N TOTAL	MG/L	0.000 U	0.000	0.110	0.070	0.040
00625	TOT KJEL	N	MG/L	0.240			0.120	
00630	NO2&NO3	N-TOTAL	MG/L	0.23	0.48	0.14	0.22	0.19
00640	T INORG.	NITROGEN	MG/L N	0.23	0.48	0.25	0.29	0.23
00665	PHOS-TOT		MG/L P	0.020	0.060	0.050	0.070	0.080
00671	PHOS-DIS	ORTHO	MG/L P	0.010	0.020	0.020	0.040	0.010
00680	T ORG C	C	MG/L	6.3	6.0	1.0	3.8	2.3
00681	D ORG C	C	MG/L	3.6	1.9	1.0	0.0	0.0
00900	TOT HARD	CACO3	MG/L	42			34	
00916	CALCIUM	CA-TOT	MG/L	12.0			9.1	
00927	MGNSIUM	MG,TOT	MG/L	2.8			2.7	
00929	SODIUM	NA,TOT	MG/L	5.10			6.40	
00937	PTSSIUM	K,TOT	MG/L	1.50			1.60	
00940	CHLORIDE	TOTAL	MG/L	5		5	6	
00945	SULFATE	SO4-DISS	MG/L	6.6	6.6	6.8	6.1	6.7
01045	IRON	FE,TOT	UG/L	600	710	530	470	1100
01046	IRON	FE,DISS	UG/L	10	220	120	150	230
01055	MANGNESE	MN	UG/L	61.0	50.0	100.0	84.0	60.0
01056	MANGNESE	MN,DISS	UG/L	4.0	28.0	7.0	31.0	1.0
01092	ZINC	ZN,TOT	UG/L	100	190	130	220	20
31616	FEC COLI	MFM-FCBR	/100ML	58	10	10	0	50
31673	FECSTREP	MFKFAGAR	/100ML	74	3	20	8	170
32211	CHLRPHYL	A UG/L	CORRECTD	2.10	0.60	6.60	9.00	5.10
32212	CHLRPHYL	B	UG/L	0.50	3.60	0.72	0.70	0.78
32214	CHLRPHYL	C	UG/L	1.30	2.17	0.74	0.17	0.00
70300	RESIDUE	DISS-180	C MG/L	71	46	73	64	59
70947	ZOOPLANK	DRY WT.	G/CU.M.	47.0	77.0	25.0	20.0	53.0
70998	ATP	PLANKTON	NG/L	160.000	1200.00	1000.00	200.000	290.000

*Change to 00530 Residue, total nonfilterable

Table A-2.--Sediment data entered into the EPA STORET retrieval system, 1978

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STORET RETRIEVAL DATE 82/07/15
 02419692            05A00
32 35 00.0 086 15 30.0  4
TALLAPOOSA RIVER 0.5 MILES FROM MOUTH
01051 ALABAMA                  ELMORE
SOUTHEAST                       033400
ALABAMA RIVER BASIN
11MOH4               03150107010
         781215       DEPTH     3 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX 0341110  000700  02780
MILES 0045.00 0314.40 000.50      .         .       .       .
      INITIAL DATE                                78/08/01
      INITIAL TIME-DEPTH-BOTTOM                   1215
00496 LOSS ON      IGNITION      MG/KG       49100.0
00553 OIL-GRSE     MUD-HEAN      MG/KG          75.00
00627  KJELDL      N TOT MU   D  MG/KG        110.000
00668 PHOS MUD      DRY WGT     MG/KG-P            0.5
00687 BM ORG        CARBON      GM/KG-C         17.000
01003 ARSENIC      SEDMG/KG      DRY WGT          1.30
01028 CD MUD       DRY WGT      MG/KG-CD         10.00 K
01029 CHROMIUM     SEDMG/KG      DRY WGT         50.00 K
01043 COPPER       SEDMG/KG      DRY WGT         20.00 K
01052 LEAD         SEDMG/KG      DRY WGT         50.00 K
01053  MN MUD      DRY WGT      MG/KG-MN        560.00
01068 NICKEL       SEDMG/KG      DRY WGT         50.00 K
01093 ZINC         SEDMG/KG      DRY WGT        125.00
01170  FE MUD      DRY WGT      MG/KG-FE       8800.00
71921 MERCURY      SEDMG/KG      DRY WGT            0.2 K


STORET RETRIEVAL DATE 82/07/16
 02411505            05A01
32 32 28.0 086 15 13.0  2
COOSA RIVER AT WETUMPKA ALA
01051 ALABAMA                  ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11MOH4               03150201000
         760103       DEPTH     0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES      .         .         .         .         .       .       .
      INITIAL DATE                                76/08/01
      INITIAL TIME-DEPTH-BOTTOM                   1105
00496 LOSS ON      IGNITION      MG/KG        8200.00
00553 OIL-GRSE     MUD-HEAN      MG/KG         150.00
00627  KJELDL      N TOT MU   D  MG/KG        320.000
00668 PHOS MUD      DRY WGT     MG/KG-P            1.6
00687 BM ORG        CARBON      GM/KG-C        650.000
01003 ARSENIC      SEDMG/KG      DRY WGT          1.80
01028 CD MUD       DRY WGT      MG/KG-CD         10.00 K
01029 CHROMIUM     SEDMG/KG      DRY WGT         50.00 K
01043 COPPER       SEDMG/KG      DRY WGT         20.00 K
01052 LEAD         SEDMG/KG      DRY WGT         50.00 K
01053  MN MUD      DRY WGT      MG/KG-MN        760.00
01068 NICKEL       SEDMG/KG      DRY WGT         50.00 K
01093 ZINC         SEDMG/KG      DRY WGT        150.00
01170  FE MUD      DRY WGT      MG/KG-FE       16000.0
71921 MERCURY      SEDMG/KG      DRY WGT            0.2 K
```

Table A-2.--Continued

STORET RETRIEVAL DATE 82/07/16
02419965 GSA02
32 30 19.0 086 16 06.0 2
COOSA R BELOW MORTARCR NR ELMORE
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11MOR4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

INITIAL DATE			78/08/01	
INITIAL TIME-DEPTH-BOTTOM			1330	
00496 LOSS ON	IGNITION	MG/KG	19800.0	
00553 OIL-GRSE	MUD-HEXN	MG/KG	85.00	
00627 KJELDL	N TOT MU	D MG/KG	200.000	
00668 PHOS MUD	DRY WGT	MG/KG-P	0.7	
00687 BM ORG	CARBON	GM/KG-C	18.000	
01003 ARSENIC	SEDMG/KG	DRY WGT	4.50	
01028 CD MUD	DRY WGT	MG/KG-CD	10.00	K
01029 CHROMIUM	SEDMG/KG	DRY WGT	50.00	K
01043 COPPER	SEDMG/KG	DRY WGT	20.00	K
01052 LEAD	SEDMG/KG	DRY WGT	50.00	K
01053 MN MUD	DRY WGT	MG/KG-MN	520.00	
01068 NICKEL	SEDMG/KG	DRY WGT	50.00	K
01093 ZINC	SEDMG/KG	DRY WGT	80.00	
01170 FE MUD	DRY WGT	MG/KG-FE	12000.0	
71921 MERCURY	SEDMG/KG	DRY WGT	0.2	

STORET RETRIEVAL DATE 82/07/16
02419990 GSA03
32 29 33.0 086 17 43.0 2
ALABAMA RIVER AT COOSADA FERRY AT COOSADA
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11MOR4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

INITIAL DATE			78/08/01	
INITIAL TIME-DEPTH-BOTTOM			1450	
00496 LOSS ON	IGNITION	MG/KG	23900.0	
00553 OIL-GRSE	MUD-HEXN	MG/KG	96.00	
00627 KJELDL	N TOT MU	D MG/KG	150.000	
00668 PHOS MUD	DRY WGT	MG/KG-P	1.2	
00687 BM ORG	CARBON	GM/KG-C	18.000	
01003 ARSENIC	SEDMG/KG	DRY WGT	4.50	
01028 CD MUD	DRY WGT	MG/KG-CD	10.00	K
01029 CHROMIUM	SEDMG/KG	DRY WGT	50.00	K
01043 COPPER	SEDMG/KG	DRY WGT	20.00	K
01052 LEAD	SEDMG/KG	DRY WGT	50.00	K
01053 MN MUD	DRY WGT	MG/KG-MN	660.00	
01068 NICKEL	SEDMG/KG	DRY WGT	50.00	K
01093 ZINC	SEDMG/KG	DRY WGT	30.00	
01170 FE MUD	DRY WGT	MG/KG-FE	12000.0	
71921 MERCURY	SEDMG/KG	DRY WGT	0.2	K

Table A-2.--Continued

```
STORET RETRIEVAL DATE 82/07/15
 02419933            GSA04
32 25 37.0 086 19 31.0  2
ALA R NR CHISOLM
01051 ALABAMA                ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11MGMA                  03150201000
          780103        DEPTH      0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES     .          .          .          .          .        .        .
      INITIAL DATE                                          78/08/02
      INITIAL TIME-DEPTH-BOTTOM                               1000
00496 LOSS ON     IGNITION       MG/KG       16300.0
00553 OIL-GRSE    MUD-HEXAN      MG/KG         120.00
00627  KJELDL     N TOT MU     D MG/KG        140.000
00668 PHOS MUD     DRY WGT     MG/KG-P           0.4
00687 BM ORG       CARBON      GM/KG-C         27.000
01003 ARSENIC     SEDMG/KG      DRY WGT          4.60
01028 CD MUD      DRY WGT      MG/KG-CD         10.00 K
01029 CHROMIUM    SEDMG/KG      DRY WGT         50.00 K
01043 COPPER      SEDMG/KG      DRY WGT         20.00 K
01052 LEAD        SEDMG/KG      DRY WGT         50.00 K
01053  MN MUD     DRY WGT      MG/KG-MN        540.00
01068 NICKEL      SEDMG/KG      DRY WGT         50.00 K
01093 ZINC        SEDMG/KG      DRY WGT         50.00
01170  FE MUD     DRY WGT      MG/KG-FE      11000.0
71921 MERCURY     SEDMG/KG      DRY WGT           0.2 K
```

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STORET RETRIEVAL DATE 82/07/15
 02419986            GSA05
32 25 45.0 086 20 17.0  2
ALA R AT L&N RR NR MILLBROOK
01051 ALABAMA                ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11MGMA                  03150201000
          780103        DEPTH      0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES     .          .          .          .          .        .        .
      INITIAL DATE                                          78/08/02
      INITIAL TIME-DEPTH-BOTTOM                               1120
00496 LOSS ON     IGNITION       MG/KG       41500.0
00553 OIL-GRSE    MUD-HEXAN      MG/KG         110.00
00627  KJELDL     N TOT MU     D MG/KG        600.000
00668 PHOS MUD     DRY WGT     MG/KG-P           2.3
00687 BM ORG       CARBON      GM/KG-C         36.000
01003 ARSENIC     SEDMG/KG      DRY WGT          5.40
01028 CD MUD      DRY WGT      MG/KG-CD         10.00 K
01029 CHROMIUM    SEDMG/KG      DRY WGT         50.00 K
01043 COPPER      SEDMG/KG      DRY WGT         20.00 K
01052 LEAD        SEDMG/KG      DRY WGT         50.00 K
01053  MN MUD     DRY WGT      MG/KG-MN        740.00
01068 NICKEL      SEDMG/KG      DRY WGT         50.00 K
01093 ZINC        SEDMG/KG      DRY WGT         50.00
01170  FE MUD     DRY WGT      MG/KG-FE      24000.0
71921 MERCURY     SEDMG/KG      DRY WGT           0.2 K
```

Table A-2.--Continued

```
STORET RETRIEVAL DATE 82/07/16
 02419987             GSA06
32 24 39.0 086 20 28.0  2
ALA R AT HWY 143 NR MONTGOMERY
01101 ALABAMA                MONTGOMERY
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4                03150201000
        780103      DEPTH     0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES       .       .       .       .       .       .       .
     INITIAL DATE                            78/08/02
     INITIAL TIME-DEPTH-BOTTOM               1300
00496 LOSS ON    IGNITION     MG/KG     16800.0
00553 OIL-GRSE   MUD-HEXN     MG/KG       90.00
00627  KJELDL    N TOT MU   D MG/KG     220.000
00668 PHOS MUD    DRY WGT   MG/KG-P         1.4
00687 BM ORG      CARBON    GM/KG-C      21.000
01003 ARSENIC    SEDMG/KG    DRY WGT       2.10
01028 CD MUD     DRY WGT    MG/KG-CD      10.00 K
01029 CHROMIUM   SEDMG/KG    DRY WGT      50.00 K
01043 COPPER     SEDMG/KG    DRY WGT      20.00 K
01052 LEAD       SEDMG/KG    DRY WGT      50.00 K
01053  MN MUD    DRY WGT    MG/KG-MN     440.00
01068 NICKEL     SEDMG/KG    DRY WGT      50.00 K
01093 ZINC       SEDMG/KG    DRY WGT      60.00
01170  FE MUD    DRY WGT    MG/KG-FE    13000.0
71921 MERCURY    SEDMG/KG    DRY WGT        0.0 K
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STORET RETRIEVAL DATE 82/07/16
 02419989             GSA07
32 25 03.0 086 22 01.0  2
ALA R NR MAXWELL AFB NR MONT.
01101 ALABAMA                MONTGOMERY
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4                03150201000
        780103      DEPTH     0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES       .       .       .       .       .       .       .
     INITIAL DATE                            78/08/03
     INITIAL TIME-DEPTH-BOTTOM               0827
00496 LOSS ON    IGNITION     MG/KG     20200.0
00553 OIL-GRSE   MUD-HEXN     MG/KG      640.00
00627  KJELDL    N TOT MU   D MG/KG     280.000
00668 PHOS MUD    DRY WGT   MG/KG-P         1.7
00687 BM ORG      CARBON    GM/KG-C      14.000
01003 ARSENIC    SEDMG/KG    DRY WGT       6.20
01028 CD MUD     DRY WGT    MG/KG-CD      10.00 K
01029 CHROMIUM   SEDMG/KG    DRY WGT      50.00 K
01043 COPPER     SEDMG/KG    DRY WGT      20.00 K
01052 LEAD       SEDMG/KG    DRY WGT      50.00 K
01053  MN MUD    DRY WGT    MG/KG-MN     760.00
01068 NICKEL     SEDMG/KG    DRY WGT      50.00 K
01093 ZINC       SEDMG/KG    DRY WGT      60.00
01170  FE MUD    DRY WGT    MG/KG-FE    19000.0
71921 MERCURY    SEDMG/KG    DRY WGT        0.2 K
```

STORET RETRIEVAL DATE 82/07/16
02420045 GSA08
32 24 15.0 086 27 10.0 2
ALA R NR PRATTVILLE
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES . . . .

	INITIAL DATE			78/08/03	
	INITIAL TIME-DEPTH-BOTTOM			0940	
00496	LOSS ON	IGNITION	MG/KG	13300.0	
00553	OIL-GRSE	MUD-HEXN	MG/KG	87.00	
00627	KJELDL	N TOT MUD	MG/KG	260.000	
00668	PHOS MUD	DRY WGT	MG/KG-P	1.3	
00687	BM ORG	CARBON	GM/KG-C	18.000	
01003	ARSENIC	SEDMG/KG	DRY WGT	7.60	
01028	CD MUD	DRY WGT	MG/KG-CD	10.00	K
01029	CHROMIUM	SEDMG/KG	DRY WGT	50.00	K
01043	COPPER	SEDMG/KG	DRY WGT	20.00	K
01052	LEAD	SEDMG/KG	DRY WGT	50.00	K
01053	MN MUD	DRY WGT	MG/KG-MN	380.00	
01068	NICKEL	SEDMG/KG	DRY WGT	50.00	K
01093	ZINC	SEDMG/KG	DRY WGT	50.00	
01170	FE MUD	DRY WGT	MG/KG-FE	13000.0	
71921	MERCURY	SEDMG/KG	DRY WGT	0.2	K

STORET RETRIEVAL DATE 82/07/16
02420600 GSA09
32 23 56.0 086 27 34.0 2
ALA R BELOW AUTAUGA CR NR PRATVL
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES . . . .

	INITIAL DATE			78/08/03	
	INITIAL TIME-DEPTH-BOTTOM			1245	
00496	LOSS ON	IGNITION	MG/KG	8730.00	
00553	OIL-GRSE	MUD-HEXN	MG/KG	90.00	
00627	KJELDL	N TOT MUD	MG/KG	45.000	
00668	PHOS MUD	DRY WGT	MG/KG-P	0.9	
00687	BM ORG	CARBON	GM/KG-C	49.000	
01003	ARSENIC	SEDMG/KG	DRY WGT	1.40	
01028	CD MUD	DRY WGT	MG/KG-CD	10.00	K
01029	CHROMIUM	SEDMG/KG	DRY WGT	50.00	K
01043	COPPER	SEDMG/KG	DRY WGT	20.00	K
01052	LEAD	SEDMG/KG	DRY WGT	50.00	K
01053	MN MUD	DRY WGT	MG/KG-MN	140.00	K
01068	NICKEL	SEDMG/KG	DRY WGT	50.00	K
01093	ZINC	SEDMG/KG	DRY WGT	180.00	
01170	FE MUD	DRY WGT	MG/KG-FE	6200.00	
71921	MERCURY	SEDMG/KG	DRY WGT	0.2	K

Table A-2.--Continued

STORET RETRIEVAL DATE 82/07/16
02421060 GSA10
32 21 56.0 086 28 54.0 2
ALA R BELOW CATOMA CR NR PRATVL
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES . . . .

INITIAL DATE				78/08/03	
INITIAL TIME-DEPTH-BOTTOM				1410	
00496 LOSS ON	IGNITION	MG/KG		43900.0	
00553 OIL-GRSE	MUD-HEXN	MG/KG		67.00	
00627 KJELDL	N TOT MU	D MG/KG		280.000	
00668 PHOS MUD	DRY WGT	MG/KG-P		3.1	
00687 BM ORG	CARBON	GM/KG-C		32.000	
01003 ARSENIC	SEDMG/KG	DRY WGT		6.70	
01028 CD MUD	DRY WGT	MG/KG-CD		10.00	K
01029 CHROMIUM	SEDMG/KG	DRY WGT		50.00	K
01043 COPPER	SEDMG/KG	DRY WGT		20.00	K
01052 LEAD	SEDMG/KG	DRY WGT		50.00	K
01053 MN MUD	DRY WGT	MG/KG-MN		640.00	
01068 NICKEL	SEDMG/KG	DRY WGT		50.00	
01093 ZINC	SEDMG/KG	DRY WGT		60.00	
01170 FE MUD	DRY WGT	MG/KG-FE		18000.0	
71921 MERCURY	SEDMG/KG	DRY WGT		0.2	

STORET RETRIEVAL DATE 82/07/16
02421090 GSA11
32 20 41.0 086 29 23.0 2
ALA R AB FINTOLLA CR NR PRATTVIL
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES . . . .

INITIAL DATE				78/08/03	
INITIAL TIME-DEPTH-BOTTOM				1625	
00496 LOSS ON	IGNITION	MG/KG		33500.0	
00553 OIL-GRSE	MUD-HEXN	MG/KG		78.00	
00627 KJELDL	N TOT MU	D MG/KG		220.000	
00668 PHOS MUD	DRY WGT	MG/KG-P		2.4	
00687 BM ORG	CARBON	GM/KG-C		51.000	
01003 ARSENIC	SEDMG/KG	DRY WGT		4.60	
01028 CD MUD	DRY WGT	MG/KG-CD		10.00	K
01029 CHROMIUM	SEDMG/KG	DRY WGT		50.00	K
01043 COPPER	SEDMG/KG	DRY WGT		20.00	K
01052 LEAD	SEDMG/KG	DRY WGT		50.00	K
01053 MN MUD	DRY WGT	MG/KG-MN		680.00	
01068 NICKEL	SEDMG/KG	DRY WGT		50.00	K
01093 ZINC	SEDMG/KG	DRY WGT		80.00	
01170 FE MUD	DRY WGT	MG/KG-FE		19000.0	
71921 MERCURY	SEDMG/KG	DRY WGT		0.2	K

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STORET RETRIEVAL DATE 82/07/16
 02421195          03412
32 20 22.0 086 31 21.0  2
ALA R NR SUMRVILLE
01001 ALABAMA              AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4                 03150201000
        780103      DEPTH     0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES     .      .      .      .      .      .      .
     INITIAL DATE                              78/08/03
     INITIAL TIME-DEPTH-BOTTOM                 1705
00496 LOSS ON    IGNITION     MG/KG     44700.0
00553 OIL-GRSE   MUD-HEXN     MG/KG      140.00
00627  KJELDL    N TOT MUD  D MG/KG     530.000
00668 PHOS MUD    DRY WGT   MG/KG-P        3.1
00687 BM ORG      CARBON    GM/KG-C     23.000
01003 ARSENIC    SEDMG/KG    DRY WGT       5.30
01028 CD MUD     DRY WGT    MG/KG-CD      10.00 K
01029 CHROMIUM   SEDMG/KG    DRY WGT      50.00 K
01043 COPPER     SEDMG/KG    DRY WGT      20.00 K
01052 LEAD       SEDMG/KG    DRY WGT      50.00 K
01053  MN MUD    DRY WGT    MG/KG-MN    660.00
01068 NICKEL     SEDMG/KG    DRY WGT      50.00 K
01093 ZINC       SEDMG/KG    DRY WGT      90.00
01170  FE MUD    DRY WGT    MG/KG-FE   20000.0
71921 MERCURY    SEDMG/KG    DRY WGT        0.3
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STORET RETRIEVAL DATE 82/07/16
 02421220          03413
32 22 10.0 086 34 00.0  2
ALA R BELOW ROCKY BR NR LOWNDSBO
01001 ALABAMA              AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4                 03150201000
        780103      DEPTH     0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES     .      .      .      .      .      .      .
     INITIAL DATE                              78/08/03
     INITIAL TIME-DEPTH-BOTTOM                 1515
00496 LOSS ON    IGNITION     MG/KG     26600.0
00553 OIL-GRSE   MUD-HEXN     MG/KG       72.00
00627  KJELDL    N TOT MUD  D MG/KG     420.000
00668 PHOS MUD    DRY WGT   MG/KG-P        3.1
00687 BM ORG      CARBON    GM/KG-C      6.900
01003 ARSENIC    SEDMG/KG    DRY WGT       5.70
01028 CD MUD     DRY WGT    MG/KG-CD      10.00 K
01029 CHROMIUM   SEDMG/KG    DRY WGT      50.00 K
01043 COPPER     SEDMG/KG    DRY WGT      20.00 K
01052 LEAD       SEDMG/KG    DRY WGT      50.00 K
01053  MN MUD    DRY WGT    MG/KG-MN    540.00
01068 NICKEL     SEDMG/KG    DRY WGT      50.00 K
01093 ZINC       SEDMG/KG    DRY WGT     120.00
01170  FE MUD    DRY WGT    MG/KG-FE   15000.0
71921 MERCURY    SEDMG/KG    DRY WGT        0.2 K
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Table A-2.--Continued

STORET RETRIEVAL DATE 82/07/16
02421290 GSA14
32 23 56.0 086 43 55.0 2
ALA R BELOW BEAVER CR NR AUTAUGA
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES . . . .

	INITIAL DATE			78/08/04	
	INITIAL TIME-DEPTH-BOTTOM			1010	
00496	LOSS ON	IGNITION	MG/KG	36100.0	
00553	OIL-GRSE	MUD-HEXAN	MG/KG	39.00	
00627	KJELDL	N TOT MU	D MG/KG	740.000	
00668	PHOS MUD	DRY WGT	MG/KG-P	3.1	
00687	BM ORG	CARBON	GM/KG-C	14.000	
01003	ARSENIC	SEDMG/KG	DRY WGT	6.90	
01028	CD MUD	DRY WGT	MG/KG-CD	10.00	K
01029	CHROMIUM	SEDMG/KG	DRY WGT	50.00	K
01043	COPPER	SEDMG/KG	DRY WGT	20.00	K
01052	LEAD	SEDMG/KG	DRY WGT	50.00	K
01053	MN MUD	DRY WGT	MG/KG-MN	940.00	
01068	NICKEL	SEDMG/KG	DRY WGT	50.00	K
01093	ZINC	SEDMG/KG	DRY WGT	120.00	
01170	FE MUD	DRY WGT	MG/KG-FE	20000.0	
71921	MERCURY	SEDMG/KG	DRY WGT	0.2	

STORET RETRIEVAL DATE 82/07/16
02421315 GSA15
32 23 23.0 086 46 55.0 2
ALA R BELOW IVY CR NR MULBERRY
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES . . . .

	INITIAL DATE			78/08/04	
	INITIAL TIME-DEPTH-BOTTOM			1120	
00496	LOSS ON	IGNITION	MG/KG	20400.0	
00553	OIL-GRSE	MUD-HEXAN	MG/KG	61.00	
00627	KJELDL	N TOT MU	D MG/KG	310.000	
00668	PHOS MUD	DRY WGT	MG/KG-P	1.3	
00687	BM ORG	CARBON	GM/KG-C	13.000	
01003	ARSENIC	SEDMG/KG	DRY WGT	3.80	
01028	CD MUD	DRY WGT	MG/KG-CD	10.00	K
01029	CHROMIUM	SEDMG/KG	DRY WGT	50.00	K
01043	COPPER	SEDMG/KG	DRY WGT	20.00	K
01052	LEAD	SEDMG/KG	DRY WGT	50.00	K
01053	MN MUD	DRY WGT	MG/KG-MN	380.00	
01068	NICKEL	SEDMG/KG	DRY WGT	50.00	K
01093	ZINC	SEDMG/KG	DRY WGT	130.00	
01170	FE MUD	DRY WGT	MG/KG-FE	12000.0	
71921	MERCURY	SEDMG/KG	DRY WGT	0.2	K

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STORET RETRIEVAL DATE 82/07/16
 02421325          GSA16
32 30 15.0 086 46 33.0  2
ALA R AT DAYS BEND NR BENTON
01001 ALABAMA                AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
114044                 03150201000
         780103      DEPTH     0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES       .       .       .       .       .       .       .
      INITIAL DATE                                78/08/04
      INITIAL TIME-DEPTH-BOTTOM                     1300
00495 LOSS ON    IGNITION     MG/KG      28200.0
00553 OIL-GRSE   MUD-MEAN     MG/KG        77.00
00627  KJELDL    N TOT MU   D MG/KG      470.000
00668 PHOS MUD    DRY WGT   MG/KG-P          2.4
00687 BM ORG      CARBON    GM/KG-C        9.400
01003 ARSENIC    SEDMG/KG    DRY WGT        5.50
01028 CD MUD     DRY WGT    MG/KG-CD       10.00 K
01029 CHROMIUM   SEDMG/KG    DRY WGT       50.00 K
01043 COPPER     SEDMG/KG    DRY WGT       20.00 K
01052 LEAD       SEDMG/KG    DRY WGT       50.00 K
01053  MN MUD    DRY WGT    MG/KG-MN      540.00
01068 NICKEL     SEDMG/KG    DRY WGT       50.00
01093 ZINC       SEDMG/KG    DRY WGT     1000.00
01170  FE MUD    DRY WGT    MG/KG-FE     20000.0
71921 MERCURY    SEDMG/KG    DRY WGT         0.2 K
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STORET RETRIEVAL DATE 82/07/16
 02421349          GSA17
32 19 30.0 086 47 00.0  2
ALA R JONES BLUFF NR BENTON
01001 ALABAMA                AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
114044                 03150201000
         780103      DEPTH     0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES       .       .       .       .       .       .       .
      INITIAL DATE                                78/08/04
      INITIAL TIME-DEPTH-BOTTOM                     1600
00495 LOSS ON    IGNITION     MG/KG      30400.0
00553 OIL-GRSE   MUD-MEAN     MG/KG       130.00
00627  KJELDL    N TOT MU   D MG/KG      560.000
00668 PHOS MUD    DRY WGT   MG/KG-P          2.3
00687 BM ORG      CARBON    GM/KG-C       28.000
01003 ARSENIC    SEDMG/KG    DRY WGT        4.30
01028 CD MUD     DRY WGT    MG/KG-CD       10.00 K
01029 CHROMIUM   SEDMG/KG    DRY WGT       50.00 K
01043 COPPER     SEDMG/KG    DRY WGT       20.00 K
01052 LEAD       SEDMG/KG    DRY WGT       50.00 K
01053  MN MUD    DRY WGT    MG/KG-MN      480.00
01068 NICKEL     SEDMG/KG    DRY WGT       50.00 K
01093 ZINC       SEDMG/KG    DRY WGT     1300.00
01170  FE MUD    DRY WGT    MG/KG-FE     13000.0
71921 MERCURY    SEDMG/KG    DRY WGT         0.2 K
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Table A-2.--Continued

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STORET RETRIEVAL DATE 82/07/16
 02421355          GSA18
32 19 37.0 086 47 16.0  2
ALA RIVER NR BENTON
01001 ALABAMA                AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOBA               03150201000
         780103      DEPTH      0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES     .      .       .       .         .       .      .
      INITIAL DATE                           78/08/07
      INITIAL TIME-DEPTH-BOTTOM                1305
00496 LOSS ON    IGNITION    MG/KG     36200.0
00553 OIL-GRSE   MUD-HEXN    MG/KG      110.00
00627  KJELDL    N TOT MU  D MG/KG     480.000
00668 PHOS MUD    DRY WGT   MG/KG-P       1.9
00687 BM ORG      CARBON    GM/KG-C     12.000
01003 ARSENIC    SEDMG/KG    DRY WGT      4.60
01028 CD MUD     DRY WGT    MG/KG-CD     10.00 K
01029 CHROMIUM   SEDMG/KG    DRY WGT     50.00 K
01043 COPPER     SEDMG/KG    DRY WGT     20.00 K
01052 LEAD       SEDMG/KG    DRY WGT     50.00 K
01053  MN MUD    DRY WGT    MG/KG-MN    540.00
01068 NICKEL     SEDMG/KG    DRY WGT     50.00 K
01093 ZINC       SEDMG/KG    DRY WGT     80.00
01170  FE MUD    DRY WGT    MG/KG-FE   18000.0
71921 MERCURY    SEDMG/KG    DRY WGT       0.2 K
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Table A-3.--The 1976 AWIC list of permitted dischargers to the Alabama River system

Municipal Discharger Inventory

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Design Flow (mgd)
Econchate WWTP Montgomery (M-37-51-002)	350.3	T17N/R18E/S30 SE1/4	32°25'04"	86°18'24'
	Alabama River (FW)		AL0022225	14.0

Standard rate trickling filter with grease removal and Cl_2 disinfection. Sludge to thickener, anaerobic digester and sand drying beds with ultimate disposal as fertilizer.

	Permit	Reported (1975) July	Aug.	Sept.	Nov.
Flow, mgd		10.9	10.2	11.3	11.1
pH, S.U.	6-9	6.6-7.1	6.5-7.2	6.2-7.2	6.4-7.0
BOD_5 (infl/effl), mg/l	30	158/5	139/7	172/7	187/12
SS (infl/effl), mg/l	30	206/14	160/27	169/16	154/11
Cl_2, mg/l (max.)	0.5	2.0	1.4	1.4	1.4
Fecal Coli, No/100 ml	200	598	4610	3110	25

Issuance Date 6/14/74
Expiration Date 3/31/79
Compliance Date 6/14/74

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
Towassa WWTP Montgomery (M-37-51-003)	338.6	T16N/R17E/S4 NE1/4	32°23'33"	86°21'51"
	Alabama River (FW)		AL0022241	3.0

Standard rate trickling filter with grease removal and Cl_2 disinfection. Sludge to anaerobic digester to sand drying beds with ultimate disposal as fertilizer.

	Permit	Reported (1975) July	Aug.	Sept.	Nov.
Q, mgd		2.1	2.4	2.8	2.7
pH, S.U.	6-9	7.6	6.9-7.6	6.8-7.7	6.8-7.7
BOD_5 (infl/effl), mg/l	30	161/5	138/6	127/7	162/9
SS (infl/effl), mg/l	30	166/7	206/13	138/8	153/10
Cl_2, mg/l (max.)	200	0.5	0.5	0.5	0.5
Fecal Coli, No/100 ml	0.5	800	4020	72	5

Issuance Date 6/14/74
Expiration Date 3/31/79
Compliance Date 6/14/74

Table A-3.--Continued

Municipal Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Design Flow (mgd)
Prattville WWTP (M-37-01-012)	333.5	T17N/R16E/S16 SW1/4	32°26'55"	86°27'59"
	Autauga Creek (FW)		AL0020397	1.0

High rate trickling filter with Cl_2 disinfection. Sludge to anaerobic digester to sand drying beds with ultimate disposal to landfill.

	Permit	Reported (1975) 7/1-7/28	7/29-8/18	8/20-9/16
Q, mgd	1.0	1.0	1.66	0.97
pH, S.U.	6-9	6.4-7.6	6.8-7.0	6.9-7.1
BOD_5 (infl/effl), mg/l	75	150/41	200/67	144/48
SS (infl/effl), mg/l	60	95/17	125/38	156/78
Fecal Coli, No/100 ml	200			
Issuance Date	10/15/74			
Expiration Date	6/30/77			
Compliance Date	11/30/74			

	9/16-10/13	10/15-11/17	11/18-12/8
Q, mgd	1.5	1.6	1.3
pH, S.U.	6.7-7.0	6.5-6.8	6.2-7.6
BOD_5 (infl/effl), mg/l	122/36	67/27	120/37
SS (infl/effl), mg/l	102/44	36/12	92/35

Table A-3.--Continued

Municipal Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Design Flow (mgd)
Catoma Creek WWTP Montgomery (M-37-51-001)	339.5	T16N/R17E/S34 NE1/4	32°19'35"	86°20'32"
	Catoma Creek (FWG)*		AL0022317	9.0

Standard rate trickling filter/conventional activated sludge with grease removal and Cl_2 disinfection. Sludge to anaerobic digester to sand drying beds with ultimate disposal as fertilizer.

	Permit	Reported (1975) July	Aug.	Sept.	Nov.
Q, mgd	9.0	9.5	9.8	9.3	9.1
pH, S.U.	6-9	7.0-7.3	7.0-7.5	6.9-7.3	6.8-7.3
BOD_5 (infl/effl), mg/l	30	311/41	277/39	274/48	323/55
SS (infl/effl), mg/l	30	163/39	147/50	195/60	174/76
Cl_2, mg/l (max.)	0.5	1.3	1.0	1.0	0.91
Fecal Coli, No/100 ml	200	TNTC	583	18,000	18,500
Issuance Date	6/14/74				
Expiration Date	12/ 1/77				
Compliance Date	6/14/74				

Plant sewer system infiltration rate is high.

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
Thorsby WWTP (M-37-11-004)	324.0	T22N/R13E/S1 SE1/4	32°64'55"	86°43'30"
	Charlotte Creek (FWG)*		AL0020478	0.19

Imhoff Tank. Sludge to Landfill.

	Permit
Issuance Date	10/26/73
Expiration Date	9/30/78
Compliance ate	10/26/73
pH, S.U.	6-9
BOD_5, mg/l	30
SS, mg/l	30
Fecal Coli, No/100 ml	200

*Asterisks denote Water Quality Limited receiving segment.

Table A-3.--Continued

unicipal Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Design Flow (mgd)
Valley Creek WWTP (Selma) (M-37-24-011)	259.3	T17N/R10E/S35 SE1/4	32°23'42"	87°02'15"
	Alabama River (FW)		AL0022578	6.0

High rate trickling filter with Cl_2 disinfection. Sludge to storage tanks to anaerobic digesters to sand drying beds with ultimate disposal as fertilizer.

	Permit	Reported (1975) July	Aug.	Sept.	Oct.	Nov.
Q, mgd	6.0	3.6	3.8	3.3	3.7	3.4
pH, S.U.	6-9	7.0-7.3	7.0-7.3	7.0-7.4	6.9-7.4	6.6-7.5
BOD_5 (infl/effl), mg/l	30	355/16	449/21	380/21	267/16	336/10
SS (infl/effl), mg/l	30	272/17	382/15	433/20	118/34	291/20
Fecal Coli, No/100 ml	200	108		117	175	182
Issuance Date	6/ 4/74					
Expiration Date	3/31/79					
Compliance Date	6/ 4/74					

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Design Flow (mgd)
Marion WWTP (M-37-53-014)	264.1	T19N/R7E/S11 S1/2	32°37'37"	87°20'33"
	Bogue Chitto Creek (FW)*		AL0020681	-

No treatment provided.

	Permit
Issuance Date	6/20/75
Expiration Date	6/30/77
Compliance Date	7/ 1/77
pH, S.U.	6-9
BOD_5, mg/l	30
SS, mg/l	30
NH_3-N, mg/l	18
Fecal Coli, No/100 ml	200

Table A-3.--Continued

Municipal Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Design Flow (mgd)
Pine Hill Lagoon (M-37-66-007)	188.2	T12N/R5E/S28 SE1/4	31°58'40"	87°34'31"
	Cub Creek (FW)*		AL0024147	0.15
	Single cell, nonaerated stabilization lagoon.			
			Permit	
	Issuance Date		12/31/75	
	Expiration Date		6/30/77	
	Compliance Date		7/ 1/77	
	pH, S.U.		6-9	
	BOD_5, mg/l		30	
	SS, mg/l		30	
	Fecal Coli, No/100 ml		200	
Camden North Lagoon (M-37-66-008)	191.5	T12N/R7E/S13 SE1/4	32°00'36"	87°18'57"
	Rockwest Creek (FW)		AL0023701	0.09
	Single cell, nonaerated stabilization lagoon.			
			Permit	
	Issuance Date		10/15/74	
	Expiration Date		6/30/77	
	Compliance Date		7/ 1/77	
	pH, S.U.		6-9	
	BOD_5, mg/l		30	
	SS, mg/l		30	
	Fecal Coli, No/100 ml		200	

Table A-3.--Continued

[illegible]entory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Design Flow (mgd)
Camden West Lagoon (M-37-66-010)	178.1	T12N/R7E/S24 SW1/4	31°59'29"	87°19'37"
	Reed Creek (FW)*		AL0023698	0.09
Camden South Lagoon (M-37-66-009)	177.3	T12N/R8E/S32 SW1/4	31°58'22"	87°17'25"
	Town Branch (FW)*		AL0023680	0.36

Camden West Lagoon (M-37-66-010): Single cell, nonaerated stabilization lagoon.

	Permit
Issuance Date	10/15/74
Expiration Date	6/30/77
Compliance Date	7/ 1/77
pH, S.U.	6-9
BOD_5, mg/l	30
SS, mg/l	30
Fecal Coli, No/100 ml	200

Camden South Lagoon (M-37-66-009): Single cell, nonaerated stabilization lagoon.

	Permit
Issuance Date	10/15/74
Expiration Date	6/30/77
Compliance Date	7/ 1/77
pH, S.U.	6-9
BOD_5, mg/l	30
SS, mg/l	30
Fecal Coli, No/100 ml	200

Table A-3.--Continued

Municipal Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Design Flow (mgd)
Hudson Branch WWTP Monroeville (M-37-50-005)	143.4	T2N/R8E/S31 SE1/4	31°31'34"	87°17'58"
	Hudson Branch (FW)*		AL0022316	1.4
	Aerated lagoon with sludge return.			
			Permit	Reported (12/75)
	Q, mgd		1.2	0.75
	pH, S.U.		6-9	7.3
	BOD_5 (infl/effl), mg/l		30	211/67
	SS (infl/effl), mg/l		30	58/26
	UOD, mg/l		62	
	NH_3-N, mg/l		5	
	DO, mg/l		6	
	Fecal Coli, No/100 ml		200	
	Issuance Date		12/16/74	
	Expiration Date		6/30/77	
	Compliance Date		7/ 1/77	
	Plant is to be expanded to 3 mgd capacity and upgraded to include nitrification, Cl_2 disinfection, and post aeration. Approximately 90% of flow is due to Vanity Fair Mills.			
Broughton St. WWTP Monroeville (M-37-50-006)	137.1	T7N/R7E/S26 S1/2	31°32'16"	87°20'04"
	Tributary to Limestone Creek (FW)*		AL0020702	0.5
	High rate trickling filter. Sludge to anaerobic digester to sand drying beds with ultimate disposal to landfill and as fertilizer.			
			Permit	Reported (12/75)
	Q, mgd			0.35
	pH, S.U.		6-9	7.3
	BOD_5 (infl/effl), mg/l		30	527/117
	SS (infl/effl), mg/l		30	152/22
	UOD, mg/l		126	
	NH_3-N, mg/l		18	
	DO, mg/l		6	
	Fecal Coli, No/100 ml		200	< 2
	Issuance Date		5/ 9/75	
	Expiration Date		6/30/77	
	Compliance Date		7/ 1/77	
	Will go to proposed Doubles Branch WWTP.			

Table A-3.--Continued

Municipal Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Design Flow (mgd)
Double Branches WWTP Monroeville (AM-1) (Proposed)	136.6	T6N/R7E/S3 NW1/4	31°31'00"	87°21'20"
	Double Branches Creek (FW)		Application Filed	1.0
	Activated sludge with nitrification, Cl_2 disinfection, and post aeration. Sludge will be sent to sludge thickener, aerobic digester, sludge drying beds, and disposed of at landfill. Plant is to be constructed by December, 1977.			
Frisco City WWTP (M-37-50-013)	116.0	T5N/R6E/S2 NE1/4	31°25'58"	87°26'22"
	Bear Creek (FW)*		-	0.15
	Imhoff Tank			

Table A-3 --Continued

Industrial Discharger Inventory

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Flow (mgd)
Brockway Glass Montgomery (I-37-51-005)	352.3	T17N/R18E/S29 S1/2	32°25'10"	86°17'03"
	Tributary of Alabama River (FW)		AL0001899	0.024
	No treatment provided for noncontact cooling water. Permit: Issuance Date 12/30/74 Expiration Date 2/13/80 Compliance Date 4/1/76 pH, S.U. 6-9 Temperature, °F 95 Cr(t), mg/l 1.0 Zn(t), mg/l 0.25 Cl_2, mg/l 0.2			
Illinois Gulf Central Montgomery (I-37-51-015)	341.4	T16N/R17E/S4 SW1/4	32°22'24"	86°20'30"
	Tributary to Alabama River (FW)		AL0004006	-
	No treatment provided for runoff and sanitary wastewater. Permit: Issuance Date 11/14/73 Expiration Date 9/30/78 Compliance Date Completion of Constr. pH, S.U. 6-9 BOD_5, mg/l 30 Oil and Grease, mg/l 10 Permit: Phenols, mg/l 0.25 SS, mg/l 30 Cr(t), mg/l 0.25 Cu(t), mg/l 0.2 Surfactants, mg/l 0.35 Fecal Coliform, No/100 ml 200			

Table A-3.--Continued

Industrial Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Flow (mgd)
J.P. Stevens Montgomery (I-37-51-024)	362.2	T17N/R18E/S29 NE1/4	32°25'58"	86°16'28"
	Tributary of Alabama River (FW)		AL0001562	0.065

No treatment provided for noncontact cooling water.

	Permit	Reported (6-8/75) 001 Avg.	001 Max.	002 Avg.	002 Max.
Q, mgd		.00096		.00003	
pH, S.U.	6-9		8.3		8.0
Temperature, °F	95	89	89	74	74
SS, mg/l	30	2	2	<2	<2
Cr(t), mg/l	0.5	<0.03	<0.03	<0.03	<0.03
Zn(t), mg/l	0.5	0.2	0.35	1.98	2.40
Cl_2, mg/l	0.2				
Issuance Date	6/30/75				
Expiration Date	8/14/80				
Compliance Date	8/14/75				

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
Gurney Manufacturing Prattville (I-37-01-012)	334.4	T17N/R16E/S17 NE1/4	32°27'40"	80°28'35"
	Autauga Creek (FW)		AL0000922	0.6

No treatment provided for process wastewater.

	Permit		Permit
Issuance Date	6/10/74	SS, lbs/day	150
Expiration Date	6/14/79	$S^=$, lbs/day	1.2
Compliance Date	1/1/77	Cr(t), lbs/day	0.6
pH, S.U.	6-9	Cr^{+6}, lbs/day	0.015
Temperature, °F	90	Fecal Coliform, No/100 ml	200
BOD_5, lbs/day	120		
Oil & Grease, mg/l(max)	15		
Phenols, lbs/day	0.6		

Table A-3.--Continued

Industrial Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Flow (mgd)
Union Camp Corp. Outfall 003 Prattville (I-37-01-026)	330.6	T17N/R16E/S33 NW1/4	32°24'58"	86°27'47"
	Autauga Creek (FW)		AL0003115	0.72
	No treatment is provided for cooling water. Permit: Q, mgd pH, S.U. — 6-9 Temperature, °F — 95 Issuance Date — 8/23/73 Expiration Date — 9/22/78 Compliance Date — 9/22/73			
Union Camp Corp. Outfall 002 Prattville (I-37-01-026)	329.1	T17N/R16E/S33 SW1/4	32°24'10"	80°27'50"
	Alabama River (SW)		AL0003115	1.3
	No treatment for cooling water. Part of discharge is recycled. Permit / Reported (11/75): Q, mgd — / 0.13 pH, S.U. — 6-9 / Temperature, °F — 95 / 89 Issuance Date — 8/23/73 Expiration Date — 9/22/78 Compliance Date — 9/22/73			
American Oil Company Montgomery (I-37-51-004)	333.9	T16N/R17E/S17 SE1/4	32°21'30"	86°23'00"
	Tributary to Catoma Creek (FWG)*		AL0003573	Runoff
	Runoff from tank loading area is treated by oil-water separator. Permit: Issuance Date — 9/20/74 Expiration Date — 11/8/79 Compliance Date — 2/1/76 pH, S.U. — 6-9 Oil and Grease, mg/l (max) — 15			

*Water Quality Limited segment

Table A-3.--Continued

Industrial Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Flow (mgd)
Texaco Montgomery (I-37-51-024)	333.6	T17N/R17E/S31 · SW1/4	32°24'08"	86°24'20"
	Trib. to West End Ditch (FW)		AL0021849	Runoff
	Runoff is discharged untreated. State inventory lists receiving stream as Pintlalla Creek. Permit Issuance Date 9/20/74 Expiration Date 11/8/79 Compliance Date 2/1/76 pH, S.U. 6-9 Oil and Grease, mg/l (max) 15			
Union Camp Corp. Outfall 001 Prattville (I-37-01-026)	325.3	T16N/R16E/S18 NE1/4	32°22'00"	86°29'10"
	Alabama River (SW)		AL0003115	18.3
	Process wastewater is treated by sedimentation. Some sludge is recovered and reused with the remainder lagooned.			

	Permit	Reported (1975) July	Aug.	Sept.	Oct.	Nov.
Q, mgd		25.8	37.9	24.4	26.2	20.7
pH, S.U.	6-9					
Temperature, °F	80	80	79	75	69	64
BOD_5, lbs/day	5600	2550	3060	2040	2290	2450
SS, lbs/day	8425	3815	3190	2620	2690	2275
Issuance Date	8/23/73					
Expiration Date	9/22/78					
Compliance Date	9/22/73					

Table A-3.--Continued

Industrial Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Flow (mgd)
Dan River Mills Benton (I-37-24-008)	288.3	T15N/R12E/S2 NE1/4	32°18'40"	86°49'36"
	Old Town Creek (FWG)		AL0001759	0.108

Sanitary and process wastewater are treated in a stabilization basin. Sludge is taken to a landfill.

	Permit	Reported (1975) Aug. Avg.	Aug. Max.	Sept. Avg.	Sept. Max.
Q, mgd		0.47	0.54	0.54	.55
pH, S.U.	6-9		9.0		8.6
Temperature, °F	94	89.8	98	80.3	92
BOD_5, lbs/day	12.6	5.6	6.8	8.2	14
SS, lbs/day	20	10.6	13.3	14	20.2
Settleable Solids, ml/l	0.1	<0.05		<0.05	
Fecal Coliform, No/100 ml	200			2.5	10
Issuance Date	2/25/74				
Expiration Date	12/31/78				
Compliance Date	9/30/74				

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
Transcontinental Gas Billingsley (I-37-11-025)	300.0	T20N/R13E/S25 S1/2	32°40'30"	86°43'20"
	Daylight Creek (FWC)		AL0001732 (Draft)	0.5

Cooling water is recycled and reused. Cooling tower blowdown is discharged untreated.

	Permit	Reported (10/74-4/75) Min.	Avg.	Max.
Q, mgd		0.029	0.036	0.05
pH, S.U.	6-9			
Temperature, °F	95	63	75	87
Cr(t), mg/l	5.0	0	0.06	0.18
Zn(t), mg/l	1.0	0	0.2	0.6
Cl_2, mg/l	0.2	0	0	0

Table A-3.-- d

Industrial Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Flow (mgd)
Hammermill Paper Selma (I-37-24-013)	273.6	T17N/R12E/S33 NE1/4	32°24'50"	86°51'42"
	Alabama River (FW)		AL0003018	20.8
Southland Mower Selma (I-37-24-023)	263.3	T16N/R11E/S17 NE1/4	32°22'05"	86°59'10"
	Tarver Creek (FW)		AL0002585	0.003

Hammermill Paper, Selma (I-37-24-013)

Process and sanitary wastes are treated in a sedimentation pond followed by a stabilization pond. Sludge to sludge lagoon. Part of wastes are recycled.

		Reported (1975)			
		Nov.		Dec.	
	Permit	Avg.	Max.	Avg.	Max.
Q, mgd		17.1	24.0		11.0
pH, S.U.	6-9				7.5
Temperature, °F	105	62	72	55	68
BOD_5 (infl/effl), lbs/day	5775	32,365 / 4,328	50,865 / 7,932	23,691 / 5,964	37,843 / 9,580
SS (infl/effl), lbs/day	5250	32,477 / 4,532	[illegible]0,492 / 10,66[illegible]	31,329 / 3,498	99,898 / 7,200
Issuance Date	10/9/73				
Expiration Date	9/30/78				
Compliance Date	12/31/75				

Southland Mower, Selma (I-37-24-023)

Process wastewater is treated in an equalization basin.

		Reported (1975)			
		Aug.		Sept.	
	Permit	Avg.	Max.	Avg.	Max.
Q, mgd		0.0031	0.0034	0.0032	0.0034
pH, S.U.	6-9		7.8		
SS, lbs/day	.75	.08		0.2	
Issuance Date	9/10/74				
Expiration Date	10/25/79				
Compliance Date	10/25/74				

Table A-3.--Continued

...nventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Flow (mgd)
General Battery Selma (1-37-24-010)	263.6	T16N/R11E/S17 NE1/4	32°22'05"	86°58'50"
	Alabama River (FW)		AL0025381	0.014
	No treatment on process wastewater. **Permit** Issuance Date 12/5/75 Expiration Date 1/9/81 Compliance Date 1/9/76 pH, S.U. 6-9 Temperature, °F 95 SS, mg/l 30 Cr(t), mg/l 0.5 Pb(t), mg/l 0.1 Zn(t), mg/l 0.8 Residual Chlorine, mg/l 0.2			
Cloverleaf Dairy Selma (1-37-24-007)	261.5	T16N/R11E/S7 NW1/4	32°23'19"	87°00'06"
	Alabama River (FW)		Draft	0.173
	No treatment provided for cooling and wash water. **Proposed Permit** BOD_5, mg/l 30 SS, mg/l 30			
Miller Plant No. 4 Selma (1-37-24-040)	262.6	T17N/R11E/S29	32°25'06"	86°59'43"
	Trib. to Beech Creek (FW)		AL0002372	0.04
	Process wastewater is discharged untreated. **Permit** Issuance Date 7/26/74 Expiration Date 7/26/79 Compliance Date 7/26/74 pH, S.U. 6-9 Temperature, °F 95 Oil & Grease, mg/l 15 Cr(t), mg/l 1.0 Zn(t), mg/l 0.5			

Table A-3.--Continued

Industrial Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	River Mile	Township/Range Section/Quadrant	Latitude	Longitude
	Receiving Stream (Water Use Classification)		NPDES Permit No.	Flow (mgd)
Miller Plant No. 1 Selma (I-37-24-041)	258.8	T17N/R10E/S35 SE1/4	32°24'55"	87°02'06"
	Valley Creek (FW)		AL0002356	0.06
	Process wastewater is discharged untreated.			
MacMillan-Bloedel Pine Hill (I-37-66-017)	176.2	T12N/R6E/S27	31°58'40"	87°27'58"
	Alabama River (FW)		AL0002674	14.0
	Process and sanitary wastewater. The treatment system includes equalization, sedimentation, flotation, stabilization, evaporation and incineration of liquid wastes, and reuse of water. Sludge is thickened, anaerobically digested, and lagooned.			

Miller Plant No. 1:

	Permit
Issuance Date	7/26/74
Expiration Date	7/26/79
Compliance Date	7/26/74
pH, S.U.	6-9
Temperature, °F	95
Oil and Grease, mg/l	15
Cr(t), mg/l	1.0
Zn(t), mg/l	0.5

MacMillan-Bloedel:

	Permit	Reported (1975) Nov. Avg.	Nov. Max.	Dec. Avg.	Dec. Max.
Q, mgd		13.6	14.2	10	14.2
pH, S.U.	6-9		8.4		8.6
Temperature, °F (max.)	86	62	74	53	62
BOD_5, lbs/day	6325	4647	7000	5994	7500
COD, lbs/day		22,250		17,860	
SS, lbs/day	6325	5497	7800	5455	8500
Issuance Date	9/23/73				
Expiration Date	9/22/78				
Compliance Date	10/23/73				

Table A-3.--Continued

Semipublic and Private Discharger Inventory

Identification (AWIC Inventory No.)	Design Flow (mgd)	Township/Range Section/Quadrant	River Mile	Receiving Stream (Water Use Classification)
Draper Correction Center, Elmore (S-35-26-043)	0.225	T18N/R17E/S2 NE1/4	361.8	Mortar Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Merry Wood Lodge, Elmore (S-35-26-039)	0.018	T18N/R17E/S2 SE1/4	360.6	Mortar Creek (FW)
	Standard package plant without aerobic digestion and with rapid sand filter and disinfection.			
Blue Ridge Trailer Park, Montgomery (S-37-51-024)	0.03	T17N/R18E/S24 NW1/4	361.3	Swamp to Galbraith Mill Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Stanhope-Elmore Elementary School, Millbrook (S-37-26-038)	0.038	T18N/R17E/S33 SE1/4	342.5	Mill Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Mills Acre Subdivision, Millbrook (S-37-26-039)	0.085	T17N/R17E/S4 NE1/4	341.7	Mill Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Paradise Trailer Park, Millbrook (S-37-26-037)	0.02	T17N/R17E/S4 SE1/4	341.6	Mill Creek (FW)
	Septic tank.			
Holiday Inn, Millbrook (S-37-26-040)	0.02	T17N/R17E/S17 NW1/4	339.6	Ditch to Alabama River (FW)
	Complete mix activated sludge with disinfection.			
Standard Forge & Axle, Montgomery (S-37-24-032)	0.014	T16N/R17E/S6 NE1/4	333.5	Ditch to Alabama River (FW)
	Standard package plant without aerobic digestion and with disinfection.			

Table A-3.--Continued

Semipublic and Private Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	Design Flow (mgd)	Township/Range Section/Quadrant	River Mile	Receiving Stream (Water Use Classification)
Gulf Oil Warehouse, Montgomery (S-37-51-028)	0.0005	T16N/R17E/S6 NE1/4	333.5	Ditch to Alabama River (FW)
	Standard package plant without aerobic digestion.			
Cook's Washerteria, Creekville (S-37-01-001)	<0.01	-	-	Autauga Creek (SW)
Green's Washerteria, Prattville (S-37-01-002)	-	T18N/R15E/S24 NE1/4	343.0	Tributary to Bridge Creek (FW)
	No treatment.			
Ramada Inn, Prattville (S-37-01-003)	0.025	T18N/R16E/S16 NW1/4	343.0	Breakfast Creek (FW)
	Standard package plant without aerobic digestion and with disinfection.			
Dixie Electric Co-op, Carter's Hill (S-37-51-006)	0.0007	T14N/R19E/S12 NE1/4	365.5	Ditch to Little Catoma Creek (FW)
	Standard package plant without aerobic digestion.			
Green Lantern Restaurant, Montgomery (S-37-51-027)	0.015	T15N/R19E/S17 NE1/4	358.1	Tributary to Catoma Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Rawl's Trailer Park, Montgomery (S-37-51-031)	0.03	T15N/R19E/S17 NW1/4	356.0	Ditch to Little Catoma Creek (FW)
	Single cell, nonaerated stabiliation lagoon.			
Hooper Stockyard, Montgomery (S-37-51-029)	0.01	T16N/R17E/S34 SW1/4	338.4	Catoma Creek (FW)
	Septic tank.			

Table A-3.--Continued

Semipublic and Private Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	Design Flow (mgd)	Township/Range Section/Quadrant	River Mile	Receiving Stream (Water Use Classification)
Day's Inn Lodge, Hope Hull (S-37-51-026)	0.04	T15N/R17E/S22 NW1/4	342.0	Caney Branch (FW)
	Standard package plant without aerobic digestion and with disinfection.			
Cedar Point, Montgomery (S-37-51-025)	0.015	T16N/R16E/S15 NE1/4	329.3	Catoma Creek (FW)
	Activated sludge with disinfection.			
Wedgewood Village, Montgomery (S-37-51-024)	0.035	T16N/R16E/S22 NW1/4	329.0	Antioch Branch (FW)
	Two nonaerated stabilization lagoons in series with polishing pond.			
Swan Lake Trailer Park, Hope Hull (S-37-51-033)	0.052	T14N/R17E/S3 SW1/4	348.9	Beulah Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
McClean-Stewart Estates, Hope Hull (S-37-51-030)	0.023	T15N/R17E/S27 SW1/4	347.1	Tributary to Pintlalla Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Hope Hull Utility Co., Hope Hull (AS-1)	-	T15N/R17E/S34 W1/2	348.6	Tributary to Pintlalla Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Rainbow Trailer Park, Montgomery (AS-2)	-	T15N/R17E/S34 SW1/4	348.0	Tributary to Pintlalla Creek (FW)
	Septic tank.			

Table A-3.--Continued

[illegible] Public and Private Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	Design Flow (mgd)	Township/Range Section/Quadrant	River Mile	Receiving Stream (Water Use Classification)
KOA Campground, Hope Hull (S-37-51-007)	0.03	T15N/R17E/S21 SE1/4	347.9	Tributary to Pintlalla Creek (FW)
	Three nonaerated stabilization lagoons in series.			
Mosses Estates Subdivision, Mosses (S-37-43-035)	0.144	T14N/R14E/S20 NE1/4	309.6	Ash Creek (FW)
	Three nonaerated stabilization lagoons in series with polishing pond.			
Popwell's Washerteria, Maplesville (S-37-11-004)	-	T21N/R12E/S21 NW1/4	307.7	Ditch to Byrd Creek (FW)
	Septic tank with leach field.			
Self-Service Laundry, Maplesville (S-37-11-005)	-	T21N/R12E/S21 SE1/4	307.4	Ditch to Byrd Creek (FW)
	No treatment.			
Southside High School, Selma (S-37-24-022)	0.06	T16N/R11E/S25 SW1/4	269.3	Tributary to Tarver Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Pinetree Trailer Park, Selma (S-37-24-019)	0.0075	T16N/R11E/S26 NW1/4	268.3	Tributary to Tarver Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Bivin's Trailer Park, Selma (S-37-24-009)	0.0165	T16N/R11E/S26 NW1/4	268.3	Tributary to Tarver Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Big D Trailer Park, Selma (S-37-24-008)	0.06	T16N/R11E/S16 SE1/4	264.7	Tarver Creek (FW)
	Single cell, nonaerated stabilization lagoon.			

Table A-3.--Continued

Semipublic and Private Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	Design Flow (mgd)	Township/Range Section/Quadrant	River Mile	Receiving Stream (Water Use Classification)
Southside Elementary School, Selma (S-37-24-021)	0.015	T16N/R11E/S17 NE1/4	263.6	Tarver Creek (FW)
Dallas County Jail, Selma (S-37-24-012)	0.06	T17N/R11E/S14 SW1/4	269.4	Tributary to Beech Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Overlook Hills Subdivision, Selma (S-37-24-018)	0.063	T17N/R11E/S18 SE1/4	270.0	Tributary to Beech Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Valley Grand School, Selma (S-37-24-023)	0.021	T18N/R11E/S32 NE1/4	272.3	Tributary to Beech Creek (FW)
	Standard package plant without aerobic digestion and with disinfection.			
Green Meadows Country, Selma (S-37-24-014)	0.01	T18N/R11E/S33 SE1/4	265.2	Tributary to Valley Creek (FW)
	Standard package plant without aerobic digestion and with disinfection.			
Jimmies Mobile Home Park, Selma (S-37-24-015)	0.12	T16N/R11E/S7 NW1/4	255.0	Bethel Branch (FW)
	Single cell, nonaerated stabilization lagoon.			
Capp's Mobile Home Park, Selma (S-37-24-010)	0.0435	T16N/R11E/S7 SW1/4	254.8	Bethel Branch (FW)
	Single cell, nonaerated stabilization lagoon.			
Craig Hill Trailer Park, Selma (S-37-24-011)	0.02	T16N/R11E/S21 SE1/4	253.6	Tributary to Six Mile Creek (FW)
	Standard package plant without aerobic digestion and with disinfection.			

Table A-3.--Continued

Semipublic and Private Discharger Inventory--Cont'd

Identification (AWIC Inventory No.)	Design Flow (mgd)	Township/Range Section/Quadrant	River Mile	Receiving Stream (Water Use Classification)
Luker's Apartments, Selma (S-37-24-017)	0.015	T16N/R11E/S17 SW1/4	252.2	Tributary to Four Mile Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Jones Trailer Park, Selma (S-37-24-016)	0.03	T16N/R11E/S17 SW1/4	252.2	Tributary to Four Mile Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Sheriff's Boys Ranch, Minter (S-37-24-020)	0.0135	T13N/R10E/S8 SE1/4	229.3	Tributary to Oak Creek (FW)
	Single cell, nonaerated stabilization lagoon.			
Dellwood Estates Subdivision, Orrville (S-37-24-013)	0.062	T15N/R8E/S16 SW1/4	228.6*	Tributary to Bogue Chitto Creek (FW)
	Two nonaerated stabilization lagoons in series.			

Mining Discharger Inventory

AWIC Discharger Inventory Number	Identification	Township/Range Section	Receiving Stream (Water Use Classification)
B-37-11-021	Cole Sand & Gravel, Plantersville	T20N/R12E S3	Martins Creek (FWG)
		Latitude: 32°48'28" Longitude: 86°54'55" River Mile: 295.1	
B-37-24-003	Dallas Sand & Gravel, Free-mont Station	T18N/R12E S6	Big Mulberry Creek (SW)
B-37-24-008	Lowndes Sand & Gravel, Burkeyville	T16N/R15E S25	Alabama River (SW)
B-37-50-009	Manning Sand & Gravel, Monroeville	T16N/R8E S20	Limestone Creek (FWG)
B-37-11-012	Pierce & Sons Gravel, Camp Ambassador	T20N/R19E S34	Cowwile Creek (FWG)
(B-34-26-005)	R & S Materials, Prattville	T17N/R18E S6	Tributary to Alabama River (FWG)
(B-34-26-006)	R & S Materials, Prattville	T17N/R16E S20	Tributary to Alabama River (FWG)
B-37-51-017	Radcliffe Materials Montgomery	T17N/R17E S36	Alabama River (FW)
		Flow (mgd) - 2.68 River Mile - 349.8 Latitude - 32°23'49" Longitude - 86°19'35"	Permit
		NPDES No. Issuance Date pH, s.u. SS, mg/l	AL0000566 11/14/73 6-9 55

Table A-3.--Continued

Mining Discharger Inventory--Cont'd

AWIC Discharger Inventory Number	Identification	Township/Range Section	Receiving Stream (Water Use Classification)
B-35-26-007	Southern Stone Elmore	T18N/R17E S24	Mortar Creek (FW)
		Flow (mgd) - 0.05 River Mile - 358.4 Latitude - 32°31'44" Longitude - 86°18'42"	Permit
		NPDES No. Issuance Date pH, s.u. SS, mg/l	AL0024406 11/14/73 6-9 55

Note: All dischargers have sedimentation ponds.

Table A-4.--Chemical analyses (before and after autoclaving) on algal growth potential waters collected from four stations during three runs on the Alabama, Coosa and Tallapoosa Rivers

	Station							
	0		1		8		16	
Parameter	A*	B**	A	B	A	B	A	B
Run 1 (4/10-18/78)								
pH	6.4	6.7	6.7	6.7	6.7	6.7	6.6	6.6
Conductivity	60	57	126	126	132	132	148	149
Ammonia as N	0.01	0.01	0.51	0.39	0.43	0.00	0.17	0.38
Nitrate + Nitrite as N	0.17	0.17	1.46	0.16	0.51	0.22	0.22	0.21
Total phosphorus as P	0.02	0.02	0.00	0.02	0.04	0.02	0.04	0.02
Ortho-phosphorus as P	0.02	0.02	0.00	0.02	0.03	0.01	0.03	0.01
TKN as N	0.08	0.08	0.28	0.28	0.10	0.10	0.09	0.09
Run 4 (8/1-7/78)								
pH	6.9	6.9	7.3	7.3	7.1	7.1	7.6	7.6
Conductivity	47	50	121	120	64	66	104	104
Ammonia as N	0.02	0.07	0.34	0.26	0.04	0.11	0.01	0.05
Nitrate + Nitrite as N	0.16	0.28	0.09	0.26	0.15	0.27	0.12	0.26
Total phosphorus as P	0.03	0.02	0.01	0.00	0.04	0.01	0.02	0.01
Ortho-phosphorus as P	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01
TKN as N	0.05	0.18	0.17	0.25	0.20	0.28	0.29	0.19

*Before autoclaving
**After autoclaving

Table A-4.--Continued

Parameter	Station 0 A	Station 0 B	Station 1 A	Station 1 B	Station 8 A	Station 8 B	Station 16 A	Station 16 B
Run 5 (9/12-18/78)								
pH	7.0	7.0	7.5	7.5	6.9	6.9	7.1	7.1
Conductivity	76	75	152	150	103	108	112	112
Ammonia as N	0.01	0.04	0.01	0.11	0.05	0.09	0.08	0.11
Nitrate + Nitrite as N	0.13	0.40	0.07	0.14	0.13	0.21	0.13	0.17
Total phosphorus as P	0.02	0.02	0.03	0.04	0.02	0.08	0.03	0.06
Ortho-phosphorus as P	0.00	0.01	0.01	0.02	0.02	0.08	0.02	0.08
TKN as N	0.10	0.10	0.15	0.16	0.28	0.30	0.25	0.24

Tables A-5 through A-24
Algal growth potential test data for select stations in the Jones Bluff Reservoir, 1978

Explanation of AGP controls:

1	Control (unspiked river water, autoclaved)
2	0.05 mg/l P
3	1.0 mg/l N
4	1.0 mg/l EDTA
5	0.05 mg/l P + 1.0 mg/l N
6	0.05 mg/l P + 1.0 mg/l EDTA
7	1.0 mg/l N + 1.0 mg/l EDTA
8	0.5 mg/l P + 1.0 mg/l N + 1.0 mg/l EDTA

Inoculum *Selenastrum*

1,000 cells/ml or 50,000 cells
These cells are from the 7- to 10-day culture

Coulter Counter

A count is made on the 12th and 14th days after inoculation.
Mean cell volume is determined by changing threshold of counter.

The following pages include data from run 1 (April 10-18, 1978), run 4 (August 1-7, 1978), and run 5 (September 12-18, 1978). No samples were collected at station 0 in April or August.

The cell count is the number of cells in 0.5 ml of sample. This value is an average of two separate counts by the Coulter Counter. Also, all concentrations are a 10X dilution.

Example

2.5×10^{-7} x total number of cells ÷ 0.5 ml x 10 (dilution) x mean cell volume = mg/l dry weight *S. capricornutum*

Table A-5.--Algal growth potential test data for station 1, run 1, day 12, collected April 10, 1978

Control number	Triplicate sample 1		Triplicate sample 2		Triplicate sample 3	
	cells	mm^3	cells	mm^3	cells	mm^3
1	1,400	63	1,440	62	1,400	61
2	4,793	65	4,994	63	3,593	64
3	2,769	65	2,764	64	2,778	63
4	2,419	62	2,540	61	2,540	62
5	2,000	65	2,875	66	2,500	67
6	3,360	61	3,417	60	3,226	62
7	2,817	63	2,969	64	2,879	66
8	2,714	70	2,951	64	3,003	64

Table A-6.--Algal growth potential test data for station 1, run 1, day 14, collected April 10, 1978

Control number	Triplicate sample$_1$		Triplicate sample$_2$		Triplicate sample$_3$	
	cells	mm^3	cells	mm^3	cells	mm^3
1	1,392	63	1,371	66	2,208	41
2	4,664	67	5,000	63	3,594	64
3	2,846	65	2,852	64	2,897	63
4	2,420	62	2,500	61	2,500	62
5	2,000	65	2,613	66	2,160	66
6	3,254	63	3,203	64	3,077	65
7	2,817	63	2,969	64	2,879	66
8	2,714	70	2,969	64	3,008	64

Table A-7.--Algal growth potential test data for station 8, run 1, day 12, collected April 13, 1978

Control number	Triplicate sample$_1$		Triplicate sample$_2$		Triplicate sample$_3$	
	cells	mm^3	cells	mm^3	cells	mm^3
1	21,812	80	18,994	82	18,625	80
2	30,992	84	29,302	86	29,559	85
3	6,071	84	5,764	85	6,000	87
4	27,515	79	28,322	76	27,628	78
5	44,879	82	34,390	82	44,877	81
6	13,536	82	13,750	80	14,406	80
7	39,352	81	35,312	80	39,844	80
8	35,759	79	40,190	79	40,316	79

Table A-8.--Algal growth potential test data for station 8, run 1, day 14, collected April 13, 1978

Control number	Triplicate sample[1]		Triplicate sample[2]		Triplicate sample[3]	
	cells	mm^3	cells	mm^3	cells	mm^3
1	22,089	79	19,228	81	18,625	80
2	30,923	84	29,070	86	29,821	84
3	6,054	83	5,882	85	5,901	86
4	26,875	80	28,700	75	27,564	78
5	44,512	82	36,768	82	44,512	82
6	13,537	82	13,813	80	14,375	80
7	39,383	81	35,875	80	39,844	80
8	42,089	79	40,348	79	40,355	79

Table A-9.--Algal growth potential test data for station 16, run 1, day 12, collected April 15, 1978

Control number	Triplicate sample$_1$		Triplicate sample$_2$		Triplicate sample$_3$	
	cells	mm^3	cells	mm^3	cells	mm^3
1	2,460	62	3,056	63	2,903	62
2	7,583	60	7,623	61	7,500	62
3	33,077	65	38,690	63	40,742	64
4	39,458	60	37,992	61	39,458	60
5	31,854	62	33,024	62	32,016	62
6	43,651	63	43,984	64	34,325	63
7	39,516	62	39,315	62	38,810	63
8	40,484	62	39,234	62	40,484	62

Table A-10.--Algal growth potential test data for station 16, run 1, day 14, collected April 15, 1978

Control number	Triplicate sample 1		Triplicate sample 2		Triplicate sample 3	
	cells	mm^3	cells	mm^3	cells	mm^3
1	2,661	62	2,984	62	2,944	62
2	7,500	60	7,418	61	7,298	62
3	34,654	65	38,651	63	40,156	64
4	39,500	60	38,238	61	39,542	60
5	32,218	62	32,540	62	32,177	62
6	43,889	63	44,102	64	34,683	63
7	39,758	62	38,281	64	38,359	64
8	40,968	62	39,879	62	39,531	64

Table A-11.--Algal growth potential test data for station 1, run 4, day 12, collected August 1, 1978

Control number	Triplicate sample$_1$		Triplicate sample$_2$		Triplicate sample$_3$	
	cells	mm^3	cells	mm^3	cells	mm^3
1	2,114	70	3,363	70	*	*
2	2,818	72	2,444	70	4,472	72
3	2,802	68	2,305	68	6,432	68
4	3,234	70	9,010	74	17,743	75
5	3,554	68	2,809	68	2,604	68
6	54,300	70	20,000	70	44,800	70
7	9,162	74	7,444	72	6,295	74
8	27,300	70	16,900	72	26,300	70

*No growth

Table A-12.--Algal growth potential test data for station 1, run 4, day 14, collected August 1, 1978

Control number	Triplicate sample[1]		Triplicate sample[2]		Triplicate sample[3]	
	cells	mm^3	cells	mm^3	cells	mm^3
1	2,406	70	3,506	70	--	--
2	2,988	72	3,200	70	4,500	72
3	2,904	68	3,262	68	6,708	68
4	3,836	70	10,100	74	18,200	75
5	4,200	68	3,277	68	3,608	68
6	55,200	70	23,200	70	45,600	70
7	10,100	74	8,964	72	7,562	74
8	28,100	70	17,100	72	28,600	70

261

Table A-13.--Algal growth potential test data for station 8, run 4, day 12, collected August 3, 1978

Control number	Triplicate sample 1		Triplicate sample 2		Triplicate sample 3	
	cells	mm^3	cells	mm^3	cells	mm^3
1	4,595	72	2,799	72	4,577	72
2	5,621	70	5,891	70	4,542	72
3	4,072	68	6,359	68	4,772	66
4	5,641	70	6,439	70	12,953	70
5	9,831	80	7,250	80	8,184	80
6	8,146	68	34,500	70	16,600	68
7	4,864	68	5,636	68	*	
8	34,900	72	46,500	72	39,400	72

*No growth

Table A-14.--Algal growth potential test data for station 8, run 4, day 14, collected August 3, 1978

Control number	Triplicate sample[1]		Triplicate sample[2]		Triplicate sample[3]	
	cells	mm^3	cells	mm^3	cells	mm^3
1	2,285	68	3,590	74	2,556	74
2	1,905	74	1,871	70	3,009	70
3	974	70	2,939	70	2,069	68
4	5,692	70	611	70	2,748	70
5	9,176	80	3,096	78	2,412	78
6	1,048	70	25,400	70	13,100	70
7	4,019	70	5,573	68	*	*
8	38,000	72	53,200	72	44,900	72

*No growth

Table A-15.--Algal growth potential test data for station 16, run 4, day 12, collected August 4, 1978

Control number	Triplicate sample[1]		Triplicate sample[2]		Triplicate sample[3]	
	cells	mm^3	cells	mm^3	cells	mm^3
1	1,200	60	2,028	62	1,207	61
2	5,200	61	3,806	61	3,938	61
3	3,701	62	3,709	61	1,540	56
4	3,108	60	3,620	61	3,840	61
5	1,500	62	3,436	62	5,932	62
6	21,300	63	27,200	63	25,300	62
7	5,862	60	6,089	62	4,242	62
8	15,900	60	30,100	61	15,600	61

Table A-16.--Algal growth potential test data for station 16, run 4, day 14, collected August 4, 1978

Control number	Triplicate sample[1]		Triplicate sample[2]		Triplicate sample[3]	
	cells	mm^3	cells	mm^3	cells	mm^3
1	1,210	60	2,245	62	1,169	61
2	5,309	61	3,783	61	4,207	61
3	3,712	62	2,475	61	1,484	61
4	3,302	61	3,698	61	3,239	61
5	1,467	63	3,537	63	6,238	63
6	22,400	64	28,700	62	26,300	64
7	5,921	63	6,174	64	4,540	64
8	16,300	61	31,300	62	16,800	61

Table A-17.--Algal growth potential test data for station 0, run 5, day 12, collected September 12, 1978

Control number	Triplicate sample$_1$		Triplicate sample$_2$		Triplicate sample$_3$	
	cells	mm^3	cells	mm^3	cells	mm^3
1	10,500	68	10,500	68	6,165	66
2	43,300	68	61,900	70	39,800	68
3	5,308	66	5,326	66	5,573	66
4	8,219	66	6,294	66	5,400	66
5	42,500	68	50,200	68	75,300	70
6	41,400	68	52,100	68	48,200	68
7	7,043	66	7,533	66	8,257	66
8	78,800	70	77,000	70	98,200	70

Table A-18.--Algal growth potential test data for station 0, run 5, day 14, collected September 12, 1978

Control number	Triplicate $sample_1$		Triplicate $sample_2$		Triplicate $sample_3$	
	cells	mm^3	cells	mm^3	cells	mm^3
1	12,900	68	10,900	68	*	*
2	38,300	70	38,200	70	54,000	70
3	5,884	66	8,070	64	6,596	62
4	7,954	66	6,482	66	6,219	62
5	46,100	70	53,100	72	83,600	72
6	40,500	70	55,000	70	43,600	70
7	7,684	66	7,501	66	8,897	66
8	78,700	72	88,500	72	106,100	72

*No growth

Table A-19.--Algal growth potential test data for station 1, run 5, day 12, collected September 12, 1978

Control number	Triplicate sample 1		Triplicate sample 2		Triplicate sample 3	
	cells	mm^3	cells	mm^3	cells	mm^3
1	13,300	63	17,600	64	14,300	64
2	34,000	66	33,300	66	37,600	66
3	11,200	62	11,000	62	11,600	64
4	12,400	64	12,900	64	16,500	64
5	99,600	68	72,400	68	81,300	68
6	44,000	64	44,600	66	40,200	66
7	12,300	64	14,300	64	13,400	64
8	59,400	68	43,500	68	41,800	68

Table A-20.--Algal growth potential test data for station 1, run 5, day 14, collected September 12, 1978

Control number	Triplicate sample[1]		Triplicate sample[2]		Triplicate sample[3]	
	cells	mm^3	cells	mm^3	cells	mm^3
1	12,900	64	15,500	64	13,200	64
2	35,500	66	33,400	66	41,300	68
3	8,980	64	8,262	64	8,097	64
4	9,739	64	9,800	64	12,100	64
5	81,600	68	58,400	68	68,200	68
6	34,000	66	35,200	66	33,400	66
7	16,900	64	12,100	64	11,900	64
8	64,500	68	45,200	68	42,000	68

Table A-21.--Algal growth potential test data for station 8, run 5, day 12, collected September 14, 1978

Control number	Triplicate $sample_1$		Triplicate $sample_2$		Triplicate $sample_3$	
	cells	mm^3	cells	mm^3	cells	mm^3
1	10,500	64	12,700	64	7,068	64
2	9,578	62	19,300	64	15,700	64
3	14,100	64	20,800	64	13,600	64
4	31,400	66	25,900	66	27,500	66
5	92,100	70	100,500	70	18,400	66
6	43,900	66	85,200	70	52,000	68
7	18,700	64	18,600	64	28,600	64
8	91,100	70	104,500	70	77,700	70

Table A-22.--Algal growth potential test data for station 8, run 5, day 14, collected September 14, 1978

Control number	Triplicate sample$_1$		Triplicate sample$_2$		Triplicate sample$_3$	
	cells	mm^3	cells	mm^3	cells	mm^3
1	19,600	64	13,200	64	6,440	64
2	11,800	64	22,600	64	24,000	64
3	16,300	64	22,200	64	14,800	64
4	35,400	66	27,800	66	29,200	66
5	100,400	70	109,600	70	27,200	66
6	53,800	68	106,900	70	65,500	68
7	29,500	64	30,300	66	31,100	66
8	101,700	70	108,700	70	63,900	70

Table A-23.--Algal growth potential test data for station 16, run 5, day 12, collected September 15, 1978

Control number	Triplicate $sample_1$		Triplicate $sample_2$		Triplicate $sample_3$	
	cells	mm^3	cells	mm^3	cells	mm^3
1	5,966	54	5,239	54	9,836	56
2	5,866	54	5,732	54	6,269	56
3	5,622	54	7,196	56	5,599	54
4	25,400	60	32,800	60	28,100	60
5	5,075	54	5,095	56	4,055	54
6	51,900	64	49,800	64	55,400	64
7	26,500	56	3,339	54	18,300	56
8	68,000	66	74,600	66	64,700	66

Table A-24.--Algal growth potential test data for station 16, run 5, day 14, collected September 15, 1978

Control number	Triplicate sample$_1$		Triplicate sample$_2$		Triplicate sample$_3$	
	cells	mm^3	cells	mm^3	cells	mm^3
1	7,189	54	7,335	54	12,400	56
2	9,295	54	9,670	54	8,684	56
3	6,033	54	7,753	56	6,812	54
4	31,500	60	32,000	60	31,600	60
5	9,368	54	9,424	54	9,292	54
6	57,700	64	56,300	64	57,600	64
7	22,700	56	3,513	56	24,800	58
8	90,200	66	87,400	66	91,400	66

APPENDIX B

Plankton and STORET Data

Table B-1.--Phytoplankton (cells per liter) encountered in samples collected from 18 stations above and 1 station below Jones Bluff Lock and Dam, April 10 through September 18, 1978

Taxa	Run no.	Station number 0	1	2	3	4
Chlorophyta						
Chlamydomonodaceae						
Carteria	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	224,000	60,000	320,000	168,000
	V	-	52,000	8,000	68,000	40,000
Chlamydomonas	I	-	-	-	-	-
	II	2,754	-	-	-	-
	III	-	-	2,074	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Phacotaceae						
Pteromonas	I	-	-	-	-	-
	II	-	-	-	1,379	1,043
	III	-	-	-	5,531	4,148
	IV	-	-	-	-	-
	V	-	-	-	-	-
Volvocaceae						
Eudorina	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	128,000	-	64,000	-	-
	V	-	-	-	-	-
Pandorina	I	-	-	-	-	-
	II	24,787	-	26,936	1,379	9,385
	III	-	-	-	-	116,144
	IV	-	-	-	64,000	-
	V	-	-	-	-	-
Micractiniaceae						
Golenkinia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	2,488	14,518	8,296	22,123	20,740
	IV	-	4,000	32,000	56,000	16,000
	V	12,000	-	6,000	12,000	-

Run I=April 10-18, 1978
Run II=May 22-29, 1978
Run III=July 6-11, 1978
Run IV=August 1-7, 1978
Run V=September 12-18, 1978

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Chlorophyta						
Chlamydomonodaceae						
Carteria	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	204,000	808,000	28,000	54,000	42,667
	V	2[illegible],000	24,000	28,000	16,000	14,000
Chlamydomonas	I	-	-	-	-	-
	II	-	4,146	49,757	1,382	11,403
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Phacotaceae						
Pteromonas	I	-	-	-	-	-
	II	-	2,073	2,073	2,764	3,110
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	4,000	-
Volvocaceae						
Eudorina	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	128,002
	V	-	-	-	32,000	-
Pandorina	I	-	-	-	-	-
	II	58,134	-	58,050	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Micractiniaceae						
Golenkinia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	116,144	58,072	58,072	8,296	8,296
	IV	16,000	48,000	28,000	10,000	26,667
	V	8,000	4,000	12,000	2,000	2,000

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Chlorophyta						
Chlamydomonodaceae						
Carteria	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	20,000	8,000	2,000	10,000	4,000
	V	8,000	8,000	12,800	8,000	3,000
Chlamydomonas	I	-	-	-	-	-
	II	11,057	-	45,610	20,732	12,439
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Phacotaceae						
Pteromonas	I	-	-	-	-	-
	II	1,382	6,911	-	8,293	4,146
	III	-	-	-	-	4,978
	IV	4,000	8,000	-	-	2,000
	V	-	-	1,600	-	2,000
Volvocaceae						
Eudorina	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	176,290	388,253
	IV	-	-	-	-	-
	V	-	-	51,200	38,400	-
Pandorina	I	-	-	-	-	-
	II	-	-	82,928	-	38,700
	III	-	-	-	-	-
	IV	4,000	32,000	-	-	140,000
	V	-	6,000	25,600	-	-
Micractiniaceae						
Golenkinia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	8,296	8,296	6,222	2,074	11,614
	IV	4,000	10,000	4,000	-	2,000
	V	4,000	2,000	1,600	-	3,000

Table B-1.--Continued

Taxa	Run no.	15	16	17	18
		Station number			
Chlorophyta					
Chlamydomonodaceae					
Carteria	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	88,000	52,000	8,000	16,000
	V	1,333	22,400	10,400	12,000
Chlamydomonas	I	-	-	-	-
	II	-	9,329	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Phacotaceae					
Pteromonas	I	-	-	-	-
	II	2,073	3,110	6,220	3,110
	III	3,111	4,978	6,222	8,296
	IV	8,000	28,000	4,000	4,000
	V	5,332	6,400	3,900	6,000
Volvocaceae					
Eudorina	I	-	-	-	-
	II	5,183	49,757	-	-
	III	303,841	552,514	199,104	-
	IV	-	128,000	-	318,566
	V	-	19,200	49,400	64,000
Pandorina	I	-	-	-	10,906
	II	33,171	22,805	159,636	103,660
	III	-	-	-	-
	IV	128,000	240,000	256,000	40,000
	V	-	-	36,400	-
Micractiniaceae					
Golenkinia	I	-	-	-	-
	II	-	-	-	-
	III	1,037	1,659	4,148	-
	IV	16,000	4,000	4,000	12,000
	V	1,333	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Chlorophyta (cont'd)						
Micractiniaceae (cont'd)						
Micractinium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Dictyosphaeriaceae						
Dictyosphaerium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	128,000	-	128,000	52,000	-
	V	80,000	-	44,000	-	-
Characiaceae						
Actidesmium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	33,184	-
	IV	-	-	40,000	-	-
	V	-	-	-	-	-
Schroederia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	24,888	-	-	-
	IV	-	-	4,000	-	8,000
	V	-	12,000	-	8,000	16,000
Hydrodictyaceae						
Pediastrum	I	41,237	5,479	-	-	-
	II	20,656	-	26,936	-	8,342
	III	-	8,296	-	88,491	-
	IV	-	-	112,000	32,000	64,000
	V	-	4,000	-	32,000	-
Coelastraceae						
Coelastrum	I	-	-	-	-	-
	II	-	-	15,540	-	-
	III	-	35,258	-	44,245	-
	IV	-	32,000	48,000	20,000	88,000
	V	-	32,000	16,000	-	32,000
Oöcystaceae						
Monoraphidium	I	386,595	-	13,013	37,870	54,193
	II	42,689	47,472	49,728	28,963	56,311
	III	153,476	12,444	62,220	118,909	174,216
	IV	112,000	104,000	220,000	152,000	196,000
	V	24,000	148,000	96,000	124,000	96,000
Chodatella	I	-	-	-	-	-
	II	-	15,824	6,216	12,413	6,257
	III	-	8,295	10,370	-	78,812
	IV	20,000	-	4,000	4,000	8,000
	V	4,000	20,000	2,000	16,000	32,000

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Chlorophyta (cont'd)						
Micractiniaceae (cont'd)						
Micractinium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Dictyosphaeriaceae						
Dictyosphaerium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	128,000	-	-	24,000
	V	16,000	-	-	-	-
Characiaceae						
Actidesmium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	132,736	49,776	16,592	39,406
	IV	16,000	-	-	-	-
	V	-	-	-	-	-
Schroederia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	8,296	4,148	4,148	4,148
	IV	-	-	-	4,000	-
	V	4,000	24,000	12,000	6,000	14,000
Hydrodictyaceae						
Pediastrum	I	-	-	-	5,454	-
	II	-	33,171	-	11,057	9,329
	III	66,368	165,920	49,776	132,736	20,740
	IV	-	-	112,000	16,000	10,[illegible]67
	V	-	-	-	12,000	8,000
Coelastraceae						
Coelastrum	I	-	-	-	-	-
	II	-	31,098	20,732	-	-
	III	99,552	66,368	-	-	29,036
	IV	20,000	-	20,000	-	-
	V	-	128,000	-	-	208,000
Oocystaceae						
Monoraphidium	I	39,878	39,035	38,855	35,448	58,283
	II	33,219	68,416	95,367	77,399	49,757
	III	323,544	365,024	95,404	74,664	62,220
	IV	256,000	432,000	168,000	46,000	74,668
	V	156,000	136,000	84,000	82,000	134,000
Chodatella	I	-	-	-	-	-
	II	9,343	10,366	12,439	-	7,256
	III	91,256	66,368	53,924	66,368	35,258
	IV	16,000	-	24,000	2,000	24,000
	V	28,000	8,000	24,000	8,000	4,000

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Chlorophyta (cont'd)						
Micractiniaceae (cont'd)						
Micractinium	I	-	-	-	-	-
	II	-	-	-	4,146	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Dictyosphaeriaceae						
Dictyosphaerium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	4,000	-	-
	V	20,000	100,000	76,800	22,400	-
Characiaceae						
Actidesmium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	29,036	8,296	-	-
	IV	-	16,000	-	-	-
	V	-	8,000	-	-	-
Schroederia	I	-	-	-	-	-
	II	-	-	-	8,293	-
	III	4,148	4,148	20,740	6,222	6,637
	IV	20,000	-	6,000	-	8,000
	V	8,000	6,000	9,600	6,400	7,000
Hydrodictyaceae						
Pediastrum	I	-	-	-	-	-
	II	5,529	-	-	-	-
	III	-	49,776	-	16,592	39,821
	IV	16,000	32,000	32,000	16,000	-
	V	32,000	-	-	-	-
Coelastraceae						
Coelastrum	I	8,180	-	-	-	-
	II	-	-	-	-	12,439
	III	-	-	16,592	62,220	-
	IV	96,000	24,000	-	-	-
	V	-	-	-	-	-
Oöcystaceae						
Monoraphidium	I	42,945	32,698	18,405	53,229	28,630
	II	59,432	70,489	74,635	70,489	37,318
	III	49,776	45,628	16,592	35,258	82,960
	IV	64,000	94,000	86,000	78,000	30,000
	V	126,000	98,000	35,200	51,200	73,000
Chodatella	I	-	2,725	4090	-	2,045
	II	8,293	12,439	99,514	-	16,586
	III	16,592	33,184	20,740	8,296	33,184
	IV	16,000	14,000	8,000	2,000	14,000
	V	-	16,000	4,800	6,400	4,000

Table B-1.--Continued

Taxa	Run no.	Station number 15	16	17	18
Chlorophyta (cont'd)					
Micractiniaceae (cont'd)					
Micractinium	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Dictyosphaeriaceae					
Dictyosphaerium	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	32,000
Characiaceae					
Actidesmium	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	8,000	32,000	-	-
	V	-	-	-	-
Schroederia	I	-	-	-	-
	II	-	-	-	-
	III	9,333	1,659	18,666	6,637
	IV	-	24,000	8,000	6,000
	V	10,664	11,200	6,500	4,000
Hydrodictyaceae					
Pediastrum	I	6,558	-	-	-
	II	-	33,171	16,586	8,293
	III	-	-	-	13,274
	IV	-	-	-	-
	V	5,332	-	-	-
Coelastraceae					
Coelastrum	I	-	-	-	-
	II	-	-	-	-
	III	-	-	8,296	-
	IV	-	-	-	-
	V	-	-	-	-
Oöcystaceae					
Monoraphidium	I	19,673	25,886	33,401	44,989
	II	12,439	18,659	41,464	11,403
	III	51,850	86,278	118,218	68,027
	IV	344,000	240,000	134,000	88,000
	V	66,650	54,000	50,700	60,000
Chodatella	I	3,279	1,362	1,363	2,726
	II	-	11,403	45,610	-
	III	8,296	11,614	4,148	18,251
	IV	24,000	24,000	12,000	14,000
	V	9,331	19,200	7,800	18,000

Table B-1.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Chlorophyta (cont'd)						
Oöcystaceae (cont'd)						
Franceia	I	-	-	-	-	-
	II	-	2,064	2,072	2,758	-
	III	4,148	2,074	2,074	-	8,296
	IV	-	-	-	-	8,000
	V	-	4,000	-	20,000	16,000
Pachycladon	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Treubaria	I	-	-	-	-	-
	II	-	-	-	-	-
	III	4,148	2,074	2,074	38,715	4,148
	IV	-	4,000	12,000	-	8,000
	V	-	-	-	8,000	-
Kirchneriella	I	-	-	-	-	-
	II	-	-	4,144	11,034	-
	III	-	-	-	27,653	-
	IV	-	16,000	-	28,000	40,000
	V	-	16,000	8,000	-	-
Polyedriopsis	I	-	-	-	-	-
	II	-	2,064	1,036	-	1,043
	III	-	-	-	-	-
	IV	16,000	-	4,000	-	-
	V	-	-	-	-	-
Selenastrum	I	-	-	-	-	-
	II	-	1,376	-	-	-
	III	-	-	8,296	-	-
	IV	88,000	-	72,000	-	44,000
	V	-	-	-	20,000	16,000
Quadrigula	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	33,184
	IV	-	8,000	-	-	-
	V	-	-	-	8,000	-
Tetraëdron	I	-	-	-	-	-
	II	-	688	-	4,138	4,171
	III	-	14,518	18,666	11,061	12,444
	IV	80,000	2,000	12,000	8,000	44,000
	V	4,000	8,000	6,000	4,000	8,000

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Chlorophyta (cont'd)						
Oöcystaceae (cont'd)						
Franceia	I	-	-	-	-	-
	II	2,076	-	-	-	-
	III	-	8,296	4,148	8,296	2,074
	IV	-	8,000	-	-	-
	V	-	-	-	4,000	-
Pachycladon	I	-	-	-	-	-
	II	2,076	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Treubaria	I	-	-	-	-	-
	II	-	-	-	-	1,037
	III	-	8,296	-	4,148	-
	IV	-	24,000	4,000	2,000	2,667
	V	-	4,000	4,000	-	-
Kirchneriella	I	-	-	-	-	-
	II	-	8,293	-	5,539	4,146
	III	-	24,888	41,480	-	-
	IV	40,000	32,000	4,000	12,000	2,667
	V	4,000	-	-	4,000	-
Polyedriopsis	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	2,000	-
Selenastrum	I	-	-	-	-	-
	II	-	-	8,293	-	14,512
	III	-	107,848	-	58,072	8,296
	IV	40,000	32,000	4,000	8,000	5,334
	V	32,000	12,000	-	4,000	4,000
Quadrigula	I	-	-	-	-	-
	II	4,152	-	-	-	-
	III	-	-	-	12,444	8,296
	IV	-	16,000	-	-	-
	V	-	-	-	6,000	-
Tetraëdron	I	-	-	-	-	-
	II	1,038	-	-	1,382	-
	III	24,888	24,888	12,444	20,740	14,518
	IV	8,000	16,000	20,000	6,000	-
	V	8,000	8,000	4,000	8,000	6,000

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Chlorophyta (cont'd)						
Oöcystaceae (cont'd)						
Franceia	I	-	-	-	-	-
	II	-	2,764	-	-	-
	III	4,148	-	-	-	-
	IV	4,000	2,000	-	-	-
	V	-	-	-	-	-
Pachycladon	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-		-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Treubaria	I	-	-	-	-	-
	II	-	-	-	-	-
	III	4,148	-	-	-	-
	IV	-	16,000	8,000	6,000	-
	V	4,000	4,000	1,600	3200	-
Kirchneriella	I	-	-	-	-	-
	II	11,057	11,057	-	33,171	22,114
	III	-	-	4,148	-	-
	IV	-	18,000	-	-	-
	V	-	4,000	-	-	-
Polyedriopsis	I	2,045	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	2,074	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Selenastrum	I	-	-	-	-	-
	II	-	-	-	-	1,382
	III	29,036	2,074	20,740	14,518	18,251
	IV	204,000	18,000	42,000	20,000	30,000
	V	20,000	30,000	41,600	9,600	13,000
Quadrigula	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	4,000	-	-	3,318
Tetraëdron	I	-	-	-	-	-
	II	1,382	-	8,293	-	1,382
	III	12,444	10,370	6,222	6,222	1,659
	IV	12,000	10,000	26,000	2,000	2,000
	V	4,000	4,000	4,800	-	-

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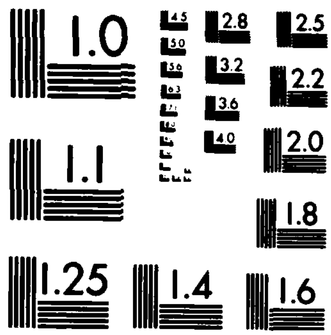

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Table B-1.--Continued

Taxa	Run no.	15	16	17	18
		Station number			
Chlorophyta (cont'd)					
Oöcystaceae (cont'd)					
Franceia	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	4,000	-	2,000
	V	-	-	-	-
Pachycladon	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Treubaria	I	-	-	-	-
	II	518	1,037	-	-
	III	1,037	1,659	-	1,659
	IV	16,000	-	-	4,000
	V	1,333	-	-	-
Kirchneriella	I	-	-	-	-
	II	6,220	4,146	-	-
	III	-	1,659	-	6,637
	IV	8,000	4,000	8,000	-
	V	10,664	-	-	-
Polyedriopsis	I	-	-	-	-
	II	-	-	2,073	-
	III	-	-	-	4,978
	IV	-	-	-	-
	V	-	-	-	-
Selenastrum	I	-	-	-	-
	II	-	11,403	93,294	-
	III	6,222	4,978	-	24,888
	IV	24,000	-	44,000	8,000
	V	13,333	24,000	5,200	8,000
Quadriqula	I	-	-	-	-
	II	-	-	-	-
	III	-	3,318	-	-
	IV	-	-	-	-
	V	-	-	-	-
Tetraëdron	I	-	-	-	-
	II	-	1,037	2,073	1,037
	III	6,222	-	2,074	3,318
	IV	8,000	12,000	4,000	4,000
	V	13,333	1,600	-	-

Table B-1.--Continued

Taxa	Run no.	0	1	2	3	4
		Station number				
Chlorophyta (cont'd)						
Scenedesmaceae						
Actinastrum	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	5,531	24,888
	IV	-	-	-	-	-
	V	-	-	-	12,000	8,000
Coronastrum	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	16,592	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Crucigenia	I	20,618	-	2,740	24,564	8,180
	II	27,541	11,008	16,576	2,758	33,370
	III	16,592	99,552	-	143,797	-
	IV	32,000	64,000	80,000	44,000	32,000
	V	64,000	140,000	160,000	48,000	-
Paradoxia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	4,000
	V	-	-	-	-	-
Scenedesmus	I	82,474	8,219	4,109	12,282	2,045
	II	110,165	112,832	110,852	117,232	118,879
	III	431,392	87,108	165,920	221,227	311,100
	IV	552,000	280,000	560,000	296,000	448,000
	V	184,000	40,000	98,000	192,000	264,000
Tetrastrum	I	41,237	-	-	-	-
	II	11,017	42,656	33,152	44,134	37,541
	III	16,592	-	16,592	33,184	-
	IV	32,000	16,000	-	16,000	32,000
	V	-	-	-	-	-
Zygnemataceae						
Spirogyra	I	-	-	-	-	-
	II	-	-	-	-	-
	III	12,444	-	-	-	-
	IV	-	4,000	8,000	4,000	-
	V	-	-	-	-	-
Desmidiaceae						
Arthrodesmus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	4,148
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Chlorophyta (cont'd)						
Scenedesmaceae						
Actinastrum	I	-	-	-	-	-
	II	-	-	-	-	-
	III	33,184	33,184	-	8,296	4,148
	IV	-	-	-	-	-
	V	4,000	4,000	8,000	4,000	4,000
Coronastrum	I	-	-	-	-	-
	II	16,610	-	33,171	5,529	20,732
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Crucigenia	I	16,360	-	-	16,361	8,180
	II	4,152	74,635	58,058	146,506	36,281
	III	-	107,848	232,288	58072	78,812
	IV	124,000	56,000	80,000	46,000	5,333
	V	108,000	40,000	12,000	14,000	6,000
Paradoxia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	2,000	2,000
Scenedesmus	I	8,180	14,870	12,270	10,907	44,990
	II	101,734	203,174	186,588	99,514	116,099
	III	497,760	813,008	373,320	277,916	186,660
	IV	320,000	536,000	256,000	206,000	296,000
	V	192,000	232,000	180,000	68,000	102,000
Tetrastrum	I	-	7,435	4,090	8,180	8,180
	II	45,676	58,050	22,805	44,228	24,878
	III	-	-	-	-	-
	IV	-	-	-	46,000	-
	V	-	32,000	-	-	-
Zygnemataceae						
Spirogyra	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	8,000	-	-	8,000
	V	-	-	-	-	-
Desmidiaceae						
Arthrodesmus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Chlorophyta (cont'd)						
Scenedesmaceae						
Actinastrum	I	-	-	-	-	-
	II	29,025	20,732	128,538	99,514	1,382
	III	12,444	-	-	10,370	-
	IV	-	-	-	-	-
	V	24,000	-	6,400	4,800	-
Coronastrum	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Crucigenia	I	26,585	62,670	-	16,394	16,360
	II	64,960	68,814	66,342	232,198	11,057
	III	95,404	33,184	47,702	33,184	51,435
	IV	112,000	88,000	120,000	46,000	80,000
	V	-	74,000	25,600	30,400	6,000
Paradoxia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	1,000
Scenedesmus	I	20,450	130,790	57,260	57,378	16,360
	II	152,035	158,945	289,541	199,027	65,578
	III	186,660	178,364	141,032	178,364	102,870
	IV	424,000	254,000	194,000	148,000	114,000
	V	252,000	128,000	79,980	62,400	44,000
Tetrastrum	I	8,180	32,698	-	65,574	-
	II	27,643	66,342	66,342	16,586	11,057
	III	16,592	-	16,592	8,296	6,637
	IV	-	-	-	-	16,000
	V	-	-	6,400	-	7,000
Zygnemataceae						
Spirogyra	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Desmidiaceae						
Arthrodesmus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	4,148	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 15	16	17	18
Chlorophyta (cont'd)					
Scenedesmaceae					
Actinastrum	I	-	-	-	-
	II	1,037	6,220	2,073	4,146
	III	-	1,659	-	-
	IV	-	4,000	-	-
	V	-	-	1,300	-
Coronastrum	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Crucigenia	I	3,229	10,899	16,359	5,453
	II	15,549	24,878	12,439	11,403
	III	68,442	-	16,592	33,184
	IV	32,000	-	32,000	8,000
	V	-	11,200	-	14,000
Paradoxia	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	4,000	12,000	-
	V	-	-	-	-
Scenedesmus	I	12,296	8,174	36,809	65,439
	II	34,208	49,757	62,196	21,769
	III	25,925	97,893	49,776	71,346
	IV	336,000	176,000	104,000	144,000
	V	39,990	27,200	44,200	66,000
Tetrastrum	I	-	10,899	13,633	10,906
	II	9,329	16,586	16,586	1,037
	III	-	-	8,296	6,637
	IV	32,000	16,000	-	4,000
	V	5,332	-	5,200	-
Zygnemataceae					
Spirogyra	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Desmidiaceae					
Arthrodesmus	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	1,600	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Chlorophyta (cont'd)						
Desmidiaceae (cont'd)						
Closterium	I	-	685	-	-	-
	II	-	-	-	1,379	-
	III	4,148	6,222	-	-	-
	IV	-	-	4,000	-	-
	V	-	-	2,000	4,000	-
Cosmarium	I	15,464	-	-	1,024	2,045
	II	2,754	-	-	-	1,043
	III	-	18,666	16,592	2,765	-
	IV	24,000	-	20,000	-	20,000
	V	-	-	2,000	-	24,000
Euastrum	I	-	-	-	-	-
	II	-	-	-	-	-
	III	4,148	-	2,074	5,531	-
	IV	-	4,000	-	-	-
	V	-	-	-	-	-
Hyalotheca	I	159,792	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Penium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	4,148	-	-	19,357	4,148
	IV	24,000	-	48,000	-	4,000
	V	-	-	-	-	40,000
Sphaerozosma	I	-	-	-	-	-
	II	-	-	-	-	-
	III	29,036	-	12,444	11,061	16,592
	IV	56,000	16,000	24,000	-	24,000
	V	1,644,000	8,000	10,000	104,000	-
Spondylosium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Staurastrum	I	-	-	-	-	-
	II	-	-	-	-	1,043
	III	4,148	-	2,074	-	4,148
	IV	20,000	20,000	4,000	-	-
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Chlorophyta (cont'd)						
Desmidiaceae (cont'd)						
Closterium	I	-	-	-	-	-
	II	1,038	2,073	-	1,382	1,037
	III	-	-	-	-	-
	IV	-	-	-	2,000	-
	V	4,000	4,000	4,000	-	2,000
Cosmarium	I	-	3,718	-	-	2,045
	II	-	2,073	-	-	1,037
	III	24,888	16,592	-	-	-
	IV	4,000	-	-	2,000	-
	V	-	12,000	4,000	-	-
Euastrum	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	8,296	4,148	-
	IV	4,000	-	4,000	2,000	8,000
	V	-	-	4,000	4,000	4,000
Hyalotheca	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Penium	I	-	-	-	-	-
	II	2,076	37,318	49,757	27,643	26,952
	III	41,480	-	29,036	1,244	4,148
	IV	8,000	104,000	4,000	4,000	5,333
	V	-	-	-	-	-
Sphaerozosma	I	-	-	-	-	-
	II	-	-	-	-	-
	III	8,296	8,296	-	-	4,148
	IV	8,000	-	4,000	4,000	2,667
	V	60,000	4,000	-	6,000	-
Spondylosium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Staurastrum	I	-	-	-	-	-
	II	-	-	-	1,382	1,037
	III	16,592	8,296	8,296	4,148	-
	IV	-	8,000	-	-	-
	V	4,000	4,000	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Chlorophyta (cont'd)						
Desmidiaceae (cont'd)						
Closterium	I	-	5,450	-	-	-
	II	-	-	4,146	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	1,600	1,000
Cosmarium	I	6,135	-	2,045	4,098	2,045
	II	-	1,382	-	-	2,764
	III	-	-	-	-	-
	IV	-	-	-	2,000	-
	V	-	-	-	-	-
Euastrum	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	8,000	-	-	-	1,000
Hyalotheca	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Penium	I	-	-	-	-	-
	II	27,643	29,025	78,782	53,903	12.439
	III	20,740	10,370	12,444	-	1,660
	IV	-	8,000	-	-	-
	V	-	-	-	-	-
Sphaerozosma	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	8,000	-	-	-	-
	V	-	-	-	-	-
Spondylosium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Staurastrum	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	2,000	-	-	2,000
	V	8,000	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 15	16	17	18
Chlorophyta (cont'd)					
Desmidiaceae (cont'd)					
Closterium	I	-	-	-	-
	II	-	1,037	-	-
	III	-	-	-	-
	IV	8,000	-	4,000	-
	V	2,666	-	-	2,000
Cosmarium	I	-	2,725	2,044	-
	II	518	-	-	-
	III	-	-	-	-
	IV	-	-	4,000	2,000
	V	-	-	-	-
Euastrum	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	1,659
	IV	-	-	-	-
	V	-	-	-	-
Hyalotheca	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Penium	I	-	-	-	-
	II	12,439	6,220	-	9,329
	III	-	4,978	-	1,659
	IV	-	-	4,000	2,000
	V	-	-	-	-
Sphaerozosma	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Spondylosium	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	8,000	-	-
	V	-	-	-	-
Staurastrum	I	-	-	-	-
	II	518	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Chlorophyta (cont'd)						
Indet. family	I	180,411	10,274	15,752	45,034	66,463
	II	106,034	38,528	114,996	67,581	104,280
	III	2,725,236	277,916	1,292,102	508,821	1,049,444
	IV	940,000	300,000	780,000	432,000	520,000
	V	844,000	600,000	142,000	404,000	800,000
Euglenophyta						
Euglenaceae						
Euglena	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Phacus	I	-	-	-	-	
	II	-	-	1,036	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Trachelomonas	I	5,155	-	-	3,071	-
	II	1,377	2,752	1,036	-	3,128
	III	-	14,518	2,074	16,592	8,296
	IV	40,000	16,000	16,000	4,000	4,000
	V	4,000	-	-	-	-
*Indet. genus	I	175,256	33,560	25,341	17,400	36,810
	II	-	-	-	1,379	-
	III	-	-	-	2,765	-
	IV	-	-	-	-	-
	V	-	-	-	4,000	8,000
Colaciaceae						
Colacium	I	-	-	-	-	-
	II	49,574	-	16,576	-	4,171
	III	526,796	-	58,072	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Pyrrophyta						
Glenodiniaceae						
Glenodium	I	-	-	-	-	-
	II	-	1,376	-	-	-
	III	8,296	2,074	14,518	-	-
	IV	-	8,000	12,000	4,000	-
	V	48,000	-	4,000	12,000	-

*Subsequently identified as *Cryptomonas* in the Cryptophyta.

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Chlorophyta (cont'd)						
Indet. family	I	-	47,399	9,203	24.542	64,193
	II	131,839	180,002	31,090	214,231	159,636
	III	829,600	1,227,808	190,808	286,212	304,878
	IV	456,000	952,000	600,000	152,000	429,339
	V	508,000	1,048,000	270,000	186,000	142,000
Euglenophyta						
Euglenaceae						
Euglena	I	-	-	-	-	-
	II	-	-	2,073	-	1,037
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Phacus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	2,000	-
Trachelomonas	I	-	-	-	-	1,023
	II	1,038	26,952	55,976	-	4,146
	III	8,296	-	8,296	12,444	4,148
	IV	4,000	-	-	4,000	10,667
	V	4,000	4,000	-	4,000	6,000
Indet. genus	I	27,608	25,094	35,788	29,313	20,450
	II	-	68,416	157,563	58,050	80,855
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Colaciaceae						
Colacium	I	-	-	-	-	-
	II	91,353	8,293	91,221	-	-
	III	33,184	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Pyrrophyta						
Glenodiniaceae						
Glenodium	I	-	-	-	-	-
	II	-	-	2,073	1,382	-
	III	-	8,296	24,888	16,592	-
	IV	4,000	16,000	12,000	16,000	21,334
	V	40,000	12,000	16,000	14,000	10,000

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Chlorophyta (cont'd)						
Indet. family	I	102,250	51,771	100,205	106,558	108,385
	II	226,670	96,749	302,687	273,662	56,667
	III	568,276	66,368	244,732	37,332	209,060
	IV	960,000	258,000	258,000	188,000	260,000
	V	632,000	118,000	276,800	177,600	75,000
Euglenophyta						
Euglenaceae						
Euglena	I	-	-	-	-	-
	II	1,382	-	-	-	2,764
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Phacus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	2,000	-
	V	4,000	-	-	-	-
Trachelomonas	I	6,135	2,725	-	16,394	2,045
	II	9,675	4,146	8,293	-	12,439
	III	16,592	10,370	12,444	2,074	8,296
	IV	8,000	8,000	4,000	4,000	40,000
	V	4,000	-	-	3,200	1,000
Indet. genus	I	12,270	19,074	2,045	24,590	14,315
	II	60,814	48,375	78,782	107,806	64,960
	III	-	-	-	-	-
	IV	-	-	2,000	2,000	2,000
	V	-	2,000	1,600	1,600	-
Colaciaceae						
Colacium	I	-	-	-	-	-
	II	22,114	34,553	45,610	66,342	8,293
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Pyrrophyta						
Glenodiniaceae						
Glenodium	I	-	-	-	-	-
	II	-	-	-	-	2,764
	III	4,148	-	2,074	-	3,318
	IV	16,000	12,000	-	-	10,000
	V	-	4,000	16,000	4,800	-

Table B-1.--Continued

Taxa	Run no.	Station number 15	16	17	18
Chlorophyta (cont'd)					
Indet. family	I	86,068	103,543	71,574	62,713
	II	71,007	71,525	769,157	22,805
	III	160,735	189,149	296,582	285,382
	IV	880,000	1,744,000	1,352,000	170,000
	V	89,311	224,000	107,900	174,000
Euglenophyta					
Euglenaceae					
Euglena	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Phacus	I	-	-	-	-
	II	-	-	-	-
	III	1,037	-	-	-
	IV	-	-	4,000	-
	V	-	-	-	2,000
Trachelomonas	I	4,918	1,362	5,453	-
	II	12,439	12,439	66,342	5,183
	III	3,111	23,229	18,666	13,274
	IV	-	12,000	-	6,000
	V	7,998	1,600	26,000	2,000
Indet. genus	I	19,673	19,074	23,858	85,889
	II	18,659	39,391	2,073	-
	III	-	-	-	-
	IV	8,000	-	3,900	-
	V	-	1,600	-	-
Colaciaceae					
Colacium	I	-	-	-	-
	II	8,811	18,659	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Pyrrophyta					
Glenodiniaceae					
Glenodium	I	-	-	-	1,363
	II	1,037	1,037	49,757	-
	III	1,037	6,637	-	-
	IV	72,000	4,000	12,000	-
	V	3,999	9,600	1,300	-

Table B-1.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Pyrrophyta (cont'd)						
Gloeodiniaceae (cont'd)						
Indet. genus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	48,000	-	-	-	-
	V	-	-	-	-	-
Chrysophyta						
Centritractaceae						
Centritractus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	2,074	-	-
	IV	8,000	-	-	-	-
	V	4,000	-	-	-	-
Chlorotheciaceae						
Ophiocytium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Ochromonadaceae						
Dinobryon	I	36,082	-	-	-	-
	II	2,754	-	5,180	-	1,043
	III	178,364	-	128,588	2,765	8,296
	IV	16,000	-	-	-	-
	V	-	-	-	-	-
Coscinodiscaceae						
Cyclotella	I	51,546	-	-	-	-
	II	5,508	688	10,360	11,034	6,257
	III	4,148	8,296	6,222	49,776	136,884
	IV	36,000	52,000	104,000	56,000	40,000
	V	16,000	12,000	24,000	28,000	48,000
Melosira	I	293,812	215,744	163,691	203,677	193,253
	II	107,755	153,424	171,976	128,266	164,148
	III	120,292	91,256	99,552	102,317	618,052
	IV	44,000	172,000	132,000	220,000	300,000
	V	8,000	448,000	364,000	864,000	1,080,000
Stephanodiscus	I	144,329	60,356	48,628	17,400	24,540
	II	2,754	3,440	11,396	1,379	22,942
	III	-	-	-	-	29,036
	IV	-	-	4,000	-	4,000
	V	-	-	-	8,000	24,000

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Pyrrophyta (cont'd)						
Gloeodiniaceae (cont'd)						
Indet. genus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Chrysophyta						
Centritractaceae						
Centritractus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	2,000	-
	V	-	-	-	-	-
Chlorotheciaceae						
Ophiocytium	I	-	-	-	-	-
	II	-	-	2,073	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Ochromonadaceae						
Dinobryon	I	-	929	28,630	12,952	-
	II	-	33,171	58,050	8,293	9,329
	III	-	149,328	33,184	99,552	8,296
	IV	-	-	-	2,000	-
	V	-	-	-	-	-
Coscinodiscaceae						
Cyclotella	I	2,045	-	-	-	-
	II	8,305	16,586	12,439	11,057	12,439
	III	174,216	165,920	203,252	16,592	182,512
	IV	100,000	72,000	88,000	26,000	42,667
	V	48,000	36,000	32,000	16,000	60,000
Melosira	I	234,153	207,256	241,310	180,651	152,353
	II	223,192	236,344	236,345	128,538	142,014
	III	373,320	1,418,616	352,580	983,076	630,496
	IV	112,000	208,000	132,000	48,000	69,334
	V	992,000	744,000	376,000	338,000	368,000
Stephanodiscus	I	47,035	19,517	28,630	21,133	51,125
	II	8,305	20,732	33,171	-	14,512
	III	-	74,664	-	78,812	8,296
	IV	-	-	-	-	-
	V	-	4,000	4,000	4,000	-

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Pyrrophyta (cont'd)						
Gloeodiniaceae						
Indet. genus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Chrysophyta						
Centritractaceae						
Centritractus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	8,296	-	-	-	-
	IV	4,000	-	2,000	-	-
	V	-	-	-	-	-
Chlorotheciaceae						
Ophiocytium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	4,000
	V	-	-	-	-	-
Ochromonadaceae						
Dinobryon	I	-	-	4,090	8,196	-
	II	6,911	2,764	8,293	8,293	4,146
	III	8,296	8,296	-	-	-
	IV	-	4,000	-	-	-
	V	-	-	-	-	-
Coscinodiscaceae						
Cyclotella	I	-	-	-	-	-
	II	9,675	12,439	8,293	211,466	13,821
	III	128,588	174,216	132,736	232,288	16,592
	IV	380,000	52,000	64,000	42,000	8,000
	V	32,000	46,000	4,800	4,800	4,000
Melosira	I	897,755	371,936	852,765	1,184,438	556,240
	II	494,804	376,704	937,086	675,863	146,506
	III	443,836	298,656	197,030	37,332	63,050
	IV	76,000	70,000	70,000	88,000	70,000
	V	80,000	182,000	83,200	81,600	84,000
Stephanodiscus	I	34,765	59,946	34,765	24,590	22,495
	II	24,878	1,382	45,610	-	22,114
	III	62,220	4,148	12,444	-	-
	IV	4,000	-	-	4,000	2,000
	V	-	-	1,600	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 15	16	17	18
Pyrrophyta (cont'd)					
Gloeodiniaceae					
Indet. genus	I	-	-	-	-
	II	19,177	30,061	6,220	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Chrysophyta					
Centritractaceae					
Centritractus	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Chlorotheciaceae					
Ophiocytium	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Ochromonadaceae					
Dinobryon	I	820	1,362	-	-
	II	1,037	1,037	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Coscinodiscaceae					
Cyclotella	I	1,639	-	681	-
	II	7,775	9,329	2,073	-
	III	4,148	1,659	10,370	13,274
	IV	80,000	-	8,000	6,000
	V	-	6,400	10,400	-
Melosira	I	314,765	351,499	117,927	156,782
	II	27,988	54,939	22,806	-
	III	122,366	82,960	145,180	61,390
	IV	72,000	64,000	48,000	52,000
	V	87,978	92,800	70,200	152,000
Stephanodiscus	I	14,755	28,610	3,408	8,179
	II	518	5,183	4,146	-
	III	2,074	3,318	-	1,660
	IV	-	-	4,000	10,000
	V	1,333	-	1,300	-

Table B-1.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Chrysophyta (cont'd)						
Rhizosoleniaceae						
Attheya	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Rhizosolenia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Indet. family	I	67,010	3,425	9,589	22,517	12,270
	II	6,885	37,152	27,972	42,755	23,984
	III	37,332	16,592	53,924	74,664	394,060
	IV	68,000	12,000	58,000	-	60,000
	V	8,000	48,000	14,000	72,000	88,000
Fragilariaceae						
Asterionella	I	41,237	6,164	1,370	7,165	1,023
	II	45,443	-	52,836	27,584	12,514
	III	16,592	-	22,814	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Fragilaria	I	20,618	1,370	2,740	-	8,180
	II	-	-	-	-	-
	III	8,296	-	8,296	-	16,592
	IV	-	-	-	-	-
	V	-	-	-	-	-
Meridion	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Synedra	I	350,513	13,013	7,534	18,423	34,765
	II	53,706	2,752	43,512	11,034	33,370
	III	315,248	130,662	188,734	152,093	157,624
	IV	72,000	64,000	76,000	112,000	92,000
	V	52,000	24,000	22,000	76,000	48,000
Tabellaria	I	-	1,370	-	-	-
	II	11,017	-	24,864	11,034	8,342
	III	8,296	-	6,222	-	8,296
	IV	-	-	4,000	-	-
	V	-	-	-	28,000	-

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Chrysophyta (cont'd)						
Rhizosoleniaceae						
Attheya	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Rhizosolenia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Indet. family	I	12,270	16,729	9,203	13,634	28,630
	II	14,533	41,464	70,489	41,464	30,061
	III	265,472	705,168	161,772	165,920	60,146
	IV	12,000	256,000	8,000	108,000	5,333
	V	16,000	68,000	48,000	84,000	10,000
Fragilariaceae						
Asterionella	I	4,090	3,718	17,383	1,363	4,090
	II	33,219	37,318	62,196	38,700	21,769
	III	66,368	33,184	-	-	-
	IV	16,000	-	-	-	-
	V	4,000	-	-	-	-
Fragilaria	I	2,045	3,718	17,383	-	1,023
	II	4,152	-	-	-	-
	III	-	33,184	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Meridion	I	-	1,859	-	682	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Synedra	I	31,698	37,176	26,585	13,634	21,473
	II	17,648	78,782	111,953	34,553	25,915
	III	356,728	472,872	128,588	111,996	95,404
	IV	88,000	120,000	32,000	52,000	26,667
	V	32,000	64,000	40,000	38,000	46,000
Tabellaria	I	33,743	-	1,023	10,226	8,180
	II	2,076	2,073	31,098	2,764	8,293
	III	33,184	-	16,592	-	-
	IV	16,000	-	-	-	-
	V	-	-	32,000	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Chrysophyta (cont'd)						
Rhizosoleniaceae						
Attheya	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Rhizosolenia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Indet. family	I	61,350	68,120	49,080	16,394	14,315
	II	99,514	34,553	87,074	66,342	71,871
	III	244,732	43,554	107,848	26,962	111,166
	IV	120,000	28,000	112,000	120,000	148,000
	V	72,000	28,000	60,800	25,600	38,000
Fragilariaceae						
Asterionella	I	4,090	2,725	-	-	2,045
	II	5,529	11,057	4,146	-	6,911
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Fragilaria	I	-	-	4,090	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Meridion	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Synedra	I	24,540	27,248	26,585	12,295	22,495
	II	34,553	40,082	41,464	8,293	19,350
	III	41,480	39,406	41,480	18,666	21,570
	IV	48,000	14,000	16,000	16,000	6,000
	V	28,000	14,000	14,400	4,800	3,000
Tabellaria	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 15	16	17	18
Chrysophyta (cont'd)					
Rhizosoleniaceae					
Attheya	I	-	1,037	-	-
	II	-	-	-	3,318
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Rhizosolenia	I	-	2,073	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Indet. family	I	27,050	27,248	20,449	49,079
	II	9,329	37,318	14,512	2,073
	III	39,406	48,117	14,518	73,005
	IV	80,000	160,000	156,000	134,000
	V	37,324	9,600	26,000	64,000
Fragilariaceae					
Asterionella	I	13,115	-	-	-
	II	5,103	2,073	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Fragilaria	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Meridion	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Synedra	I	26,230	19,074	6,134	6,816
	II	6,220	9,329	4,146	3,110
	III	6,222	18,251	4,148	14,933
	IV	40,000	16,000	20,000	12,000
	V	7,998	3,200	2,600	18,000
Tabellaria	I	11,476	16,349	-	-
	II	-	4,146	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Chrysophyta (cont'd)						
Eunotiaceae						
Eunotia	I	-	-	-	-	-
	II	1,377	-	-	-	-
	III	-	-	-	-	-
	IV	4,000	-	4,000	-	-
	V	-	-	-	-	8,000
Achnanthaceae						
Achnanthes	I	-	-	-	-	-
	II	2,754	1,376	1,036	-	2,086
	III	-	-	-	-	-
	IV	4,000	-	4,000	-	4,000
	V	-	-	-	-	8,000
Cocconeis	I	-	685	-	-	-
	II	-	-	1,036	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Naviculaceae						
Frustulia	I	-	-	-	-	-
	II	-	-	-	1,379	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Gyrosigma	I	-	-	-	2,047	-
	II	-	-	1,036	-	-
	III	-	-	-	2,765	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Navicula	I	123,710	10,274	13,698	22,517	25,563
	II	15,148	4,816	13,468	6,896	8,342
	III	66,368	8,296	4,148	22,123	24,888
	IV	144,000	16,000	88,000	16,000	44,000
	V	28,000	12,000	24,000	16,000	40,000
Pinnularia	I	10,309	-	-	1,024	1,023
	II	2,754	-	2,072	-	-
	III	4,148	-	-	-	4,148
	IV	-	-	-	-	-
	V	-	-	-	-	-
Strauroneis	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	8,000	-
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Chrysophyta (cont'd)						
Eunotiaceae						
Eunotia	I	-	929	1,023	682	1,023
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Achnanthaceae						
Achnanthes	I	-	-	-	-	-
	II	1,038	-	2,073	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Cocconeis	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Naviculaceae						
Frustulia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Gyrosigma	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Navicula	I	22,495	14,870	22,495	6,135	11,248
	II	8,305	2,073	12,439	13,821	5,183
	III	8,296	8,296	16,592	4,148	6,222
	IV	24,000	16,000	-	6,000	2,667
	V	24,000	4,000	12,000	8,000	6,000
Pinnularia	I	-	929	-	-	-
	II	-	-	2,073	-	-
	III	-	-	-	-	-
	IV	4,000	-	-	-	-
	V	-	-	-	-	-
Strauroneis	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	4,000	-	-	-	-
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Chrysophyta (cont'd)						
Eunotiaceae						
Eunotia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Achnanthaceae						
Achnanthes	I	-	-	4,090	-	-
	II	1,382	-	-	-	-
	III	-	-	2,074	-	-
	IV	-	-	-	-	2,000
	V	4,000	2,000	1,600	3,200	1,000
Cocconeis	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Naviculaceae						
Frustulia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Gyrosigma	I	-	-	-	-	2,045
	II	-	-	4,146	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	4,000	-	-	-	-
Navicula	I	20,450	10,899	22,495	-	4,090
	II	6,911	4,146	12,439	-	4,146
	III	-	-	2,074	4,148	3,318
	IV	36,000	2,000	-	2,000	6,000
	V	20,000	4,000	6,400	4,800	1,000
Pinnularia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	2,074	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Strauroneis	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number			
		15	16	17	18
Chrysophyta (cont'd)					
Eunotiaceae					
Eunotia	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Achnanthaceae					
Achnanthes	I	-	1,362	-	4,089
	II	-	1,037	2,073	-
	III	3,111	1,659	-	-
	IV	-	-	4,000	8,000
	V	-	-	-	2,000
Cocconeis	I	-	-	-	-
	II	-	1,037	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Naviculaceae					
Frustulia	I	820	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Gyrosigma	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	3,318
	IV	-	-	-	-
	V	-	-	-	-
Navicula	I	16,394	8,174	681	12,269
	II	1,037	6,220	6,220	1,037
	III	3,111	1,659	-	4,978
	IV	16,000	-	4,000	8,000
	V	2,666	1,600	-	6,000
Pinnularia	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Stauroneis	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Chrysophyta (cont'd)						
Gomphonemaceae						
Gomphonema	I	15,464	685	1,370	3,071	1,023
	II	4,131	-	4,144	2,758	2,086
	III	24,888	-	2,074	-	4,148
	IV	4,000	-	4,000	-	-
	V	-	-	2,000	-	8,000
Cymbellaceae						
Amphora	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	2,765	-
	IV	16,000	-	12,000	-	8,000
	V	-	-	-	-	8,000
Cymbella	I	25,773	-	-	2,047	-
	II	4,131	-	2,072	-	-
	III	24,888	-	2,074	2,765	4,148
	IV	-	-	-	-	-
	V	-	-	-	-	-
Epithemiaceae						
Epithemia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Nitzschiaceae						
Nitzschia	I	190,720	3,425	2,740	7,165	21,473
	II	4,131	-	5,180	4,138	10,428
	III	12,444	-	6,222	44,245	107,848
	IV	36,000	-	12,000	-	-
	V	4,000	8,000	4,000	12,000	8,000
Bacillariaceae						
Capartogramma	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Surirellaceae						
Surirella	I	-	-	-	1,024	-
	II	-	-	1,036	2,758	-
	III	4,148	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Chrysophyta (cont'd)						
Gomphonemaceae						
Gomphonema	I	6,135	4,647	3,068	2,727	5,113
	II	2,076	4,146	-	1,382	1,037
	III	-	-	-	-	-
	IV	-	-	-	2,000	-
	V	-	-	-	-	-
Cymbellaceae						
Amphora	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	8,000	-	-	-
	V	-	-	-	-	-
Cymbella	I	2,045	929	3,068	1,363	-
	II	3,114	-	2,073	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	8,000	-	-	-	2,000
Epithemiaceae						
Epithemia	I	-	-	-	-	-
	II	-	-	-	1,382	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Nitzschiaceae						
Nitzschia	I	7,158	9,294	36,810	29,313	30,675
	II	2,076	62,196	14,512	12,439	10,366
	III	99,552	149,328	33,184	4,148	6,222
	IV	12,000	80,000	84,000	2,000	24,000
	V	16,000	4,000	24,000	12,000	4,000
Bacillariaceae						
Capartogramma	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Surirellaceae						
Surirella	I	1,023	-	1,023	-	1,023
	II	-	-	4,146	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	2,000

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Chrysophyta (cont'd)						
Gomphonemaceae						
Gomphonema	I	30,675	29,973	-	-	-
	II	4,146	-	-	-	-
	III	-	2,074	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Cymbellaceae						
Amphora	I	-	2,725	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Cymbella	I	2,045	-	2,045	-	-
	II	2,764	-	4,146	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	4,000	-	-	1,600	-
Epithemiaceae						
Epithemia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Nitzschiaceae						
Nitzschia	I	122,700	250,682	167,690	155,739	20,450
	II	42,846	62,196	99,514	149,770	46,983
	III	8,296	-	-	-	-
	IV	24,000	8,000	8,000	6,000	4,000
	V	8,000	14,000	1,600	-	-
Bacillariaceae						
Capartogramma	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Surirellaceae						
Surirella	I	-	-	-	-	-
	II	-	-	-	-	1,382
	III	-	-	-	-	-
	IV	-	-	2,000	-	-
	V	4,000	-	1,600	-	1,000

Table B-1.--Continued

Taxa	Run no.	Station number 15	16	17	18
Chrysophyta (cont'd)					
Gomphonemaceae					
Gomphonema	I	-	-	-	1,363
	II	-	2,073	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Cymbellaceae					
Amphora	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Cymbella	I	-	1,362	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	1,333	-	-	-
Epithemiaceae					
Epithemia	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Nitzschiaceae					
Nitzschia	I	16,656	4,087	1,363	10,906
	II	16,586	13,476	-	2,073
	III	-	-	6,222	3,318
	IV	32,000	24,000	-	14,000
	V	-	-	-	6,000
Bacillariaceae					
Capartogramma	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	1,660
	V	-	-	-	-
Surirellaceae					
Surirella	I	820	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	2,000

Table B-1.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Chrysophyta (cont'd)						
Indet. family	I	51,546	21,232	4,109	6,141	2,045
	II	59,214	4,128	49,728	15,171	40,669
	III	236,436	55,998	55,998	19,358	107,848
	IV	264,000	68,000	276,000	76,000	216,000
	V	60,000	40,000	20,000	80,000	128,000
Cyanophyta						
Chroococcaceae						
Chroococcus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	82,960
	IV	-	-	-	32,000	64,000
	V	-	-	60,000	128,000	-
Merismopedia	I	-	-	-	-	-
	II	-	5,504	-	33,101	231,502
	III	331,840	24,888	116,144	99,552	66,368
	IV	336,000	32,000	64,000	64,000	144,000
	V	256,000	1,264,000	288,000	5,096,000	4,864,000
Oscillatoriaceae						
Lyngbya	I	-	-	-	-	-
	II	35,804	-	-	-	-
	III	16,592	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Oscillatoria	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	20,000	-	-
	V	-	-	-	-	-
Spirulina	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	20,740	24,888	19,357	16,592
	IV	-	12,000	-	4,000	-
	V	-	-	-	-	-
Nostocaceae						
Anabaena	I	-	-	-	20,470	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	700,000	388,000	524,000	96,000	224,000
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Chrysophyta (cont'd)						
Indet. family	I	9,203	9,294	6,135	7,499	7,158
	II	4,152	62,196	51,330	9,675	22,805
	III	41,480	82,960	16,592	33,184	14,518
	IV	108,000	128,000	40,000	54,000	24,000
	V	20,000	120,000	68,000	48,000	22,000
Cyanophyta						
Chroococcaceae						
Chroococcus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	398,208	862,784	464,576	132,736	-
	IV	32,000	704,000	148,000	40,000	-
	V	428,000	128,000	-	32,000	60,000
Merismopedia	I	-	-	-	-	-
	II	66,438	-	-	11,057	-
	III	66,368	99,552	33,184	8,296	-
	IV	32,000	256,000	320,000	344,000	106,668
	V	608,000	3,008,000	1,056,000	1,328,000	700,000
Oscillatoriaceae						
Lyngbya	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Oscillatoria	I	-	-	-	-	35,788
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Spirulina	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Nostocaceae						
Anabaena	I	-	-	8,180	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	100,000	-	-	-	21,334
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Chrysophyta (cont'd)						
Indet. family	I	30,675	29,973	40,900	8,197	18,405
	II	30,407	2,764	62,196	-	26,261
	III	4,148	18,666	14,518	-	18,251
	IV	48,000	16,000	32,000	14,000	10,000
	V	44,000	6,000	19,200	20,800	13,000
Cyanophyta						
Chroococcaceae						
Chroococcus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	40,000	-	-	-
	V	-	16,000	-	-	-
Merismopedia	I	-	-	-	-	-
	II	840,337	635,781	3,001,994	1,807,830	486,511
	III	3,285,216	1,794,010	1,557,574	1,856,304	1,957,856
	IV	5,016,000	1,272,000	928,000	360,000	229,000
	V	5,056,000	664,000	1,164,800	793,600	816,000
Oscillatoriaceae						
Lyngbya	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Oscillatoria	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	12,000	-	-
	V	-	-	-	-	-
Spirulina	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	4,148	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Nostocaceae						
Anabaena	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 15	16	17	18
Chrysophyta (cont'd)					
Indet. family	I	22,952	20,436	20,449	49,079
	II	1,037	16,586	14,512	2,073
	III	9,333	8,296	14,518	73,005
	IV	8,000	36,000	156,000	134,000
	V	21,328	11,200	26,000	64,000
Cyanophyta					
Chroococcaceae					
Chroococcus	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	14,000
	V	31,992	25,600	-	-
Merismopedia	I	-	-	24,539	21,813
	II	122,319	476,836	116,099	58,050
	III	1,090,924	1,484,984	1,868,674	2,299,651
	IV	15,944,000	10,580,000	9,980,000	5,774,000
	V	1,221,028	985,600	2,299,700	3,048,000
Oscillatoriaceae					
Lyngbya	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Oscillatoria	I	26,230	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Spirulina	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	1,659
	IV	-	-	-	-
	V	-	-	-	-
Nostocaceae					
Anabaena	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Cyanophyta (cont'd)						
Hammatoideaceae						
Raphidiopsis	I	-	-	-	-	-
	II	-	-	-	-	-
	III	16,592	151,402	14,518	196,339	-
	IV	32,000	436,000	648,000	396,000	600,000
	V	-	128,000	104,000	236,000	400,000
Indet. family	I	-	-	-	-	-
	II	652,730	37,152	-	2,402,566	6,257
	III	49,776	6,251,318	4,475,692	7,524,472	489,464
	IV	1,040,000	3,056,000	5,096,000	876,000	7,376,000
	V	444,000	2,508,000	1,352,000	7,796,000	11,640,000
Indet. division	I	-	-	-	-	-
	II	6,885	3,440	3,108	8,275	1,043
	III	-	-	-	-	72,960
	IV	-	-	72,000	-	-
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Cyanophyta (cont'd)						
Hammatoideaceae						
Raphidiopsis	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	41,480	12,444	12,444	2,074
	IV	432,000	544,000	232,000	116,000	117,335
	V	336,000	148,000	72,000	40,000	100,000
Indet. family	I	-	-	-	-	-
	II	374,754	76,708	153,416	30,407	-
	III	7,424,920	12,379,632	-	3,032,188	1,930,894
	IV	4,524,000	13,600,000	3,880,000	4,536,000	2,608,032
	V	1,448,000	6,524,000	6,196,000	4,340,000	1,192,000
Indet. division	I	-	-	-	-	-
	II	18,686	2,073	-	9,675	-
	III	-	-	-	-	-
	IV	-	-	-	-	2,667
	V	-	-	-	-	-

Table B-1.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Cyanophyta (cont'd)						
Hammatoideaceae						
Raphidiopsis	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	2,074	-	-	-
	IV	-	64,000	74,000	26,000	-
	V	44,000	62,000	1,600	-	5,000
Indet. family	I	-	-	-	-	-
	II	17,968	23,496	95,367	82,928	40,082
	III	5,147,578	1,184,254	1,192,550	933,300	1,204,579
	IV	4,680,000	2,240,000	3,240,000	1,254,000	982,000
	V	3,464,000	916,000	1,931,200	2,302,400	2,468,000
Indet. division	I	-	-	-	-	-
	II	-	9,675	-	-	16,586
	III	8,296	-	10,370	20,740	1,660
	IV	-	4,000	-	8,000	2,000
	V	-	-	-	1,600	-

Table B-1.--Continued

Taxa	Run no.	Station number 15	16	17	18
Cyanophyta (cont'd)					
Hammatoideaceae					
Raphidiopsis	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	7,800	-
Indet. family	I	-	-	-	-
	II	-	14,512	-	19,695
	III	370,209	549,196	53924	394,890
	IV	9,624,000	2,272,000	1,780,000	1,860,000
	V	1,207,698	1,310,400	1,717,900	3,192,000
Indet. division	I	-	-	-	-
	II	-	-	-	3,110
	III	-	-	-	-
	IV	48,000	40,000	32,000	3,318
	V	3,999	6,400	13,000	22,000

Table B-2.--Phytoplankton (organisms/liter) dominants encountered in samples collected from 18 stations above and 1 station below Jones Bluff Lock and Dam, April 10 through September 18, 1978

Station no.	April 10-18, 1978	May 22-29, 1978	July 6-11, 1978
0	*Monoraphidium contortum*	Unidentified coccoid green	Unidentified coccoid green
	Synedra ulna	*Synedra ulna*	*Synedra rumpens*
1	*Melosira italica*	*Monoraphidium contortum*	*Synedra ulna*
	Stephanodiscus tenuis	*Melosira italica*	*Raphidiopsis curvata*
2	*Melosira italica*	*Monoraphidium contortum*	Unidentified coccoid green
	Stephanodiscus tenuis	*Melosira italica*	*Synedra ulna*
3	*Melosira italica*	Unidentified coccoid green	*Synedra ulna*
	Monoraphidium contortum	*Melosira italica*	*Monoraphidium contortum*
4	*Melosira italica*	*Melosira italica*	*Melosira italica*
	Monoraphidium contortum	*Monoraphidium contortum*	*Monoraphidium contortum*
5	*Melosira italica*	*Melosira italica*	*Synedra ulna*
	Stephanodiscus tenuis	Unidentified coccoid green	*Monoraphidium contortum*
6	*Melosira italica*	*Melosira italica*	*Synedra ulna*
	Monoraphidium contortum	*Monoraphidium contortum*	*Melosira italica*
7	*Melosira italica*	*Cryptomonas ovata*	*Cyclotella stelligera*
	Monoraphidium contortum	*Nitzschia acicularis*	*Synedra ulna*
8	*Melosira italica*	*Monoraphidium contortum*	*Melosira italica*
	Monoraphidium contortum	*Cryptomonas ovata*	*Synedra ulna*
9	*Melosira italica*	*Cryptomonas ovata*	*Cyclotella stelligera*
	Monoraphidium contortum	*Monoraphidium contortum*	*Melosira granulata*
10	*Melosira italica*	*Melosira italica*	*Melosira italica*
	Nitzschia holsatica	*Cryptomonas ovata*	*Merismopedia tenuissima*
11	*Melosira italica*	*Melosira italica*	*Cyclotella stelligera*
	Nitzschia holsatica	*Monoraphidium contortum*	*Merismopedia tenuissima*
12	*Melosira italica*	*Melosira italica*	*Cyclotella stelligera*
	Nitzschia holsatica	*Merismopedia tenuissima*	*Merismopedia tenuissima*
13	*Melosira italica*	*Melosira italica*	*Cyclotella stelligera*
	Nitzschia holsatica	*Cyclotella* sp.	*Merismopedia tenuissima*
14	*Melosira italica*	*Melosira italica*	*Monoraphidium contortum*
	Monoraphidium contortum	*Cryptomonas ovata*	*Merismopedia tenuissima*
15	*Melosira italica*	*Melosira italica*	*Monoraphidium contortum*
	Navicula graciloides	*Cryptomonas ovata*	*Merismopedia tenuissima*
16	*Melosira italica*	*Melosira italica*	*Monoraphidium contortum*
	Stephanodiscus tenuis	*Cryptomonas ovata*	*Merismopedia tenuissima*
17	*Melosira italica*	Unidentified coccoid green	*Merismopedia tenuissima*
	Monoraphidium contortum	*Monoraphidium convolutum*	*Monoraphidium contortum*
18	*Melosira italica*	*Monoraphidium contortum*	*Merismopedia tenuissima*
	Cryptomonas ovata	*Scenedesmus quadricauda*	*Monoraphidium contortum*

Table B-2.--Continued

Station no.	August 1-7, 1978	September 12-18, 1978
0	*Scenedesmus quadricauda*	Unidentified desmid
	Navicula sp.	Unidentified coccoid green
1	*Raphidiopsis curvata*	*Melosira italica*
	Carteria sp.	*Monoraphidium contortum*
2	*Raphidiopsis curvata*	*Melosira italica*
	Monoraphidium contortum	*Monoraphidium contortum*
3	*Carteria* sp.	*Melosira italica*
	Raphidiopsis curvata	*Merismopedia tenuissima*
4	*Raphidiopsis curvata*	*Melosira italica*
	Monoraphidium contortum	Unidentified coccoid blue-green
5	*Monoraphidium contortum*	*Melosira italica*
	Raphidiopsis curvata	*Monoraphidium contortum*
6	*Carteria* sp.	Unidentified coccoid blue-green
	Unidentified coccoid blue-green	*Melosira italica*
7	Unidentified coccoid blue-green	*Melosira italica*
	Monoraphidium contortum	Unidentified coccoid blue-green
8	Unidentified coccoid blue-green	Unidentified coccoid blue-green
	Scenedesmus quadricauda	*Melosira italica*
9	*Scenedesmus quadricauda*	*Monoraphidium contortum*
	Monoraphidium contortum	*Melosira italica*
10	*Cyclotella stelligera*	Unidentified coccoid blue-green
	Monoraphidium convolutum	*Merismopedia tenuissima*
11	*Scenedesmus quadricauda*	*Monoraphidium contortum*
	Monoraphidium contortum	*Scenedesmus quadricauda*
12	*Monoraphidium contortum*	Unidentified coccoid blue-green
	Unidentified coccoid blue-green	*Merismopedia tenuissima*
13	*Monoraphidium contortum*	Unidentified coccoid blue-green
	Scenedesmus quadricauda	*Monoraphidium contortum*
14	*Merismopedia tenuissima*	*Monoraphidium contortum*
	Scenedesmus quadricauda	Unidentified coccoid blue-green
15	*Merismopedia tenuissima*	*Monoraphidium contortum*
	Monoraphidium contortum	Unidentified coccoid blue-green
16	Unidentified coccoid green	Unidentified coccoid blue-green
	Merismopedia tenuissima	*Monoraphidium contortum*
17	Unidentified coccoid green	Unidentified coccoid blue-green
	Merismopedia tenuissima	*Merismopedia tenuissima*
18	*Merismopedia tenuissima*	Unidentified coccoid blue-green
	Unidentified coccoid green	*Merismopedia tenuissima*

Table B-3.--Biological data entered into the EPA STORET retrieval system, 1978

```
STORET RETRIEVAL DATE 82/08/10
 02419892           GSA00
32 35 00.0 086 15 30.0  4
TALLAPOOSA RIVER 0.5 MILES FROM MOUTH
01051 ALABAMA                ELMORE
SOUTHEAST                     033400
ALABAMA RIVER BASIN
119084              03150107000
        781215      DEPTH     3 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX 0341110  000700  02780
MILES 0045.00 0314.40 000.50
```

INITIAL DATE INITIAL TIME-DEPTH-BOTTOM				78/04/11	78/05/24	78/07/06	78/08/01	78/09/12
00571	BIOMASS	BENTHIC	G/SQ M	1	1		3	
60990	ZOOPLANK	OTHER	/LITER	0	0	0	1	0
71261	PHYLUM	PROTOZOA	NO/LITER	0	0	0	0	0
71263	CL SAR-	CODINA	NO/LITER	0	0	0	0	0
71269	CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270	PHYLUM	ROTIFERA	NO/LITER	0	2	3	2	3
71287	P AR-	THROPODA	NO/LITER	0	0	3	3	6
71289	LARVAE	CRUSTACA	NO/LITER	0	0	1	1	1
71291	O CLAD-	OCERA	NO/LITER	0	0	1	0	4
71295	SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297	ORDER	COPEPODA	NO/LITER	0	1	2	2	1
71300	DIV CHL-	OROPHYTA	NO/LITER	927828	348397	.339E+07	.221E+07	.286E+07
71302	O VOLV-	OCALES	NO/LITER	0	27541	0	128000	0
71308	O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311	ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320	ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322	ORD CHLR	OCOCCALE	NO/LITER	572161	212068	628836	.106E+07	372000
71335	ORD-ZYGN	EMATALES	NO/LITER	175256	2754	58072	124000	.164E+07
71377	DIV EUG-	LENOPHYT	NO/LITER	180411	50951	526796	40000	4000
71381	DIV PYR-	ROPHYTA	NO/LITER	0	0	8296	48000	48000
71393	DIV CHR-	YSOPHYTA	NO/LITER	.142E+07	329462	.106E+07	.132E+07	180000
71394	CL CHRYS	OPHYCEAE	NO/LITER	36082	2754	178364	24000	4000
71400	CL BACIL	LARIOPHY	NO/LITER	.138E+07	326708	883524	692000	176000
71432	DIV CYA-	NOPHYTA	NO/LITER	0	688534	414800	.210E+07	705000
71434	ORD CHRO	OCOCCALE	NO/LITER	0	0	331840	336000	256000
71438	ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440	ORD HORM	OGONALES	NO/LITER	0	35804	33184	732000	0
75003	SPONGES	NO/M2		0	0		6	
75006	BRYOZOA	NO/M2		0	0		6	
75009	CADDIS	NO/M2		32	0		0	
75012	SNAILS	NO/M2		0	0		0	
75015	LEECHES	NO/M2		0	0		0	
75018	CHAOBO	NO/M2		0	0		6	
75021	CHIRON	NO/M2		139	6		146	
75024	CORBI	NO/M2		108	38		101	
75027	HEXAGE	NO/M2		0	0		0	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/16
02411605 GSA01
32 30 28.0 086 15 13.0 2
COOSA RIVER AT WETUMPKA ALA
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11M084 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

INITIAL DATE				78/04/10	78/05/22	78/07/06	78/08/31	78/09/12
INITIAL TIME-DEPTH-BOTTOM				0000	0000	0000	0000	0000
00571 BIOMASS	BENTHIC	G/SQ M		1	5		5	
50990 ZOOPLANK	OTHER	/LITER		0	0	0	0	0
71261 PHYLUM	PROTOZOA	NO/LITER		0	1	0	0	0
71263 CL SAR-	CODINA	NO/LITER		0	1	0	0	0
71269 CLASS	CILIATA	NO/LITER		0	0	0	0	0
71270 PHYLUM	ROTIFERA	NO/LITER		3	4	6	15	13
71287 P AR-	THROPODA	NO/LITER		11	4	13	9	10
71289 LARVAE	CRUSTACA	NO/LITER		2	1	11	5	7
71291 O CLAD-	OCERA	NO/LITER		5	3	1	3	2
71295 SC OSTR-	ACODA	NO/LITER		0	0	0	0	0
71297 ORDER	COPEPODA	NO/LITER		5	11	12	6	3
71300 DIV CHL-	OROPHYTA	NO/LITER		24657	274782	611830	199800	.108E+07
71302 O VOLV-	OCALES	NO/LITER		0	0	0	224000	52000
71308 O TETRA-	SPORALES	NO/LITER		0	0	0	0	0
71311 ORD-ULOT	RICHALES	NO/LITER		0	0	0	0	0
71320 ORD-CLAD	OPHORALE	NO/LITER		0	0	0	0	0
71322 ORD CHLR	OCOCCALE	NO/LITER		13698	235984	309026	530000	424000
71335 ORD-ZYGN	EMATALES	NO/LITER		685	0	24888	44000	8000
71377 DIV EUG-	LENOPHYT	NO/LITER		33560	2752	14518	16000	0
71381 DIV PYR-	ROPHYTA	NO/LITER		0	1376	2074	8000	0
71393 DIV CHR-	YSOPHYTA	NO/LITER		338343	207776	311100	384000	592000
71394 CL CHRYS	OPHYCEAE	NO/LITER		0	0	0	0	0
71400 CL BACIL	LARIOPHY	NO/LITER		338343	207776	311100	384000	592000
71432 DIV CYA-	NOPHYTA	NO/LITER		0	42656	.644E+07	.392E+07	.390E+07
71434 ORD CHRO	OCOCCALE	NO/LITER		0	5504	24888	32000	.126E+07
71438 ORD CHAM	AESIPHNL	NO/LITER		0	0	0	0	0
71440 ORD HORM	OGONALES	NO/LITER		0	0	172142	836000	128000
75003	SPONGES	NO/M2		0	0		0	
75006	BRYOZOA	NO/M2		0	6		0	
75009	CADDIS	NO/M2		0	38		13	
75012	SNAILS	NO/M2		0	0		0	
75015 LEECHES		NO/M2		0	0		19	
75018	CHAOBO	NO/M2		0	0		0	
75021	CHIRON	NO/M2		108	19		279	
75024	CORBI	NO/M2		272	51		228	
75027	HEXAGE	NO/M2		0	0		0	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/16
02419965 GSA02
32 30 19.0 086 18 06.0 2
COOSA R BELOW MORTARCR NR ELMORE
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11MO84 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

	INITIAL DATE			78/04/11	78/05/24	78/07/06	78/08/01	78/09/13
	INITIAL TIME-DEPTH-BOTTOM			0000	0000	0000	0000	0000
00571	BIOMASS	BENTHIC	G/SQ M	1	8		5	
60990	ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71261	PHYLUM	PROTOZOA	NO/LITER	0	0	0	0	0
71263	CL SAR-	CODINA	NO/LITER	0	0	0	0	0
71269	CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270	PHYLUM	ROTIFERA	NO/LITER	1	4	13	34	6
71287	P AR-	THROPODA	NO/LITER	3	3	10	9	20
71289	LARVAE	CRUSTACA	NO/LITER	1	2	7	4	12
71291	O CLAD-	OCERA	NO/LITER	1	1	3	4	2
71295	SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297	ORDER	COPEPODA	NO/LITER	1	2	7	5	18
71300	DIV CHL-	OROPHYTA	NO/LITER	35614	408184	.103E+07	.234E+07	634000
71302	O VOLV-	OCALES	NO/LITER	0	20936	2074	124000	8000
71308	O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311	ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320	ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322	ORD CHLR	OCOCCALE	NO/LITER	19662	266252	311100	.132E+07	430000
71335	ORD-ZYGN	EMATALES	NO/LITER	0	0	33184	108000	14000
71377	DIV EUG-	LENOPHYT	NO/LITER	25341	16648	60146	16000	0
71381	DIV PYR-	ROPHYTA	NO/LITER	0	0	14518	12000	4000
71393	DIV CHR-	YSOPHYTA	NO/LITER	255469	428904	580942	778000	474000
71394	CL CHRYS	OPHYCEAE	NO/LITER	0	5180	130662	0	0
71400	CL BACIL	LARIOPHY	NO/LITER	255469	423724	450280	778000	474000
71432	DIV CYA-	NOPHYTA	NO/LITER	0	0	.463E+07	.635E+07	.174E+07
71434	ORD CHRO	OCOCCALE	NO/LITER	0	0	116144	64000	288000
71438	ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440	ORD HORM	OGONALES	NO/LITER	0	0	39406	.119E+07	104000
75003	SPONGES	NO/M2		0	0		0	
75006	BRYOZOA	NO/M2		0	0		0	
75009	CADDIS	NO/M2		25	6		0	
75012	SNAILS	NO/M2		0	0		0	
75015	LEECHES	NO/M2		0	0		0	
75018	CHAOBO	NO/M2		0	0		19	
75021	CHIRON	NO/M2		583	38		367	
75024	COPRI	NO/M2		241	114		171	
75027	HEXAGE	NO/M2		0	0		0	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/16
02419980 GSA03
32 28 33.0 086 17 43.0 2
ALABAMA RIVER AT COOSADA FERRY AT COOSADA
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11MOR4 03150201000
790103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

INITIAL DATE				78/04/12	78/05/24	78/07/06	78/08/01	78/09/13
INITIAL TIME-DEPTH-BOTTOM				0000	0000	0000	0000	0000
00571	BIOMASS	BENTHIC	G/SQ M	7	7		3	
60990	ZOOPLANK	OTHER	/LITER	1	0	0	0	0
71261	PHYLUM	PROTOZOA	NO/LITER	0	1	0	0	0
71263	CL SAR-	CODINA	NO/LITER	0	0	0	0	0
71259	CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270	PHYLUM	ROTIFERA	NO/LITER	33	3	6	10	60
71267	P AR-	THROPODA	NO/LITER	148	4	16	11	13
71289	LARVAE	CRUSTACA	NO/LITER	47	2	11	4	3
71291	O CLAD-	OCERA	NO/LITER	59	1	4	5	6
71295	SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297	ORDER	COPEPODA	NO/LITER	79	3	12	5	7
71300	DIV CHL-	OROPHYTA	NO/LITER	120774	295148	.134E+07	.190E+07	.108E+07
71302	O VOLV-	OCALES	NO/LITER	0	2756	5531	384000	68000
71308	O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311	ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320	ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322	ORD CHLR	OCOCCALE	NO/LITER	74716	223430	788120	.110E+07	504000
71335	ORD-ZYGN	EMATALES	NO/LITER	1024	1379	38714	4000	108000
71377	DIV EUG-	LENOPHYT	NO/LITER	20471	1379	19357	4000	4000
71381	DIV PYR-	ROPHYTA	NO/LITER	0	0	0	4000	12000
71393	DIV CHR-	YSOPHYTA	NO/LITER	314218	266186	475636	488000	.118E+07
71394	CL CHRYS	OPHYCEAE	NO/LITER	0	0	2765	0	0
71400	CL BACIL	LARIOPHY	NO/LITER	314218	266186	472871	488000	.118E+07
71432	DIV CYA-	NOPHYTA	NO/LITER	20470	.243E+07	.783E+07	.146E+07	.132E+08
71434	ORD CHRO	OCOCCALE	NO/LITER	0	33101	99552	96000	.522E+07
71438	ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440	ORD HORM	OGONALES	NO/LITER	20470	0	215696	496000	236000
75003	SPONGES	NO/M2		0	0		0	
75006	BRYOZOA	NO/M2		0	0		0	
75009	CADDIS	NO/M2		6	0		0	
75012	SNAILS	NO/M2		0	0		0	
75015	LEECHES	NO/M2		0	0		0	
75018	CHAOBO	NO/M2		6	6		0	
75021	CHIRON	NO/M2		114	32		25	
75024	CORHI	NO/M2		190	146		196	
75027	HEXAGE	NO/M2		0	6		0	

STORET RETRIEVAL DATE 82/07/16
02419983 GSA04
32 26 37.0 086 19 31.0 2
ALA R NR CHISOLM
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
11MOE4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/12	78/05/24	78/07/06	78/08/02	78/09/13
INITIAL DATE				78/04/12	78/05/24	78/07/06	78/08/02	78/09/13
INITIAL TIME-DEPTH-BOTTOM				0000	0000	0000	0000	0000
00571	BIOMASS	BENTHIC	G/SQ M	6	4		4	
60990	ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71261	PHYLUM	PROTOZOA	NO/LITER	0	0	0	0	0
71263	CL SAR-	CODINA	NO/LITER	0	0	0	0	0
71269	CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270	PHYLUM	ROTIFERA	NO/LITER	4	1	7	20	98
71287	P AR-	THROPODA	NO/LITER	14	2	14	28	29
71289	LARVAE	CRUSTACA	NO/LITER	4	1	5	12	9
71291	O CLAD-	OCERA	NO/LITER	6	1	9	11	9
71295	SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297	ORDER	COPEPODA	NO/LITER	9	1	5	16	20
71300	DIV CHL-	OROPHYTA	NO/LITER	132926	378537	921436	.178E+07	.139E+07
71302	O VOLV-	OCALES	NO/LITER	0	19628	120292	168000	40000
71308	O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311	ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320	ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322	ORD CHLR	OCOCCALE	NO/LITER	64418	265914	667828	.134E+07	488000
71335	ORD-ZYGN	EMATALES	NO/LITER	2045	2056	29036	48000	64000
71377	DIV EUG-	LENOPHYT	NO/LITER	36810	7299	8296	4000	8000
71381	DIV PYR-	ROPHYTA	NO/LITER	0	0	0	0	0
71393	DIV CHR-	YSOPHYTA	NO/LITER	325158	336211	.162E+07	768000	.149E+07
71394	CL CHRYS	OPHYCEAE	NO/LITER	0	1043	8296	0	0
71400	CL BACIL	LARIOPHY	NO/LITER	325158	335168	.161E+07	768000	.149E+07
71432	DIV CYA-	NOPHYTA	NO/LITER	0	237759	655384	.840E+07	.159E+08
71434	ORD CHRO	OCOCCALE	NO/LITER	0	231502	149328	208000	.488E+07
71438	ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440	ORD HORM	OGONALES	NO/LITER	0	0	16592	824000	400000
75003	SPONGES	NO/M2		0	0		0	
75006	BRYOZOA	NO/M2		0	0		0	
75009	CADDIS	NO/M2		6	19		6	
75012	SNAILS	NO/M2		13	0		0	
75015	LEECHES	NO/M2		0	0		0	
75018	CHAOBO	NO/M2		0	0		0	
75021	CHIRON	NO/M2		108	6		120	
75024	CORBI	NO/M2		57	89		266	
75027	HEXAGE	NO/M2		0	0		13	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/15
02419986 GSA05
32 25 48.0 086 20 17.0 2
ALA R AT L&N RR NR MILLBROOK
01051 ALABAMA ELMORE
SOUTHEAST
ALABAMA RIVER BASIN
114064 0315020C1000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

INITIAL DATE			78/04/12	78/05/24	78/07/06	78/08/02	78/09/13
INITIAL TIME-DEPTH-BOTTOM			0000	0000	0000	0000	0000
00571 BIOMASS	BENTHIC	G/SQ M	10	4		5	
60990 ZOOPLANK	OTHER	/LITER	0	0	0	1	0
71261 PHYLUM	PROTOZOA	NO/LITER	10	1	1	0	0
71263 CL SAR-	CODINA	NO/LITER	10	1	1	0	0
71269 CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270 PHYLUM	ROTIFERA	NO/LITER	8	3	52	192	127
71287 P AR-	THROPODA	NO/LITER	26	3	26	50	14
71289 LARVAE	CRUSTACA	NO/LITER	7	1	10	41	5
71291 O CLAD-	OCERA	NO/LITER	13	2	14	31	6
71295 SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297 ORDER	COPEPODA	NO/LITER	13	1	12	49	9
71300 DIV CHL-	OROPHYTA	NO/LITER	64418	413163	.134E+07	.154E+07	.116E+07
71302 O VOLV-	OCALES	NO/LITER	0	58134	0	204000	24000
71306 O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311 ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320 ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322 ORD CHLR	OCOCCALE	NO/LITER	64418	220076	.125E+07	656000	560000
71335 ORD-ZYGN	EMATALES	NO/LITER	0	3114	91256	24000	68000
71377 DIV EUG-	LENOPHYT	NO/LITER	27608	92391	41480	4000	4000
71381 DIV PYR-	ROPHYTA	NO/LITER	0	0	0	4000	40000
71393 DIV CHR-	YSOPHYTA	NO/LITER	415138	332191	.141E+07	496000	.116E+07
71394 CL CHRYS	OPHYCEAE	NO/LITER	0	0	0	0	0
71400 CL BACIL	LARIOPHY	NO/LITER	415138	332191	.141E+07	496000	.116E+07
71432 DIV CYA-	NOPHYTA	NO/LITER	0	441192	.788E+07	.512E+07	.282E+07
71434 ORD CHRO	OCOCCALE	NO/LITER	0	66438	464576	64000	.103E+07
71438 ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440 ORD HORM	OGONALES	NO/LITER	0	0	0	532000	336000
75003 SPONGES	NO/M2		0	0		0	
75006 BRYOZOA	NO/M2		0	0		0	
75009 CADDIS	NO/M2		0	0		13	
75012 SNAILS	NO/M2		0	0		0	
75015 LEECHES	NO/M2		0	0		0	
75018 CHAOBO	NO/M2		0	0		0	
75021 CHIRON	NO/M2		184	44		114	
75024 CORRI	NO/M2		120	38		82	
75027 HEXAGE	NO/M2		0	0		25	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/15
02419987 GSA06
32 24 39.0 086 20 28.0 2
ALA R AT HWY 143 NR MONTGOMERY
01101 ALABAMA MONTGOMERY
SOUTHEAST
ALABAMA RIVER BASIN
11M064 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

INITIAL DATE				78/04/12	78/05/24	78/07/06	78/08/02	78/09/13
INITIAL TIME-DEPTH-BOTTOM				0000	0000	0000	0000	0000
00571	BIOMASS	BENTHIC	G/SQ M	9	623		4	
60990	ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71261	PHYLUM	PROTOZOA	NO/LITER	3	3	0	0	1
71263	CL SAR-	CODINA	NO/LITER	3	3	0	0	1
71269	CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270	PHYLUM	ROTIFERA	NO/LITER	7	25	59	70	108
71287	P AR-	THROPODA	NO/LITER	17	10	31	25	43
71289	LARVAE	CRUSTACA	NO/LITER	7	9	12	10	9
71291	O CLAD-	OCERA	NO/LITER	7	1	16	11	14
71295	SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297	ORDER	COPEPODA	NO/LITER	10	9	14	13	30
71300	DIV CHL-	OROPHYTA	NO/LITER	112457	714888	.325E+07	.320E+07	.201E+07
71302	O VOLV-	OCALES	NO/LITER	0	6219	0	808000	24000
71308	O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311	ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320	ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322	ORD CHLR	OCOCCALE	NO/LITER	61140	487203	.199E+07	.132E+07	632000
71335	ORD-ZYGN	EMATALES	NO/LITER	3718	41464	33184	120000	24000
71377	DIV EUG-	LENOPHYT	NO/LITER	25094	103661	0	0	4000
71381	DIV PYR-	ROPHYTA	NO/LITER	0	0	8296	16000	12000
71393	DIV CHR-	YSOPHYTA	NO/LITER	331194	597081	.329E+07	888000	.104E+07
71394	CL CHRYS	OPHYCEAE	NO/LITER	929	33171	149328	0	0
71400	CL BACIL	LARIOPHY	NO/LITER	330865	563910	.314E+07	888000	.104E+07
71432	DIV CYA-	NOPHYTA	NO/LITER	0	76708	.133E+08	.151E+08	.980E+07
71434	ORD CHRO	OCOCCALE	NO/LITER	0	0	962336	965000	.313E+07
71438	ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440	ORD HORM	OGONALES	NO/LITER	0	0	41480	544000	148000
75003	SPONGES	NO/M2		0	0		0	
75006	BRYOZOA	NO/M2		0	0		6	
75009	CADDIS	NO/M2		0	0		0	
75012	SNAILS	NO/M2		0	0		0	
75015	LEECHES	NO/M2		0	0		0	
75018	CHAOBO	NO/M2		0	0		0	
75021	CHIRON	NO/M2		127	19		70	
75024	CORRI	NO/M2		0	108		63	
75027	HEXAGE	NO/M2		0	0		5	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/16
02419989 GSA07
32 25 03.0 086 22 01.0 2
ALA R NR MAXWELL AFB NR MONT.
01101 ALABAMA MONTGOMERY
SOUTHEAST
ALABAMA RIVER BASIN
11M084 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/13	78/05/25	78/07/07	78/08/03	78/09/14
INITIAL DATE				78/04/13	78/05/25	78/07/07	78/08/03	78/09/14
INITIAL TIME-DEPTH--BOTTOM				0000	0000	0000	0000	0000
00571	BIOMASS	BENTHIC	G/SQ M	165	1855		12	
60990	ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71261	PHYLUM	PROTOZOA	NO/LITER	2	2	0	0	0
71263	CL SAR-	CODINA	NO/LITER	2	2	0	0	0
71269	CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270	PHYLUM	ROTIFERA	NO/LITER	7	53	117	34	115
71287	P AR-	THROPODA	NO/LITER	9	13	67	25	42
71289	LARVAE	CRUSTACA	NO/LITER	5	10	20	7	9
71291	O CLAD-	OCERA	NO/LITER	1	2	46	15	17
71295	SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297	ORDER	COPEPODA	NO/LITER	8	11	21	10	18
71300	DIV CHL-	OROPHYTA	NO/LITER	64418	628180	.121E+07	.136E+07	600000
71302	O VOLV-	OCALES	NO/LITER	0	109880	0	28000	28000
71308	O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311	ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320	ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322	ORD CHLR	OCOCCALE	NO/LITER	55215	437453	974780	720000	340000
71335	ORD-ZYGN	EMATALES	NO/LITER	0	49757	46258	12000	12000
71377	DIV EUG-	LENOPHYT	NO/LITER	35788	306833	8296	0	0
71381	DIV PYR-	ROPHYTA	NO/LITER	0	2073	24888	12000	16000
71393	DIV CHR-	YSOPHYTA	NO/LITER	443769	706960	962336	384000	636000
71394	CL CHRYS	OPHYCEAE	NO/LITER	28630	60123	33184	0	0
71400	CL BACIL	LARIOPHY	NO/LITER	415139	646837	929152	384000	636000
71432	DIV CYA-	NOPHYTA	NO/LITER	0	153416	510404	.458E+07	.732E+07
71434	ORD CHRO	OCOCCALE	NO/LITER	0	0	497760	468000	.105E+07
71438	ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440	ORD HORM	OGONALES	NO/LITER	0	0	12444	232000	72000
75003	SPONGES	NO/M2		0	0		0	
75006	BRYOZOA	NO/M2		0	0		0	
75009	CADDIS	NO/M2		0	0		6	
75012	SNAILS	NO/M2		0	0		0	
75015	LEECHES	NO/M2		0	0		0	
75018	CHAOBO	NO/M2		0	0		6	
75021	CHIRON	NO/M2		57	44		228	
75024	CORBI	NO/M2		177	159		76	
75027	HEXAGE	NO/M2		0	0		25	

STORET RETRIEVAL DATE 82/07/16
02420045 GS406
32 24 16.0 086 27 13.0 2
ALA R NR PRATTVILLE
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11M084 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/13	78/05/25	78/07/07	78/08/03	78/09/14
INITIAL TIME-DEPTH-BOTTOM				0000	0000	0000	0000	0000
00571 BIOMASS	BENTHIC	G/SQ M		2217	564		157	
60990 ZOOPLANK	OTHER	/LITER		0	0	0	0	0
71261 PHYLUM	PROTOZOA	NO/LITER		1	4	0	0	0
71263 CL SAR-	CODINA	NO/LITER		1	4	0	0	0
71269 CLASS	CILIATA	NO/LITER		0	0	0	0	0
71270 PHYLUM	ROTIFERA	NO/LITER		6	130	120	72	135
71287 P AR-	THROPODA	NO/LITER		13	36	75	36	19
71289 LARVAE	CRUSTACA	NO/LITER		5	30	22	8	6
71291 O CLAD-	OCERA	NO/LITER		6	5	47	24	3
71295 SC OSTR-	ACODA	NO/LITER		0	0	0	0	0
71297 ORDER	COPEPODA	NO/LITER		7	31	27	12	15
71300 DIV CHL-	OROPHYTA	NO/LITER		100892	646853	.104E+07	656000	441000
71302 O VOLV-	OCALES	NO/LITER		0	4146	0	54000	52000
71308 O TETRA-	SPORALES	NO/LITER		0	0	0	0	0
71311 ORD-ULOT	RICHALES	NO/LITER		0	0	0	0	0
71320 ORD-CLAD	OPHORALE	NO/LITER		0	0	0	0	0
71322 ORD CHLR	OCOCCALE	NO/LITER		76350	391154	750788	404000	226000
71335 ORD-ZYGN	EMATALES	NO/LITER		0	30407	9540	14000	10000
71377 DIV EUG-	LENOPHYT	NO/LITER		29213	50050	12444	4000	6000
71381 DIV PYR-	ROPHYTA	NO/LITER		0	1382	16592	16000	14000
71393 DIV CHR-	YSOPHYTA	NO/LITER		301994	304068	.149E+07	302000	548000
71394 CL CHRYS	OPHYCEAE	NO/LITER		12952	8293	99552	4000	0
71400 CL BACIL	LARIOPHY	NO/LITER		289042	295775	.139E+07	298000	548000
71432 DIV CYA-	NOPHYTA	NO/LITER		0	41464	.318E+07	.503E+07	.574E+07
71434 ORD CHRO	OCOCCALE	NO/LITER		0	11057	141032	384000	.136E+07
71438 ORD CHAM	AESIPHNL	NO/LITER		0	0	0	0	0
71440 ORD HORM	OGONALES	NO/LITER		0	0	12444	116000	40000
75003 SPONGES	NO/M2			0	0		0	
75006 BRYOZOA	NO/M2			0	6		0	
75009 CADDIS	NO/M2			0	0		13	
75012 SNAILS	NO/M2			0	0		0	
75015 LEECHES	NO/M2			0	0		0	
75018 CHAOBO	NO/M2			0	0		13	
75021 CHIRON	NO/M2			25	95		380	
75024 CORBI	NO/M2			323	57		152	
75027 HEXAGE	NO/M2			0	0		0	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/16
02420600 GSA09
32 23 56.0 086 27 34.0 2
ALA R BELOW AUTAUGA CR NR PRATVL
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 0315020100 0
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

			78/04/13	78/05/25	78/07/07	78/08/03	78/09/14
INITIAL DATE			78/04/13	78/05/25	78/07/07	78/08/03	78/09/14
INITIAL TIME-DEPTH-BOTTOM			0000	0000	0000	0000	0000
00571 BIOMASS	BENTHIC	G/SQ M	250	2222		153	
60990 ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71261 PHYLUM	PROTOZOA	NO/LITER	1	1	0	0	0
71263 CL SAR-	CODINA	NO/LITER	1	1	0	0	0
71269 CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270 PHYLUM	ROTIFERA	NO/LITER	3	26	58	54	19
71287 P AR-	THROPODA	NO/LITER	11	11	113	37	10
71289 LARVAE	CRUSTACA	NO/LITER	4	10	24	8	5
71291 O CLAD-	OCERA	NO/LITER	5	2	82	24	4
71295 SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297 ORDER	COPEPODA	NO/LITER	6	10	31	14	6
71300 DIV CHL-	OROPHYTA	NO/LITER	185871	518315	815082	.109E+07	710000
71302 O VOLV-	OCALES	NO/LITER	0	14513	0	170669	14000
71308 O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311 ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320 ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322 ORD CHLR	OCOCCALE	NO/LITER	119633	284027	501908	472003	548000
71335 ORD-ZYGN	EMATALES	NO/LITER	2045	30063	8296	24000	6000
71377 DIV EUG-	LENOPHYT	NO/LITER	21473	86038	4148	10667	6000
71381 DIV PYR-	ROPHYTA	NO/LITER	0	0	0	21334	10000
71393 DIV CHR-	YSOPHYTA	NO/LITER	323114	303723	.101E+07	194568	520000
71394 CL CHRYS	OPHYCEAE	NO/LITER	0	9329	8296	0	0
71400 CL BACIL	LARIOPHY	NO/LITER	323114	294394	.100E+07	194668	520000
71432 DIV CYA-	NOPHYTA	NO/LITER	35788	0	.193E+07	.285E+07	.205E+07
71434 ORD CHRO	OCOCCALE	NO/LITER	0	0	0	106668	760000
71438 ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440 ORD HORM	OGONALES	NO/LITER	35788	0	2074	138669	100000
75003 SPONGES	NO/M2		0	0		0	
75006 BRYOZOA	NO/M2		0	0		0	
75009 CADDIS	NO/M2		0	0		13	
75012 SNAILS	NO/M2		0	0		0	
75015 LEECHES	NO/M2		0	0		0	
75018 CHAOBO	NO/M2		6	0		25	
75021 CHIRON	NO/M2		57	32		171	
75024 CORBI	NO/M2		95	234		190	
75027 HEXAGE	NO/M2		0	0		0	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/15
02421060   USA10
32 21 56.0 086 28 54.0 2
ALA R BELOW CATOMA CR NR PRATVL
01001 ALABAMA   AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11M0H4   03150201000
780103   DEPTH   0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

	INITIAL DATE			78/04/14	78/05/26	78/07/07	78/08/03	78/09/14
	INITIAL TIME-DEPTH-BOTTOM			0000	0000	0000	0000	0000
00571	BIOMASS	BENTHIC	G/SQ M	1194	206		377	
60990	ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71261	PHYLUM	PROTOZOA	NO/LITER	1	1	0	0	0
71263	CL SAR-	CODINA	NO/LITER	1	1	0	0	0
71269	CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270	PHYLUM	ROTIFERA	NO/LITER	13	23	94	44	15
71287	P AR-	THROPODA	NO/LITER	28	15	131	49	17
71289	LARVAE	CRUSTACA	NO/LITER	12	11	30	8	4
71291	O CLAD-	OCERA	NO/LITER	10	4	96	38	11
71295	SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297	ORDER	COPEPODA	NO/LITER	18	11	36	11	5
71300	DIV CHL-	OROPHYTA	NO/LITER	210770	626108	.103E+07	.196E+07	.115E+07
71302	O VOLV-	OCALES	NO/LITER	0	12439	0	26000	8000
71308	O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311	ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320	ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322	ORD CHLR	OCOCCALE	NO/LITER	108382	359356	439088	972000	448000
71335	ORD-ZYGN	EMATALES	NO/LITER	6135	27043	24888	8000	16000
71377	DIV EUG-	LENOPHYT	NO/LITER	18405	93985	16592	8000	8000
71381	DIV PYR-	ROPHYTA	NO/LITER	0	0	4148	16000	0
71393	DIV CHR-	YSOPHYTA	NO/LITER	.122E+07	815459	949892	740000	300000
71394	CL CHRYS	OPHYCEAE	NO/LITER	0	6911	16592	4000	0
71400	CL BACIL	LARIOPHY	NO/LITER	.122E+07	805548	933300	736000	300000
71432	DIV CYA-	NOPHYTA	NO/LITER	0	858305	.843E+07	.959E+07	.856E+07
71434	ORD CHRO	OCOCCALE	NO/LITER	0	640337	.328E+07	.501E+07	.505E+07
71438	ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440	ORD HORM	OGONALES	NO/LITER	0	0	0	0	44000
75003	SPONGES	NO/M2		0	0		0	
75006	BRYOZOA	NO/M2		0	0		0	
75009	CADDIS	NO/M2		6	0		13	
75012	SNAILS	NO/M2		0	0		0	
75015	LEECHES	NO/M2		0	0		0	
75018	CHAOBO	NO/M2		0	6		44	
75021	CHIRON	NO/M2		57	127		222	
75024	CORBI	NO/M2		266	53		76	
75027	HEXAGE	NO/M2		0	0		0	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/16
02421090 GSA11
32 20 41.0 086 29 23.0 2
ALA R AB PINTOLLA CR NR PRATTVIL
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11M054 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

INITIAL DATE			78/04/14	78/05/25	78/07/07	78/08/03	78/09/14
INITIAL TIME-DEPTH-BOTTOM			0000	0000	0000	0000	0000
00571 BIOMASS	BENTHIC	G/SQ M	1052	2153		176	
60990 ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71261 PHYLUM	PHOTOZOA	NO/LITER	0	0	0	0	1
71263 CL SAR-	CODINA	NO/LITER	0	0	0	0	1
71269 CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270 PHYLUM	ROTIFERA	NO/LITER	7	30	70	113	57
71287 P AR-	THROPODA	NO/LITER	14	11	94	93	43
71289 LARVAE	CRUSTACA	NO/LITER	7	9	15	16	12
71291 O CLAD-	OCERA	NO/LITER	6	2	69	63	25
71295 SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297 ORDER	COPEPODA	NO/LITER	8	9	25	30	17
71300 DIV CHL-	OROPHYTA	NO/LITER	318802	545649	470798	902000	618000
71302 O VOLV-	OCALES	NO/LITER	0	6911	0	48000	14000
71308 O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311 ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320 ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322 ORD CHLR	OCOCCALE	NO/LITER	261581	411582	394060	596000	478000
71335 ORD-ZYGN	EMATALES	NO/LITER	5450	30407	10370	10000	0
71377 DIV EUG-	LENOPHYT	NO/LITER	21799	87074	10370	8000	2000
71381 DIV PYR-	ROPHYTA	NO/LITER	0	0	0	12000	4000
71393 DIV CHR-	YSOPHYTA	NO/LITER	.135E+07	548087	591090	194000	296000
71394 CL CHRYS	OPHYCEAE	NO/LITER	0	2764	8295	4000	0
71400 CL BACIL	LARIOPHY	NO/LITER	.135E+07	545323	582794	190000	296000
71432 DIV CYA-	NOPHYTA	NO/LITER	0	659277	.298E+07	.361E+07	.165E+07
71434 ORD CHRO	OCOCCALE	NO/LITER	0	635781	.179E+07	.131E+07	680000
71438 ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440 ORD HORM	OGONALES	NO/LITER	0	0	2074	64000	62000
75003	SPONGES	NO/M2	0	0		0	
75006	BRYOZOA	NO/M2	0	0		0	
75009	CAUDIS	NO/M2	0	0		13	
75012	SNAILS	NO/M2	0	0		0	
75015 LEECHES		NO/M2	13	13		0	
75018	CHAOBO	NO/M2	0	0		6	
75021	CHIRON	NO/M2	44	38		63	
75024	CORAI	NO/M2	291	323		108	
75027	HEXAGE	NO/M2	0	0		6	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/15
02421195 GSA12
32 20 22.0 086 31 21.0 2
ALA R NR BURKVILLE
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/14	78/05/26	78/07/07	78/08/03	78/09/14
INITIAL DATE				78/04/14	78/05/26	78/07/07	78/08/03	78/09/14
INITIAL TIME-DEPTH-BOTTOM				0000	0000	0000	0000	0000
00571	BIOMASS	BENTHIC	G/SQ M	228	901		737	
60990	ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71261	PHYLUM	PHOTOZOA	NO/LITER	0	0	0	0	0
71263	CL SAR-	CODINA	NO/LITER	0	0	0	0	0
71264	CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270	PHYLUM	ROTIFERA	NO/LITER	7	16	48	165	9
71287	P AR-	THROPODA	NO/LITER	17	6	93	90	26
71289	LARVAE	CRUSTACA	NO/LITER	7	4	20	12	8
71291	O CLAD-	OCERA	NO/LITER	9	2	64	74	18
71295	SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297	ORDER	COPEPODA	NO/LITER	8	4	29	15	10
71300	DIV CHL-	OROPHYTA	NO/LITER	182005	.124E+07	576572	790000	625580
71302	O VOLV-	OCALES	NO/LITER	0	128538	0	2000	91200
71308	O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311	ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320	ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322	ORD CHLR	OCOCCALE	NO/LITER	79755	733205	325618	530000	294380
71335	ORD-ZYGN	EMATALES	NO/LITER	2045	62928	12444	0	0
71377	DIV EUG-	LENOPHYT	NO/LITER	2045	132685	12440	6000	1600
71381	DIV PYR-	ROPHYTA	NO/LITER	0	0	2074	0	16000
71393	DIV CHR-	YSOPHYTA	NO/LITER	.120E+07	323418	510204	336000	195200
71394	CL CHRYS	OPHYCEAE	NO/LITER	4090	8293	0	2000	0
71400	CL BACIL	LARIOPHY	NO/LITER	.120E+07	315125	510204	304000	195200
71432	DIV CYA-	NOPHYTA	NO/LITER	0	.309E+07	.275E+07	.425E+07	.309E+07
71434	ORD CHRO	OCOCCALE	NO/LITER	0	.300E+07	.155E+07	928000	.116E+07
71436	ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440	ORD HORM	OGONALES	NO/LITER	0	0	4148	86000	1600
75003	SPONGES		NO/M2	0	0		0	
75006	BRYOZOA		NO/M2	0	0		6	
75009	CADDIS		NO/M2	0	0		38	
75012	SNAILS		NO/M2	0	13		0	
75015	LEECHES		NO/M2	0	6		0	
75018	CHAOBO		NO/M2	0	0		6	
75021	CHIRON		NO/M2	272	19		519	
75024	CORRI		NO/M2	63	152		185	
75027	HEXAGE		NO/M2	0	13		0	

STORET RETRIEVAL DATE 82/07/16
02421220 GSA13
32 22 10.0 086 34 00.0 2
ALA R BELOW ROCKY BR NR LOWNDS60
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11M094 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

Code	Name		Units	78/04/14	78/05/26	78/07/07	78/08/03	78/09/14
	INITIAL DATE			78/04/14	78/05/26	78/07/07	78/08/03	78/09/14
	INITIAL TIME-DEPTH-BOTTOM			0000	0000	0000	0000	0000
00571	BIOMASS	BENTHIC	G/SQ M	256	566		100	
60990	ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71261	PHYLUM	PHOTOZOA	NO/LITER	0	0	0	0	0
71263	CL SAR-	CODINA	NO/LITER	0	0	0	0	0
71269	CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270	PHYLUM	ROTIFERA	NO/LITER	5	27	77	91	19
71287	P AR-	THROPODA	NO/LITER	15	5	105	125	45
71289	LARVAE	CRUSTACA	NO/LITER	6	3	26	18	10
71291	O CLAD-	OCERA	NO/LITER	7	2	72	96	32
71295	SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297	ORDER	COPEPODA	NO/LITER	8	3	33	29	13
71300	DIV CHL-	OROPHYTA	NO/LITER	303231	.102E+07	597312	518000	372400
71302	O VOLV-	OCALES	NO/LITER	0	29025	176290	10000	46400
71304	O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311	ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320	ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322	ORD CHLR	OCOCCALE	NO/LITER	192575	663424	383690	310000	196800
71335	ORD-ZYGN	EMATALES	NO/LITER	4098	53903	0	2000	1600
71377	DIV EUG-	LENOPHYT	NO/LITER	40984	174148	2074	8000	4800
71381	DIV PYR-	ROPHYTA	NO/LITER	0	0	0	0	4800
71393	DIV CHR-	YSOPHYTA	NO/LITER	.140E+07	.111E+07	319396	292000	.114E+07
71394	CL CHRYS	OPHYCEAE	NO/LITER	8196	8293	0	0	0
71400	CL BACIL	LARIOPHY	NO/LITER	.140E+07	.111E+07	319396	292000	.114E+07
71432	DIV CYA-	NOPHYTA	NO/LITER	0	.189E+07	.279E+07	.164E+07	.309E+07
71434	ORD CHRO	OCOCCALE	NO/LITER	0	.180E+07	.165E+07	360000	793000
71438	ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440	ORD HORM	OGONALES	NO/LITER	0	0	0	26000	0
75003	SPONGES		NO/M2	0	0		0	
75006	BRYOZOA		NO/M2	0	6		0	
75009	CADDIS		NO/M2	0	0		0	
75012	SNAILS		NO/M2	0	0		0	
75015	LEECHES		NO/M2	6	6		0	
75018	CHAOBO		NO/M2	0	0		13	
75021	CHIRON		NO/M2	139	95		279	
75024	CORBI		NO/M2	76	133		76	
75027	HEXAGE		NO/M2	108	127		0	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/16
02421290 35414
32 23 56.0 086 43 55.0 2
ALA R BELOW BEAVER CR NR AUTAUGA
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11M064 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

INITIAL DATE				78/04/15	78/05/27	78/07/11	78/08/04	78/09/15
INITIAL TIME-DEPTH-BOTTOM				0000	0000	0000	0000	0000
00571	BIOMASS	BENTHIC	G/SQ M	110	191		59	
60990	ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71251	PHYLUM	PROTOZOA	NO/LITER	0	0	0	0	0
71263	CL SAR-	CODINA	NO/LITER	0	0	0	0	0
71269	CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270	PHYLUM	ROTIFERA	NO/LITER	6	8	18	12	20
71287	P AR-	THROPODA	NO/LITER	20	3	68	71	49
71289	LARVAE	CRUSTACA	NO/LITER	11	2	41	27	25
71291	O CLAD-	OCERA	NO/LITER	5	1	19	38	18
71295	SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297	ORDER	COPEPODA	NO/LITER	15	2	49	33	31
71300	DIV CHL-	OROPHYTA	NO/LITER	173625	208132	959019	704000	243318
71302	O VOLV-	OCALES	NO/LITER	0	55285	393231	146000	5000
71308	O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311	ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320	ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322	ORD CHLR	OCOCCALE	NO/LITER	63395	180295	355066	296000	161318
71335	ORD-ZYGN	EMATALES	NO/LITER	2045	15203	1660	2000	2000
71377	DIV EUG-	LENOPHYT	NO/LITER	16360	68456	8296	42000	1000
71381	DIV PYR-	ROPHYTA	NO/LITER	0	2764	3318	10000	0
71393	DIV CHR-	YSOPHYTA	NO/LITER	662580	363501	214534	260000	145000
71394	CL CHRYS	OPHYCEAE	NO/LITER	0	4146	0	4000	0
71400	CL BACIL	LARIOPHY	NO/LITER	662580	359355	233947	256000	145000
71432	DIV CYA-	NOPHYTA	NO/LITER	0	526593	.316E+07	.121E+07	.328E+07
71434	ORD CHRO	OCOCCALE	NO/LITER	0	466511	.195E+07	229000	816000
71436	ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440	ORD HORM	OGONALES	NO/LITER	0	0	0	0	5000
75003	SPONGES	NO/M2		0	0		0	
75006	BRYOZOA	NO/M2		0	0		0	
75009	CADDIS	NO/M2		0	0		5	
75012	SNAILS	NO/M2		13	0		0	
75015	LEECHES	NO/M2		0	0		0	
75018	CHAOBO	NO/M2		13	0		0	
75021	CHIRON	NO/M2		456	6		215	
75024	CORBI	NO/M2		44	13		316	
75027	HEXAGE	NO/M2		63	89		89	

STORET RETRIEVAL DATE 82/07/16
02421315 GSA15
32 23 23.0 086 46 55.0 2
ALA R BELOW IVY CR NR MULBERRY
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11M064 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/15	78/05/27	78/07/11	78/08/04	78/09/15
INITIAL DATE				78/04/15	78/05/27	78/07/11	78/08/04	78/09/15
INITIAL TIME-DEPTH-BOTTOM				0000	0000	0000	0000	
00571	BIOMASS	BENTHIC	G/SQ M	12	347		9	
60990	ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71261	PHYLUM	PROTOZOA	NO/LITER	0	0	0	0	0
71263	CL SAR-	CODINA	NO/LITER	0	0	0	0	0
71269	CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270	PHYLUM	ROTIFERA	NO/LITER	3	20	20	42	10
71287	P AR-	THROPODA	NO/LITER	13	8	139	65	50
71289	LARVAE	CRUSTACA	NO/LITER	7	5	87	42	31
71291	O CLAD-	OCERA	NO/LITER	3	3	41	21	13
71295	SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297	ORDER	COPEPODA	NO/LITER	10	5	98	44	37
71300	DIV CHL-	OROPHYTA	NO/LITER	190133	204209	64605	.196E+07	275937
71302	O VOLV-	OCALES	NO/LITER	0	40427	306952	224000	6665
71308	O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311	ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320	ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322	ORD CHLR	OCOCCALE	NO/LITER	45035	79300	178364	548000	177295
71335	ORD-ZYGN	EMATALES	NO/LITER	0	13475	0	8000	2666
71377	DIV EUG-	LENOPHYT	NO/LITER	24591	39909	4148	8000	7998
71381	DIV PYR-	ROPHYTA	NO/LITER	0	20214	1037	72000	3999
71393	DIV CHR-	YSOPHYTA	NO/LITER	467492	76630	189771	328000	70649
71394	CL CHRYS	OPHYCEAE	NO/LITER	820	1037	0	0	0
71400	CL BACIL	LARIOPHY	NO/LITER	466672	75593	189771	328000	70649
71432	DIV CYA-	NOPHYTA	NO/LITER	26230	122319	.146E+07	.255E+08	.246E+07
71434	ORD CHRO	OCOCCALE	NO/LITER	0	122319	.109E+07	.159E+08	.125E+07
71438	ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440	ORD HORM	OGONALES	NO/LITER	26230	0	0	0	0
75003	SPONGES		NO/M2	0	0		0	
75006	BRYOZOA		NO/M2	0	13		0	
75009	CADDIS		NO/M2	0	0		25	
75012	SNAILS		NO/M2	0	0		0	
75015	LEECHES		NO/M2	0	0		0	
75018	CHAOBO		NO/M2	0	0		19	
75021	CHIRON		NO/M2	32	13		272	
75024	CORBI		NO/M2	133	63		133	
75027	HEXAGE		NO/M2	0	0		152	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/16
02421325 05A16
32 30 15.0 086 46 33.0 2
ALA R AT DAYS BEND NR BENTON
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11MOB4 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

				78/04/15	78/05/27	78/07/11	78/08/04	78/09/15
INITIAL DATE				78/04/15	78/05/27	78/07/11	78/08/04	78/09/15
INITIAL TIME-DEPTH-BOTTOM				0000	0000	0000	0000	0000P
00571 BIOMASS	BENTHIC	G/SQ M		128	523		4	
60990 ZOOPLANK	OTHER	/LITER		0	0	0	0	0
71261 PHYLUM	PROTOZOA	NO/LITER		0	0	0	0	0
71263 CL SAR-	CODINA	NO/LITER		0	0	0	0	0
71269 CLASS	CILIATA	NO/LITER		0	0	0	0	0
71270 PHYLUM	ROTIFERA	NO/LITER		3	20	14	18	20
71287 P AR-	THROPODA	NO/LITER		18	12	77	37	42
71289 LARVAE	CRUSTACA	NO/LITER		10	6	51	22	33
71291 O CLAD-	OCERA	NO/LITER		5	6	18	11	8
71295 SC OSTR-	ACODA	NO/LITER		0	0	0	0	0
71297 ORDER	COPEPODA	NO/LITER		13	6	59	26	34
71300 DIV CHL-	OROPHYTA	NO/LITER		163489	342079	963995	.273E+07	382800
71302 O VOLV-	OCALES	NO/LITER		0	85001	557492	448000	48000
71308 O TETRA-	SPORALES	NO/LITER		0	0	0	0	0
71311 ORD-ULOT	RICHALES	NO/LITER		0	0	0	0	0
71320 ORD-CLAD	OPHORALE	NO/LITER		0	0	0	0	0
71322 ORD CHLR	OCOCCALE	NO/LITER		57220	178297	212376	544000	148400
71335 ORD-ZYGN	EMATALES	NO/LITER		2725	7257	4978	0	1600
71377 DIV EUG-	LENOPHYT	NO/LITER		20436	70489	23229	12000	3200
71381 DIV PYR-	ROPHYTA	NO/LITER		0	31098	5637	4000	9600
71393 DIV CHR-	YSOPHYTA	NO/LITER		479563	239454	165919	300000	124800
71394 CL CHRYS	OPHYCEAE	NO/LITER		1362	1037	0	0	0
71400 CL BACIL	LARIOPHY	NO/LITER		478201	238417	165919	300000	.124E+07
71432 DIV CYA-	NOPHYTA	NO/LITER		0	491348	.160E+07	.128E+08	.232E+07
71434 ORD CHRO	OCOCCALE	NO/LITER		0	476836	.148E+06	.105E+08	.101E+07
71438 ORD CHAM	AESIPHNL	NO/LITER		0	0	0	0	0
71440 ORD HORM	OGONALES	NO/LITER		0	0	0	0	0
75003 SPONGES	NO/M2			0	0		0	
75006 BRYOZOA	NO/M2			0	0		0	
75009 CADDIS	NO/M2			0	25		38	
75012 SNAILS	NO/M2			0	0		0	
75015 LEECHES	NO/M2			0	0		13	
75018 CHAOBO	NO/M2			0	0		0	
75021 CHIRON	NO/M2			177	303		342	
75024 CORBI	NO/M2			32	82		32	
75027 HEXAGE	NO/M2			0	0		19	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/16
02421349 GSA17
32 19 30.0 086 47 00.0 2
ALA R JONES BLUFF NR BENTON
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11M084 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

INITIAL DATE			78/04/17	78/05/29	78/07/11	78/08/04	78/09/15
INITIAL TIME-DEPTH-BOTTOM			0000	0000	0000	0000	0000
00571 BIOMASS	BENTHIC	G/SQ M	589	638		128	
60990 ZOOPLANK	OTHER	/LITER	0	0	0	0	0
71261 PHYLUM	PROTOZOA	NO/LITER	0	0	0	0	0
71263 CL SAR-	CODINA	NO/LITER	0	0	0	0	0
71269 CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270 PHYLUM	ROTIFERA	NO/LITER	14	37	20	15	3
71287 P AR-	THROPODA	NO/LITER	19	13	88	53	30
71289 LARVAE	CRUSTACA	NO/LITER	8	7	54	25	18
71291 O CLAD-	OCERA	NO/LITER	6	6	26	24	6
71295 SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297 ORDER	COPEPODA	NO/LITER	13	8	62	28	24
71300 DIV CHL-	OROPHYTA	NO/LITER	175183	.122E+07	732122	.299E+07	773500
71302 O VOLV-	OCALES	NO/LITER	0	165856	205326	268000	100100
71308 O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311 ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320 ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322 ORD CHLR	OCOCCALE	NO/LITER	101565	294394	230214	362000	120900
71335 ORD-ZYGN	EMATALES	NO/LITER	2044	0	0	12000	0
71377 DIV EUG-	LENOPHYT	NO/LITER	29311	68415	18666	7900	26000
71381 DIV PYR-	ROPHYTA	NO/LITER	0	55977	0	12000	1300
71393 DIV CHR-	YSOPHYTA	NO/LITER	153369	82854	18660	252000	122200
71394 CL CHRYS	OPHYCEAE	NO/LITER	0	0	0	0	0
71400 CL BACIL	LARIOPHY	NO/LITER	153369	82854	186660	252000	122200
71432 DIV CYA-	NOPHYTA	NO/LITER	24539	116099	.192E+07	.117E+08	.402E+07
71434 ORD CHRO	OCOCCALE	NO/LITER	24539	116099	.186E+07	.998E+07	.229E+07
71438 ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440 ORD HORM	OGONALES	NO/LITER	0	0	0	0	780
75003 SPONGES	NO/M2		0	0		0	
75006 BRYOZOA	NO/M2		0	0		0	
75009 CADDIS	NO/M2		0	0		19	
75012 SNAILS	NO/M2		13	0		0	
75015 LEECHES	NO/M2		0	0		0	
75018 CHAOBO	NO/M2		6	0		63	
75021 CHIRON	NO/M2		44	13		614	
75024 CORBI	NO/M2		228	101		412	
75027 HEXAGE	NO/M2		0	19		44	

Table B-3.--Continued

STORET RETRIEVAL DATE 82/07/16
02421355 GSA18
32 19 07.0 086 47 18.0 2
ALA RIVER NR BENTON
01001 ALABAMA AUTAUGA
SOUTHEAST
ALABAMA RIVER BASIN
11M084 03150201000
780103 DEPTH 0 DATA LOCKED AFTER 7707
/TYPA/AMBNT/STREAM
INDEX
MILES

			78/04/18	78/05/24	78/07/11	78/08/07	78/09/18
INITIAL DATE			78/04/18	78/05/24	78/07/11	78/08/07	78/09/18
INITIAL TIME-DEPTH-BOTTOM			0000	0000	0000	0000	0000
00571 BIOMASS	BENTHIC	G/SQ M	3	6		1	
60990 ZOOPLANK	OTHER	/LITER	0	0	1	0	0
71261 PHYLUM	PROTOZOA	NO/LITER	0	0	0	0	0
71263 CL SAR-	CODINA	NO/LITER	0	0	0	0	0
71269 CLASS	CILIATA	NO/LITER	0	0	0	0	0
71270 PHYLUM	ROTIFERA	NO/LITER	5	0	24	48	0
71287 P AR-	THROPODA	NO/LITER	15	0	136	45	0
71289 LARVAE	CRUSTACA	NO/LITER	0	0	71	71	0
71291 O CLAD-	OCERA	NO/LITER	12	0	55	21	0
71295 SC OSTR-	ACODA	NO/LITER	0	0	0	0	0
71297 ORDER	COPEPODA	NO/LITER	2	0	84	78	0
71300 DIV CHL-	OROPHYTA	NO/LITER	203132	197991	674398	846566	460000
71302 O VOLV-	OCALES	NO/LITER	10906	106770	8296	268000	82000
71308 O TETRA-	SPORALES	NO/LITER	0	0	0	0	0
71311 ORD-ULOT	RICHALES	NO/LITER	0	0	0	0	0
71320 ORD-CLAD	OPHORALE	NO/LITER	0	0	0	0	0
71322 ORD CHLR	OCOCCALE	NO/LITER	129513	59088	256836	294000	202000
71335 ORD-ZYGN	EMATALES	NO/LITER	0	9329	3318	4000	2000
71377 DIV EUG-	LENOPHYT	NO/LITER	65889	5163	13274	6000	4000
71381 DIV PYR-	ROPHYTA	NO/LITER	1363	0	0	0	0
71393 DIV CHR-	YSOPHYTA	NO/LITER	260389	9330	197446	262000	266000
71394 CL CHRYS	OPHYCEAE	NO/LITER	0	0	0	0	0
71400 CL BACIL	LARIOPHY	NO/LITER	260389	9330	197446	262000	256000
71432 DIV CYA-	NOPHYTA	NO/LITER	21813	77745	625514	.754E+07	.624E+07
71434 ORD CHRO	OCOCCALE	NO/LITER	21813	58050	.229E+07	.578E+07	.304E+07
71438 ORD CHAM	AESIPHNL	NO/LITER	0	0	0	0	0
71440 ORD HORM	OGONALES	NO/LITER	0	0	1659	0	0
75003 SPONGES	NO/M2		0	6		6	
75006 BRYOZOA	NO/M2		0	13		0	
75009 CADDIS	NO/M2		6	0		6	
75012 SNAILS	NO/M2		0	0		0	
75015 LEECHES	NO/M2		0	0		0	
75018 CHAOBO	NO/M2		0	0		6	
75021 CHIRON	NO/M2		25	13		13	
75024 CORBI	NO/M2		6	0		38	
75027 HEXAGE	NO/M2		13	0		0	

Table B-4.--Zooplankton (organisms per liter) encountered in samples collected from 18 stations above and 1 station below Jones Bluff Lock and Dam, April 10 through September 18, 1978

Taxa	Run no.	Station number 0	1	2	3	4
Protozoa						
Amoeba	I	-*	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Arcella	I	-	-	-	0.37	0.05
	II	0.07	-	0.05	-	-
	III	0.04	-	-	-	-
	IV	-	-	-	0.22	-
	V	-	-	-	-	-
Centropyxis						
	I	-	-	-	-	-
	II	0.17	1.07	0.18	0.16	0.20
	III	0.04	-	-	-	-
	IV	0.22	-	-	-	-
	V	-	-	-	-	-
Difflugia	I	-	-	-	-	-
	II	0.16	0.06	0.16	0.20	0.18
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	0.04	0.14	0.20
Euglypha	I	-	-	-	-	-
	II	0.01	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Ophrydium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	0.11	0.33	-	0.03
	IV	-	-	-	-	0.17
	V	-	-	-	-	-
Trachelomonas						
	I	-	-	0.01	0.37	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Run number I=April 10-18, 1978
Run number II=May 22-29, 1978
Run number III=July 6-11, 1978
Run number IV=August 1-18, 1978
Run number V=September 12-29, 1978
*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Protozoa						
Amoeba	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	0.10	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Arcella	I	0.33	-	-	-	-
	II	-	-	-	0.42	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Centropyxis						
	I	9.44	3.12	2.30	1.24	0.64
	II	0.81	2.88	2.30	2.94	0.85
	III	0.49	-	-	-	-
	IV	0.43	-	-	0.16	-
	V	-	0.24	-	-	-
Difflugia	I	0.22	-	-	-	-
	II	0.07	-	-	0.42	0.32
	III	-	0.10	-	-	-
	IV	-	-	-	-	-
	V	-	0.24	-	0.24	-
Euglypha	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Ophrydium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	0.20	-	-	-
	V	-	-	-	-	-
Trachelomonas						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-4.--Continued

Taxa	Run no.	Station number				
		10	11	12	13	14
Protozoa						
Amoeba	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Arcella	I	-	-	0.09	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Centropyxis						
	I	0.60	0.38	0.21	-	0.05
	II	0.65	0.18	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Difflugia	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	0.72	0.07	-	-
Euglypha	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Ophrydium	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Trachelomonas						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-4.--Continued

Taxa	Run no.	Station number 15	16	17	18
Protozoa					
Amoeba	I	-	-	-	-
	II	-	-	-	-*
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-*
Arcella	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Centropyxis					
	I	-	-	-	-
	II	-	-	-	-
	III	0.14	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Difflugia	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	0.14	0.10	-
Euglypha	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Ophrydium	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Trachelomonas					
	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Rotifera						
Bdelloidea						
Philodina	I	-*	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	0.03
	IV	-	-	-	-	-
	V	-	-	0.04	-	-
Indet. genus						
	I	-	-	-	-	-
	II	0.17	0.09	0.02	0.07	0.06
	III	-	0.50	0.56	0.23	0.06
	IV	-	-	-	-	-
	V	-	-	0.08	0.14	-
Flosculariaceae						
Conochiloides						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	2.94	2.40	3.14	4.37
	IV	-	3.04	0.45	0.64	5.61
	V	-	0.30	0.04	1.09	3.71
Conochilus						
	I	-	-	-	10.09	0.44
	II	0.12	0.09	2.03	-	-
	III	-	0.65	1.40	0.31	0.57
	IV	-	-	-	2.36	0.67
	V	0.51	8.27	3.68	24.79	40.17
Cupelopagis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	0.22	-	-	-	-
	V	-	-	-	0.27	-
Filinia	I	-	-	0.01	-	-
	II	0.01	0.03	-	-	-
	III	-	0.08	0.78	0.15	0.03
	IV	-	-	2.25	-	0.08
	V	-	0.03	-	-	-
Hexarthra	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	0.28	0.11	0.27	0.09
	IV	-	2.09	1.12	-	-
	V	-	0.84	0.51	0.95	5.41

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Rotifera						
Bdelloidea						
Philodina	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	0.24	-	-	-
Indet. genus						
	I	-	-	-	-	-
	II	0.02	0.22	0.13	0.42	-
	III	-	0.38	0.44	0.79	-
	IV	-	0.10	0.18	-	0.14
	V	-	-	-	-	0.06
Flosculararaceae						
Conochiloides						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	27.42	29.08	52.10	27.26	16.20
	IV	41.94	12.68	7.36	18.01	7.66
	V	1.49	2.16	2.96	0.71	0.71
Conochilus						
	I	0.76	0.67	1.89	1.74	1.28
	II	-	18.11	24.14	64.23	14.02
	III	8.82	4.42	30.72	49.78	14.77
	IV	70.18	24.58	15.25	27.89	21.24
	V	98.44	82.05	57.16	67.16	3.75
Cupelopagis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	0.43	-	-	-	-
	V	-	-	-	-	0.13
Filinia	I	-	0.08	-	0.06	-
	II	-	-	0.38	-	-
	III	0.98	1.06	-	0.79	0.95
	IV	-	-	-	0.32	-
	V	-	0.48	-	-	-
Hexarthra	I	-	-	-	-	-
	II	-	-	-	-	-
	III	0.98	0.96	6.68	2.76	8.58
	IV	2.82	2.85	0.18	0.16	0.58
	V	2.73	0.96	9.61	2.14	0.84

Table B-4.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Rotifera						
Bdelloidea						
Philodina	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	0.22	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Indet. genus						
	I	-	-	0.17	1.19	0.24
	II	-	0.18	-	0.11	0.04
	III	0.31	-	-	-	0.23
	IV	0.13	0.38	-	-	-
	V	-	-	-	-	-
Flosculariaceae						
Conochiloides						
	I	-	-	-	-	-
	II	-	-	-	0.16	0.02
	III	24.26	19.13	11.14	9.43	2.41
	IV	4.77	25.00	64.94	11.96	0.41
	V	0.42	1.93	0.07	0.54	0.37
Conochilus						
	I	2.02	2.37	2.05	1.13	2.73
	II	11.29	8.89	5.02	1.57	2.40
	III	13.20	13.04	10.83	22.20	2.64
	IV	14.83	43.55	29.24	28.49	0.14
	V	6.76	22.69	3.43	0.43	1.46
Cupelopagis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Filinia	I	-	0.08	0.51	0.12	-
	II	0.43	0.09	-	0.16	0.26
	III	1.23	1.09	1.81	0.60	0.23
	IV	0.26	-	-	-	0.14
	V	0.05	0.72	0.15	0.11	-
Hexarthra	I	-	-	-	-	-
	II	-	-	-	-	-
	III	17.50	3.04	2.11	13.00	3.67
	IV	-	-	0.24	7.12	0.28
	V	0.99	1.69	0.29	4.89	1.28

Table B-4.--Continued

Taxa	Run no.	Station number 15	16	17	18
Rotifera					
Bdelloidea					
Philodina	I	-	-	-	-
	II	-	-	-	-*
	III	-	-	-	-
	IV	-	-	-	0.17
	V	-	-	-	-
Indet. genus					
	I	0.40	0.24	0.36	0.22
	II	-	-	-	-
	III	-	0.24	-	1.28
	IV	-	-	-	0.17
	V	-	-	-	-
Flosculariaceae					
Conochiloides					
	I	0.03	-	-	-
	II	0.45	0.06	0.44	-
	III	2.63	2.15	3.42	1.92
	IV	1.03	1.00	1.12	3.23
	V	0.08	-	-	-
Conochilus					
	I	0.81	0.71	11.14	3.24
	II	7.52	2.72	2.65	-
	III	2.91	2.03	1.52	0.96
	IV	0.57	0.75	0.45	1.87
	V	0.65	0.72	-	-
Cupelopagis					
	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	1.38	0.75	0.17	1.70
	V	-	0.36	-	-
Filinia	I	0.06	-	0.15	-
	II	0.19	-	0.71	-
	III	0.28	0.48	0.63	-
	IV	0.34	0.17	-	-
	V	-	0.14	-	-
Hexarthra	I	-	-	-	-
	II	-	-	0.09	-
	III	3.33	2.27	2.80	7.99
	IV	4.14	1.00	0.62	1.70
	V	0.14	0.14	1.03	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Rotifera (cont'd)						
Flosculariaceae (cont'd)						
Ptygura?	I	-*	-	-	-	-
	II	-	-	-	-	-
	III	-	0.06	-	-	-
	IV	-	-	-	0.22	0.08
	V	-	0.06	0.12	-	-
Sinantherina?						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	0.10
Ploima						
Ascomorpha						
	I	-	-	-	-	-
	II	-	0.03	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	2.04	-
Asplanchna						
	I	-	1.74	0.23	17.57	2.11
	II	-	-	-	-	-
	III	0.65	0.28	1.51	0.04	0.06
	IV	-	-	-	0.22	-
	V	-	0.09	0.08	1.09	0.60
Brachionus						
	I	-	0.36	0.16	2.99	1.28
	II	1.10	0.81	0.60	0.49	0.96
	III	0.08	0.34	0.95	0.35	0.51
	IV	0.45	-	6.08	0.22	0.25
	V	-	0.15	0.08	0.82	0.60
Cephalodella						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Dipeuchlanis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	0.03	0.28	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Rotifera (cont'd)						
Flosculariaceae (cont'd)						
Ptygura?	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	4.78	1.27	0.88	0.48	0.43
	V	0.37	-	0.49	0.47	-
Sinantherina?						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Ploima						
Ascomorpha						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Asplanchna						
	I	3.58	3.45	2.52	1.63	1.14
	II	-	0.07	0.26	0.42	0.21
	III	0.82	0.77	1.34	2.76	0.48
	IV	1.09	0.59	-	1.59	1.01
	V	2.36	1.20	4.43	8.07	1.29
Brachionus						
	I	2.50	1.55	1.19	0.96	0.7[illegible]
	II	0.62	0.67	0.89	1.63	0.11
	III	1.63	3.17	2.67	2.76	7.62
	IV	2.82	0.98	0.35	3.03	1.44
	V	-	2.16	0.49	-	0.32
Cephalodella						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	0.48	-	-	-
Dipleuchlanis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-4.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Rotifera (cont'd)						
Flosculariaceae (cont'd)						
Ptygura?	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	0.12
	IV	1.46	-	0.24	0.57	-
	V	0.05	0.24	-	-	-
Sinantherina?						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	0.24	-	-
	V	-	-	-	-	-
Ploima						
Ascomorpha						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Asplanchna						
	I	1.72	1.00	0.73	0.65	0.80
	II	1.52	0.45	0.68	2.65	0.34
	III	1.23	5.22	1.20	3.65	0.80
	IV	0.53	2.65	3.83	1.42	-
	V	0.52	0.48	0.15	0.54	0.09
Brachionus						
	I	8.76	2.99	3.63	2.38	1.88
	II	3.80	3.99	2.78	9.75	1.50
	III	8.90	13.48	11.74	10.95	0.69
	IV	7.02	5.68	20.61	9.40	1.38
	V	0.21	3.62	1.90	1.09	0.09
Cephalodella						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Dipeuchlanis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-4.--Continued

Taxa	Run no.	Station number 15	16	17	18
Rotifera (cont'd)					
Floscularaceae (cont'd)					
Ptygura?	I	-	0.04	-	-
	II	-	-	-	-*
	III	-	-	0.13	-
	IV	-	-	-	-
	V	-	-	-	-
Sinantherina?					
	I	-	-	-	-
	II	-	-	-	-
	III	-	0.12	-	-
	IV	-	0.08	-	-
	V	-	-	-	-
Ploima					
Ascomorpha					
	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Asplanchna					
	I	0.58	0.67	0.66	0.16
	II	0.97	1.62	3.27	-
	III	0.14	0.36	-	0.32
	IV	-	0.17	-	0.51
	V	0.16	0.07	0.29	-
Brachionus					
	I	1.09	0.59	1.17	0.38
	II	2.14	1.88	4.86	-
	III	3.05	2.03	4.82	6.07
	IV	5.34	2.76	1.85	8.32
	V	0.49	1.29	0.05	-
Cephalodella					
	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Dipeuchlanis					
	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Rotifera (cont'd)						
Ploima (cont'd)						
Epiphanes	I	-*	-	-	-	-
	II	0.27	-	-	-	-
	III	-	0.03	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Eosphora	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Euchlanis	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Gastropus	I	-	-	-	-	-
	II	-	-	-	0.13	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	0.14	0.20
Kellicottia						
	I	-	0.13	0.05	0.37	0.05
	II	-	0.03	0.02	0.03	-
	III	-	-	-	-	0.06
	IV	-	-	-	-	-
	V	-	-	-	-	-
Keratella	I	-	0.23	0.12	1.12	0.05
	II	0.14	1.85	0.74	1.43	-
	III	0.41	0.11	-	0.12	0.27
	IV	-	0.38	2.92	-	0.34
	V	1.02	0.57	0.31	3.68	4.51
Lecane	I	-	-	-	-	-
	II	-	-	-	-	-
	III	0.04	-	0.11	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Monostyla	I	-	-	-	-	-
	II	0.01	0.03	-	-	-
	III	0.08	-	-	-	-
	IV	-	-	-	0.22	-
	V	-	-	-	-	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Rotifera (cont'd)						
Ploima (cont'd)						
Epiphanes	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Eosphora	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	0.48	-	-	-
Euchlanis	I	0.11	0.04	-	0.06	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Gastropus	I	-	-	-	-	-
	II	0.02	-	-	-	-
	III	-	-	-	-	-
	IV	0.22	0.20	0.35	2.23	0.43
	V	-	0.24	1.72	0.24	0.19
Kellicottia						
	I	0.11	0.08	0.04	0.11	0.03
	II	0.04	-	0.13	-	-
	III	-	0.10	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Keratella	I	0.54	0.63	0.52	0.34	0.03
	II	1.51	1.40	4.34	4.20	1.81
	III	2.78	2.11	5.79	9.09	3.81
	IV	4.34	4.72	3.16	8.60	8.24
	V	1.86	7.70	2.22	1.66	2.07
Lecane	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Monostyla	I	-	-	-	-	-
	II	0.02	-	-	-	-
	III	-	-	-	-	-
	IV	0.22	-	-	-	-
	V	-	-	-	-	-

Table B-4.--Continued

Taxa	Run no.	10	11	12	13	14
		Station number				
Rotifera (cont'd)						
Ploima (cont'd)						
Epiphanes	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Eosphora	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Euchlanis	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Gastropus	I	-	-	-	-	-
	II	-	0.09	-	0.16	-
	III	-	-	-	-	-
	IV	-	1.89	4.07	1.14	1.24
	V	-	2.17	-	0.32	0.64
Kellicottia						
	I	-	0.15	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Keratella	I	0.08	0.15	-	0.18	0.24
	II	2.39	1.18	0.49	0.54	0.30
	III	6.45	4.56	2.71	2.13	2.64
	IV	4.90	6.44	13.42	7.98	3.32
	V	0.31	7.24	1.24	4.89	1.56
Lecane	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Monostyla	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	0.09

Table B-4.--Continued

Taxa	Run no.	Station number 15	16	17	18
Rotifera (cont'd)					
Ploima (cont'd)					
Epiphanes	I	-	-	-	-
	II	-	-	-	-*
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Eosphora	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Euchlanis	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Gastropus	I	-	-	-	-
	II	-	0.78	0.79	-
	III	-	-	0.25	0.32
	IV	1.03	0.33	0.45	1.02
	V	0.49	0.79	0.05	-
Kellicottia					
	I	-	-	-	0.11
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Keratella	I	-	0.36	0.44	0.11
	II	1.23	0.83	2.41	-
	III	2.91	1.43	0.63	1.28
	IV	1.55	2.68	1.18	13.08
	V	2.68	4.73	1.03	-
Lecane	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Monostyla	I	-	-	-	-
	II	0.06	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Rotifera (cont'd)						
Ploima (cont'd)						
Mytilina	I	-*	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	0.64	-
	V	-	-	0.04	-	-
Notholca	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Notommata	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Platyias	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	0.06	0.06	0.04	0.03
	IV	0.22	2.47	0.90	4.30	11.48
	V	0.25	0.30	0.23	2.72	0.50
Floesoma	I	-	-	-	-	-
	II	-	0.16	0.02	0.16	0.16
	III	-	-	0.06	0.12	0.03
	IV	-	-	1.58	-	-
	V	-	-	-	-	0.10
Polyarthra						
	I	-	0.33	0.10	0.75	-
	II	0.06	0.53	0.14	0.03	-
	III	0.24	0.06	0.89	0.12	0.03
	IV	0.45	6.27	18.00	0.43	0.50
	V	1.27	2.05	1.09	19.48	16.43
Pompholyx?						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	0.14	-
Synchaeta	I	-	-	-	-	-
	II	0.16	-	0.02	0.13	0.02
	III	0.57	0.34	3.40	0.54	0.45
	IV	-	0.38	0.45	-	0.25
	V	-	0.12	0.12	2.86	25.14

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Rotifera (cont'd)						
Ploima (cont'd)						
Mytilina	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	0.43	-	-	-	0.14
	V	-	-	-	-	-
Notholca	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	0.87	0.29	-	0.16	0.29
	V	-	-	-	-	-
Notommata	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Platyias	I	-	-	-	-	-
	II	-	0.15	0.13	-	-
	III	0.16	0.10	-	0.79	-
	IV	49.96	14.16	4.73	3.35	9.54
	V	0.74	1.92	0.25	0.47	0.19
Ploesoma	I	-	-	-	-	-
	II	0.06	-	-	-	0.11
	III	-	0.10	-	-	-
	IV	0.22	-	0.35	1.91	0.37
	V	0.25	0.24	0.74	1.19	0.32
Polyarthra						
	I	0.33	0.42	0.48	0.56	0.11
	II	0.22	2.22	9.07	5.04	1.38
	III	2.94	1.54	3.12	9.09	2.86
	IV	9.12	5.21	0.70	2.71	1.16
	V	9.92	4.09	21.43	28.00	8.08
Pompholyx?						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	0.16	-	0.89	0.40	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Synchaeta	I	-	-	-	-	-
	II	-	2.59	13.54	53.31	7.97
	III	4.57	14.50	12.91	12.25	2.86
	IV	-	1.38	-	0.64	0.14
	V	9.05	1.92	13.55	24.68	0.45

Table B-4.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Rotifera (cont'd)						
Ploima (cont'd)						
Mytilina	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	0.30	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Notholca	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	0.28	-
	V	-	-	-	-	-
Notommata	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	0.11	-
Platyias	I	-	-	-	-	-
	II	-	-	0.05	-	0.21
	III	0.31	-	-	1.22	0.12
	IV	5.96	13.63	17.49	13.10	0.55
	V	0.16	-	0.07	0.98	0.18
Ploesoma	I	-	-	-	-	0.05
	II	0.11	-	-	-	0.04
	III	0.92	-	0.90	2.13	0.34
	IV	1.85	7.57	4.07	1.14	2.0[illegible]
	V	-	0.96	0.15	0.65	-
Polyarthra						
	I	0.67	0.15	-	0.18	0.28
	II	2.60	2.72	0.68	1.25	1.22
	III	3.07	6.52	3.31	8.82	3.33
	IV	1.46	3.41	3.83	6.27	2.49
	V	2.81	10.38	1.02	4.13	10.44
Pompholyx?						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Synchaeta	I	-	-	-	-	-
	II	5.43	11.33	5.46	10.51	1.67
	III	4.91	1.74	1.20	0.30	0.92
	IV	0.26	2.65	1.44	1.42	-
	V	1.51	4.58	0.36	0.43	3.30

Table B-4.--Continued

Taxa	Run no.	Station number 15	16	17	18
Rotifera (cont'd)					
Ploima (cont'd)					
Mytilina	I	-	-	-	-
	II	-	-	-	-*
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Notholca	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	0.08	-	-
	V	-	-	-	-
Notommata	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Platyias	I	-	-	-	-
	II	0.06	0.32	0.35	-
	III	0.28	0.12	-	0.32
	IV	0.69	0.25	0.11	1.02
	V	0.32	0.36	-	-
Ploesoma	I	-	-	-	-
	II	0.32	-	-	-
	III	0.42	0.12	-	-
	IV	6.55	2.76	0.84	1.36
	V	0.41	0.36	-	-
Polyarthra					
	I	-	0.08	0.36	0.43
	II	2.72	2.14	4.42	-
	III	2.50	2.03	3.68	2.24
	IV	17.92	3.68	7.41	12.40
	V	2.43	6.37	0.64	-
Pompholyx?					
	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Synchaeta	I	-	-	-	-
	II	3.24	7.98	17.05	-
	III	1.39	0.24	2.54	0.96
	IV	0.17	0.92	0.39	1.02
	V	1.62	4.15	0.20	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Rotifera (cont'd)						
Ploima (cont'd)						
Trichocerca						
	I	-*	-	0.01	-	-
	II	-	-	-	0.10	-
	III	0.69	0.17	0.73	0.19	0.03
	IV	0.22	0.38	0.22	0.22	1.09
	V	-	0.03	-	-	0.10
Trichotria						
	I	-	-	-	-	-
	II	-	-	-	-	0.06
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Bryozoa	I	-	-	-	0.75	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	0.22	-	-	-	-
	V	-	-	-	-	-
Nematoda	I	-	-	-	-	-
	II	0.11	-	-	-	-
	III	0.28	-	-	-	-
	IV	0.45	-	-	-	-
	V	-	-	-	-	-
Nematomorpha						
Gordius	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Annelida						
Oligochaeta						
Aelosomatidae						
	I	-	-	-	-	-
	II	0.01	-	-	-	-
	III	0.08	-	-	0.08	0.06
	IV	-	-	-	-	-
	V	-	-	-	-	-
Tubificidae	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Rotifera (cont'd)						
Ploima (cont'd)						
Trichocerca						
	I	-	0.04	-	-	-
	II	0.07	-	0.13	0.42	-
	III	0.82	0.48	0.44	1.58	-
	IV	2.61	0.88	0.70	1.12	0.87
	V	-	1.92	-	-	0.06
Trichotria						
	I	-	-	-	-	-
	II	-	-	-	0.42	0.42
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Bryozoa	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Nematoda	I	-	-	-	-	-
	II	0.07	0.37	0.13	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	0.12	-	-	-	-
Nematomorpha						
Gordius	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	0.06
Annelida						
Oligochaeta						
Aelosomatidae						
	I	-	-	-	-	-
	II	-	0.07	-	0.42	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Tubificidae	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	0.24	-	-	-

Table B-4.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Rotifera (cont'd)						
Ploima (cont'd)						
Trichocerca						
	I	-	-	-	0.06	-
	II	0.22	0.09	-	0.05	0.04
	III	1.84	1.52	0.60	1.22	0.12
	IV	0.66	0.38	1.20	0.57	0.28
	V	1.51	0.24	0.22	0.11	0.09
Trichotria						
	I	-	-	-	-	-
	II	0.55	0.73	0.39	0.05	0.34
	III	-	-	-	0.60	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Bryozoa	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Nematoda	I	-	-	0.09	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	0.24	-	-	-
Nematomorpha						
Gordius	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	0.07	-	-
Annelida						
Oligochaeta						
Aelosomatidae						
	I	0.30	0.15	0.13	0.12	0.14
	II	-	-	-	-	0.05
	III	-	-	-	-	-
	IV	-	-	0.24	-	-
	V	-	-	-	-	-
Tubificidae	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-4.--Continued

Taxa	Run no.	Station number 15	16	17	18
Rotifera (cont'd)					
Ploima (cont'd)					
Trichocerca					
	I	-	-	-	-
	II	0.19	0.13	-	-*
	III	0.14	0.36	0.13	0.32
	IV	1.03	0.17	0.06	0.34
	V	-	0.21	0.10	-
Trichotria					
	I	-	-	-	-
	II	1.04	1.36	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Bryozoa	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	0.34
	V	-	-	-	-
Nematoda	I	-	-	-	-
	II	0.06	0.06	-	-
	III	-	-	-	0.32
	IV	-	0.08	-	-
	V	-	-	-	-
Nematomorpha					
Gordius	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Annelida					
Oligochaeta					
Aelosomatidae					
	I	0.03	0.12	0.07	0.11
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Tubificidae	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Mollusca						
Pelecypoda	I	-*	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Arthropoda						
Crustacea						
Ostracoda	I	-	-	-	0.37	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Branchiopoda						
Cladocera						
Alona	I	-	-	-	-	-
	II	0.02	-	-	0.03	0.04
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Alonella	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	0.04	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Bosmina	I	-	4.76	1.28	59.44	4.71
	II	0.03	2.69	0.44	0.81	0.86
	III	1.02	0.84	-	3.22	6.80
	IV	0.22	0.57	1.80	0.64	2.93
	V	3.81	0.84	0.98	4.09	3.91
Bosminopsis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	2.09	0.22	1.94	2.60
	V	-	0.03	-	-	-
Ceriodaphnia						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	0.03	0.17	0.08	0.03
	IV	0.22	-	0.22	0.22	0.25
	V	-	0.45	0.74	0.27	1.70

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Mollusca						
Pelecypoda	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	0.87	-	-	-	-
	V	-	-	-	-	-
Arthropoda						
Crustacea						
Ostracoda	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Branchiopoda						
Cladocera						
Alona	I	-	-	-	-	-
	II	0.02	-	-	-	-
	III	-	-	-	-	-
	IV	-	0.10	-	-	-
	V	-	-	-	-	-
Alonella	I	-	-	-	-	-
	II	-	-	-	-	-
	III	0.33	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Bosmina	I	10.31	6.53	-	4.61	4.05
	II	1.87	0.07	0.89	0.42	0.42
	III	9.14	11.42	20.93	7.51	40.03
	IV	15.64	3.93	3.33	5.26	6.65
	V	3.47	7.94	8.62	1.43	1.42
Bosminopsis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	5.43	2.65	1.05	8.92	5.78
	V	-	0.72	-	0.47	0.12
Ceriodaphnia						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	0.22	0.10	-	0.16	0.58
	V	0.62	0.96	3.94	-	-

Table B-4.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Mollusca						
Pelecypoda	I	-	-	-	-	-
	II	-	-	-	0.11	0.02
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Arthropoda						
Crustacea						
Ostracoda	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Branchiopoda						
Cladocera						
Alona	I	-	-	-	-	-
	II	-	-	-	-	0.04
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Alonella	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Bosmina	I	5.16	4.67	7.52	6.53	3.81
	II	0.43	0.18	1.02	0.16	0.21
	III	74.31	26.74	27.09	61.77	4.93
	IV	5.16	9.85	10.54	35.32	6.64
	V	2.44	7.72	7.66	10.21	3.66
Bosminopsis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	18.14	32.19	51.12	37.32	0.83
	V	0.10	4.10	0.66	4.78	0.18
Ceriodaphnia						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	0.44	-	-	0.12
	IV	0.66	0.38	1.92	0.85	0.97
	V	0.83	2.17	1.82	1.85	1.28

Table B-4.--Continued

Taxa	Run no.	Station number 15	16	17	18
Mollusca					
Pelecypoda	I	-	-	-	-
	II	0.06	0.06	0.09	-*
	III	-	0.24	0.13	0.32
	IV	-	-	0.08	-
	V	-	-	-	-
Arthropoda					
Crustacea					
Ostracoda	I	-	-	-	-
	II	-	-	-	-
	III	0.14	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Branchiopoda					
Cladocera					
Alona	I	-	-	-	-
	II	0.06	0.06	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Alonella	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Bosmina	I	2.23	3.60	4.81	11.89
	II	0.78	2.53	0.97	-
	III	14.84	4.06	7.44	23.97
	IV	5.86	1.34	7.18	4.01
	V	3.65	2.51	1.13	-
Bosminopsis					
	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	5.17	2.26	7.58	0.34
	V	0.65	1.07	-	-
Ceriodaphnia					
	I	-	-	-	-
	II	-	0.06	-	-
	III	0.14	-	0.13	-
	IV	0.52	0.08	0.62	1.87
	V	1.87	0.36	0.54	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Arthropoda (cont'd)						
Branchiopoda (cont'd)						
Cladocera (cont'd)						
Daphnia	I	-*	0.82	0.14	6.73	0.49
	II	-	-	0.21	0.03	-
	III	0.04	-	-	-	-
	IV	-	0.19	-	0.22	0.84
	V	-	-	-	-	0.10
Diaphanosoma						
	I	-	-	-	-	-
	II	-	-	-	0.10	-
	III	0.24	0.14	2.34	0.84	1.74
	IV	-	0.19	1.80	1.29	4.11
	V	-	0.24	0.31	1.36	1.50
Holopedium						
	I	-	-	-	0.37	0.44
	II	-	0.03	0.05	0.07	-
	III	-	0.03	0.17	0.04	0.03
	IV	-	-	-	0.22	-
	V	-	-	-	-	-
Ilyocryptus						
	I	-	-	-	-	-
	II	-	-	-	-	0.02
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	0.04	-	-
Latonopsis						
	I	-	-	-	-	-
	II	-	-	0.05	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Leptodora	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Moina	I	-	0.33	-	2.20	0.05
	II	0.01	-	0.02	-	-
	III	-	-	0.06	-	-
	IV	-	-	-	0.22	-
	V	-	0.03	0.12	-	1.70

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Arthropoda (cont'd)						
Branchiopoda (cont'd)						
Cladocera (cont'd)						
Daphnia	I	1.09	0.67	0.37	0.56	0.36
	II	0.04	0.22	0.13	0.42	0.11
	III	0.49	-	0.89	1.58	0.48
	IV	0.22	0.10	-	0.16	0.87
	V	-	0.24	0.25	-	-
Diaphanosoma						
	I	-	-	-	-	-
	II	-	0.30	0.51	2.52	0.85
	III	4.41	4.32	21.37	32.40	34.79
	IV	8.47	4.13	8.59	5.10	5.63
	V	1.12	3.61	4.19	1.19	2.34
Holopedium						
	I	1.19	0.17	0.93	1.07	0.56
	II	-	0.22	0.38	1.26	0.32
	III	-	0.67	2.67	5.93	6.67
	IV	0.87	0.10	0.35	0.64	0.29
	V	-	-	-	-	0.06
Ilyocryptus						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	0.20	-	-	-
	V	-	-	-	-	-
Latonopsis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Leptodora	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Moina	I	0.11	-	-	-	-
	II	-	0.07	-	-	-
	III	-	-	-	-	-
	IV	0.22	0.10	1.23	3.66	4.05
	V	0.25	-	-	-	-

Table B-4.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Arthropoda (cont'd)						
Branchiopoda (cont'd)						
Cladocera (cont'd)						
Daphnia	I	4.19	0.69	0.51	0.36	1.46
	II	0.22	0.09	-	0.11	0.06
	III	0.31	0.22	1.50	-	0.23
	IV	0.40	1.14	0.96	0.57	0.41
	V	0.16	0.24	0.15	0.11	0.09
Diaphanosoma						
	I	-	-	-	-	-
	II	2.39	1.36	0.44	0.76	0.30
	III	20.27	35.87	24.49	9.13	10.90
	IV	8.34	9.47	6.23	14.53	26.28
	V	6.76	10.38	7.73	14.78	12.08
Holopedium						
	I	0.97	0.69	0.81	0.12	0.14
	II	0.33	0.36	0.20	0.16	0.34
	III	0.92	5.87	11.14	0.61	2.29
	IV	0.26	0.38	-	2.85	0.14
	V	-	-	-	-	-
Ilyocryptus						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	0.57	-
	V	-	-	-	-	-
Latonopsis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Leptodora	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	0.22	-	-	-
	IV	-	-	-	-	0.14
	V	-	-	-	-	-
Moina	I	-	-	-	-	-
	II	0.11	-	-	0.38	0.17
	III	-	-	-	-	-
	IV	4.63	9.85	3.59	4.27	2.07
	V	0.16	-	0.15	0.11	0.18

Table B-4.--Continued

Taxa	Run no.	Station number 15	16	17	18
Arthropoda (cont'd)					
Branchiopoda (cont'd)					
Cladocera (cont'd)					
Daphnia	I	0.40	0.67	0.66	0.27
	II	0.32	0.19	0.09	-*
	III	0.28	0.12	-	3.20
	IV	0.34	-	0.06	1.70
	V	-	-	0.05	-
Diaphanosoma					
	I	-	-	-	-
	II	0.97	1.62	4.06	-
	III	22.19	11.11	14.97	22.05
	IV	8.96	5.61	8.08	13.08
	V	6.57	3.58	4.62	-
Holopedium					
	I	0.14	0.24	0.44	0.16
	II	0.65	0.91	0.71	-
	III	3.47	2.51	3.80	4.80
	IV	-	0.08	0.06	0.17
	V	-	-	-	-
Ilyocryptus					
	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Latonopsis					
	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Leptodora	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	0.64
	IV	-	-	-	-
	V	-	-	-	-
Moina	I	-	-	-	-
	II	0.39	0.19	-	-
	III	-	-	-	-
	IV	0.52	1.34	0.79	-
	V	0.32	0.21	0.05	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Arthropoda (cont'd)						
Branchiopoda (cont'd)						
Cladocera (cont'd)						
Moinodaphnia						
	I	-*	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Scapholeberis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Indet. genus						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Copepoda						
Eucopepoda						
Argulus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	0.03	-	-	-
Cyclops	I	-	2.89	0.57	27.67	3.98
	II	-	-	-	-	-
	III	-	-	0.11	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Diaptomus	I	-	-	-	4.11	0.49
	II	0.04	0.09	0.18	0.13	0.02
	III	0.28	1.01	-	1.19	0.45
	IV	0.22	1.33	1.12	0.64	3.69
	V	0.51	1.15	5.59	3.40	11.62
Epischura	I	-	-	-	-	-
	II	-	-	0.32	0.16	0.02
	III	0.04	0.03	-	0.08	0.06
	IV	-	-	-	-	-
	V	-	0.18	-	-	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Arthropoda (cont'd)						
Branchiopoda (cont'd)						
Cladocera (cont'd)						
Moinodaphnia						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Scapholeberis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Indet. genus						
	I	-	-	-	-	-
	II	-	-	-	-	0.11
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Copepoda						
Eucopepoda						
Argulus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Cyclops	I	6.41	1.85	1.74	1.40	1.31
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	0.18	-	-
	V	-	-	-	-	-
[illegible]	I	0.11	0.25	0.93	0.34	0.47
	II	0.09	0.15	0.38	0.84	-
	III	1.63	2.59	1.34	4.74	6.67
	IV	7.60	3.24	3.16	3.98	5.49
	V	4.09	20.69	15.03	9.25	1.16
[illegible]	I	-	-	-	-	-
	II	-	-	0.13	-	-
	III	-	0.10	-	-	-
	IV	-	-	-	-	-
	V	-	0.24	-	-	-

Table B-4.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Arthropoda (cont'd)						
Branchiopoda (cont'd)						
Cladocera (cont'd)						
Moinodaphnia						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	0.14
	V	0.05	-	-	-	-
Scapholeberis						
	I	-	-	-	-	-
	II	-	-	-	-	0.04
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Indet. genus						
	I	-	-	-	-	-
	II	0.22	0.09	0.10	0.05	0.06
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	0.24	-	-	-
Copepoda						
Eucopepoda						
Argulus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Cyclops	I	5.02	1.15	1.37	1.37	3.77
	II	-	-	-	-	-
	III	-	-	-	-	0.12
	IV	-	-	0.24	-	-
	V	-	-	0.07	-	0.09
Diaptomus	I	0.90	0.38	0.43	0.30	0.52
	II	-	-	0.10	-	0.06
	III	5.22	8.70	9.03	6.69	7.80
	IV	3.04	13.63	3.36	10.54	5.26
	V	2.55	5.31	2.26	2.72	5.68
Epischura	I	-	-	-	-	-
	II	-	-	0.10	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-4.--Continued

Taxa	Run no.	Station number 15	16	17	18
Arthropoda (cont'd)					
Branchiopoda (cont'd)					
Cladocera (cont'd)					
Moinodaphnia					
	I	-	-	-	-
	II	-	-	-	-*
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Scapholeberis					
	I	-	-	-	-
	II	0.06	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Indet. genus					
	I	-	-	-	-
	II	0.13	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Copepoda					
Eucopepoda					
Argulus	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Cyclops	I	2.86	3.04	3.93	2.16
	II	-	-	-	-
	III	-	-	-	-
	IV	0.17	-	0.22	-
	V	-	-	0.05	-
Diaptomus	I	-	0.28	0.73	0.16
	II	0.13	0.45	0.26	-
	III	10.40	7.17	7.61	13.10
	IV	1.72	3.68	3.59	6.97
	V	6.08	0.72	9.26	-
[illegible]	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-

*Sample not collected

Table B-4.--Continued

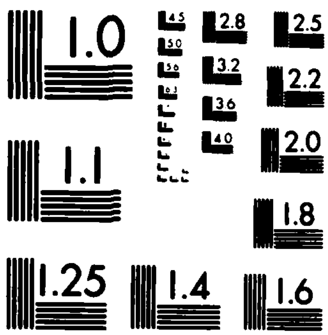
Taxa	Run no.	Station number 0	1	2	3	4
Arthropoda (cont'd)						
Copepoda (cont'd)						
Eucopepoda (cont'd)						
Ergasilus	I	-*	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	0.14	-
Indet. Harpaticoida						
	I	-	-	-	-	-
	II	-	-	-	0.03	-
	III	-	0.03	-	-	-
	IV	-	-	-	0.22	-
	V	-	-	-	-	-
Immature Cyclopoida						
	I	-	-	-	-	-
	II	0.16	0.56	0.46	0.75	0.64
	III	0.33	0.76	0.73	0.84	0.63
	IV	0.68	0.57	0.45	0.86	4.36
	V	0.25	1.12	0.59	-	1.20
Crustacean Nauplii	I	-	2.23	0.68	47.11	4.32
	II	0.41	0.34	1.20	1.37	0.52
	III	0.85	10.12	6.25	10.08	3.89
	IV	[illegible]	4.37	3.60	3.44	8.04
	V	[illegible]	5.52	11.89	3.40	7.61
Arachnida						
Acarina	I	-	-	-	-	-
	II	[illegible]	0.06	-	0.03	0.02
	III	[illegible]	-	-	-	-
	IV	[illegible]	-	-	0.22	-
	V	[illegible]	-	-	-	-
Insecta						
Coleoptera	I	[illegible]	-	-	-	-
	II	[illegible]	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Diptera						
Chaoboridae	I	-	-	-	-	-
	II	-	-	-	-	-
	III	0.04	-	0.06	0.04	0.06
	IV	-	-	-	-	-
	V	-	0.03	-	-	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Arthropoda (cont'd)						
Copepoda (cont'd)						
Eucopepoca (cont'd)						
Ergasilus	I	–	–	–	–	–
	II	–	–	–	–	–
	III	–	–	–	–	–
	IV	–	–	–	–	–
	V	–	–	0.25	–	–
Indet. Harpaticoida						
	I	–	–	–	–	–
	II	–	–	–	–	–
	III	0.33	–	–	0.40	–
	IV	–	–	–	–	–
	V	–	–	–	–	–
Immature Cyclopoida						
	I	–	–	–	–	–
	II	0.55	1.26	1.66	3.36	1.38
	III	2.45	4.51	7.57	2.37	5.24
	IV	8.69	2.06	1.75	3.35	2.17
	V	1.49	3.61	1.72	1.90	1.16
Crustacean Nauplii	I	6.95	7.41	5.07	4.83	4.38
	II	0.61	7.39	8.30	26.87	8.18
	III	7.18	7.01	12.47	19.36	19.06
	IV	32.16	7.87	5.26	4.94	5.78
	V	3.22	5.05	7.64	4.27	4.01
Arachnida						
Acarina	I	–	–	–	–	–
	II	–	–	–	–	–
	III	–	–	–	–	–
	IV	0.22	–	–	–	–
	V	–	–	–	–	–
Insecta						
Coleoptera	I	–	–	–	–	–
	II	–	–	–	–	–
	III	–	–	–	–	–
	IV	–	–	–	–	–
	V	–	–	–	–	–
Diptera						
[illegible]	I	–	–	–	–	–
	II	–	–	–	–	–
	III	0.16	–	–	–	–
	IV	0.[illegible]	–	–	–	–
	V	–	–	–	–	0.13

AD-A149 944 WATER QUALITY MANAGEMENT STUDIES POSTIMPOUNDMENT STUDY 5/6
OF RE 'BOB' WOODRU..(U) GEOLOGICAL SURVEY OF ALABAMA
UNIVERSITY M F METTEE ET AL. AUG 84 COESAM/PDEE-84/005
UNCLASSIFIED DACW01-78-C-0122 F/G 8/8 NL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1.1
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3.2
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Table B-4.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Arthropoda (cont'd)						
Copepoda (cont'd)						
Eucopepoda (cont'd)						
Ergasilus	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	0.05	0.24	-	-	-
Indet. Harpaticoida						
	I	-	-	-	-	-
	II	-	-	-	-	-
	III	0.31	0.65	0.30	-	0.34
	IV	-	-	-	-	-
	V	-	-	-	-	-
Immature Cyclopoida						
	I	-	-	-	-	-
	II	1.95	1.00	0.83	1.25	0.99
	III	13.82	4.13	7.52	11.26	8.72
	IV	2.65	3.03	2.64	8.26	3.87
	V	1.92	2.65	3.72	2.61	2.38
Crustacean Nauplii	I	12.20	6.74	6.54	5.94	10.78
	II	9.01	7.53	2.93	1.79	0.38
	III	16.27	11.30	12.24	15.21	31.89
	IV	4.90	12.88	9.11	9.69	23.24
	V	1.82	8.93	4.16	7.39	23.07
Arachnida						
Acarina	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	0.05	-	-	-	-
Insecta						
Coleoptera	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Diptera						
Chaoboridae	I	-	-	-	-	-
	II	-	-	-	0.05	-
	III	-	-	-	-	0.34
	IV	-	-	-	-	0.52
	V	-	0.48	0.07	0.11	0.09

Table B-4.--Continued

Taxa	Run no.	Station number 15	16	17	18
Arthropoda (cont'd)					
Copepoda (cont'd)					
Eucopepoda (cont'd)					
Ergasilus	I	-	-	-	-
	II	-	-	-	-*
	III	-	-	-	-
	IV	-	-	-	-
	V	0.16	0.29	-	-
Indet. Harpaticoida					
	I	-	-	-	-
	II	-	-	-	-
	III	0.42	0.72	0.51	-
	IV	0.17	0.08	-	-
	V	0.08	-	-	-
Immature Cyclopoida					
	I	-	-	-	-
	II	2.27	1.23	1.50	-
	III	4.85	2.51	5.96	32.60
	IV	2.24	2.34	3.03	16.65
	V	3.81	0.57	3.78	-
Crustacean Nauplii	I	7.17	10.07	8.30	-
	II	2.27	4.48	5.83	-
	III	82.37	48.76	47.69	38.03
	IV	39.29	19.83	21.55	54.03
	V	27.01	32.51	14.68	-
Arachnida					
Acarina	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	0.16	-	-	-
Insecta					
Coleoptera	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	0.17	-	-	-
	V	-	-	-	-
Diptera					
Chaoboridae	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	0.52	-	0.06	-
	V	0.08	0.07	-	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 0	1	2	3	4
Arthropoda (cont'd)						
Insecta (cont'd)						
Diptera (cont'd)						
Chironomidae	I	-*	-	-	-	-
	II	-	-	0.05	0.10	0.06
	III	0.45	-	0.06	0.40	0.60
	IV	0.22	-	-	-	-
	V	0.25	-	-	-	-
Simuliidae	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	0.10
Ephemeroptera	I	-	-	-	-	-
	II	0.01	-	-	-	-
	III	0.04	0.03	-	0.04	0.06
	IV	-	-	-	-	-
	V	-	-	-	-	-
Trichoptera	I	-	-	-	-	-
	II	-	0.03	0.02	-	-
	III	0.04	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Tardigrada	I	-	-	-	-	-
	II	0.02	0.06	0.02	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

*Sample not collected

Table B-4.--Continued

Taxa	Run no.	Station number 5	6	7	8	9
Arthropoda (cont'd)						
Insecta (cont'd)						
Diptera (con'td)						
Chironomidae	I	-	-	-	-	-
	II	0.06	0.07	0.26	-	-
	III	0.33	0.10	-	0.40	0.48
	IV	-	0.10	-	-	-
	V	-	-	-	-	-
Simuliidae	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Ephemeroptera	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	0.22	0.10	-	-	-
	V	-	-	-	-	-
Trichoptera	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Tardigrada	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-4.--Continued

Taxa	Run no.	Station number 10	11	12	13	14
Arthropoda (cont'd)						
Insecta (cont'd)						
Diptera (cont'd)						
Chironomidae	I	-	-	-	-	0.05
	II	-	-	-	-	0.02
	III	-	0.22	-	-	-
	IV	-	-	0.24	-	-
	V	-	0.24	-	-	-
Simuliidae	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Ephemeroptera	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	0.28	-
	V	-	-	-	-	-
Trichoptera	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-
Tardigrada	I	-	-	-	-	-
	II	-	-	-	-	-
	III	-	-	-	-	-
	IV	-	-	-	-	-
	V	-	-	-	-	-

Table B-4.--Continued

Taxa	Run no.	Station number 15	16	17	18
Arthropoda (cont'd)					
Insecta (cont'd)					
Diptera (cont'd)					
Chironomidae	I	-	-	-	-
	II	-	-	-	-*
	III	-	-	-	-
	IV	-	-	-	-
	V	-	0.07	-	-
Simuliidae	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Ephemeroptera	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Trichoptera	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-
Tardigrada	I	-	-	-	-
	II	-	-	-	-
	III	-	-	-	-
	IV	-	-	-	-
	V	-	-	-	-

*Sample not collected

Table B-5.--Zooplankton dominants encountered in samples collected from 18 stations above and 1 station below Jones Bluff Lock and Dam, April 10 through September 18, 1978

Station no.	April 10-18, 1978	May 22-29, 1978	July 6-11, 1978
0	Not collected	*Brachionus* sp.	*Bosmina longirostris*
	Not collected	*Epiphanes* sp.	*Trichocera* sp.
1	*Bosmina longirostris*	*Bosmina longirostris*	*Conochiloides* sp.
	Cyclops vernalis	*Keratella* sp.	*Diaptomus* sp.
2	*Bosmina longirostris*	*Conochilus unicornis*	*Synchaeta* sp.
	Cyclops vernalis	*Keratella* sp.	*Conochiloides* sp.
3	*Bosmina longirostris*	*Keratella* sp.	*Bosmina longirostris*
	Cyclops vernalis	*Bosmina longirostris*	*Conochiloides* sp.
4	*Bosmina longirostris*	*Keratella* sp.	*Bosmina longirostris*
	Cyclops vernalis	*Brachionus* sp.	*Conochiloides* sp.
5	*Bosmina longirostris*	*Bosmina longirostris*	*Conochiloides* sp.
	Centropyxis aculeata	*Keratella* sp.	*Bosmina longirostris*
6	*Bosmina longirostris*	*Conochilus unicornis*	*Conochiloides* sp.
	Asplanchna sp.	*Corbicula* sp.	*Synchaeta* nr. *stylata*
7	*Bosmina longirostris*	*Conochilus unicornis*	*Conochiloides* sp.
	Asplanchna sp.	*Synchaeta* sp.	*Conochilus unicornis*
8	*Bosmina longirostris*	*Conichilus unicornis*	*Conochilus unicornis*
	Conochilus unicornis	*Synchaeta* sp.	*Diaphanosoma leuchtenbergianum*
9	*Bosmina longirostris*	*Conochilus unicornis*	*Bosmina longirostris*
	Cyclops vernalis	*Synchaeta* sp.	*Diaphanosoma leuchtenbergianum*
10	*Brachionus* sp.	*Conochilus unicornis*	*Bosmina longirostris*
	Bosmina longirostris	*Synchaeta* sp.	*Conochiloides* sp.
11	*Bosmina longirostris*	*Synchaeta* sp.	*Diaphanosoma leuchtenbergianum*
	Brachionus sp.	*Conochilus unicornis*	*Bosmina longirostris*
12	*Bosmina longirostris*	*Synchaeta* sp.	*Diaphanosoma leuchtenbergianum*
	Brachionus sp.	*Conochilus unicornis*	*Bosmina longirostris*
13	*Bosmina longirostris*	*Synchaeta* sp.	*Bosmina longirostris*
	Brachionus sp.	*Brachionus* sp.	*Conochilus unicornis*
14	*Bosmina longirostris*	*Conochilus unicornis*	*Diaphanosoma leuchtenbergianum*
	Cyclops vernalis	*Synchaeta* sp.	Immature Cyclopoida
15	*Cyclops vernalis*	*Conochilus unicornis*	*Diaphanosoma leuchtenbergianum*
	Bosmina longirostris	*Synchaeta* sp.	*Bosmina longirostris*
16	*Bosmina longirostris*	*Synchaeta* sp.	*Diaphanosoma leuchtenbergianum*
	Cyclops vernalis	*Conochilus unicornis*	*Diaptomus* sp.
17	*Conochilus unicornis*	*Synchaeta* sp.	*Diaphanosoma leuchtenbergianum*
	Bosmina longirostris	*Brachionus* sp.	*Bosmina longirostris*
18	*Bosmina longirostris*	Not collected	Immature Cyclopoida
	Conochilus sp.	Not collected	*Bosmina longirostris*

Table B-5.--Continued

Station no.	August 1-7, 1978	September 12-18, 1978
0	*Brachionus* sp.	*Bosmina longirostris*
	Polyarthra sp.	*Polyarthra* sp.
1	*Polyarthra* sp.	*Conochilus* sp.
	Conochiloides sp.	*Polyarthra* sp.
2	*Polyarthra* sp.	*Diaptomus* sp.
	Brachionus sp.	*Conochilus unicornis*
3	*Platyias* nr. *patulus*	*Conochilus unicornis*
	Conochilus unicornis	*Polyarthra* sp.
4	*Platyias* nr. *patulus*	*Conochilus unicornis*
	Conochiloides sp.	*Synchaeta* sp.
5	*Conochilus unicornis*	*Conochilus unicornis*
	Platyias nr. *patulus*	*Polyarthra* sp.
6	*Conochilus unicornis*	*Conochilus unicornis*
	Platyias nr. *patulus*	*Diaptomus* sp.
7	*Conochilus unicornis*	*Conochilus unicornis*
	Diaphanosoma leuchtenbergianum	*Polyarthra* sp.
8	*Conochilus unicornis*	*Conochilus unicornis*
	Conochiloides sp.	*Polyarthra* sp.
9	*Conochilus unicornis*	*Polyarthra* sp.
	Platyias nr. *patulus*	*Conochilus unicornis*
10	*Bosminopsis deitersi*	*Diaphanosoma leuchtenbergianum*
	Conochilus unicornis	*Conochilus unicornis*
11	*Conochilus unicornis*	*Conochilus unicornis*
	Bosminopsis deitersi	*Diaphanosoma leuchtenbergianum*
12	*Conochiloides* sp.	*Diaphanosoma leuchtenbergianum*
	Bosminopsis deitersi	*Bosmina longirostris*
13	*Bosminopsis deitersi*	*Diaphanosoma leuchtenbergianum*
	Bosmina longirostris	*Bosmina longirostris*
14	*Diaphanosoma leuchtenbergianum*	*Diaphanosoma leuchtenbergianum*
	Bosmina longirostris	*Polyarthra* sp.
15	*Polyarthra* sp.	*Diaphanosoma leuchtenbergianum*
	Diaphanosoma leuchtenbergianum	*Diaptomus* sp.
16	*Diaphanosoma leuchtenbergianum*	*Polyarthra* sp.
	Diaptomus sp. & *Polyarthra*	*Keratella* sp.
17	*Diaphanosoma leuchtenbergianum*	*Diaptomus* sp.
	Bosminopsis	*Diaphanosoma leuchtenbergianum*
18	Immature Cyclopoida	*
	Diaphanosoma leuchtenbergianum	*

*Sample taken and analyzed but no organisms observed.

APPENDIX C

Benthic Data

Table C-1.--Benthic macroinvertebrates (organisms per square meter) collected in Ponar dredge samples taken at 18 stations above and 1 station below Jones Bluff Lock and Dam, April 10 through August 7, 1978

Taxa	Run no.	0 L	0 M	0 R	1 L	1 M	1 R	2 L	2 M	2 R
Porifera										
Haplosclerina										
Spongillidae										
Spongilla	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	19	-	-	-	-	-	-	-
Coelenterata										
Hydroida										
Hydridae										
Hydra	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Clavidae										
Cordylophora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Platyhelminthes										
Turbellaria										
Tricladida										
Planariidae										
Dugesia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Nemertea										
Prostoma	I	-	-	-	-	-	-	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Rotifera										
Flosculariacea										
Flosculariidae										
Sinantherina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Nematoda										
Phasmidia	I	-	-	-	-	-	-	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Apasmidia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Run number I=April 10-18, 1978
Run number II=May 22-29, 1978
Run number III=July 6-11, 1978 (no samples)
Run number IV=August 1-7, 1978
Run number V=September 12-18, 1978 (no samples)

L=Sample taken from left bank looking downstream
M=Midstream sample
R=Sample taken from right bank looking downstream

Table C-1.--Continued

Taxa	Run no.	Station number 3 L	3 M	3 R	4 L	4 M	4 R	5 L	5 M	5 R
Porifera										
Haplosclerina										
Spongillidae										
Spongilla	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Coelenterata										
Hydroida										
Hydridae										
Hydra	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Clavidae										
Cordylophora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Platyhelminthes										
Turbellaria										
Tricladida										
Planariidae										
Dugesia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Nemertea										
Prostoma	I	-	19	-	-	19	19	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Rotifera										
Flosculariacea										
Flosculariidae										
Sinantherina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	19	-	-	-
Nematoda										
Phasmidia	I	-	-	-	19	-	-	-	-	-
	II	-	-	-	-	-	-	-	19	-
	IV	-	-	-	-	-	-	-	-	-
Apasmidia	I	-	-	-	19	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 6 L	6 M	6 R	7 L	7 M	7 R	8 L	8 M	8 R
Porifera										
Haplosclerina										
Spongillidae										
Spongilla	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Coelenterata										
Hydroida										
Hydridae										
Hydra	I	-	-	-	-	-	-	-	-	-
	II	-	-	19	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Clavidae										
Cordylophora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Platyhelminthes										
Turbellaria										
Tricladida										
Planariidae										
Dugesia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Nemertea										
Prostoma	I	-	19	-	-	-	-	-	19	-
	II	152	38	19	-	19	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Rotifera										
Flosculariacea										
Flosculariidae										
Sinantherina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Nematoda										
Phasmidia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Apasmidia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	9 L	9 M	9 R	10 L	10 M	10 R	11 L	11 M	11 R
Porifera										
Haplosclerina										
Spongillidae										
Spongilla	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Coelenterata										
Hydroida										
Hydridae										
Hydra	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Clavidae										
Cordylophora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	19	-	-
Platyhelminthes										
Turbellaria										
Tricladida										
Planariidae										
Dugesia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Nemertea										
Prostoma	I	-	-	19	19	-	-	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Rotifera										
Flosculariacea										
Flosculariidae										
Sinantherina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Nematoda										
Phasmidia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Apasmidia	I	-	-	-	19	-	-	57	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 12 L	12 M	12 R	13 L	13 M	13 R	14 L	14 M	14 R
Porifera										
Haplosclerina										
Spongillidae										
Spongilla	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Coelenterata										
Hydroida										
Hydridae										
Hydra	I	-	-	-	-	-	-	-	19	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Clavidae										
Cordylophora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	-	-	-	-
Platyhelminthes										
Turbellaria										
Tricladida										
Planariidae										
Dugesia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Nemertea										
Prostoma	I	19	19	-	19	-	19	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Rotifera										
Flosculariacea										
Flosculariidae										
Sinantherina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Nematoda										
Phasmidia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	19	-	-
Apasmidia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 15 L	15 M	15 R	16 L	16 M	16 R	17 L	17 M	17 R
Porifera										
Haplosclerina										
Spongillidae										
Spongilla	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Coelenterata										
Hydroida										
Hydridae										
Hydra	I	-	-	38	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Clavidae										
Cordylophora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	19	-	-	-	-
	IV	-	-	-	19	-	-	-	-	-
Platyhelminthes										
Turbellaria										
Tricladida										
Planariidae										
Dugesia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Nemertea										
Prostoma	I	19	57	-	-	-	-	-	-	57
	II	76	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Rotifera										
Flosculariacea										
Flosculariidae										
Sinantherina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	19	-	19	-	-	-	-	-
Nematoda										
Phasmidia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	-	-	-	-
Apasmidia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 18 L	M	R
Porifera				
Haplosclerina				
Spongillidae				
Spongilla	I	-	-	-
	II	19	-	-
	IV	-	19	-
Coelenterata				
Hydroida				
Hydridae				
Hydra	I	-	-	-
	II	-	-	-
	IV	-	-	-
Clavidae				
Cordylophora	I	19	-	-
	II	-	-	-
	IV	-	-	-
Platyhelminthes				
Turbellaria				
Tricladida				
Planariidae				
Dugesia	I	-	-	-
	II	95	-	-
	IV	-	-	-
Nemertea				
Prostoma	I	-	-	-
	II	-	-	-
	IV	-	-	-
Rotifera				
Flosculariacea				
Flosculariidae				
Sinantherina	I	-	-	-
	II	-	-	-
	IV	-	-	-
Nematoda				
Phasmidia	I	-	-	-
	II	-	-	-
	IV	-	-	-
Apasmidia	I	19	-	-
	II	-	-	-
	IV	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 0 L	0 M	0 R	1 L	1 M	1 R	2 L	2 M	2 R
Bryozoa										
Gymnolaemata										
Paludicellidae										
Pottsiella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	19	-	-	-	-	-
	IV	-	19	-	-	-	-	-	-	-
Endoprocta										
Urnatella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Annelida										
Oligochaeta										
Haplotaxida										
Aeolosomatidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Naididae	I	-	-	-	-	-	-	95	-	-
	II	-	-	-	19	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Haplotaxidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tubificidae	I	-	-	-	-	-	19	19	-	76
	II	38	-	-	247	-	-	456	95	57
	IV	209	-	133	38	-	-	266	19	152
Lumbriculida										
Lumbriculidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hirundinea										
Rhynchobdellida										
Glossiphoniidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	57	-	-	-	-
Arthropoda										
Crustacea										
Cladocera										
Sididae										
Diaphanosoma	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Latona	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 3			4			5		
		L	M	R	L	M	R	L	M	R
Bryozoa										
Gymnolaemata										
Paludicellidae										
Pottsiella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Endoprocta										
Urnatella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Annelida										
Oligochaeta										
Haplotaxida										
Aeolosomatidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Naididae	I	-	-	-	-	-	38	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Haplotaxidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tubificidae	I	171	57	-	228	171	151	19	38	247
	II	76	133	380	38	95	19	494	76	494
	IV	-	209	-	-	114	171	779	266	95
Lumbriculida										
Lumbriculidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hirudinea										
Rhynchobdellida										
Glossiphaniidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Arthropoda										
Crustacea										
Cladocera										
Sididae										
Diaphanosoma	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	19	-	-	-	-	-	-
Latona	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	6 L	6 M	6 R	7 L	7 M	7 R	8 L	8 M	8 R
Bryozoa										
Gymnolaemata										
Paludicellidae										
Pottsiella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	-	-	-	-
Endoprocta										
Urnatella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	19	-	-
	IV	-	-	-	-	-	-	-	-	-
Annelida										
Oligochaeta										
Haplotaxida										
Aeolosomatidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Naididae	I	-	-	-	-	-	19	-	-	-
	II	19	-	-	76	19	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Haplotaxidae	I	-	-	-	-	-	-	-	-	19
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tubificidae	I	627	38	-	646	76	19	19	57	665
	II	703	76	57	684	361	1463	589	589	741
	IV	103	190	114	399	133	133	288	209	494
Lumbriculida										
Lumbriculidae	I	-	-	-	-	-	19	-	-	19
	II	-	-	-	19	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hirudinea										
Rhynchobdellida										
Glossiphoniidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	.	-	-
Arthropoda										
Crustacea										
Cladocera										
Sididae										
Diaphanosoma	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Latona	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	9 L	9 M	9 R	10 L	10 M	10 R	11 L	11 M	11 R
		Station number								
Bryozoa										
Gymnolaemata										
Paludicellidae										
Pottsiella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Endoprocta										
Urnatella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Annelida										
Oligochaeta										
Haplotaxida										
Aeolosomatidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Naididae	I	-	-	-	-	-	19	-	-	-
	II	-	-	-	19	-	-	19	-	-
	IV	-	-	-	-	-	-	-	-	-
Haplotaxidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tubificidae	I	171	19	76	38	-	76	209	152	228
	II	1083	-	532	209	304	342	456	836	1159
	IV	304	171	817	95	19	152	152	19	114
Lumbriculida										
Lumbriculidae	I	-	-	-	-	95	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hirudinea										
Rhynchobdellida										
Glossiphoniidae	I	-	-	-	-	-	-	-	38	-
	II	-	-	-	-	-	-	-	38	-
	IV	-	-	-	-	-	-	-	-	-
Arthropoda										
Crustacea										
Cladocera										
Sididae										
Diaphanosoma	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	19	-
	IV	-	-	-	-	-	-	-	-	-
Latona	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19

Table C-1.--Continued

Taxa	Run no.	Station number 12 L	12 M	12 R	13 L	13 M	13 R	14 L	14 M	14 R
Bryozoa										
Gymnolaemata										
Paludicellidae										
Pottsiella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	19	-	-	-
	IV	19	-	-	-	-	-	-	-	-
Endoprocta										
Urnatella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Annelida										
Oligochaeta										
Haplotaxida										
Aeolosomatidae	I	-	19	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Naididae	I	-	-	-	38	76	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Haplotaxidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tubificidae	I	399	152	361	247	19	171	133		304
	II	1311	76	1083	1763	152	-	1083	1007	133
	IV	646	228	912	741	57	152	209	133	266
Lumbriculida										
Lumbriculidae	I	-	-	-	-	-	-	-	-	19
	II	-	-	38	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hirudinea										
Rhynchobdellida										
Glossiphoniidae	I	-	-	-	19	-	-	-	-	-
	II	19	-	-	-	19	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Arthropoda										
Crustacea										
Cladocera										
Sididae										
Diaphanosoma	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Latona	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 15 L	15 M	15 R	16 L	16 M	16 R	17 L	17 M	17 R
Bryozoa										
Gymnolaemata										
Paludicellidae										
Pottsiella	I	-	-	-	-	-	-	-	-	-
	II	-	-	19	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Endoprocta										
Urnatella	I	-	-	-	-	-	-	-	-	-
	II	-	-	19	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Annelida										
Oligochaeta										
Haplotaxida										
Aeolosomatidae	I	-	-	-	-	-	-	-	19	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Naididae	I	-	19	-	-	-	-	-	-	-
	II	38	-	-	-	-	-	-	-	-
	IV	-	-	19	-	-	-	-	-	-
Haplotaxidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tubificidae	I	266	-	-	57	19	57	114	209	19
	II	684	1083	76	152	57	76	589	171	513
	IV	171	228	19	399	19	342	361	247	589
Lumbriculida										
Lumbriculidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	19	-	-	-	-	-
	IV	19	-	-	-	-	-	-	-	-
Hirudinea										
Rhynchobdellida										
Glossiphoniidae	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	38	-	-	-	-
Arthropoda										
Crustacea										
Cladocera										
Sididae										
Diaphanosoma	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Latona	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 18 L	M	R
Bryozoa				
Gymnolaemata				
Paludicellidae				
Pottsiella	I	-	-	-
	II	19	-	-
	IV	-	-	-
Endoprocta				
Urnatella	I	-	-	-
	II	19	-	-
	IV	-	-	-
Annelida				
Oligochaeta				
Haplotaxida				
Aeolosomatidae	I	-	-	-
	II	-	-	-
	IV	-	-	-
Naididae	I	-	-	-
	II	-	-	38
	IV	-	-	-
Hyplotaxidae	I	-	-	-
	II	-	-	-
	IV	-	-	-
Tubificidae	I	38	-	-
	II	-	-	-
	IV	19	-	19
Lumbriculida				
Lumbriculidae	I	-	-	-
	II	-	-	-
	IV	-	-	-
Hirudinea				
Rhynchobdellida				
Glossiphoniidae	I	-	-	-
	II	-	-	-
	IV	-	-	-
Arthropoda				
Crustacea				
Cladocera				
Sididae				
Diaphanosoma	I	-	-	-
	II	-	-	-
	IV	-	-	-
Latona	I	-	-	-
	II	-	-	-
	IV	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station 0 L	Station 0 M	Station 0 R	Station 1 L	Station 1 M	Station 1 R	Station 2 L	Station 2 M	Station 2 R
Arthropoda (cont'd)										
Crustacea (cont'd)										
Sididae (cont'd)										
Latonopsis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Holopedidae										
Holopedium	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Daphnidae										
Ceriodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Moinidae										
Moina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Moinodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Leptodoridae										
Leptodora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Copepoda										
Cyclopoida										
Cyclops	I	-	-	19	-	19	19	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Calanoida										
Epischura	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ostracoda										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Gammaridae										
Gammarus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 3 L	3 M	3 R	4 L	4 M	4 R	5 L	5 M	5 R
Arthropoda (cont'd)										
Crustacea (cont'd)										
Sididae (cont'd)										
Latonopsis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Holopedidae										
Holopedium	I	-	-	-	-	19	-	-	-	-
	II	-	-	-	19	-	-	-	-	-
	IV	-	-	-	-	-	-	38	-	228
Daphnidae										
Ceriodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	114
Moinidae										
Moina	I	-	-	-	-	-	-	-	19	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	190
Moinodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	76
Leptodoridae										
Leptodora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Copepoda										
Cyclopoida										
Cyclops	I	19	-	-	-	-	19	-	-	-
	II	-	-	-	19	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Calanoida										
Epischura	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ostracoda										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Gammaridae										
Gammarus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 6			7			8		
		L	M	R	L	M	R	L	M	R
Arthropoda (cont'd)										
Crustacea (cont'd)										
Sididae (cont'd)										
Latonopsis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	38	-	-
	IV	-	-	-	-	-	-	-	-	-
Holopedidae										
Holopedium	I	-	-	-	-	-	-	-	-	-
	II	-	19	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Daphnidae										
Ceriodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Moinidae										
Moina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Moinodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Leptodoridae										
Leptodora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Copepoda										
Cyclopoida										
Cyclops	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Calanoida										
Epischura	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ostracoda										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Gammaridae										
Gammarus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	9 L	9 M	9 R	10 L	10 M	10 R	11 L	11 M	11 R
		Station number								
Arthropoda (cont'd)										
Crustacea (cont'd)										
Sididae (cont'd)										
Latonopsis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Holopedidae										
Holopedium	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Daphnidae										
Ceriodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Moinidae										
Moina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Moinodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Leptodoridae										
Leptodora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Copepoda										
Cyclopoida										
Cyclops	I	-	-	-	-	-	-	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Calanoida										
Epischura	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ostracoda										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Gammaridae										
Gammarus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 12 L	12 M	12 R	13 L	13 M	13 R	14 L	14 M	14 R
Arthropoda (cont'd)										
Crustacea (cont'd)										
Sididae (cont'd)										
Latonopsis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Holopedidae										
Holopedium	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Daphnidae										
Ceriodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Moinidae										
Moina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Moinodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Leptodoridae										
Leptodora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Copepoda										
Cyclopoida										
Cyclops	I	-	-	-	-	-	19	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	19	-	-	-
Calanoida										
Epischura	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ostracoda										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Gammaridae										
Gammarus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	19	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 15 L	15 M	15 R	16 L	16 M	16 R	17 L	17 M	17 R
Arthropoda (cont'd)										
Crustacea (cont'd)										
Sididae (cont'd)										
Latonopsis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Holopedidae										
Holopedium	I	-	-	-	-	-	-	-	19	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	19	-	-	-	-
Daphnidae										
Ceriodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Moinidae										
Moina	I	-	-	19	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Moinodaphnia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Leptodoridae										
Leptodora	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	38	-	-	-	-	-	-	-	-
Copepoda										
Cyclopoida										
Cyclops	I	19	19	19	-	19	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	19	-	-	-	-	-	19
Calanoida										
Epischura	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	95	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ostracoda										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Gammaridae										
Gammarus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 18 L	M	R
Arthropoda (cont'd)				
Crustacea (cont'd)				
Sididae (cont'd)				
Latonopsis	I	-	-	-
	II	-	-	-
	IV	-	-	-
Holopedidae				
Holopedium	I	-	-	-
	II	-	-	-
	IV	-	-	-
Daphnidae				
Ceriodaphnia	I	-	-	-
	II	-	-	-
	IV	-	-	-
Moinidae				
Moina	I	-	-	-
	II	-	-	-
	IV	-	-	-
Moinodaphnia	I	-	-	-
	II	-	-	-
	IV	-	-	-
Leptodoridae				
Leptodora	I	-	-	-
	II	-	-	-
	IV	-	-	-
Copepoda				
Cyclopoida				
Cyclops	I	-	-	-
	II	-	-	-
	IV	-	-	-
Calanoida				
Epischura	I	-	-	-
	II	-	-	-
	IV	-	-	-
Ostracoda				
Indet. genus	I	-	-	-
	II	-	-	-
	IV	-	-	-
Gammaridae				
Gammarus	I	-	-	-
	II	-	-	-
	IV	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 0			1			2		
		L	M	R	L	M	R	L	M	R
Arthropoda (cont'd)										
Arachnida										
Acarina										
Lebertiidae										
Lebertia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Unionicolidae										
Unionicola	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Insecta										
Ephemeroptera										
Baetidae										
Centroptilum	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Heptageniidae										
Heptagenia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stenonema	I	114	-	-	19	-	-	-	19	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	19	-	-	38	-
Ephemerellidae										
Ephemerella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tricorythidae										
Tricorythodes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	38	-	-	-
	IV	-	-	-	133	57	-	-	-	-
Caenidae										
Caenis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	19	-	-	-	19	171	-
Ephemeridae										
Hexagenia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Polymitarcyidae										
Tortopus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 3 L	3 M	3 R	4 L	4 M	4 R	5 L	5 M	5 R
Arthropoda (cont'd)										
Arachnida										
Acarina										
Lebertiidae										
Lebertia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	19	-
Unionicolidae										
Unionicola	I	-	-	19	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Insecta										
Ephemeroptera										
Baetidae										
Centroptilum	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Heptageniidae										
Heptagenia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stenonema	I	-	-	-	-	-	19	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ephemerellidae										
Ephemerella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tricorythidae										
Tricorythodes										
	I	-	-	-	-	-	-	-	-	-
	II	114	-	-	-	38	76	-	-	-
	IV	-	-	19	-	-	-	19	-	38
Caenidae										
Caenis	I	-	-	-	-	-	19	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	76	-	19	-	38
Ephemeridae										
Hexagenia	I	-	-	-	-	-	-	-	-	-
	II	-	-	19	-	-	-	-	-	-
	IV	-	-	-	-	-	38	38	-	38
Polymitarcyidae										
Tortopus	I	-	-	-	-	-	-	-	-	-
	II	19	-	-	-	19	19	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	6 L	6 M	6 R	7 L	7 M	7 R	8 L	8 M	8 R
Arthropoda (cont'd)										
Arachnida										
Acarina										
Lebertiidae										
Lebertia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-		-	-	-
	IV	-	-	-	-	-	-	-	-	-
Unionicolidae										
Unionicola	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Insecta										
Ephemeroptera										
Baetidae										
Centroptilum	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Heptageniidae										
Heptagenia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stenonema	I	-	-	-	-	-	-	-	38	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ephemerellidae										
Ephemerella	I	-	19	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tricorythidae										
Tricorythodes										
	I	-	-	-	-	-	-	-	-	-
	II	19	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	19	-	-
Caenidae										
Caenis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ephemeridae										
Hexagenia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	19	76	-	-	-	-	-
Polymitarcyidae										
Tortopus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	9 L	9 M	9 R	10 L	10 M	10 R	11 L	11 M	11 R
		Station number								
Arthropoda (cont'd)										
Arachnida										
Acarina										
Lebertiidae										
Lebertia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Unionicolidae										
Unionicola	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	38	-	-	19
Insecta										
Ephemeroptera										
Baetidae										
Centroptilum	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	19	-	-	-	-	-	-
Heptageniidae										
Heptagenia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stenonema	I	-	-	-	-	-	-	-	-	114
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ephemerellidae										
Ephemerella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tricorythidae										
Tricorythodes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	19	-	-	-	-	-	-
Caenidae										
Caenis	I	-	-	-	19	-	-	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ephemeridae										
Hexagenia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	19	-
Polymitarcyidae										
Tortopus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 12 L	12 M	12 R	13 L	13 M	13 R	14 L	14 M	14 R
Arthropoda (cont'd)										
Arachnida										
Acarina										
Lebertiidae										
Lebertia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Unionicolidae										
Unionicola	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	-	-	19	19
Insecta										
Ephemeroptera										
Baetidae										
Centroptilum	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	38	-	-	-	-	-	19
Heptageniidae										
Heptagenia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stenonema	I	-	-	-	-	19	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ephemerellidae										
Ephemerella	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tricorythidae										
Tricorythodes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Caenidae										
Caenis	I	-	-	-	76	-	38	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ephemeridae										
Hexagenia	I	-	-	-	19	-	304	190	-	-
	II	38	-	-	19	-	361	266	-	-
	IV	-	-	-	-	-	-	95	171	-
Polymitarcyidae										
Tortopus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	15 L	15 M	15 R	16 L	16 M	16 R	17 L	17 M	17 R
		Station number								
Arthropoda (cont'd)										
Arachnida										
Acarina										
Lebertiidae										
Lebertia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Unionicolidae										
Unionicola	I	-	-	-	-	19	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Insecta										
Ephemeroptera										
Baetidae										
Centroptilum	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	19	-	-	-	-	-
Heptageniidae										
Heptagenia	I	-	-	-	133	19	57	38	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stenonema	I	-	19	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ephemerellidae										
Ephemerella	I	-	-	-	-	-	-	-	-	-
	II	-	19	-	-	19	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tricorythidae										
Tricorythodes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Caenidae										
Caenis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	-	-	-	-
Ephemeridae										
Hexagenia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	57	-	-
	IV	456	-	-	-	19	38	76	57	-
Polymitarcyidae										
Tortopus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 18 L	M	R
Arthropoda (cont'd)				
Arachnida				
Acarina				
Lebertiidae				
Lebertia	I	-	-	-
	II	-	-	-
	IV	-	-	-
Unionicolidae				
Unionicola	I	-	-	-
	II	-	-	-
	IV	-	-	-
Insecta				
Ephemeroptera				
Baetidae				
Centroptilum	I	-	-	-
	II	-	-	-
	IV	-	-	-
Heptageniidae				
Heptagenia	I	-	-	-
	II	-	-	-
	IV	-	-	-
Stenonema	I	-	-	-
	II	-	-	-
	IV	-	-	-
Ephemerellidae				
Ephemerella	I	-	-	-
	II	-	-	-
	IV	-	-	-
Tricorythidae				
Tricorythodes				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Caenidae				
Caenis	I	-	-	-
	II	-	-	-
	IV	-	-	-
Ephemeridae				
Hexagenia	I	-	38	-
	II	-	-	-
	IV	-	-	-
Polymitarcyidae				
Tortopus	I	-	-	-
	II	-	-	19
	IV	-	-	-

Table C-1.--Continued

Taxa	Run no.	0 L	0 M	0 R	1 L	1 M	1 R	2 L	2 M	2 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Odonata										
Anisoptera										
Gomphidae										
Agrigomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Dromogomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Gomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	19
	IV	-	-	-	-	-	-	-	-	-
Corduliidae										
Neurocordulia										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Zygoptera										
Coenagrionidae										
Argia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hemiptera										
Corixidae										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Coleoptera										
Hydrophilidae										
Berosus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Trichoptera										
Polycentropodidae										
Cyrnellus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	19	19	-	-	-	-
Hydropsychidae										
Cheumatopsyche										
	I	76	19	-	-	-	-	-	76	-
	II	-	-	-	-	76	38	-	-	19
	IV	-	-	-	-	-	-	-	-	-
Hydropsyche	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 3 L	3 M	3 R	4 L	4 M	4 R	5 L	5 M	5 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Odonata										
Anisoptera										
Gomphidae										
Agrigomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Dromogomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Gomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Corduliidae										
Neurocordulia										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Zygoptera										
Coenagrionidae										
Argia	I	-	-	-	-	-	-	-	-	19
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Hemiptera										
Corixidae										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Coleoptera										
Hydrophilidae										
Berosus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Trichoptera										
Polycentropodidae										
Cyrnellus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	19	19	-	-
Hydropsychidae										
Cheumatopsyche										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	38	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hydropsyche	I	-	19	-	-	19	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 6 L	6 M	6 R	7 L	7 M	7 R	8 L	8 M	8 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Odonata										
Anisoptera										
Gomphidae										
Agrigomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Dromogomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Gomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Corduliidae										
Neurocordulia										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Zygoptera										
Coenagrionidae										
Argia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Hemiptera										
Corixidae										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Coleoptera										
Hydrophilidae										
Berosus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Trichoptera										
Polycentropodidae										
Cyrnellus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	38	-
Hydropsychidae										
Cheumatopsyche										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hydropsyche	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	9 L	9 M	9 R	10 L	10 M	10 R	11 L	11 M	11 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Odonata										
Anisoptera										
Gomphidae										
Agrigomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Dromogomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Gomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Corduliidae										
Neurocordulia										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Zygoptera										
Coenagrionidae										
Argia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hemiptera										
Corixidae										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Coleoptera										
Hydrophilidae										
Berosus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Trichoptera										
Polycentropodidae										
Cyrnellus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	38	-	-	-	-	-	-	38
Hydropsychidae										
Cheumatopsyche										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hydropsyche	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 12 L	12 M	12 R	13 L	13 M	13 R	14 L	14 M	14 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Odonata										
Anisoptera										
Gomphidae										
Agrigomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Dromogomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	-	-	-	-
Gomphus	I	-	-	-	19	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Corduliidae										
Neurocordulia										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	-	-	-	-
Zygoptera										
Coenagrionidae										
Argia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Hemiptera										
Corixidae										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Coleoptera										
Hydrophilidae										
Berosus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Trichoptera										
Polycentropodidae										
Cyrnellus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	38	38	19	-	-	-	-	-	-
Hydropsychidae										
Cheumatopsyche										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hydropsyche	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 15 L	15 M	15 R	16 L	16 M	16 R	17 L	17 M	17 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Odonata										
Anisoptera										
Gomphidae										
Agrigomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Dromogomphus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Gomphus	I	-	-	-	-	-	-	-	-	19
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Corduliidae										
Neurocordulia										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Zygoptera										
Coenagrionidae										
Argia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hemiptera										
Corixidae										
Indet. genus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	19	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Coleoptera										
Hydrophilidae										
Berosus	I	-	-	-	-	-	-	-	-	-
	II	-	19	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Trichoptera										
Polycentropodidae										
Cyrnellus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	38	-	95	-	-	38	19
Hydropsychidae										
Cheumatopsyche										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hydropsyche	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 18 L	M	R
Arthropoda (cont'd)				
Insecta (cont'd)				
Odonata				
Anisoptera				
Gomphidae				
Agrigomphus	I	-	-	-
	II	-	-	-
	IV	-	-	-
Dromogomphus	I	-	-	-
	II	-	-	-
	IV	-	-	-
Gomphus	I	-	-	-
	II	-	-	-
	IV	-	-	-
Corduliidae				
Neurocordulia				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Zygoptera				
Coenagrionidae				
Argia	I	-	-	-
	[illegible]	-	-	-
	[illegible]	-	-	-
Hemiptera				
Corixidae				
Indet. genus	I	-	-	-
	II	-	-	-
	IV	-	-	-
Coleoptera				
Hydrophilidae				
Berosus	I	-	-	-
	II	-	-	-
	IV	-	-	-
Trichoptera				
Polycentropodidae				
Cyrnellus	I	-	-	-
	II	-	-	-
	IV	-	-	-
Hydropsychidae				
Cheumatopsyche				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Hydropsyche	I	-	-	-
	II	-	-	-
	IV	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station 0 L	0 M	0 R	1 L	1 M	1 R	2 L	2 M	2 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Trichoptera (cont'd)										
Hydroptilidae										
Ochrotrichia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Leptoceridae										
Ceraclea	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Oecetis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Diptera										
Chaoboridae										
Chaoborus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	-	-	57	-
Ceratopogonidae										
Atrichopogon	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Culicoides	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Palpomyia	I	-	-	19	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	57	-	-
Chironomidae										
Tanypodinae										
Ablabesmyia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	38	19	-	-	-	-
Coelotanypus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Procladius	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tanypus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	3 L	3 M	3 R	4 L	4 M	4 R	5 L	5 M	5 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Trichoptera (cont'd)										
Hydroptilidae										
Ochrotrichia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	19	-	-	-
	IV	-	-	-	-	-	-	19	-	-
Leptoceridae										
Ceraclea	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Oecetis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Diptera										
Chaoboridae										
Chaoborus	I	-	-	19	-	-	-	-	-	-
	II	-	-	19	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Ceratopogonidae										
Atrichopogon	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Culicoides	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Palpomyia	I	-	-	38	-	-	38	-	-	19
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	114	19	-	19
Chironomidae										
Tanypodinae										
Ablabesmyia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	19	-	-
	IV	-	-	-	-	-	-	76	-	114
Coelotanypus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	57	-	-	-
Procladius	I	-	-	-	-	-	19	-	-	-
	II	-	-	-	-	-	-	19	-	-
	IV	-	-	-	-	19	57	-	-	-
Tanypus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	6 L	6 M	6 R	7 L	7 M	7 R	8 L	8 M	8 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Trichoptera (cont'd)										
Hydroptilidae										
Ochrotrichia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Leptoceridae										
Ceraclea	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Oecetis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	19	-	-	-	-
Diptera										
Chaoboridae										
Chaoborus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	19	-	-	38	-
Ceratopogonidae										
Atrichopogon	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Culicoides	I	-	-	-	-	-	-	-	-	-
	II	19	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Palpomyia	I	38	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	19	19	-	19
Chironomidae										
Tanypodinae										
Ablabesmyia	I	-	-	-	-	19	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	19	-	-	19	-	38	-	-
Coelotanypus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	19	-	-	19	57	-
Procladius	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	133	-	-
	IV	-	-	-	19	152	-	-	-	19
Tanypus	I	-	-	-	-	19	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	9 L	9 M	9 R	10 L	10 M	10 R	11 L	11 M	11 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Trichoptera (cont'd)										
Hydroptilidae										
Ochrotrichia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	19	-	-	-
Leptoceridae										
Ceraclea	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Oecetis	I	-	-	-	19	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	19	-	-	-	-
Diptera										
Chaoboridae										
Chaoborus	I	-	-	19	-	-	-	-	-	-
	II	-	-	-	-	19	-	-	-	-
	IV	19	57	-	-	133	-	19	-	-
Ceratopogonidae										
Atrichopogon	I	-	-	-	-	-	-	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Culicoides	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	19	-	-	-
Palpomyia	I	57	-	-	-	-	38	38	-	-
	II	-	-	-	19	-	-	-	-	-
	IV	-	-	-	-	-	152	-	-	-
Chironomidae										
Tanypodinae										
Ablabesmyia	I	-	-	-	-	-	-	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	19	57	-	-	38	19	-	38
Coelotanypus	I	-	-	-	-	-	57	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	171	57	-	19	-
Procladius	I	-	-	-	-	-	-	-	-	-
	II	-	-	19	-	133	-	-	-	-
	IV	-	-	38	-	133	-	-	-	-
Tanypus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	12 L	12 M	12 R	13 L	13 M	13 R	14 L	14 M	14 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Trichoptera (cont'd)										
Hydroptilidae										
Ochrotrichia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Leptoceridae										
Ceraclea	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Oecetis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	-	-	-	-
Diptera										
Chaoboridae										
Chaoborus	I	-	-	-	-	-	-	19	19	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	19	-	-	38	-	-	-	-
Ceratopogonidae										
Atrichopogon	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Culicoides	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Palpomyia	I	19	19	133	76	-	133	57	-	19
	II	-	-	-	-	-	-	-	-	-
	IV	38	-	76	57	-	19	76	114	-
Chironomidae										
Tanypodinae										
Ablabesmyia	I	-	-	-	-	-	57	-	-	-
	II	19	-	-	-	-	57	-	-	-
	IV	-	-	19	-	19	-	95	19	-
Coelotanypus	I	-	-	-	-	-	95	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	57	95	-	19	-	95	57	57	-
Procladius	I	-	-	-	-	-	-	38	-	-
	II	-	-	-	-	-	57	-	-	19
	IV	-	57	-	-	-	-	76	-	-
Tanypus	I	-	-	-	-	-	19	-	-	19
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	38	-	-

Table C-1.--Continued

Taxa	Run no.	15 L	15 M	15 R	16 L	16 M	16 R	17 L	17 M	17 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Trichoptera (cont'd)										
Hydroptilidae										
Ochrotrichia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	76	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Leptoceridae										
Ceraclea	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Oecetis	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	19	-	-	-
Diptera										
Chaoboridae										
Chaoborus	I	-	-	-	-	-	-	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	19	19	-	-	-	57	133	-
Ceratopogonidae										
Atrichopogon	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Culicoides	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Palpomyia	I	-	-	-	57	19	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	114	-	19	-	95	-	-	114
Chironomidae										
Tanypodinae										
Ablabesmyia	I	-	-	-	-	19	-	38	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	114	19	-	-	19	19	19	-	-
Coelotanypus	I	19	-	-	-	-	-	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	133	57	-	19	19	57	57	228	38
Procladius	I	38	-	-	-	-	-	-	-	19
	II	-	-	-	-	-	-	-	-	-
	IV	57	-	-	114	19	-	171	57	19
Tanypus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 18 L	M	R
Arthropoda (cont'd)				
Insecta (cont'd)				
Trichoptera (cont'd)				
Hydroptilidae				
Ochrotrichia	I	-	-	-
	II	-	-	-
	IV	-	-	19
Leptoceridae				
Ceraclea	I	-	19	-
	II	-	-	-
	IV	-	-	-
Oecetis	I	-	-	-
	II	-	-	-
	IV	-	-	-
Diptera				
Chaoboridae				
Chaoborus	I	-	-	-
	II	-	-	-
	IV	-	-	19
Ceratopogonidae				
Atrichopogon	I	-	-	-
	II	-	-	-
	IV	-	-	-
Culicoides	I	-	-	-
	II	-	-	-
	IV	-	-	-
Palpomyia	I	-	-	-
	II	-	-	-
	IV	-	-	-
Chironomidae				
Tanypodinae				
Ablabesmyia	I	-	-	-
	II	-	-	-
	IV	-	-	-
Coelotanypus	I	-	-	-
	II	-	-	-
	IV	-	19	-
Procladius	I	-	-	-
	II	-	-	-
	IV	-	-	-
Tanypus	I	-	-	-
	II	-	-	-
	IV	-	-	-

Table C-1.--Continued

Taxa	Run no.	0 L	0 M	0 R	1 L	1 M	1 R	2 L	2 M	2 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Orthocladiinae										
Cricotopus	I	-	-	-	-	-	38	-	-	19
	II	-	-	-	-	-	19	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Epoicocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Heterotrissocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Psectrocladius										
	I	-	-	-	-	-	-	-	-	19
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	19	-	-	-	-	-
Chironominae										
Chironomini										
Chironomus	I	-	-	57	-	-	-	-	-	-
	II	-	-	-	-	-	-	38	-	-
	IV	-	-	-	38	-	-	-	-	-
Demicryptochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	38	38	-	-	-	-
Cryptochironomus										
	I	-	-	-	-	-	-	-	-	57
	II	-	-	-	-	-	-	-	-	-
	IV	38	-	-	19	-	38	95	-	19
Cryptocladopelma										
	I	-	-	38	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Cryptotendipes										
	I	-	-	19	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Dicrotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	38	38	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	3 L	3 M	3 R	4 L	4 M	4 R	5 L	5 M	5 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Orthocladiinae										
Cricotopus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Epoicocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Heterotrissocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Psectrocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	19	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Chironominae										
Chironomini										
Chironomus	I	-	-	-	-	-	19	-	-	-
	II	-	-	-	-	-	-	19	-	19
	IV	-	-	-	-	-	-	-	-	-
Demicryptochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Cryptochironomus										
	I	-	-	-	19	-	-	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	57	-	57	19	57	-
Cryptocladopelma										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Cryptotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Microtendipes										
	I	-	-	-	-	-	19	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Station number headers: 3, 4, 5 (L, M, R)

Table C-1.--Continued

Taxa	Run no.	Station number 6 L	6 M	6 R	7 L	7 M	7 R	8 L	8 M	8 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Orthocladiinae										
Cricotopus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	114	-	-
Epoicocladius										
	I	-	-	-	-	19	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Heterotrissocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Psectrocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Chironominae										
Chironomini										
Chironomus	I	19	-	-	-	-	-	-	-	19
	II	-	-	-	-	-	114	38	-	76
	IV	-	-	-	-	-	-	-	-	-
Demicryptochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Cryptochironomus										
	I	57	-	-	-	-	19	-	-	38
	II	-	-	-	-	-	-	19	-	-
	IV	38	-	-	57	-	-	-	-	114
Cryptocladopelma										
	I	-	-	-	19	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	-	-	-	76
Cryptotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Dicrotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 9 L	9 M	9 R	10 L	10 M	10 R	11 L	11 M	11 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Orthocladiinae										
Cricotopus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Epoicocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Heterotrissocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	19	-	-	-	-
Psectrocladius										
	I	-	-	19	19	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Chironominae										
Chironomini										
Chironomus	I	19	-	19	-	-	-	19	-	-
	II	19	-	19	19	133	-	-	-	76
	IV	-	-	-	-	19	-	-	-	-
Demicryptochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Cryptochironomus										
	I	38	19	-	-	-	-	-	-	-
	II	-	-	-	-	-	19	-	-	-
	IV	-	-	190	19	-	-	-	-	-
Cryptocladopelma										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	76	-	-	38	19	-	-
Cryptotendipes										
	I	-	-	19	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Dicrotendipes										
	I	-	-	-	-	-	-	19	-	-
	II	19	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 12 L	12 M	12 R	13 L	13 M	13 R	14 L	14 M	14 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Orthocladiinae										
Cricotopus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	19	-	-	-	-	-
Epoicocladius										
	I	-	-	-	-	-	-	38	-	-
	II	-	-	-	-	-	95	-	-	-
	IV	-	-	-	-	-	-	38	-	-
Heterotrissocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	57	-	-
Psectrocladius										
	I	-	-	-	19	-	-	-	-	-
	II	-	-	-	-	-	19	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Chironominae										
Chironomini										
Chironomus	I	-	19	19	57	-	-	-	-	152
	II	19	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	57	-	-
Demicryptochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Cryptochironomus										
	I	-	19	19	-	-	-	-	19	57
	II	-	-	-	-	-	19	-	-	-
	IV	38	-	57	19	-	-	-	-	-
Cryptocladopelma										
	I	-	-	-	-	-	-	-	-	95
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	304	57	-	19	-	-	-
Cryptotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Dicrotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	15 L	15 M	15 R	16 L	16 M	16 R	17 L	17 M	17 R
Archropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Orthocladiinae										
Cricotopus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Epoicocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Heterotrissocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	152	-	-	-	-	19	38	-	-
Psectrocladius										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Chironominae										
Chironomini										
Chironomus	I	-	-	-	-	-	-	-	-	-
	II	19	-	-	703	-	54	19	-	-
	IV	-	-	-	-	19	-	19	-	-
Demicryptochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Cryptochironomus										
	I	-	-	-	19	-	19	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	114	-	38	114	-	266
Cryptocladopelma										
	I	19	-	-	19	-	38	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	209	-	38	-	-	114
Cryptotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Dicrotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	152	-	-	76	-	-	-	-	38

Table C-1.--Continued

Taxa	Run no.	Station number 18 L	M	R
Arthropoda (cont'd)				
Insecta (cont'd)				
Diptera (cont'd)				
Orthocladiinae				
Cricotopus	I	-	-	19
	II	-	-	-
	IV	-	-	-
Epoicocladius				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Heterotrissocladius				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Psectrocladius				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Chironominae				
Chironomini				
Chironomus	I	-	-	-
	II	-	-	-
	IV	-	-	-
Demicryptochironomus				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Cryptochironomus				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Cryptocladopelma				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Cryptotendipes				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Dicrotendipes				
	I	-	-	-
	II	-	-	-
	IV	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 0 L	0 M	0 R	1 L	1 M	1 R	2 L	2 M	2 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Endochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Glyptotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-		-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Harnischia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	19	-	-
	IV	-	-	-	-	-	-	-	-	-
Parachironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	57	-	-	-	-
Paracladopelma										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Paralauterborniella										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	19	-	-	-	-	-	-	-	-
Polypedilum	I	-	-	38	-	-	-	171	-	836
	II	-	19	-	19	-	19	-	-	19
	IV	38	-	-	38	-	-	133	38	265
Pseudochironomus										
	I	-	-	-	-	-	-	-	-	57
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	361	-	-	-	-	38
Robackia	I	-	-	-	-	-	-	-	19	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	57	-	-	-	-	-	19	-
Stenochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stictochironomus										
	I	-	-	114	-	-	133	437	-	38
	II	-	-	-	-	-	-	-	-	-
	IV	285	-	-	-	-	38	323	-	152

Table C-1.--Continued

Taxa	Run no.	Station number 3 L	3 M	3 R	4 L	4 M	4 R	5 L	5 M	5 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Endochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	19	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Glyptotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Harnischia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	19	-	-
	IV	19	-	-	-	-	-	-	-	-
Parachironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Paracladopelma										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Paralauterborniella										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Polypedilum	I	-	-	19	-	-	-	171		57
	II	-	19	-	-	-	-	-	19	-
	IV	-	-	-	-	-	38	19	19	-
Pseudochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	19	-	-
Robackia	I	-	114	-	-	19	-	-	38	-
	II	-	38	-	-	-	-	-	-	-
	IV	-	19	-	19	19	-	-	-	-
Stenochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	19	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stictochironomus										
	I	209	-	-	152	-	-	266	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	38	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	6 L	6 M	6 R	7 L	7 M	7 R	8 L	8 M	8 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Endochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Glyptotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Harnischia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	19	-	-	19	-	-
	IV	-	-	-	19	19	-	-	38	-
Parachironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Paracladopelma										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Paralauterborniella										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Polypedilum	I	209	-	-	19	-	-	-	-	19
	II	-	-	-	-	-	-	-	-	-
	IV	76	-	-	19	-	-	38	-	361
Pseudochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Robackia	I	-	-	-	-	19	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stenochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Stictochironomus										
	I	76	-	-	57	-	-	-	-	-
	II	-	19	-	-	-	-	-	-	-
	IV	19	19	19	19	-	-	-	-	19

Table C-1.--Continued

Taxa	Run no.	Station number 9 L	9 M	9 R	10 L	10 M	10 R	11 L	11 M	11 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Endochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Glyptotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	19	-	-	-
Harnischia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	38	-	38	-	-	19
	IV	-	19	-	-	-	38	-	-	-
Parachironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Paracladopelma										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Paralauterborniella										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Polypedilum	I	19	-	-	19	19	-	38	-	-
	II	-	-	-	-	-	-	-	-	19
	IV	-	-	19	-	-	-	-	-	-
Pseudochironomus										
	I	-	-	-	19	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	57	-	-	-
Robackia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stenochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	38	-	-	-	-	-	-	-
Stictochironomus										
	I	19	-	-	19	19	-	38	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 12 L	12 M	12 R	13 L	13 M	13 R	14 L	14 M	14 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Endochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Glyptotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	38
Harnischia	I	-	-	-	-	-	-	-	-	-
	II	-	19	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Parachironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Paracladopelma										
	I	-	-	-	-	-	19	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Paralauterborniella										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Polypedilum	I	38	-	665	95	-	-	19	-	893
	II	-	-	-	-	-	38	-	-	-
	IV	152	-	589	285	-	-	19	-	-
Pseudochironomus										
	I	-	-	-	38	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Robackia	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stenochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Stictochironomus										
	I	-	-	38	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	19	-	-

Table C-1.--Continued

Taxa	Run no.	15 L	15 M	15 R	16 L	16 M	16 R	17 L	17 M	17 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Endochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Glyptotendipes										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	209
Harnischia	I	-	-	-	-	-	-	-	-	-
	II	19	-	-	19	-	-	-	19	-
	IV	38	-	-	-	-	-	-	-	-
Parachironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	133	-	-	-	-	-
Paracladopelma										
	I	-	-	-	-	-	-	19	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Paralauterborniella										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Polypedilum	I	-	-	-	38	-	380	-	38	-
	II	-	-	-	76	-	-	-	-	-
	IV	76	-	-	76	-	19	38	-	19
Pseudochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Robackia	I	-	19	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stenochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stictochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	38

Table C-1.--Continued

Taxa	Run no.	Station number 18 L	M	R
Arthropoda (cont'd)				
Insecta (cont'd)				
Diptera (cont'd)				
Chironominae (cont'd)				
Endochironomus				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Glyptotendipes				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Harnischia	I	-	-	-
	II	19	19	-
	IV	-	-	-
Parachironomus				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Paracladopelma				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Paralauterborniella				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Polypedilum	I	-	-	57
	II	-	-	-
	IV	-	-	-
Pseudochironomus				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Robackia	I	-	-	-
	II	-	-	-
	IV	-	-	-
Stenochironomus				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Stictochironomus				
	I	-	-	-
	II	-	-	-
	IV	-	-	-

Table C-1.--Continued

Taxa	Run no.	0 L	0 M	0 R	1 L	1 M	1 R	2 L	2 M	2 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Xenochironomus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	19
	IV	-	-	-	-	19	-	-	19	-
Tanytarsini										
Cladotanytarsus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Rheotanytarsus	I	38	-	-	-	152	-	-	95	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stempellina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tanytarsus	I	-	-	114	-	-	-	-	-	-
	II	-	-	-	-	-	-	19	-	-
	IV	-	-	-	-	-	-	-	-	-
Simuliidae										
Simulium	I	-	-	-	-	-	-	-	38	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Mollusca										
Gastropoda										
Planorbidae										
Gyraulus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Viviparidae										
Campeloma	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hydrobiidae										
Somatogyrus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Station number (columns 0, 1, 2; L, M, R)

Table C-1.--Continued

Taxa	Run no.	Station number 3 L	3 M	3 R	4 L	4 M	4 R	5 L	5 M	5 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Xenochironomus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	19	-	-	-	-	-	19
Tanytarsini										
Cladotanytarsus	I	-	-	-	-	-	19	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Rheotanytarsus	I	-	-	-	-	19	-	-	-	-
	II	-	-	-	-	-	-	-	19	-
	IV	-	-	-	-	-	-	-	-	-
Stempellina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tanytarsus	I	-	-	-	-	-	38	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Simuliidae										
Simulium	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	19	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Mollusca										
Castropoda										
Planorbidae										
Gyraulus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Viviparidae										
Campeloma	I	-	-	-	-	-	38	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hydrobiidae										
Somatogyrus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-i.--Continued

Taxa	Run no.	Station number 6 L	6 M	6 R	7 L	7 M	7 R	8 L	8 M	8 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Xenochironomus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	342	171	-	-
Tanytarsini										
Cladotanytarsus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Rheotanytarsus	I	-	-	-	-	-	-	-	-	-
	II	38	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stempellina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tanytarsus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Simuliidae										
Simulium	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Mollusca										
Gastropoda										
Planorbidae										
Gyraulus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Viviparidae										
Campeloma	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hydrobiidae										
Somatogyrus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 9 L	9 M	9 R	10 L	10 M	10 R	11 L	11 M	11 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Xenochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	19	-	-	-	-	-	-	-	-
	IV	-	57	-	-	-	-	-	76	19
Tanytarsini										
Cladotanytarsus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Rheotanytarsus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stempellina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tanytarsus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	38	-	-	-
Simuliidae										
Simulium	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Mollusca										
Gastropoda										
Planorbidae										
Gyraulus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Viviparidae										
Campeloma	I	-	-	-	-	-	-	-	-	-
	II	19	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hydrobiidae										
Somatogyrus	I	-	-	-	-	-	-	-	-	-
	II	19	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-[illegible].--Continued

		Station number								
	Run	12			13			14		
Taxa	no.	L	M	R	L	M	R	L	M	R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Xenochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tanytarsini										
Cladotanytarsus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	171	304	-	-	-	-	19
Rheotanytarsus										
	I	-	-	-	19	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stempellina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tanytarsus	I	-	-	-	-	-	-	-	-	19
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Simuliidae										
Simulium	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Mollusca										
Gastropoda										
Planorbidae										
Gyraulus	I	-	-	-	-	-	-	-	19	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Viviparidae										
Campeloma	I	-	-	-	-	-	-	-	-	19
	II	-	-	38	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hydrobiidae										
Somatogyrus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 15 L	15 M	15 R	16 L	16 M	16 R	17 L	17 M	17 R
Arthropoda (cont'd)										
Insecta (cont'd)										
Diptera (cont'd)										
Chironominae (cont'd)										
Xenochironomus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Tanytarsini										
Cladotanytarsus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	19	-	-	-	-	342
Rheotanytarsus										
	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	19	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Stempellina	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	19
Tanytarsus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	38	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Simuliidae										
Simulium	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Mollusca										
Gastropoda										
Planorbidae										
Gyraulus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Viviparidae										
Campeloma	I	-	-	-	-	-	-	-	-	38
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Hydrobiidae										
Somatogyrus	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 18 L	M	R
Arthropoda (cont'd)				
Insecta (cont'd)				
Diptera (cont'd)				
Chironominae (cont'd)				
Xenochironomus				
	I	-	-	-
	II	-	-	-
	IV	-	19	-
Tanytarsini				
Cladotanytarsus				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Rheotanytarsus				
	I	-	-	-
	II	-	-	-
	IV	-	-	-
Stempellina	I	-	-	-
	II	-	-	-
	IV	-	-	-
Tanytarsus	I	-	-	-
	II	-	-	-
	IV	-	-	-
Simuliidae				
Simulium	I	-	-	-
	II	-	-	-
	IV	-	-	-
Mollusca				
Gastropoda				
Planorbidae				
Gyraulus	I	-	-	-
	II	-	-	-
	IV	-	-	-
Viviparidae				
Campeloma	I	-	-	-
	II	-	-	-
	IV	-	-	-
Hydrobiidae				
Somatogyrus	I	-	-	-
	II	-	-	-
	IV	-	-	-

Table C-1.--Continued

Taxa	Run no.	Station number 0 L	0 M	0 R	1 L	1 M	1 R	2 L	2 M	2 R
Mollusca (cont'd)										
Pelecypoda										
Unionidae										
Alasmidonta	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Sphaeriidae										
Eupera	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Corbiculidae										
Corbicula	I	114	171	38	133	38	646	38	627	57
	II	19	95	-	19	114	19	19	171	152
	IV	19	228	57	114	361	209	57	418	38

Table C-1.--Continued

Taxa	Run no.	3 L	3 M	3 R	4 L	4 M	4 R	5 L	5 M	5 R
		Station number								
Mollusca (cont'd)										
Pelecypoda										
Unionidae										
Alasmidonta	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	19	-	-	-	-
Sphaeriidae										
Eupera	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Corbiculidae										
Corbicula	I	57	437	76	-	133	38	19	342	-
	II	152	247	38	95	133	38	19	76	19
	IV	361	228	-	228	456	114	57	171	19

Table C-1.--Continued

Taxa	Run no.	6 L	6 M	6 R	7 L	7 M	7 R	8 L	8 M	8 R
Mollusca (cont'd)										
Pelecypoda										
Unionidae										
Alasmidonta	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Sphaeriidae										
Eupera	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Corbiculidae										
Corbicula	I	-	551	19	76	247	209	399	190	380
	II	-	304	19	38	152	285	38	57	76
	IV	-	133	57	133	19	76	285	19	152

Table C-1.--Continued

Taxa	Run no.	9 L	9 M	9 R	10 L	10 M	10 R	11 L	11 M	11 R
		Station number								
Mollusca (cont'd)										
Pelecypoda										
Unionidae										
Alasmidonta	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Sphaeriidae										
Eupera	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Corbiculidae										
Corbicula	I	-	209	76	190	570	38	57	779	38
	II	532	76	95	152	38	-	209	760	-
	IV	114	-	456	57	19	152	133	171	19

Table C-1.--Continued

Taxa	Run no.	Station number 12 L	12 M	12 R	13 L	13 M	13 R	14 L	14 M	14 R
Mollusca (cont'd)										
Pelecypoda										
Unionidae										
Alasmidonta	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Sphaeriidae										
Eupera	I	57	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Corbiculidae										
Corbicula	I	38	114	38	19	190	19	76	57	-
	II	247	171	38	19	380	-	19	-	19
	IV	437	-	114	152	-	76	-	-	931

Table C-1.-Continued

Taxa	Run no.	15 L	15 M	15 R	16 L	16 M	16 R	17 L	17 M	17 R
Mollusca (cont'd)										
Pelecypoda										
Unionidae										
Alasmidonta	I	-	-	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Sphaeriidae										
Eupera	I	-	38	-	-	-	-	-	-	-
	II	-	-	-	-	-	-	-	-	-
	IV	-	-	-	-	-	-	-	-	-
Corbiculidae										
Corbicula	I	19	133	247	19	19	57	228	266	190
	II	76	95	19	-	247	-	190	95	19
	IV	95	190	114	-	95	-	-	19	1216

Table C-1.--Continued

Taxa	Run no.	Station number 18 L	M	R
Mollusca (cont'd)				
Pelecypoda				
Unionidae				
Alasmidonta	I	-	-	-
	II	-	-	-
	IV	-	-	-
Sphaeriidae				
Fupera	I	-	-	-
	II	-	-	-
	IV	-	-	-
Corbiculidae				
Corbicula	I	19	-	-
	II	-	-	-
	IV	-	-	114

Table C-2.--Organisms (number per square meter) collected on multiplate samplers at 17 stations above Jones Bluff Lock and Dam, April 10 through August 7, 1978

Taxa	Run no.	Station number 1	3	4	5	6
Arthropoda						
Crustacea						
Amphipoda						
Talitridae						
Hyalella	I	-	-	-	Lost*	-
	II	-	-	-		-
	IV	-	-	-		-
Insecta						
Ephemeroptera						
Siphlonuridae						
Isonychia	I	-	-	-		-
	II	-	-	9		-
	IV	-	-	-		-
Baetidae						
Baetis	I	-	387	126		-
	II	-	-	-		-
	IV	-	-	-		-
Heptageniidae						
Heptagenia						
	I	-	45	9		-
	II	-	-	-		-
	IV	-	-	-		-
Stenacron	I	-	-	-		-
	II	27	-	-		-
	IV	-	-	-		-
Stenonema	I	-	-	-		-
	II	18	207	297		27
	IV	9	297	144		27
Ephemerellidae						
Ephemerella						
	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	-		-
Tricorythidae						
Tricorythodes						
	I	-	9	252		-
	II	513	135	414		45
	IV	1,683	1,764	1,026		-

Run number I=Placement: April 10-18, 1978; Retrieval: May 22-29, 1978
Run number II=Placement: May 22-29, 1978; Retrieval: July 6-11, 1978
Run number IV=Placement: August 1-7, 1978; Retrieval: September 12-18, 1978
*Multiplate samplers lost and not retrieved at this station.

Table C-2.--Continued

Taxa	Run no.	Station number 7	8	9	10	11
Arthropoda						
Crustacea						
Amphipoda						
Talitridae						
Hyalella	I	-	-	126	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Insecta						
Ephemeroptera						
Siphlonuridae						
Isonychia	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Baetidae						
Baetis	I	-	-	-	-	-
	II	-	126	-	-	-
	IV	-	-	-	-	-
Heptageniidae						
Heptagenia						
	I	9	-	9	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Stenacron	I	-	-	-	9	-
	II	-	126	126	-	18
	IV	-	-	-	-	-
Stenonema	I	135	-	-	-	-
	II	-	396	18	153	126
	IV	-	-	-	-	-
Ephemerellidae						
Ephemerella						
	I	-	-	-	9	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Tricorythidae						
Tricorythodes						
	I	-	126	-	144	-
	II	135	540	144	-	27
	IV	-	261	-	-	-

Table C-2.--Continued

Taxa	Run no.	Station number 12	13	14	15	16
Arthropoda						
Crustacea						
Amphipoda						
Talitridae						
Hyalella	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Insecta						
Ephemeroptera						
Siphlonuridae						
Isonychia	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Baetidae						
Baetis	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Heptageniidae						
Heptagenia						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Stenacron	I	-	-	-	-	-
	II	-	9	-	-	-
	IV	-	-	-	-	-
Stenonema	I	-	-	-	-	9
	II	-	-	-	-	-
	IV	-	-	-	-	-
Ephemerellidae						
Ephemerella						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Tricorythidae						
Tricorythodes						
	I	-	-	-	126	-
	II	-	18	-	-	-
	IV	-	-	-	-	-

Table C-2.--Continued

Taxa	Run no.	Station number 17
Arthropoda		
Crustacea		
Amphipoda		
Talitridae		
Hyalella	I	-
	II	-
	IV	-
Insecta		
Ephemeroptera		
Siphlonuridae		
Isonychia	I	-
	II	-
	IV	-
Baetidae		
Baetis	I	-
	II	-
	IV	-
Heptageniidae		
Heptagenia		
	I	-
	II	-
	IV	-
Stenacron	I	-
	II	126
	IV	-
Stenonema	I	-
	II	-
	IV	-
Ephemerellidae		
Ephemerella		
	I	-
	II	-
	IV	-
Tricorythidae		
Tricorythodes		
	I	-
	II	-
	IV	-

Table C-2.--Continued

Taxa	Run no.	Station number 1	3	4	5	6
Arthropoda (cont'd)						
Insecta (cont'd)						
Ephemeroptera (cont'd)						
Caenidae						
Caenis	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	-		-
Odonata						
Anisoptera						
Corduliidae						
Neurocordulia						
	I	-	-	-		-
	II	-	54	-		-
	IV	18	9	-		-
Zygoptera						
Coenagrionidae						
Argia	I	-	-	-		-
	II	9	-	-		-
	IV	-	-	-		-
Coleoptera						
Elmidae						
Stenelmis	I	-	-	-		-
	II	-	-	-		9
	IV	-	-	-		-
Trichoptera						
Polycentropodidae						
Cyrnellus	I	-	-	126		-
	II	135	-	252		261
	IV	18	270	144		-
Neureclipsis						
	I	-	-	-		-
	II	-	126	-		-
	IV	-	-	-		-
Hydropsychidae						
Cheumatopsyche						
	I	-	882	630		-
	II	-	-	126		-
	IV	-	-	-		-
Hydropsyche						
	I	-	-	126		-
	II	-	252	387		126
	IV	-	9	36		-

Table C-2.--Continued

Taxa	Run no.	Station number 7	8	9	10	11
Arthropoda (cont'd)						
Insecta (cont'd)						
Ephemeroptera (cont'd)						
Caenidae						
Caenis	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Odonata						
Anisoptera						
Corduliidae						
Neurocordulia						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	9	-	-	9
Zygoptera						
Coenagrionidae						
Argia	I	-	-	-	-	-
	II	-	-	-	-	18
	IV	-	-	-	-	-
Coleoptera						
Elmidae						
Stenelmis	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Trichoptera						
Polycentropodidae						
Cyrnellus	I	9	-	-	18	-
	II	252	396	630	2,520	387
	IV	1,143	144	531	1,278	1,413
Neureclipsis						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Hydropsychidae						
Cheumatopsyche						
	I	18	126	252	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Hydropsyche						
	I	9	-	-	-	-
	II	-	9	-	-	-
	IV	-	-	-	-	-

Table C-2.--Continued

Taxa	Run no.	Station number 12	13	14	15	16
Arthropoda (cont'd)						
Insecta (cont'd)						
Ephemeroptera (cont'd)						
Caenidae						
Caenis	I	-	-	-	9	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Odonata						
Anisoptera						
Corduliidae						
Neurocordulia						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Zygoptera						
Coenagrionidae						
Argia	I	-	-	9	-	-
	II	-	-	-	9	-
	IV	-	-	-	-	-
Coleoptera						
Elmidae						
Stenelmis	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Trichoptera						
Polycentropodidae						
Cyrnellus	I	-	-	-	-	-
	II	504	2,808	639	1,296	1,665
	IV	18	648	639	1,764	900
Neureclipsis						
	I	-	-	126		-
	II	-	9	-	-	-
	IV	-	-	-	-	-
Hydropsychidae						
Cheumatopsyche						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Hydropsyche						
	I	-	-	126	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-

Table C-2.--Continued

Taxa	Run no.	Station number 17
Arthropoda (cont'd)		
Insecta (cont'd)		
Ephemeroptera (cont'd)		
Caenidae		
Caenis	I	-
	II	-
	IV	-
Odonata		
Anisoptera		
Corduliidae		
Neurocordulia		
	I	-
	II	-
	IV	-
Zygoptera		
Coenagrionidae		
Argia	I	-
	II	18
	IV	-
Coleoptera		
Elmidae		
Stenelmis	I	-
	II	-
	IV	-
Trichoptera		
Polycentropodidae		
Cyrnellus	I	-
	II	-
	IV	-
Neureclipsis		
	I	-
	II	-
	IV	-
Hydropsychidae		
Cheumatopsyche		
	I	-
	II	-
	IV	-
Hydropsyche		
	I	-
	II	-
	IV	-

Table C-2.--Continued

Taxa	Run no.	Station number 1	3	4	5	6
Arthropoda (cont'd)						
Insecta (cont'd)						
Trichoptera (cont'd)						
Hydroptilidae						
Ochrotrichia						
	I	-	-	-		-
	II	-	-	-		-
	IV	9	-	-		-
Leptoceridae						
Nectopsyche						
	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	-		-
Oecetis	I	-	-	-		-
	II	-	-	9		-
	IV	-	-	-		-
Diptera						
Chironomidae						
Tanypodinae						
Ablabesmyia						
	I	-	-	-		-
	II	126	-	-		9
	IV	153	153	144		-
Orthocladiinae						
Cricotopus						
	I	-	-	126		-
	II	-	-	-		9
	IV	252	-	-		-
Eukiefferiella						
	I	-	-	126		-
	II	-	-	-		-
	IV	-	-	-		-
Psectrocladius						
	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	-		-
Rheocricotopus						
	I	-	-	-		-
	II	-	-	14		-
	IV	-	-	-		-

Table C-2.--Continued

Taxa	Run no.	Station number 7	8	9	10	11
Arthropoda (cont'd)						
Insecta (cont'd)						
Trichoptera (cont'd)						
Hydroptilidae						
Ochrotrichia						
	I	126	-	-	-	126
	II	-	126	126	9	9
	IV	-	9	-	-	9
Leptoceridae						
Nectopsyche						
	I	-	-	-	-	-
	II	-	-	-	-	9
	IV	-	-	-	-	-
Oecetis	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Diptera						
Chironomidae						
Tanypodinae						
Ablabesmyia						
	I	-	-	-	72	126
	II	-	-	-	18	-
	IV	18	270	126	27	9
Orthocladiinae						
Cricotopus						
	I	-	-	-	-	-
	II	126	126	18	-	-
	IV	-	-	-	-	9
Eukiefferiella						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Psectrocladius						
	I	-	-	-	-	-
	II	-	-	-	-	126
	IV	-	126	-	-	-
Rheocricotopus						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-

Table C-2.--Continued

Taxa	Run no.	12	13	14	15	16
		Station number				
Arthropoda (cont'd)						
Insecta (cont'd)						
Trichoptera (cont'd)						
Hydroptilidae						
Ochrotrichia						
	I	-	-	126	-	-
	II	-	135	-	-	-
	IV	-	-	-	-	-
Leptoceridae						
Nectopsyche						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Oecetis	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Diptera						
Chironomidae						
Tanypodinae						
Ablabesmyia						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	153	-	-	261
Orthocladiinae						
Cricotopus						
	I	-	-	-	126	-
	II	-	9	-	-	252
	IV	-	-	-	-	135
Eukiefferiella						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Psectrocladius						
	I	-	-	-	-	-
	II	630	-	-	-	378
	IV	-	-	-	-	-
Rheocricotopus						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-

Table C-2.--Continued

Taxa	Run no.	Station number 17
Arthropoda (cont'd)		
Insecta (cont'd)		
Trichoptera (cont'd)		
Hydroptilidae		
Ochrotrichia	I	-
	II	126
	IV	-
Leptoceridae		
Nectopsyche	I	-
	II	-
	IV	-
Oecetis	I	-
	II	-
	IV	-
Diptera		
Chironomidae		
Tanypodinae		
Ablabesmyia	I	-
	II	-
	IV	126
Orthocladiinae		
Cricotopus	I	-
	II	-
	IV	-
Eukiefferiella	I	-
	II	-
	IV	-
Psectrocladius	I	-
	II	126
	IV	-
Rheocricotopus	I	-
	II	-
	IV	-

Table C-2.--Continued

Taxa	Run no.	Station number 1	3	4	5	6
Arthropoda (cont'd)						
Insecta (cont'd)						
Diptera (cont'd)						
Chironominae						
Chironomini						
Dicrotendipes						
	I	-	-	126		-
	II	252	-	-		126
	IV	126	270	261		-
Endochironomus						
	I	-	-	-		-
	II	135	-	-		-
	IV	-	-	-		-
Glyptotendipes						
	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	-		-
Parachironomus						
	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	-		-
Polypedilum						
	I	-	126	252		-
	II	1,638	135	1,764		-
	IV	-	126	-		-
Pseudochironomus						
	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	-		-
Stenochironomus						
	I	-	-	-		-
	II	-	-	-		135
	IV	-	-	-		-
Tanytarsini						
Rheotanytarsus						
	I	-	1,890	2,178		-
	II	7,443	7,110	2,907		3,285
	IV	-	-	-		-
Simuliidae						
Simulium	I	-	504	2,520		-
	II	-	-	-		-
	IV	-	-	-		-

Table C-2.--Continued

Taxa	Run no.	Station number 7	8	9	10	11
Arthropoda (cont'd)						
Insecta (cont'd)						
Diptera (cont'd)						
Chironominae						
Chironomini						
Dicrotendipes						
	I	-	126	-	-	-
	II	252	504	378	171	414
	IV	522	297	540	414	630
Endochironomus						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	9	18	9	-
Glyptotendipes						
	I	-	-	-	72	-
	II	-	126	-	126	9
	IV	-	9	-	-	18
Parachironomus						
	I	-	-	-	-	-
	II	-	-	-	126	-
	IV	-	-	-	-	-
Polypedilum						
	I	-	126	126	-	-
	II	-	378	-	-	126
	IV	-	-	-	-	-
Pseudochironomus						
	I	-	-	-	72	-
	II	-	-	-	126	-
	IV	-	-	-	-	-
Stenochironomus						
	I	-	-	-	-	-
	II	126	-	504	9	126
	IV	-	-	-	-	-
Tanytarsini						
Rheotanytarsus						
	I	378	1,512	755	72	1,134
	II	2,772	1,890	1,512	-	9
	IV	-	-	-	-	-
Simuliidae						
Simulium	I	-	630	126	-	504
	II	-	-	-	-	-
	IV	-	-	-	-	-

Table C-2.--Continued

Taxa	Run no.	Station number 12	13	14	15	16
Arthropoda (cont'd)						
Insecta (cont'd)						
Diptera (cont'd)						
Chironominae						
Chironomini						
Dicrotendipes						
	I	-	-	252	252	126
	II	-	1,440	531	756	2,925
	IV	-	648	405	1,035	405
Endochironomus						
	I	-	-	-	-	-
	II	-	-	18	126	-
	IV	-	-	-	-	9
Glyptotendipes						
	I	-	-	-	252	378
	II	-	-	126	63	-
	IV	-	9	-	135	-
Parachironomus						
	I	-	-	-	126	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Polypedilum						
	I	-	-	-	-	252
	II	-	-	126	-	-
	IV	-	-	-	-	-
Pseudochironomus						
	I	-	-	-	126	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Stenochironomus						
	I	-	-	-	-	-
	II	-	756	135	126	378
	IV	-	-	-	-	-
Tanytarsini						
Rheotanytarsus						
	I	-	-	504	126	126
	II	-	-	-	-	-
	IV	-	-	-	-	-
Simuliidae						
Simulium	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-

Table C-2.--Continued

Taxa	Run no.	Station number 17
Arthropoda (cont'd)		
Insecta (cont'd)		
Diptera (cont'd)		
Chironominae		
Chironomini		
Dicrotendipes		
	I	-
	II	1,260
	IV	279
Endochironomus		
	I	-
	II	-
	IV	-
Glyptotendipes		
	I	-
	II	126
	IV	-
Parachironomus		
	I	-
	II	-
	IV	-
Polypedilum		
	I	-
	II	-
	IV	-
Pseudochironomus		
	I	-
	II	-
	IV	-
Stenochironomus		
	I	-
	II	-
	IV	-
Tanytarsini		
Rheotanytarsus		
	I	-
	II	-
	IV	-
Simuliidae		
Simulium	I	-
	II	-
	IV	-

Table C-2.--Continued

Taxa	Run no.	1	3	4	5	6
Arthropoda (cont'd)						
Insecta (cont'd)						
Diptera (cont'd)						
Empididae						
Indet. genus						
	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	-		-
Porifera						
Haplosclerina						
Spongillidae						
Spongilla						
	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	-		-
Coelenterata						
Hydroida						
Hydridae						
Hydra	I	-	-	-		-
	II	126	-	-		-
	IV	126	-	-		-
Clavidae						
Cordylophora						
	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	9		-
Annelida						
Oligochaeta						
Haplotaxida						
Naididae	I	-	-	-		-
	II	-	-	-		-
	IV	-	252	-		-
Tubificidae	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	126		-
Mollusca						
Gastropoda						
Ancylidae						
Ferrissia	I	-	-	-		-
	II	-	-	-		-
	IV	-	-	-		-

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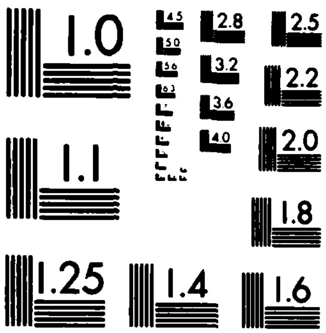

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Table C-2.--Continued

Taxa	Run no.	Station number 7	8	9	10	11
Arthropoda (cont'd)						
Insecta (cont'd)						
Diptera (cont'd)						
Empididae						
Indet. genus						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Porifera						
Haplosclerina						
Spongillidae						
Spongilla						
	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Coelenterata						
Hydroida						
Hydridae						
Hydra	I	-	-	-	792	-
	II	-	-	-	-	126
	IV	-	-	-	-	-
Clavidae						
Cordylophora						
	I	-	-	-	9	-
	II	-	-	-	-	-
	IV	9	-	-	-	9
Annelida						
Oligochaeta						
Haplotaxida						
Naididae	I	-	-	-	1,134	-
	II	-	-	-	-	-
	IV	-	-	630	126	630
Tubificidae	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Mollusca						
Gastropoda						
Ancylidae						
Ferrissia	I	-	-	-	-	-
	II	-	-	-	-	504
	IV	-	-	-	-	-

Table C-2.--Continued

Taxa	Run no.	Station number 12	13	14	15	16
Arthropoda (cont'd)						
Insecta (cont'd)						
Diptera (cont'd)						
Empididae						
Indet. genus	I	-	-	126	-	-
	II	-	-	126	-	-
	IV	-	-	-	-	-
Porifera						
Haplosclerina						
Spongillidae						
Spongilla	I	-	-	-	1	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Coelenterata						
Hydroida						
Hydridae						
Hydra	I	-	-	-	126	-
	II	-	-	504	-	252
	IV	-	-	126	-	-
Clavida						
Cordylophora	I	-	-	9	-	-
	II	-	126	-	-	9
	IV	-	-	9	9	9
Annelida						
Oligochaeta						
Haplotaxida						
Naididae	I	-	-	1,314	3,150	252
	II	-	-	-	-	-
	IV	-	-	-	252	126
Tubificidae	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-
Mollusca						
Gastropoda						
Ancylidae						
Ferrissia	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-

Table C-2.--Continued

Taxa	Run no.	Station number 17
Arthropoda (cont'd)		
Insecta (cont'd)		
Diptera (cont'd)		
Empididae		
Indet. genus		
	I	-
	II	-
	IV	-
Porifera		
Haplosclerina		
Spongillidae		
Spongilla		
	I	-
	II	-
	IV	-
Coelenterata		
Hydroida		
Hydridae		
Hydra	I	-
	II	-
	IV	-
Clavidae		
Cordylophora		
	I	-
	II	-
	IV	-
Annelida		
Oligochaeta		
Haplotaxida		
Naididae	I	630
	II	-
	IV	-
Tubificidae	I	-
	II	-
	IV	-
Mollusca		
Gastropoda		
Ancylidae		
Ferrissia	I	-
	II	-
	IV	-

Table C-2.--Continued

Taxa	Run no.	1	3	4	5	6
		Station number				
Mollusca (cont'd)						
Pelecypoda						
Corbiculidae						
Corbicula	I	-	126	-		-
	II	-	-	-		-
	IV	-	-	-		-

Table C-2.--Continued

Taxa	Run no.	Station number 7	8	9	10	11
Mollusca (cont'd)						
Pelecypoda						
Corbiculidae						
Corbicula	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-

Table C-2.--Continued

Taxa	Run no.	Station number 12	13	14	15	16
Mollusca (cont'd)						
Pelecypoda						
Corbiculidae						
Corbicula	I	-	-	-	-	-
	II	-	-	-	-	-
	IV	-	-	-	-	-

Table C-2.--Continued

Taxa	Run no.	Station number 17
Mollusca (cont'd)		
Pelecypoda		
Corbiculidae		
Corbicula	I	-
	II	-
	IV	-

APPENDIX D

Aquatic Macrophyte Data

Table D-1.--List of the aquatic plant species found in Jones Bluff Reservoir, Alabama, 1978

ASPIDACEAE
- (E) *Onoclea sensibilis* L.

AZOLLACEAE
- (Fl) *Azolla caroliniana* Willd.

TAXODIACEAE
- (E) *Taxodium distichum* (L.) Richard

TYPHACEAE
- (E) *Typha latifolia* L.

ALISMATACEAE
- (E) *Echinodorus cordifolius* (L.) Grisebach
- (E) *Sagittaria latifolia* Willd.

POACEAE
- (E) *Erianthus giganteus* (Walt.) Muhl.
- (Fl-lv) *Hydrochloa caroliniensis* Beauvois
- (E) *Leersia virginica* Willd.

CYPERACEAE
- (E) *Carex lupulina* Muhl. *ex* Schkuhr
- (E) *Cyperus pseudovegetus* Steudel
- (E) *Eleocharis obtusa* (Willd.) Schultes
- (E) *Fimbristylis autumnalis* (L.) R. & S.
- (E) *Rhynchospora corniculata* (Lam.) Gray
- (E) *Scirpus cyperinus* (L.) Kunth

ARACEAE
- (E) *Peltandra virginica* (L.) Kunth

LEMNACEAE
- (Fl) *Lemna perpusilla* Torr.
- (Fl) *Spirodela polyrrhiza* (L.) Schleid.
- (Fl) *Spirodela punctata* Thompson
- (Fl) *Wolffia columbiana* Karsten
- (Fl) *Wolffia papulifera* Thompson

IRIDACEAE
- (E) *Iris brevicaulis* Raf.

JUNCACEAE
- (E) *Juncus effusus* L.

Table D-1.--Continued

SAURURACEAE
(E) *Saururus cernuus* L.

SALICACEAE
(E) *Populus deltoides* Marshall
(E) *Salix nigra* Marshall

MYRICACEAE
(E) *Myrica cerifera* L.

BETULACEAE
(E) *Alnus serrulata* (Aiton) Willd.
(E) *Betula nigra* L.

ULMACEAE
(E) *Planera aquatica* Walter ex J. F. Gmelin

URTICACEAE
(E) *Boehmeria cylindrica* (L.) Swartz

POLYGONACEAE
(E) *Polygonum hydropiperoides* Michx.

AMARANTHACEAE
(E,Fl-lv) *Alternanthera philoxeroides* (Martius) Grisebach

NYMPHAEACEAE
(Fl-lv) *Nuphar luteum* (L.) Sibthorp & Smith

BRASSICACEAE
(E) *Rorippa palustris* (L.) Besser

CRASSULACEAE
(E) *Penthorum sedoides* L.

PLATANACEAE
(E) *Platanus occidentalis* L.

FABACEAE
(E) *Daubentonia punicea* (Cav.) DC.
(E) *Sesbania exaltata* (Raf.) Rydberg ex A. W. Hill

ACERACEAE
(E) *Acer rubrum* L.

MELASTOMATACEAE
(E) *Rhexia mariana* L.

Table D-1.--Continued

BALSAMINACEAE
(E) *Impatiens capensis* L.

MALVACEAE
(E) *Hibiscus militaris* Cav.
(E) *Hibiscus moscheutos* L.

HYPERICACEAE
(E) *Hypericum prolificum* L.
(E) *Hypericum walteri* Gmelin

LYTHRACEAE
(E) *Ammannia coccinea* Rottboell
(E) *Rotala ramosior* (L.) Koehne

ONAGRACEAE
(E) *Ludwigia decurrens* Walter
(E,Fl-lv) *Ludwigia peploides* var. *glabrescens* (Kuntze) Shinners
(E,Fl-lv) *Ludwigia palustris* (L.) Ell.

HALORAGACEAE
(Fl,S) *Myriophyllum brasilense* Camb.

APIACEAE
(E) *Cicuta maculata* L.
(Fl-lv) *Hydrocotyle ranunculoides* L. f.
(E) *Hydrocotyle verticillata* Thunberg

OLEACEAE
(E) *Forestiera acuminata* (Michx.) Poir.

HYDROPHYLLACEAE
(E) *Hydrolea quadrivalvis* Walter

VERBENACEAE
(E) *Lippia lanceolata* Michaux

LAMIACEAE
(E) *Lycopus rubellus* Moench.

SCROPHULARIACEAE
(E) *Bacopa rotundifolia* (Michx.) Wettst.
(E) *Lindernia dubia* (L.) Pennell
(E) *Mimulus alatus* Aiton

ACANTHACEAE

(E,Fl) *Justicia americana* (L.) Vahl

(E) *Justicia lanceolata* (Chapm.) Small

RUBIACEAE

(E) *Cephalanthus occidentalis* L.

ASTERACEAE

(E) *Eclipta alba* (L.) Hassk.

(E) *Eupatorium maculatum* L.

(E) *Mikania scandens* (L.) Willd.

(E) *Pluchea camphorata* (L.) DC.

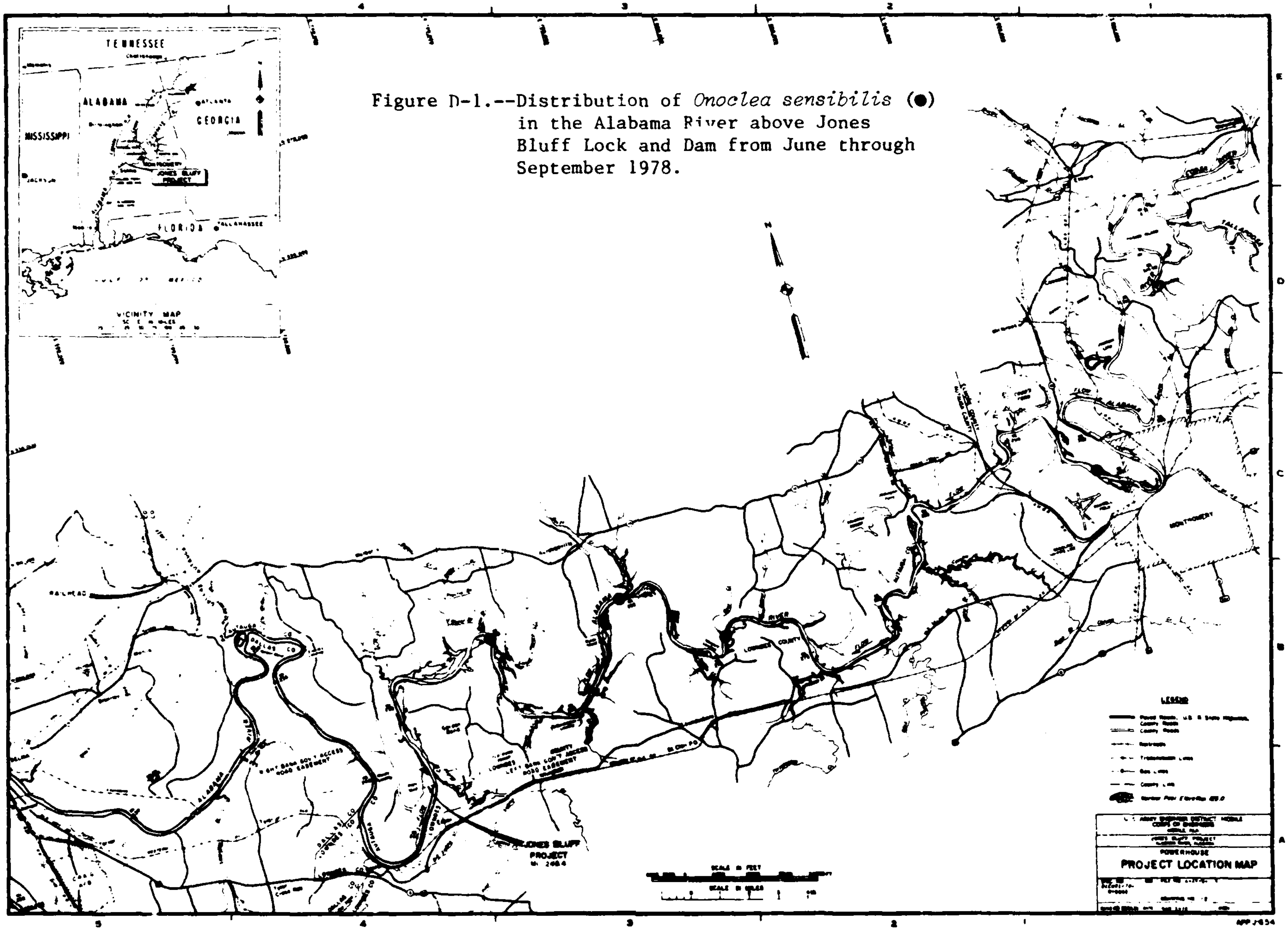

Figure D-1.--Distribution of *Onoclea sensibilis* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

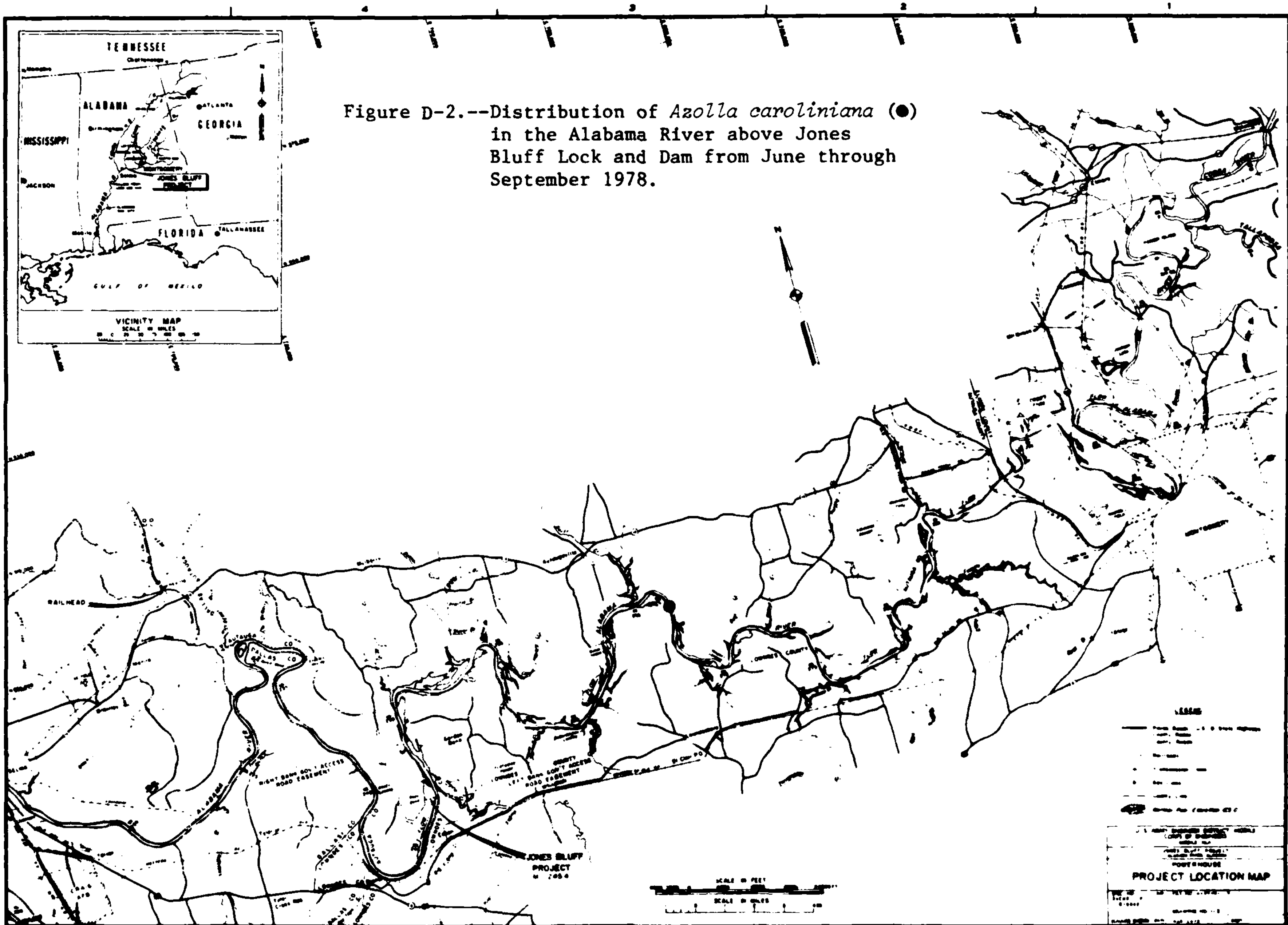

Figure D-2.--Distribution of *Azolla caroliniana* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

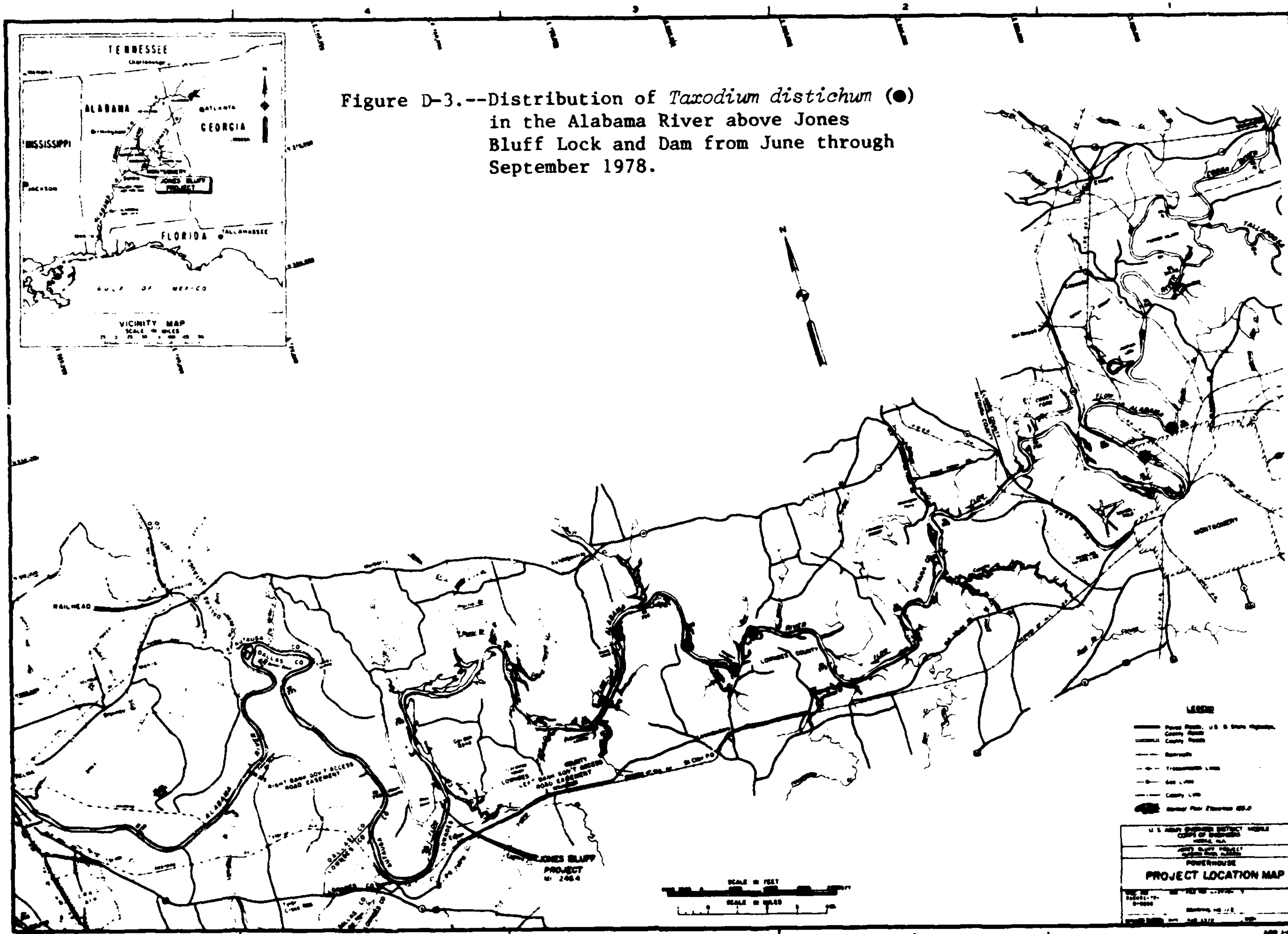

Figure D-3.--Distribution of *Taxodium distichum* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

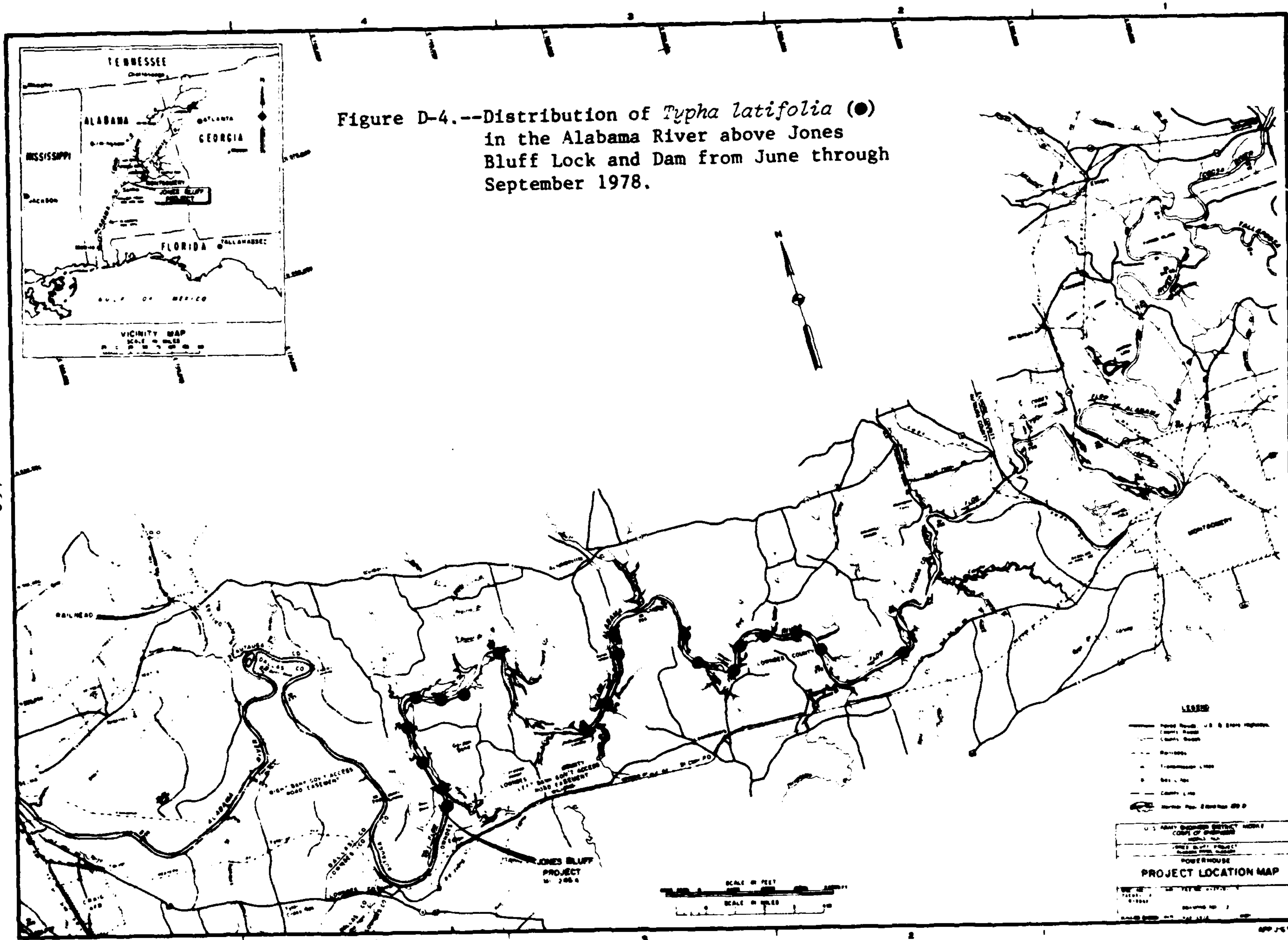

Figure D-4.--Distribution of *Typha latifolia* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

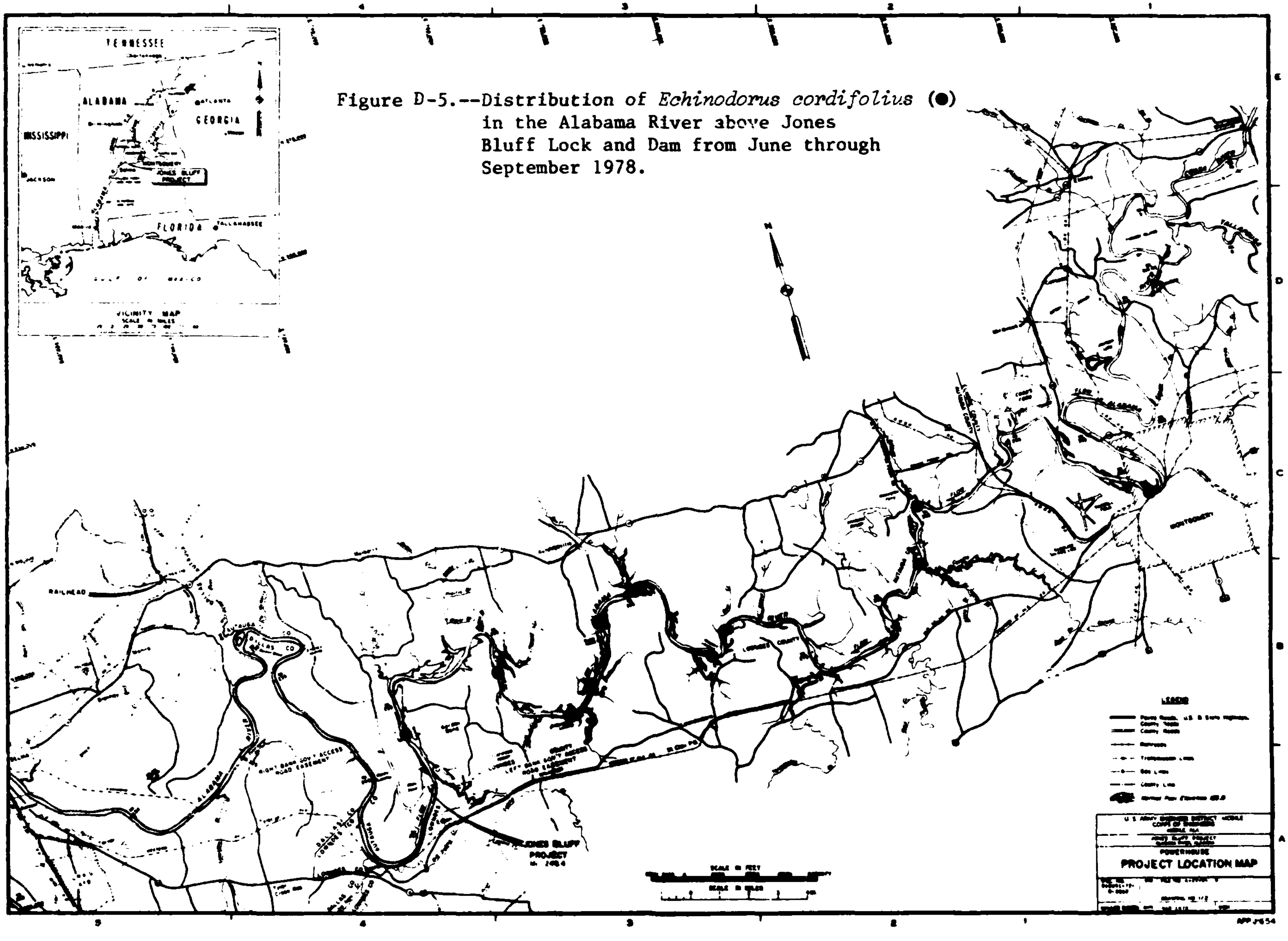

Figure D-5.--Distribution of *Echinodorus cordifolius* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

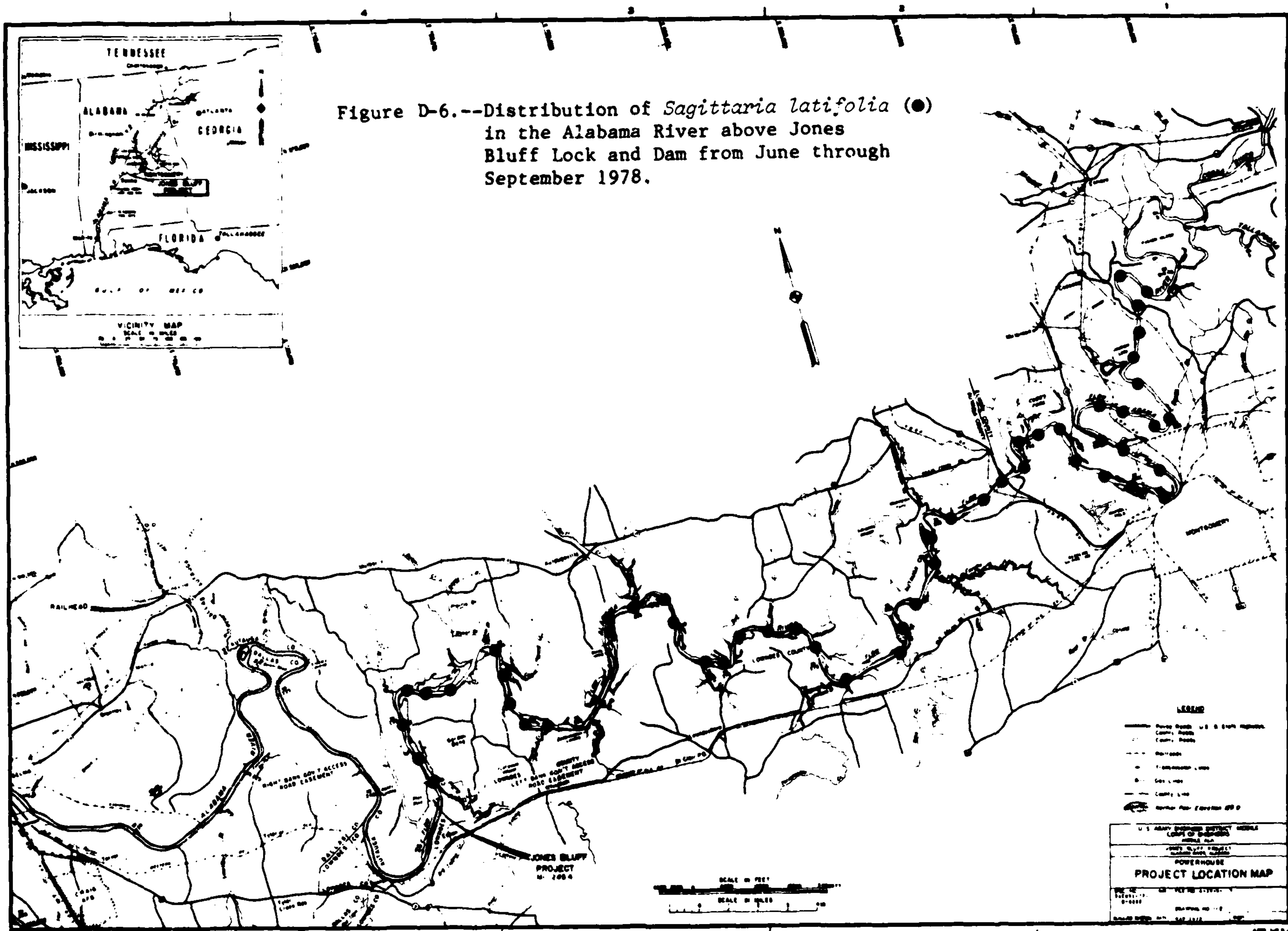

Figure D-6.--Distribution of *Sagittaria latifolia* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

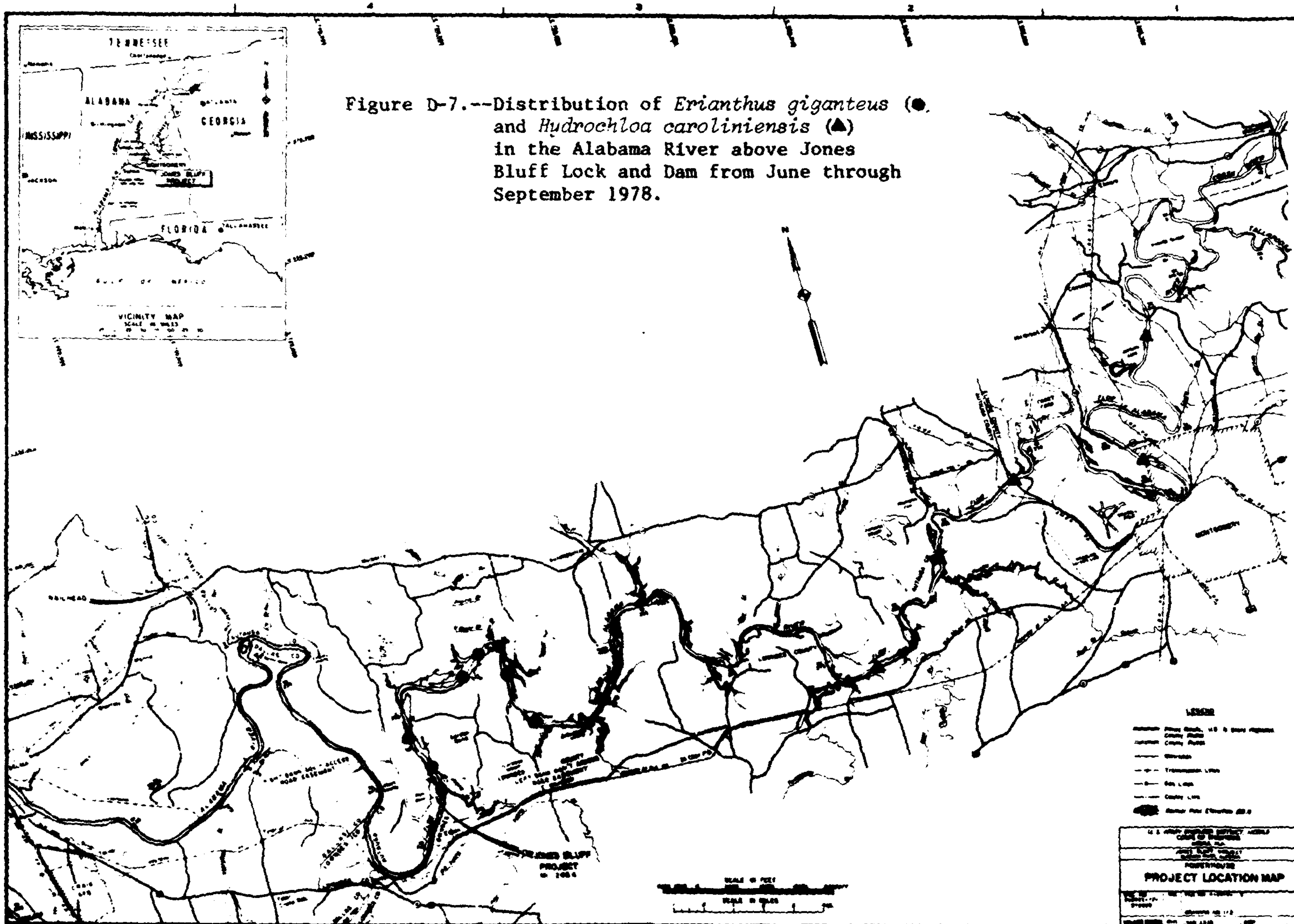

Figure D-7.--Distribution of *Erianthus giganteus* (●) and *Hydrochloa caroliniensis* (▲) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

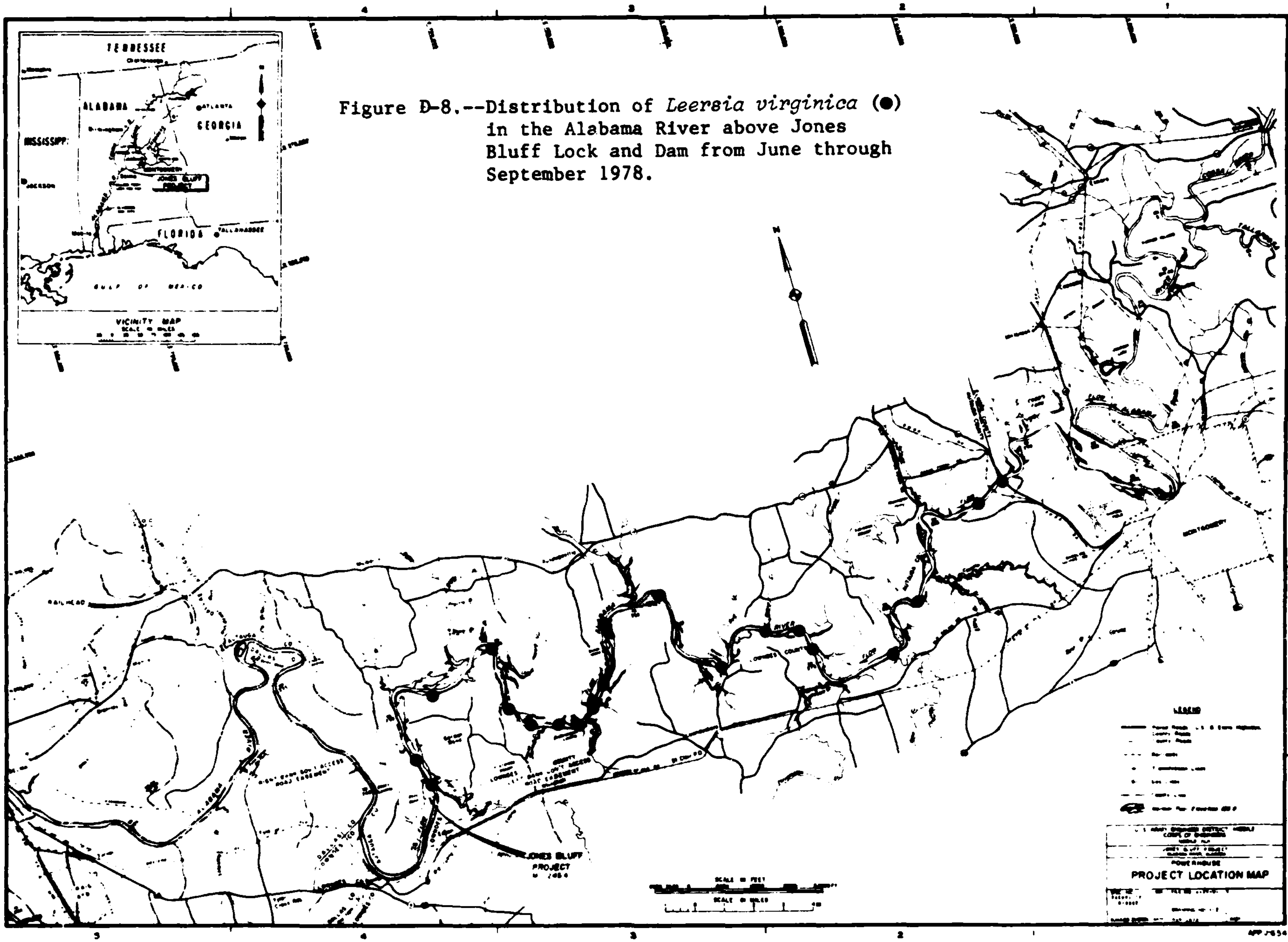

Figure D-8.--Distribution of *Leersia virginica* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

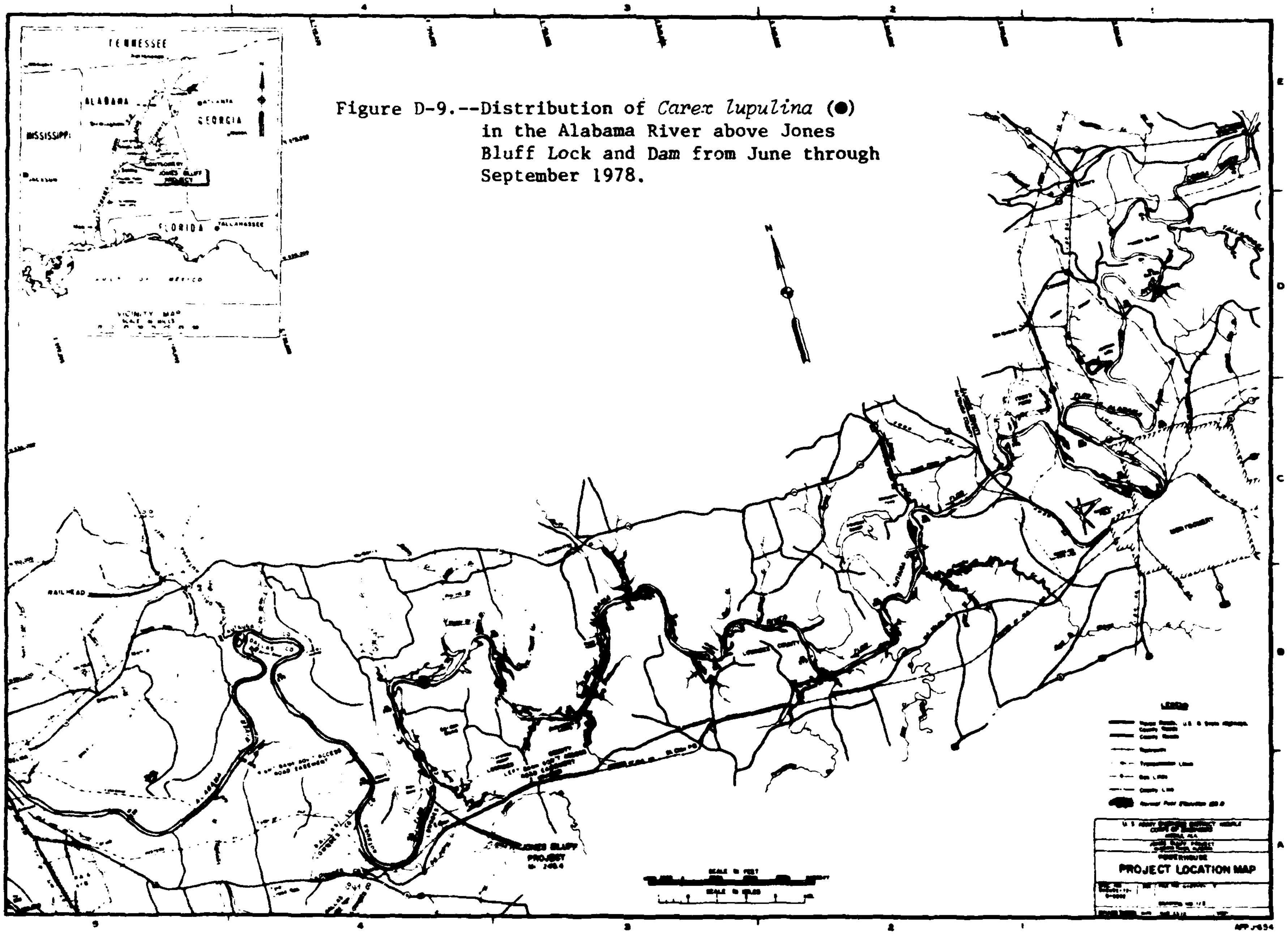

Figure D-9.--Distribution of *Carex lupulina* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

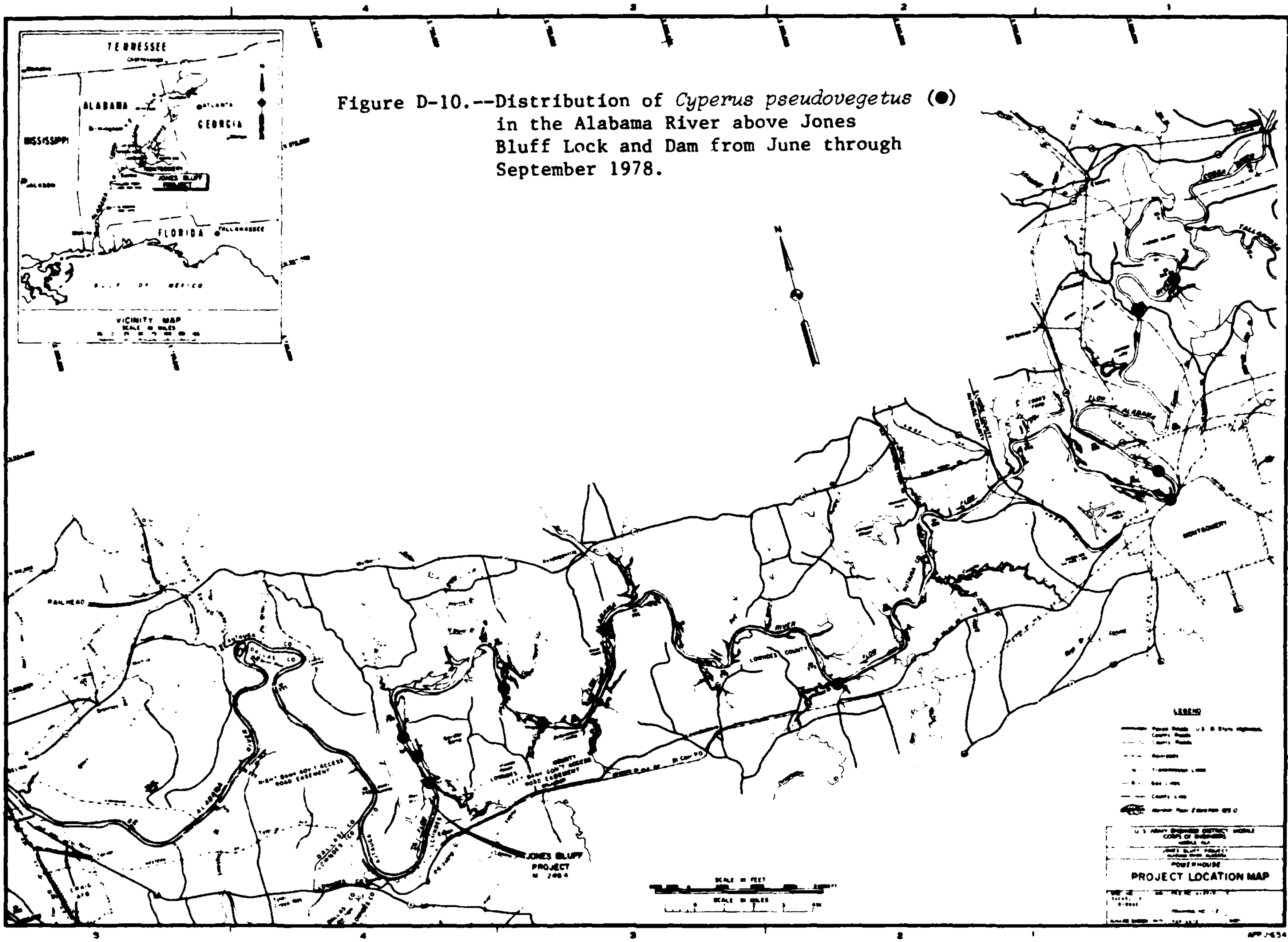

Figure D-10.--Distribution of *Cyperus pseudovegetus* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

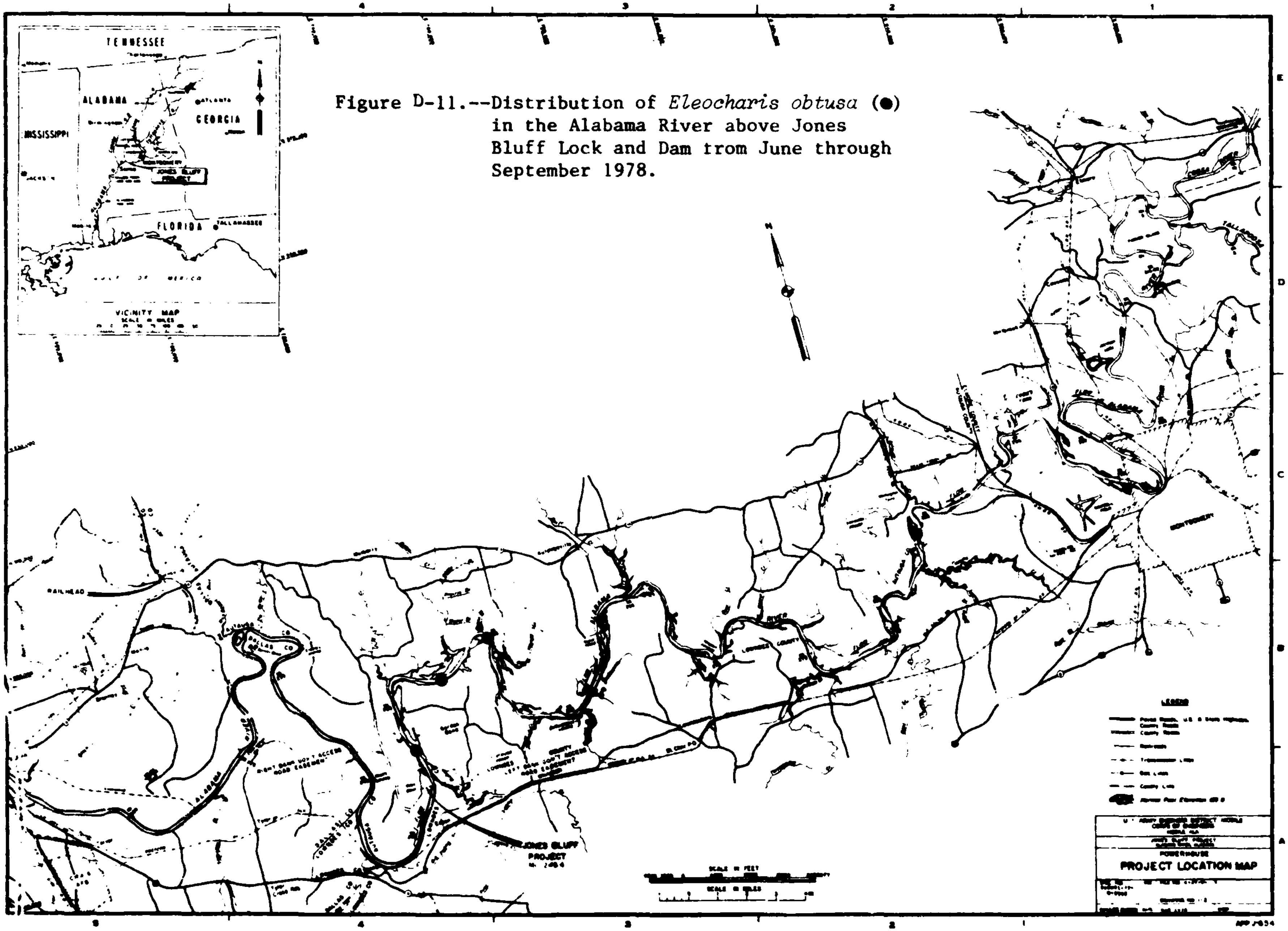

Figure D-11.--Distribution of *Eleocharis obtusa* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

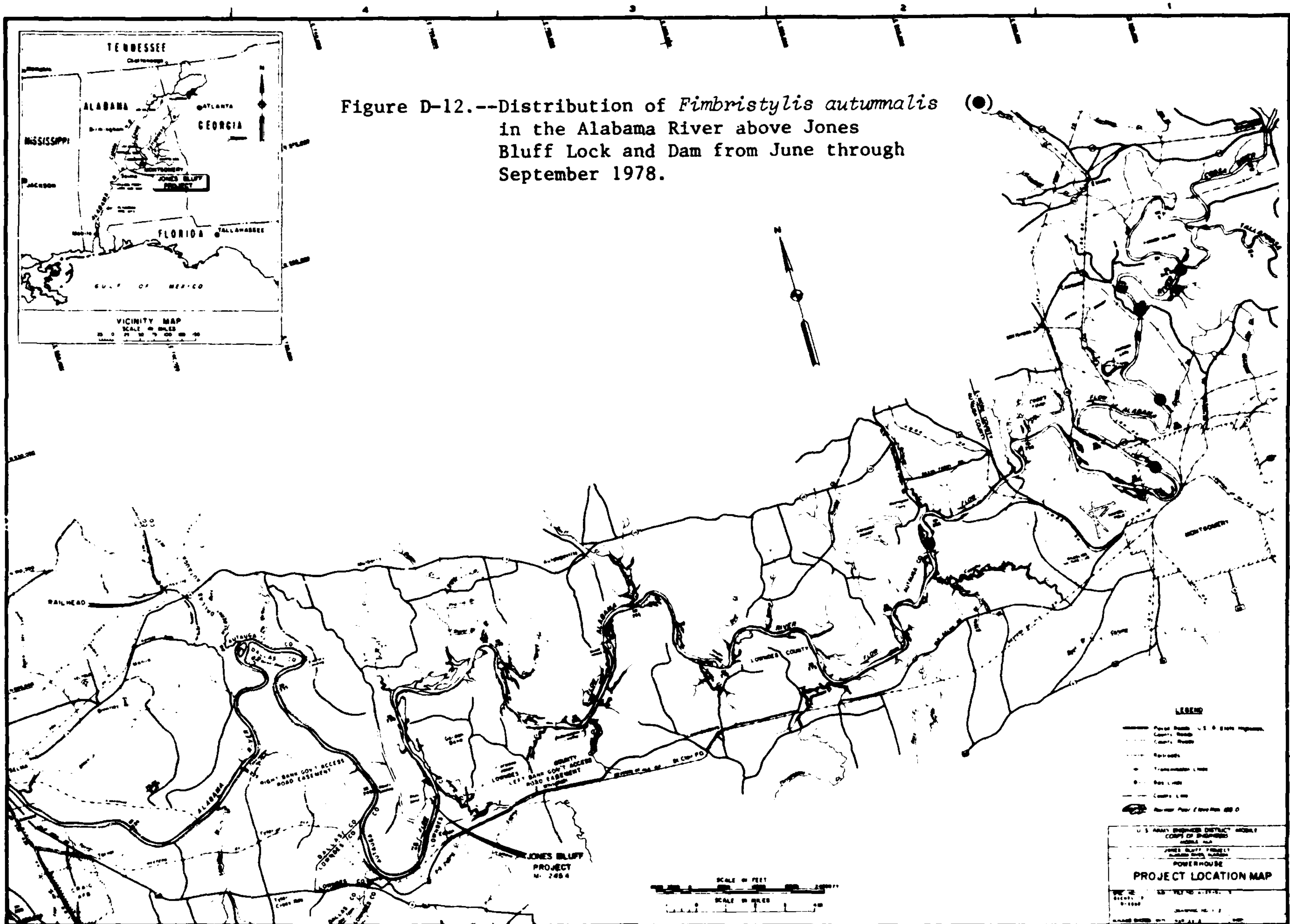

Figure D-12.--Distribution of *Fimbristylis autumnalis* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

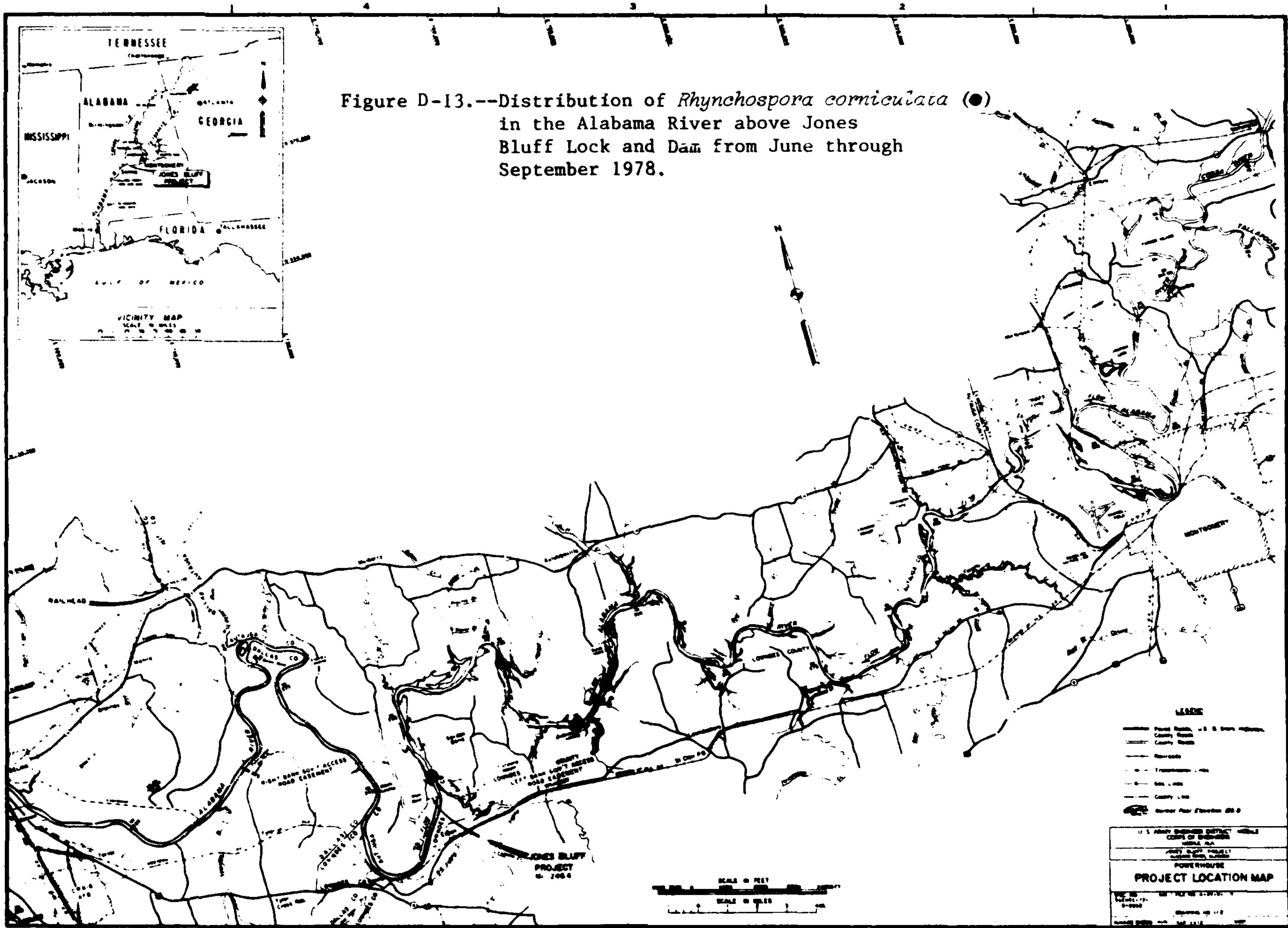

Figure D-13.--Distribution of *Rhynchospora corniculata* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

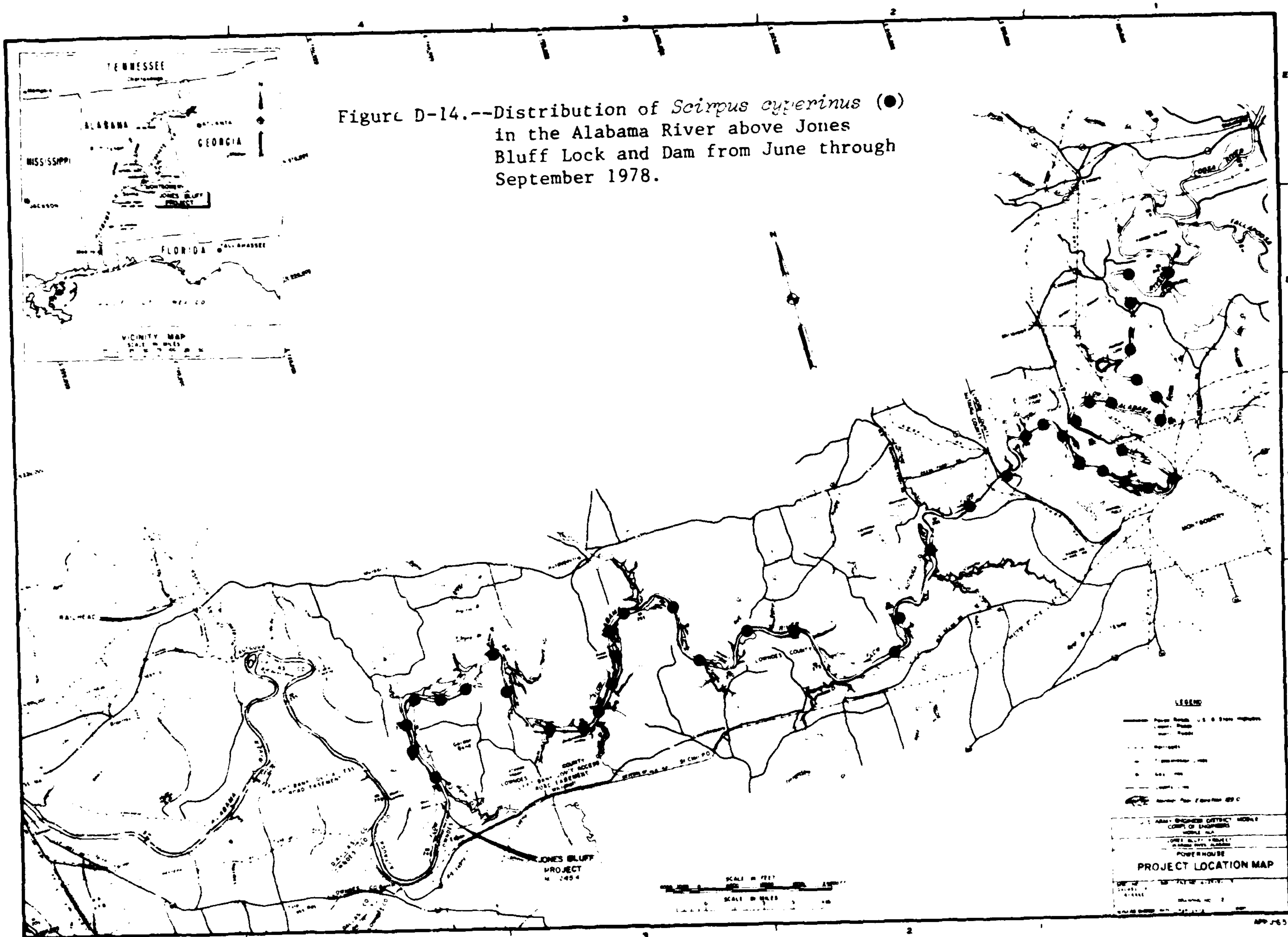

Figure D-14.--Distribution of *Scirpus cyperinus* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

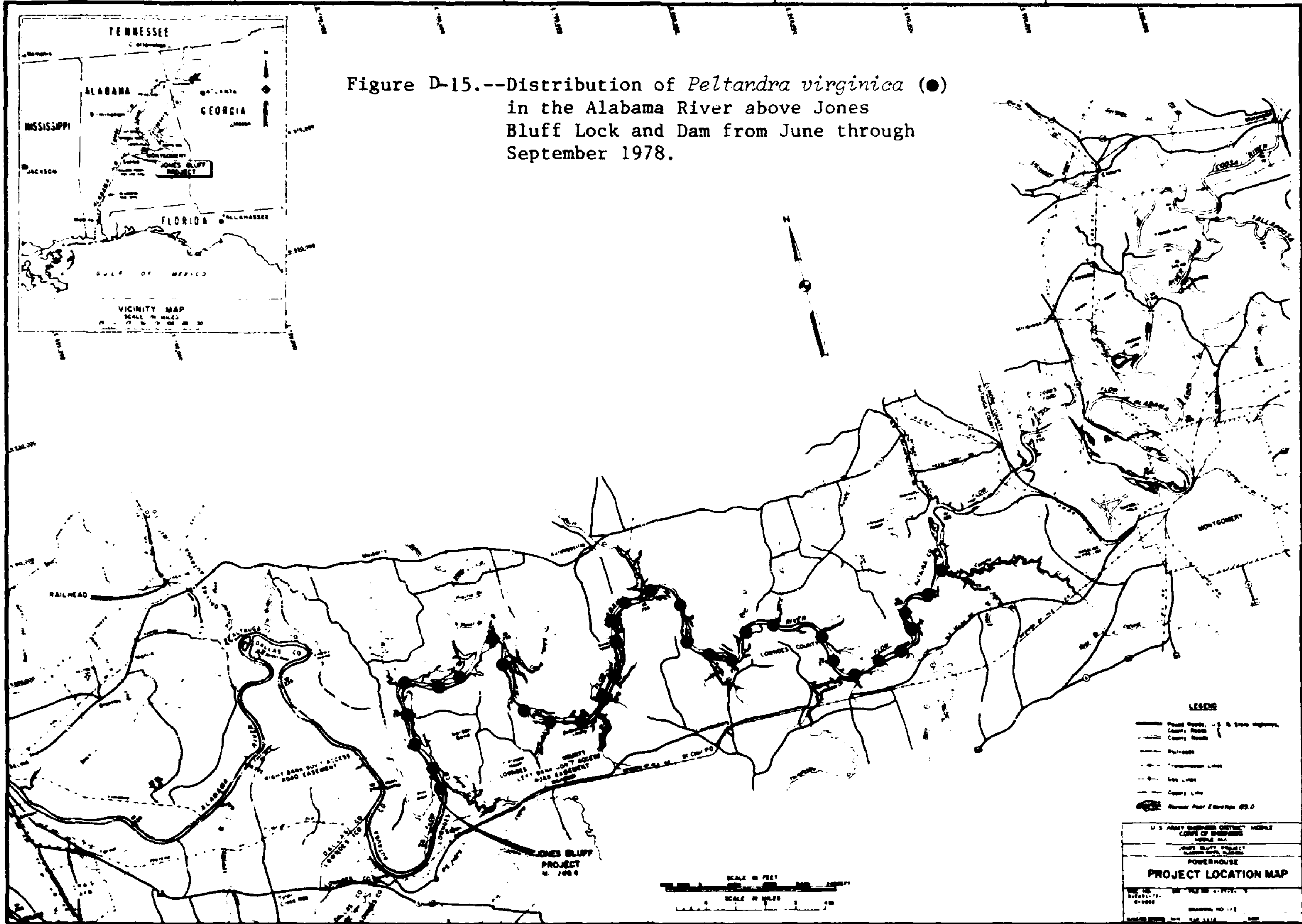

Figure D-15.--Distribution of *Peltandra virginica* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

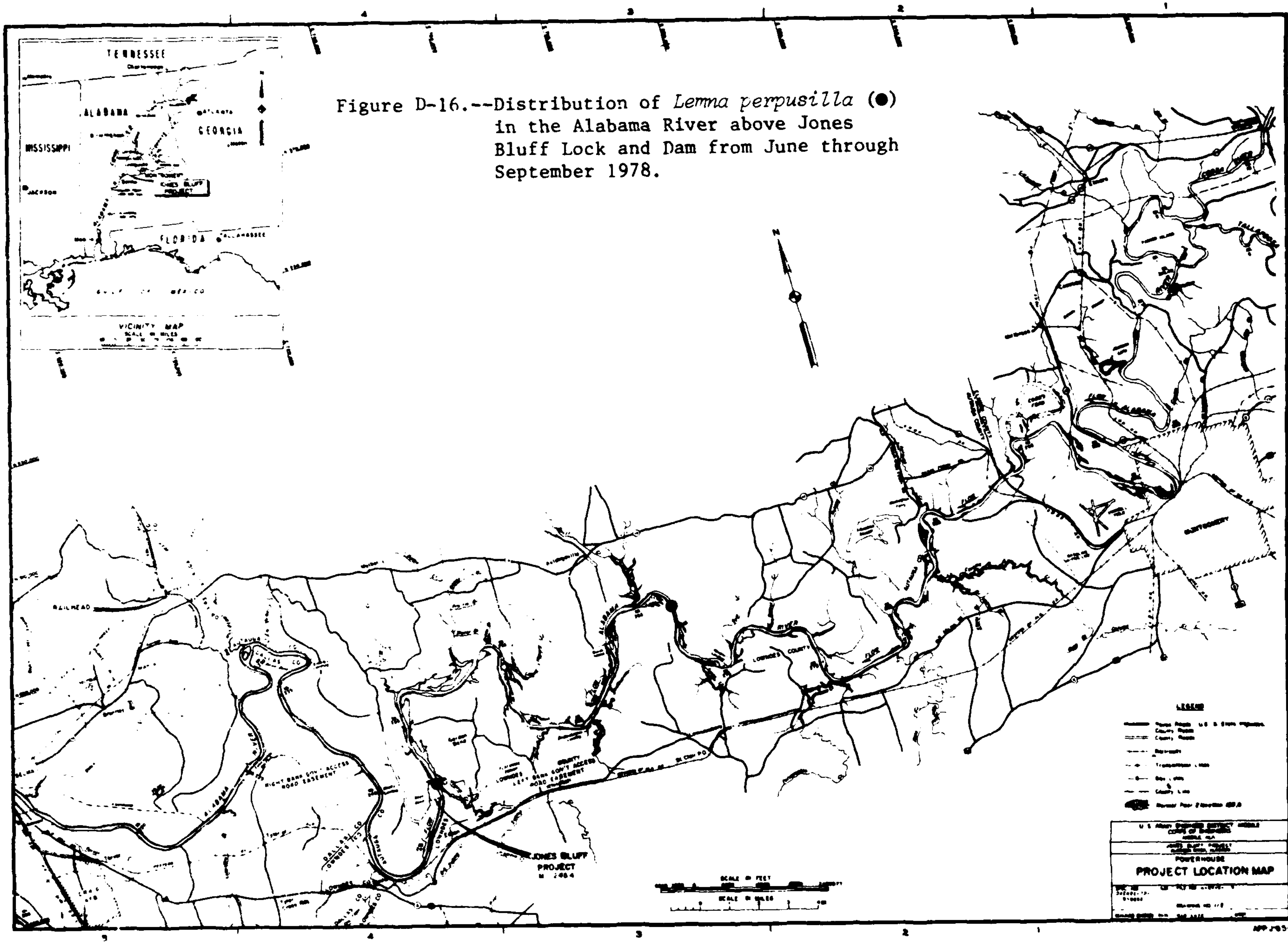

Figure D-16.--Distribution of *Lemna perpusilla* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

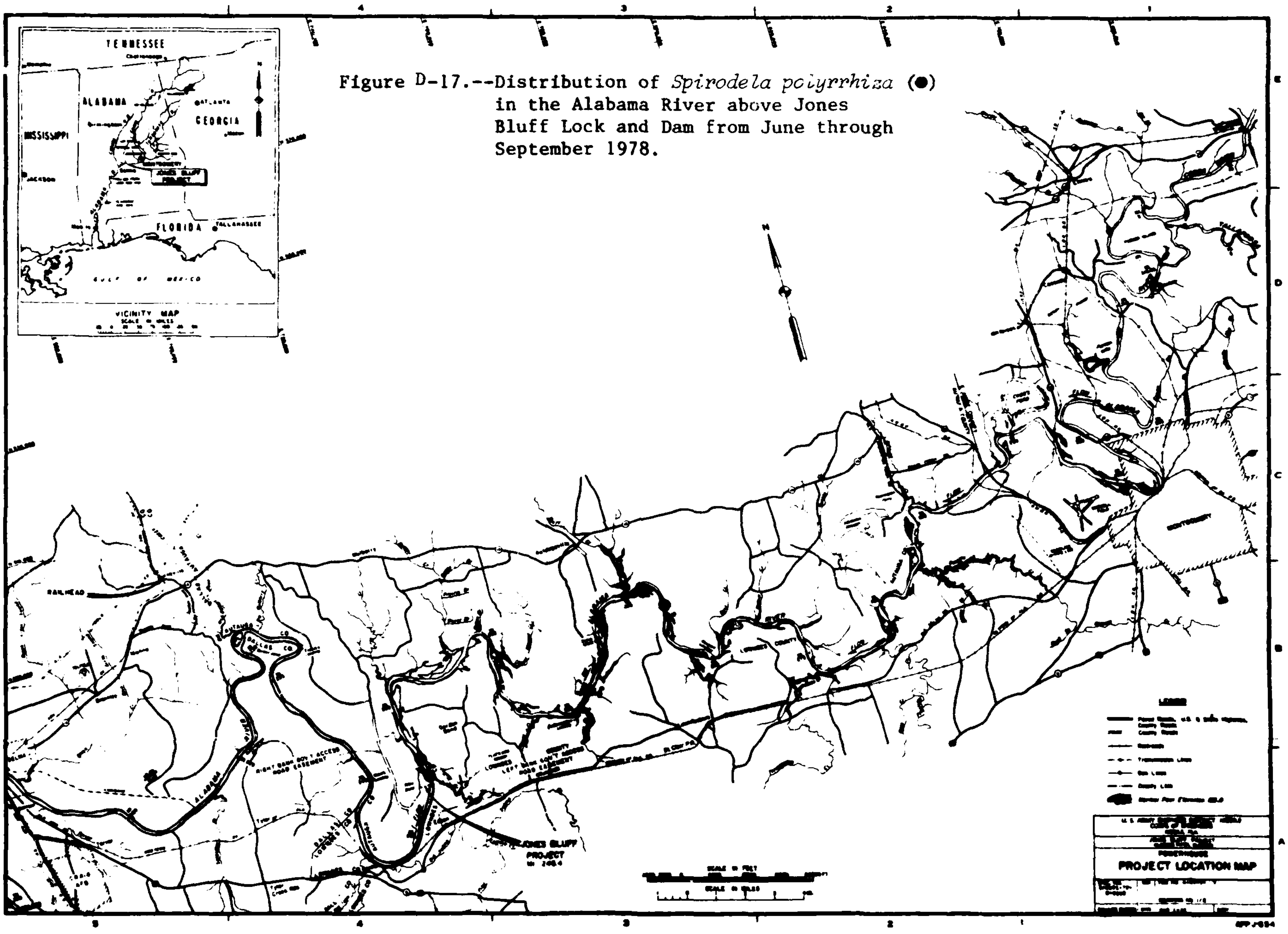

Figure D-17.--Distribution of *Spirodela polyrrhiza* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

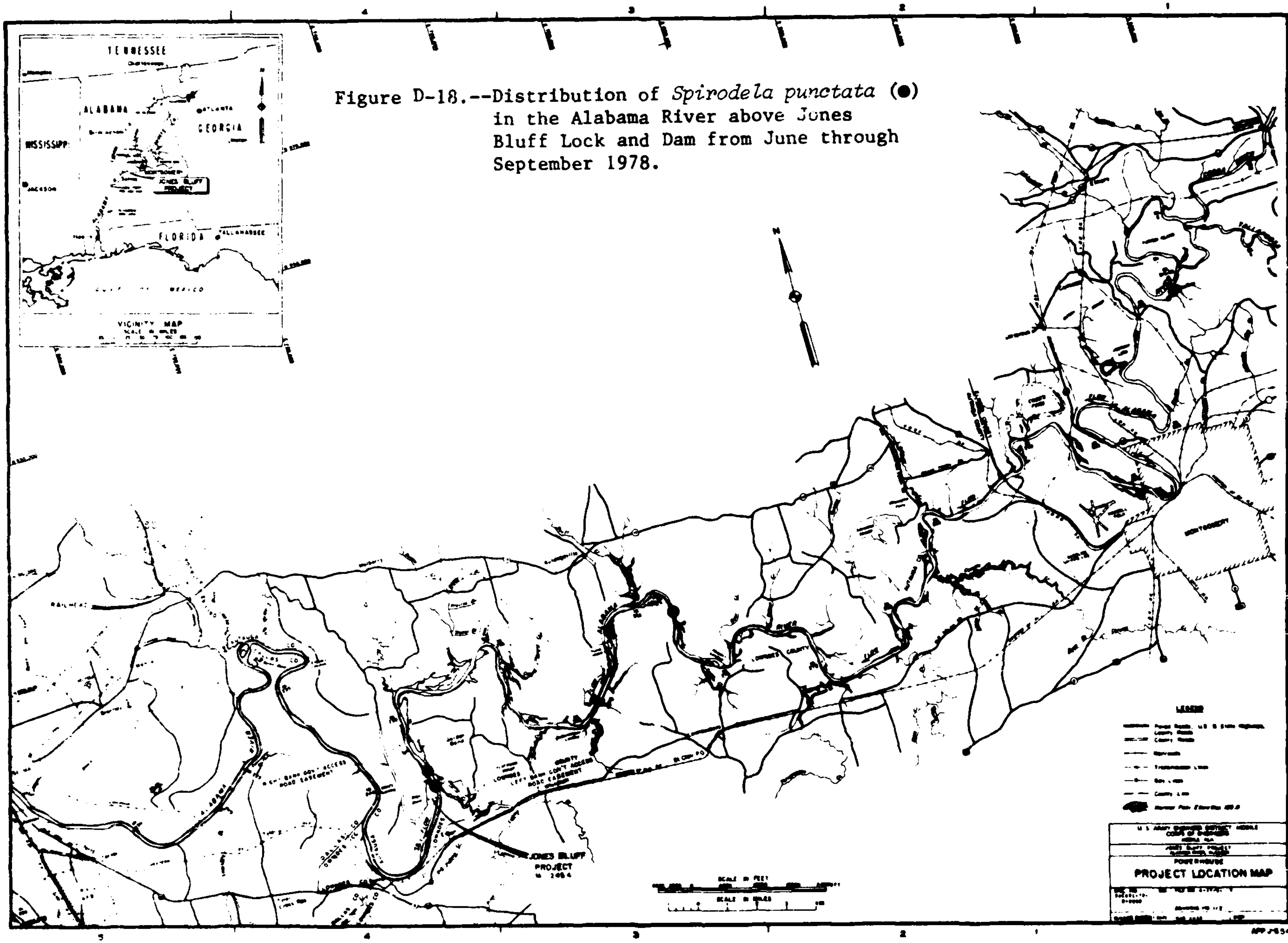

Figure D-18.--Distribution of *Spirodela punctata* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

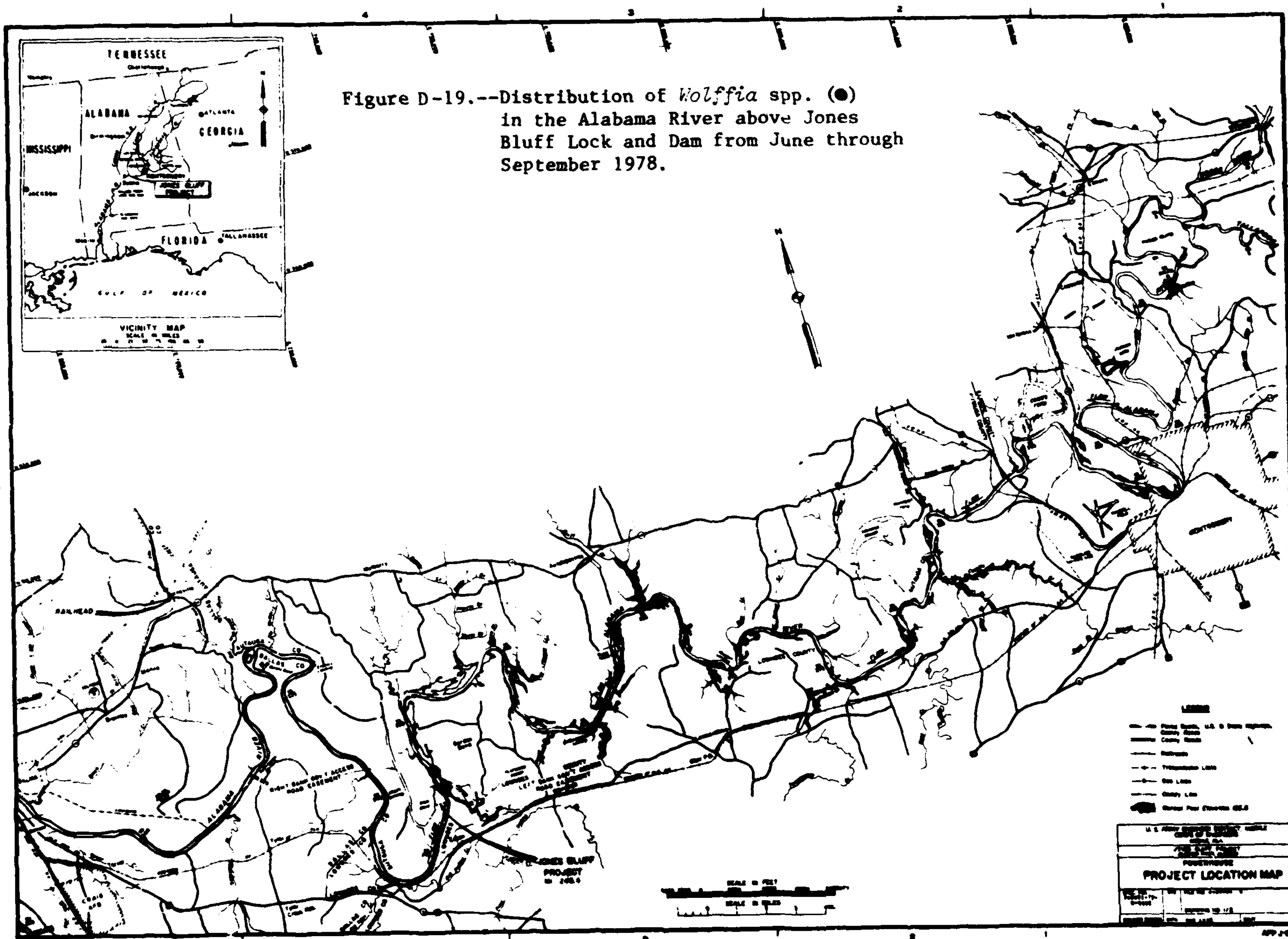

Figure D-19.--Distribution of *Wolffia* spp. (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

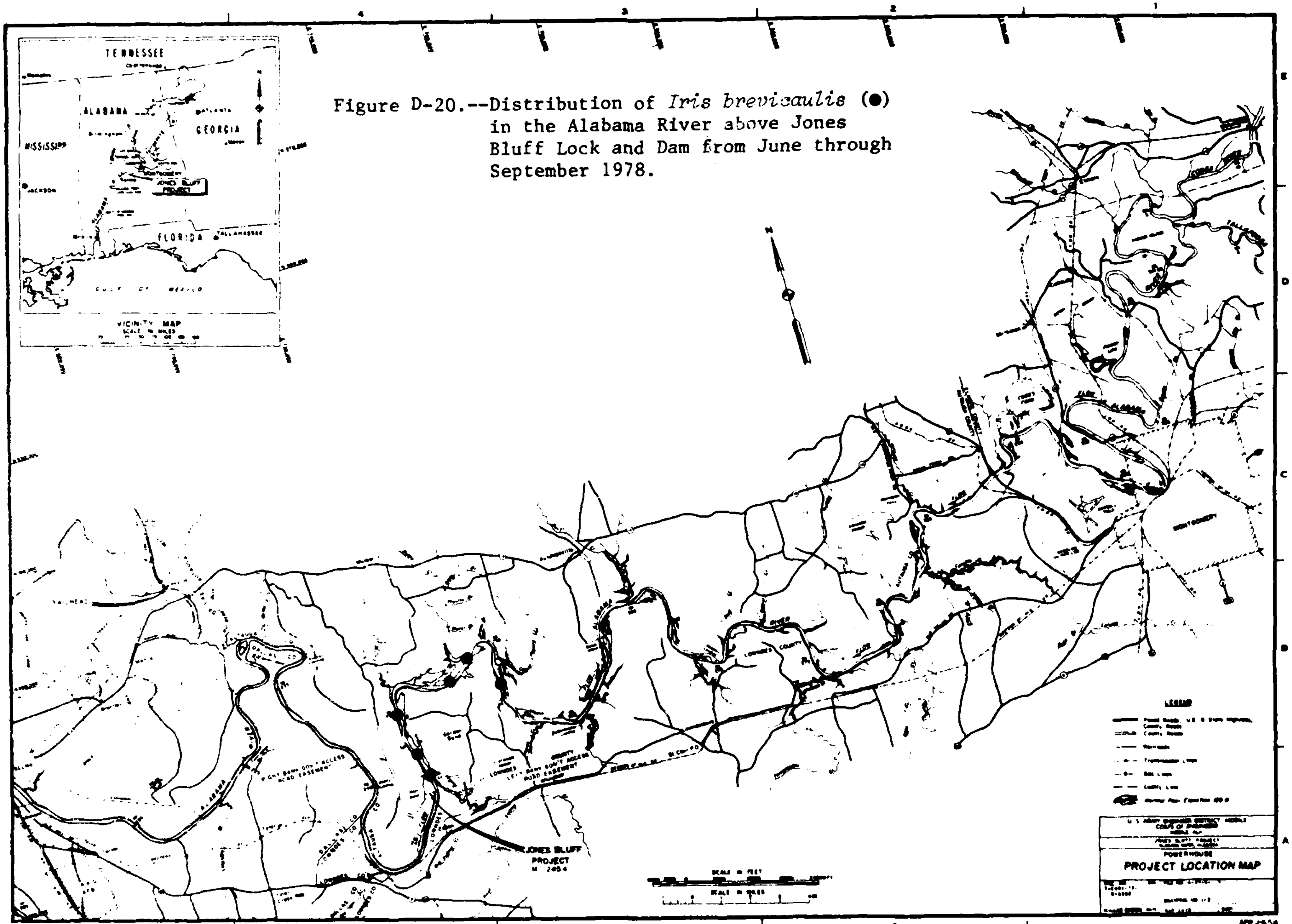

Figure D-20.--Distribution of *Iris brevicaulis* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

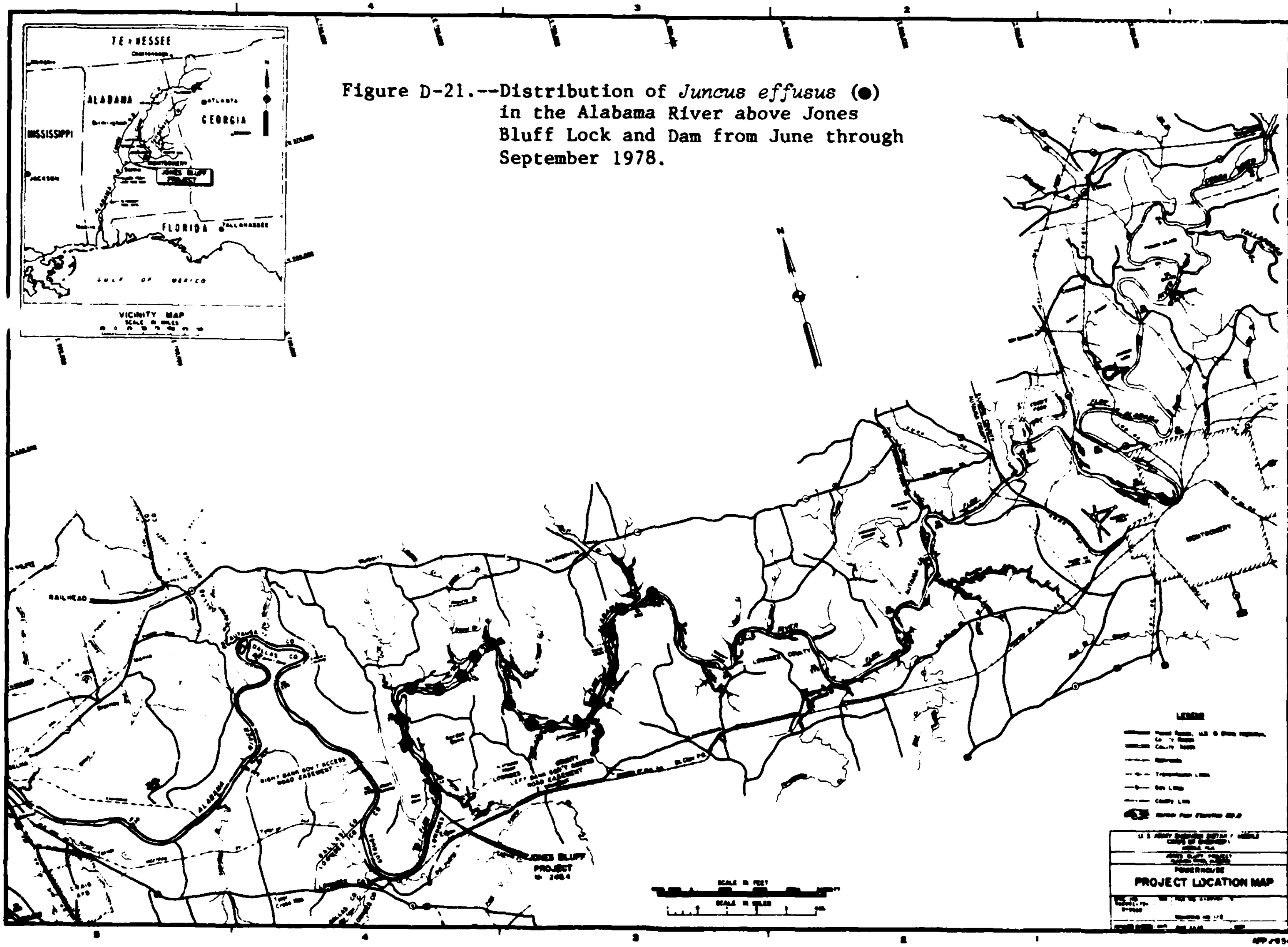

Figure D-21.--Distribution of *Juncus effusus* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

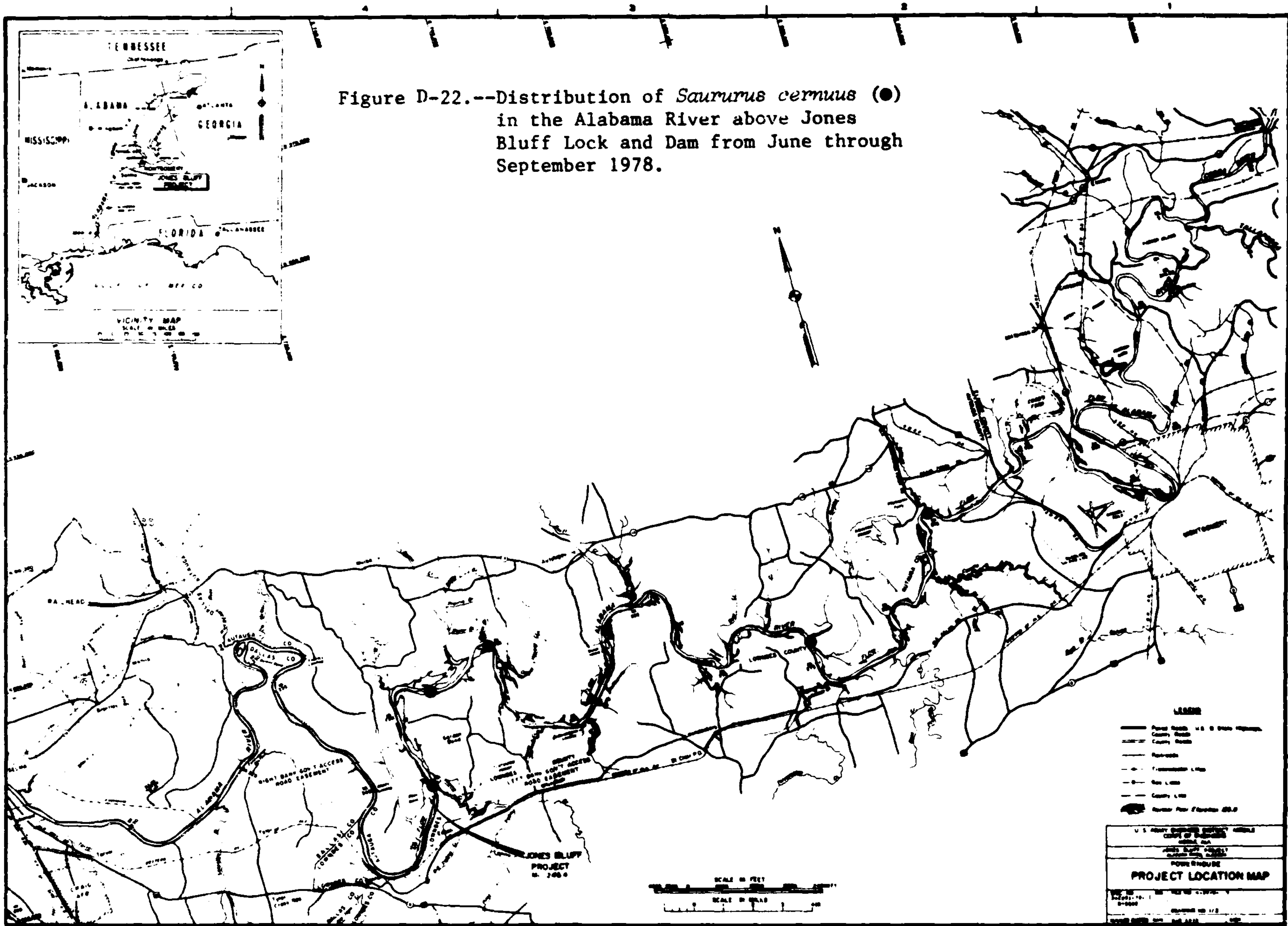

Figure D-22.--Distribution of *Saururus cernuus* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

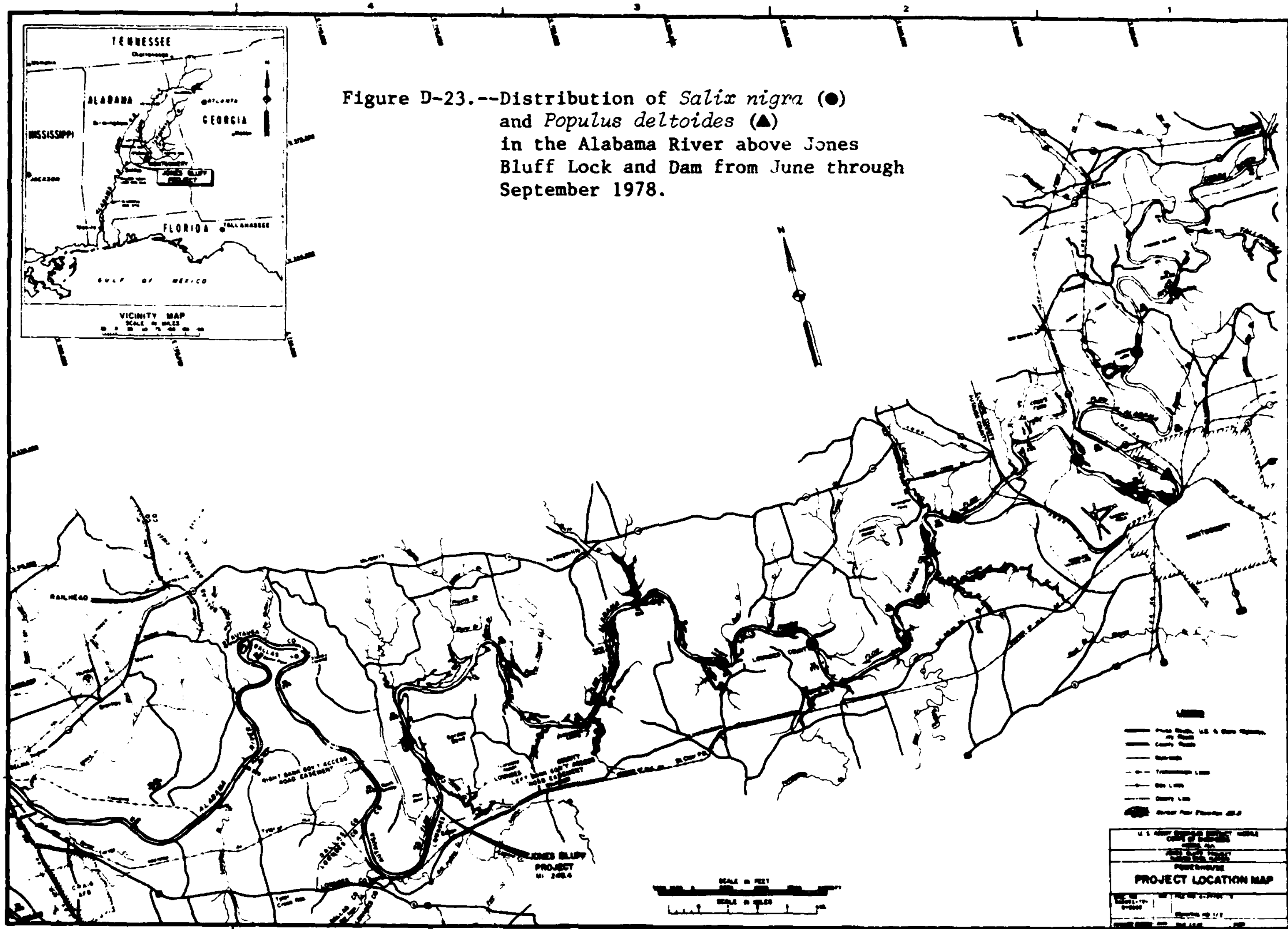

Figure D-23.--Distribution of *Salix nigra* (●) and *Populus deltoides* (▲) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

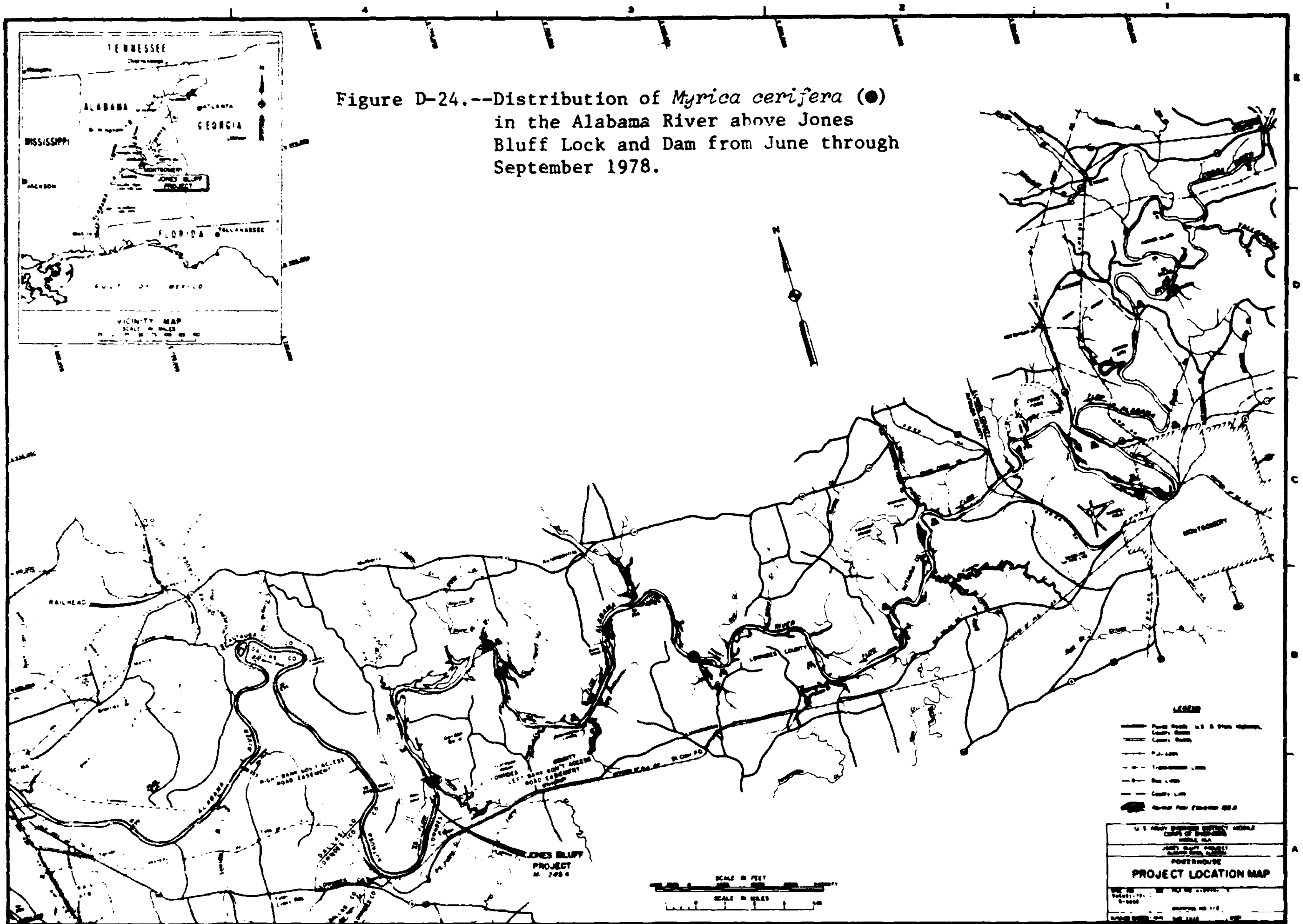

Figure D-24.--Distribution of *Myrica cerifera* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

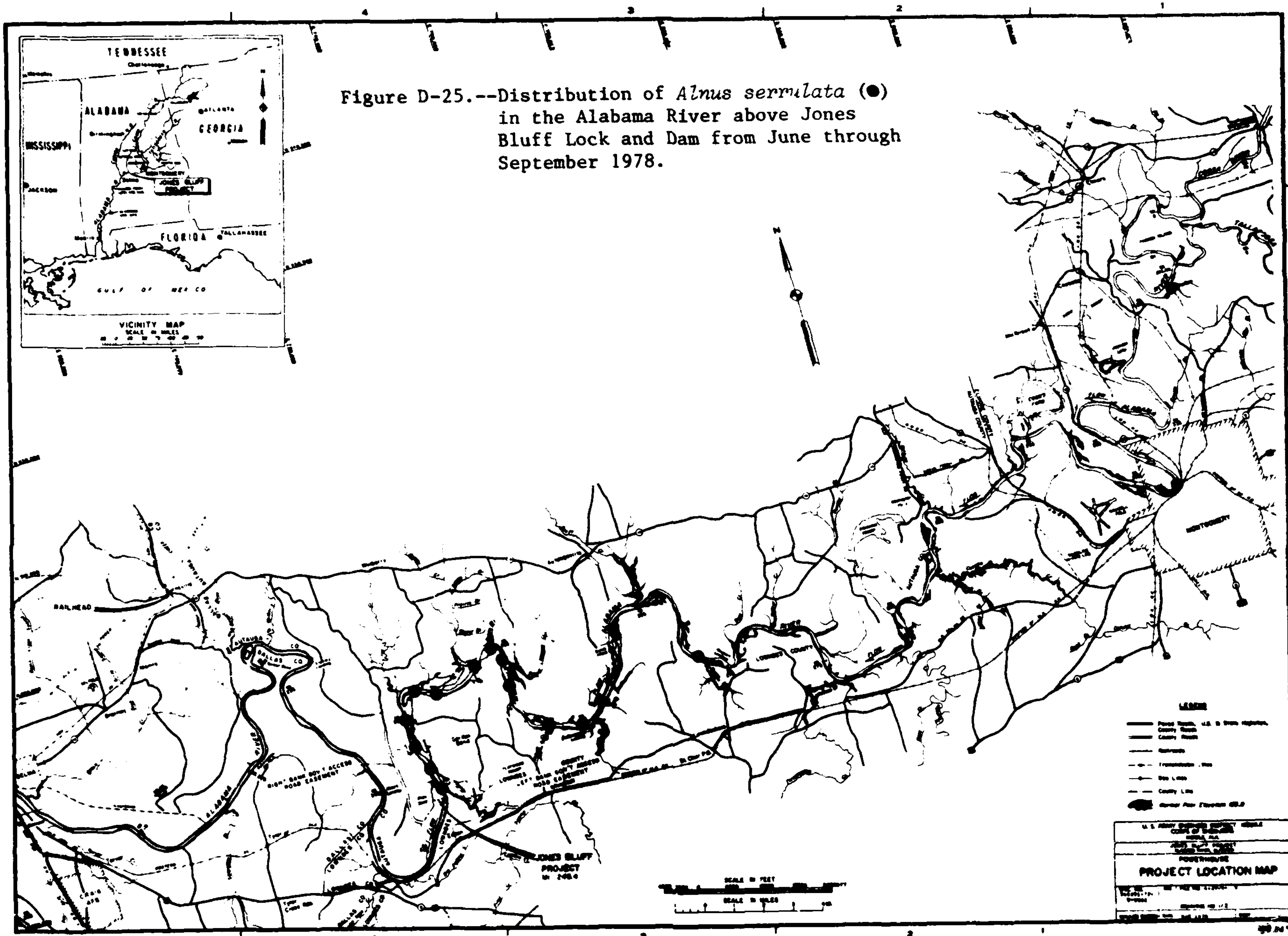

Figure D-25.--Distribution of *Alnus serrulata* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

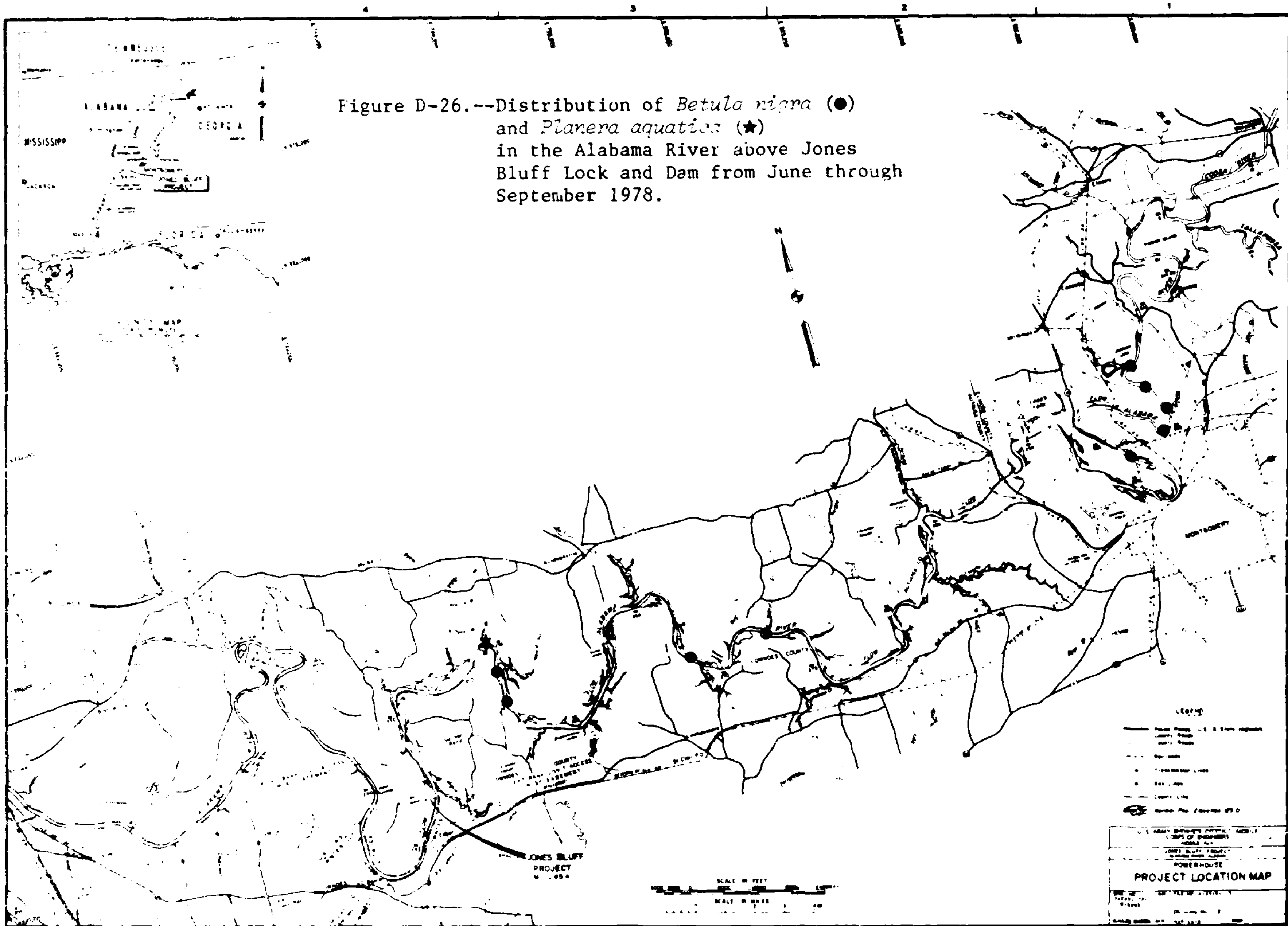

Figure D-26.--Distribution of *Betula nigra* (●) and *Planera aquatica* (★) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

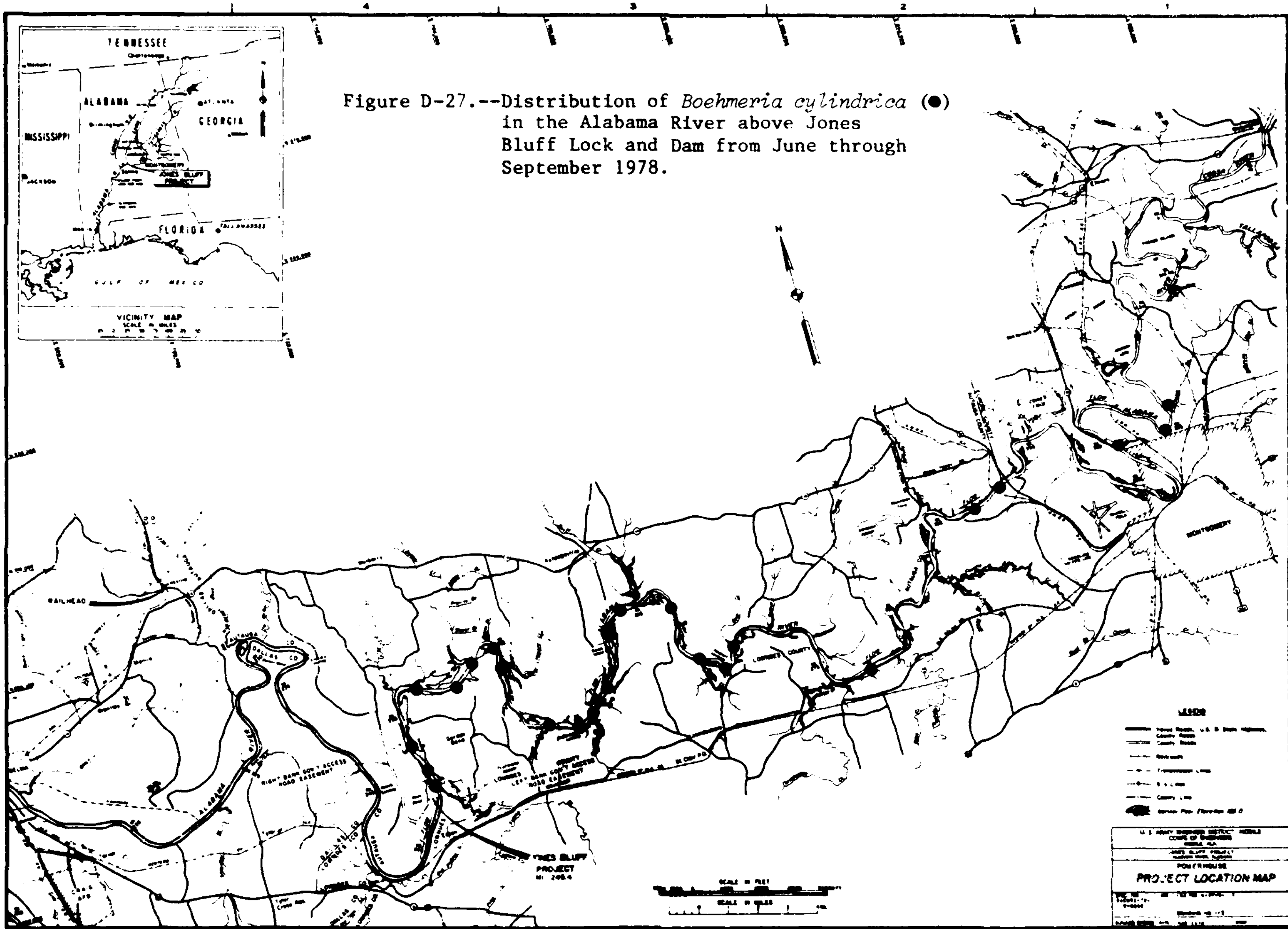

Figure D-27.--Distribution of *Boehmeria cylindrica* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

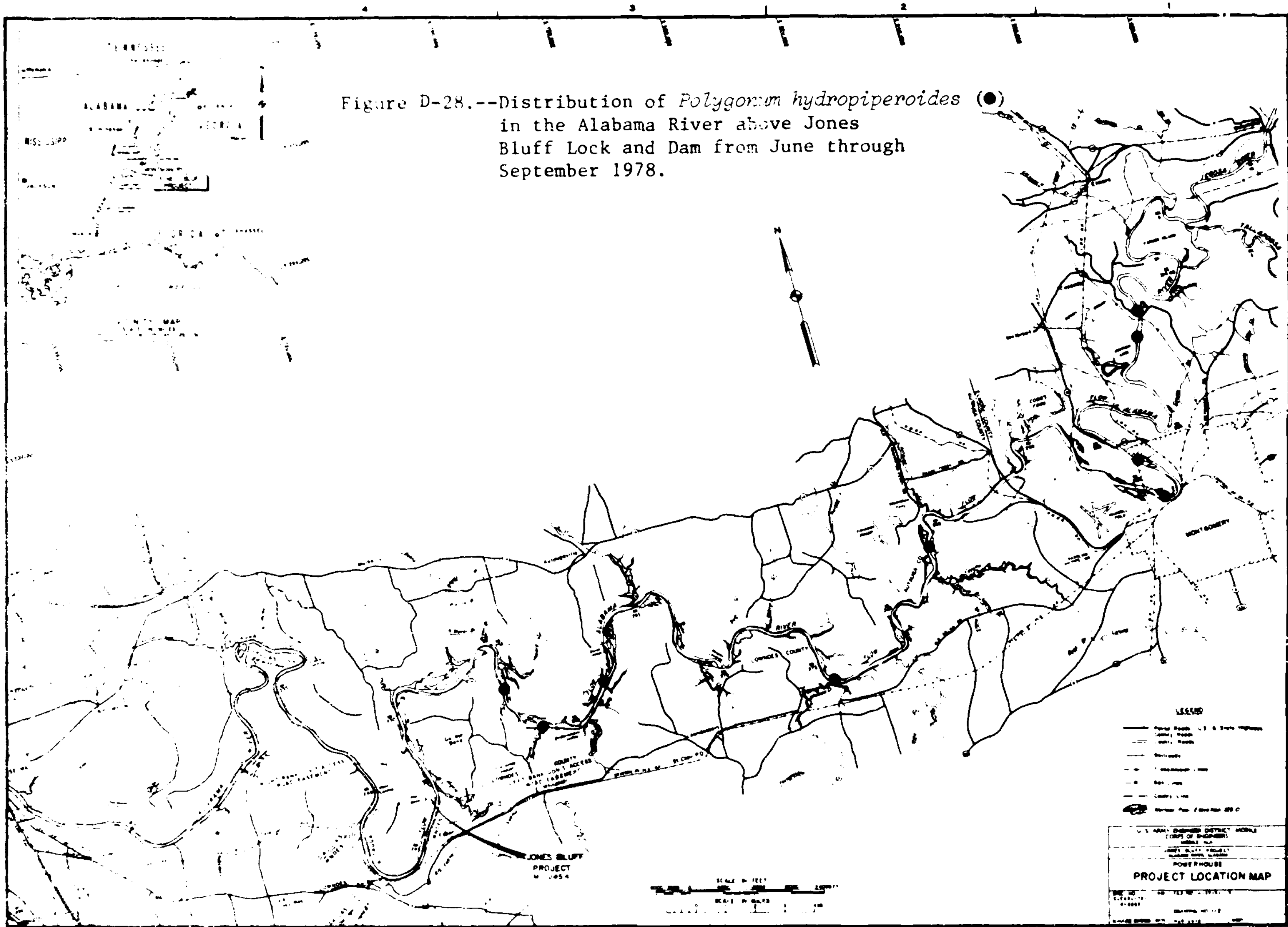

Figure D-28.--Distribution of *Polygonum hydropiperoides* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

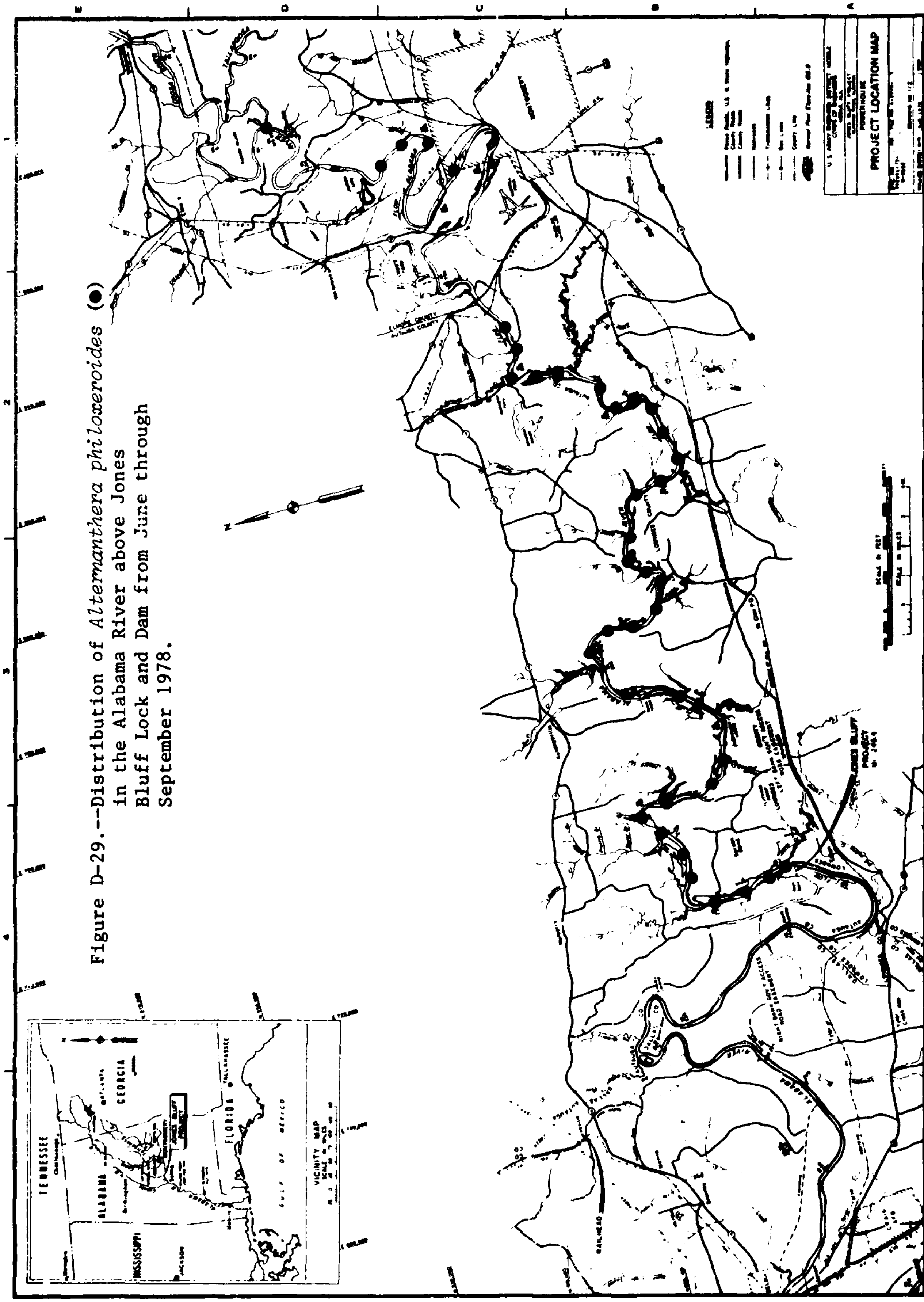

Figure D-29.--Distribution of *Alternanthera philoxeroides* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

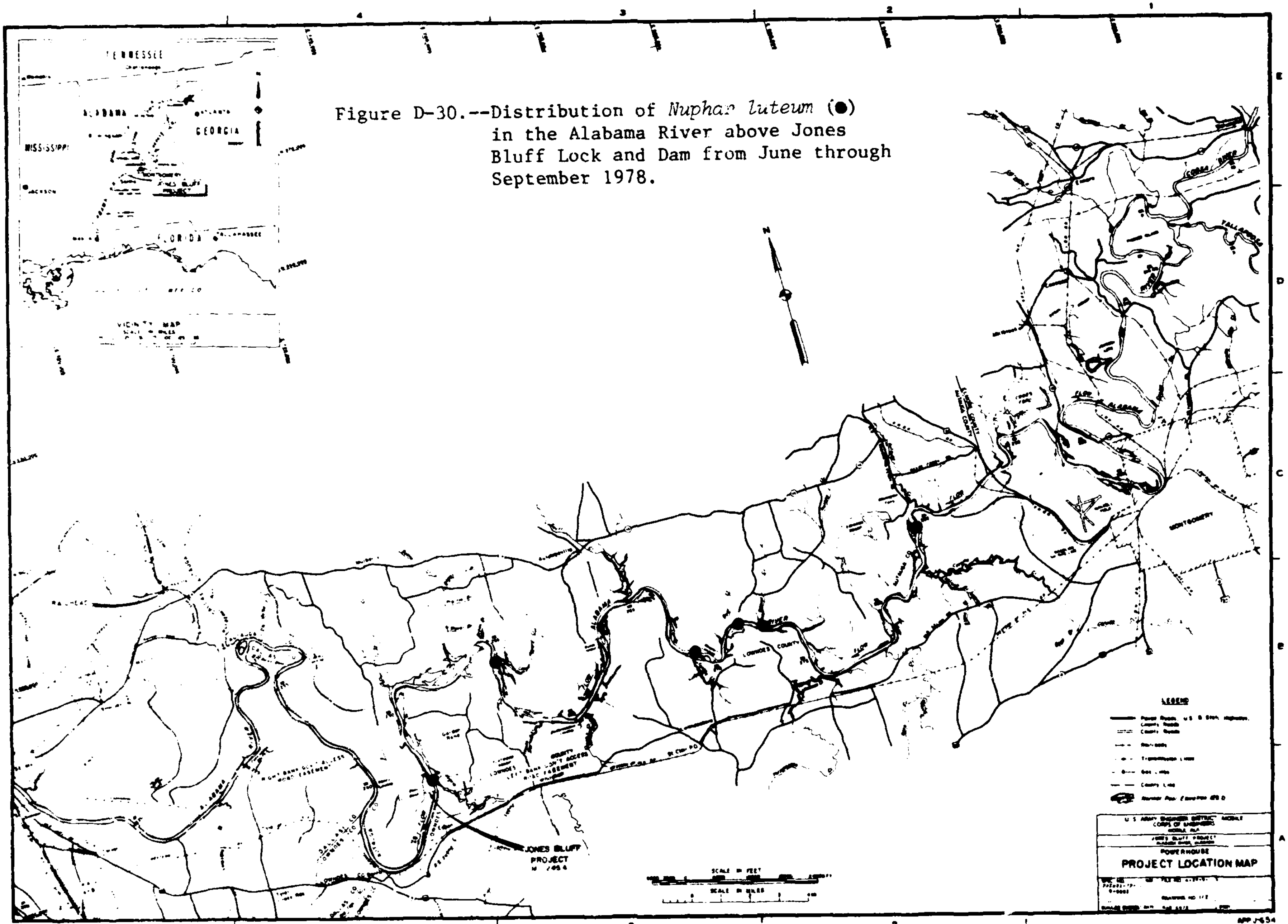

Figure D-30.--Distribution of *Nuphar luteum* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

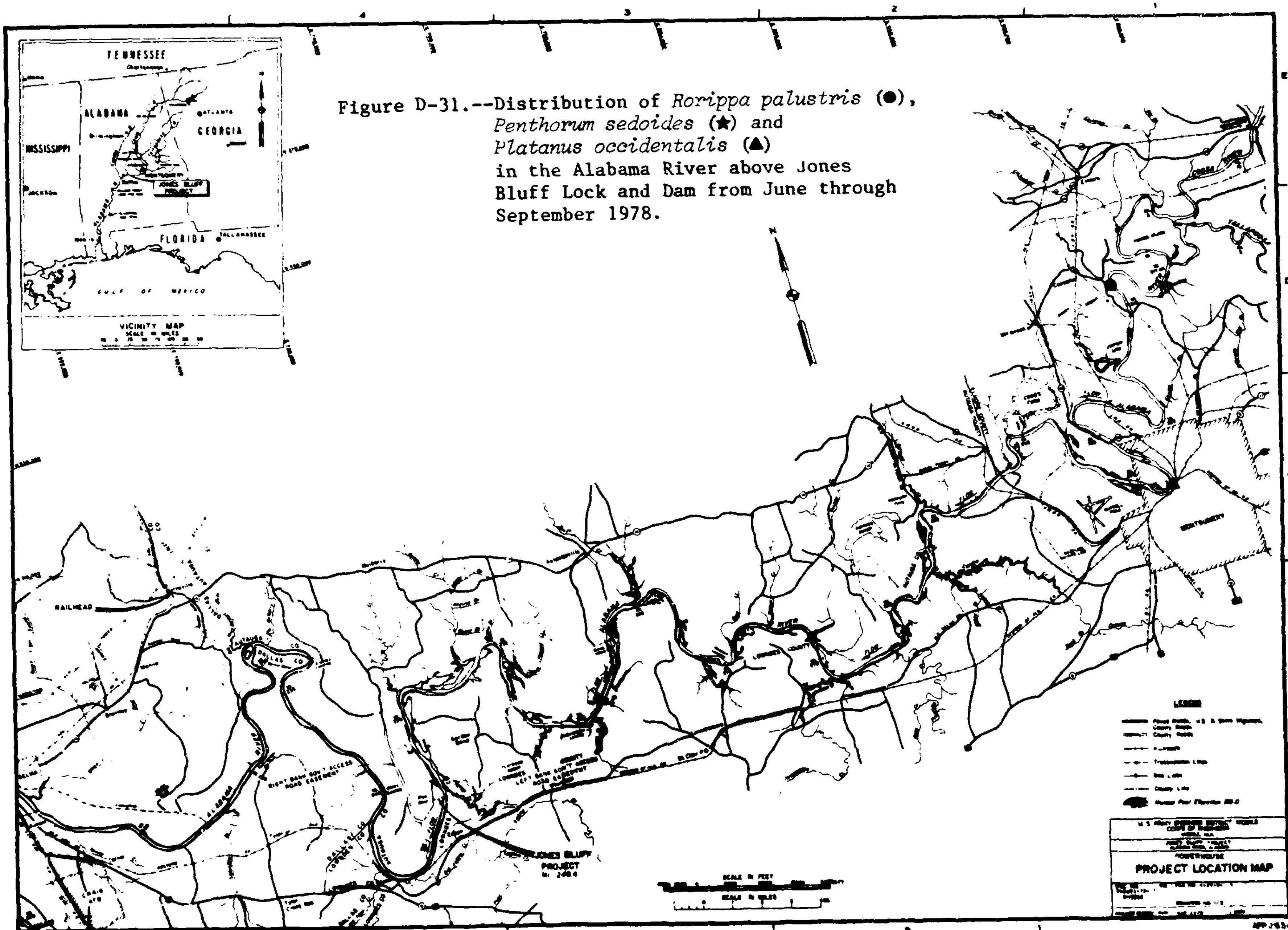

Figure D-31.--Distribution of *Rorippa palustris* (●), *Penthorum sedoides* (★) and *Platanus occidentalis* (▲) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

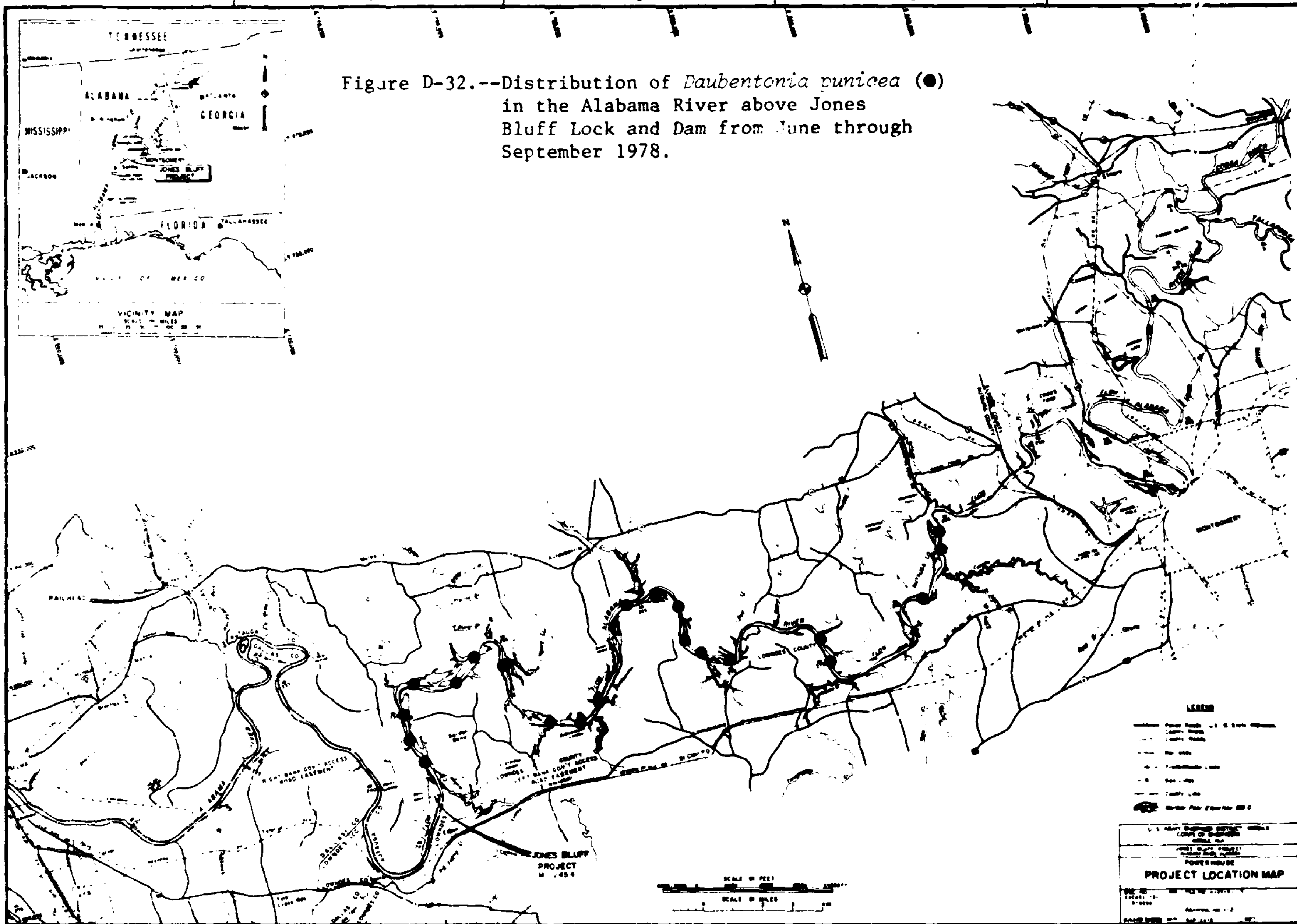

Figure D-32.--Distribution of *Daubentonia punicea* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

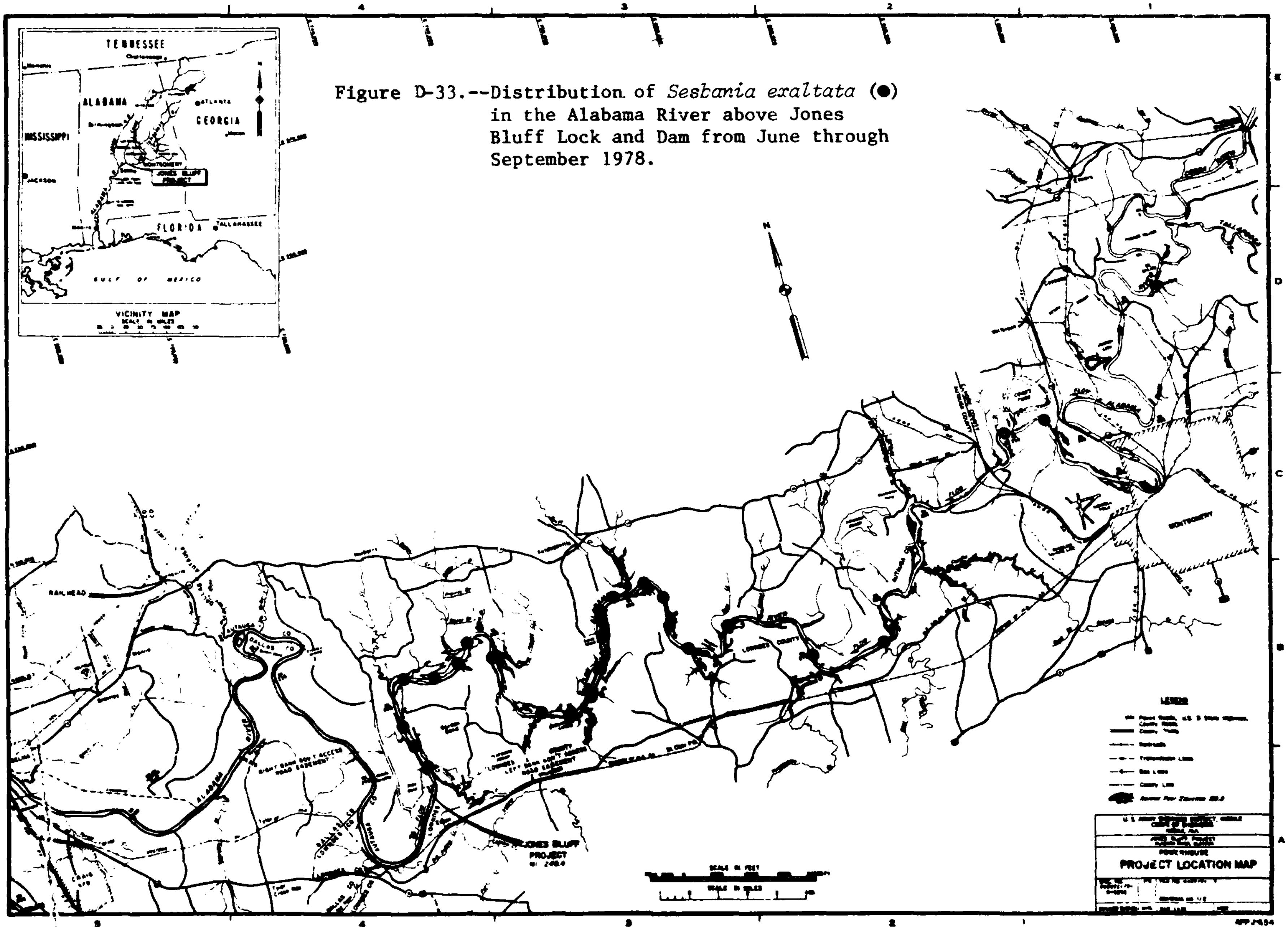

Figure D-33.--Distribution of *Sesbania exaltata* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

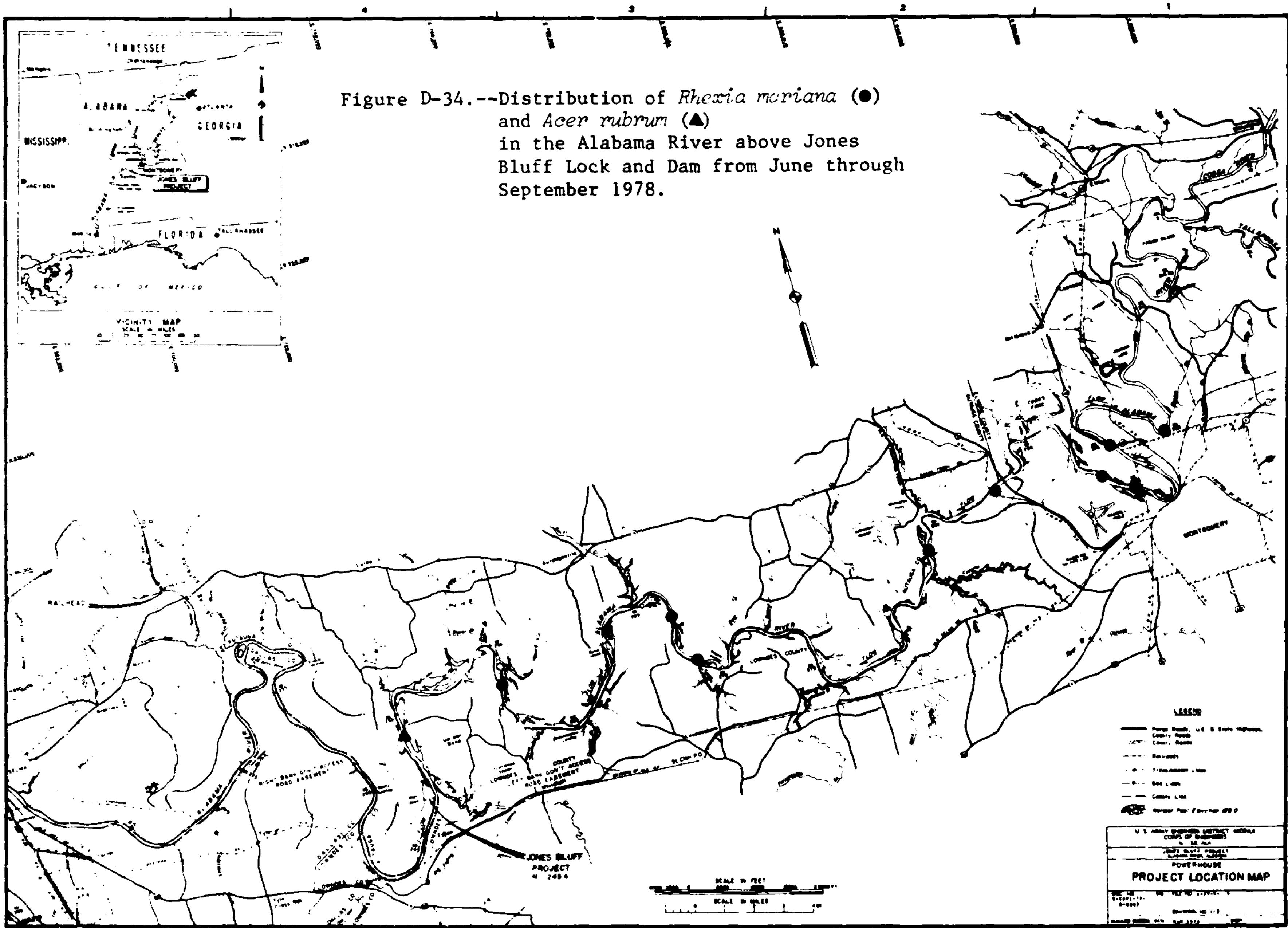

Figure D-34.--Distribution of *Rhexia mariana* (●) and *Acer rubrum* (▲) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

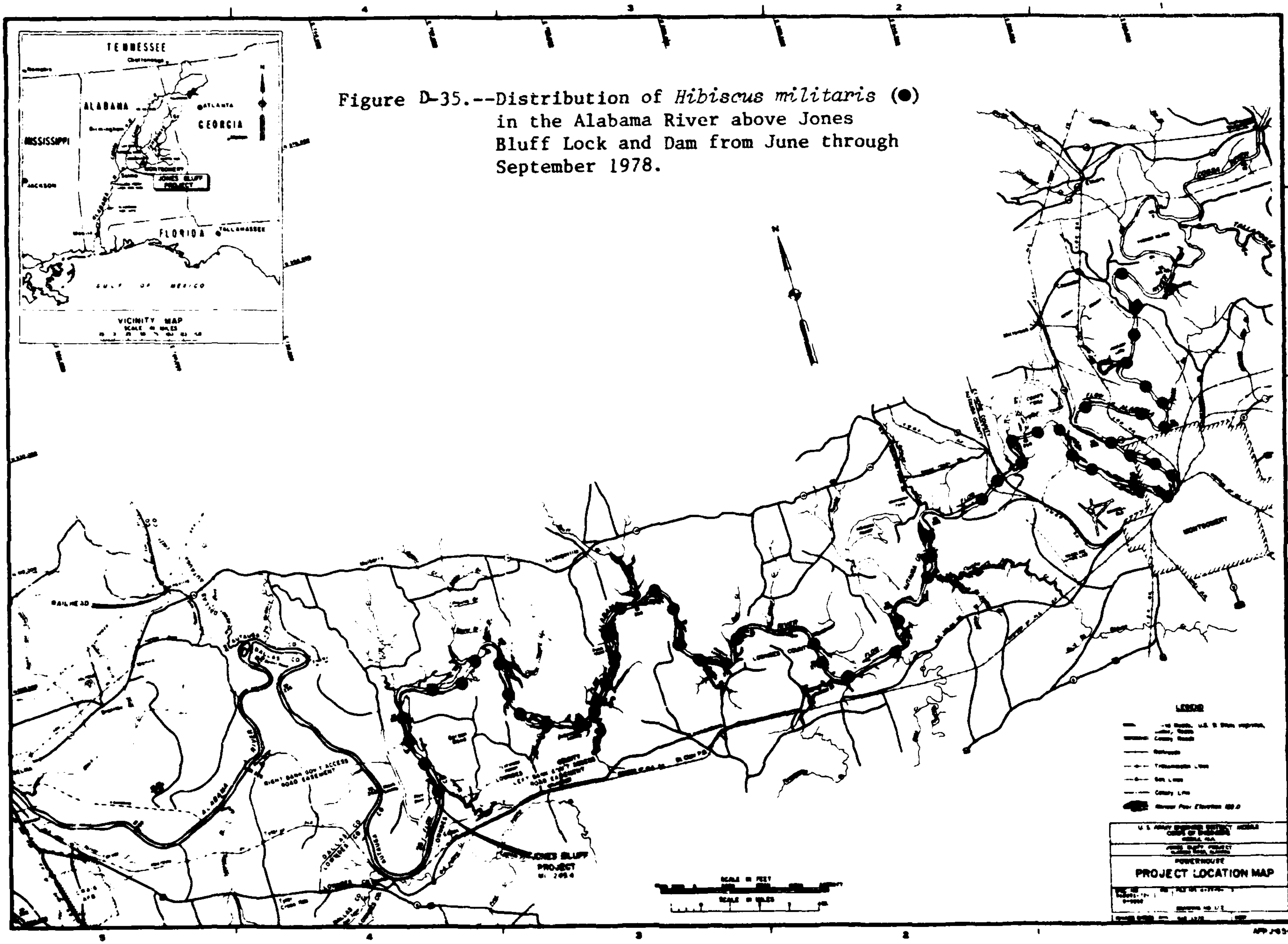

Figure D-35.--Distribution of *Hibiscus militaris* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

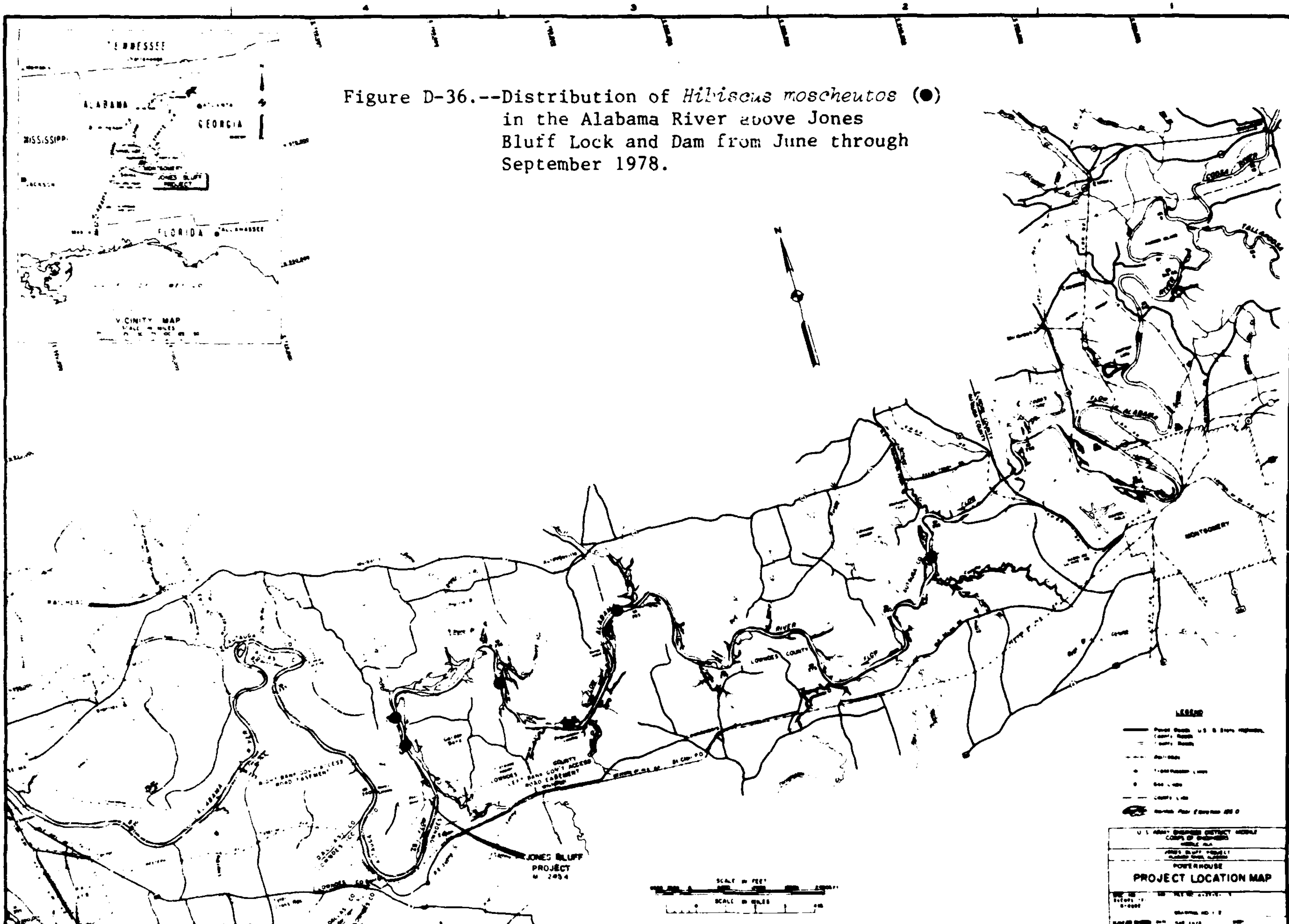

Figure D-36.--Distribution of *Hibiscus moscheutos* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

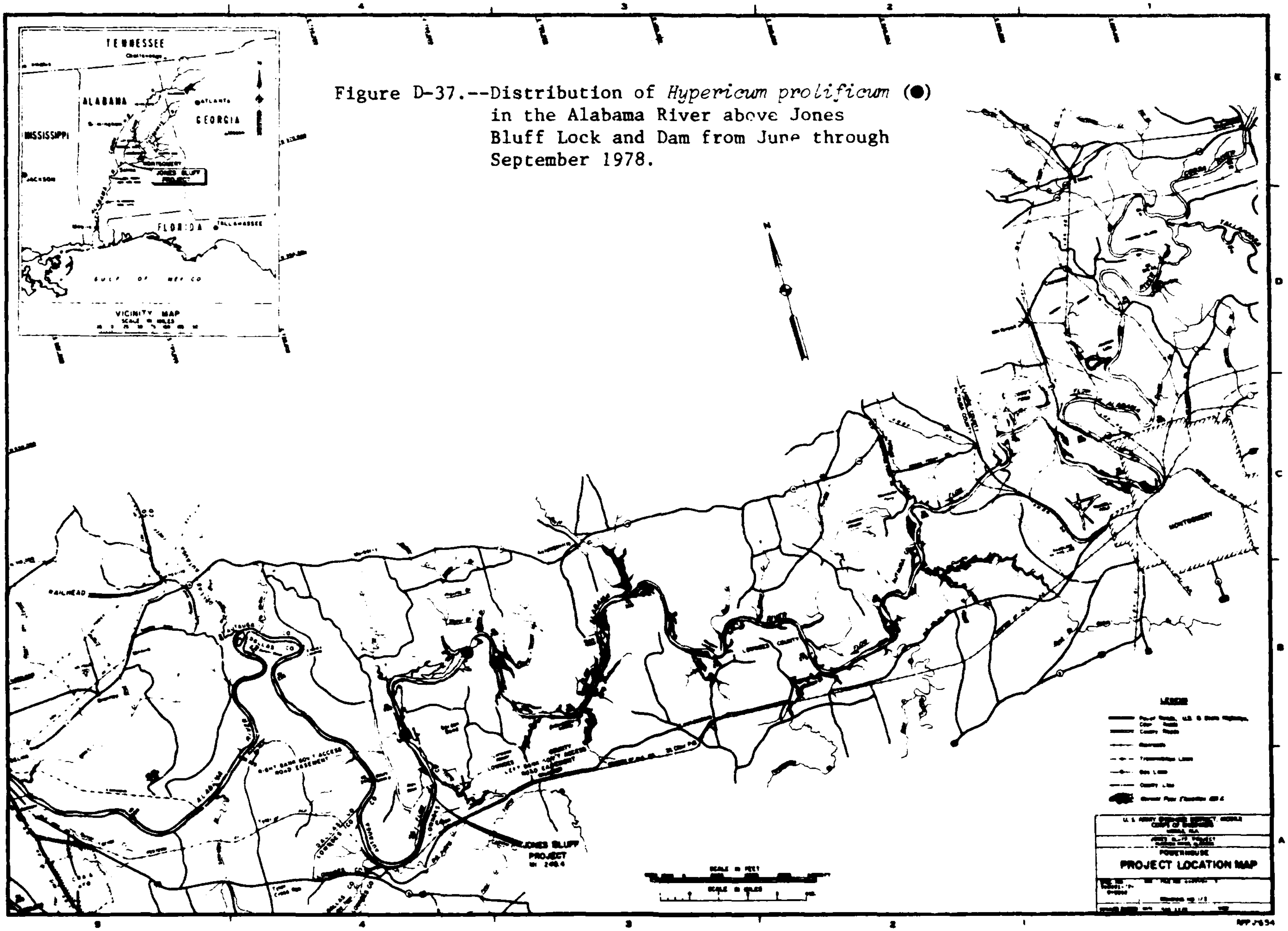

Figure D-37.--Distribution of *Hypericum prolificum* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

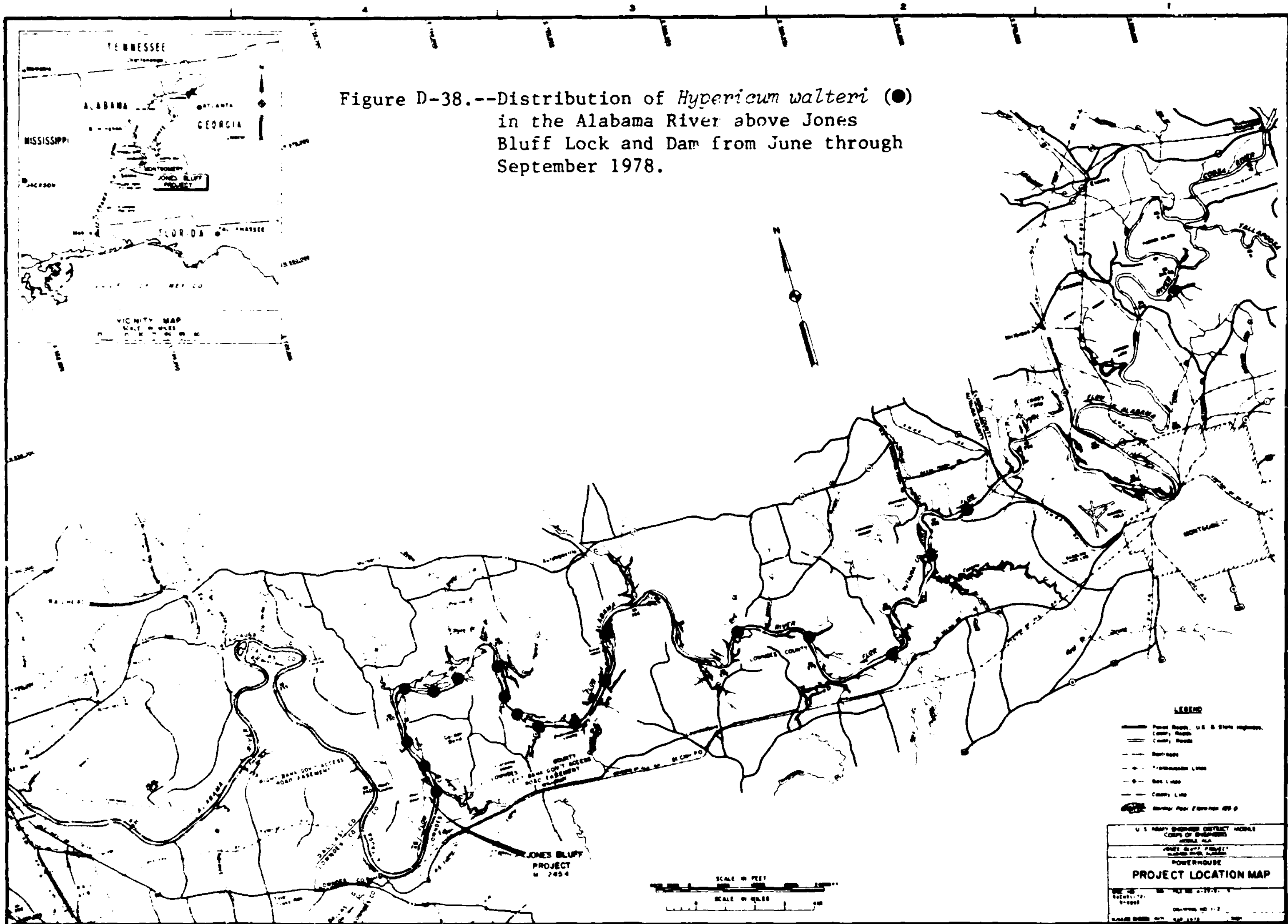

Figure D-38.--Distribution of *Hypericum walteri* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

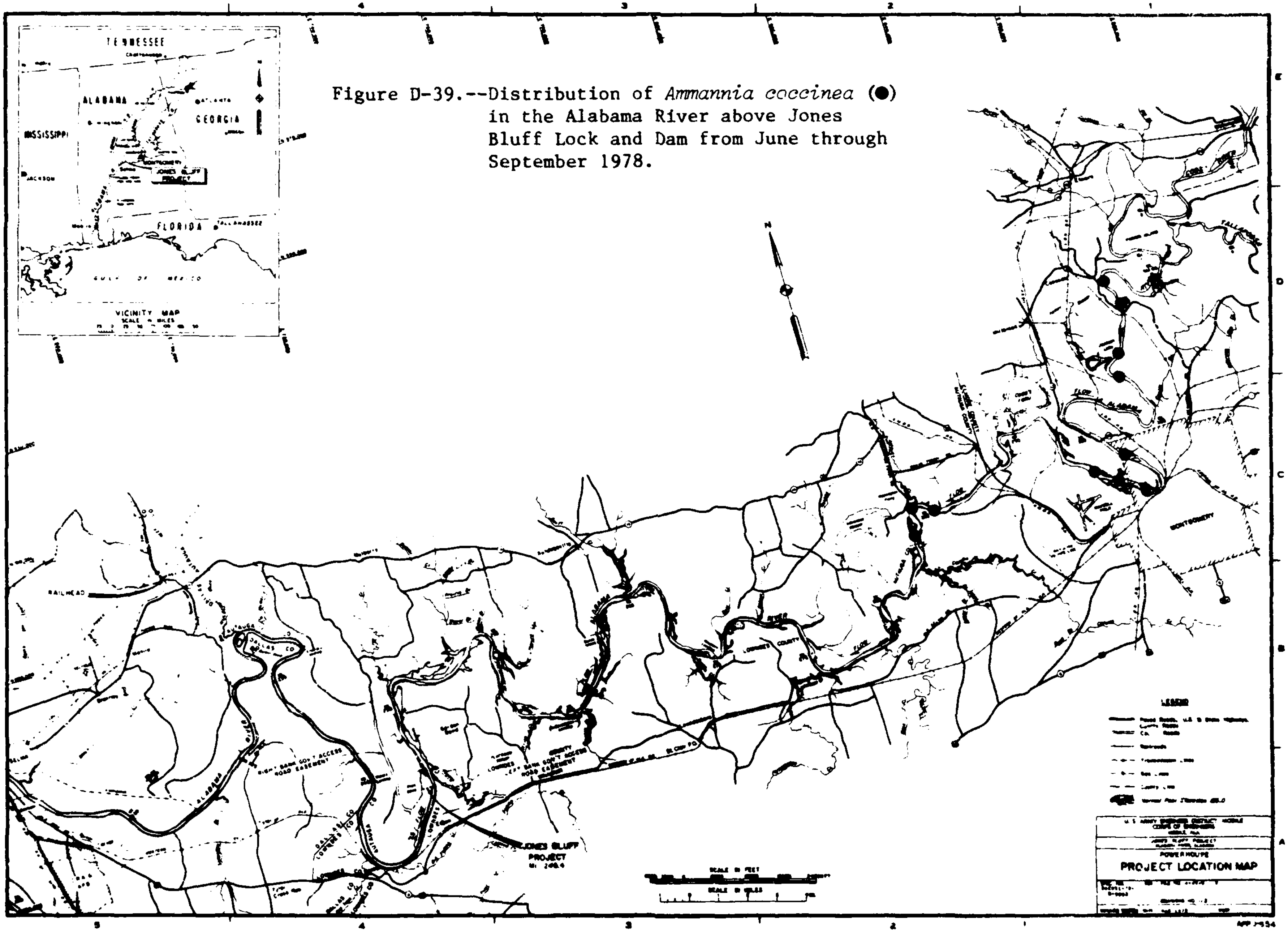

Figure D-39.--Distribution of *Ammannia coccinea* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

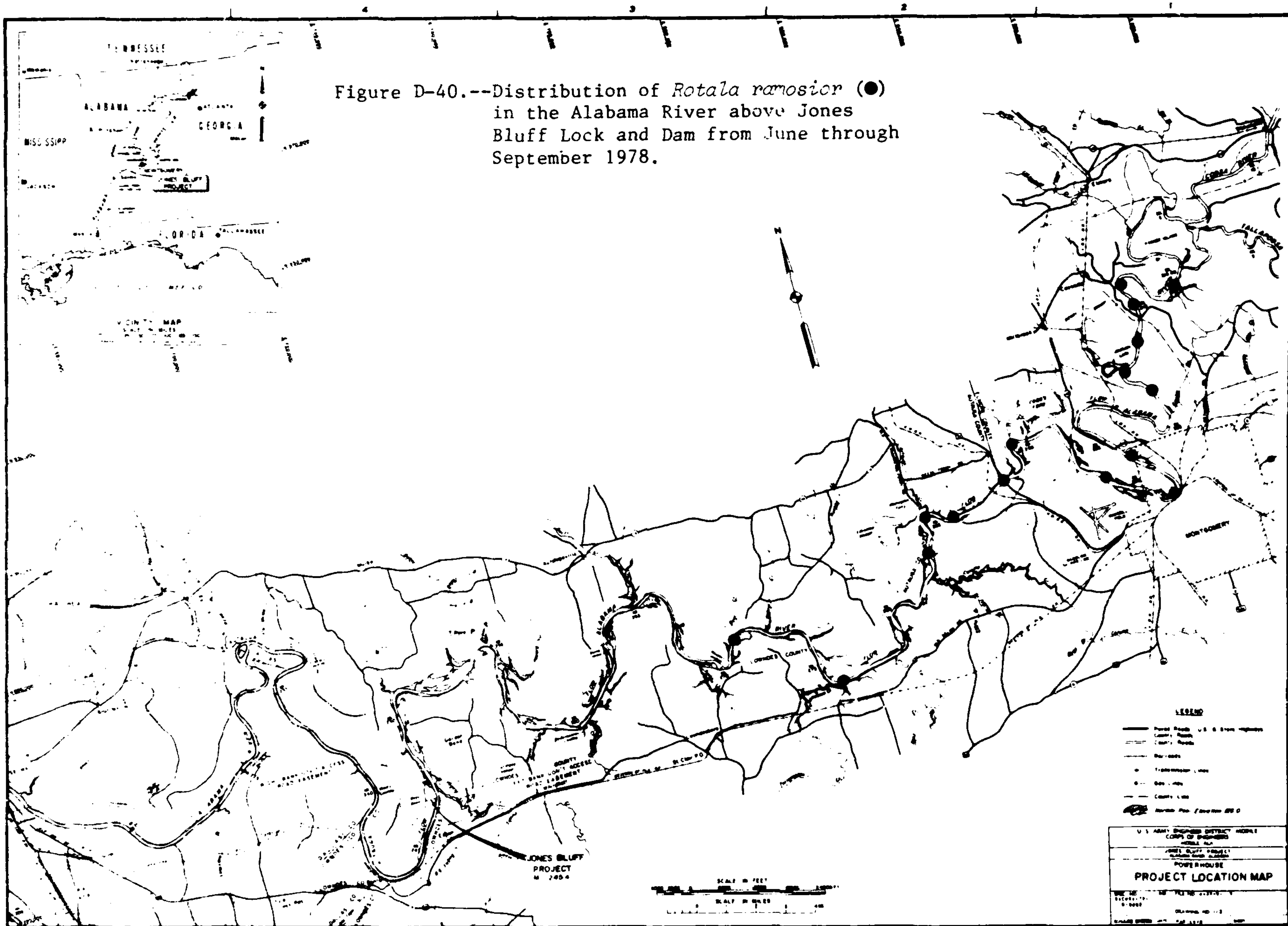

Figure D-40.--Distribution of *Rotala ramosior* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

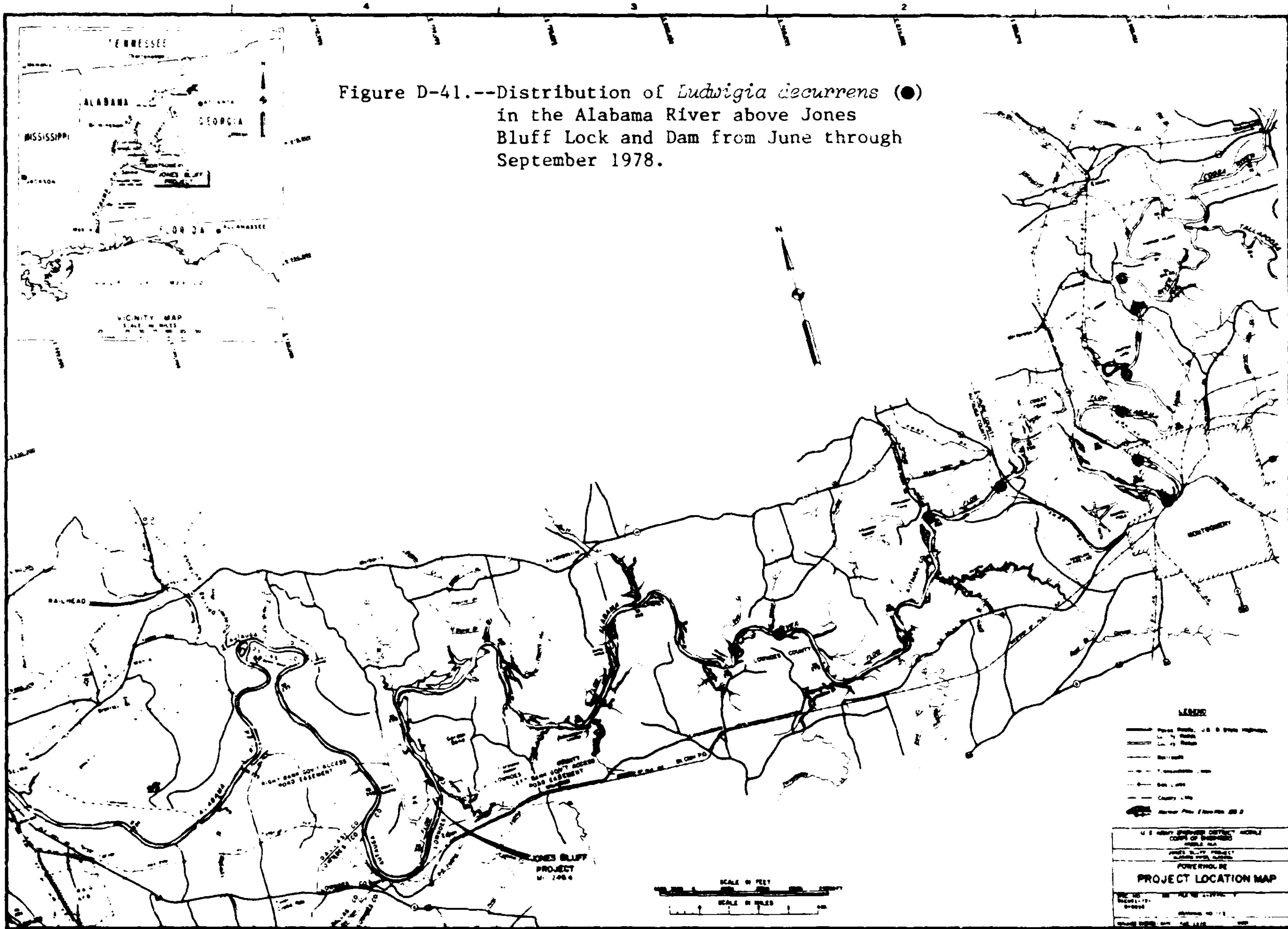

Figure D-41.--Distribution of *Ludwigia decurrens* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

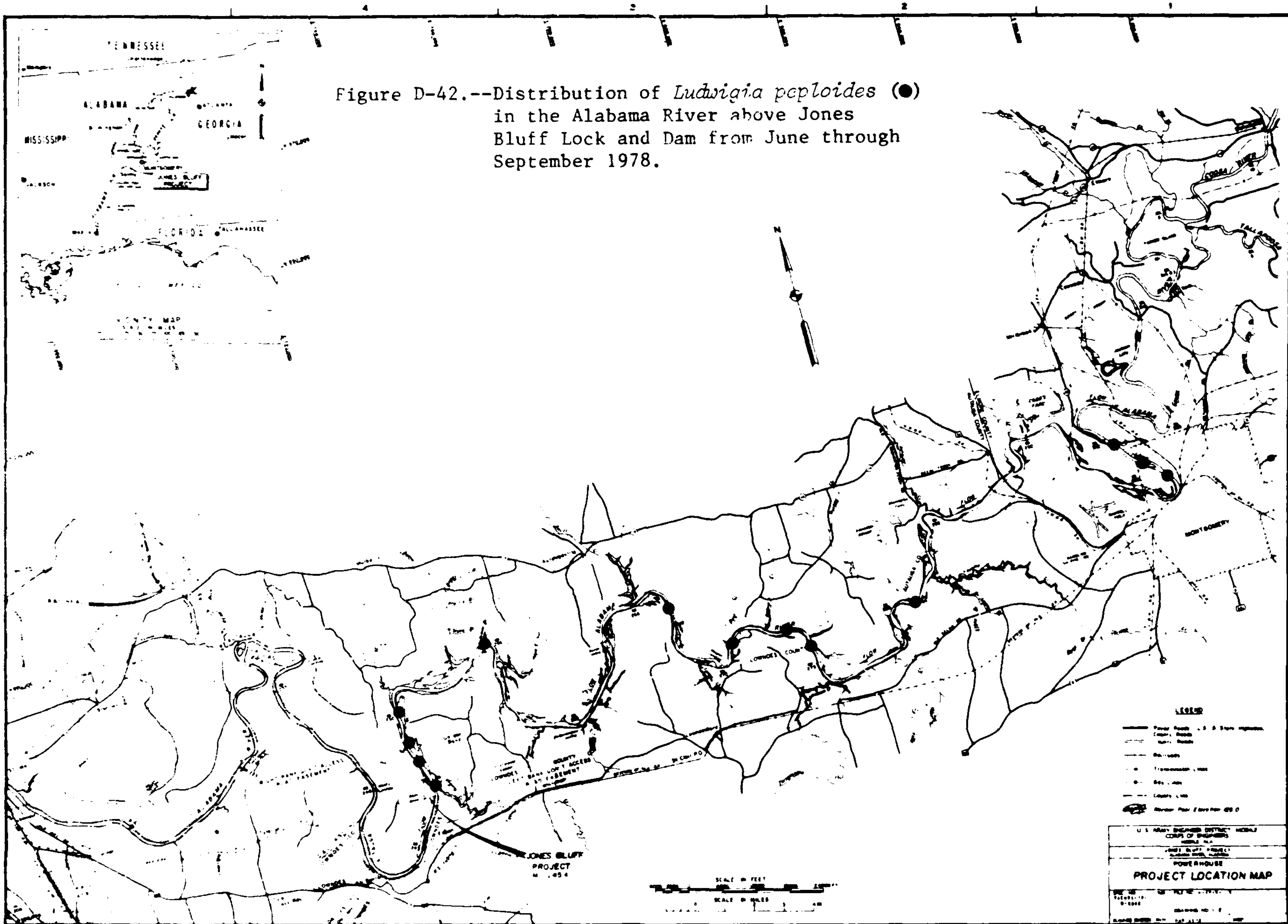

Figure D-42.--Distribution of *Ludwigia peploides* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

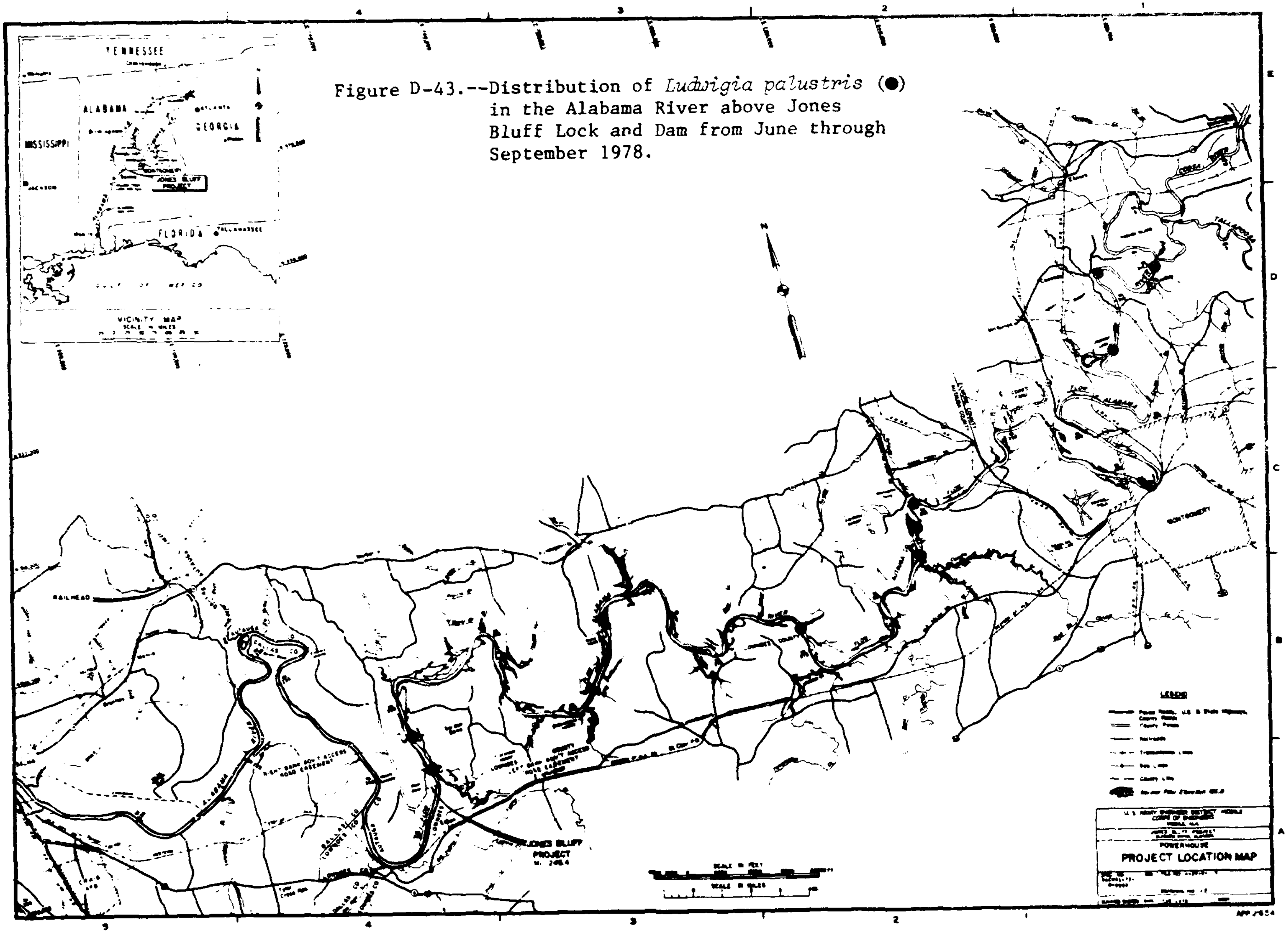

Figure D-43.--Distribution of *Ludwigia palustris* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

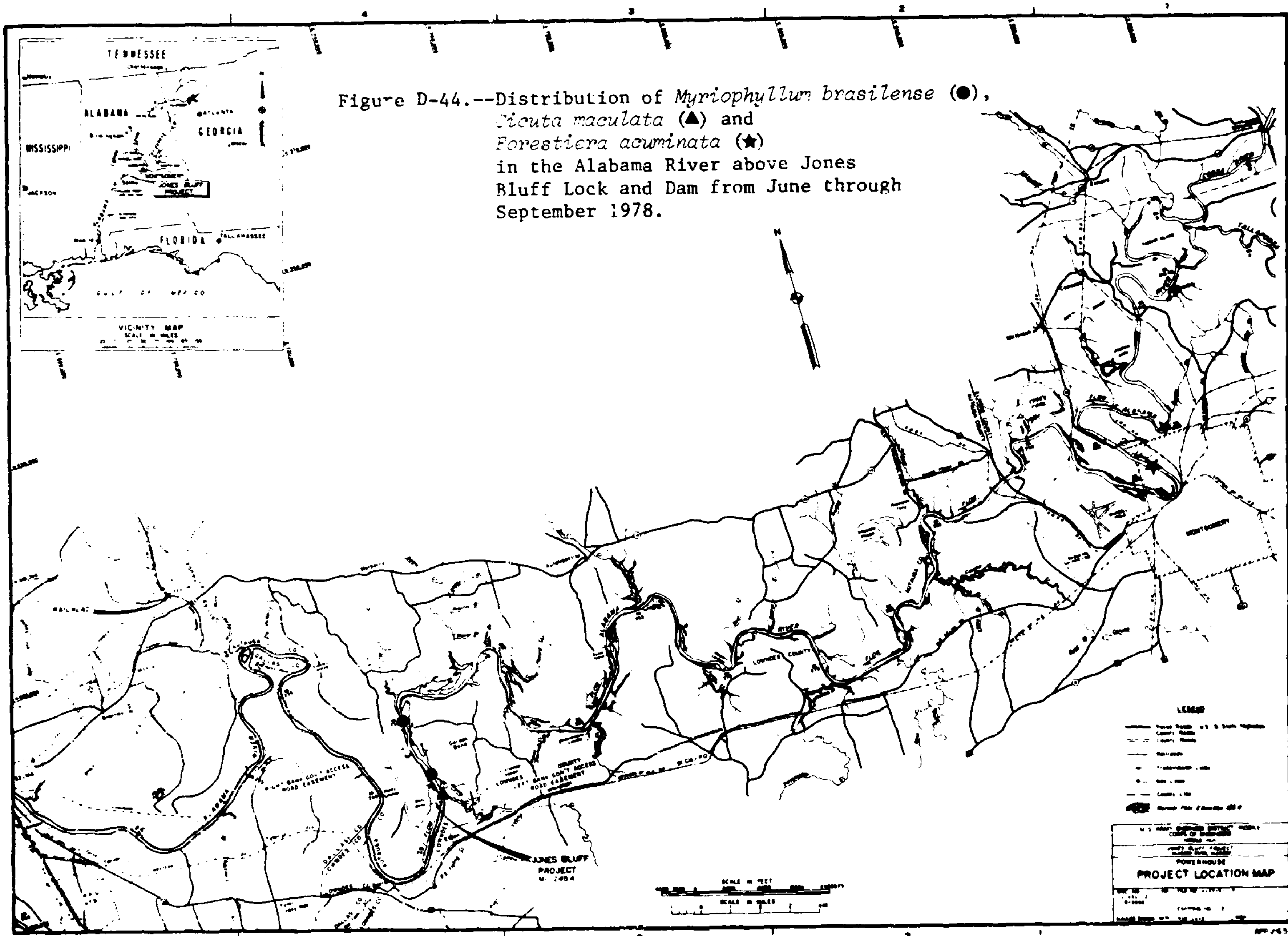

Figure D-44.--Distribution of *Myriophyllum brasilense* (●), *Cicuta maculata* (▲) and *Forestiera acuminata* (★) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

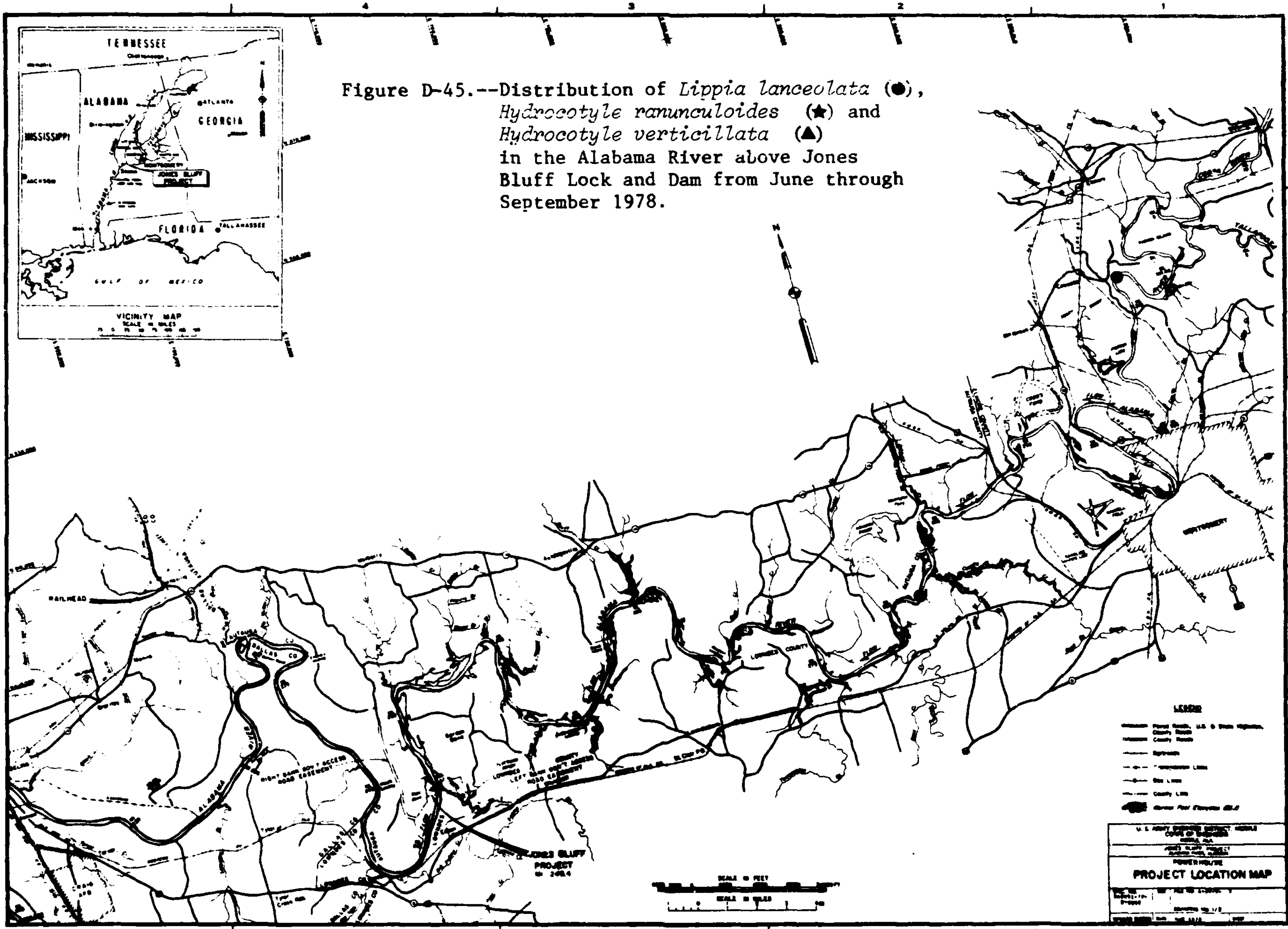

Figure D-45.--Distribution of *Lippia lanceolata* (●), *Hydrocotyle ranunculoides* (★) and *Hydrocotyle verticillata* (▲) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

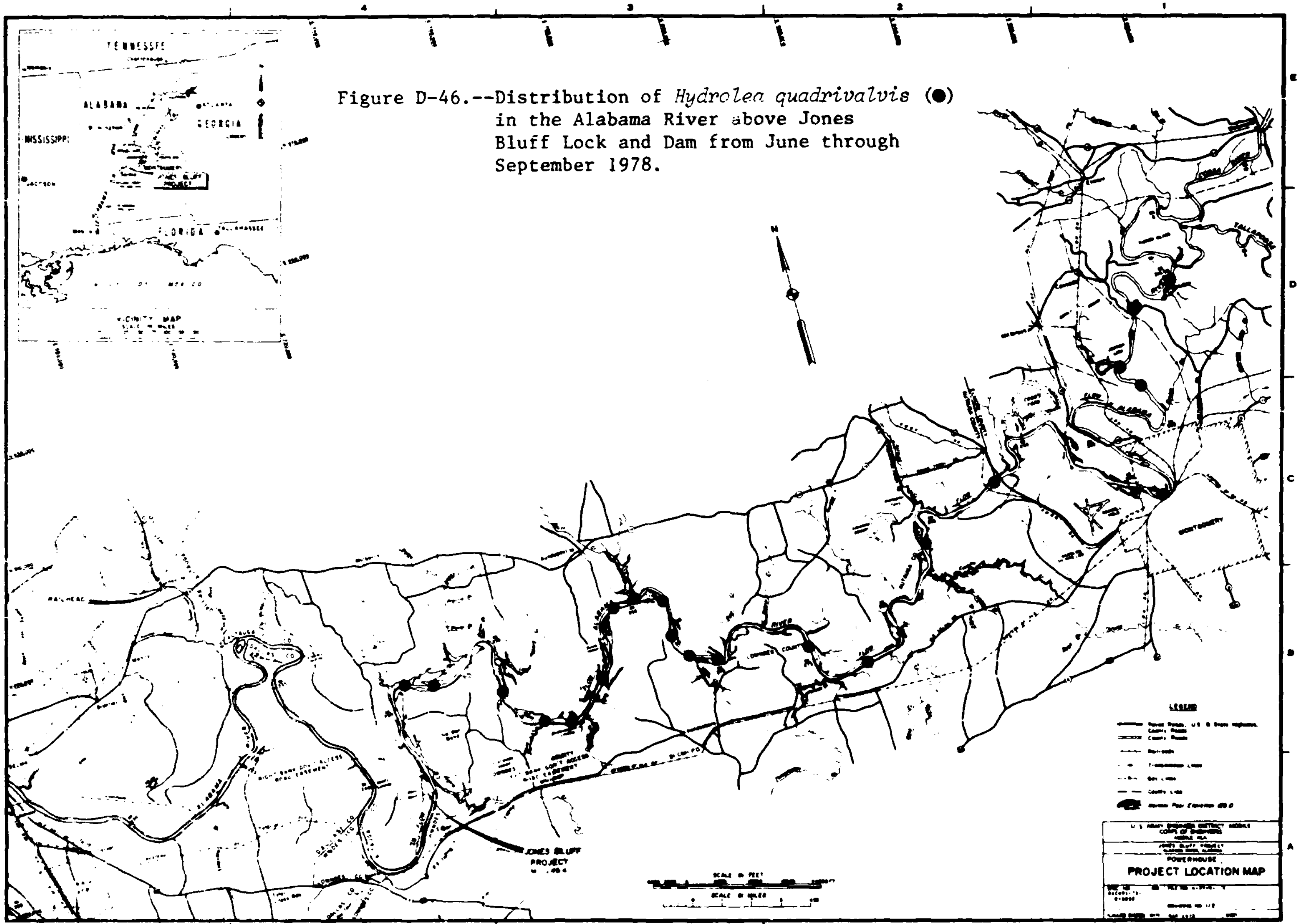

Figure D-46.--Distribution of *Hydrolea quadrivalvis* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

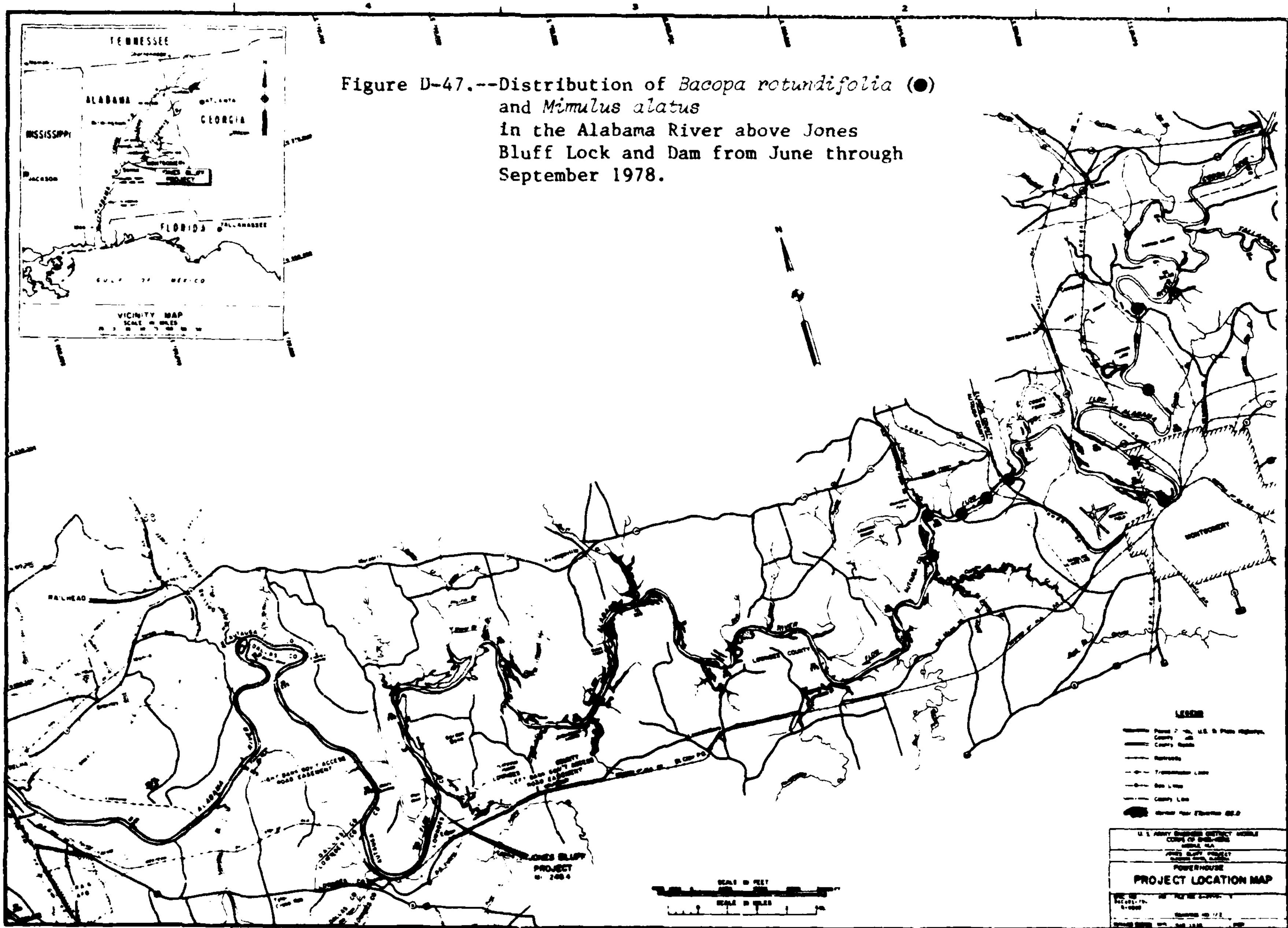

Figure D-47.--Distribution of *Bacopa rotundifolia* (●) and *Mimulus alatus* in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

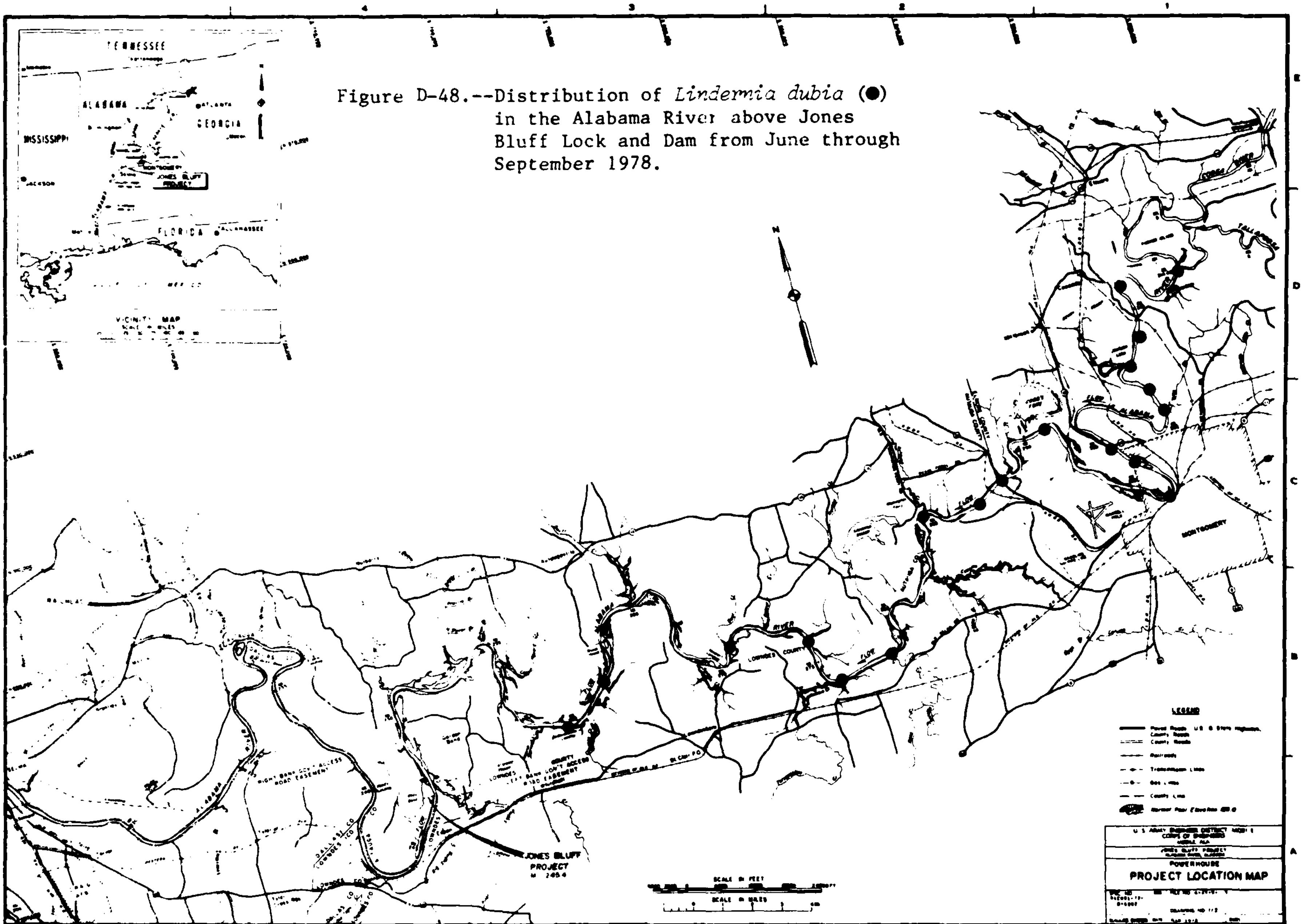

Figure D-48.--Distribution of *Lindernia dubia* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

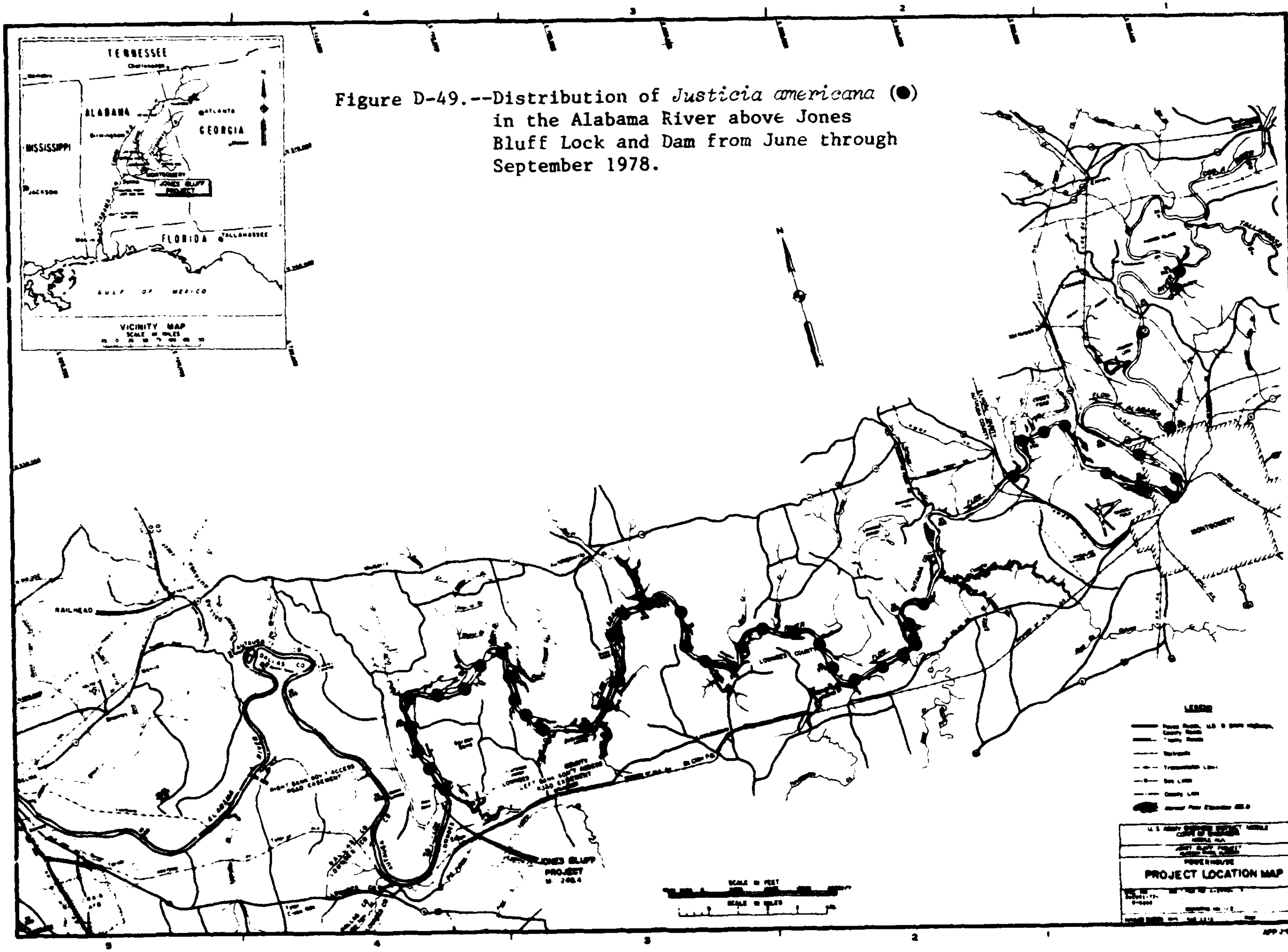

Figure D-49.--Distribution of *Justicia americana* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

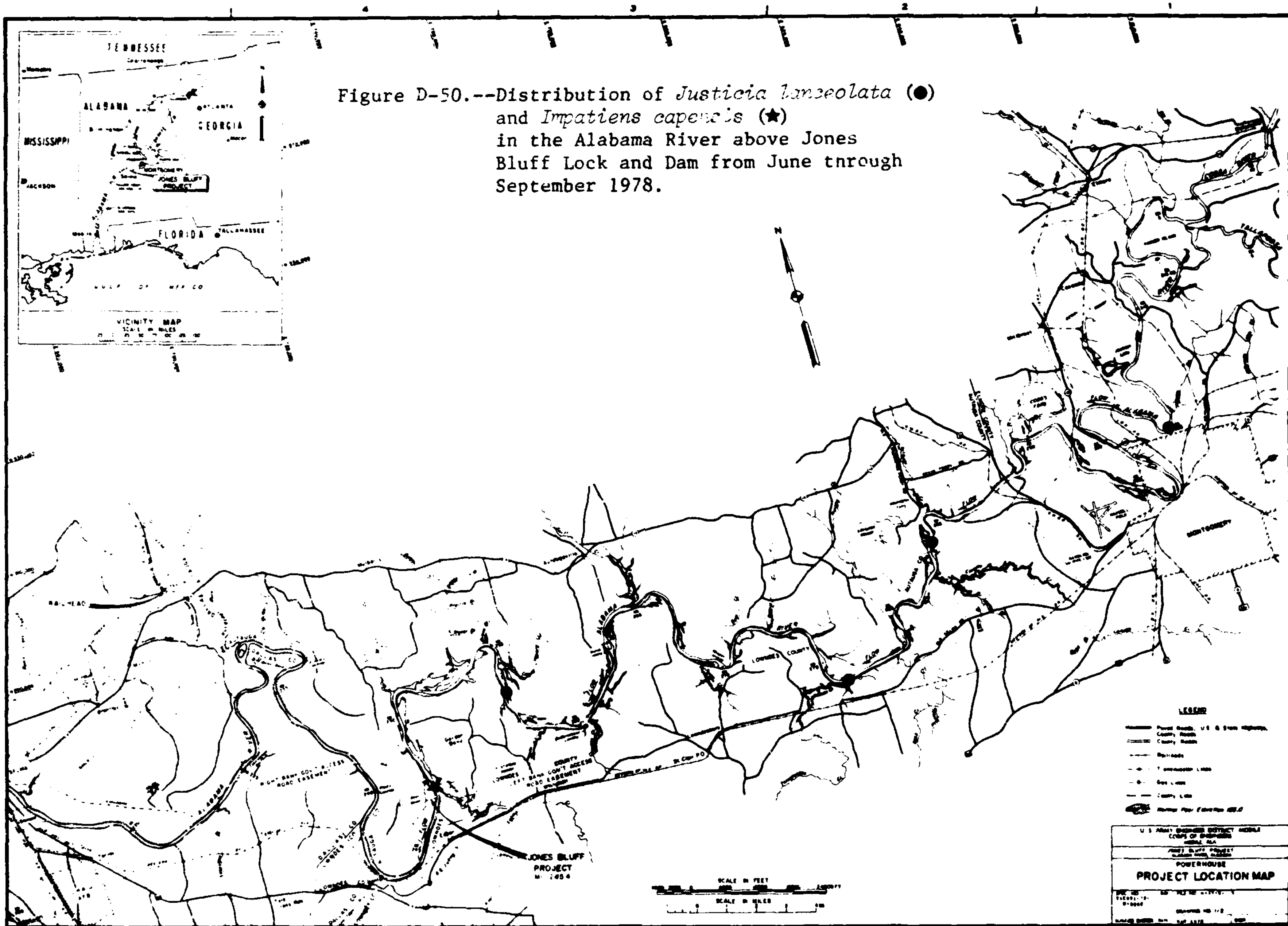

Figure D-50.--Distribution of *Justicia lanceolata* (●) and *Impatiens capensis* (★) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

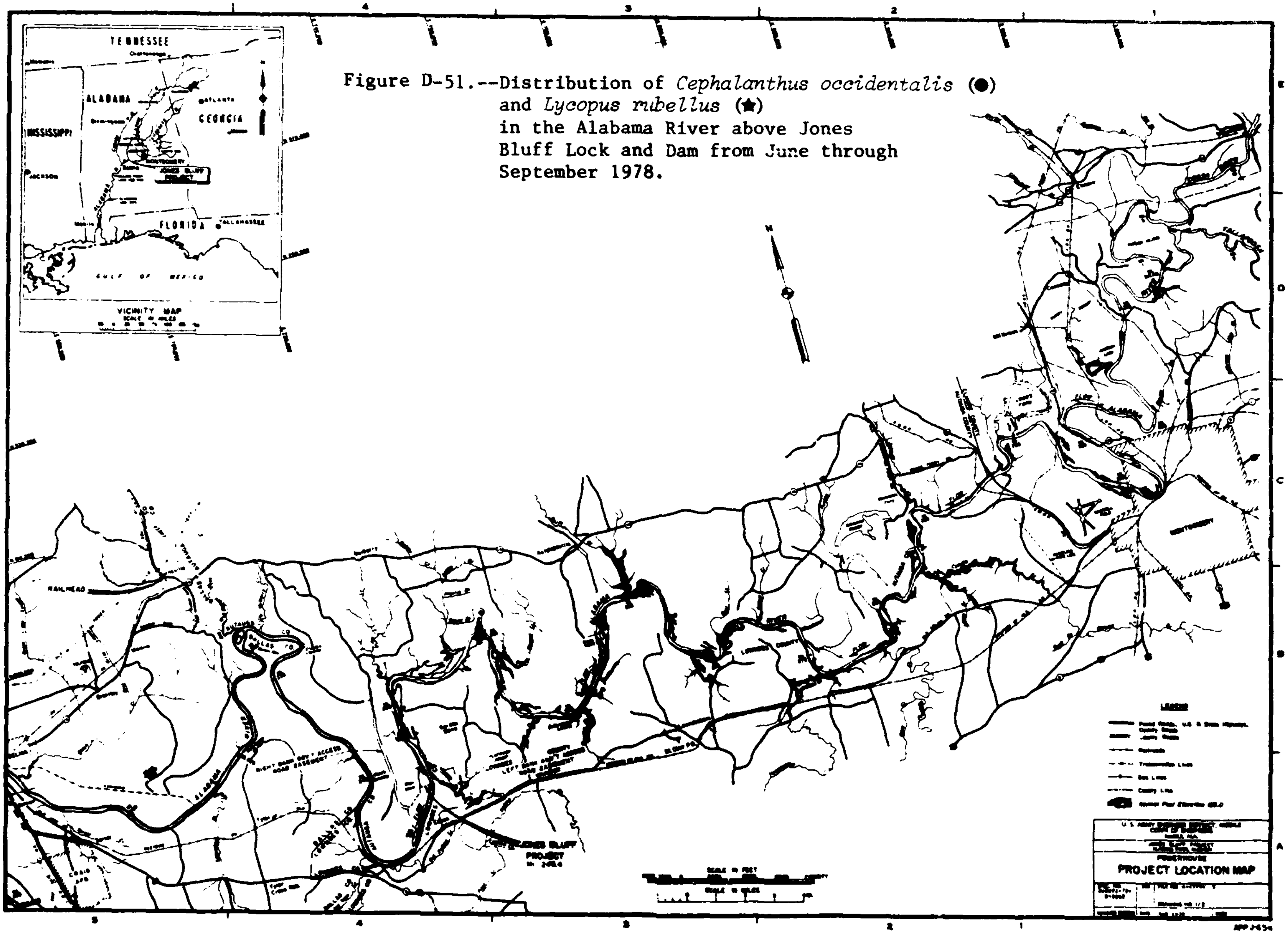

Figure D-51.--Distribution of *Cephalanthus occidentalis* (●) and *Lycopus rubellus* (★) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

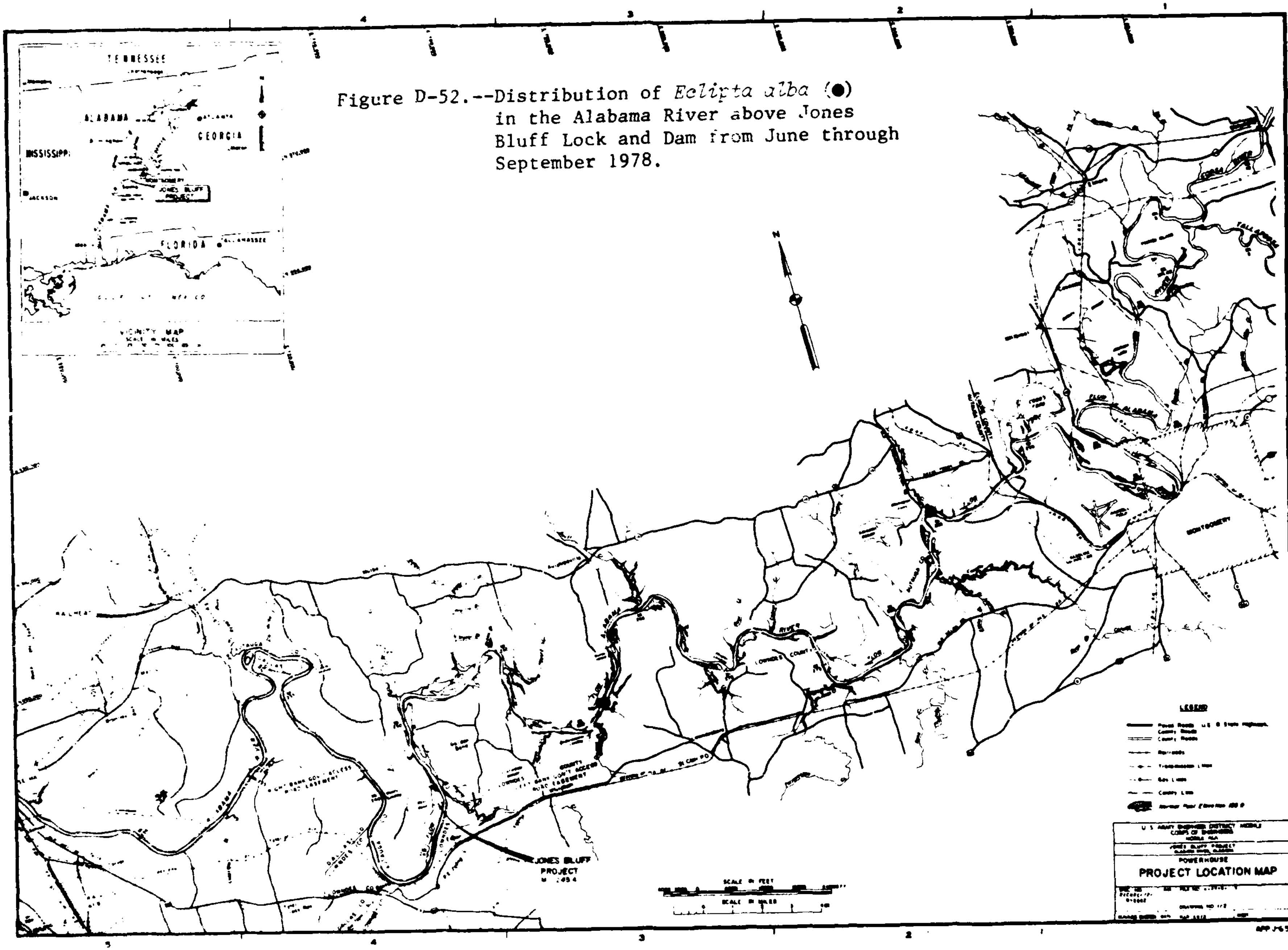

Figure D-52.--Distribution of *Eclipta alba* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

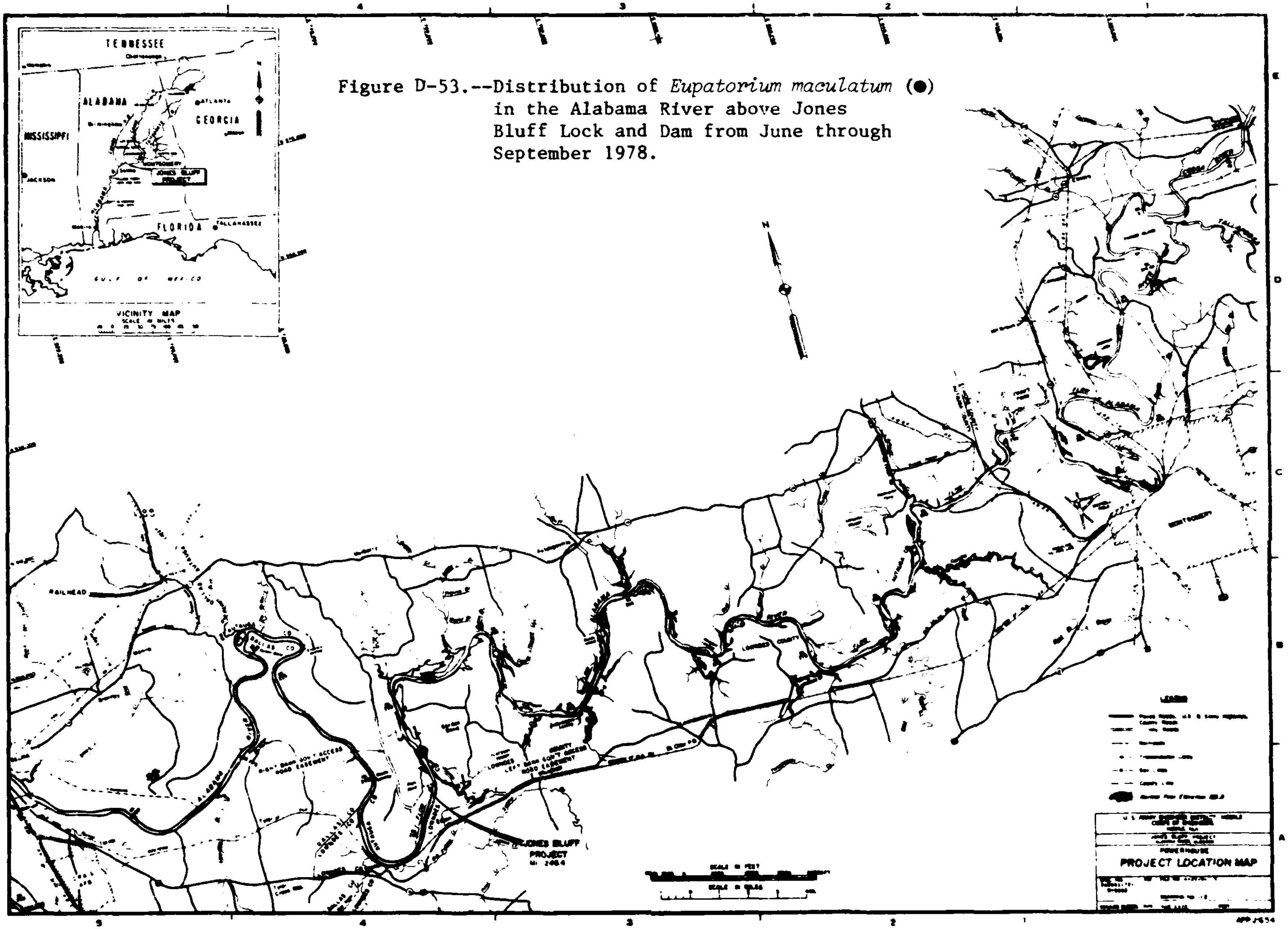

Figure D-53.--Distribution of *Eupatorium maculatum* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

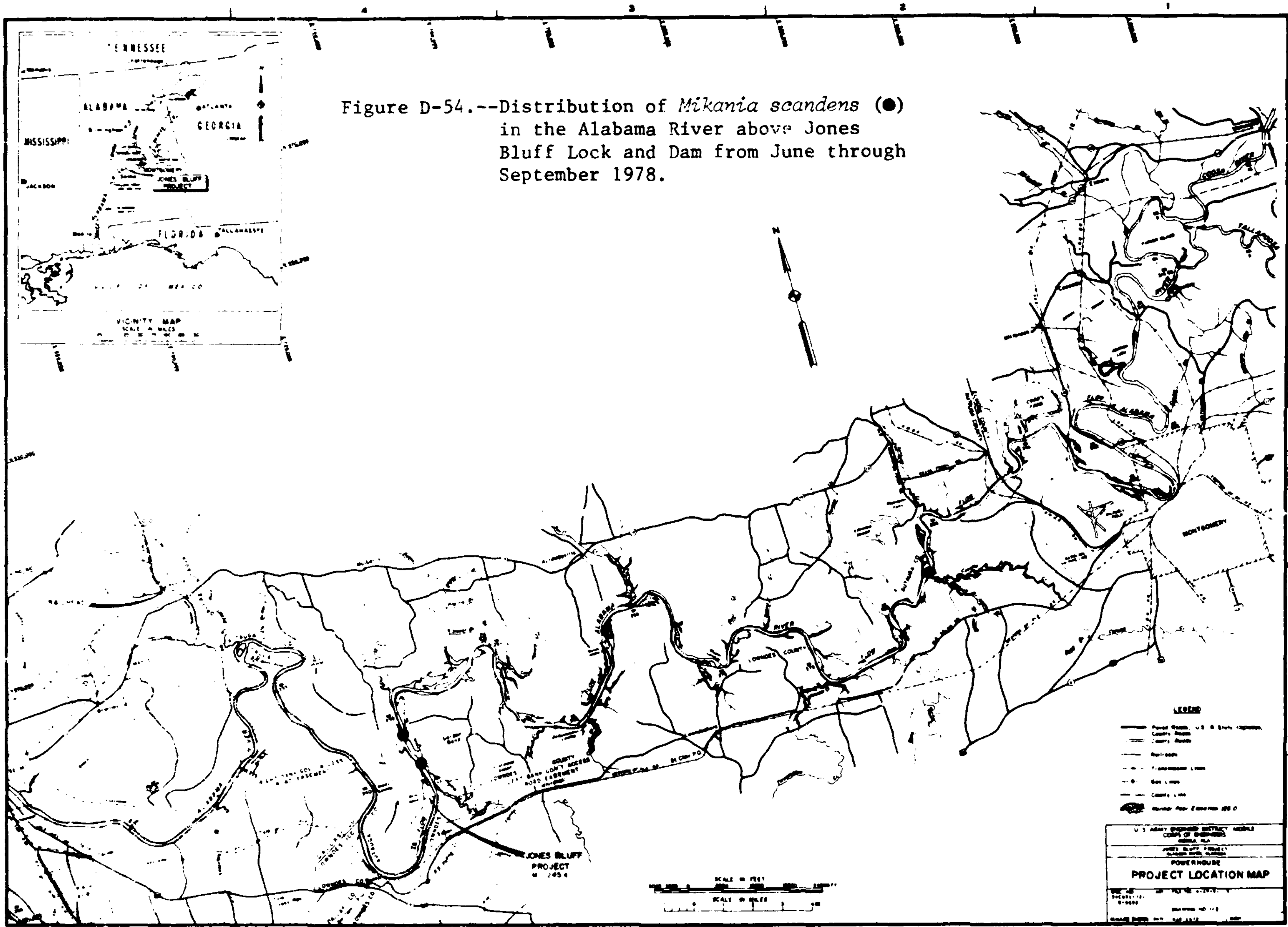

Figure D-54.--Distribution of *Mikania scandens* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

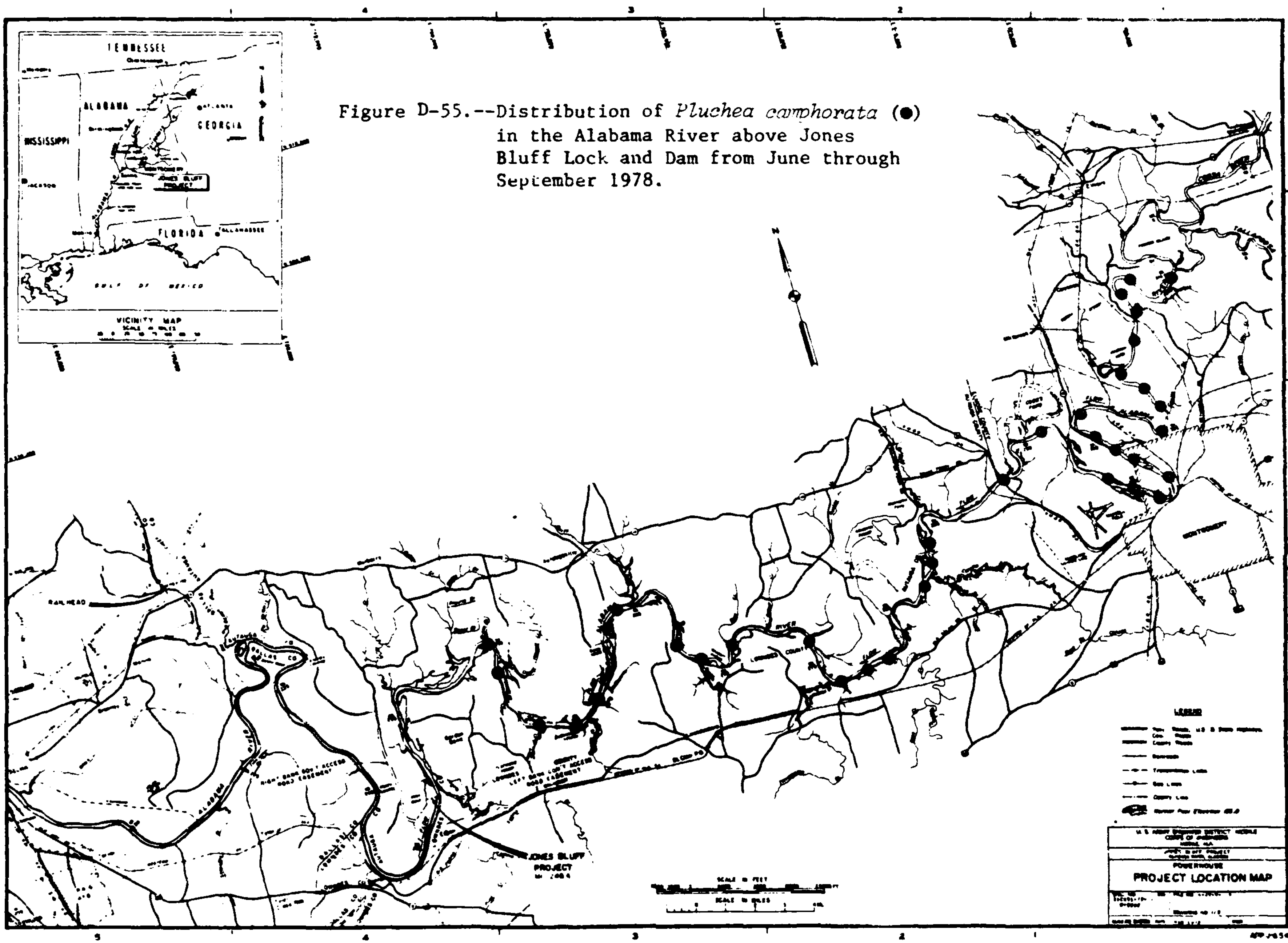

Figure D-55.--Distribution of *Pluchea camphorata* (●) in the Alabama River above Jones Bluff Lock and Dam from June through September 1978.

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