

A UNITED STATES
DEPARTMENT OF
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PUBLICATION



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Compendium of Juvenile Menhaden Surveys in
Coastal Streams of the Northern Gulf of Mexico

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Data Report 89

SEATTLE, WA
August 1974

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Compendium of Juvenile Menhaden Surveys in Coastal Streams of the Northern Gulf of Mexico

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ABSTRACT

Catches of juvenile Gulf menhaden with two-boat surface trawls in coastal streams along the northern Gulf of Mexico are compiled for the period from 1964 through 1969. The catches are presented chronologically with accompanying hydrological data (including Secchi disc measurements, salinity determinations, and surface water temperatures) collected at each sampling station. Maps are provided defining the various areal designations, streams, and sampling stations.

INTRODUCTION

Gulf menhaden, *Brevoortia patronus*, constitute an important fishery in coastal waters of the northern Gulf of Mexico; the resource ranks first in volume of commercial landings, and in value is second only to shrimp (Kutkuhn, 1966). The National Marine Fisheries Service has conducted surveys annually since 1964 to evaluate the relative strength of each new year class. Estimates of year-class strength provide indexes of resource condition and also serve as a guide to industry in planning fishing operations. Interest in the Gulf menhaden resource has increased in recent years because of the decline of the fishery along the Atlantic coast.

Gulf menhaden spawn from October through April in neritic waters, the eggs hatch offshore, and the larvae move into estuaries where they develop into juveniles and spend most of their first year of life. As waters cool in the fall, the juveniles leave the estuarine nursery areas and return to the ocean.

The seasonal appearance of young menhaden in estuarine nursery areas provides an excellent opportunity to assess year-class strength. It is more economical to sample for juveniles within the estuary than to sample for earlier life stages in the ocean. Sampling for juveniles rather than eggs and larvae provides the most useful evaluation of year-class strength because estimates are derived nearer the time of recruitment into the fishery.

Since 1964, 78 estuarine streams have been surveyed on a trial or continuing basis while sampling for juvenile menhaden along the northern Gulf coast. The purpose of this compendium is to give an account of the sampling methods and the data that has accrued

through 1969. The compendium will also serve as a useful working document for future analyses.

Prior to 1967, only seven Gulf coast streams were surveyed on an annual basis. When additional funds were made available in 1967, the coastline from Galveston Bay, Tex. to Apalachicola Bay, Fla. (these boundaries corresponded roughly to the commercial fishery) was arbitrarily divided into nine sampling areas (Fig. 1), and survey sites were distributed in accordance with the amount of estuarine surface water in each (Table 1). Areas 1 through 4 (Galveston Bay-Mississippi Delta) composed the Western Gulf, while Areas 5 through 9 (Lake Pontchartrain-St. Andrews Bay) constituted the Eastern Gulf. One survey site was allocated for every 60,700 hectares (150,000 surface acres) of estuarine water. The procedure assumed that all of the estuaries along the northern Gulf coast served as potential nursery area for menhaden. Use of this stratified procedure for establishing sites, eventually increased the number of routine survey streams to 36.

SURVEY METHODS

Of several types of gear tested in Atlantic coastal streams during the early stages of the project, the two-boat surface trawl proved the most expedient and efficient device for sampling juvenile menhaden on a coastwide basis (Kroger, unpubl. manuscr.).¹ The two-boat surface trawl was first adopted on the Atlantic coast in 1962 and was employed in the Gulf at the onset of the surveys in 1964. Modified from the net described by Massmann, Ladd, and McCutcheon (1952), the surface trawl was 6.1 m long with a mouth opening 6.7 × 0.9 m, and was made entirely of 6.3-mm (bar measure) knotted nylon mesh. The trawl was towed between two outboard motorboats in the

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³Kroger, R. L. Development and present status of survey methods for estimating relative abundance of juvenile menhaden. Unpubl. manuscr. filed at Atlantic Estuarine Fisheries Center, National Marine Fisheries Service, Beaufort, NC 28516

Table 1.—Distribution of juvenile menhaden survey sites in Gulf coast sampling areas established in 1967.

Area and designation	Surface area (hectares ¹)		Survey sites	
			6.7-m trawl	10.1-m trawl
	Number	Percent	Number	Number
Area 1 Galveston Bay to Sabine Lake	136,000	6.4	2	1
Area 2 Calcasieu Lake to White Lake	121,000	5.7	2	1
Area 3 Vermilion Bay to Atchafalaya Bay	224,600	10.6	4	2
Area 4 Mississippi Delta	874,100	41.0	14	7
Area 5 Lake Pontchartrain and Lake Borgne	235,500	11.1	4	2
Area 6 Mississippi Sound to Pascagoula River	231,900	10.9	4	2
Area 7 Mobile Bay	114,500	5.4	2	1
Area 8 Perdido Bay to Choctawhatchee Bay	96,300	4.5	2	1
Area 9 Panama City to Ochlockonee River	92,700	4.4	2	1
Total	2,126,600	100.0	36	18

¹One hectare is equivalent to 2.471 acres.

midchannel of a stream for 5 min at each station; a distance of about 740 m (0.4 nautical mile) was covered during each tow. When possible, the tows began upstream near fresh water and were evenly spaced to the mouth. In small tidal streams that were brackish throughout, a series of tows were spaced from the upstream working limits to the mouth. From early June to mid-July was established as the optimal sampling time for the gear, and the two-boat surface trawl was fished during this time period every year to obtain relative estimates of juvenile abundance. Since 1964, the 6.7-m trawl has been fished in 65 different streams on the Gulf coast (Table 2).

In 1967, a larger version of the two-boat surface trawl was introduced to extend coverage beyond the range of the standard gear. The large trawl was 9.1 m long and had a mouth opening 10.1 × 0.9 m. The wings and body were made of 9.5-mm and the tail bag of 6.3-mm (bar measure) knotted nylon mesh. The net was fished between two inboard-outboard boats in the same manner as the smaller trawl; a distance of about 1,100 m (0.6 nautical mile) was covered during a tow.

The large boats have been used in 27 different survey streams since 1967 (Table 3). At first the large boats were used to sample in large streams and in remote areas along the same segment of coastline covered by the small boats, but because the operation was more time consuming, only one-half as many sites were scheduled.

The large boats not only increased the effective range of sampling, but also made it feasible to explore variation in catches during daylight and darkness. Sampling during darkness proved to be the only effective means of taking large numbers of juvenile menhaden from waters east of the Mississippi Delta; most of the streams in the eastern Gulf are remarkable for their clarity. In 1969, the large boats were employed exclusively for sampling at night in the eastern Gulf.

FORMAT

Maps in the compendium were reproduced from the U.S. Coast and Geodetic Survey topographic series, and names of the various bodies of water were taken therefrom. A cover map of each sampling area shows the location of all streams surveyed within that area. Survey streams in each area are numbered on the cover map and listed by name. Arabic numerals designate streams surveyed by the 6.7-m trawl, while Roman numerals represent those surveyed by the 10.1-m trawl. All maps are oriented by the north-south axis. Although reproduced from the most current series available, many of the maps were outdated and the topography since has been altered considerably. The basic configuration of the streams, however, remain unchanged as most of the alterations were in the form of relocation of highways, ditching of marshlands, and the development of canals and waterways.

Maps of individual survey streams follow the respective cover maps and some show launching ramps, prominent reference points, and the upstream point of each sampling station. Catch data are compiled by survey dates and sampling stations for each stream. Menhaden catches are accompanied by corresponding observations of surface water temperature, surface salinity, and water transparency (Secchi disc method) at each station. All measurements were made at the upstream point of each station. Tide stages were not considered pertinent to trawling success in coastal streams of the northern Gulf and are not presented. Starting and ending times are recorded as central daylight time.

ACKNOWLEDGMENTS

The authors wish to express their appreciation to all persons who participated in the surveys and to the State Conservation agencies for making possible sampling within their waters. Herbert R. Gordy prepared the maps for the compendium.

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MASSMANN, W. H., E. C. LADD, and H. M. McCUTCHEON.
1952. A surface trawl for sampling young fishes in tidal rivers. *Trans. 17th North Am. Wildl. Conf.*, p. 386-392.

Table 2.—List of sampling sites and dates on which juvenile menhaden surveys were conducted with the 6.7-m surface trawl. Numbers in parentheses indicate replicate series of samples on the same date.

Survey site	1964	1965	1966	1967	1968	1969
Texas:						
Dickinson Bayou	7/24	6/28(2) 7/25(2)	7/15(2)	6/22	6/17	6/17
Clear Creek	7/25	6/29(2) 7/26(2)	6/11 7/16(2)	6/21	—	—
Double Bayou (East fork)	—	—	—	6/21	6/17	6/17
Louisiana:						
Johnsons Bayou	7/27	6/30 7/27(2)	6/10 7/18(2)	6/22	6/19	6/18
North Canal	—	—	—	6/23	—	—
Little Pecan Bayou	—	—	—	—	—	6/19
Vermilion River	7/28	7/1 7/28	6/9 7/19	6/23	6/20	6/19
Bayou Tigre	—	—	—	—	6/20	6/20
Bayou Petite Anse	—	—	—	6/24	—	—
Weeks Bayou	—	—	—	6/24	6/21	6/20
Shark Bayou	7/29	7/2 7/29	—	—	—	—
Hog Bayou	—	—	—	6/26	6/21	6/21
Bayou Shaffer	7/30	7/2 7/29	—	—	—	—
Falgout Canal	—	—	—	—	—	6/23
Bayou Du Large	—	—	—	6/26	6/22	6/23
Bayou Grand Caillou	—	—	—	6/27	6/22	6/21
Bayou Petit Caillou	—	—	—	6/28	6/24	6/22
Bayou Terrebonne	—	—	—	6/28	6/24	6/24
Bayou Barre	—	—	—	—	6/24	6/25
Bayou Jean La Croix	—	—	—	—	6/24	6/24
Bayou Pointe au Chien	—	—	—	6/29	6/24	6/24
Bayou Blue	—	—	—	6/29	6/25	6/25
Bayou Des Allemands	—	—	—	—	6/25	6/26
Bayou Barataria	—	—	—	—	6/26	6/26
Bayou Dupont	—	—	—	6/30	6/28	6/26
Grand Bayou	—	—	—	—	6/27	6/27
River Aux Chenes	—	—	—	7/3	6/27	6/27
Tchefuncta River	8/1	—	—	—	—	—
Lacombe Bayou	—	—	—	7/2	6/29	—
Liberty Bayou	—	8/2	8/25	—	—	—
Bayou Bonfouca	—	7/3 8/2	8/25	7/2	6/28	—
West Pearl River	—	—	—	7/3	—	—
Mississippi:						
Pearl River	8/3	7/4 8/2	6/7 7/21 8/26	7/4	6/29	—
Mulatto Bayou	—	—	—	7/3	6/29	—
Bayou Caddy	—	—	—	7/5	6/28	—
Bayou La Croix	8/5	7/4 8/2	7/21 8/25	7/4	6/29	—
Bayou Portage	8/5	—	8/26	—	—	—
Bernard Bayou	—	—	8/27	7/4	6/30	—
Old Fort and Talla Bayous	8/6	—	—	—	—	—
Davis Bayou	8/7	—	—	—	—	—
Graveline Bayou	8/7	7/5 8/3(2)	6/7 8/29	7/6	—	—
Mary Walker Bayou	—	7/5 8/3	8/29	—	—	—
Sioux Bayou	—	8/3	—	—	—	—
McInnis Bayou	—	—	—	7/6	7/1	—
Alabama:						
West Fowl River	8/8	—	—	—	—	—
Rabbit Creek	—	7/7 8/4	—	—	—	—
Dog River	—	7/7 8/4	6/6 7/22 8/30	7/7	7/2	6/28
Fish River	—	7/8 8/4	—	—	—	—
Magnolia River	8/10	7/8 8/4	—	7/8	7/2	—
Soldier Creek	8/10	—	—	—	—	—
Florida:						
Bayou Chico	8/11	7/9 8/5	7/23	7/9	—	—
Bayou Grande	—	7/9 8/5	—	—	—	—
Simpson River	—	—	—	7/9	—	—

Table 2.—Continued.

Survey site	1964	1965	1966	1967	1968	1969
Florida—Continued:						
Mulatto Bayou	8/11	—	—	—	7/2	—
Fivemile Bayou	—	8/5	6/4	—	—	—
Garnier Bayou	—	—	6/4	—	—	—
Boggy Bayou	—	8/5	—	7/10	7/3	—
Burnt Mill Creek	—	—	—	7/10	7/3	—
Watson Bayou	8/12	7/10 8/6	—	—	—	—
Callaway Creek	8/12	8/6	—	—	—	—
Little St. Marks River	—	—	6/3	—	—	—
St. Marks River	—	7/10	—	—	—	—
Whisky George Creek	—	—	—	7/11	7/4	—
Carrabelle River	8/13	8/6	—	—	—	—

Table 3.—List of sampling sites and dates on which juvenile menhaden surveys were conducted with the 10.1-m surface trawl. (D) and (N) designate Day and Night sampling.

Survey site	1967	1968	1969
Texas:			
Trinity River	8/1(D)	6/18(D)	—
Double Bayou, (West Fork)	6/21(D) 7/30(D)	—	—
Louisiana:			
Mermentau River	6/22(D) 7/29(D)	6/19(D)	—
Vermilion River	6/23(D) 7/28(D) 7/28(N)	6/20(D) 6/20(N)	—
Creole Bayou	6/27(D)	6/21(D)	—
Falgout Canal	6/30(D) 7/26(D)	6/25(D)	—
Bayou Grand Caillou	6/30(D) 7/26(D)	6/25(D)	—
Bayou Petit Caillou	7/1(D)	6/26(D)	—
Bayou Terrebonne	7/1(D)	6/26(D)	—
Grand Bayou Blue	7/2(D) 7/25(D)	6/26(D)	—
Bayou Des Allemands	—	6/28(D)	—
Bayou Barataria	7/4(D)	6/27(D)	—
Tchefuncta River	7/5(D) 7/24(D) 7/24(N)	6/28(D) 6/28(N)	6/20(N)
Bayou Bonfouca	—	—	6/23(D) 6/23(N)
Mississippi:			
Pearl River	7/6(D) 7/22(D) 7/22(N)	6/30(D) 6/30(N)	6/24(D) 6/24(N)
Wolf River	—	—	6/25(D) 6/25(N)
Bernard Bayou	7/7(D)	7/1(D) 7/1(N)	6/26(D) 6/26(N)
Tchoutacabouffa River	—	—	6/27(D) 6/27(N)
W. Pascagoula River	—	7/3(D) 7/3(N)	6/28(D) 6/28(N)
Alabama:			
Dog River	—	—	6/30(D) 6/30(N)
Fish River	6/17(D) 7/21(D) 8/5(D) 8/5(N)	7/5(D) 7/5(N)	7/1(N)
Florida:			
Blackwater River	—	—	7/2(N)
Black Creek	7/20(D)	7/6(D) 7/6(N)	7/3(N)
Mitchell River	7/9(D) 7/20(D)	—	—
Wetappo Creek	—	—	7/5(N)
Apalachicola River	6/15(D) 7/10(D)	—	—
Ochlockonee River	—	7/8(D) 7/8(N)	7/7(N)

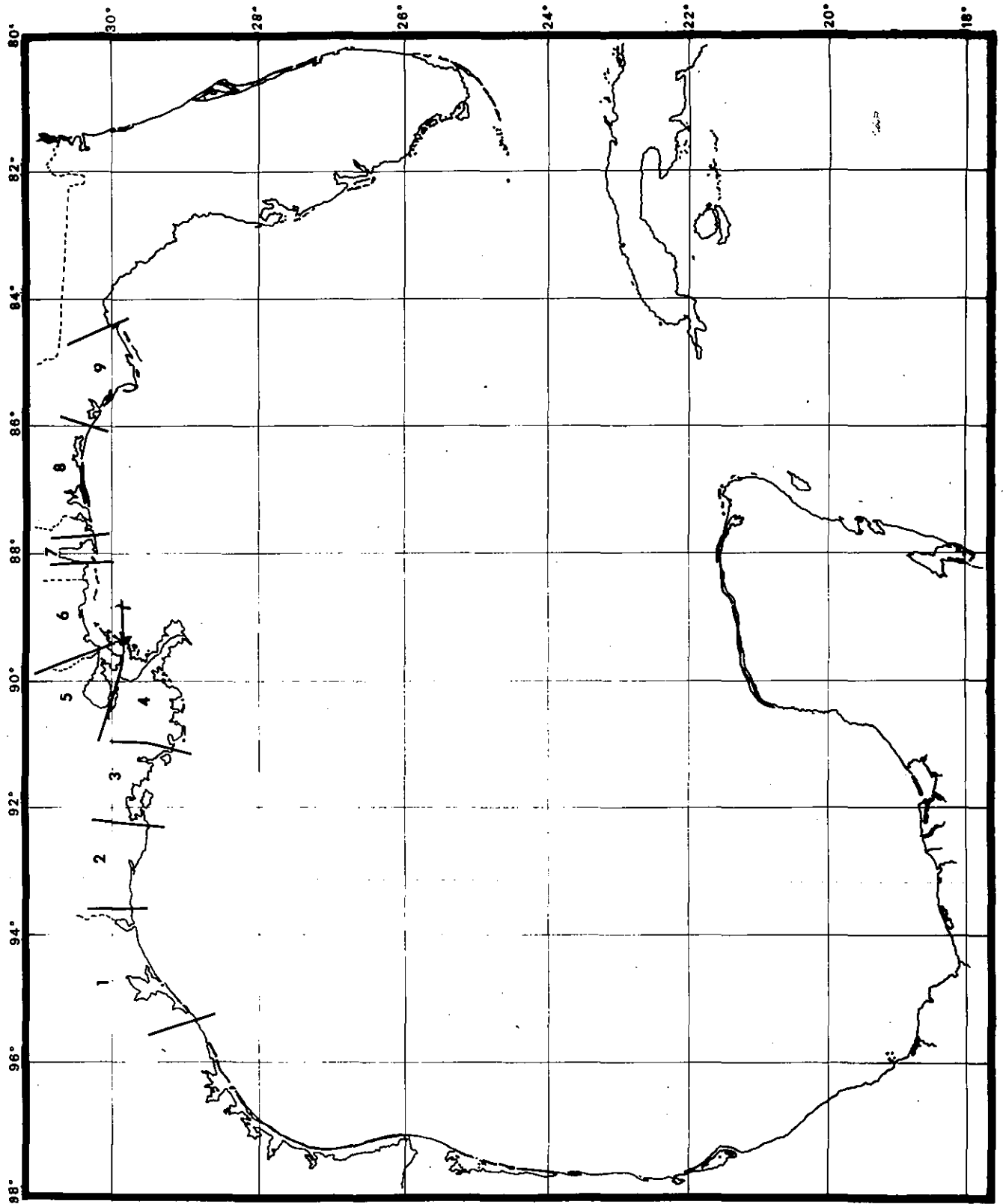


Figure 1.—Nine major estuarine areas along the northern Gulf of Mexico for juvenile menhaden surveys.

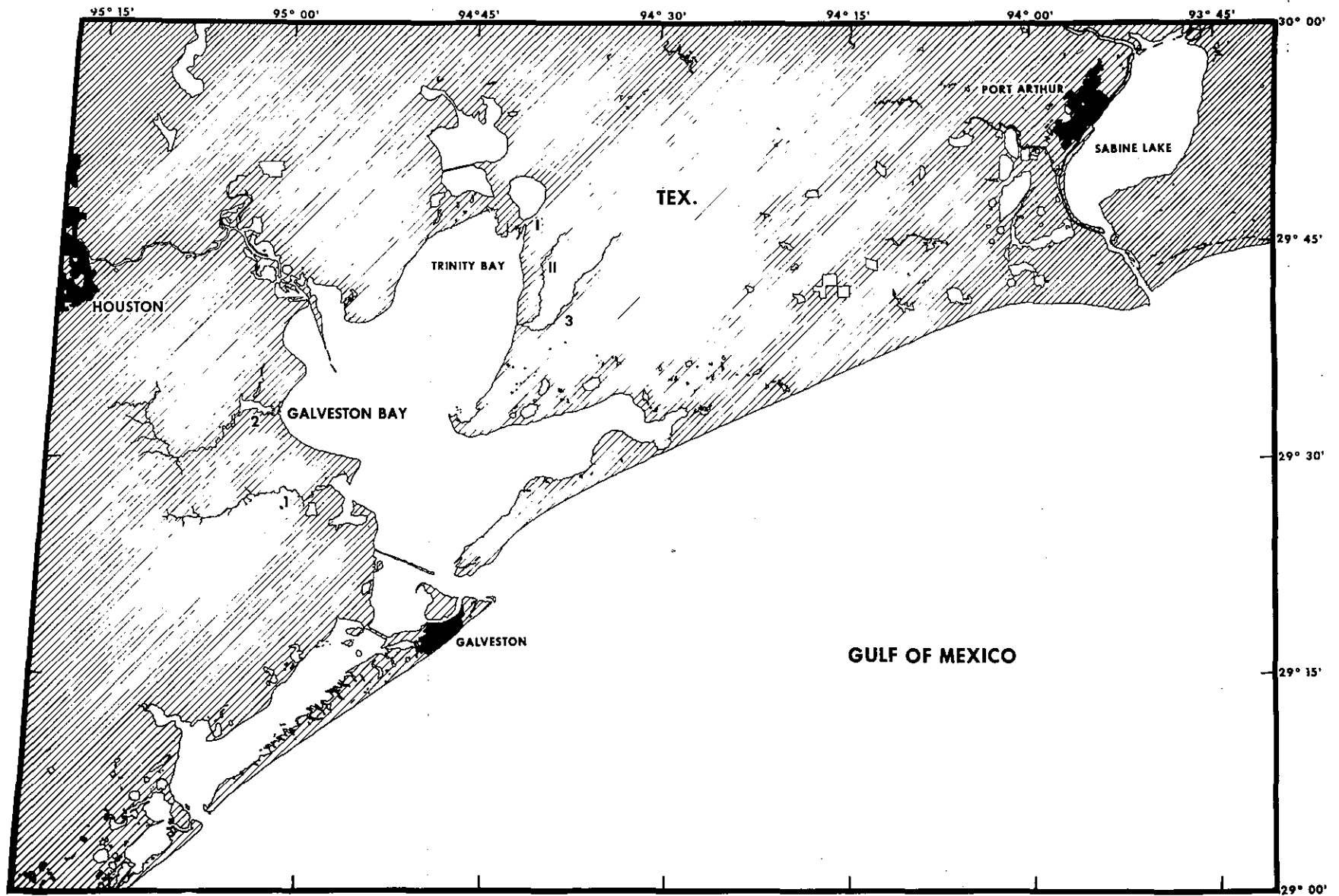


Figure 2.—Area 1: Galveston Bay to Sabine Lake, Tex.

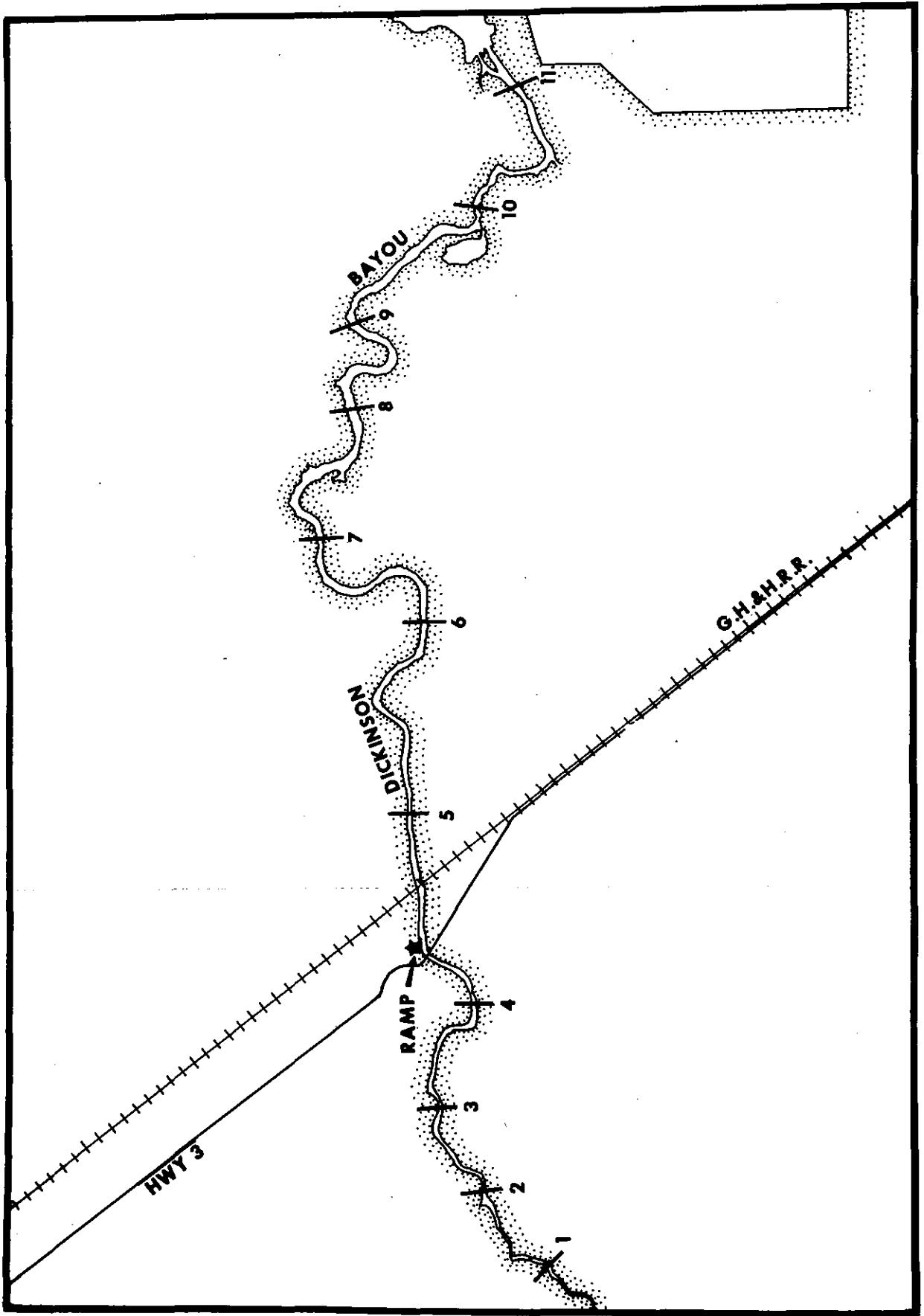


Figure 3.—Area 1: Stream 1 - Dickinson Bayou.

Stream 1 - Dickinson Bayou, Tex.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-24-64 Time: 0950-1235

1	-	-	-	-
2	-	-	-	-
3	40	1.2	29.6	931
4	32	2.1	29.8	10,455
5	34	3.7	30.0	12,933
6	38	4.8	30.6	11,934
7	39	5.7	30.8	2,170
8	43	7.3	31.0	131
9	39	13.0	31.0	88
10	36	12.7	31.1	609
11	48	17.6	31.4	136

Total catch----- 39,387

Date: 6-28-65 Time: 1025-1445

1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	31	0.4	31.1	1,960
5	24	0.6	31.5	991
6	34	1.1	31.7	222
7	30	1.2	31.1	14,322
8	29	1.8	30.6	9,595
9	33	2.3	30.6	15,602
10	23	4.9	31.1	15,050
11	19	7.3	31.0	582

Total catch----- 58,324

Date: 6-28-65 Time: 1610-1835

1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	31	0.4	31.6	54
5	25	0.6	32.4	1,040
6	33	1.0	31.7	308
7	35	1.7	31.4	1,663
8	32	1.8	30.8	660
9	37	2.8	30.1	8,036
10	30	4.9	31.1	871
11	27	5.8	31.0	128

Total catch----- 12,760

Stream 1 - Dickinson Bayou, Tex. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-25-65 Time: 0715-0935

1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	42	0.4	30.1	0
5	42	0.9	30.4	1,037
6	47	1.8	30.6	35
7	53	2.3	30.5	559
8	40	3.0	30.8	849
9	44	3.8	30.4	1,842
10	36	6.5	30.5	14
11	42	9.4	29.6	86

Total catch----- 4,422

Date: 7-25-65 Time: 1015-1255

1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	36	0.5	30.3	1,257
5	40	1.2	30.8	73
6	50	2.1	30.8	12
7	51	2.5	30.8	40
8	41	3.0	30.8	312
9	35	5.1	30.9	514
10	36	5.7	30.8	10
11	27	10.2	30.4	11

Total catch----- 2,229

Date: 7-15-66 Time: 0850-1120

1	-	-	-	-
2	-	-	-	-
3	40	0.4	31.7	1,780
4	30	0.4	32.3	31,735
5	26	1.4	33.8	5,430
6	43	1.8	31.7	11,718
7	28	1.6	32.0	7,462
8	38	2.0	31.8	10,465
9	31	3.4	32.1	229
10	37	5.1	32.1	14,322
11	29	8.3	32.5	56

Total catch----- 83,197

Stream 1 - Dickinson Bayou, Tex. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-15-66 Time: 1300-1505				
1	-	-	-	-
2	-	-	-	-
3	47	0.2	32.6	510
4	30	0.2	33.3	14,976
5	34	0.6	34.3	5,268
6	30	1.0	32.8	72,588
7	32	2.0	32.2	2,348
8	30	1.8	34.8	2,345
9	29	2.0	34.8	6,504
10	27	3.4	33.8	1,507
11	33	7.4	33.7	7,048
Total catch-----				113,094

Date: 6-22-67 Time: 0815-1125				
1	38	6.4	29.6	74,250
2	40	9.1	29.4	48,136
3	42	8.5	30.2	25,425
4	41	10.2	30.3	723
5	42	11.8	30.6	831
6	37	12.5	30.8	1,812
7	40	13.6	30.6	32
8	35	14.8	30.6	2,671
9	32	15.6	30.4	467
10	37	16.1	30.3	12
11	39	16.3	30.5	84
Total catch-----				154,443

Stream 1 - Dickinson Bayou, Tex. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-17-68 Time: 1400-1735				
1	14	0.5	29.2	11
2	15	0.5	29.5	5,486
3	17	1.2	29.9	785
4	20	0.4	29.8	520
5	20	0.5	30.0	6,545
6	20	0.6	30.3	9,075
7	20	0.9	30.2	9,548
8	18	1.3	30.1	8,000
9	21	2.1	29.8	13,733
10	20	2.8	29.5	438
11	21	3.0	29.9	0

Total catch----- 54,141

Date: 6-17-69 Time: 0715-1145

1	30	0.6	28.7	24,922
2	27	0.5	28.5	707
3	27	0.4	28.6	3,445
4	22	0.6	29.2	20,072
5	19	0.7	29.0	49,434
6	22	0.9	28.8	19,143
7	27	1.4	28.7	33,436
8	21	2.3	28.4	878
9	25	2.5	28.4	26,129
10	22	4.4	28.3	952
11	25	3.5	27.8	2,115

Total catch-----181,233

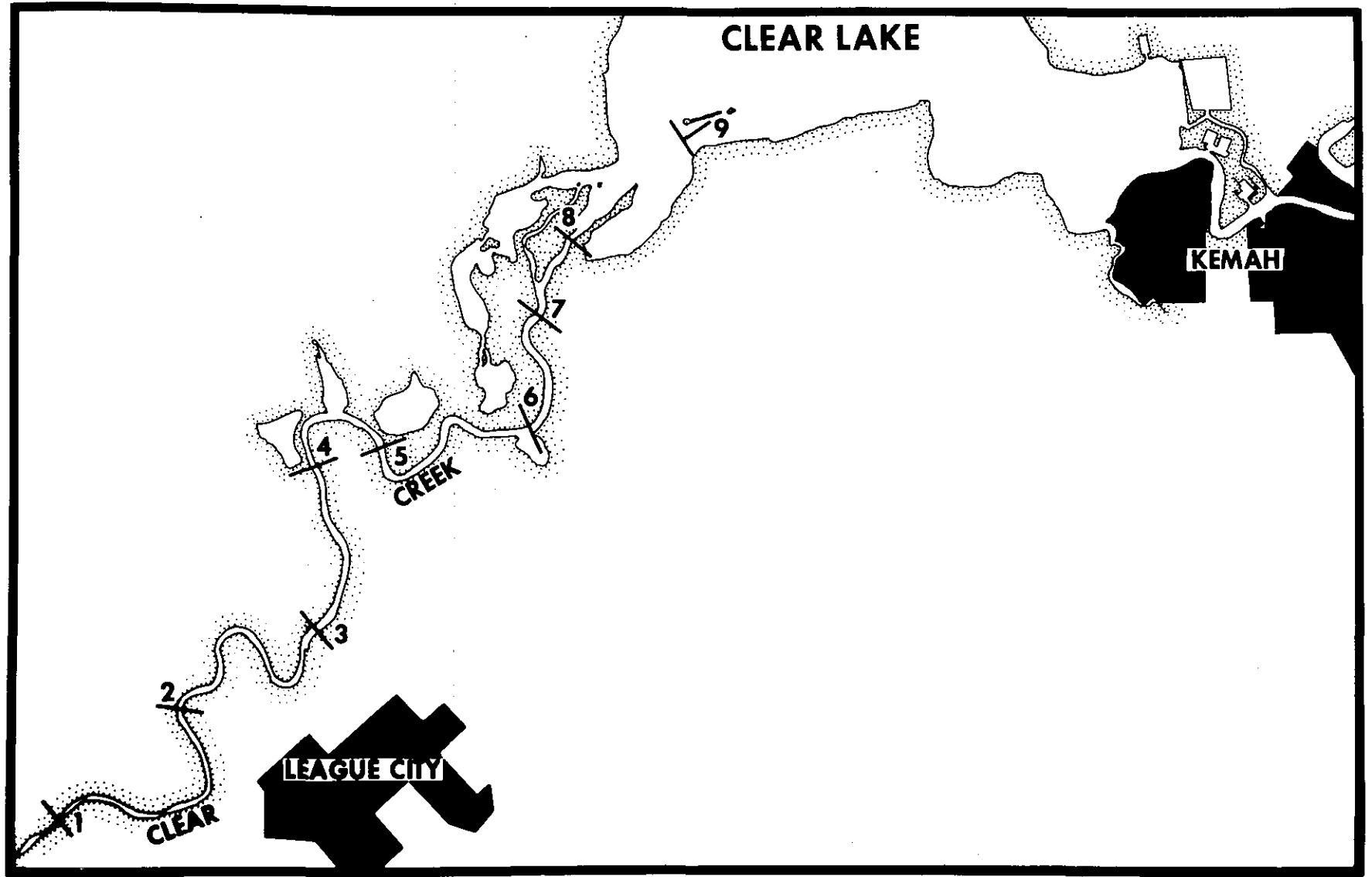


Figure 4.—Area 1: Stream 2 - Clear Creek.

Stream 2 - Clear Creek, Tex.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-25-64 Time: 1125-1330

1	-	-	-	-
2	40	3.8	31.7	5,776
3	35	3.8	33.0	4,300
4	28	5.5	30.8	4,200
5	35	8.8	31.7	1,120
6	21	16.5	31.1	186
7	25	17.5	31.5	1,275
8	30	15.8	33.7	1,054
9	28	18.5	31.8	975

Total catch----- 18,886

Date: 6-29-65 Time: 0915-1215

1	-	-	-	-
2	37	1.2	30.5	3,576
3	35	1.8	30.5	14,610
4	43	3.1	30.6	5,488
5	43	5.3	30.8	53,328
6	43	6.7	31.0	9,300
7	23	8.4	31.4	5,320
8	25	8.8	31.7	1,875
9	21	8.9	31.3	505

Total catch----- 94,002

Date: 6-29-65 Time: 1430-1650

1	-	-	-	-
2	24	2.4	32.3	18,333
3	20	3.8	31.1	7,164
4	26	5.9	31.4	163
5	13	8.6	32.1	65
6	20	8.8	32.0	93
7	26	9.0	32.5	19
8	24	9.1	31.8	1
9	23	9.4	32.1	5

Total catch----- 25,843

Stream 2 - Clear Creek, Tex. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-26-65 Time: 0740-1040

1	32	2.4	29.0	4,220
2	34	3.1	29.5	2,483
3	48	5.0	30.0	736
4	43	5.9	30.5	748
5	28	11.3	31.0	174
6	19	11.2	31.5	783
7	19	11.3	31.8	671
8	21	11.7	30.5	540
9	22	12.9	30.2	86

Total catch----- 10,441

Date: 7-26-65 Time: 1130-1410

1	21	2.7	31.5	2,160
2	51	4.1	31.5	2,431
3	42	4.9	31.1	994
4	35	6.5	31.8	270
5	37	11.2	31.9	171
6	31	11.3	31.9	104
7	32	11.2	32.0	86
8	29	11.2	32.1	18
9	32	10.6	30.7	421

Total catch----- 6,655

Date: 6-11-66 Time: 0810-1145

1	-	-	-	-
2	35	0.8	29.3	52,560
3	40	0.9	28.9	21,960
4	33	1.0	28.9	2,134
5	32	1.2	29.0	7,169
6	25	3.6	30.6	1,592
7	25	3.9	31.6	1,726
8	24	3.7	32.4	4,872
9	24	3.7	32.6	584

Total catch----- 92,597

Stream 2 - Clear Creek, Tex. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-16-66 Time: 0945-1145

1	-	-	-	-
2	39	1.0	34.5	5
3	43	1.7	32.0	83
4	34	7.3	32.1	7,046
5	39	6.8	32.3	229
6	22	6.8	32.0	149
7	30	6.2	32.4	64
8	26	7.0	33.1	372
9	29	6.6	34.7	206

Total catch----- 8,154

Date: 7-16-66 Time: 1250-1445

1	-	-	-	-
2	34	5.1	31.8	88
3	27	2.8	34.5	125
4	29	7.0	34.7	34
5	28	6.4	33.1	189
6	27	6.7	33.0	325
7	26	6.1	34.5	166
8	26	5.7	33.0	53
9	28	8.1	34.0	530

Total catch----- 1,510

Date: 6-21-67 Time: 0730-0945

1	30	2.7	29.6	2,640
2	32	4.9	30.0	8,379
3	41	5.5	30.0	4,170
4	38	7.6	29.2	2,680
5	39	15.8	31.2	569
6	25	19.1	31.9	591
7	24	18.8	31.4	226
8	31	18.8	31.5	196
9	36	19.0	31.7	108

Total catch----- 19,559

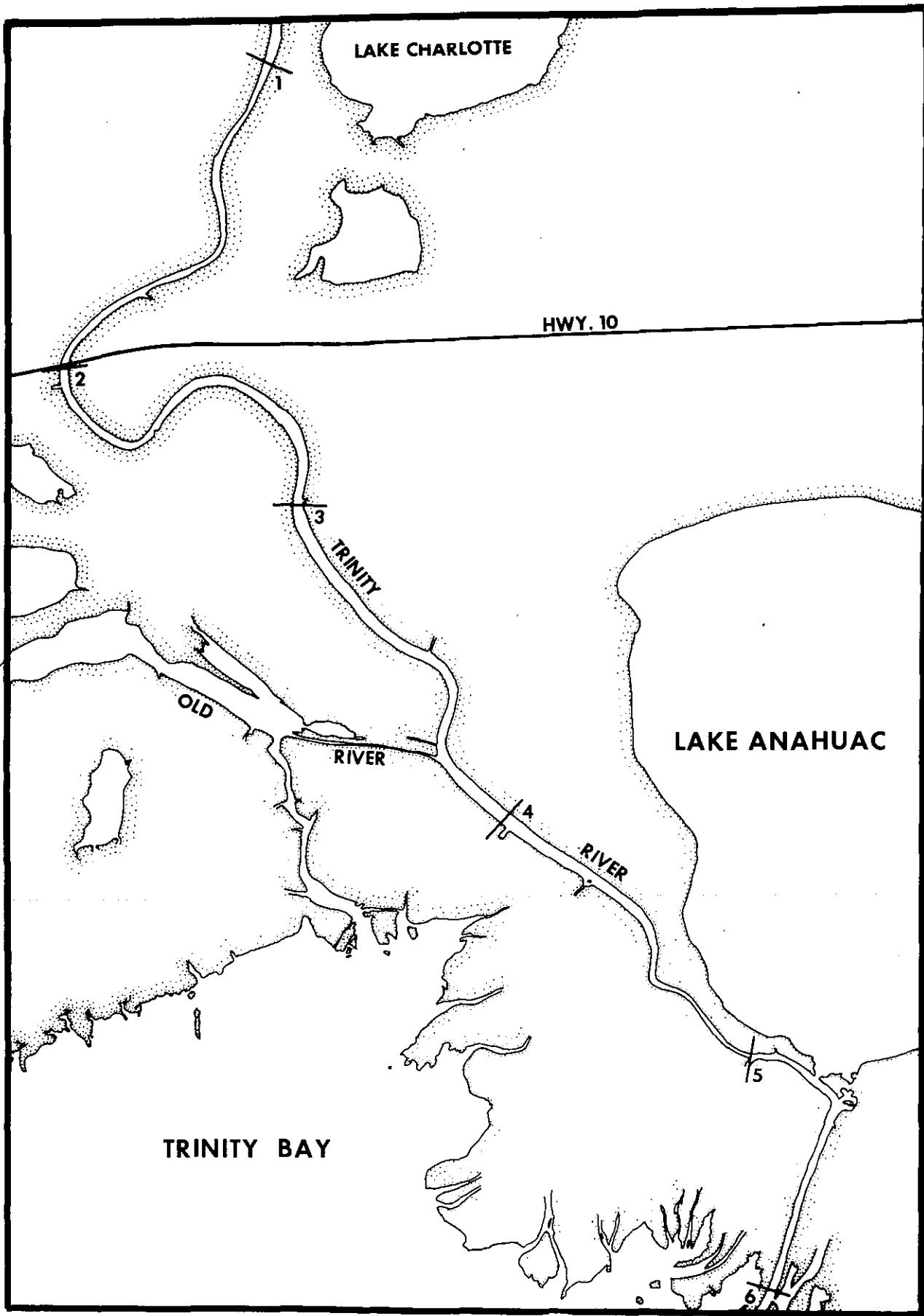


Figure 5.—Area 1: Stream I - Trinity River.

Stream I - Trinity River, Tex.

Date: 8-1-67 Time: 1625-1800

Station	Secchi (cm)	Salinity (o/oo)	Water Temp. (C)	Menhaden catch
1	48	-	-	735
2	33	-	-	2,700
3	32	-	-	2,349
4	32	-	-	1,359
5	32	-	-	3,081
6	24	-	-	1,285
Total Catch-----				11,509

Date: 6-18-68 Time: 1220-1435

1	12	0.3	29.3	0
2	12	0.3	29.0	0
3	12	0.3	29.3	0
4	10	0.4	29.3	0
5	10	0.2	29.4	0
6	10	0.2	29.5	0
Total Catch-----				0

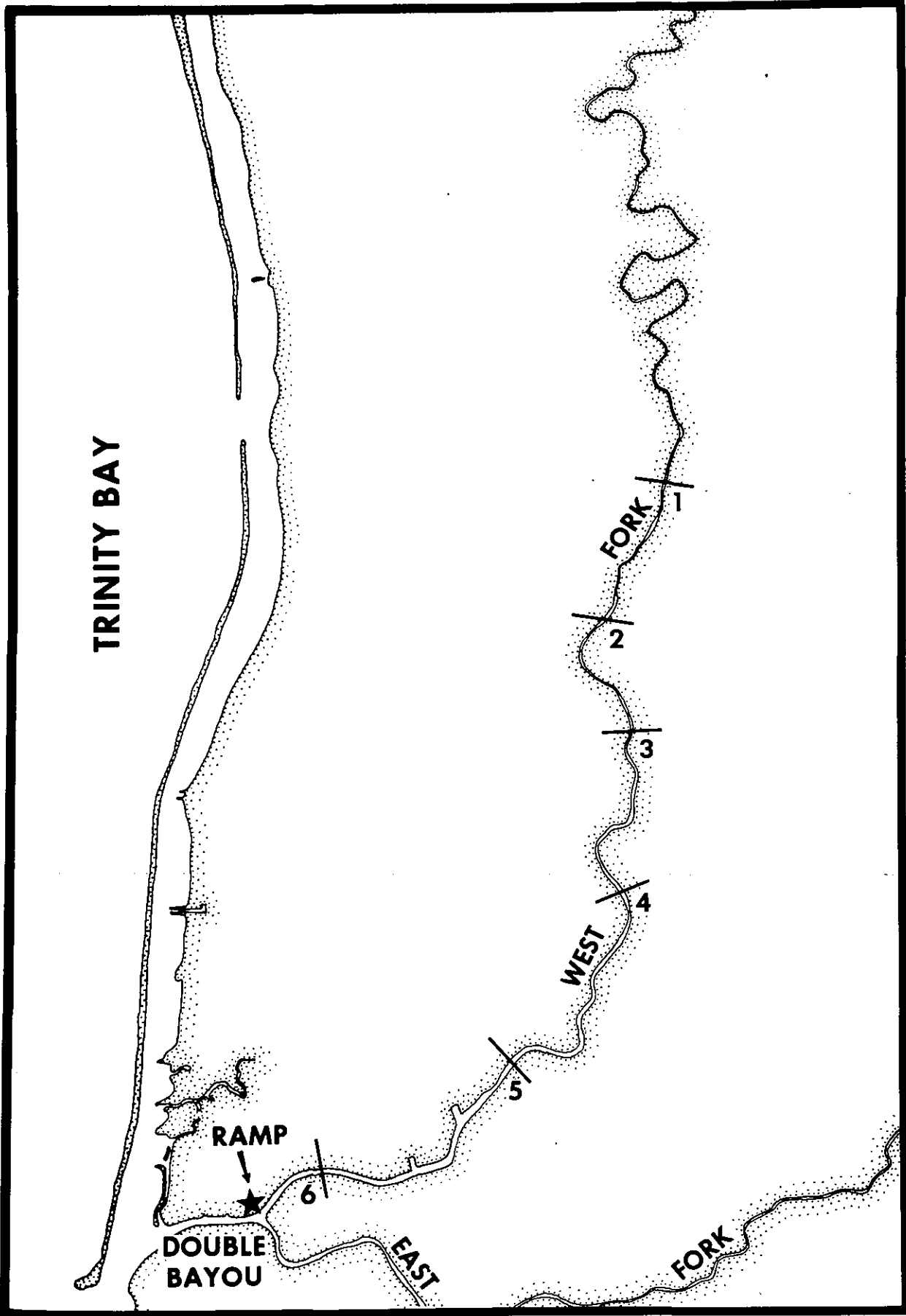


Figure 6.—Area 1: Stream II - Double Bayou (West Fork).

Stream II - Double Bayou (West Fork), Tex.

Date: 6-21-67 Time: 1450-1715

Station	Secchi (CM)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
1	28	2.0	30.8	721
2	38	2.6	31.0	6,285
3	28	3.3	31.8	22,325
4	33	6.7	31.5	10,693
5	36	9.2	31.1	9,198
6	25	10.5	31.2	17,384
Total Catch-----				66,606

Date: 7-30-67 Time: 1235-1430

1	43	-	-	3,329
2	40	-	-	8,789
3	35	-	-	9,802
4	30	-	-	371
5	50	-	-	1,292
6	40	-	-	546
Total Catch-----				24,129

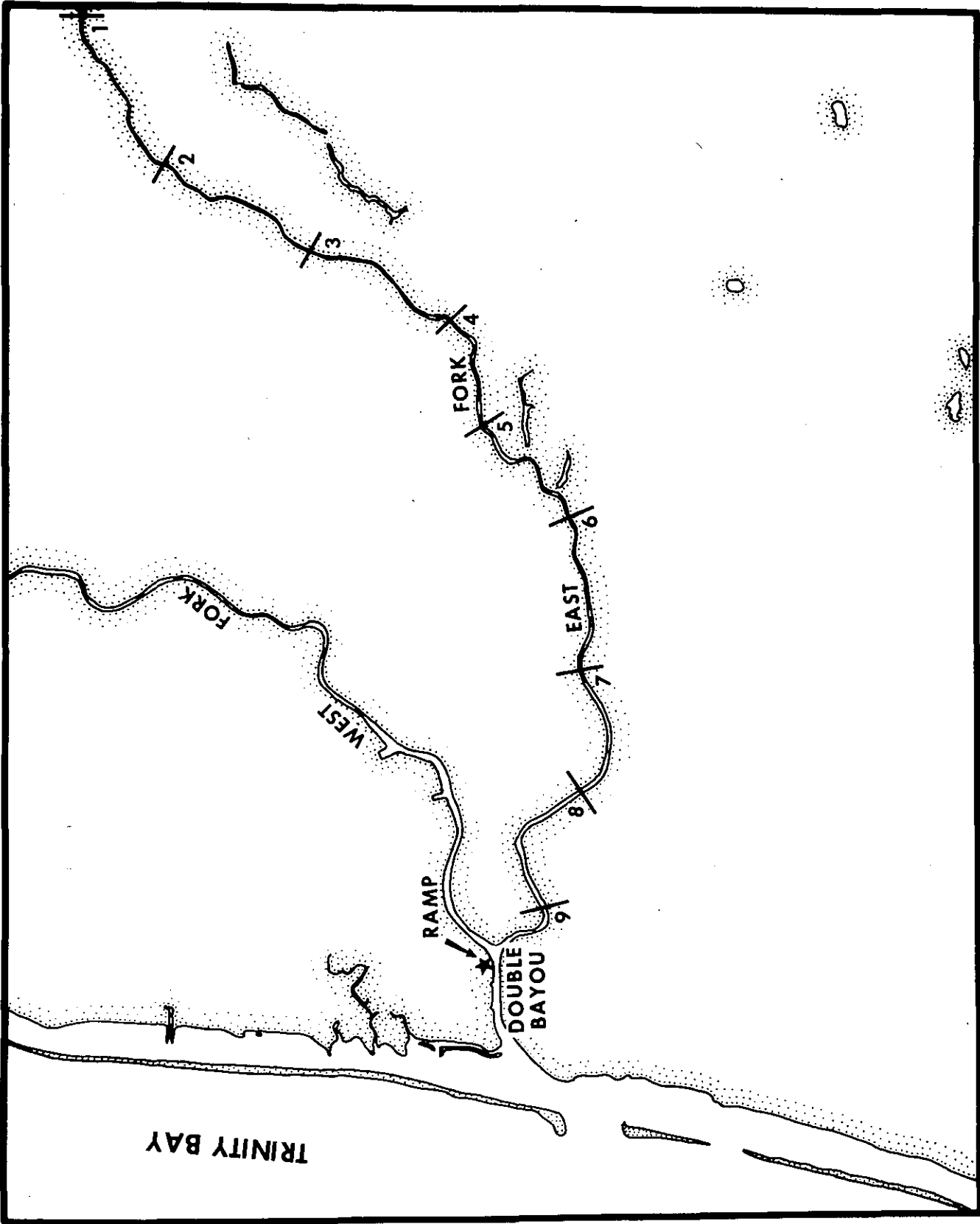


Figure 7.—Area 1: Stream 3 - Double Bayou (East Fork).

Stream 3 - Double Bayou (East Fork), Tex.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 6-21-67 Time: 1600-1730

1	-	-	-	-
2	27	2.0	31.9	173
3	30	3.8	32.0	612
4	28	4.0	31.9	43
5	30	4.6	31.9	784
6	36	6.3	31.7	31
7	38	8.2	32.2	1,785
8	41	10.0	31.6	17,360
9	45	9.6	31.4	27,755

Total catch----- 48,543

Date: 6-17-68 Time: 0830-1110

1	19	0.1	29.2	0
2	18	0.2	29.3	0
3	18	0.3	29.0	0
4	18	0.5	29.5	2,508
5	17	0.5	29.4	9,196
6	18	0.1	29.2	3,564
7	17	0.4	29.4	7,854
8	17	0.5	29.9	15,775
9	18	0.5	30.0	8,265

Total catch----- 47,162

Date: 6-17-69 Time: 1430-1905

1	-	-	-	-
2	15	0.5	31.0	73,350
3	19	0.4	28.7	96,985
4	18	0.4	32.1	88,011
5	20	0.4	32.1	36,270
6	17	0.4	31.6	33,950
7	28	0.5	31.5	53,865
8	22	0.5	31.8	8,152
9	15	0.5	32.6	26,400

Total catch-----416,983

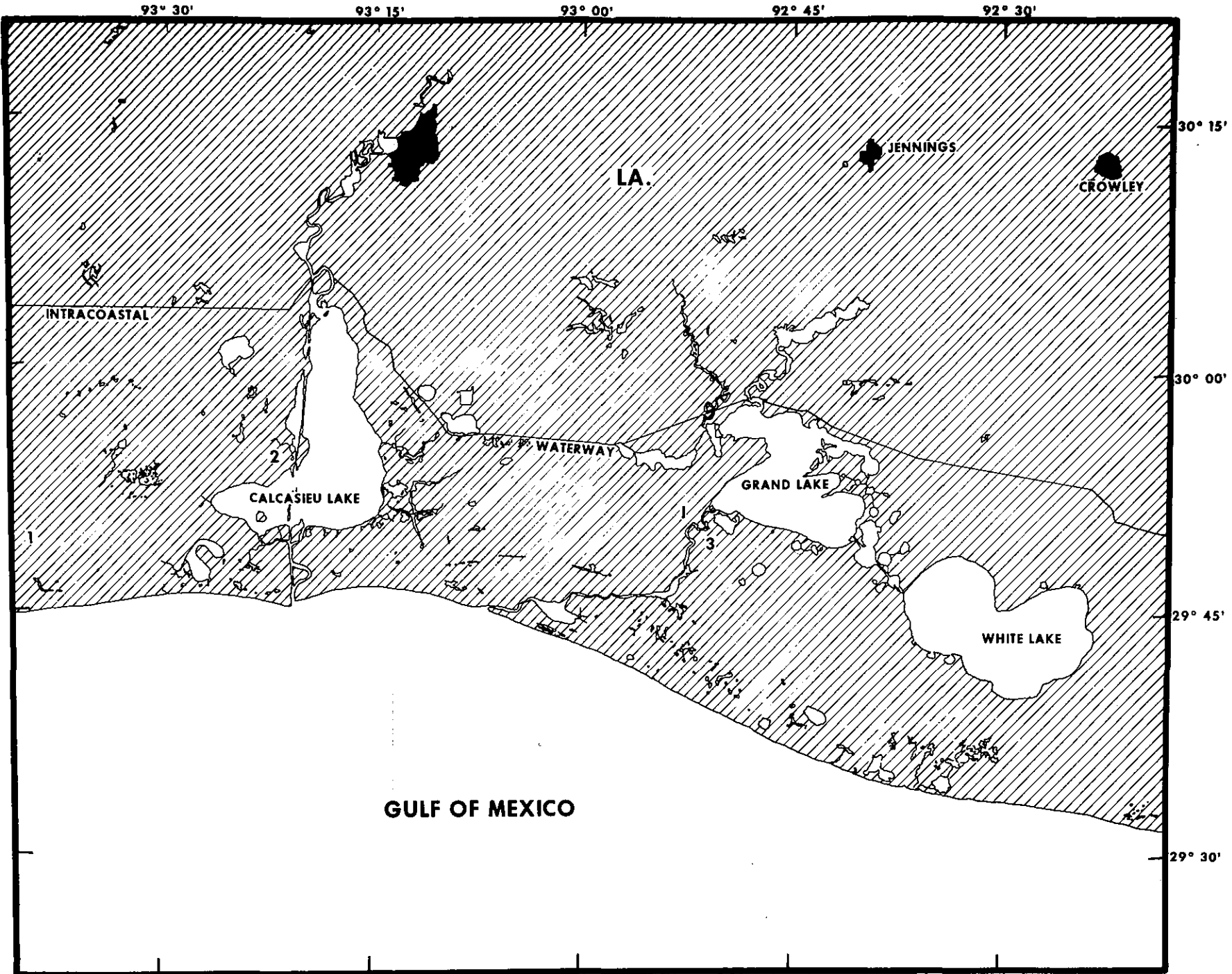


Figure 8.—Area 2: Calcasieu Lake to White Lake, La.

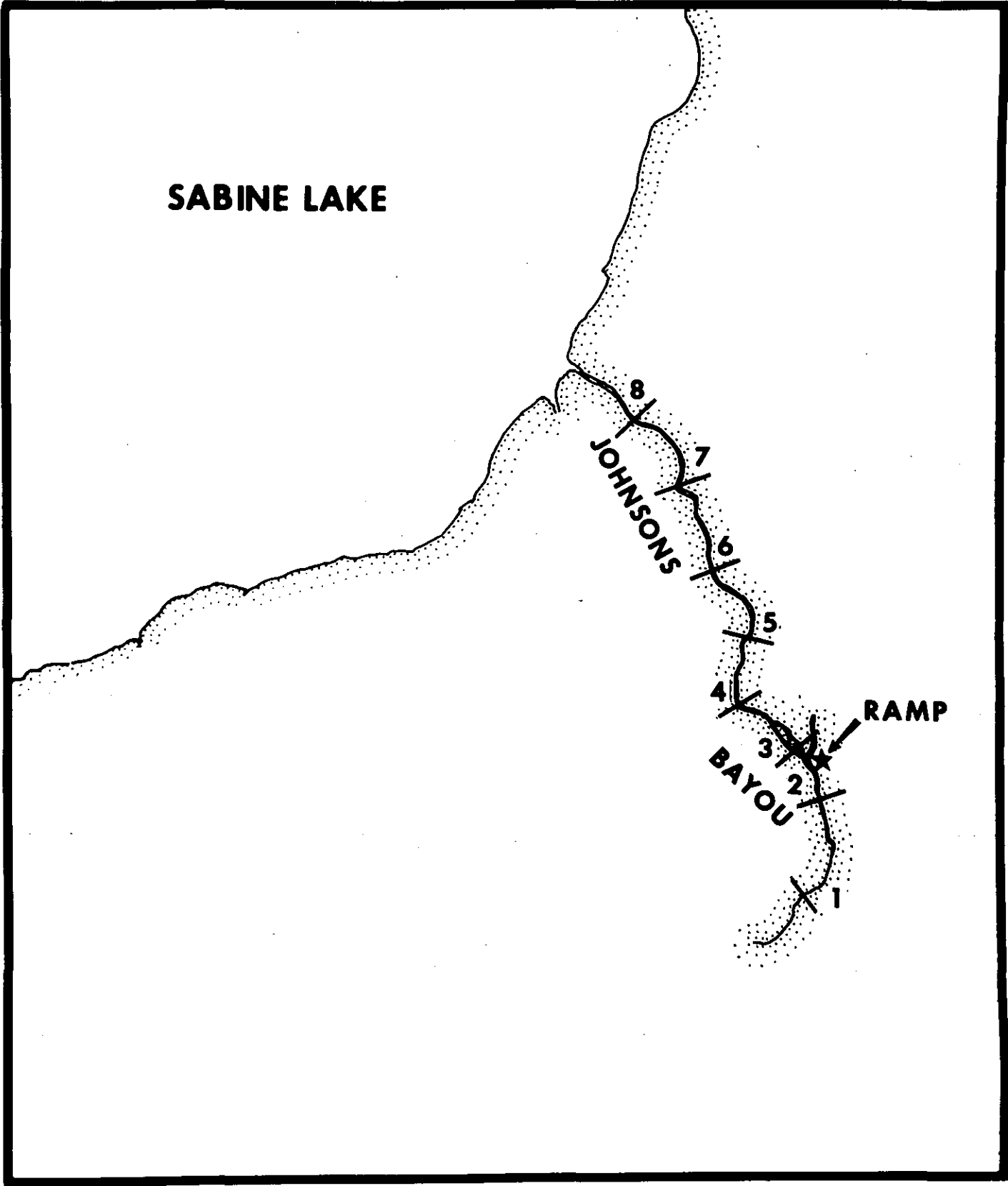


Figure 9.—Area 2: Stream 1 - Johnsons Bayou.

Stream 1 - Johnsons Bayou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-27-64 Time: 1340-1600

1	16	3.0	34.0	14,705
2	22	3.1	33.5	8,601
3	15	3.9	32.3	7,137
4	10	4.8	32.1	5,460
5	10	6.9	31.9	8,500
6	12	8.2	31.5	8,520
7	13	8.8	31.8	3,348
8	65	8.8	31.5	0

Total catch----- 56,271

Date: 6-30-65 Time: 1245-1520

1	25	2.8	29.9	24
2	26	2.4	29.8	28
3	30	2.5	29.4	155
4	30	2.4	30.8	19
5	31	2.4	30.5	16
6	38	2.5	30.8	22
7	40	2.7	30.9	0
8	45	3.0	31.0	0

Total catch----- 264

Date: 7-27-65 Time: 0715-0950

1	25	3.2	30.5	237
2	30	4.9	30.5	233
3	27	4.7	30.5	377
4	21	4.7	30.7	3,122
5	25	4.8	29.9	559
6	31	5.0	29.5	3,184
7	35	5.1	29.8	214
8	69	5.7	29.9	13

Total catch----- 7,939

Stream 1 - Johnsons Bayou, La. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-27-65 Time: 1030-1250

1	28	3.9	31.2	30
2	25	4.7	31.2	7
3	21	4.7	31.9	170
4	28	4.7	31.9	333
5	32	5.0	31.0	437
6	34	5.1	30.7	114
7	38	5.5	30.6	29
8	72	5.9	30.6	11

Total catch----- 1,131

Date: 6-10-66 Time: 1045-1340

1	34	2.2	29.8	173,228
2	40	2.3	31.0	204
3	40	2.4	30.7	43
4	40	2.4	30.9	20
5	40	2.4	32.0	21
6	38	2.4	30.0	81
7	30	1.9	30.3	38
8	40	0.7	30.6	11

Total catch-----173,646

Date: 7-18-66 Time: 1200-1335

1	24	1.0	33.9	1,908
2	20	1.8	32.6	45
3	18	2.6	34.5	38
4	26	4.4	32.9	1
5	30	4.5	34.5	4
6	30	4.5	34.6	1
7	30	4.5	35.8	0
8	70	4.7	34.4	0

Total catch----- 1,997

Stream 1 - Johnsons Bayou, La. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-18-66 Time: 1455-1630				
1	26	1.6	36.7	168
2	23	1.8	34.1	2
3	18	2.3	34.6	0
4	22	4.8	34.6	20
5	30	4.9	35.0	8
6	31	4.7	35.1	7
7	31	5.0	35.8	0
8	72	5.0	34.2	1
Total catch-----				206
Date: 6-22-67 Time: 1705-1835				
1	-	-	-	-
2	37	9.3	31.5	0
3	38	9.4	31.4	3
4	38	9.3	31.3	0
5	40	9.3	31.3	0
6	41	9.2	31.3	0
7	45	8.4	31.6	0
8	46	9.2	31.2	0
Total catch-----				3
Date: 6-19-68 Time: 1400-1640				
1	22	1.8	25.8	76,960
2	26	2.3	26.2	33,120
3	28	3.2	26.4	3,090
4	25	3.4	26.2	2,570
5	20	3.5	25.3	75
6	21	3.7	25.4	0
7	24	3.8	25.7	0
8	20	3.8	26.0	0
Total Catch-----				115,815

Stream 1 - Johnsons Bayou, La. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-18-69 Time: 1500-1930				
1	23	1.4	31.7	40,846
2	20	1.0	32.5	12,915
3	13	0.6	30.3	4,565
4	18	0.5	31.6	5,705
5	21	0.4	31.0	8,734
6	16	0.7	31.0	17,199
7	23	0.5	31.9	7
8	29	0.7	30.3	0
Total catch-----				89,971

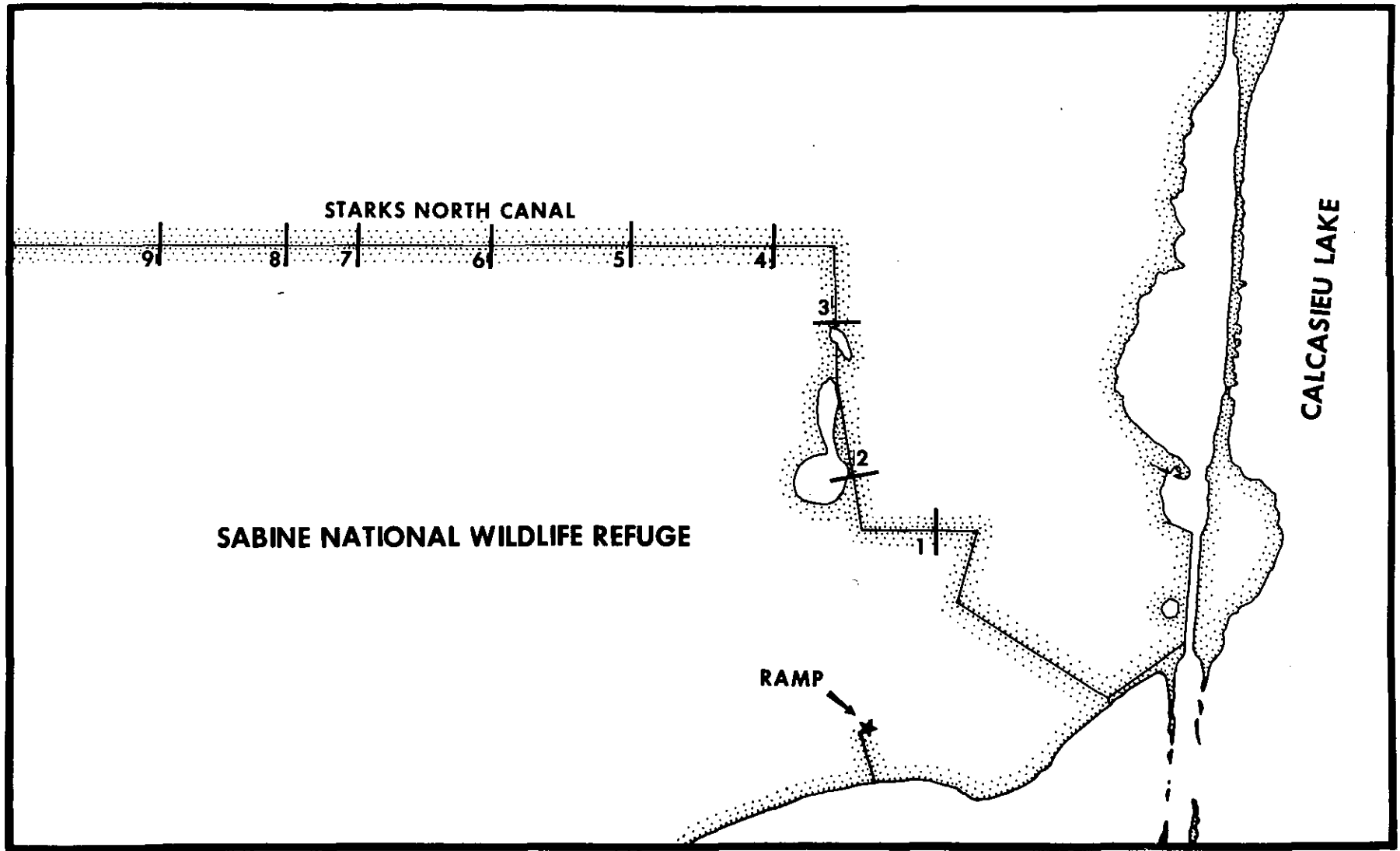


Figure 10.—Area 2: Stream 2 - North Canal.

Stream 2 - North Canal, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-23-67 Time: 0815-1050				
1	39	16.5	29.2	5
2	40	16.8	29.1	1
3	40	16.8	28.9	108
4	50	17.6	28.5	5
5	39	18.1	28.8	24,640
6	35	18.2	29.5	204,540
7	28	18.2	29.5	4,000
8	30	18.3	29.0	0
9	31	18.2	30.3	0
Total catch-----				233,299

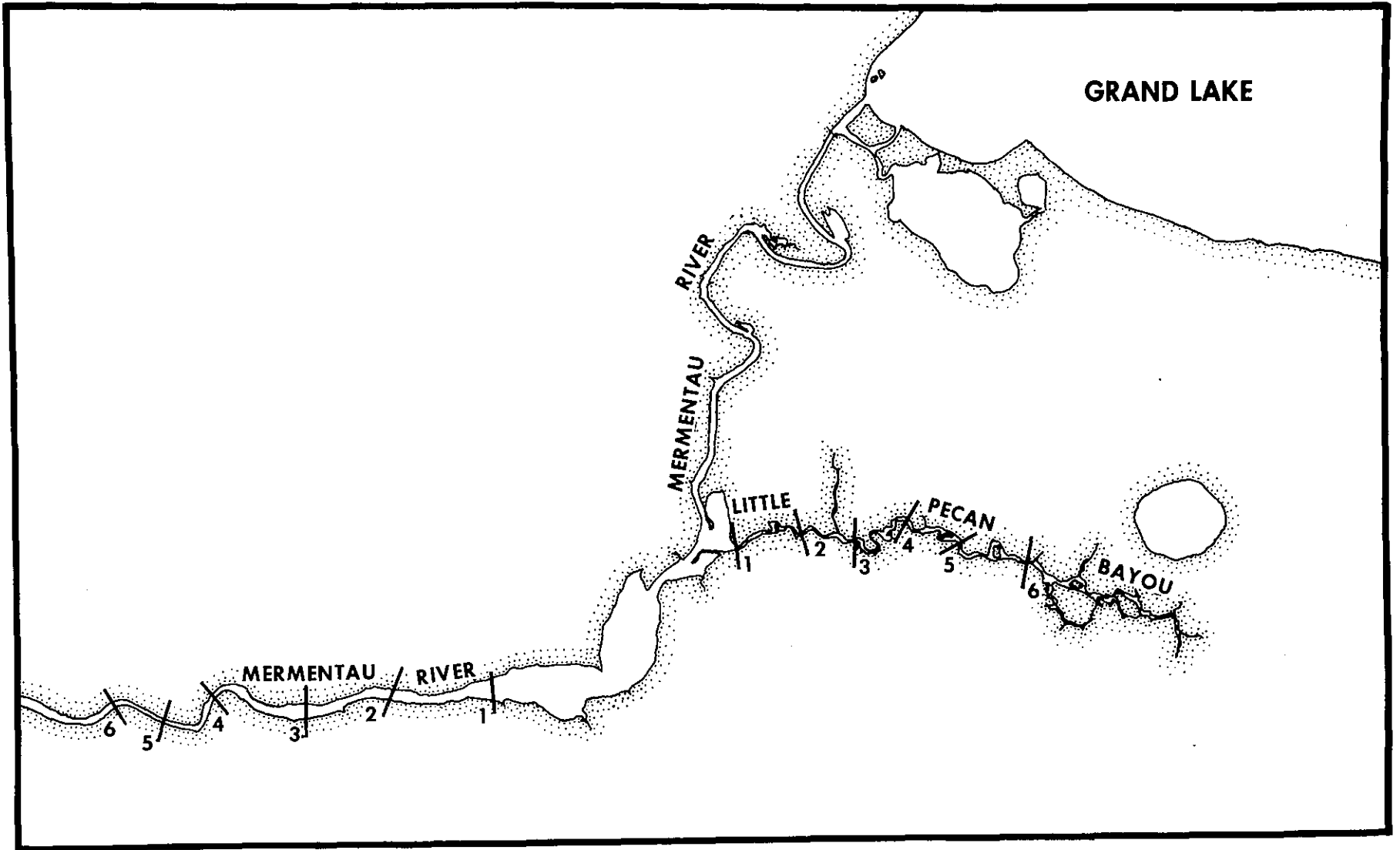


Figure 11.—Area 2: Stream 1 - Mermentau River; Stream 3 - Little Pecan Bayou.

Stream I - Mermentau River, La.

Date: 6-22-67 Time: 1345-1550

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
1	38	10.0	31.2	14,749
2	32	11.8	31.6	5,432
3	23	14.1	30.5	4,879
4	36	14.3	31.3	3,468
5	30	15.4	31.3	14,652
6	28	15.8	31.3	6,765
Total catch-----				49,945

Date: 7-29-67 Time 1015-1150

1	25	-	-	555
2	20	-	-	84
3	20	-	-	43
4	20	-	-	369
5	19	-	-	431
6	20	-	-	820
Total catch-----				2,302

Date: 6-19-68 Time: 1045-1530

1	43	7.3	27.8	205
2	47	8.1	27.8	27
3	47	9.3	28.0	113
4	40	10.5	28.4	9
5	40	11.6	28.5	3
6	39	13.4	28.6	4
Total catch-----				361

Stream 3 - Little Pecan Bayou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-19-69 Time: 0800-1200				
1	21	1.0	29.3	29,070
2	14	1.0	29.2	23,750
3	17	1.0	29.1	39,589
4	22	1.1	29.5	67,340
5	20	0.9	29.2	65,596
6	15	0.8	29.0	50,325
Total catch				-----275,670

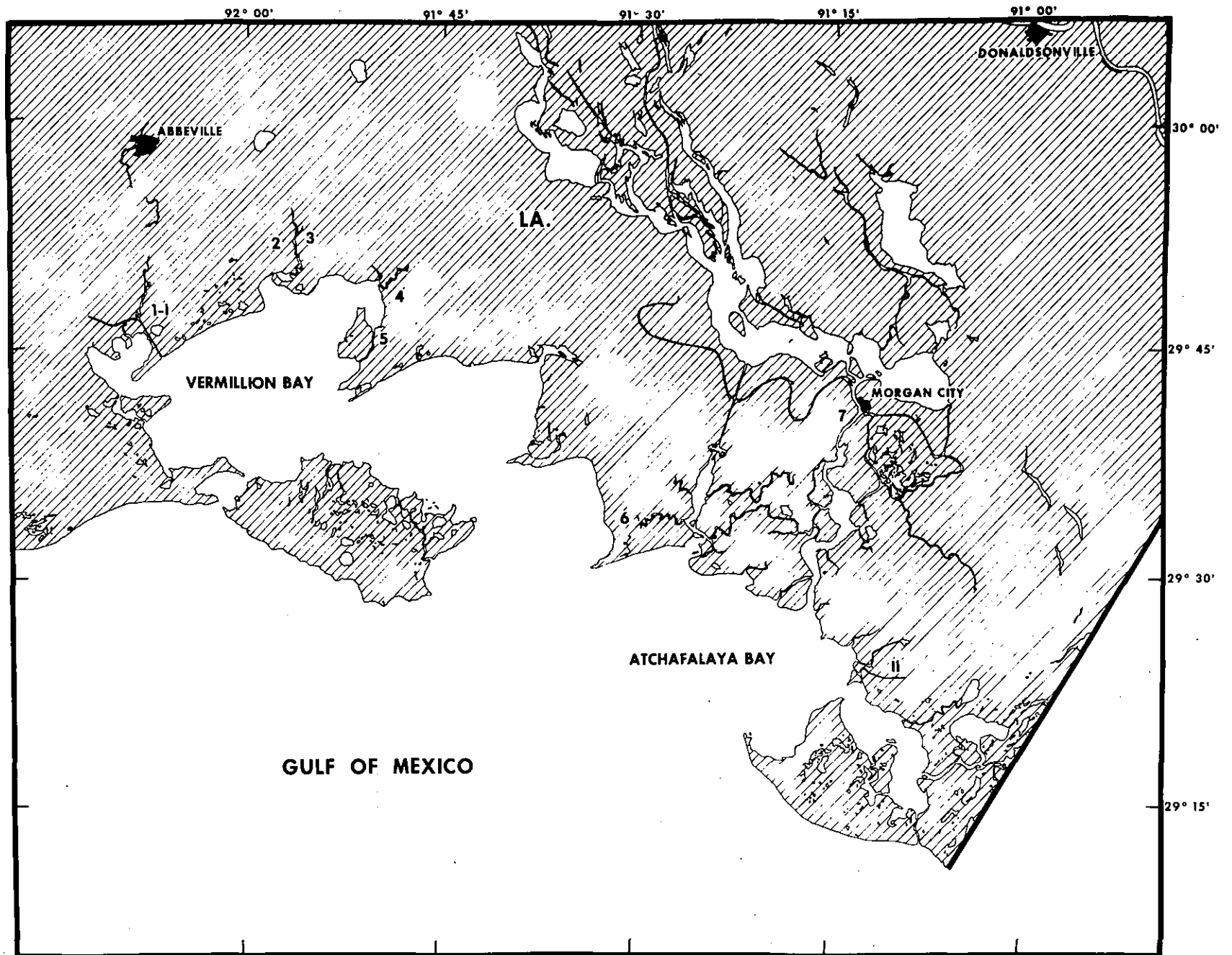


Figure 12.—Area 3: Vermillion Bay to Atchafalaya Bay, La.

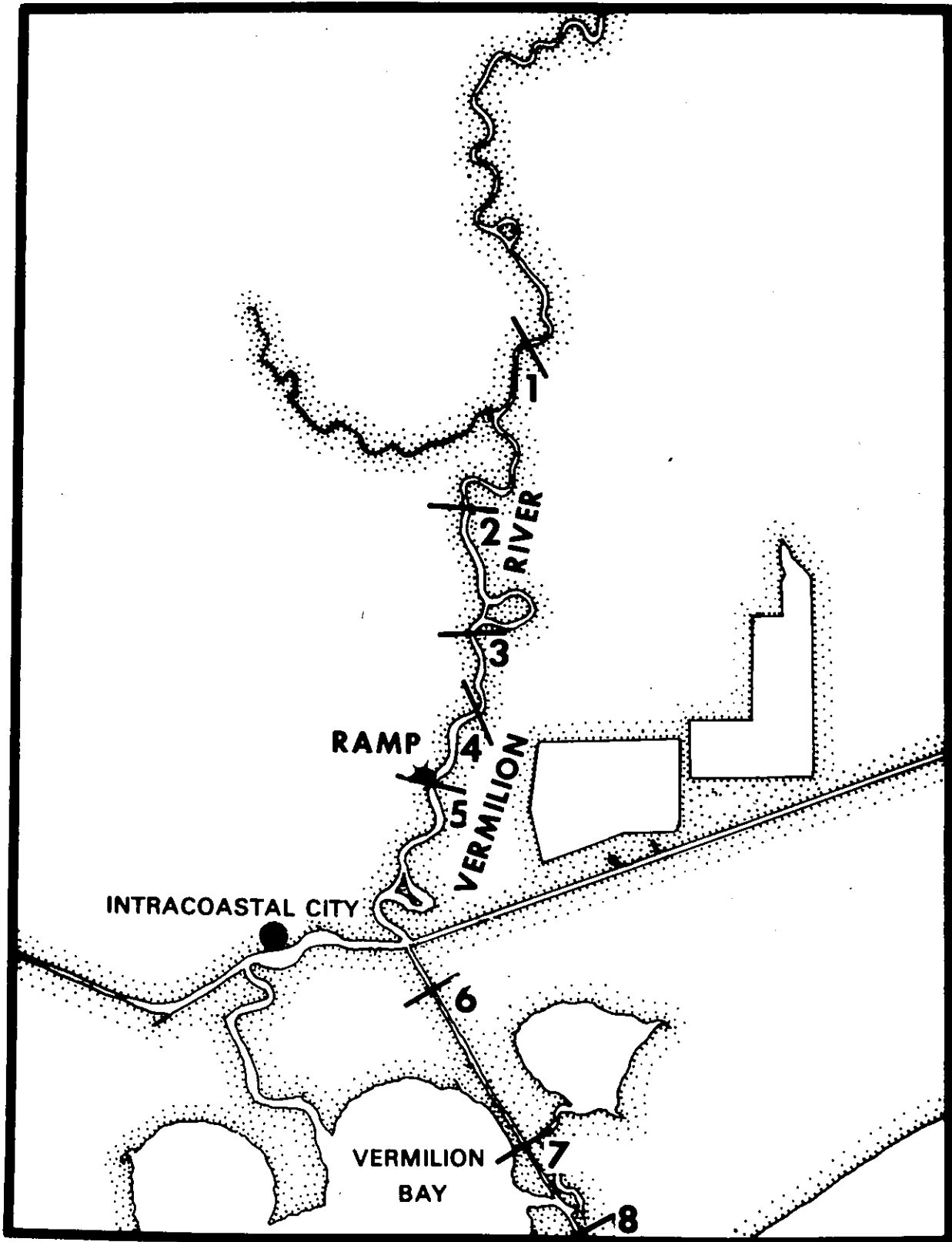


Figure 13.—Area 3: Stream 1 - Vermilion River.

Stream 1 - Vermilion River, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-28-64 Time: 1630-1800

1	-	-	-	-
2	-	-	-	-
3	16	0	30.5	541
4	18	0.1	30.3	20
5	16	0.2	30.1	107
6	11	0.5	29.9	493
7	12	0.7	29.7	653
8	18	1.4	27.8	27

Total catch----- 1,841

Date: 7-1-65 Time: 1220-1505

1	30	1.4	31.4	643
2	29	1.7	31.8	4,040
3	25	1.8	31.8	336
4	20	2.0	32.4	578
5	27	2.0	31.4	592
6	28	2.0	32.6	17
7	29	2.1	31.8	8
8	25	2.2	32.9	0

Total catch----- 6,214

Date: 7-28-65 Time: 1515-1735

1	18	0.3	32.8	73
2	21	0.5	33.5	233
3	22	1.4	33.4	245
4	22	2.4	33.7	2,990
5	26	3.1	33.0	1,270
6	24	3.5	34.8	974
7	26	2.8	34.0	512
8	31	5.0	32.9	119

Total catch----- 6,416

Stream 1 - Vermilion River, La. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 6-9-66 Time: 0840-1355

1	10	0.3	29.0	8,118
2	10	0.4	29.0	9,519
3	8	0.4	30.7	13,890
4	9	0.5	29.4	28,000
5	10	0.5	29.6	5,484
6	10	0.5	30.8	9,000
7	10	0.3	30.7	4,500
8	10	0.4	31.6	6,000

Total catch----- 84,511

Date: 7-19-66 Time: 0955-1155

1	18	0	32.8	2,510
2	14	0.1	33.0	8,064
3	20	0.2	33.0	2,916
4	16	0.3	31.7	2,481
5	13	0.8	32.3	339
6	12	1.0	33.4	681
7	20	1.0	31.6	193
8	-	-	-	-

Total catch----- 17,184

Date: 6-23-67 Time: 1730-1915

1	13	0.1	31.7	2,316
2	18	0.2	31.2	6,492
3	14	0.4	31.4	236
4	12	0.1	31.1	1
5	15	0.7	31.4	5
6	17	0.8	31.7	2
7	13	1.2	30.9	5
8	-	-	-	-

Total catch----- 9,057

Stream 1 - Vermilion River, La. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-20-68 Time: 0730-0945				
1	16	0.2	27.4	384
2	18	0.2	27.3	1,728
3	12	0.3	28.7	138
4	15	0.3	28.6	350
5	22	0.4	28.5	2,790
6	17	0.3	28.6	2,467
7	18	0.8	28.4	354
8	-	-	-	-
Total catch-----				8,211
Date: 6-19-69 Time: 1545-1920				
1	10	0.6	30.6	999
2	7	0.7	30.8	6,246
3	10	0.7	31.6	3,030
4	14	0.7	30.5	617
5	17	0.6	30.5	452
6	9	0.6	30.7	555
7	11	0.7	31.0	452
8	-	-	-	-
Total catch-----				12,351

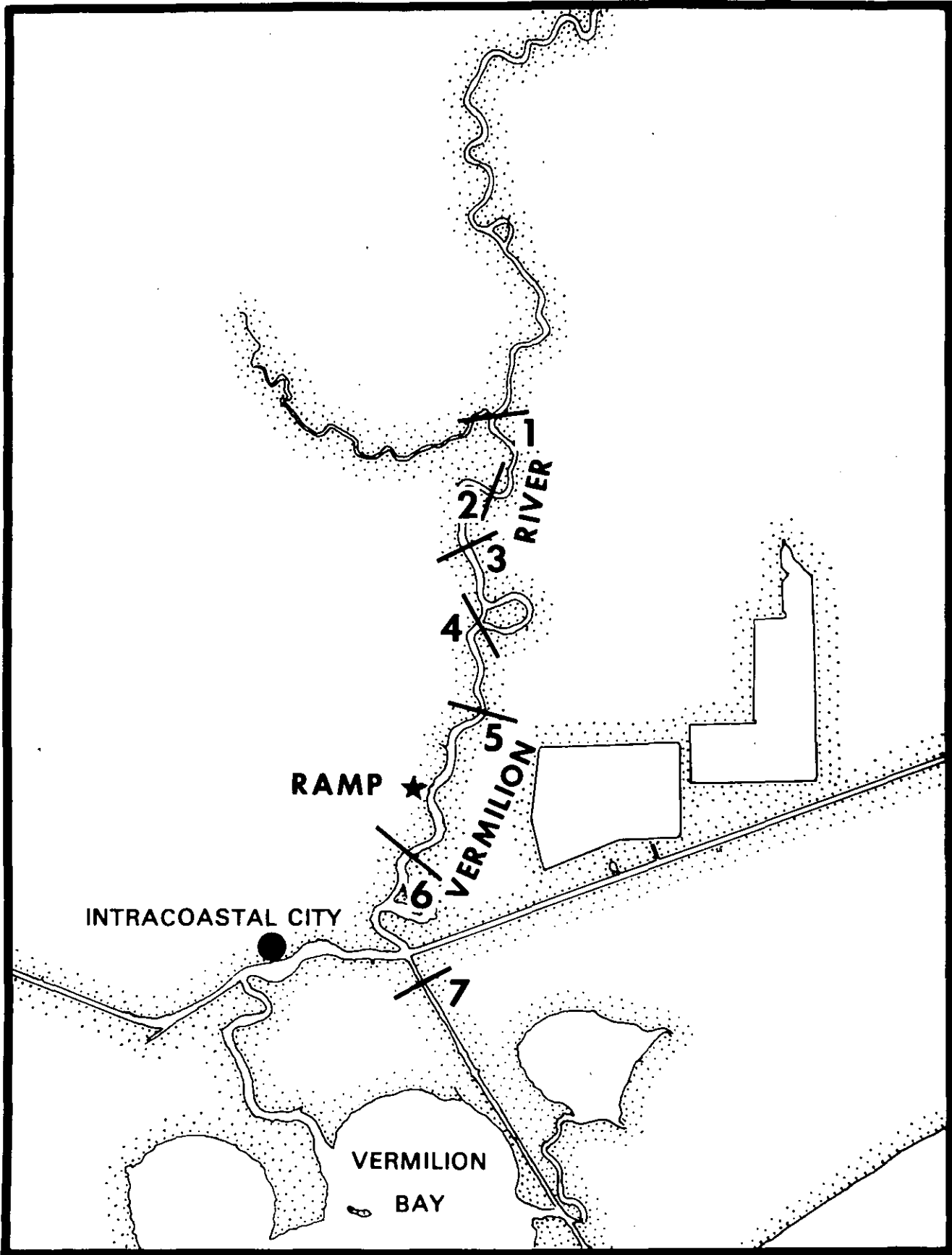


Figure 14.—Area 3: Stream I - Vermilion River.

Stream I - Vermilion River, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-28-67 Time: 2050-2250

1	-	-	-	19
2	-	-	-	37
3	-	-	-	403
4	-	-	-	526
5	-	-	-	431
6	-	-	-	599
7	-	-	-	624

Total catch----- 2,639

Date: 7-28-67 Time 1000-1150

1	13	-	-	1
2	13	-	-	2
3	15	-	-	5
4	14	-	-	1,172
5	16	-	-	32
6	12	-	-	48
7	15	-	-	17,632

Total catch----- 18,892

Date: 6-23-67 Time: 1130-1340

1	13	0.1	31.1	878
2	18	0.1	30.8	2,537
3	15	0.1	30.9	5,388
4	15	0.9	30.7	10,456
5	18	1.2	30.5	104
6	14	1.2	30.3	16
7	13	1.2	30.9	308

Total catch----- 19,687

Stream I - Vermilion River, La. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-20-68 Time: 1020-1300				
1	15	0.2	28.4	164
2	18	0.2	28.4	1,195
3	15	0.3	28.8	1,095
4	16	0.2	28.8	316
5	14	0.3	28.7	5,400
6	13	0.3	28.7	4,240
7	19	1.7	27.9	4,953
Total catch-----				17,363
Date: 6-20-68 Time: 2145-0025				
1	-	0.1	26.9	361
2	-	0.1	26.9	503
3	-	0.1	26.9	59
4	-	0.2	27.5	69
5	-	0.2	27.5	63
6	-	0.3	27.8	159
7	-	0.6	27.8	113
Total catch-----				1,327

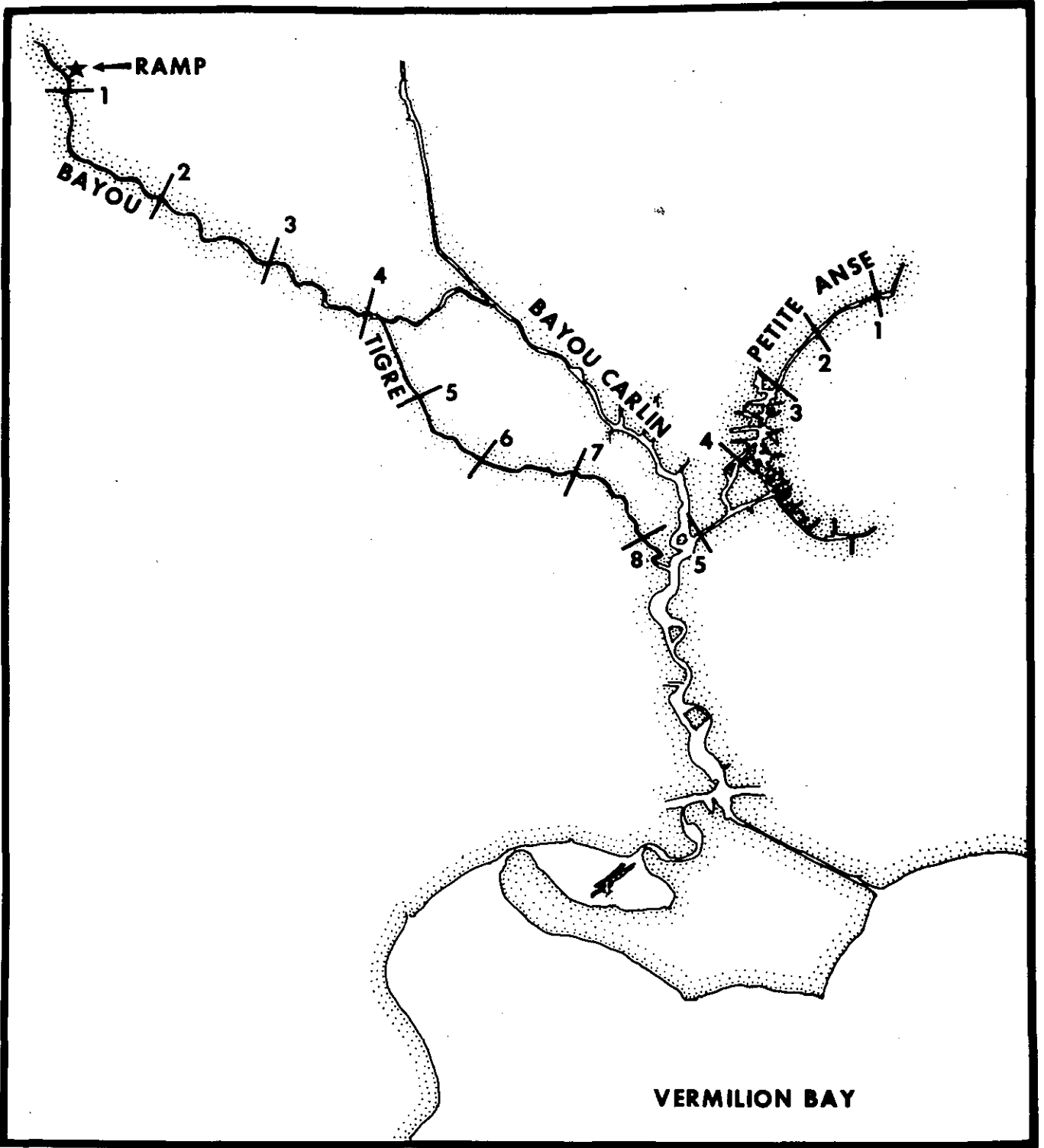


Figure 15.—Area 3: Stream 2 - Bayou Tigre; Stream 3 - Bayou Petite Anse.

Stream 2 - Bayou Tigre, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-20-68 Time: 1120-1445				
1	12	0.3	27.6	0
2	15	0.3	28.0	53,406
3	10	0.4	27.9	60,075
4	13	1.8	28.2	53,935
5	15	2.6	28.6	113,388
6	17	3.2	28.7	40,014
7	18	3.5	27.8	3,289
8	15	4.1	28.2	2,445
Total catch-----				326,552
Date: 6-20-69 Time: 0730-1040				
1	10	0.9	29.7	1
2	13	1.4	29.8	0
3	12	1.5	20.0	4,312
4	17	1.7	29.6	9,405
5	13	1.6	29.8	27,165
6	11	1.6	29.9	25,170
7	15	1.6	29.9	18,689
8	13	1.4	29.8	8,162
Total catch-----				92,904

Stream 3 - Bayou Petite Anse, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-24-67 Time: 1615-1730				
1	51	3.7	30.1	193
2	48	4.2	30.4	0
3	55	4.6	30.3	0
4	60	5.1	30.5	0
5	62	6.0	30.2	0
Total catch-----				193

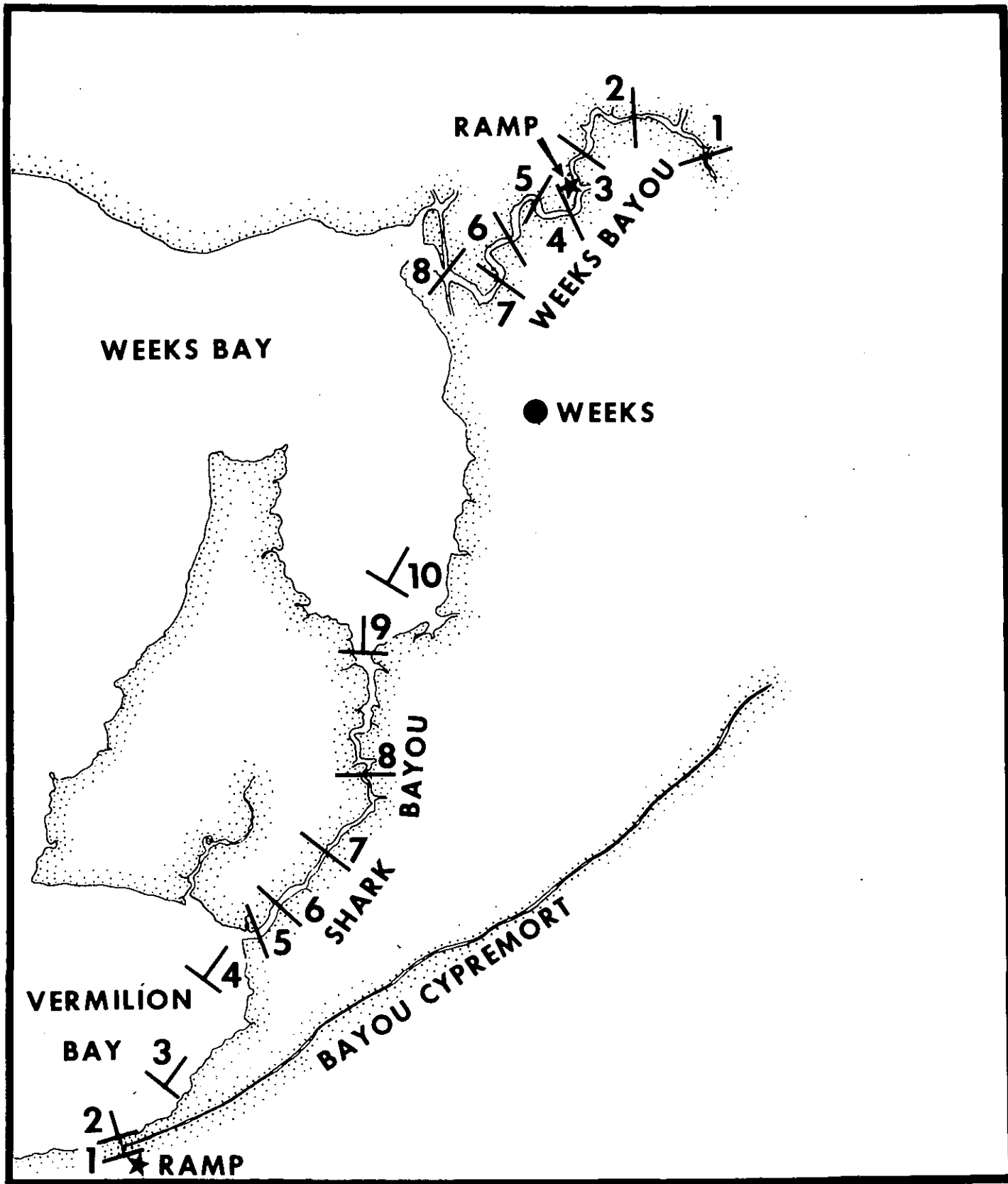


Figure 16.—Area 3: Stream 4 - Weeks Bayou; Stream 5 - Shark Bayou.

Stream 4 - Weeks Bayou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 6-24-67 Time: 0805-1020

1	63	2.0	30.6	681
2	70	3.0	30.3	10,890
3	40	3.0	30.2	581
4	40	3.0	30.5	972
5	45	3.1	30.6	2,088
6	50	3.0	30.7	1,124
7	48	2.5	30.4	31
8	45	3.8	30.7	3

Total Catch----- 16,370

Date: 6-21-68 Time: 1030-1330

1	36	3.0	27.8	3,213
2	41	3.7	27.9	743
3	32	4.2	28.2	70,376
4	35	4.2	28.4	39,240
5	30	4.1	28.2	57,984
6	32	3.8	28.5	20,094
7	35	3.1	28.6	142
8	30	3.0	28.5	3

Total Catch-----191,795

Date: 6-20-69 Time: 1315-1715

1	17	2.2	30.8	13,905
2	22	2.0	31.1	1,099
3	13	2.2	30.6	4,260
4	12	1.8	31.2	588
5	11	1.9	30.9	1,936
6	10	1.8	30.6	732
7	15	1.4	30.9	341
8	12	2.4	30.7	10

Total Catch----- 22,871

Stream 5 - Shark Bayou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-29-64 Time: 1330-1535

1	29	0.8	26.7	263
2	25	1.0	26.3	991
3	-	1.2	26.8	219
4	16	1.2	26.8	10
5	16	2.1	27.5	1,145
6	20	2.4	27.4	666
7	19	2.5	28.1	54
8	18	2.1	27.6	71
9	-	-	-	-
10	-	-	-	-

Total catch----- 3,419

Date: 7-2-65 Time: 0730-1035

1	44	2.0	30.5	0
2	38	2.0	30.2	0
3	36	2.0	30.8	0
4	33	2.1	30.6	0
5	30	2.3	21.0	6
6	48	2.6	30.0	1
7	77	3.1	31.9	0
8	100+	2.8	30.5	0
9	100+	2.5	30.5	0
10	100+	2.5	30.7	0

Total catch----- 7

Date: 7-29-65 Time: 0740-1110

1	39	4.5	28.8	42
2	48	6.3	29.1	7
3	42	8.7	29.2	10
4	48	4.2	29.7	25
5	42	3.5	29.3	44
6	45	4.0	30.2	107
7	46	4.9	30.4	53
8	49	4.7	29.3	0
9	52	5.0	29.6	0
10	50	5.2	29.5	0

Total catch----- 288

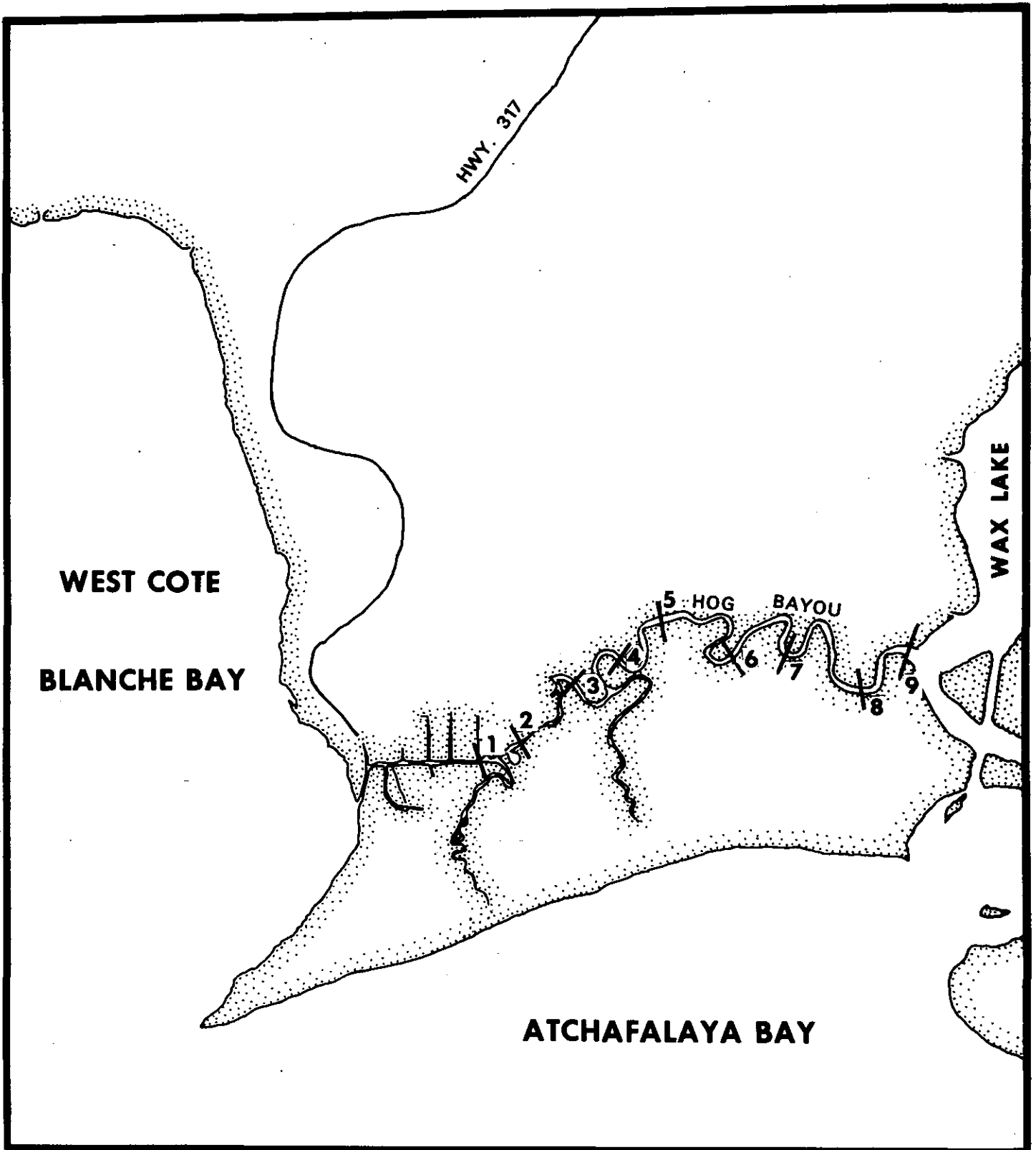


Figure 17.—Area 3: Stream 6 - Hog Bayou.

Stream 6 - Hog Bayou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-26-67 Time: 0815-1045				
1	18	0	29.7	7
2	20	0.1	29.8	2
3	15	0.1	29.7	0
4	19	0.1	29.8	0
5	16	0.1	29.9	0
6	17	0.1	29.9	0
7	19	0.1	29.8	0
8	16	0.1	30.0	2
9	15	0.1	30.1	0
Total catch-----				11
Date: 6-21-68 Time: 1615-1810				
1	12	0.2	27.4	75
2	10	0.2	27.2	6
3	10	0.2	26.9	0
4	14	0.2	26.8	0
5	15	0.2	27.0	0
6	11	0.2	27.2	0
7	17	0.2	26.5	0
8	12	0.2	26.7	0
9	15	0.2	26.8	0
Total catch-----				81
Date: 6-21-69 Time: 0825-1230				
1	28	0.3	30.5	0
2	31	0.2	30.3	13
3	23	0.2	30.6	0
4	20	0.2	30.9	0
5	25	0.2	30.9	0
6	22	0.1	30.7	0
7	26	0.1	30.5	0
8	-	-	-	-
9	-	-	-	-
Total catch-----				13

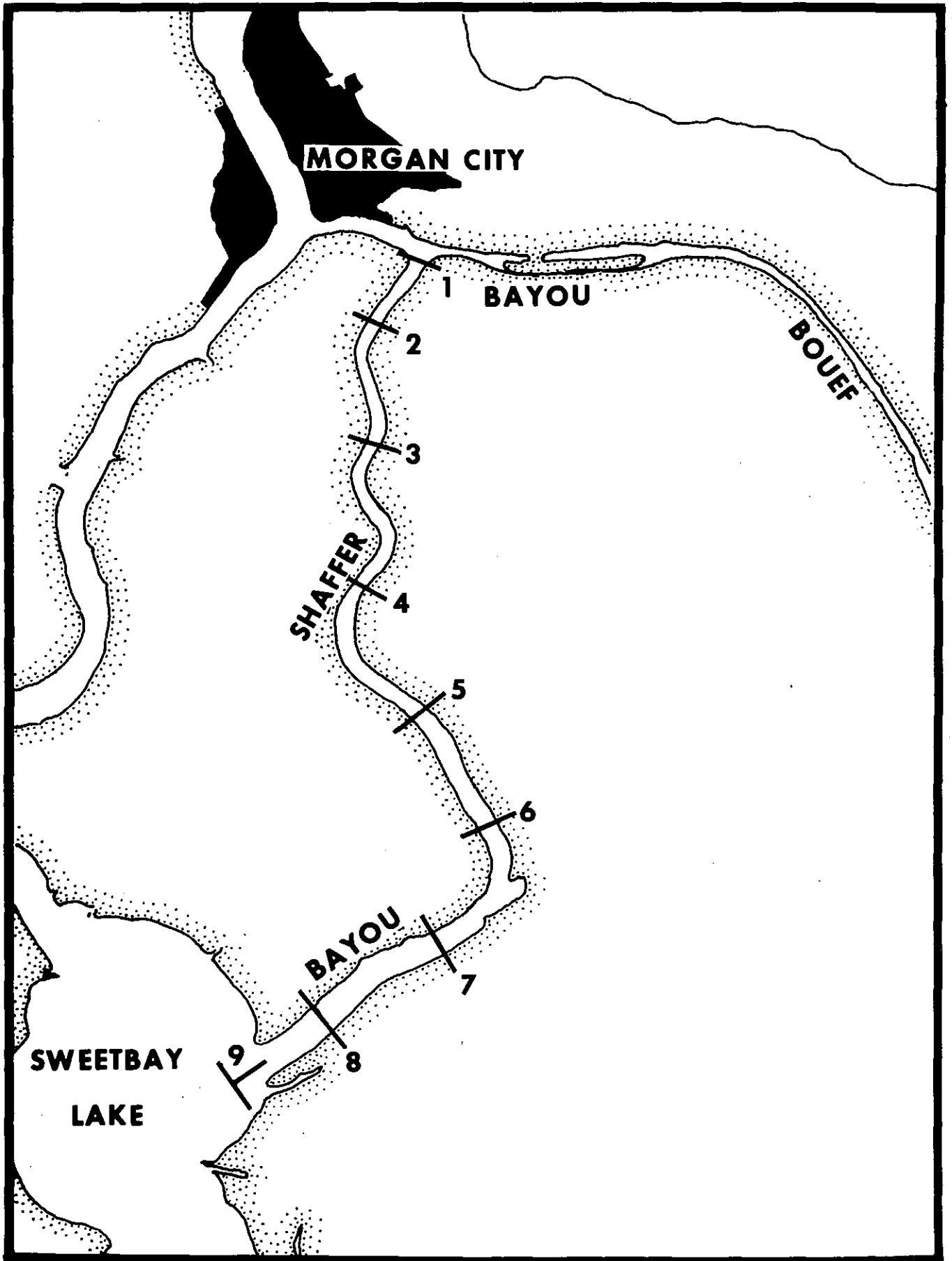


Figure 18.—Area 3: Stream 7 - Bayou Shaffer.

Stream 7 - Bayou Shaffer, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-30-64 Time: 0950-1220				
1	21	0.2	29.5	38
2	21	0.2	29.3	13
3	20	0.2	28.9	9
4	21	0.2	29.2	10
5	22	0.2	30.0	2
6	21	0.2	30.2	0
7	22	0.2	29.6	0
8	23	0.2	29.8	19
9	23	0.2	29.0	2
Total catch-----				93
Date: 7-2-65 Time: 1450-1720				
1	12	0.3	29.5	0
2	15	0.3	29.9	0
3	15	0.3	29.9	1
4	15	0.3	30.0	0
5	13	0.3	29.8	0
6	15	0.3	29.9	0
7	12	0.3	29.8	0
8	12	0.3	29.3	0
9	14	0.3	30.8	0
Total catch-----				1
Date: 7-29-65 Time: 1500-1755				
1	11	0.2	28.7	0
2	11	0.3	29.2	0
3	12	0.7	29.4	0
4	14	0.9	29.3	0
5	14	1.6	30.1	0
6	17	2.4	30.1	0
7	15	3.0	30.3	0
8	13	3.1	30.6	0
9	12	3.1	30.6	0
Total catch-----				0

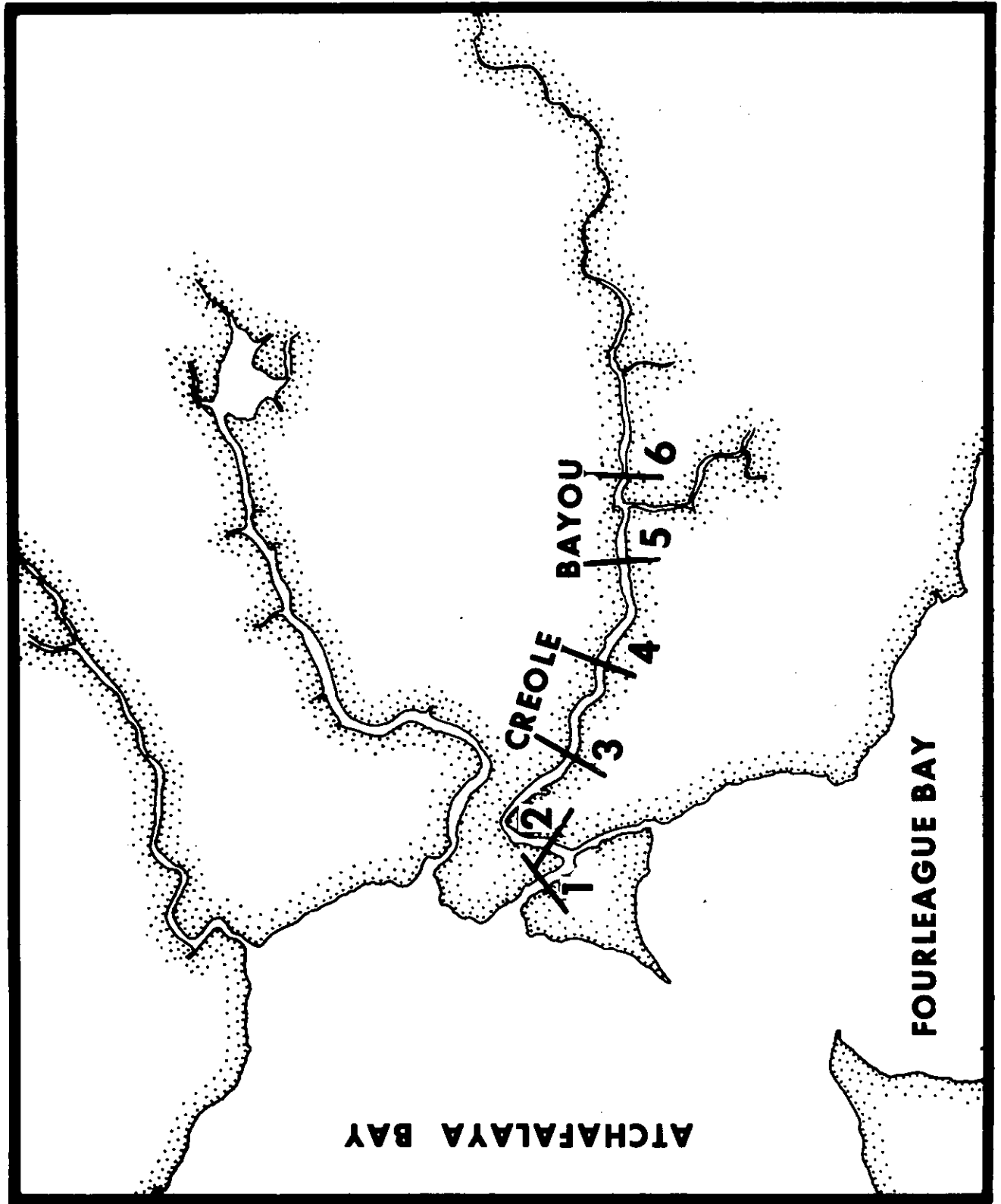


Figure 19.—Area 3: Stream II - Creole Bayou.

Stream II - Creole Bayou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-27-67 Time 1250-1335				
1	30	1.2	32.4	0
2	30	1.1	32.3	2
3	30	1.0	32.1	7
4	20	0.4	31.3	332
5	18	0.3	30.6	391
6	15	0.1	31.9	163
Total catch-----				895
Date: 6-21-68 Time: 1530-1705				
1	10	0.3	27.2	6
2	-	-	-	-
3	13	0.4	27.9	3
4	29	0.5	28.8	4
5	32	0.5	28.8	254
6	32	0.5	28.6	173
Total catch-----				440

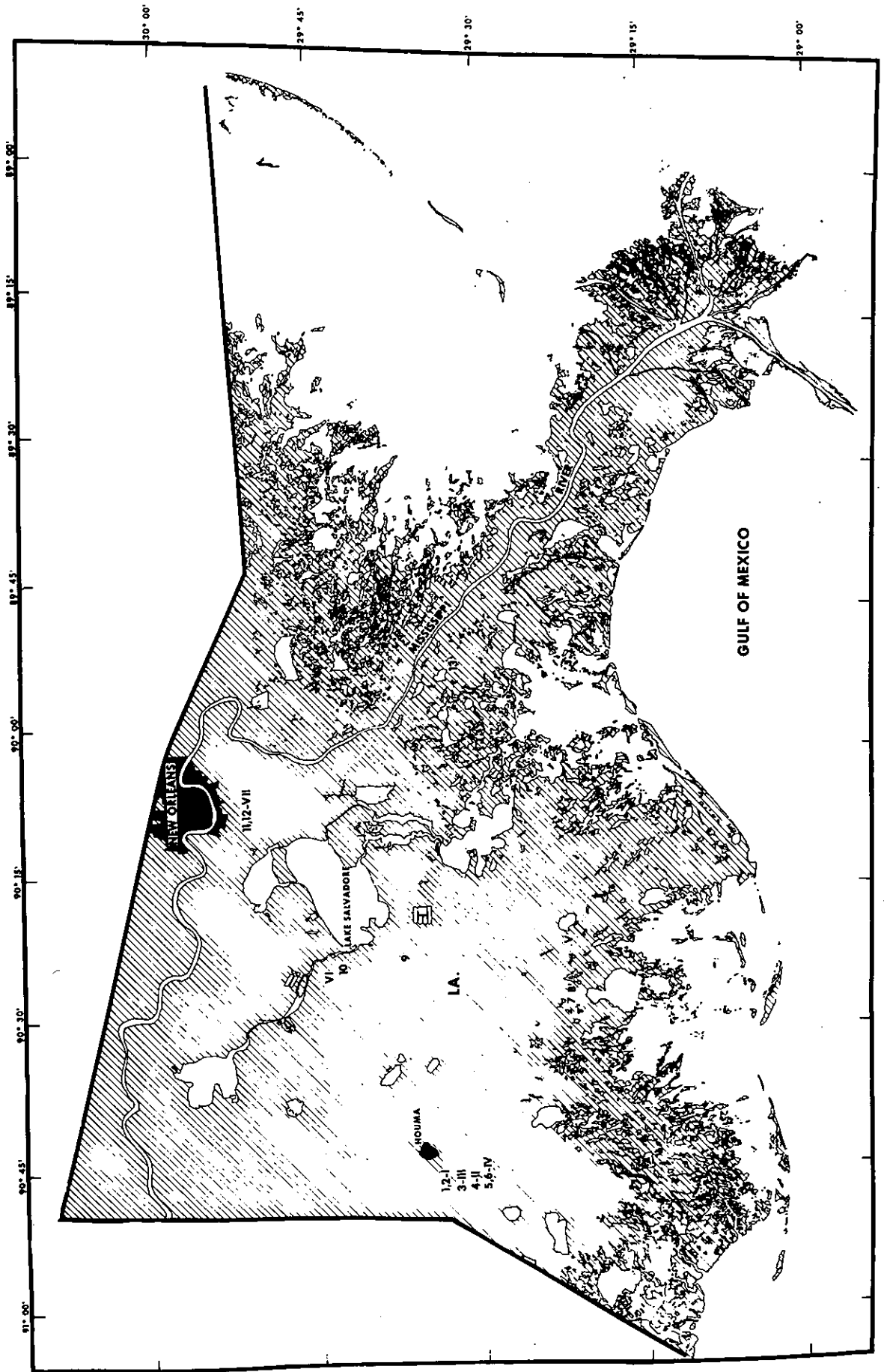


Figure 20.—Area 4: Mississippi Delta, La.

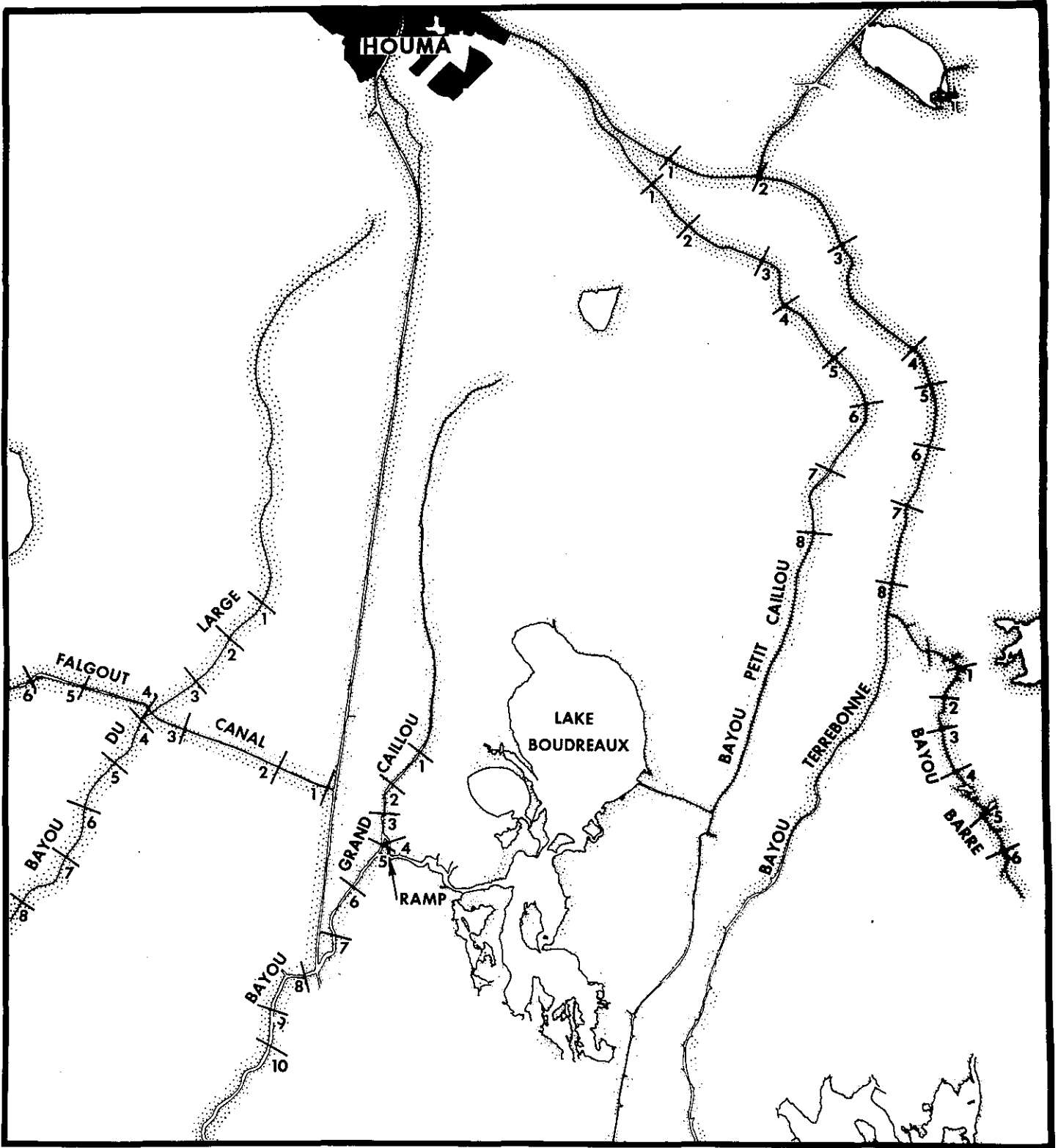


Figure 21.—Area 4: Stream 1 - Falgout Canal; Stream 2 - Bayou Du Large; Stream 3 - Bayou Grand Caillou; Stream 4 - Bayou Petit Caillou; Stream 5 - Bayou Terrebonne; Stream 6 - Bayou Barre.

Stream 1 - Falgout Canal, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-23-69 Time: 0715-0950				
1	28	0.5	32.4	0
2	22	0.7	32.0	0
3	25	0.6	32.2	24,552
4	15	0.5	31.5	4,018
5	13	0.7	32.3	41,976
6	17	0.5	32.2	26,757
Total catch-----				97,303

Stream 2 - Bayou Du Large, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-26-67 Time: 1730-1930				
1	19	0.5	34.1	64
2	19	1.8	33.3	25
3	20	3.5	33.0	0
4	22	6.8	33.4	0
5	20	6.9	32.4	0
6	22	7.0	32.4	0
7	20	7.4	32.7	0
8	21	7.8	32.5	0
Total catch-----				89
Date: 6-22-68 Time: 1000-1240				
1	15	0.3	27.4	0
2	12	0.4	27.8	2,900
3	15	0.4	26.9	0
4	15	0.4	27.0	480
5	12	0.5	27.7	5,408
6	18	0.4	27.7	1,476
7	20	0.3	27.8	2,885
8	16	0.3	28.0	14
Total catch-----				13,163
Date: 6-23-69 Time: 1025-1345				
1	17	0.5	33.3	0
2	20	0.6	32.9	0
3	22	0.6	32.6	0
4	21	0.6	32.4	0
5	25	0.7	32.6	0
6	27	0.6	32.8	0
7	23	0.6	32.5	0
8	36	0.8	32.3	0
Total catch-----				0

Stream 3 - Bayou Grand Caillou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-27-67 Time: 0725-1030				
1	29	4.8	30.1	816
2	24	2.4	30.3	12
3	26	0.9	30.4	0
4	25	0	30.6	0
5	29	1.5	29.7	10,470
6	25	3.2	30.2	374
7	30	3.7	30.5	94
8	31	1.8	30.7	743
9	37	2.6	31.1	440
10	34	4.1	31.3	26

Total catch----- 12,975

Date: 6-22-68 Time: 1410-1700				
1	18	0.4	29.6	5,060
2	20	0.4	30.6	5,586
3	17	0.9	33.0	745
4	18	1.8	31.9	1,098
5	15	2.1	30.5	115
6	16	3.2	29.7	477
7	18	3.5	30.1	15
8	17	4.1	30.5	8
9	14	4.8	31.0	17
10	20	5.2	29.7	2

Total catch----- 13,123

Date: 6-21-69 Time: 1410-1835				
1	-	0.4	31.9	0
2	-	1.3	31.4	35
3	-	1.1	31.3	91
4	-	1.0	31.9	48
5	-	0.9	31.5	42
6	-	1.1	31.6	8
7	-	1.3	31.8	6
8	-	2.5	31.5	2
9	-	3.1	31.3	3
10	-	2.6	31.0	0

Total catch----- 235

Stream 4 - Bayou Petit Caillou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-28-67 Time: 0745-1015				
1	12	0.2	28.1	26
2	11	0.2	28.2	613
3	14	0.2	28.2	4,620
4	25	0.2	29.5	10,784
5	28	0.2	29.9	3,860
6	19	0.2	29.2	8,775
7	23	0.2	30.2	1,475
8	25	0.2	30.3	41
Total catch-----				30,194
Date: 6-24-68 Time: 0745-1020				
1	18	0.3	26.2	6,120
2	20	0.2	28.9	21,112
3	17	0.4	28.8	7,440
4	21	0.3	28.6	930
5	19	0.3	28.8	4,140
6	21	0.3	29.3	603
7	17	0.3	29.2	10
8	19	0.3	29.5	4
Total catch-----				40,359
Date: 6-22-69 Time: 1530-1910				
1	47	0.3	32.3	0
2	58	0.3	32.1	0
3	52	0.2	32.0	0
4	55	0.3	32.2	0
5	43	0.4	31.7	0
6	56	0.3	32.1	0
7	55	0.5	32.5	0
8	51	0.5	32.4	0
Total catch-----				0

Stream 5 - Bayou Terrebonne, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-28-67 Time: 1025-1305				
1	15	2.2	30.1	339
2	13	2.2	31.0	110
3	15	2.1	31.0	66
4	18	1.8	30.9	117
5	20	1.5	30.9	150
6	22	1.0	31.0	3
7	18	2.6	30.3	0
8	19	2.8	30.3	19
Total catch-----				804
Date: 6-24-68 Time: 1030-1255				
1	10	0.4	29.1	16,452
2	14	0.3	29.1	2,419
3	19	0.5	29.0	63
4	16	1.1	29.2	1,175
5	12	2.5	29.2	1,170
6	15	2.8	29.1	18
7	14	3.1	29.4	10
8	20	3.5	29.0	25
Total catch-----				21,332
Date: 6-24-69 Time: 1545-1940				
1	18	0.4	33.0	38,780
2	13	0.3	33.2	14,976
3	25	0.4	33.0	1,710
4	21	0.6	33.1	14,307
5	23	1.1	33.0	10,335
6	29	2.0	33.0	690
7	22	2.7	33.1	1,519
8	25	2.5	33.5	12
Total catch-----				82,329

Stream 6 - Bayou Barre, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 6-24-68 Time: 1330-1505

1	28	13.0	29.4	9,108
2	24	15.8	29.4	52,392
3	30	16.8	29.3	77
4	25	16.9	29.2	95
5	24	17.4	29.5	0
6	21	17.6	30.1	0

Total catch----- 61,672

Date: 6-25-69 Time: 0745-1020

1	20	11.4	32.6	485
2	29	11.8	31.8	80
3	35	11.9	33.0	417
4	22	11.7	32.5	290
5	33	12.0	32.3	277
6	37	12.3	32.1	19

Total catch----- 1,568

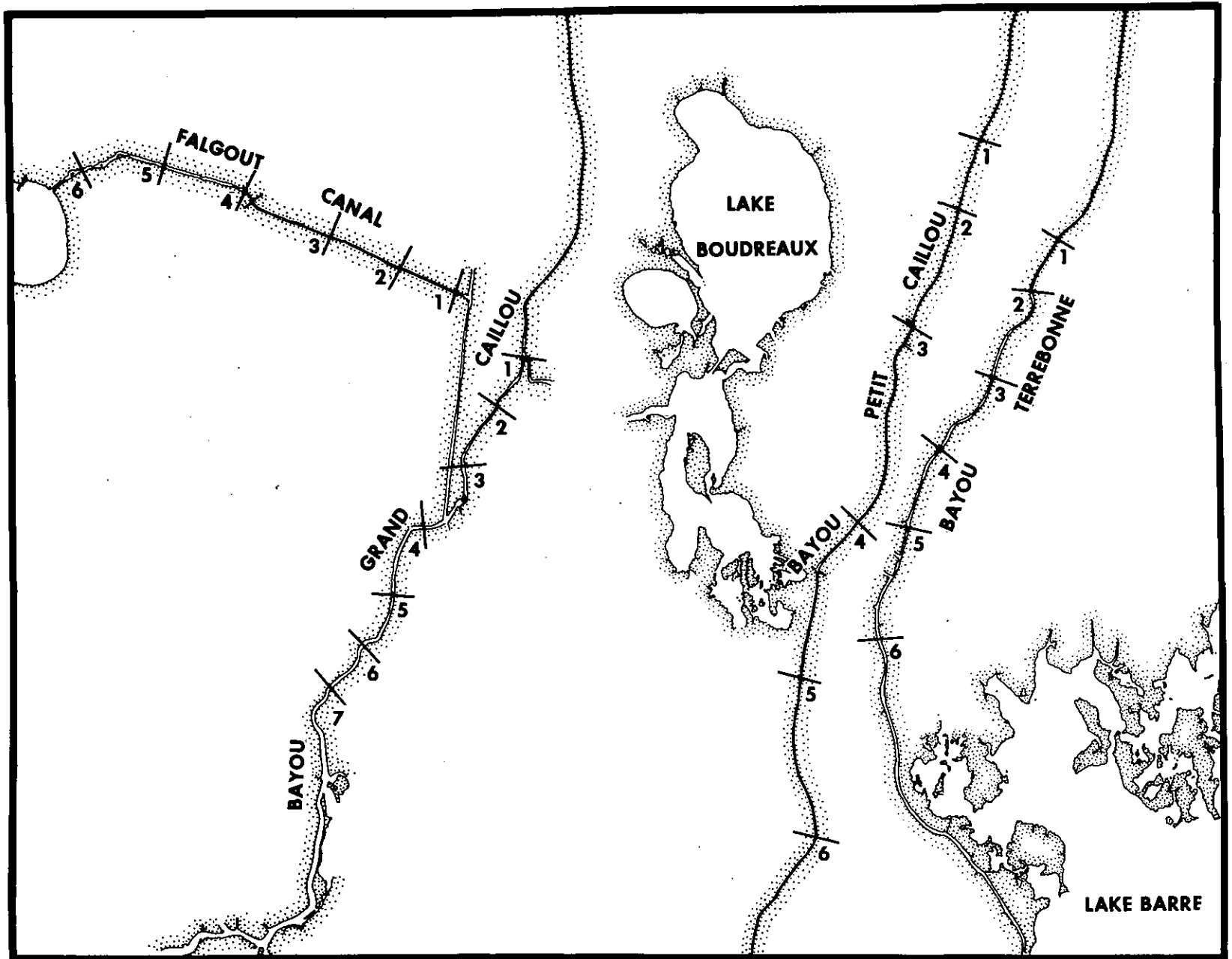


Figure 22.—Area 4; Stream I - Falgout Canal; Stream II - Bayou Grand Caillou; Stream III - Bayou Petit Caillou; Stream IV - Bayou Terrebonne.

Stream I - Falgout Canal, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-30-67 Time: 1405-1635				
1	41	0.6	32.5	2,220
2	41	4.8	32.1	12
3	28	4.5	32.3	1,663
4	36	5.1	32.5	13,512
5	28	4.7	32.4	3,439
6	27	3.8	32.3	2,573
Total catch-----				23,419
Date: 7-26-67 Time: 1315-1535				
1	28	-	-	285
2	30	-	-	178
3	31	-	-	461
4	30	-	-	807
5	30	-	-	10
6	-	-	-	-
Total catch-----				1,741
Date: 6-25-68 Time: 1350-1530				
1	28	4.3	31.0	181
2	19	4.4	30.5	1,137
3	18	3.6	31.7	9,063
4	20	1.0	30.9	3,384
5	18	0.6	31.1	33
6	16	0.6	30.3	133
Total catch-----				13,931

Stream II - Bayou Grand Caillou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-30-67 Time: 0930-1320				
1	25	2.4	30.7	8,100
2	23	2.5	31.0	711
3	18	1.4	31.3	1,231
4	20	2.4	31.3	626
5	23	5.6	31.7	472
6	28	8.9	32.1	851
7	25	15.8	32.3	90
Total catch-----				12,081
Date: 7-26-67 Time: 1030-1235				
1	28	-	-	3,690
2	23	-	-	893
3	20	-	-	1,400
4	20	-	-	7,021
5	26	-	-	1,961
6	28	-	-	361
7	34	-	-	4,873
Total catch-----				4,873
Date: 6-25-68 Time: 0945-1220				
1	33	5.9	29.2	2,162
2	30	9.4	29.3	4,257
3	20	12.0	29.6	6,773
4	30	11.1	29.6	2,480
5	28	7.7	29.6	38
6	28	5.2	30.2	316
7	35	7.6	29.3	696
Total catch-----				16,722

Stream III - Bayou Petit Caillou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-1-67 Time: 1430-1710				
1	32	0.6	32.7	621
2	30	3.1	33.1	4,631
3	28	10.7	32.5	54
4	30	12.9	32.6	1,254
5	30	12.6	32.2	19
6	30	13.3	31.8	24
Total catch-----				6,603
Date: 6-26-68 Time: 1115-1355				
1	28	3.7	31.5	2,567
2	24	5.7	30.0	878
3	30	6.4	30.3	1,720
4	34	12.1	31.2	31
5	36	13.4	31.2	510
6	37	14.7	31.0	11
Total catch-----				5,717

Stream IV - Bayou Terrebonne, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-1-67 Time: 1040-1325

1	23	5.3	32.0	278
2	28	7.4	31.6	529
3	36	6.9	31.2	507
4	33	11.7	31.8	84
5	36	13.9	23.3	332
6	30	13.6	32.6	315

Total catch----- 2,045

Date: 6-26-68 Time: 0835-1025

1	30	11.5	30.6	30,619
2	30	10.0	30.3	3,460
3	26	7.4	29.8	136
4	28	9.7	29.9	109
5	27	11.4	29.9	646
6	28	12.2	30.0	8

Total catch----- 34,978

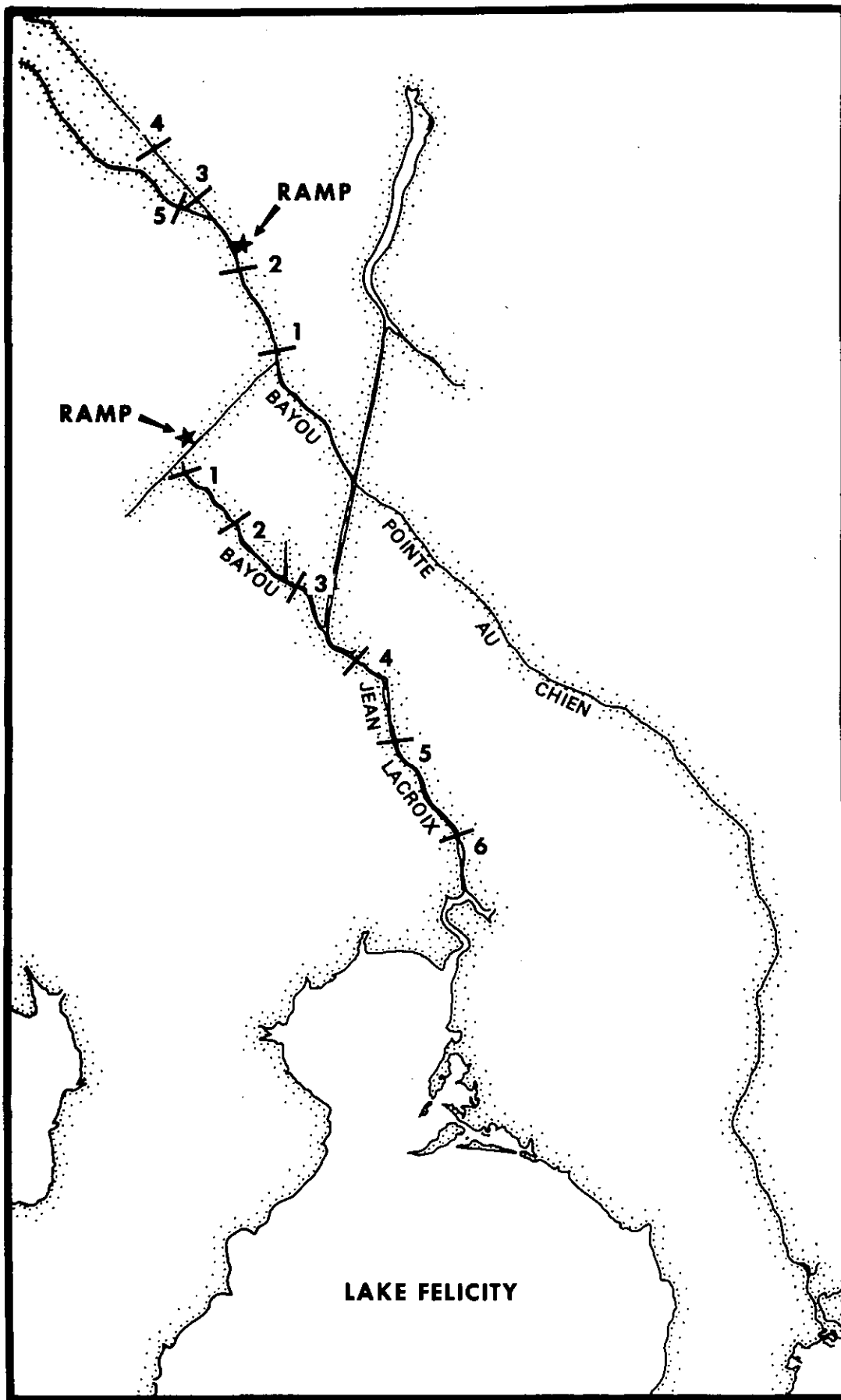


Figure 23.—Area 4: Stream 7 - Bayou Jean la Croix; Stream 8 - Bayou Pointe au Chien.

Stream 7 - Bayou Jean la Croix, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-24-68 Time: 1550-1725				
1	35	20.3	30.2	91
2	30	20.7	30.1	248
3	28	20.9	29.9	66,983
4	25	21.2	30.0	776
5	24	21.1	30.1	4
6	27	21.3	30.0	1
Total catch-----				68,103
Date: 6-24-69 Time: 1105-1350				
1	28	12.8	33.2	684
2	21	13.5	33.8	996
3	25	13.4	33.6	253
4	31	13.8	33.7	1,859
5	30	14.2	33.4	5
6	24	14.7	33.6	2
Total catch-----				3,799

Stream 8 - Bayou Pointe au Chien, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-29-67 Time: 0730-0900				
1	31	4.0	28.1	156
2	37	2.9	28.2	46
3	35	2.5	28.3	1,131
4	36	2.0	28.0	3,494
5	35	7.1	28.7	4,725
Total catch-----				9,552
Date: 6-24-68 Time: 0600-0710				
1	22	9.9	30.0	2
2	28	11.1	31.4	25,177
3	25	17.2	31.3	2
4	21	17.7	31.3	386
5	20	18.4	31.5	0
Total catch-----				25,567
Date: 6-24-69 Time: 0745-1020				
1	22	5.7	33.8	19,143
2	27	7.5	34.2	30,798
3	18	7.5	33.5	42,900
4	25	10.8	33.5	24,647
5	21	10.1	33.3	463
Total catch-----				117,951

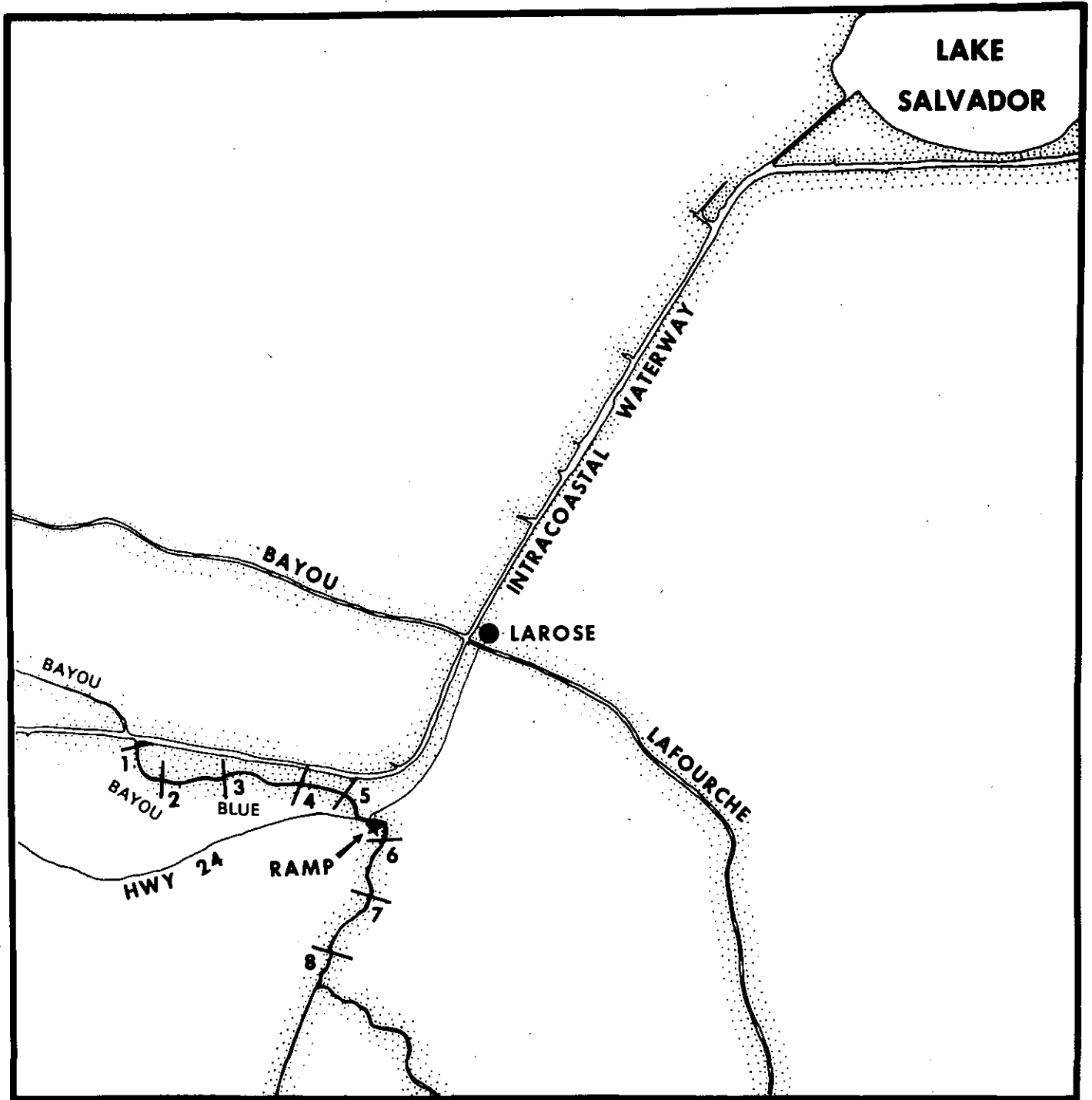


Figure 24.—Area 4: Stream 9 - Bayou Blue.

Stream 9 - Bayou Blue, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-29-67 Time: 1210-1350				
1	25	0.4	28.6	901
2	39	0.7	28.8	15,782
3	32	0.6	28.5	7,623
4	18	0.7	30.5	1,241
5	35	1.7	29.9	5,210
6	35	1.8	30.9	2,223
7	41	2.2	29.6	653
8	43	2.8	29.9	12
Total catch-----				33,645
Date: 6-25-68 Time: 0950-1150				
1	-	-	-	-
2	29	0.9	30.5	6,975
3	20	0.3	31.2	312
4	17	0.4	31.2	644
5	12	0.8	29.9	436
6	16	1.5	29.8	1,845
7	20	2.1	30.4	308
8	14	2.4	30.6	5
Total catch-----				10,525
Date: 6-25-69 Time: 1215-1745				
1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	18	4.2	32.8	24,405
5	22	7.0	32.6	4,600
6	21	7.5	32.0	6,721
7	20	8.4	32.1	7,160
8	25	8.3	32.3	3,030
Total catch-----				45,916

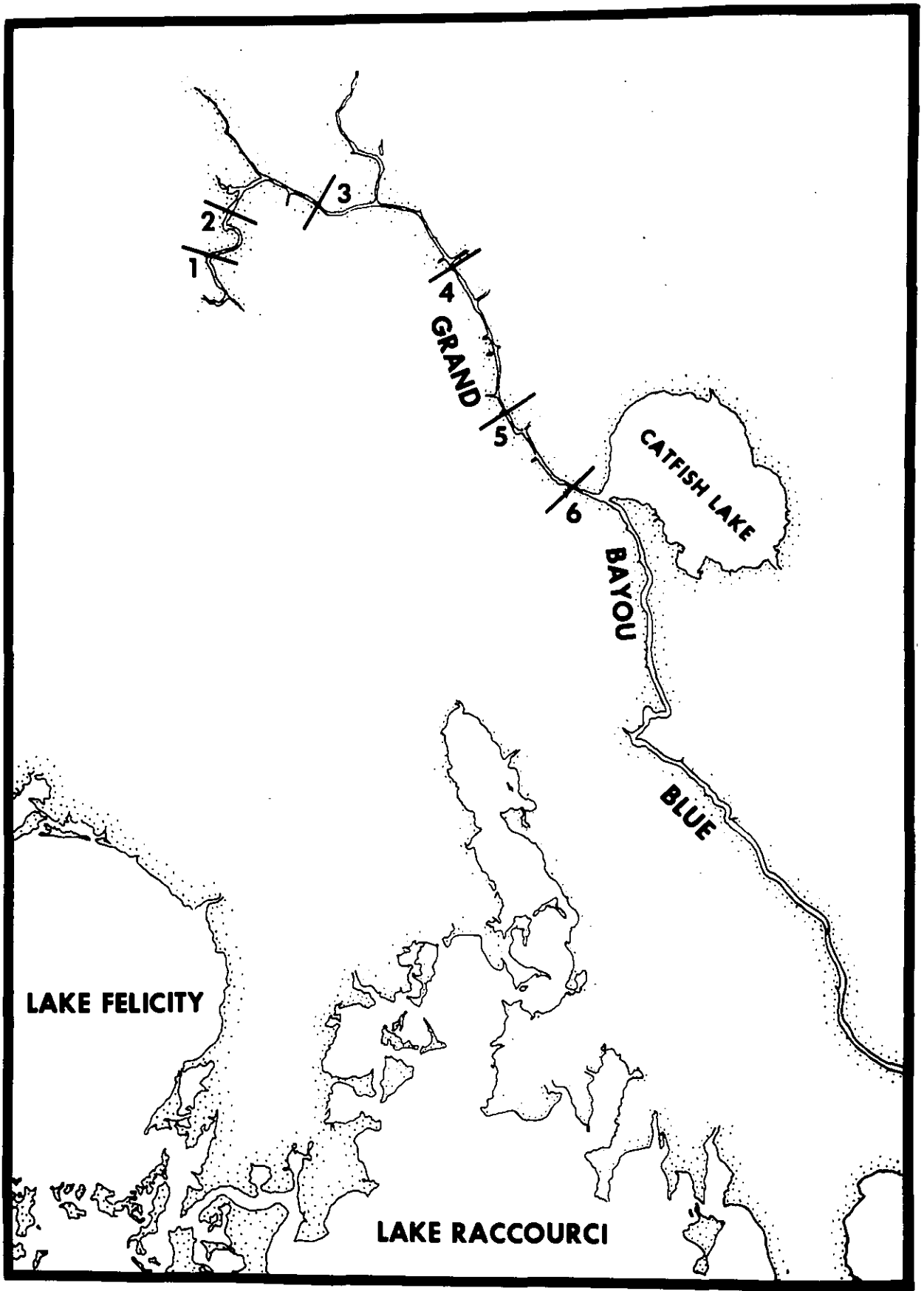


Figure 25.—Area 4: Stream V - Grand Bayou Blue.

Stream V - Grand Bayou Blue, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-2-67 Time: 1240-1505				
1	36	15.6	31.8	11,310
2	36	16.1	31.9	8,432
3	39	17.1	32.0	9,993
4	39	20.9	32.0	4,121
5	38	21.5	31.9	1,281
6	36	22.1	31.7	47
Total catch-----				35,184
Date: 7-25-67 Time: 1545-1740				
1	50	-	-	1,515
2	50	-	-	463
3	45	-	-	410
4	37	-	-	176
5	40	-	-	133
6	40	-	-	3,667
Total catch-----				6,364
Date: 6-26-68 Time: 1725-1930				
1	38	12.4	31.5	0
2	40	10.1	31.9	5,257
3	34	14.7	31.4	1,617
4	35	17.2	31.4	4,675
5	35	17.3	31.0	296
6	35	17.0	30.7	39
Total catch-----				11,884

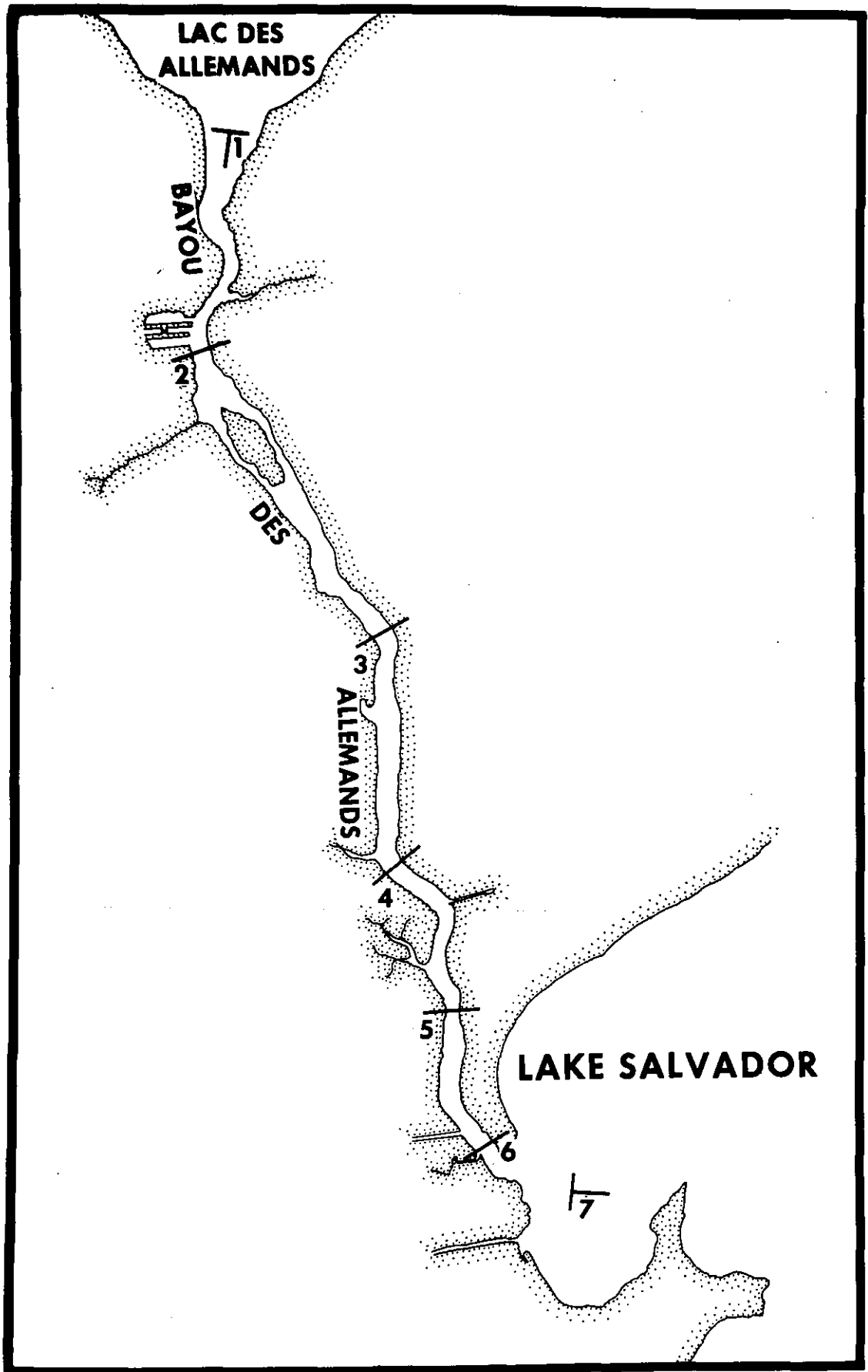


Figure 26.—Area 4: Stream 10 - Bayou Des Allemands.

Stream 10 - Bayou Des Allemands, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-25-68 Time: 1430-1635				
1	58	1.5	30.4	0
2	65	1.2	30.5	0
3	60	1.3	30.8	1
4	65	1.3	30.0	0
5	73	1.5	30.7	0
6	68	1.5	31.0	0
7	-	-	-	-
Total catch-----				1
Date: 6-26-69 Time: 0720-1055				
1	37	0.5	33.6	0
2	43	0.4	33.9	0
3	28	0.4	32.6	0
4	41	0.4	32.8	0
5	51	0.5	32.8	2
6	48	0.7	33.1	0
7	41	0.8	33.0	0
Total catch-----				2

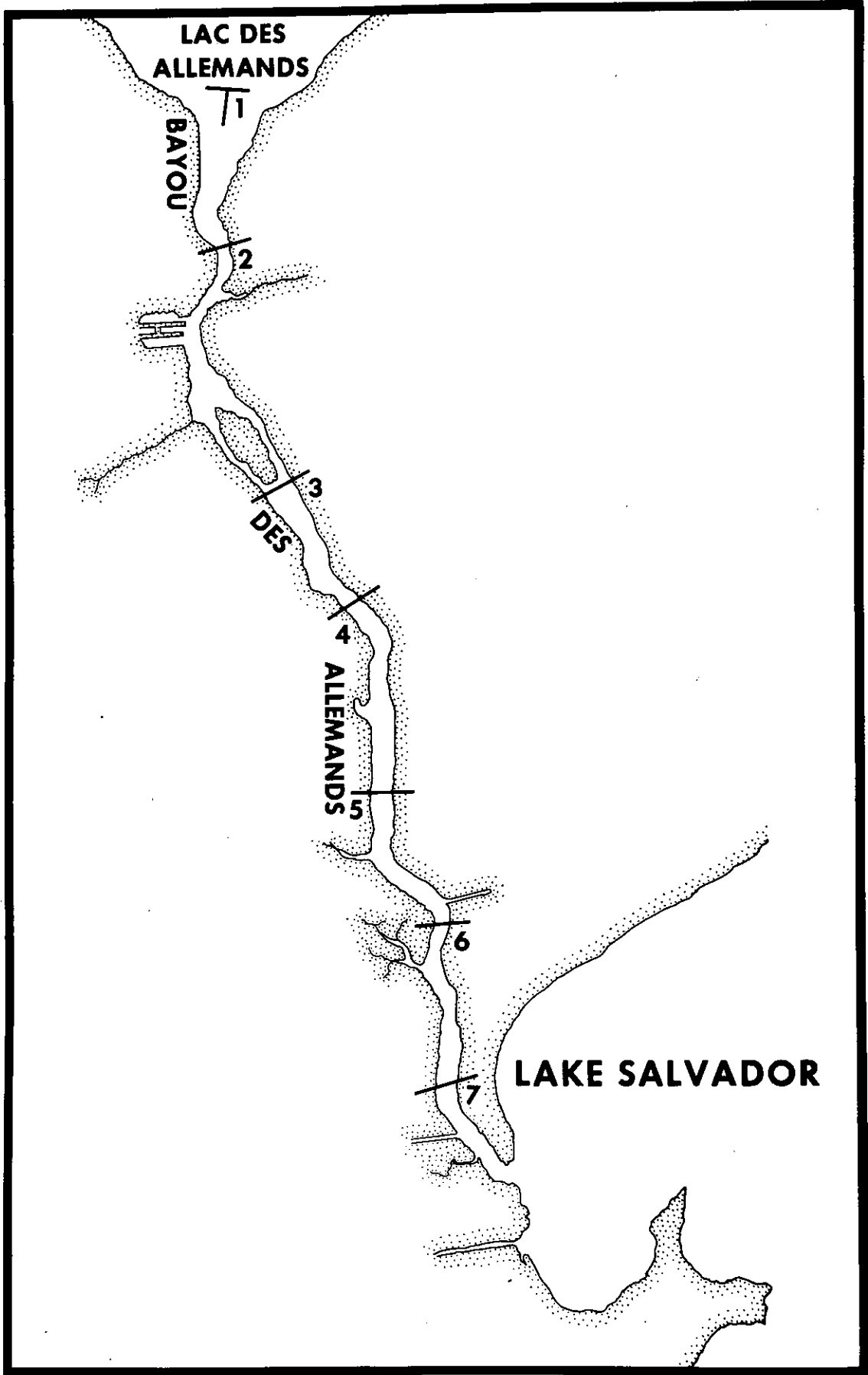


Figure 27.—Area 4: Stream VI - Bayou Des Allemands.

Stream VI - Bayou Des Allemands, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-28-68 Time: 0845-1115				
1	40	0.5	29.0	168
2	44	0.6	30.0	190
3	42	0.7	30.0	10
4	52	0.7	30.5	10
5	35	0.8	29.6	3,948
6	48	0.9	29.6	243
7	48	1.2	30.4	4
Total catch-----				4,573

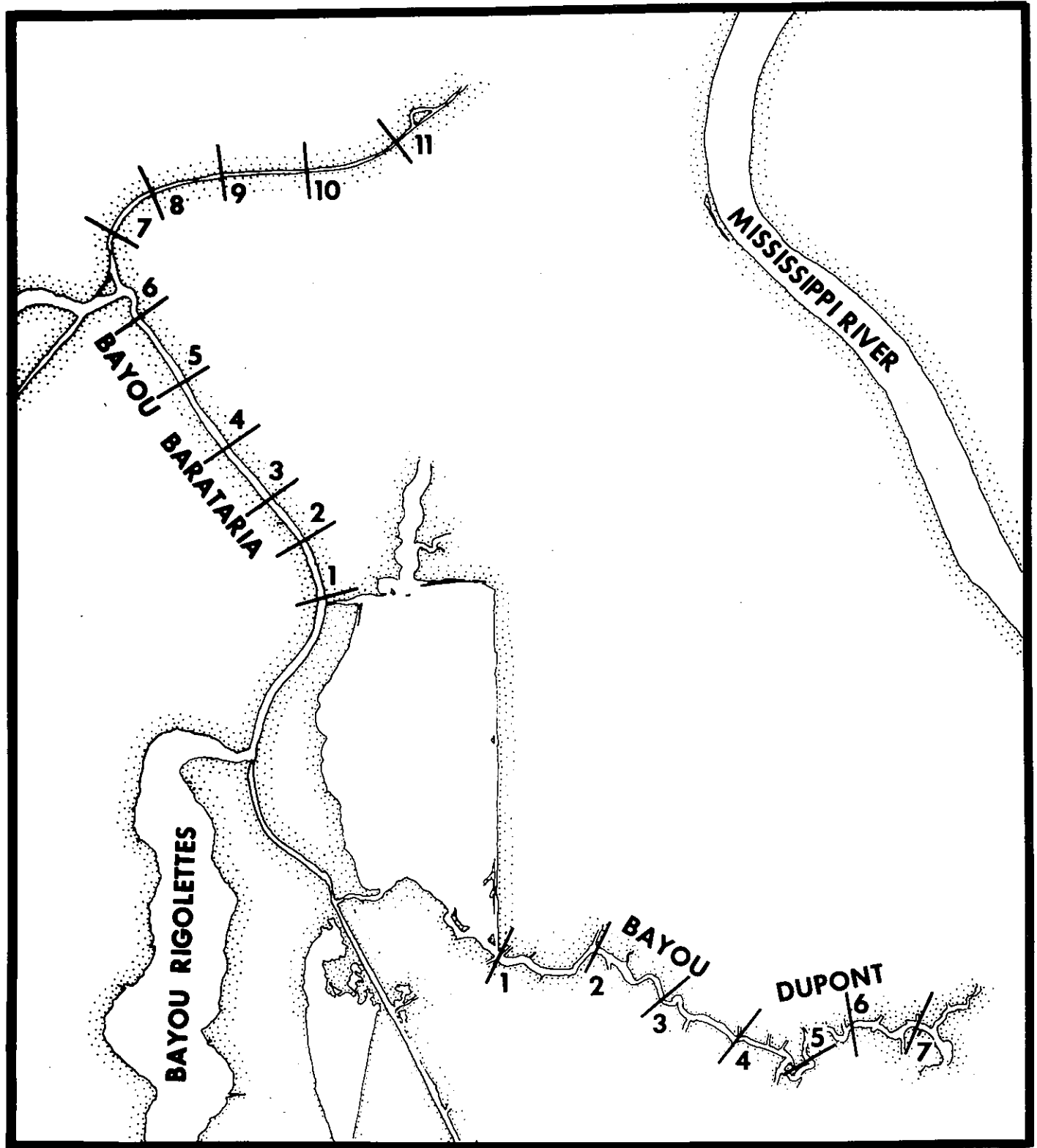


Figure 28.—Area 4: Stream 11 - Bayou Barataria; Stream 12 - Bayou Dupont.

Stream 11 - Bayou Barataria, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-26-68 Time: 0830-1210				
1	17	1.9	30.6	134
2	15	1.6	30.6	1,472
3	20	1.6	30.5	642
4	18	1.5	30.5	6,720
5	12	0.5	30.5	926
6	15	1.2	31.3	15,124
7	22	1.5	31.6	0
8	18	1.5	31.3	0
9	15	1.7	30.9	1,753
10	17	1.7	31.2	5
11	16	1.7	31.0	10

Total catch----- 26,786

Date: 6-26-69 Time: 1250-1640

1	-	0.5	32.6	89
2	-	0.7	32.5	52
3	-	0.8	32.4	29
4	-	1.3	32.7	1
5	-	1.0	32.3	3
6	-	1.0	32.5	9
7	-	1.3	32.5	7
8	-	1.2	32.8	0
9	-	1.7	31.5	8
10	-	1.9	31.2	0
11	-	2.0	31.6	0

Total catch----- 198

Stream 12 - Bayou Dupont, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-30-67 Time: 1330-1520				
1	41	9.9	31.0	4
2	37	10.4	31.4	2
3	38	10.9	30.9	21
4	35	11.0	31.0	440
5	30	11.2	31.4	20
6	36	11.7	31.3	53
7	35	12.2	31.6	0
Total catch-----				540
Date: 6-28-68 Time: 1345-1620				
1	27	5.4	30.1	31
2	23	5.0	30.2	256
3	18	4.9	30.6	12,696
4	19	5.4	29.1	484
5	12	4.3	29.6	97
6	15	4.0	30.1	28
7	17	3.8	29.8	12
Total catch-----				13,604
Date: 6-26-69 Time: 0520-0805				
1	31	3.4	31.4	7
2	30	4.1	31.9	6,210
3	35	4.2	31.6	3,549
4	31	4.3	32.2	3,876
5	35	4.1	32.2	22,239
6	28	4.6	32.5	17
7	25	4.9	32.6	1,185
Total catch-----				37,083

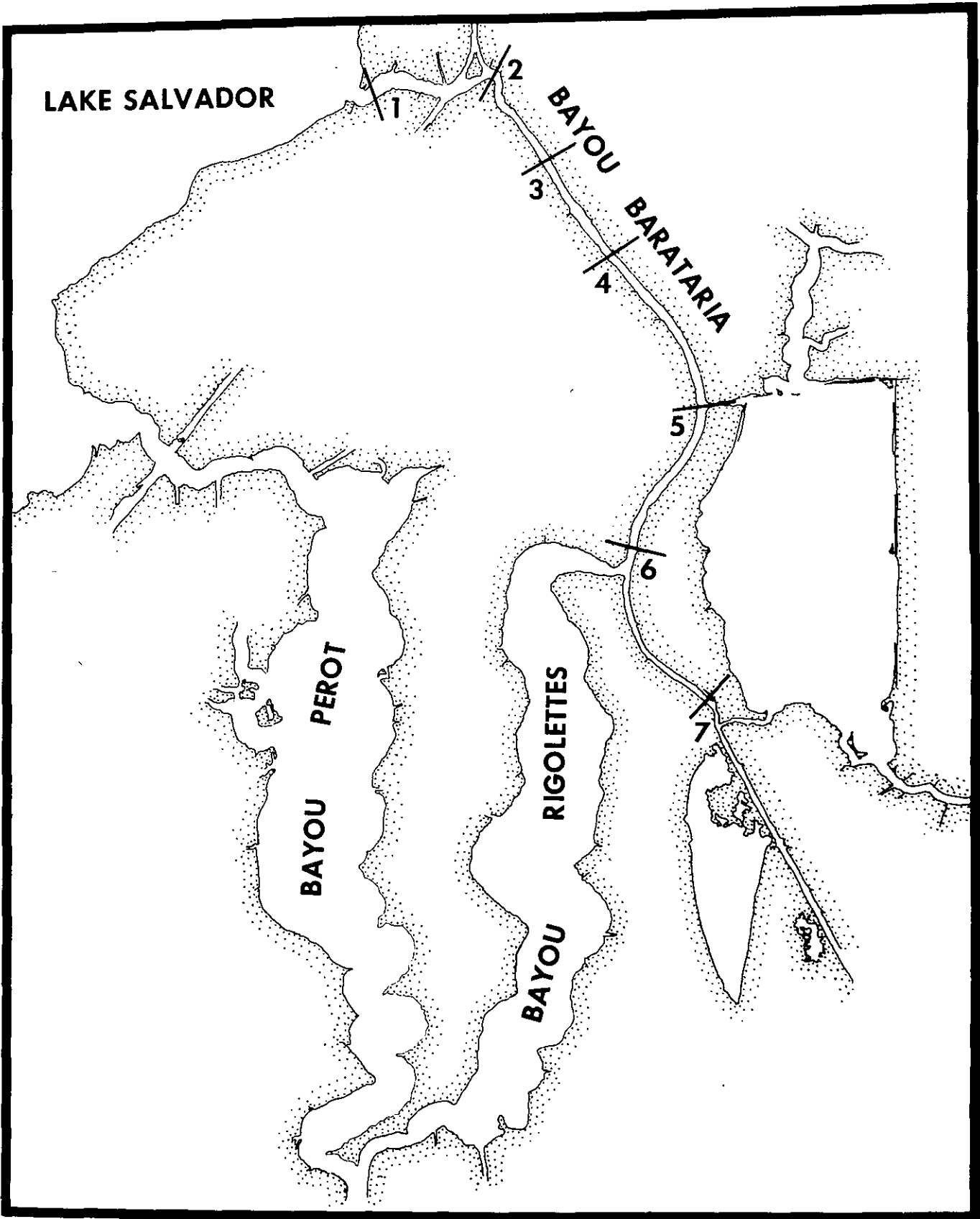


Figure 29.—Area 4: Stream VII - Bayou Barataria.

Stream VII - Bayou Barataria, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-4-67 Time: 0950-1210

1	51	5.8	31.0	6
2	36	6.0	31.3	108
3	33	6.0	31.7	135
4	33	6.1	32.1	61
5	33	6.1	31.2	413
6	33	6.3	31.3	248
7	32	10.5	31.8	268

Total catch----- 1,239

Date: 6-27-68 Time: 1445-1715

1	45	2.0	30.6	41
2	25	1.7	30.4	1,388
3	25	1.7	30.6	20,800
4	25	1.7	31.0	2,907
5	24	1.7	30.9	1,123
6	25	1.9	31.4	3,195
7	30	3.6	30.5	326

Total catch----- 29,780

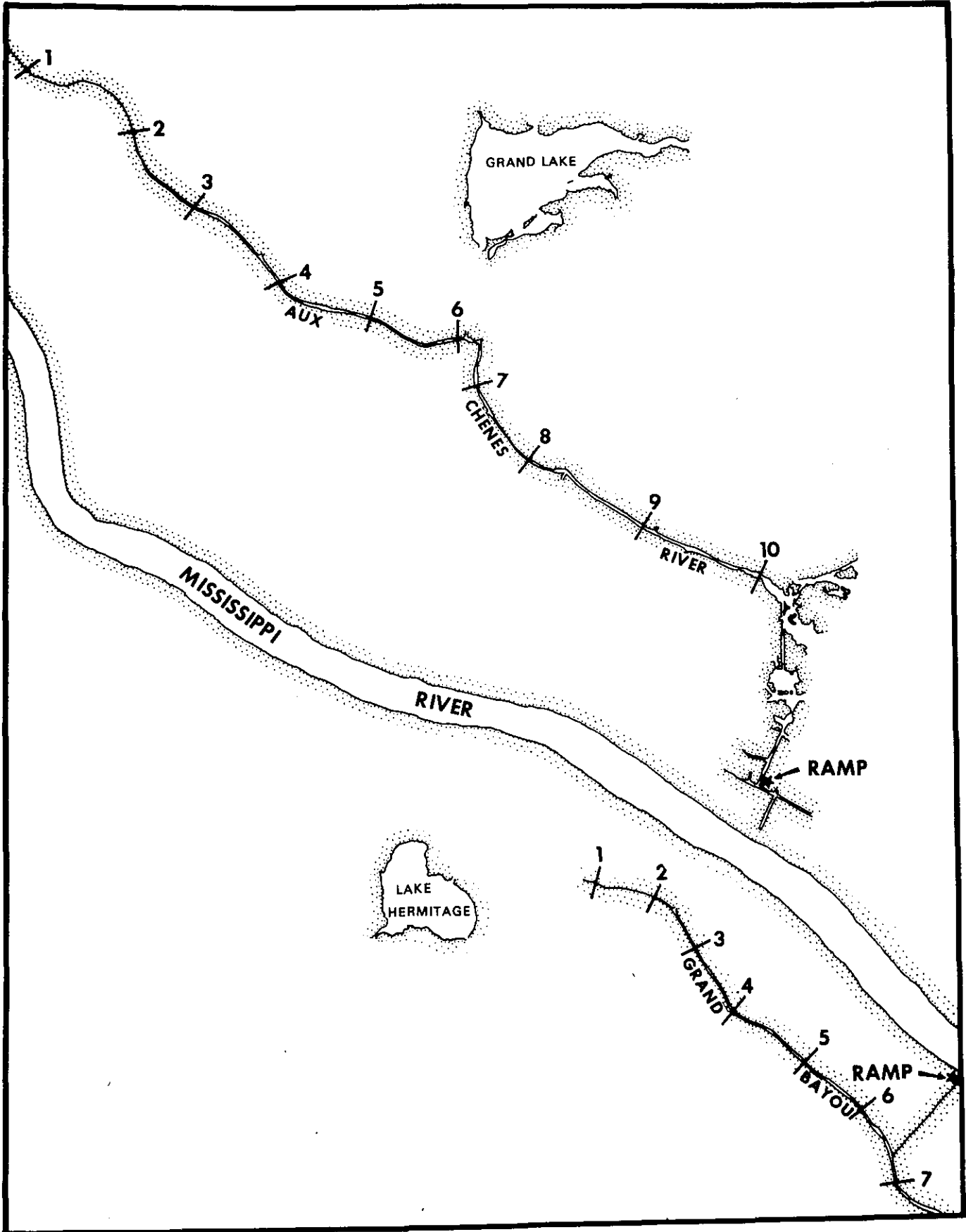


Figure 30.—Area 4: Stream 13 - Grand Bayou; Stream 14 - River Aux Chenes.

Stream 13 - Grand Bayou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-27-68 Time: 0750-1025				
1	16	12.7	28.5	207
2	18	12.7	29.2	5,278
3	15	12.0	28.4	265
4	20	11.4	28.9	13,704
5	17	10.6	29.2	1,271
6	15	12.7	29.0	4
7	-	-	-	-
Total catch-----				20,729
Date: 6-27-69 Time: 0830-1130				
1	30	11.5	31.8	458
2	37	11.7	31.6	587
3	30	13.0	31.4	8
4	33	13.4	31.1	31
5	35	13.4	31.3	2
6	32	13.3	31.1	2
7	30	13.4	31.0	0
Total catch-----				1,088

Stream 14 - River Aux Chenes, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-3-67 Time: 0945-1310

1	23	5.4	31.2	515
2	23	5.5	30.9	1,134
3	25	6.3	31.0	14
4	29	7.5	30.7	285
5	23	8.7	31.6	4
6	25	9.2	31.2	0
7	20	10.8	31.0	0
8	20	11.5	30.7	4
9	25	12.0	30.4	22
10	30	12.6	31.4	410

Total catch----- 2,388

Date: 6-27-68 Time: 1330-1635

1	21	8.7	31.8	0
2	27	8.3	31.7	0
3	25	8.1	31.0	0
4	20	7.9	31.5	0
5	27	7.5	32.2	4
6	20	7.3	30.9	281
7	18	9.1	30.2	37
8	22	8.7	30.2	316
9	20	8.5	30.2	15
10	24	8.0	31.0	3

Total catch----- 656

Date: 6-27-69 Time: 1415-1810

1	27	6.6	31.9	1
2	25	6.8	31.5	0
3	21	7.0	31.4	0
4	25	7.2	31.7	0
5	31	7.5	31.8	0
6	28	7.3	31.3	0
7	21	7.7	31.5	387
8	29	7.5	31.6	7
9	25	7.8	31.5	0
10	22	7.9	31.3	0

Total catch----- 395

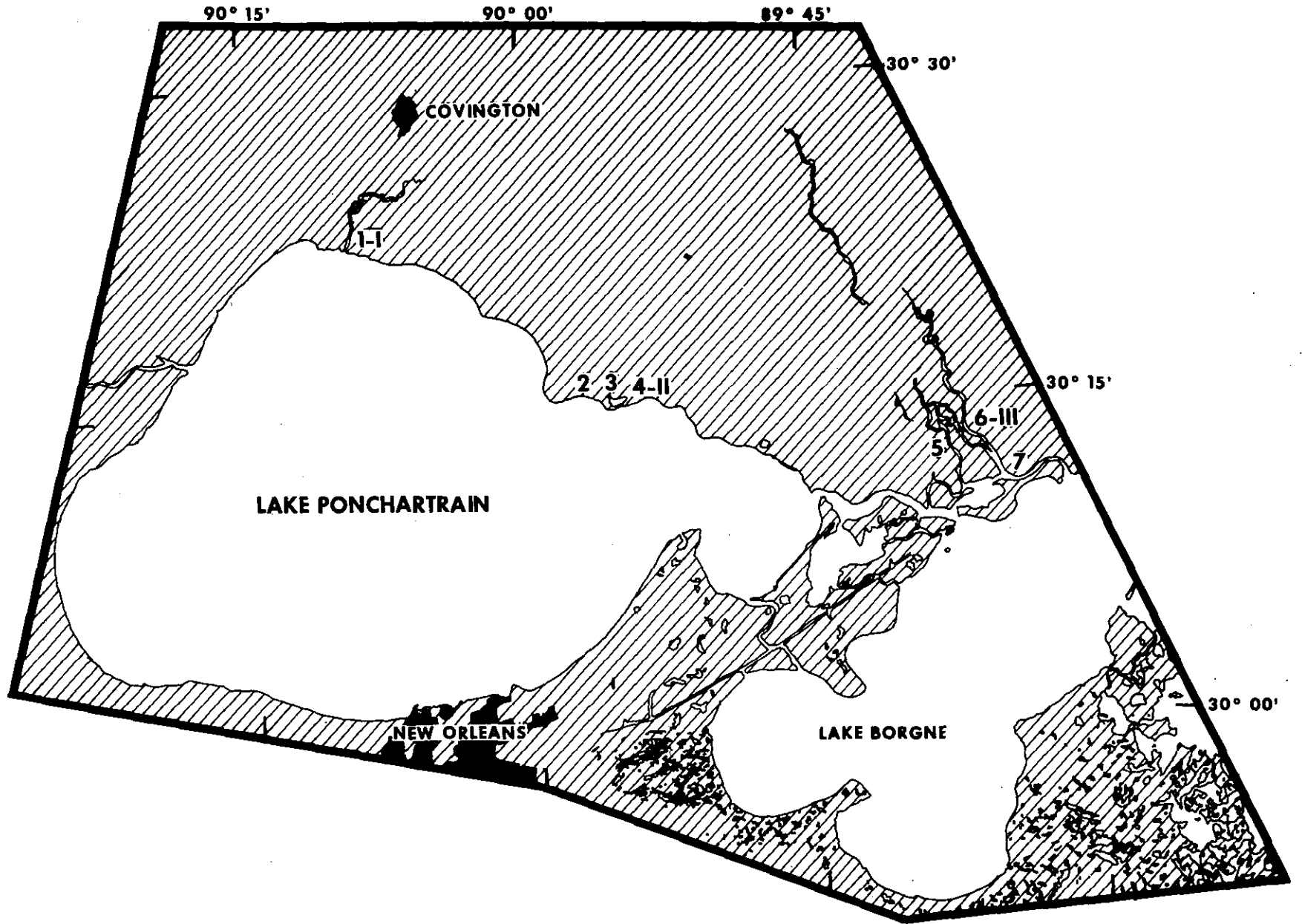


Figure 31.—Area 5: Lake Pontchartrain and Lake Borgne, La.

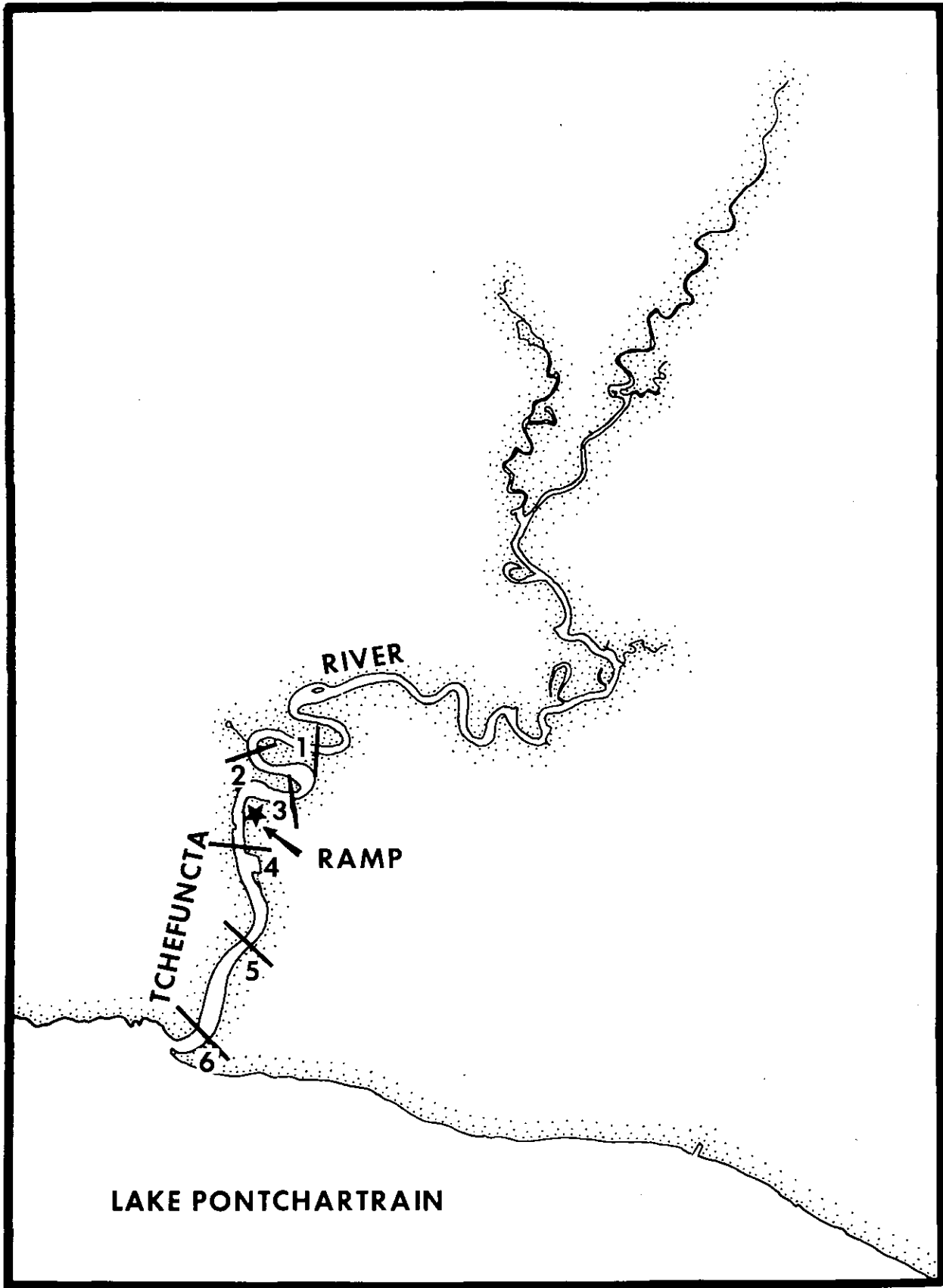


Figure 32.—Area 5: Stream 1 - Tchefuncta River.

Stream 1 - Tchefuncta River, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-1-64 Time: 1350-1450				
1	50	-	32.5	0
2	57	-	32.0	0
3	-	-	31.0	0
4	57	-	31.0	0
5	53	-	31.0	0
6	90	-	31.2	0
Total catch-----				0

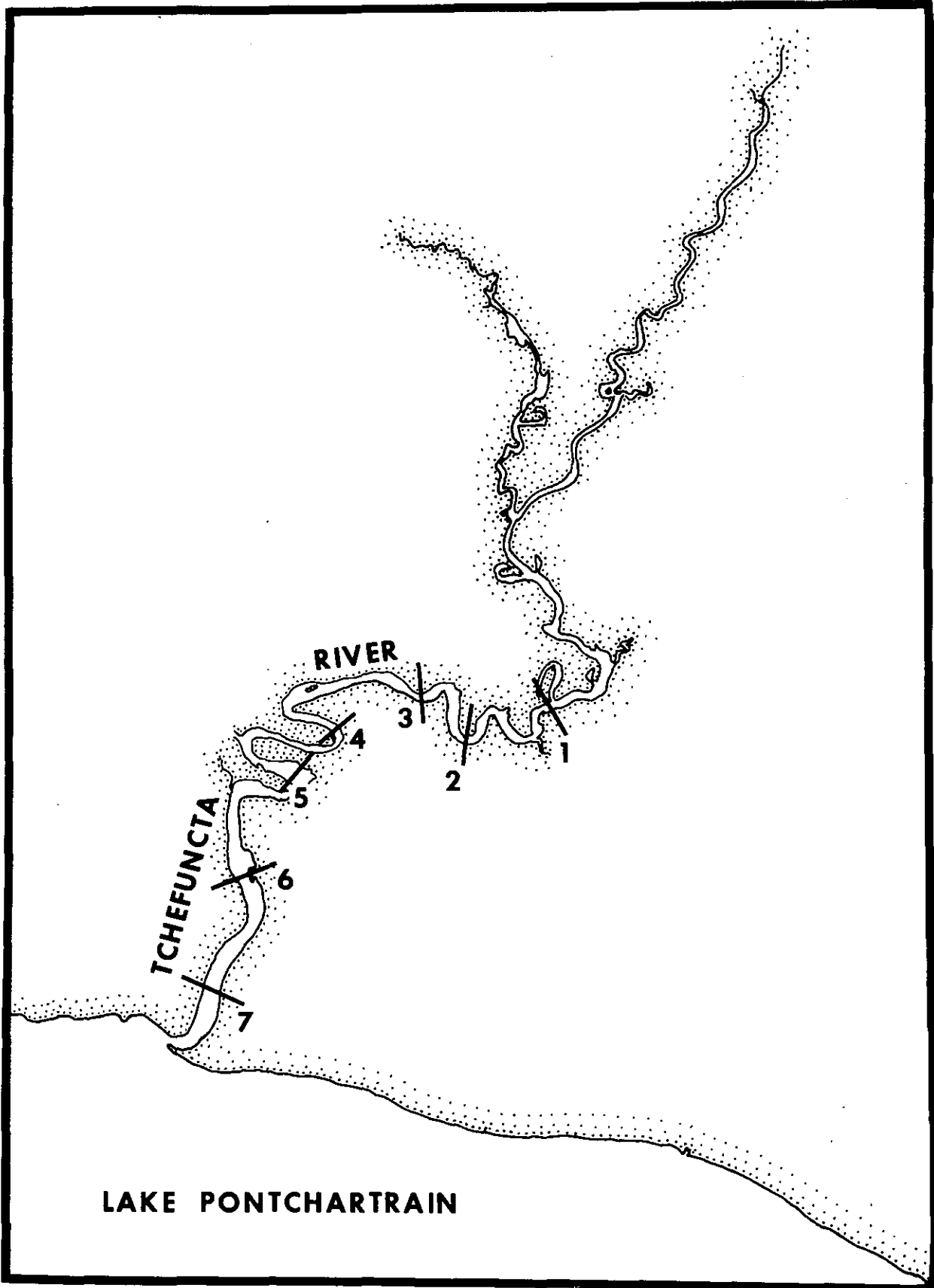


Figure 33.—Area 5: Stream I - Tchefuncta River.

Stream I - Tchefuncta River, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-5-67 Time: 1005-1140				
1	74	0.1	29.5	0
2	79	0.4	29.2	0
3	74	0.5	29.3	0
4	74	0.8	29.6	0
5	100+	1.0	30.4	0
6	79	1.5	30.5	0
7	100+	1.7	30.6	0
Total catch-----				0
Date: 7-24-67 Time: 1045-1215				
1	98	-	-	0
2	100	-	-	0
3	100+	-	-	0
4	100+	-	-	0
5	100+	-	-	0
6	100	-	-	0
7	100	-	-	0
Total catch-----				0
Date: 7-24-67 Time: 2030-2240				
1	-	-	-	828
2	-	-	-	23
3	-	-	-	660
4	-	-	-	25
5	-	-	-	52
6	-	-	-	66
7	-	-	-	13
Total catch-----				1,667

Stream I - Tchefuncta River, La. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-28-68 Time: 1550-1730				
1	100+	0.2	30.8	0
2	84	0.3	29.8	3
3	100	0.6	31.2	6
4	90	0.7	31.8	5
5	90	1.1	31.6	0
6	100+	1.4	31.8	0
7	100+	1.8	31.3	0
Total catch-----				14
Date: 6-28-68 Time: 2135-2350				
1	-	0.3	30.2	120
2	-	0.5	29.8	77
3	-	0.7	30.2	52
4	-	0.8	30.9	69
5	-	1.2	30.6	65
6	-	1.5	30.5	48
7	-	1.7	30.2	52
Total catch-----				483
Date: 6-20-69 Time: 2115-2325				
1	-	0	30.3	0
2	-	0	31.9	0
3	-	0.1	29.9	0
4	-	0.2	30.9	2
5	-	0.4	-	58
6	-	0.7	-	233
7	-	1.1	30.6	576
Total catch-----				869

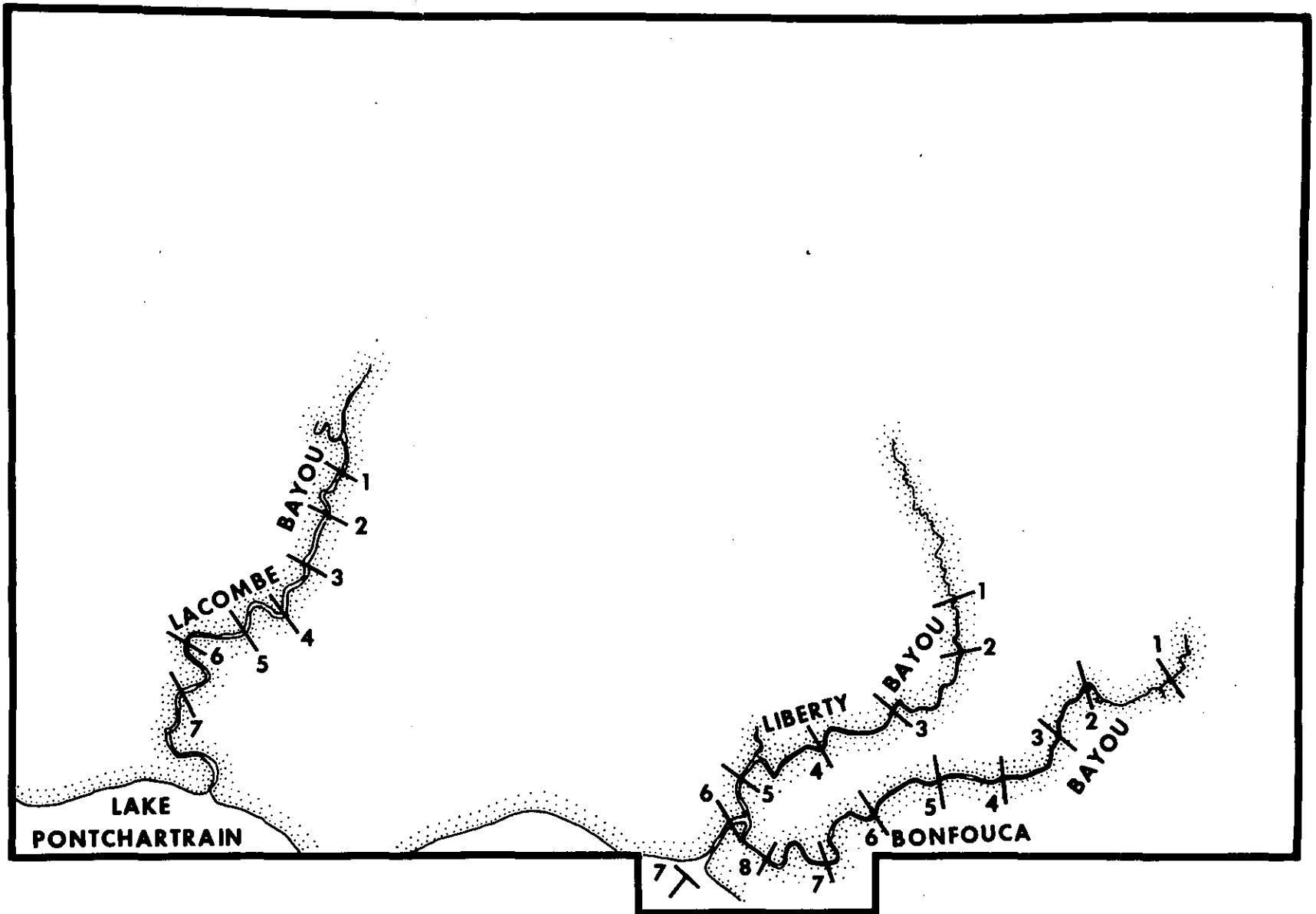


Figure 34.—Area 5: Stream 2 - Lacombe Bayou; Stream 3 - Liberty Bayou; Stream 4 - Bayou Bonfouca.

Stream 2 - Lacombe Bayou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-2-67 Time: 1105-1255				
1	28	0.7	32.0	0
2	25	1.8	31.3	0
3	47	2.4	31.5	0
4	50	2.7	31.4	0
5	48	3.4	30.8	0
6	47	3.8	30.9	0
7	55	4.0	30.6	0
Total catch-----				0
Date: 6-28-68 Time: 1245-1420				
1	88	2.3	30.3	0
2	79	2.7	30.0	0
3	80	3.0	30.5	0
4	82	3.2	30.9	1
5	95	4.3	30.4	0
6	88	4.4	30.6	0
7	80	4.7	30.1	0
Total catch-----				1

Stream 3 - Liberty Bayou, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 8-2-65 Time: 0950-1030

1	50	1.8	29.0	0
2	51	1.8	29.3	0
3	50	2.1	29.5	0
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

Total catch----- 0

Date: 8-25-66 Time: 0755-0930

1	39	0	26.8	0
2	39	0.1	26.6	0
3	40	0.3	26.8	0
4	39	0.5	27.2	0
5	34	1.7	27.6	6
6	90	4.2	27.6	0
7	100	4.7	27.8	0

Total catch----- 6

Stream 4 - Bayou Bonfouca, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-3-65 Time: 1550-1815

1	47	0.4	32.3	0
2	39	1.2	31.5	0
3	53	1.5	31.8	2
4	42	1.9	31.6	0
5	50	2.2	31.8	69
6	46	3.0	31.4	6
7	40	4.7	32.2	5
8	41	5.1	32.2	0

Total catch----- 82

Date: 8-2-65 Time: 0715-0935

1	37	0.5	29.2	0
2	42	1.2	29.7	0
3	42	1.2	29.5	0
4	41	1.3	29.5	49
5	51	1.4	29.7	12
6	52	1.6	29.3	6
7	57	2.2	29.3	4
8	65	3.0	29.5	0

Total catch----- 71

Date: 8-25-66 Time: 1010-1145

1	-	-	-	-
2	-	-	-	-
3	35	0	27.6	0
4	17	0.2	28.9	10
5	17	0.7	28.6	2,120
6	20	1.3	28.8	344
7	21	2.0	28.9	20
8	-	-	-	-

Total catch----- 2,494

Stream 4 - Bayou Bonfouca, La. Cont. .

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-2-67 Time: 0820-0945				
1	-	-	-	-
2	-	-	-	-
3	33	1.8	31.8	4
4	35	2.3	31.5	1,225
5	37	2.8	31.8	76
6	35	3.0	30.8	141
7	31	3.4	30.8	107
8	35	3.8	30.9	5
Total catch-----				1,558

Date: 6-28-68 Time: 1500-1630				
1	-	-	-	-
2	-	-	-	-
3	59	2.4	32.0	181
4	50	3.3	31.1	3,879
5	60	3.6	30.3	1,049
6	55	4.1	30.2	482
7	53	4.7	30.3	26
8	50	4.9	30.5	0
Total catch-----				5,617

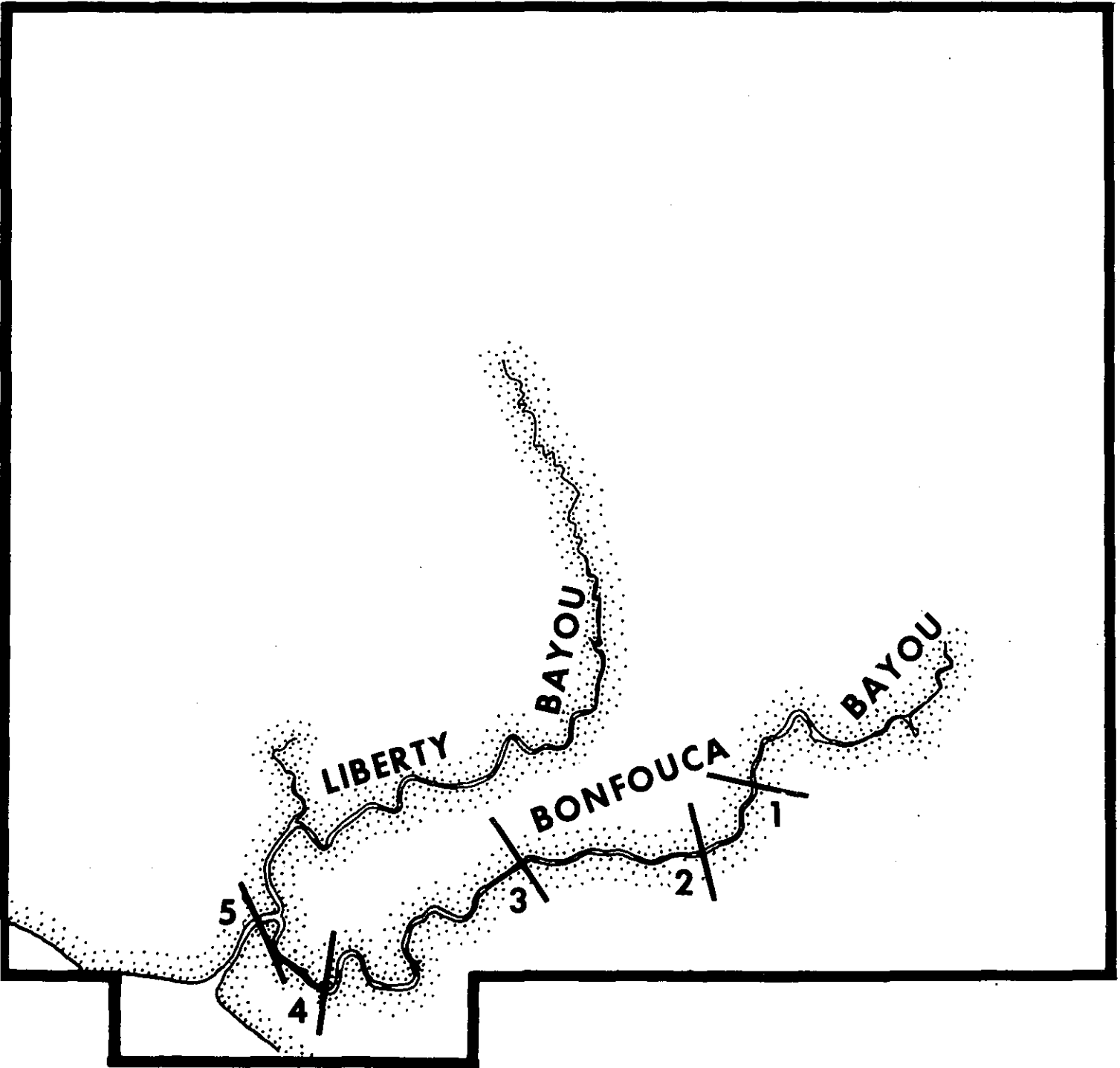


Figure 35.—Area 5: Stream II - Bayou Bonfouca.

Stream II - Bayou Bonfouca, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 6-23-69 Time: 1200-1315

1	29	1.0	32.0	60
2	25	1.4	31.9	417
3	23	1.9	32.0	100
4	26	2.6	33.1	18
5	37	3.0	32.8	34

Total catch----- 629

Date: 6-23-69 Time: 2025-2215

1	-	-	-	42
2	-	-	-	6,908
3	-	-	-	6,728
4	-	-	-	560
5	-	-	-	146

Total catch----- 14,384

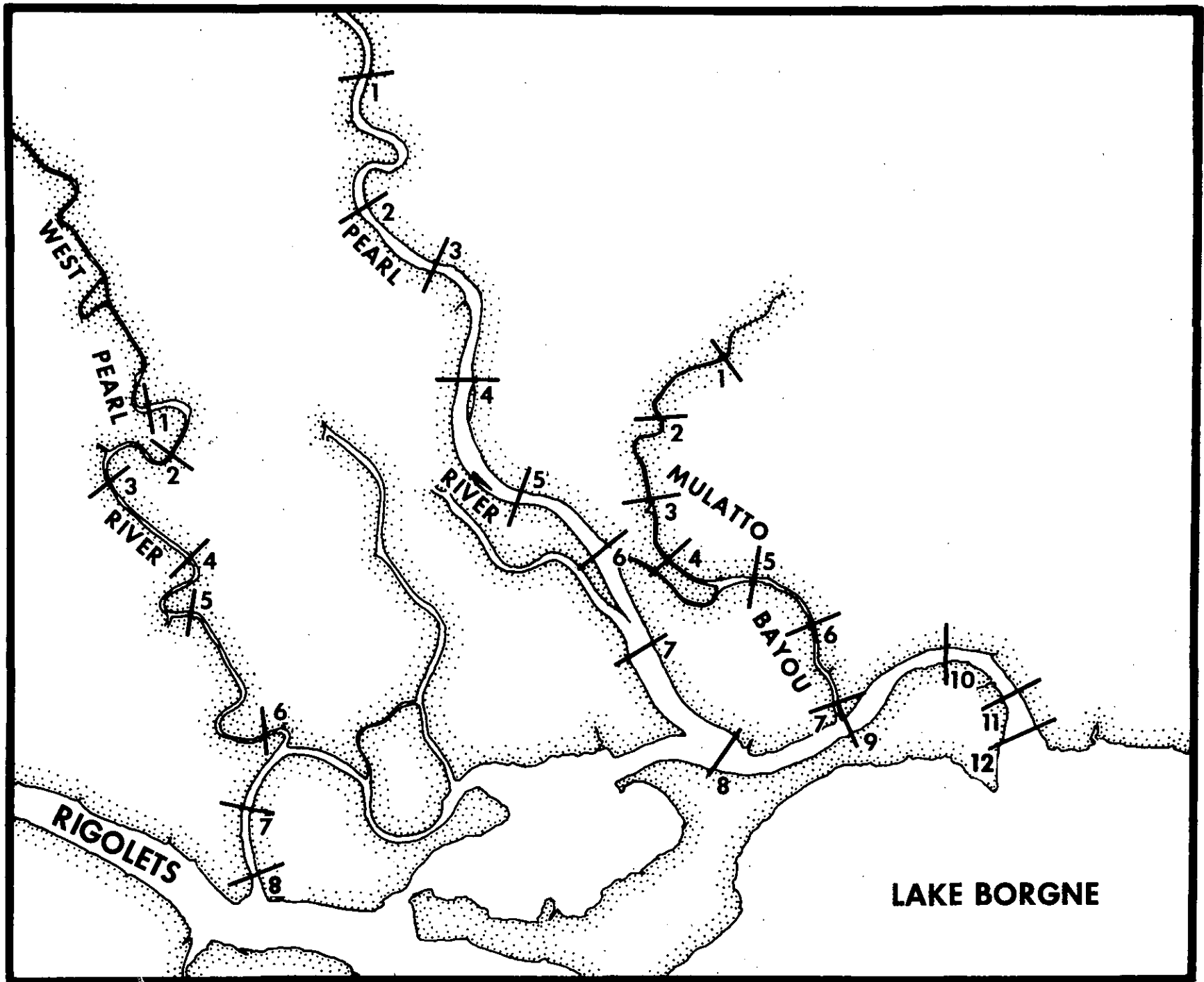


Figure 36.—Area 5: Stream 5 - West Pearl River, La.; Stream 6 - Pearl River, Miss.; Stream 7 - Mulatto Bayou, Miss.

Stream 5 - West Pearl River, La.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-3-67 Time: 1645-1845				
1	25	0	29.2	0
2	28	0	31.3	0
3	27	0	31.4	0
4	23	0	31.3	0
5	28	0.5	31.3	0
6	25	3.5	31.4	0
7	24	6.2	31.5	0
8	28	6.5	31.5	0
Total catch-----				0

Stream 6 - Pearl River, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-3-64 Time: 1135-1350				
1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	17	0	30.8	456
5	19	0	30.5	1,089
6	19	0	29.6	1,311
7	18	0	30.3	3,925
8	16	0.4	30.2	10,374
9	19	-	29.8	1,007
10	24	1.0	30.8	2,904
11	36	-	30.6	78
12	45	4.5	31.2	20
Total catch-----				21,164

Date: 7-4-65 Time: 0730-0955				
1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	100+	2.5	29.6	0
5	100+	2.5	29.6	0
6	100+	3.0	29.8	0
7	100+	3.7	29.7	0
8	100+	3.8	30.0	0
9	100+	4.2	29.9	0
10	95	3.5	30.0	0
11	88	5.5	30.1	0
12	80	5.8	30.5	0
Total catch-----				0

Date: 8-2-65 Time: 1155-1615				
1	74	0.5	29.2	0
2	100+	0.9	29.5	0
3	100+	1.3	29.8	0
4	100+	1.8	30.2	0
5	100+	2.4	30.3	0
6	100+	2.9	30.5	1
7	100+	3.1	30.5	0
8	100+	3.9	30.7	0
9	100+	4.4	30.9	0
10	100+	4.9	31.0	0
11	100+	5.2	31.1	0
12	100+	5.5	31.1	0
Total catch-----				1

Stream 6 - Pearl River, Miss. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-7-66 Time: 1510-1705				
1	-	-	-	-
2	-	-	-	-
3	43	0.1	26.4	0
4	44	0.2	27.7	0
5	50	0.3	25.8	0
6	47	0.3	26.8	0
7	47	0.3	26.3	0
8	48	0.4	26.7	0
9	48	1.6	26.7	0
10	53	3.8	27.7	0
11	75	6.3	28.3	0
12	54	6.9	28.0	0
Total catch-----				0

Date: 7-21-66 Time: 0910-1025				
1	-	-	-	-
2	-	-	-	-
3	78	0.1	30.0	0
4	78	0.4	30.1	0
5	81	0.4	29.5	1
6	78	0.5	30.5	1
7	76	0.3	30.0	1
8	78	0.4	30.5	0
9	75	0.3	30.0	0
10	79	0.5	30.4	0
11	-	-	-	-
12	-	-	-	-
Total catch-----				3

Date: 8-26-66 Time: 0810-1110				
1	-	-	-	-
2	71	0.1	28.5	0
3	74	0.4	28.4	0
4	68	0.8	28.3	0
5	69	0.9	28.3	2
6	72	1.0	28.7	0
7	64	1.1	28.4	0
8	68	1.5	28.6	0
9	74	1.5	28.5	0
10	69	2.1	28.6	0
11	71	2.8	28.8	0
12	64	3.7	28.4	0
Total catch-----				2

Stream 6 - Pearl River, Miss. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-4-67 Time: 0950-1215

1	-	-	-	-
2	-	-	-	-
3	78	1.0	30.4	0
4	70	1.2	30.7	0
5	68	2.1	30.7	0
6	60	2.2	31.0	0
7	60	3.5	30.0	0
8	60	4.0	30.4	0
9	54	4.2	30.3	0
10	50	4.9	30.8	0
11	48	5.4	31.2	0
12	-	-	-	-

Total catch----- 0

Date: 6-29-68 Time: 0915-1205

1	-	-	-	-
2	-	-	-	-
3	88	0.7	30.0	0
4	84	1.0	29.8	0
5	79	1.1	29.8	0
6	72	1.2	29.9	0
7	84	1.6	29.6	0
8	78	2.1	29.7	0
9	89	2.5	29.5	0
10	85	2.8	29.9	0
11	80	3.9	29.4	0
12	-	-	-	-

Total catch----- 0

Stream 7 - Mulatto Bayou, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-3-67 Time: 1905-2040				
1	50	0.2	32.0	0
2	52	1.7	32.2	0
3	50	2.4	32.1	0
4	48	2.9	31.8	0
5	53	3.6	32.3	0
6	54	3.8	30.3	0
7	57	4.1	32.3	0
Total catch-----				0
Date: 6-29-68 Time: 0630-0830				
1	83	0.9	30.9	0
2	90	1.5	30.5	0
3	82	1.8	29.8	0
4	70	2.0	29.4	0
5	69	2.4	30.2	0
6	84	3.0	29.9	0
7	75	3.5	29.7	0
Total catch-----				0

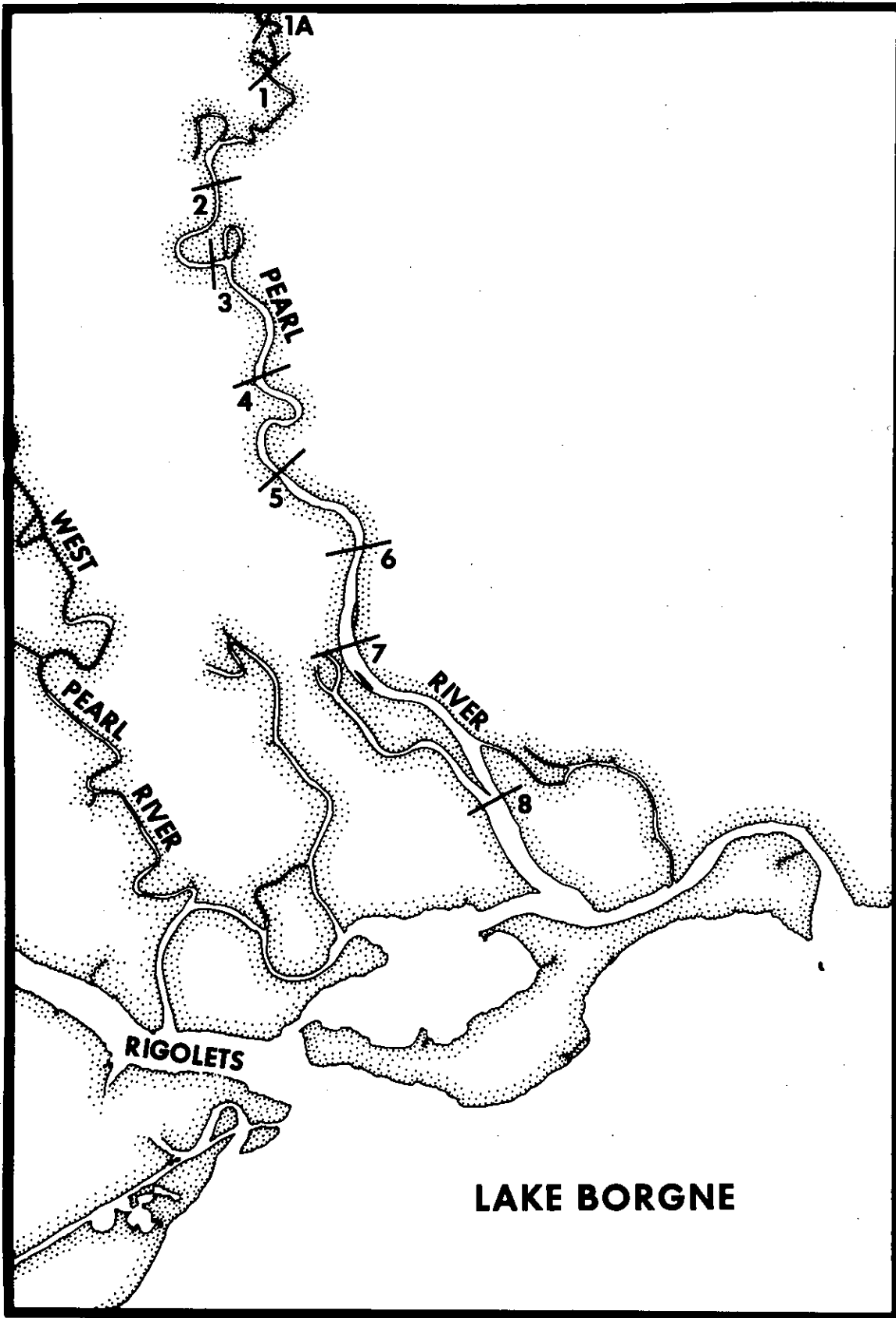


Figure 37.—Area 5; Stream III - Pearl River, Miss.

Stream III - Pearl River, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-6-67 Time: 0715-0920				
1	-	-	-	-
2	100+	1.5	29.2	0
3	100+	1.9	29.3	0
4	100+	2.6	29.5	1
5	84	3.7	29.5	0
6	76	5.0	29.2	0
7	71	5.6	29.0	0
8	71	12.6	29.3	0
Total catch-----				1

Date: 7-22-67 Time: 1225-1545				
1	73	4.3	28.0	0
2	100	5.0	27.7	1
3	76	6.1	28.0	0
4	90	7.1	27.9	0
5	87	7.1	27.9	0
6	63	7.1	27.6	0
7	60	15.5	27.7	0
8	68	20.1	27.5	0
Total catch-----				1

Date: 7-22-67 Time: 2115-2350				
1	-	5.0	26.9	21
2	-	4.3	27.5	1,770
3	-	4.5	27.8	302
4	-	10.7	27.8	1,448
5	-	8.2	28.1	119
6	-	-	-	-
7	-	-	-	-
8	-	-	-	-
Total catch-----				3,660

Date: 6-30-68 Time: 1425-1610				
1	-	-	-	-
2	88	0.5	30.8	0
3	100+	0.9	30.8	0
4	90	1.0	31.5	4
5	91	1.4	31.7	1
6	80	2.0	31.3	0
7	78	5.1	29.5	0
8	80	5.3	31.2	0
Total catch-----				5

Stream III - Pearl River, Miss. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-30-68 Time: 2100-2340				
1	-	0.2	29.3	8,594
2	-	0.8	30.1	589
3	-	1.1	31.0	260
4	-	1.4	31.0	114
5	-	1.7	31.0	257
6	-	2.2	30.9	1,718
7	-	2.8	30.9	50
8	-	-	-	-
Total catch-----				11,582
Date: 6-24-69 Time: 1400-1620				
1	67	0.1	30.7	0
2	74	0.3	32.0	1
3	71	0.7	32.3	1
4	70	0.7	32.6	1
5	72	1.1	33.4	0
6	74	1.4	32.5	1
7	77	2.3	32.2	0
8	72	2.6	32.2	0
Total catch-----				4
Date: 6-24-69 Time: 2045-2335				
1	-	-	-	-
2	-	-	-	2,920
3	-	-	-	141
4	-	-	-	445
5	-	-	-	1,300
6	-	-	-	326
7	-	-	-	1,232
8	-	-	-	110
Total catch-----				6,474

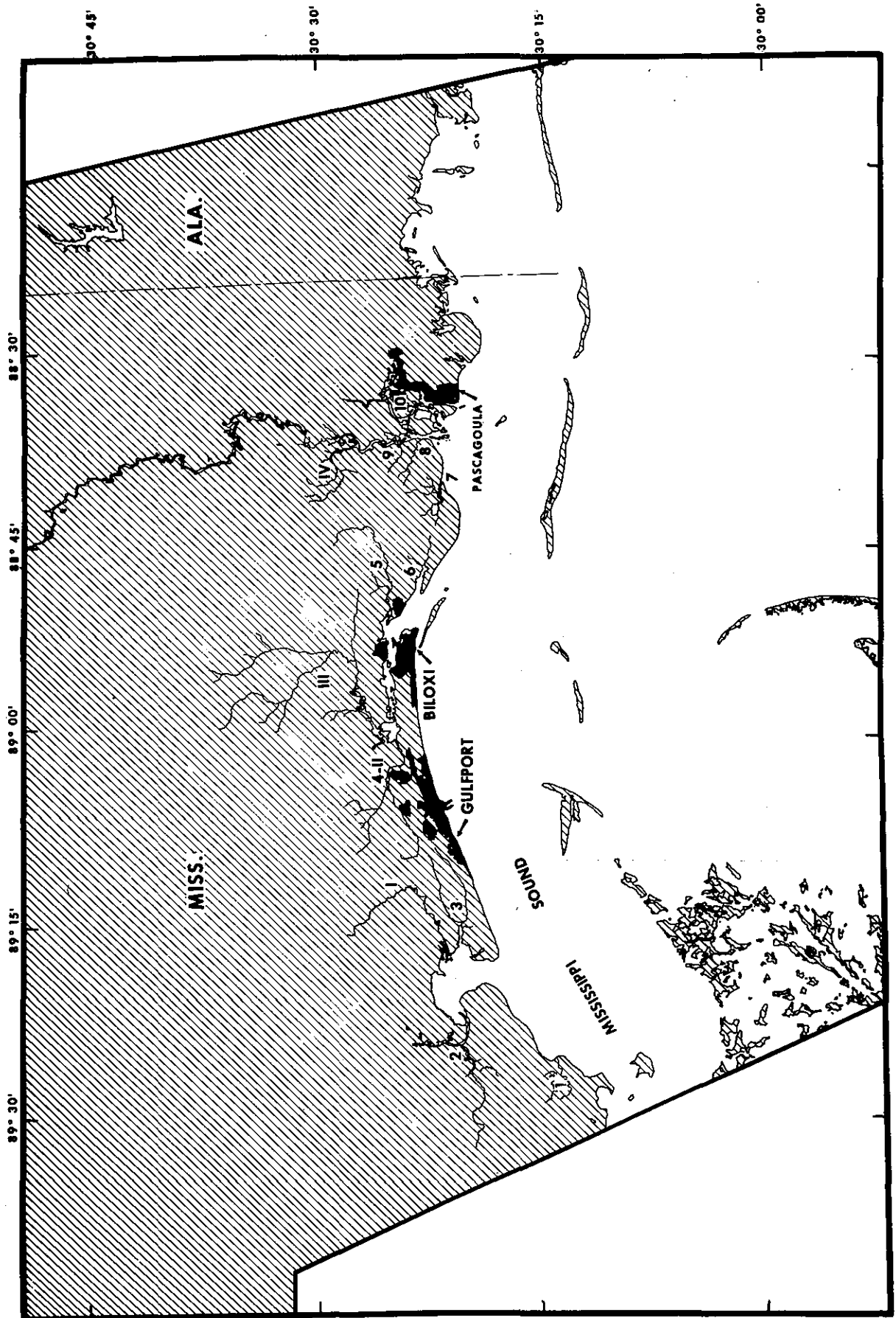


Figure 38.—Area 6: Mississippi Sound, Miss.

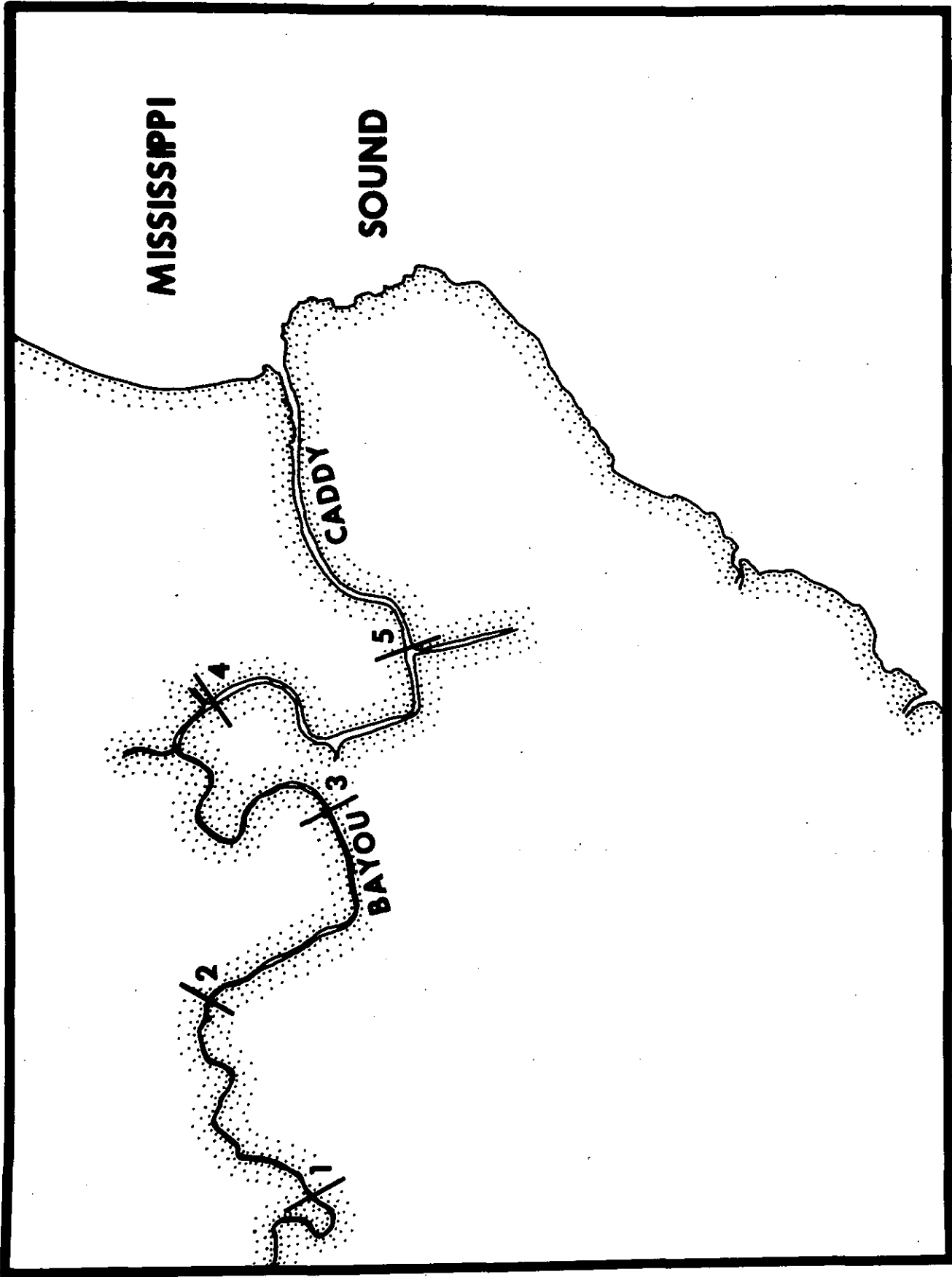


Figure 39.—Area 6: Stream 1 - Bayou Caddy.

Stream 1 - Bayou Caddy, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-5-67 Time: 0755-0855

1	80	1.0	30.9	0
2	80	3.7	30.9	0
3	75	8.2	30.7	0
4	75	12.4	30.5	0
5	65	18.4	31.0	0

Total catch----- 0

Date: 6-28-68 Time: 1740-1905

1	73	4.4	30.8	0
2	82	8.6	31.7	0
3	70	10.1	31.3	0
4	86	14.7	31.7	0
5	91	19.3	30.8	0

Total catch----- 0

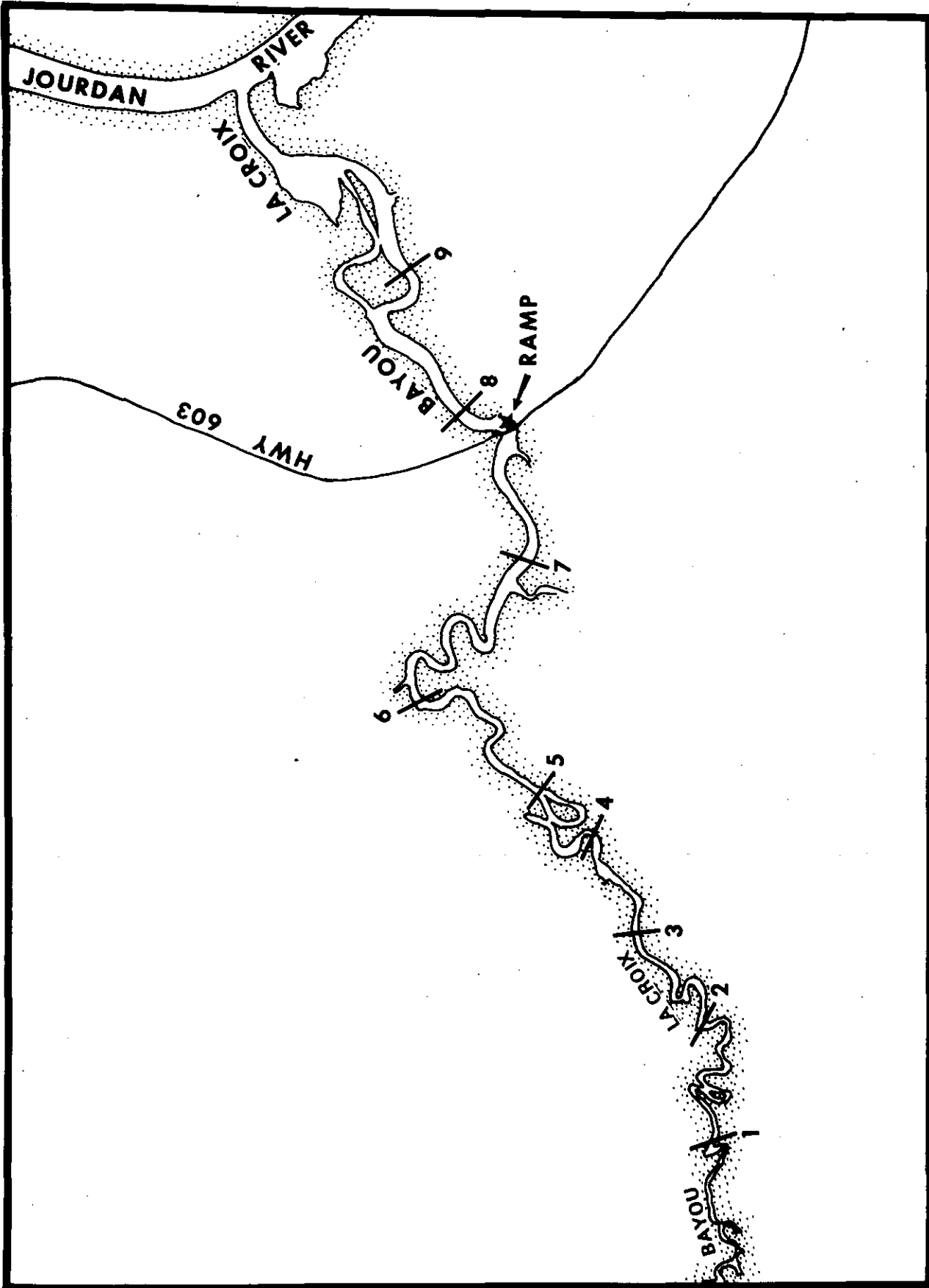


Figure 40.—Area 6: Stream 2 - Bayou la Croix.

Stream 2 - Bayou la Croix, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
1	-	-	-	-
2	26	0	30.6	43,505
3	28	0.2	30.8	2,280
4	43	1.0	30.8	795
5	49	1.5	30.8	2
6	68	2.6	31.1	0
7	72	3.9	31.3	0
8	-	-	-	-
9	-	-	-	-

Date: 8-5-64 Time: 1340-1535

Total catch----- 46,582

Date: 7-4-65 Time: 1600-1745

1	-	-	-	-
2	20	0.2	31.3	12
3	30	1.0	29.7	0
4	34	1.2	32.8	0
5	45	2.0	32.5	0
6	51	2.7	32.8	0
7	60	2.9	31.2	0
8	64	4.5	31.5	0
9	67	5.2	31.4	0

Total catch----- 12

Date: 8-2-65 Time: 1730-1940

1	-	-	-	-
2	50	0.7	32.5	0
3	64	1.5	31.4	0
4	83	2.0	30.5	0
5	80	2.9	31.7	0
6	78	3.5	32.2	0
7	60	4.3	31.6	0
8	64	5.6	32.2	1
9	60	6.5	32.2	0

Total catch----- 1

Stream 2 - Bayou la Croix, Miss. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-21-66 Time: 1230-1350

1	-	-	-	-
2	63	0.3	31.4	0
3	66	1.1	34.4	0
4	55	1.9	31.8	1
5	69	2.2	31.5	3
6	74	2.9	32.5	0
7	78	3.1	33.2	0
8	90	3.3	32.6	0
9	86	3.3	32.6	0

Total catch----- 4

Date: 8-25-66 Time: 1600-1735

1	-	-	-	-
2	38	0	28.5	0
3	37	0	28.2	0
4	38	0.1	29.0	0
5	39	0.1	28.8	1
6	44	0.2	28.5	0
7	51	1.1	28.8	0
8	53	2.3	29.3	5
9	53	4.0	29.4	0

Total catch----- 6

Date: 7-4-67 Time: 1430-1645

1	85	1.2	31.4	0
2	80	3.8	31.5	0
3	92	5.6	31.9	0
4	89	7.2	31.4	0
5	78	8.4	30.6	0
6	74	10.5	31.3	0
7	62	14.1	31.7	0
8	65	16.2	30.8	0
9	69	17.5	30.8	0

Total catch----- 0

Stream 2 - Bayou la Croix, Miss. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 6-29-68 Time: 1505-1715

1	-	-	-	-
2	59	3.7	32.2	0
3	64	4.2	32.0	0
4	73	4.8	32.2	0
5	68	5.4	32.7	0
6	75	5.7	31.5	0
7	83	6.1	32.0	0
8	91	6.4	31.7	0
9	82	7.0	31.6	0
Total catch-----				0

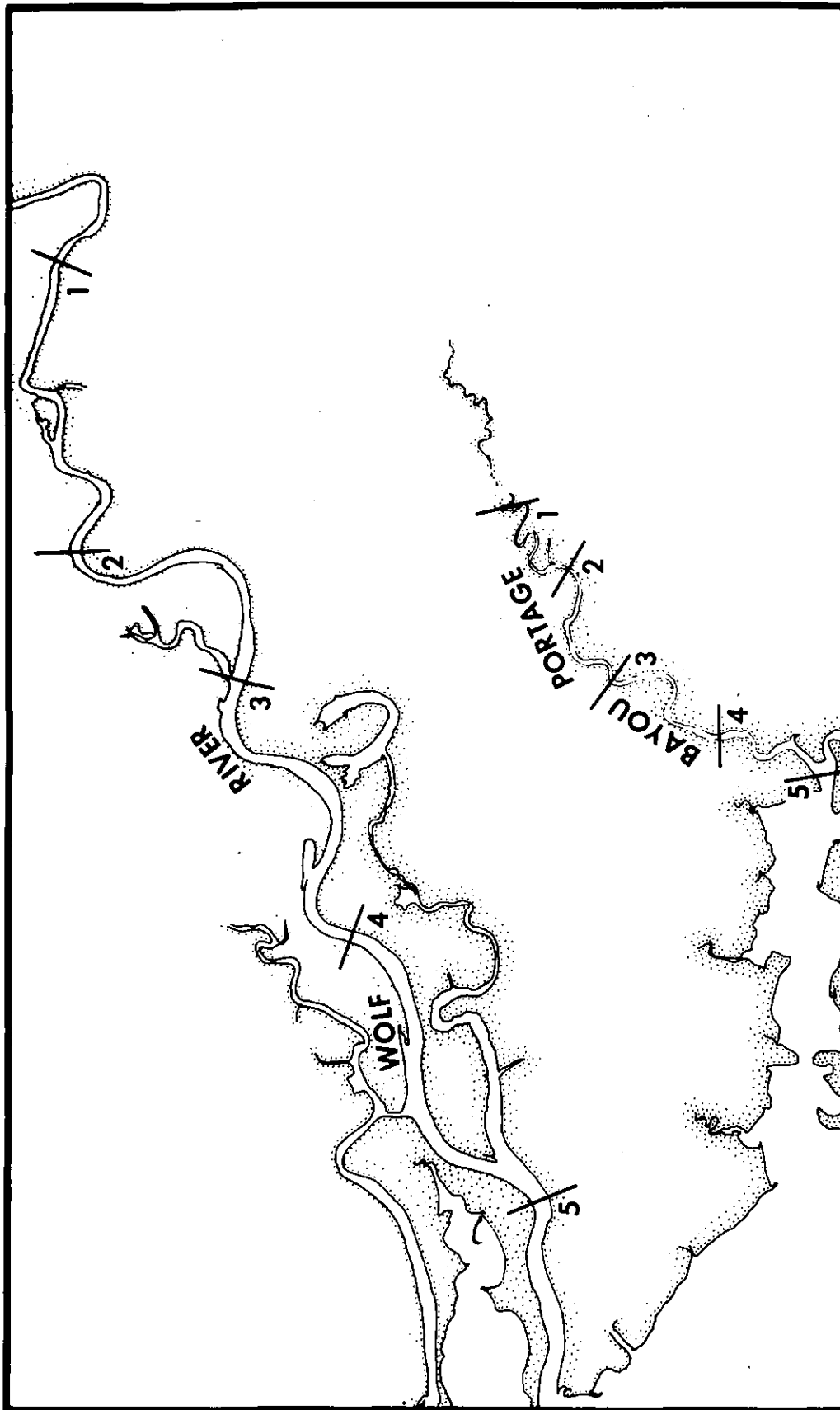


Figure 41.—Area 6: Stream 3 - Bayou Portage; Stream 1 - Wolf River.

Stream 3 - Bayou Portage, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 8-5-64 Time: 1120-1225

1	58	8.7	30.7	0
2	61	8.2	30.9	6
3	55	10.0	31.1	2
4	59	10.8	31.8	0
5	-	-	-	-

Total catch----- 8

Date: 8-26-66 Time: 1600-1720

1	39	4.3	29.8	38
2	42	7.2	28.9	11
3	46	8.2	29.3	3
4	44	11.4	28.9	0
5	54	11.7	29.4	0

Total catch----- 52

Stream I - Wolf River, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 6-25-69 Time: 1600-1730

1	100+	0	32.4	0
2	100+	0.3	32.6	0
3	100+	1.8	32.4	0
4	100+	2.9	32.6	0
5	91	5.5	32.3	0

Total catch----- 0

Date: 6-25-69 Time: 2040-2205

1	-	-	-	0
2	-	-	-	0
3	-	-	-	19
4	-	-	-	28
5	-	-	-	38

Total catch----- 85

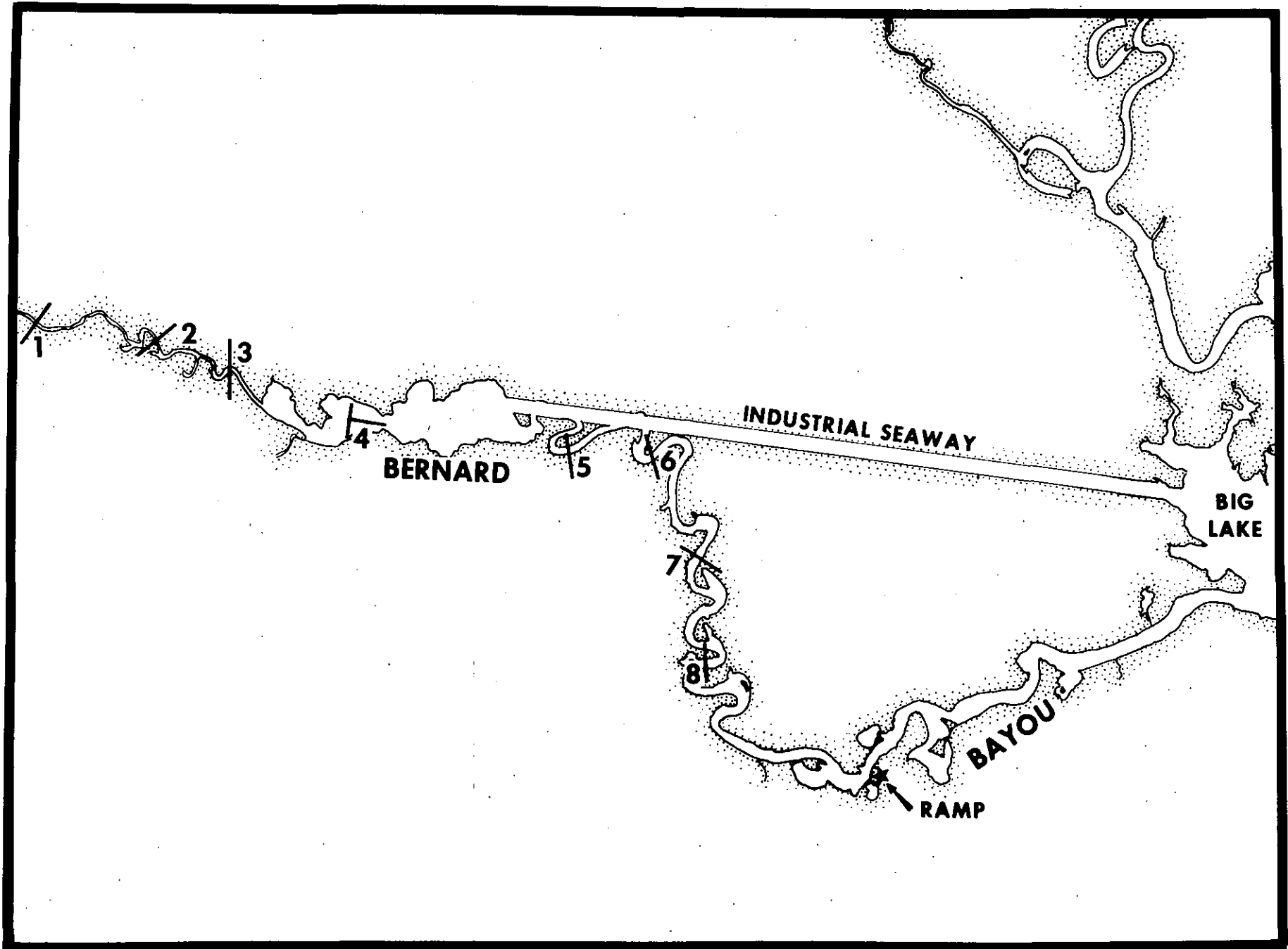


Figure 42.—Area 6: Stream 4 - Bernard Bayou.

Stream 4 - Bernard Bayou, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 8-27-66 Time: 0935-1300

1	57	0.6	28.5	0
2	61	0.9	28.5	1
3	60	1.1	28.8	11
4	51	1.7	29.2	6
5	54	2.5	30.7	0
6	61	2.8	29.5	0
7	52	3.7	29.7	0
8	59	6.2	29.2	0

Total catch----- 18

Date: 7-4-67 Time: 1010-1215

1	18	5.9	30.7	0
2	28	7.4	31.0	1
3	39	8.6	31.6	1
4	39	9.3	31.8	0
5	35	10.0	31.7	5
6	30	9.5	31.0	2
7	28	9.7	30.9	4
8	35	9.8	30.7	20

Total catch----- 33

Date: 6-30-68 Time: 0915-1140

1	70	4.8	30.7	0
2	73	5.0	30.7	0
3	85	5.3	30.9	0
4	81	5.4	30.6	0
5	74	5.8	30.8	0
6	68	6.0	30.8	0
7	85	6.4	30.9	0
8	79	7.4	30.9	0

Total catch----- 0

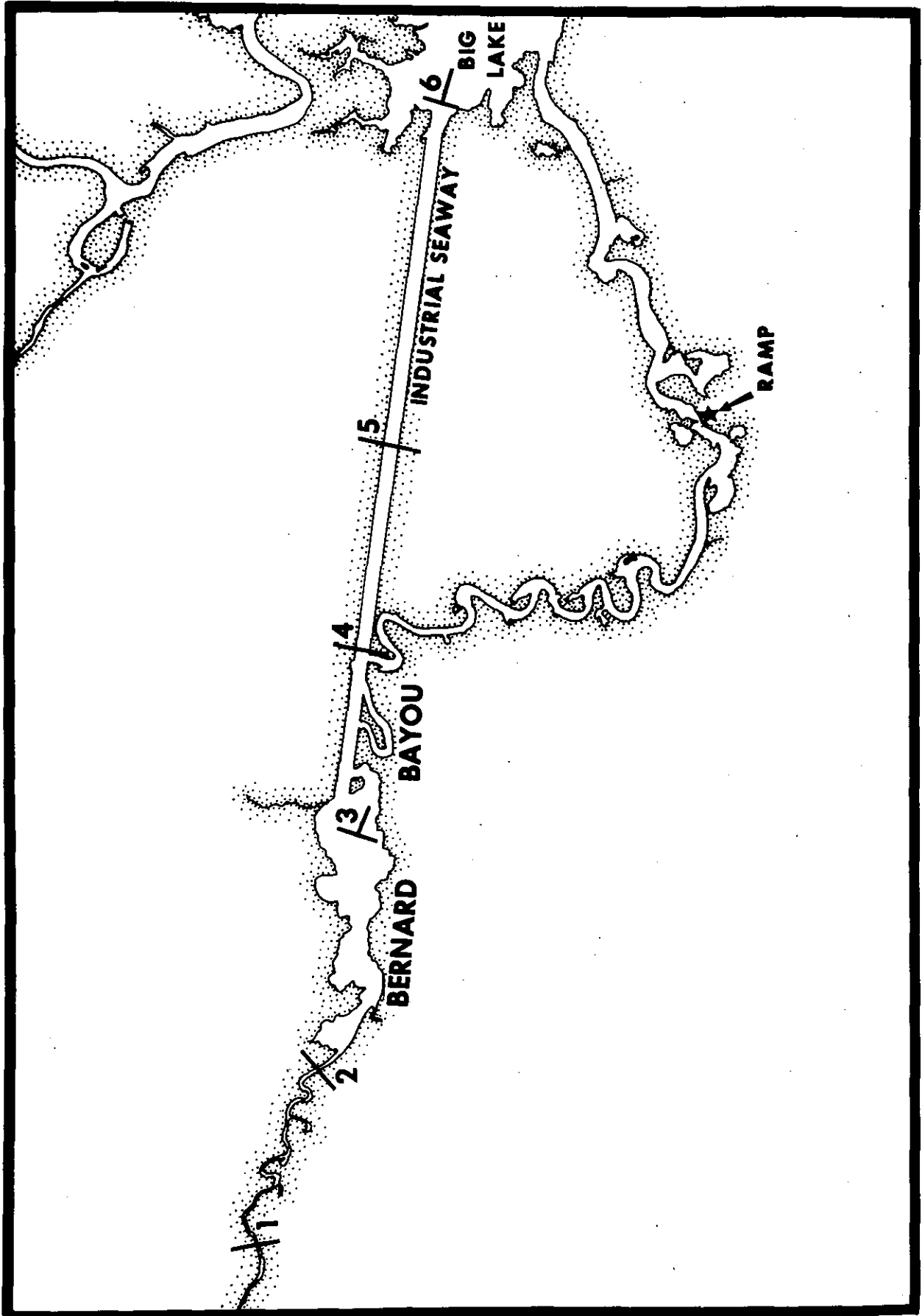


Figure 43.—Area 6: Stream II - Bernard Bayou.

Stream II - Bernard Bayou, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-7-67 Time: 1535-1640				
1	58	8.3	30.5	343
2	58	9.1	32.1	72
3	56	10.3	32.2	5
4	61	10.5	31.1	1
5	53	11.2	31.0	1
6	-	-	-	-
Total catch-----				422
Date: 7-1-68 Time: 1455-1625				
1	58	3.4	33.8	64
2	43	4.6	33.4	166
3	54	5.2	31.8	71
4	51	6.3	32.9	66
5	52	8.7	-	23
6	48	10.6	31.3	36
Total catch-----				426
Date: 7-1-68 Time: 2105-2340				
1	-	3.7	33.3	11,930
2	-	5.0	31.7	41,745
3	-	5.0	32.1	59,475
4	-	5.7	31.9	13,015
5	-	6.6	32.0	10,830
6	-	7.8	32.5	2,652
Total catch-----				239,647

Stream II - Bernard Bayou, Miss. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 6-26-69 Time: 1320-1450

1	57	6.9	30.9	4
2	51	7.5	31.8	11
3	45	7.7	31.8	8
4	59	7.9	32.3	5
5	63	9.6	33.3	2
6	73	10.3	34.8	35

Total catch----- 65

Date: 6-26-69 Time: 2040-2220

1	-	-	-	3,746
2	-	-	-	2,194
3	-	-	-	4,212
4	-	-	-	305
5	-	-	-	1,116
6	-	-	-	243

Total catch----- 11,816

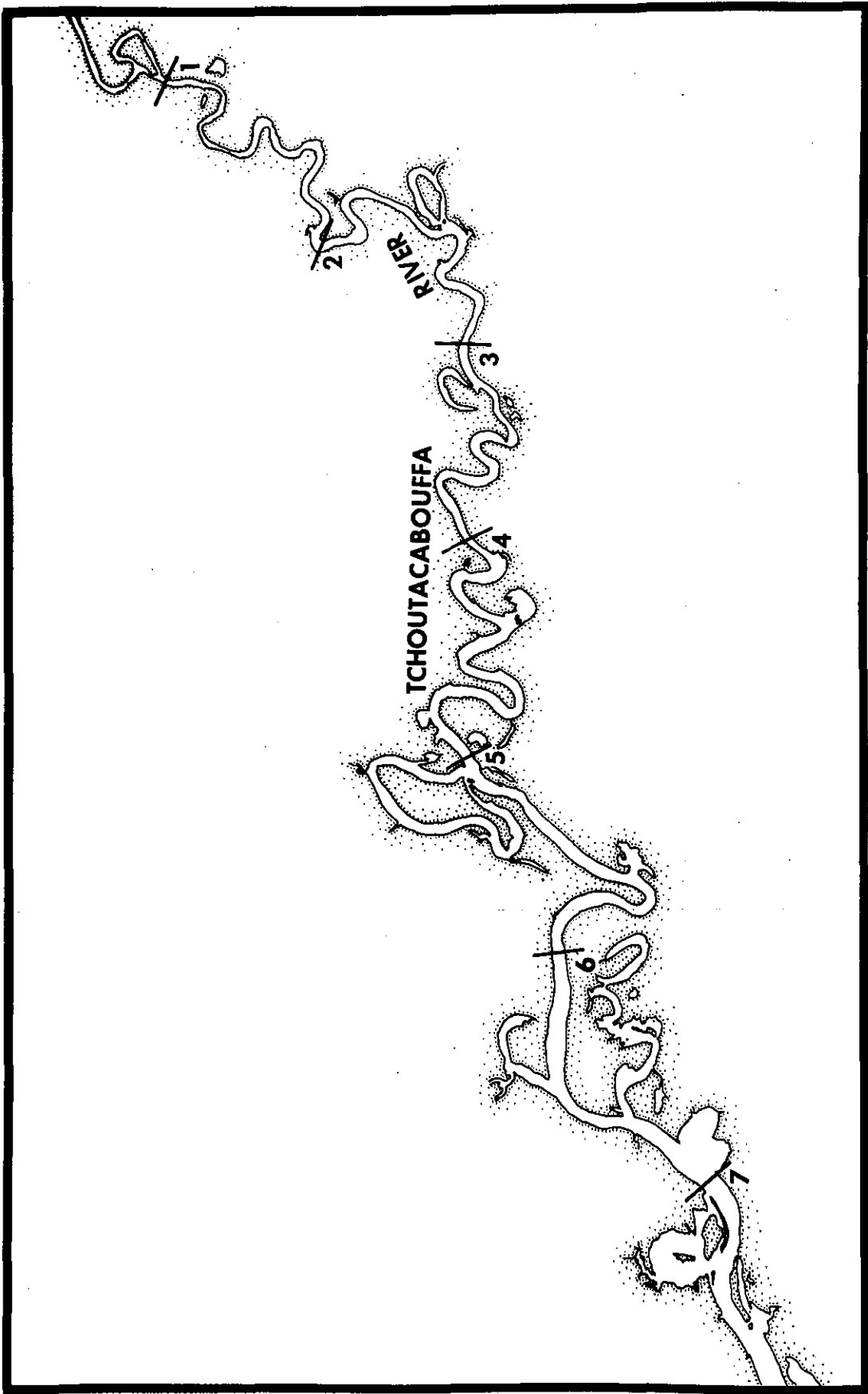


Figure 44.—Area 6; Stream III - Tchoutacabouffa River.

Stream III - Tchoutacabouffa River, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 6-27-69 Time: 1345-1550

1	100+	0.3	33.4	0
2	100+	1.1	32.9	0
3	100+	3.0	32.4	5
4	100+	5.3	32.4	0
5	100+	6.6	32.4	1
6	100+	7.6	32.9	1
7	100+	8.8	33.2	0

Total catch----- 7

Date: 6-27-69 Time: 2040-2220

1	-	-	-	0
2	-	-	-	0
3	-	-	-	0
4	-	-	-	1
5	-	-	-	0
6	-	-	-	25
7	-	-	-	-

Total catch----- 26

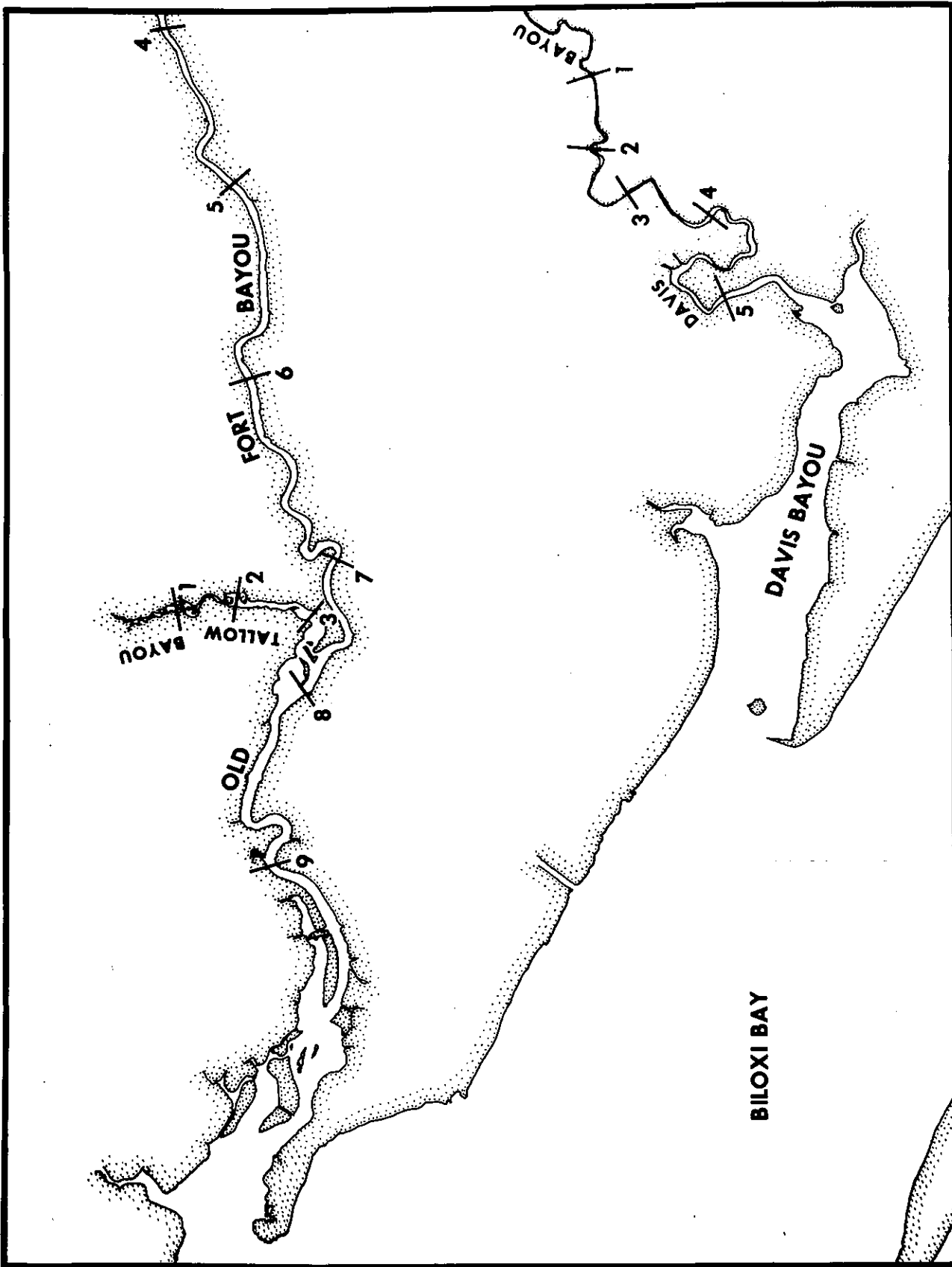


Figure 45.—Area 6: Stream 5 - Old Fort and Talla Bayous; Stream 6 - Davis Bayou.

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Stream 5 - Old Fort and Talla Bayous, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-6-64 Time: 0940-1225				
1	100+	1.6	30.2	0
2	100	2.5	31.0	0
3	77	4.5	31.2	0
4	51	0	30.7	0
5	52	0	29.0	0
6	52	0.7	31.0	0
7	48	4.5	30.3	0
8	58	6.1	31.0	0
9	100	9.6	32.7	0
Total catch-----				0

Stream 6 - Davis Bayou, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-7-64 Time: 0630-0755				
1	71	5.6	31.4	4
2	60	7.8	31.4	0
3	53	10.0	30.7	0
4	51	11.8	29.8	41
5	49	15.8	28.8	2
Total catch-----				47

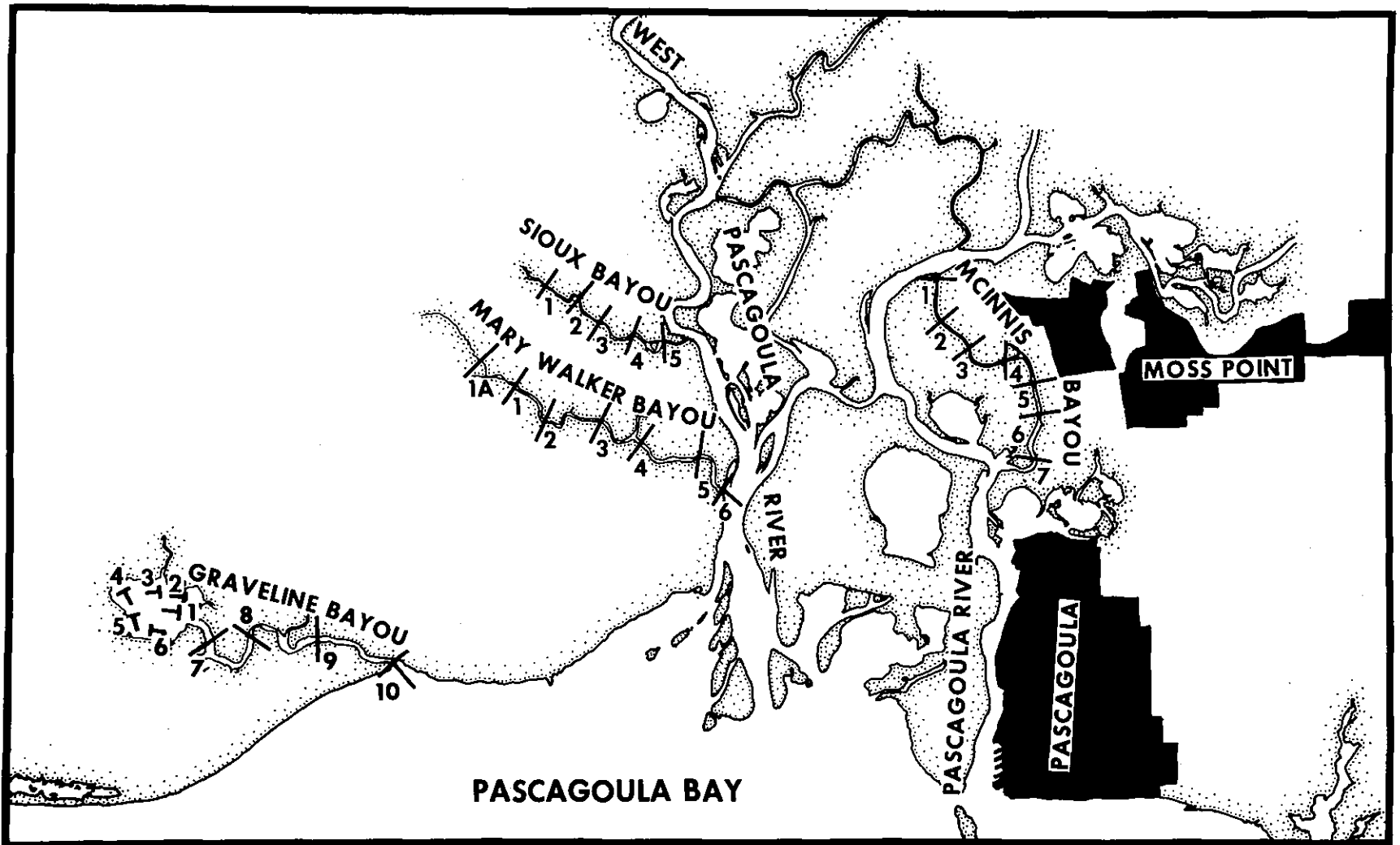


Figure 46.—Area 6: Stream 7 - Graveline Bayou; Stream 8 - Mary Walker Bayou; Stream 9 - Sioux Bayou; Stream 10 - McInnis Bayou.

Stream 7 - Graveline Bayou, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-7-64 Time: 1300-1545				
1	64	15.8	32.2	0
2	49	16.4	32.1	0
3	51	14.0	30.7	336
4	51	14.0	30.7	96
5	56	14.6	31.8	155
6	57	14.5	31.4	68
7	47	14.5	31.2	351
8	53	14.9	31.3	8
9	39	14.5	31.2	5
10	41	13.3	31.0	3

Total catch----- 1,022

Date: 7-5-65 Time: 1120-1220

1	24	16.5	31.5	217
2	-	-	-	-
3	29	16.3	30.9	0
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-
8	52	16.3	30.1	0
9	67	16.9	30.7	0
10	68	18.1	30.1	193

Total catch----- 410

Date: 8-3-65 Time: 1510-1645

1	57	13.2	31.6	131
2	56	12.7	31.2	238
3	42	13.0	30.5	0
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-
8	56	13.5	30.5	1
9	52	15.4	32.0	0
10	50	16.3	33.0	0

Total catch----- 370

Stream 7 - Graveline Bayou, Miss. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 8-3-65 Time: 1710-1845

1	50	13.9	31.4	58
2	52	13.9	30.4	112
3	50	14.0	30.9	0
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-
8	50	14.2	31.3	0
9	55	15.7	32.6	0
10	54	16.5	32.8	0

Total cCatch----- 170

Date: 6-7-66 Time: 0840-1100

1	50	8.6	27.7	889
2	48	8.9	27.8	36
3	45	8.9	28.0	127
4	55	8.9	27.2	0
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-
8	60	13.3	27.6	0
9	65	19.0	28.4	2,800
10	50	19.5	28.7	179

Total catch----- 4,031

Date: 8-29-66 Time: 1410-1610

1	52	17.0	29.5	16
2	47	17.0	29.3	5
3	37	17.1	29.3	0
4	57	17.8	29.5	2,567
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-
8	59	17.8	29.5	455
9	43	17.8	29.6	59
10	48	17.8	29.5	1,414

Total catch----- 4,516

Stream 7 - Graveline Bayou, Miss. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-6-67 Time: 1720-1850				
1	28	19.8	30.4	0
2	25	19.8	30.5	8
3	25	19.8	30.2	0
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-
8	28	20.0	30.1	6
9	25	20.3	30.4	1
10	20	20.7	30.3	10
Total catch-----				25

Stream 8 - Mary Walker Bayou, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-5-65 Time: 0730-0900				
1	100+	2.7	31.4	0
2	100+	3.8	30.7	0
3	100+	5.0	31.1	0
4	80	4.1	30.5	0
5	85	3.5	30.7	0
6	83	4.2	31.2	0
Total catch-----				0
Date: 8-3-65 Time: 0915-1050				
1	72	0.2	27.0	0
2	90	0.7	28.5	0
3	100+	2.0	29.5	0
4	100+	3.2	29.6	0
5	90	3.4	29.7	0
6	80	3.7	29.8	0
Total catch-----				0
Date: 8-29-66 Time: 1100-1230				
1	88	1.9	27.8	0
2	98	3.3	29.1	0
3	98	4.4	29.0	0
4	93	4.7	29.3	0
5	87	7.1	29.3	0
6	86	7.3	29.3	0
Total catch-----				0

Stream 9 - Sioux Bayou, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-3-65 Time: 1240-1355				
1	60	0.4	29.3	0
2	64	1.5	29.8	0
3	52	1.6	30.3	0
4	58	1.9	31.0	0
5	59	2.6	31.1	0
Total catch-----				0

Stream 10 - McInnis Bayou, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-6-67 Time: 1430-1615				
1	35	12.9	30.9	0
2	31	12.9	31.5	0
3	30	14.7	30.4	0
4	37	15.7	30.1	0
5	41	16.9	30.2	0
6	40	18.2	30.4	0
7	40	19.7	30.7	0
Total catch-----				0
Date: 7-1-68 Time: 0805-1020				
1	92	9.3	30.3	1
2	100+	11.1	30.4	0
3	96	11.2	30.2	1
4	85	13.6	30.3	0
5	81	14.2	30.8	526
6	93	14.8	30.3	0
7	95	14.4	30.2	0
Total catch-----				528

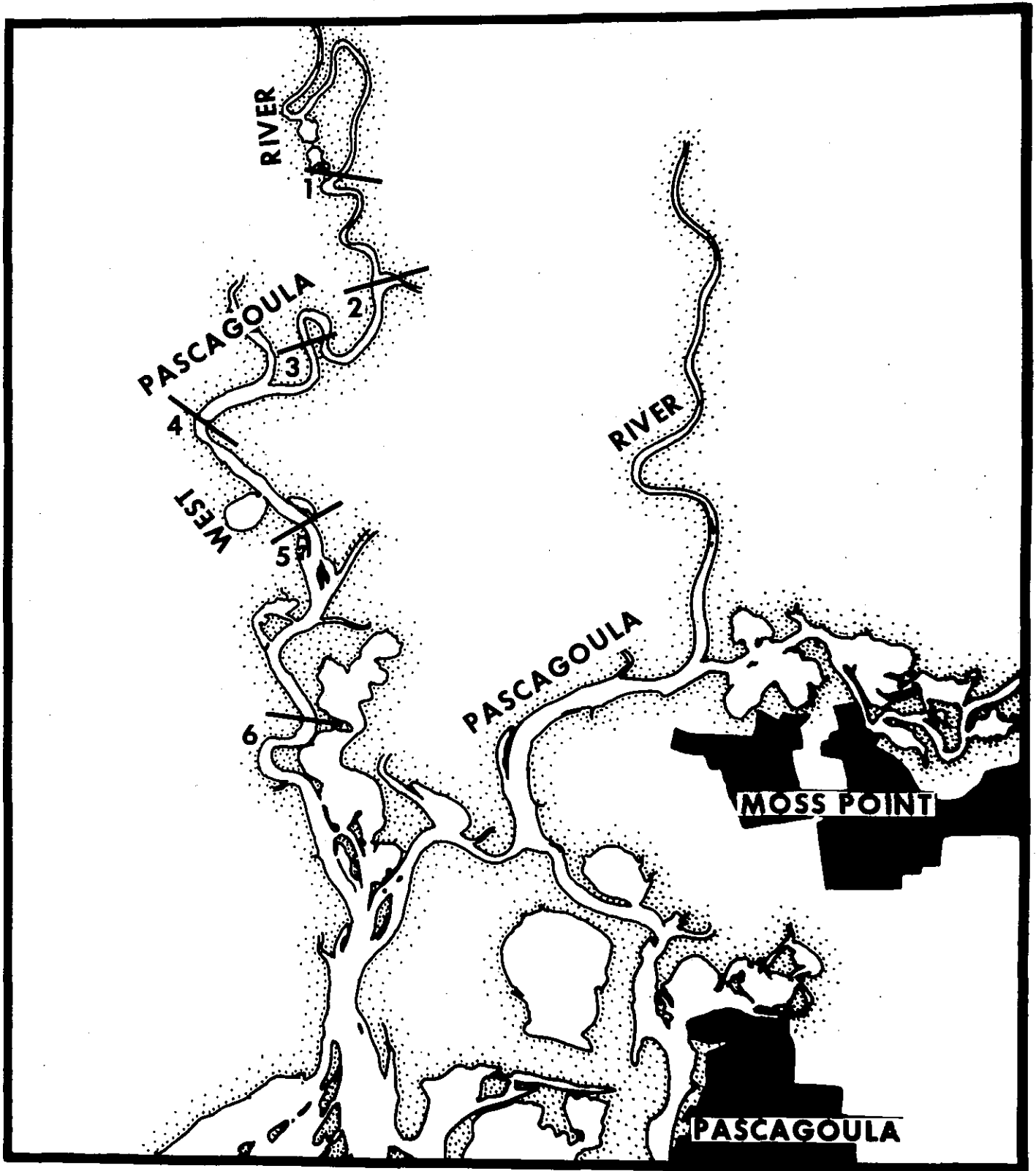


Figure 47.—Area 6: Stream IV - West Pascagoula River.

Stream IV - W. Pascagoula River, Miss.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-3-68 Time: 1610-1725

1	66	0.2	31.3	0
2	79	0.3	31.2	0
3	88	0.9	31.2	0
4	80	2.0	31.3	0
5	76	2.9	31.4	0
6	90	4.0	31.5	1

Total catch----- 1

Date: 7-3-68 Time: 2135-2345

1	-	2.1	30.9	36
2	-	2.3	30.6	89
3	-	2.9	30.6	7
4	-	3.8	30.5	7
5	-	4.2	30.7	18
6	-	4.6	30.6	69

Total catch----- 226

Date: 6-28-69 Time: 1500-1615

1	82	-	-	0
2	91	-	-	0
3	95	-	-	0
4	88	-	-	0
5	96	-	-	0
6	98	-	-	0

Total catch----- 0

Date: 6-28-69 Time: 2040-2235

1	-	0.3	31.7	0
2	-	0.5	31.7	1
3	-	0.6	31.8	12
4	-	1.7	31.7	15
5	-	2.5	31.8	153
6	-	3.9	32.1	72

Total catch----- 253

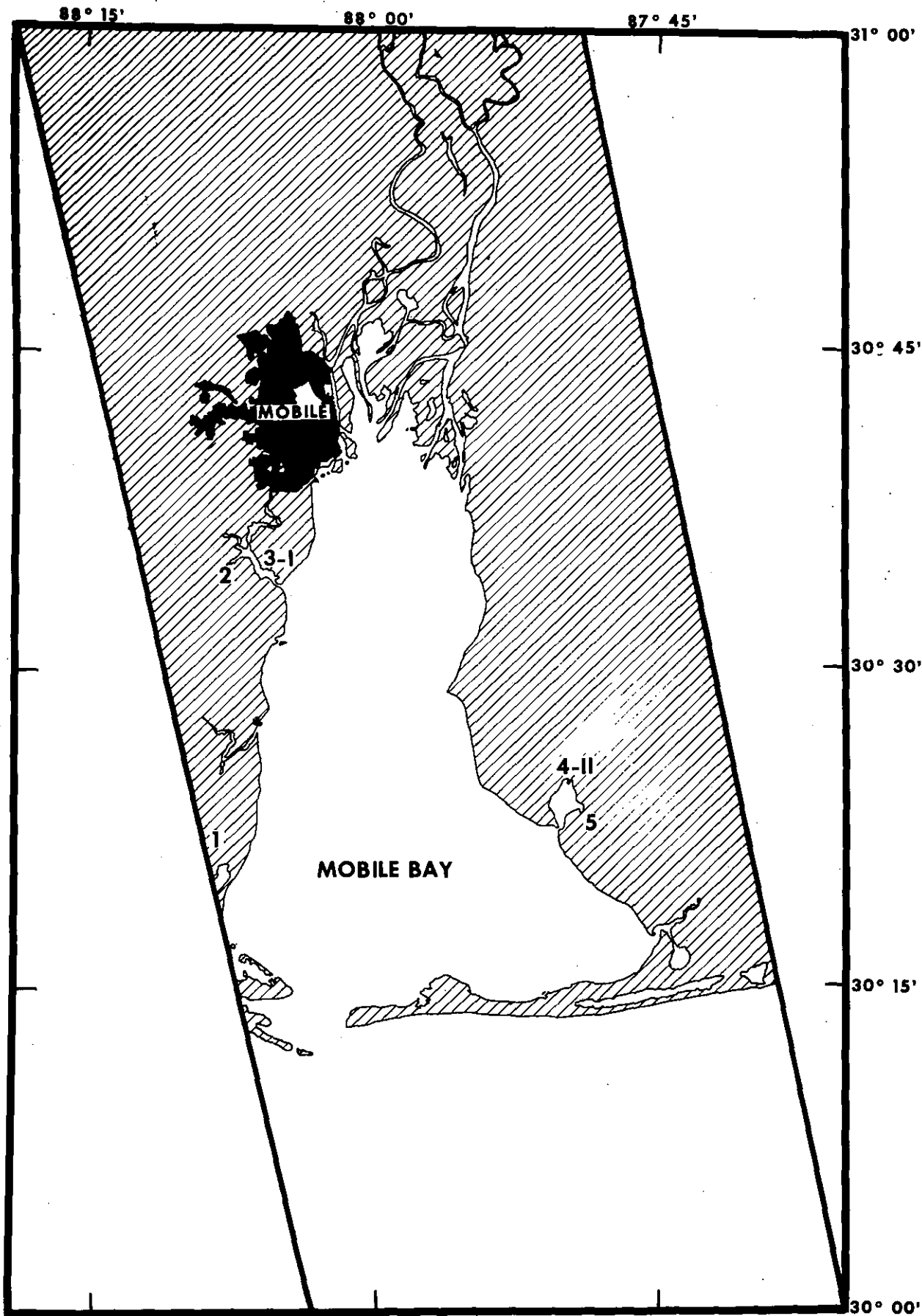


Figure 48.—Area 7: Mobile Bay, Ala.

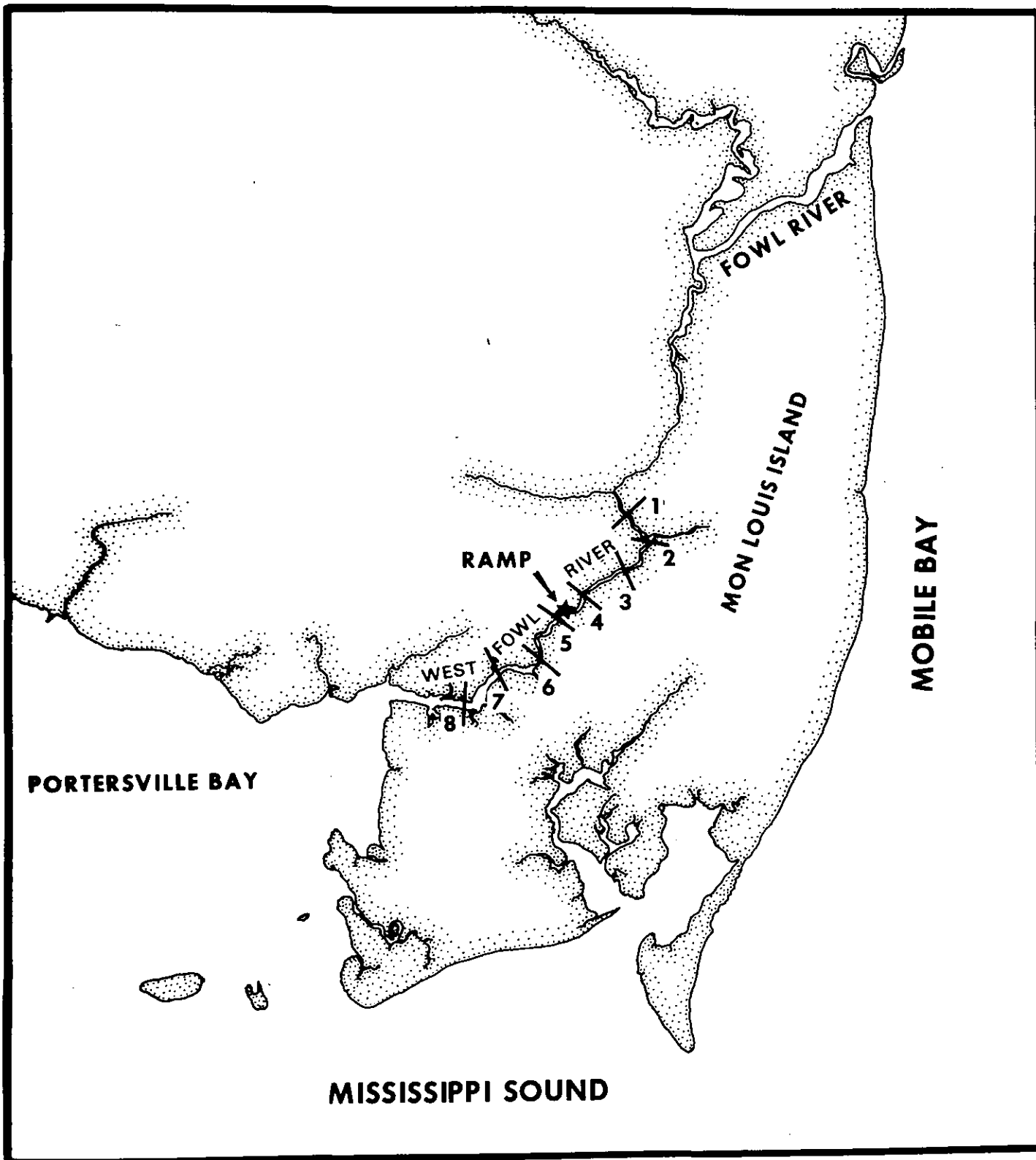


Figure 49.—Area 7: Stream 1 - West Fowl River.

Stream 1 - West Fowl River, Ala.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-8-64 Time: 1645-1815				
1	39	0.1	26.1	0
2	41	1.3	27.6	0
3	42	2.5	28.0	0
4	53	4.5	28.7	1
5	57	5.0	29.0	1
6	57	6.5	29.0	0
7	44	6.7	28.6	0
8	43	8.8	27.9	0
Total catch-----				2

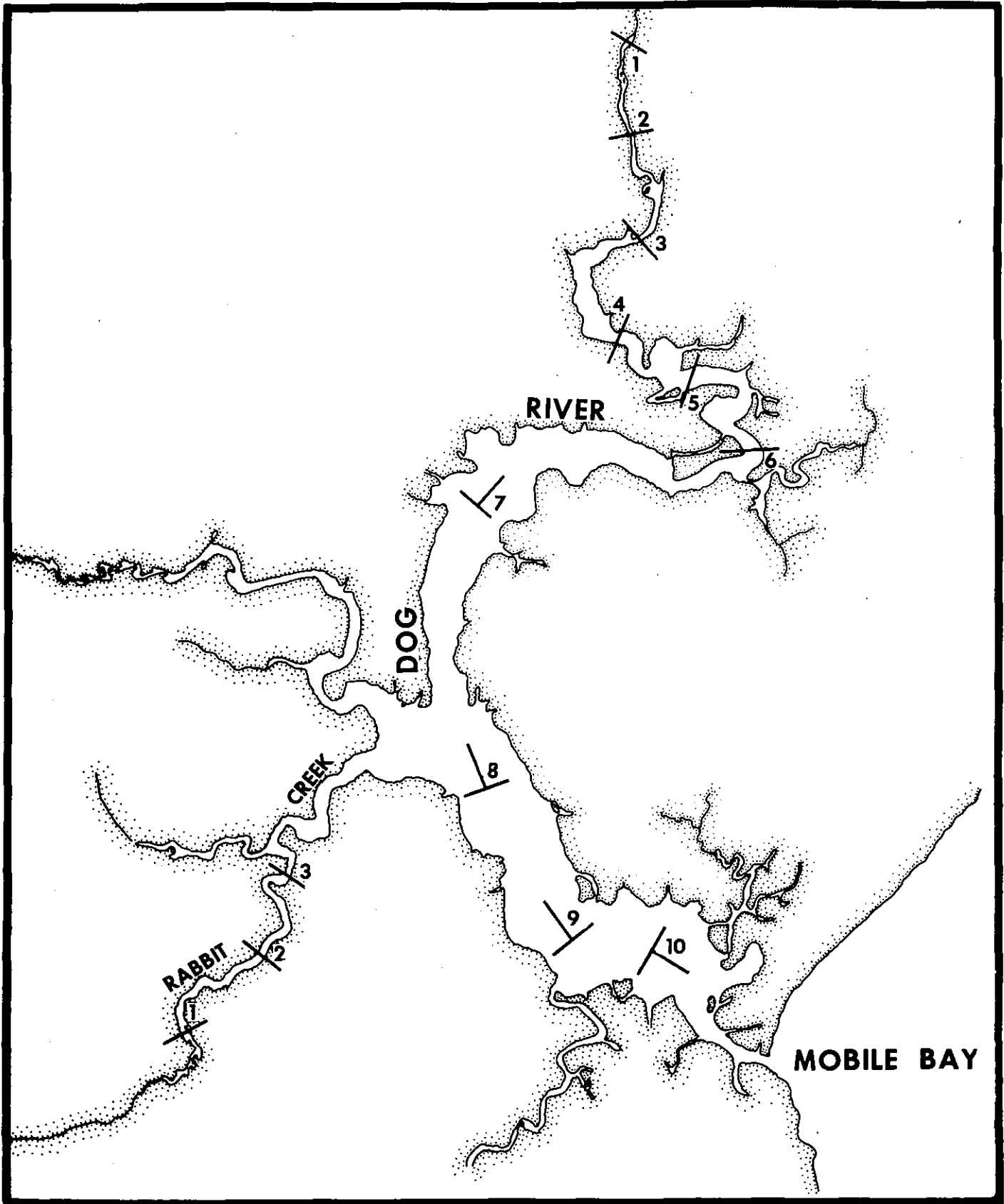


Figure 50.—Area 7: Stream 2 - Rabbit Creek; Stream 3 - Dog River.

Stream 2 - Rabbit Creek, Ala.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-7-65 Time: 1015-1045				
1	86	0.2	28.0	0
2	90	0.4	30.0	0
3	70	1.1	31.1	0
Total catch-----				0
Date: 8-4-65 Time: 0730-0755				
1	43	0.7	29.3	4
2	51	1.4	29.3	2
3	50	3.2	29.5	0
Total catch-----				6

Stream 3 - Dog River, Ala.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-7-65 Time: 1100-1410

1	20	0.2	29.8	10,792
2	28	0.2	30.9	15,750
3	33	0.3	31.7	6,496
4	43	0.4	31.5	263
5	51	0.4	32.3	73
6	52	0.6	31.6	122
7	49	1.0	32.3	426
8	49	1.3	30.7	25
9	45	2.3	30.9	2
10	52	3.2	30.3	0

Total catch----- 33,949

Date: 8-4-65 Time: 0810-1110

1	50	0.2	29.5	63
2	55	0.8	29.5	40
3	52	1.0	29.4	10
4	53	1.5	29.5	66
5	44	2.5	29.0	53
6	50	3.0	29.3	0
7	54	3.1	29.4	0
8	56	3.3	29.7	0
9	55	3.5	29.7	0
10	59	4.0	29.9	0

Total catch----- 232

Date: 6-6-66 Time: 0845-1335

1	21	0.3	27.2	61,464
2	27	0.3	27.3	68,991
3	31	0.4	28.1	22,380
4	40	0.5	29.0	12,595
5	40	0.7	28.2	492
6	43	1.1	29.4	4
7	42	1.6	29.0	1,312
8	60	4.2	28.6	19
9	73	5.5	28.4	11
10	75	5.5	28.8	0

Total catch-----167,268

Stream 3 - Dog River, Ala. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-22-66 Time: 1110-1320				
1	34	0	29.8	2,826
2	35	0	30.8	40,161
3	34	0.1	32.0	6,708
4	33	0.5	32.5	3,325
5	39	1.2	32.2	515
6	41	1.4	32.2	302
7	38	2.3	29.9	645
8	39	4.0	32.5	54
9	55	4.5	32.9	0
10	51	6.7	33.5	0
Total catch-----				54,536
Date: 8-30-66 Time: 0855-1145				
1	6	0.1	26.2	1,151
2	10	0.2	26.2	1,973
3	29	0.2	27.1	13,310
4	41	0.3	28.4	245
5	56	0.9	28.6	405
6	46	1.6	28.3	33,191
7	42	3.2	28.2	5,906
8	51	4.5	28.9	117
9	58	6.0	29.6	0
10	62	11.6	28.6	0
Total catch-----				56,298
Date: 7-7-67 Time: 1700-1925				
1	29	0.1	29.2	4
2	30	0.4	29.5	0
3	35	0.5	29.8	33
4	29	0.6	29.9	6
5	25	1.4	30.0	0
6	34	2.2	29.7	9
7	39	3.1	29.1	1
8	41	3.3	30.6	0
9	45	4.7	31.0	0
10	39	4.9	30.6	0
Total catch-----				53

Stream 3 - Dog River, Ala. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-2-68 Time: 0815-1130				
1	22	0.4	30.0	2
2	20	0.6	30.1	103,750
3	17	0.9	30.7	39,392
4	20	1.3	30.5	22,330
5	24	1.8	30.4	10,982
6	29	2.6	30.4	108
7	22	3.8	31.4	12
8	27	4.9	31.3	0
9	21	6.5	30.0	0
10	18	7.3	30.2	0

Total catch-----176,576

Date: 6-28-69 Time: 0825-1400

1	40	0.2	31.2	0
2	38	0.4	32.0	1,440
3	35	0.5	32.5	1,560
4	36	0.9	32.3	65
5	39	1.0	32.8	1,150
6	42	1.9	32.7	112
7	39	3.3	32.6	63
8	32	3.9	33.0	228
9	35	4.5	33.3	20
10	42	6.2	31.8	1

Total catch----- 4,639

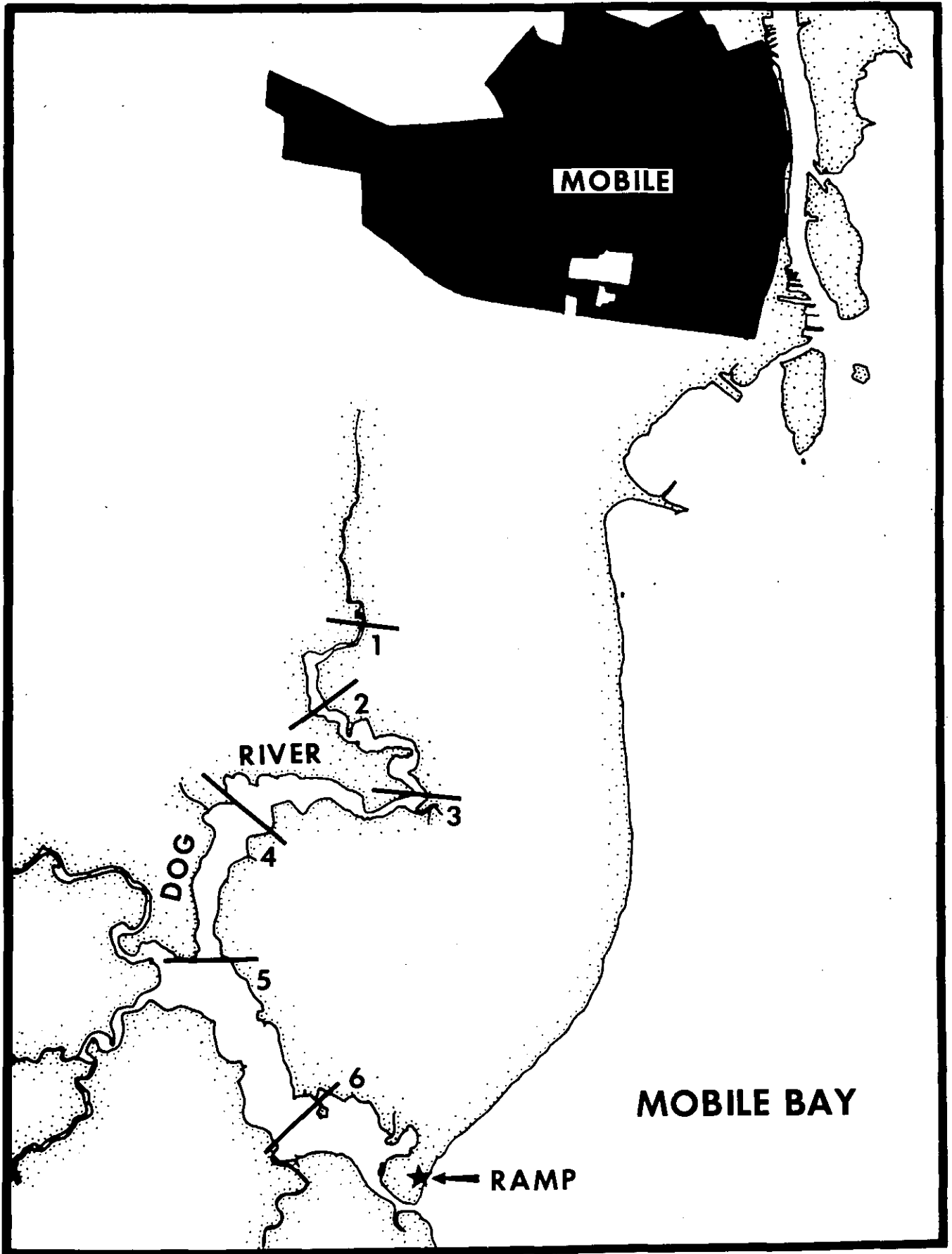


Figure 51.—Area 7: Stream I - Dog River.

Stream I - Dog River, Ala.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-30-69 Time: 1300-1440				
1	25	0.3	32.5	5,785
2	34	0.9	33.3	2,165
3	36	2.2	31.2	1,872
4	40	3.7	32.3	175
5	46	5.0	32.7	38
6	52	4.8	32.8	21
Total catch-----				10,056
Date: 6-30-69 Time: 2145-2340				
1	-	0.1	30.0	19
2	-	0.4	30.9	11,880
3	-	1.4	31.0	9,933
4	-	2.7	31.4	116
5	-	3.5	30.9	18
6	-	4.0	31.1	103
Total catch-----				22,069

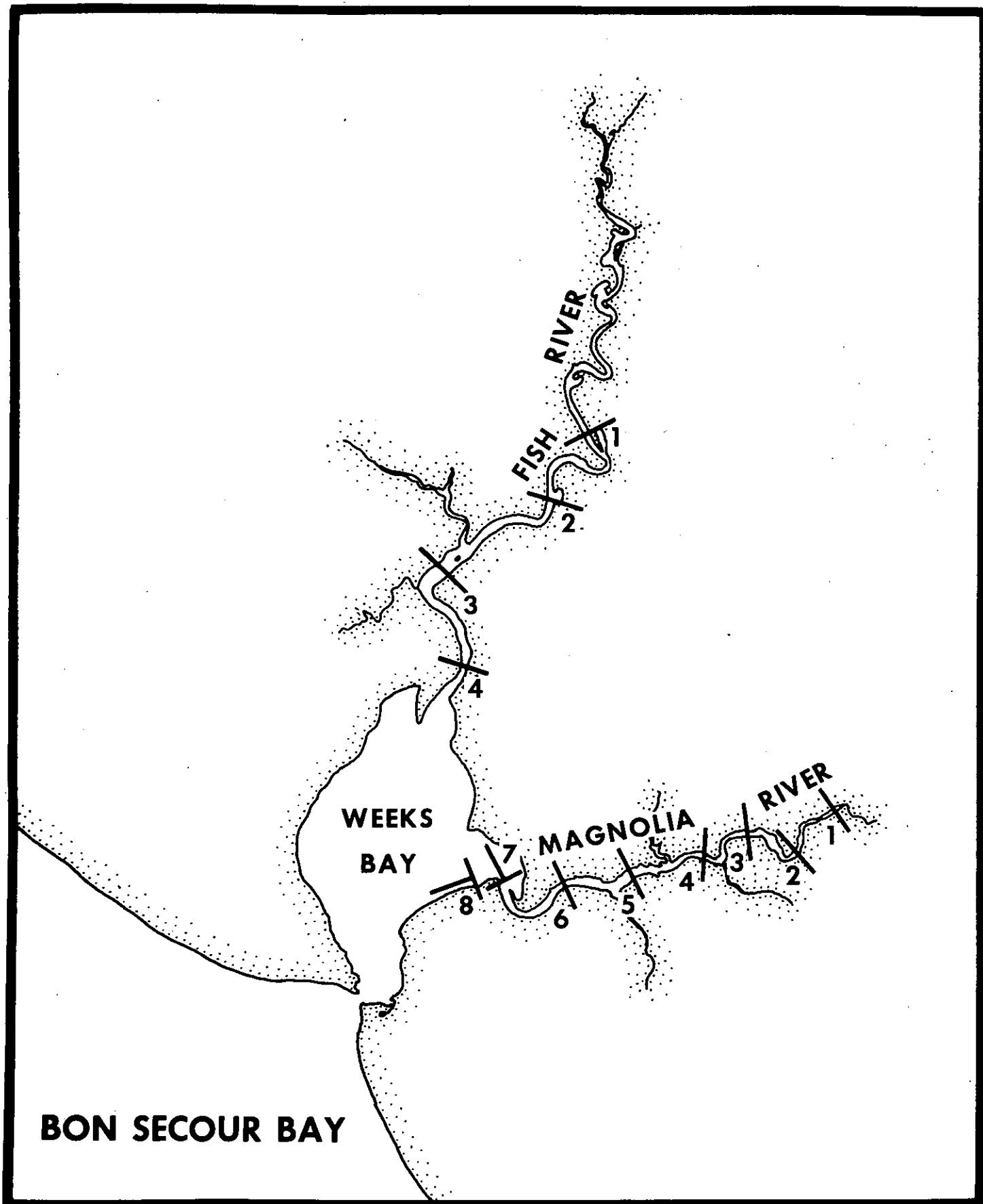


Figure 52.—Area 7: Stream 4 - Fish River; Stream 5 - Magnolia River.

Stream 4 - Fish River, Ala.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-8-65 Time: 1300-1345

1	62	0	27.2	0
2	62	0.2	28.4	0
3	62	0.3	28.5	0
4	72	0.6	28.7	0

Total catch----- 0

Date: 8-4-65 Time: 1550-1655

1	30	0.9	26.8	0
2	28	0.3	25.1	8
3	25	0.5	24.2	0
4	30	5.2	26.9	0

Total catch----- 8

Stream 5 - Magnolia River, Ala.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-10-64 Time: 0950-1210				
1	7	0	23.7	3
2	22	1.1	23.8	442
3	17	0.7	24.3	1,273
4	26	2.2	25.3	449
5	31	3.1	25.8	17
6	18	5.4	26.1	415
7	30	6.4	27.1	5
8	48	7.2	27.2	71
Total catch-----				2,675

Date: 7-8-65 Time: 1010-1140

1	100+	0.2	27.9	0
2	100+	0.5	27.9	0
3	100+	0.6	28.2	0
4	83	1.2	28.5	0
5	62	1.4	29.1	1
6	70	2.6	29.5	18
7	44	3.7	29.4	78
8	47	3.8	29.5	8
Total catch-----				105

Date: 8-4-65 Time: 1340-1530

1	48	2.8	22.9	11
2	35	3.4	23.0	19
3	32	5.8	23.4	21
4	33	2.4	24.2	8
5	31	0.5	25.5	4
6	35	0.3	26.0	0
7	30	1.2	26.2	0
8	-	-	-	-
Total catch-----				63

Stream 5 - Magnolia River, Ala. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-8-67 Time: 1015-1155

1	100+	0.3	24.8	0
2	100+	2.0	26.5	0
3	100+	3.0	29.5	0
4	100+	4.1	30.5	0
5	100+	7.1	31.1	0
6	100+	11.2	30.2	0
7	-	-	-	-
8	-	-	-	-

Total catch----- 0

Date: 7-2-68 Time: 1340-1520

1	100+	1.1	27.3	0
2	100+	3.0	27.9	0
3	100+	3.5	30.0	0
4	100+	4.2	30.5	0
5	100+	9.4	30.8	0
6	100+	10.9	30.3	0
7	-	-	-	-
8	-	-	-	-

Total catch----- 0

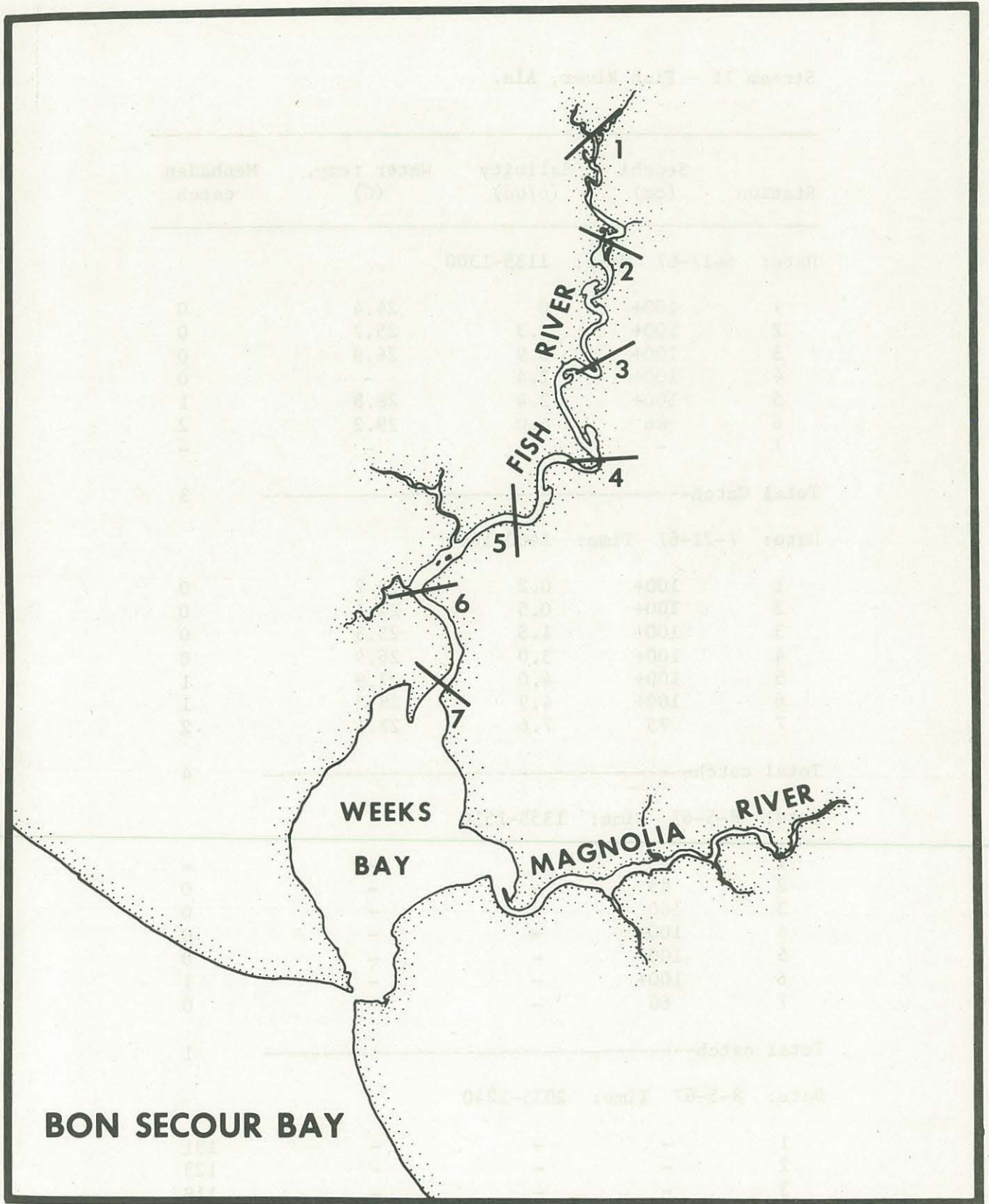


Figure 53.—Area 7: Stream II - Fish River.

Stream II - Fish River, Ala.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-17-67 Time: 1135-1300				
1	100+	0	24.4	0
2	100+	0.3	25.7	0
3	100+	0.9	26.9	0
4	100+	2.4	-	0
5	100+	2.4	28.8	1
6	86	4.0	29.2	2
7	-	-	-	-
Total Catch-----				3
Date: 7-21-67 Time: 1400-1600				
1	100+	0.2	25.2	0
2	100+	0.5	24.1	0
3	100+	1.5	25.8	0
4	100+	3.0	26.9	0
5	100+	4.0	27.9	1
6	100+	4.9	28.2	1
7	75	7.6	27.6	2
Total catch-----				4
Date: 8-5-67 Time: 1355-1510				
1	-	-	-	-
2	85	-	-	0
3	100	-	-	0
4	100+	-	-	0
5	100+	-	-	0
6	100+	-	-	1
7	60	-	-	0
Total catch-----				1
Date: 8-5-67 Time: 2035-2240				
1	-	-	-	131
2	-	-	-	123
3	-	-	-	118
4	-	-	-	178
5	-	-	-	22
6	-	-	-	21
7	-	-	-	-
Total catch-----				593

Stream II - Fish River, Ala. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-5-68 Time: 1420-1550

1	100+	0.1	24.2	0
2	100+	0.3	26.7	0
3	100+	0.9	28.4	0
4	100+	1.5	29.0	0
5	89	2.5	29.8	0
6	74	3.2	30.2	1
7	-	-	-	-

Total catch----- 1

Date: 7-5-68 Time: 2040-2250

1	-	0.2	24.1	0
2	-	0.4	26.5	3
3	-	0.6	27.4	12
4	-	1.5	28.3	564
5	-	2.0	28.7	917
6	-	3.4	29.5	6,786
7	-	-	-	-

Total catch----- 8,282

Date: 7-1-69 Time: 2030-2220

1	-	0	24.5	0
2	-	0	27.8	0
3	-	0	28.3	7
4	-	0.2	28.8	350
5	-	0.8	28.6	608
6	-	1.3	29.4	21,186
7	-	-	-	-

Total catch----- 22,151

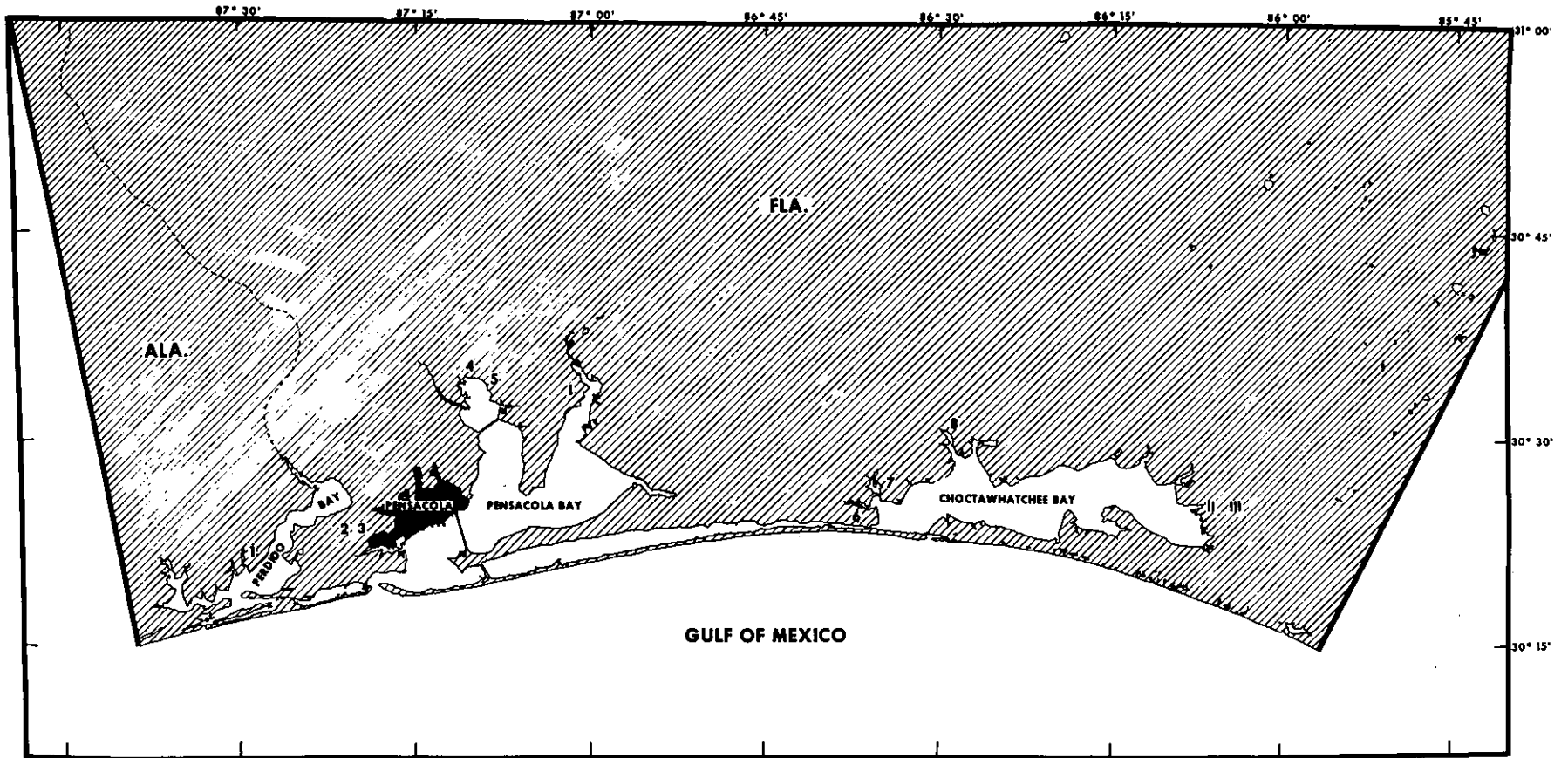


Figure 54.—Area 8: Perdido Bay, Ala., to Choctawhatchee Bay, Fla.

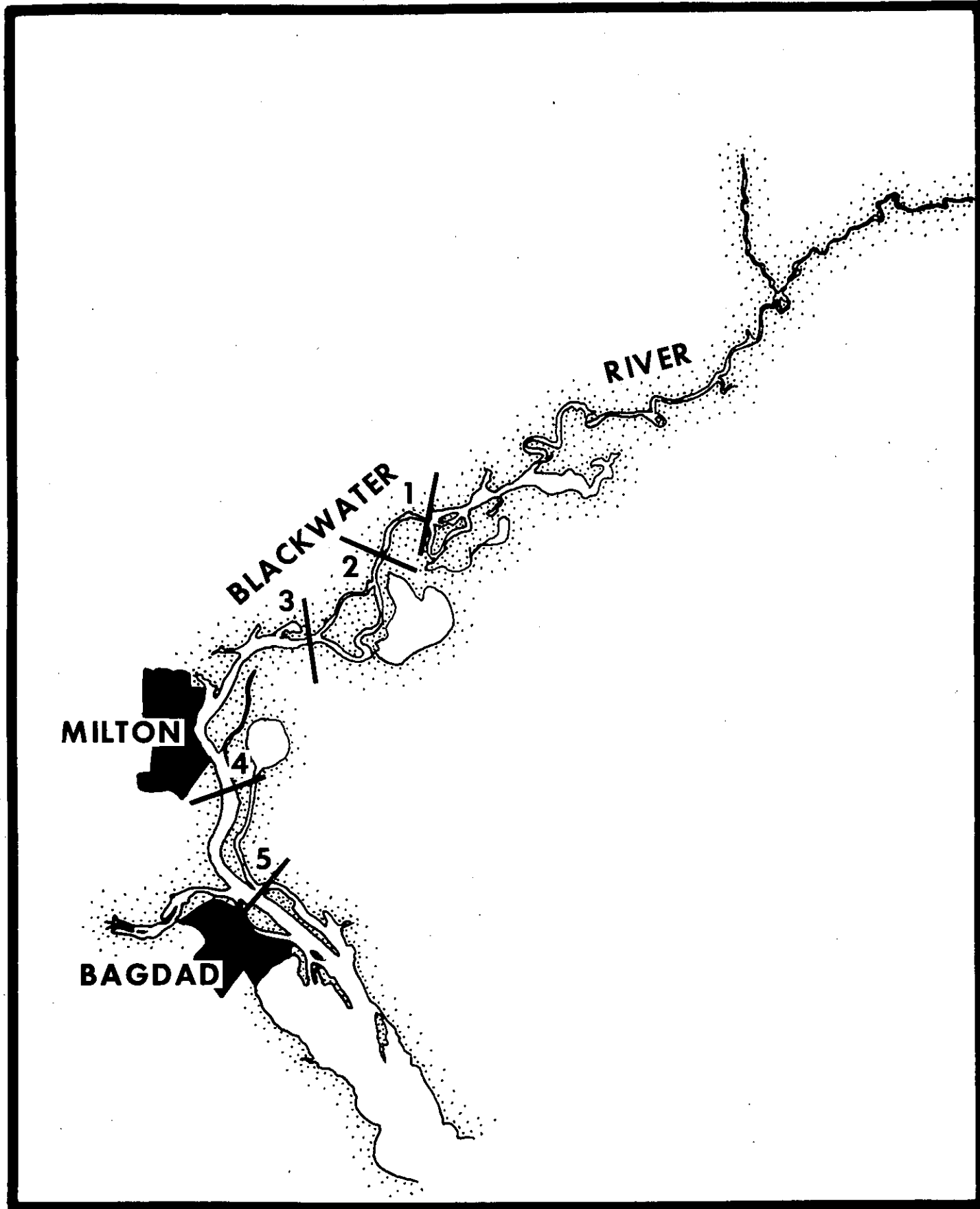


Figure 55.—Area 8: Stream 1 - Blackwater River, Fla.

Stream I - Blackwater River, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-2-69 Time: 2035-2140				
1	-	0	28.5	0
2	-	0	28.2	0
3	-	0	28.9	0
4	-	0.1	29.0	2
5	-	0.2	29.2	3
Total catch-----				5

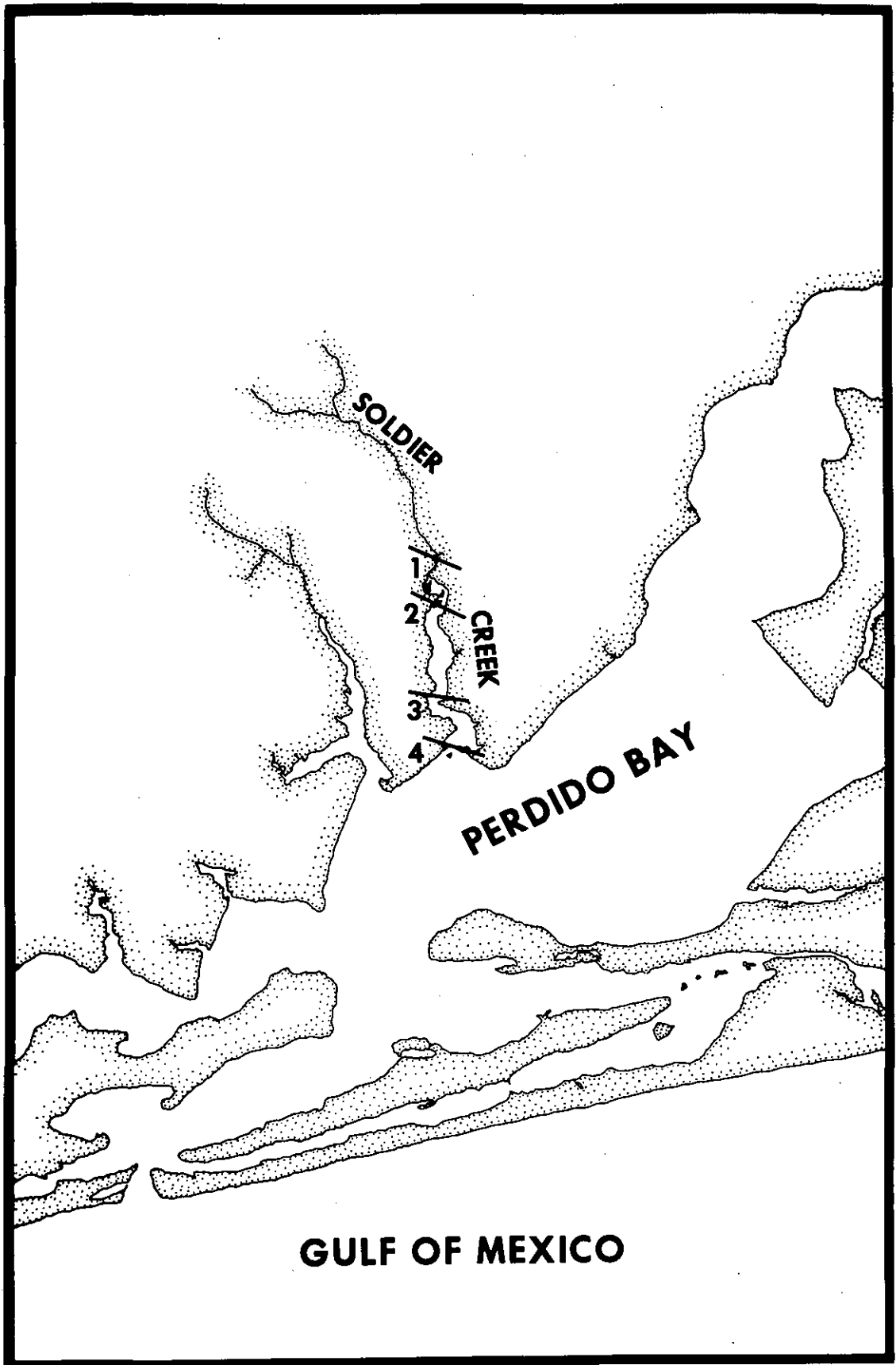
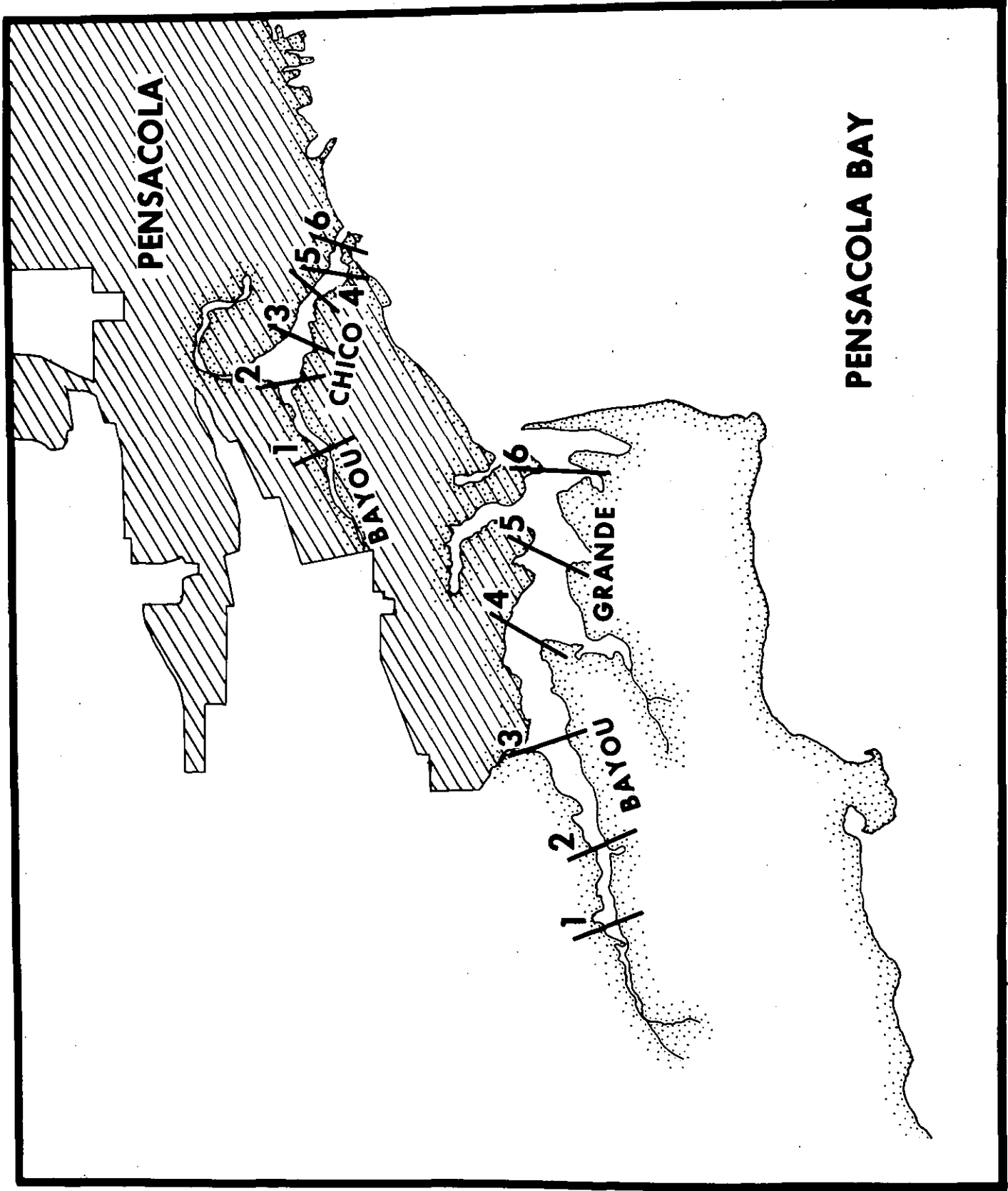


Figure 56.—Area 8: Stream 1 - Soldier Creek, Ala.

Stream 1 - Soldier Creek, Ala.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-10-64 Time: 1645-1725				
1	61	0.1	26.0	0
2	80	1.6	28.8	0
3	100+	5.0	30.1	0
4	100+	6.1	30.4	0
Total catch-----				0



Stream 2 - Bayou Chico, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 8-11-64 Time: 1600-1735

1	63	4.1	30.5	1,216
2	51	9.4	30.5	235
3	48	13.1	30.5	64
4	44	8.4	30.9	44
5	45	20.2	29.1	21
6	61	16.3	30.5	0

Total catch----- 1,580

Date: 7-9-65 Time: 0810-0920

1	47	18.9	30.7	62
2	49	19.6	30.2	0
3	49	19.6	30.0	0
4	59	19.8	29.4	0
5	64	20.5	29.3	0
6	-	-	-	-

Total catch----- 62

Date: 8-5-65 Time: 0720-0940

1	42	11.7	27.4	61
2	44	8.0	25.3	192
3	40	12.5	27.7	35
4	50	12.6	27.3	0
5	85	15.0	27.3	0
6	-	-	-	-

Total Catch----- 288

Stream 2 - Bayou Chico, Fla. Cont.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-23-66 Time: 1235-1345				
1	40	13.5	30.5	185
2	49	21.3	31.6	6
3	46	16.4	32.3	55
4	59	23.4	31.2	0
5	63	23.8	31.6	0
6	-	-	-	-
Total catch-----				246
Date: 7-9-67 Time: 0755-0900				
1	50	14.7	31.0	0
2	48	22.3	30.5	0
3	75	14.6	30.0	3
4	52	21.8	30.6	0
5	100+	23.8	29.7	0
6	-	-	-	-
Total catch-----				3

Stream 3 - Bayou Grande, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-9-65 Time: 1040-1120				
1	-	-	-	-
2	72	19.0	32.6	0
3	-	-	-	-
4	82	20.1	30.8	0
5	-	-	-	-
6	100+	20.3	30.6	0
Total catch-----				0
Date: 8-5-65 Time: 1010-1140				
1	53	13.7	26.2	0
2	59	13.0	26.9	0
3	55	13.2	26.8	0
4	68	15.0	27.2	0
5	76	15.8	27.5	0
6	93	16.5	27.6	0
Total catch-----				0

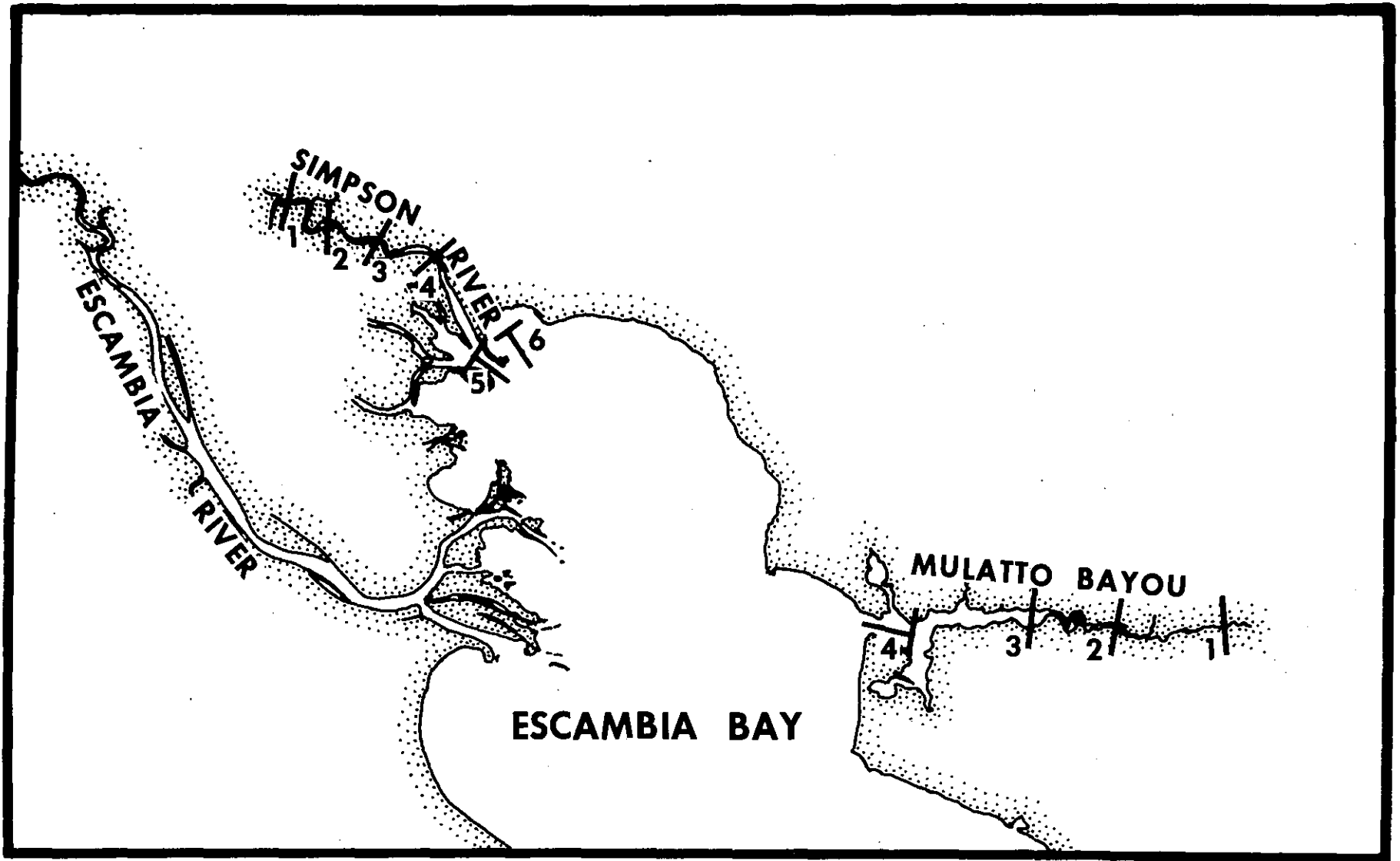


Figure 58.—Area 8: Stream 4 - Simpson River; Stream 5 - Mulatto Bayou.

Stream 4 - Simpson River, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-9-67 Time: 1245-1435				
1	42	0	29.0	0
2	41	0	29.4	0
3	40	0	29.8	0
4	45	0.3	29.8	0
5	48	2.5	29.7	0
6	55	3.7	29.5	0
Total catch-----				0

Stream 5 - Mulatto Bayou, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-11-64 Time: 1210-1300				
1	48	0.5	28.9	0
2	43	0.3	28.6	0
3	52	1.7	29.1	10
4	59	3.2	28.9	0
Total catch-----				10
Date: 7-2-68 Time: 1840-1955				
1	45	14.2	31.9	7,696
2	38	15.5	31.4	4,494
3	34	16.2	31.3	1,029
4	35	16.8	31.0	21
Total catch-----				13,240

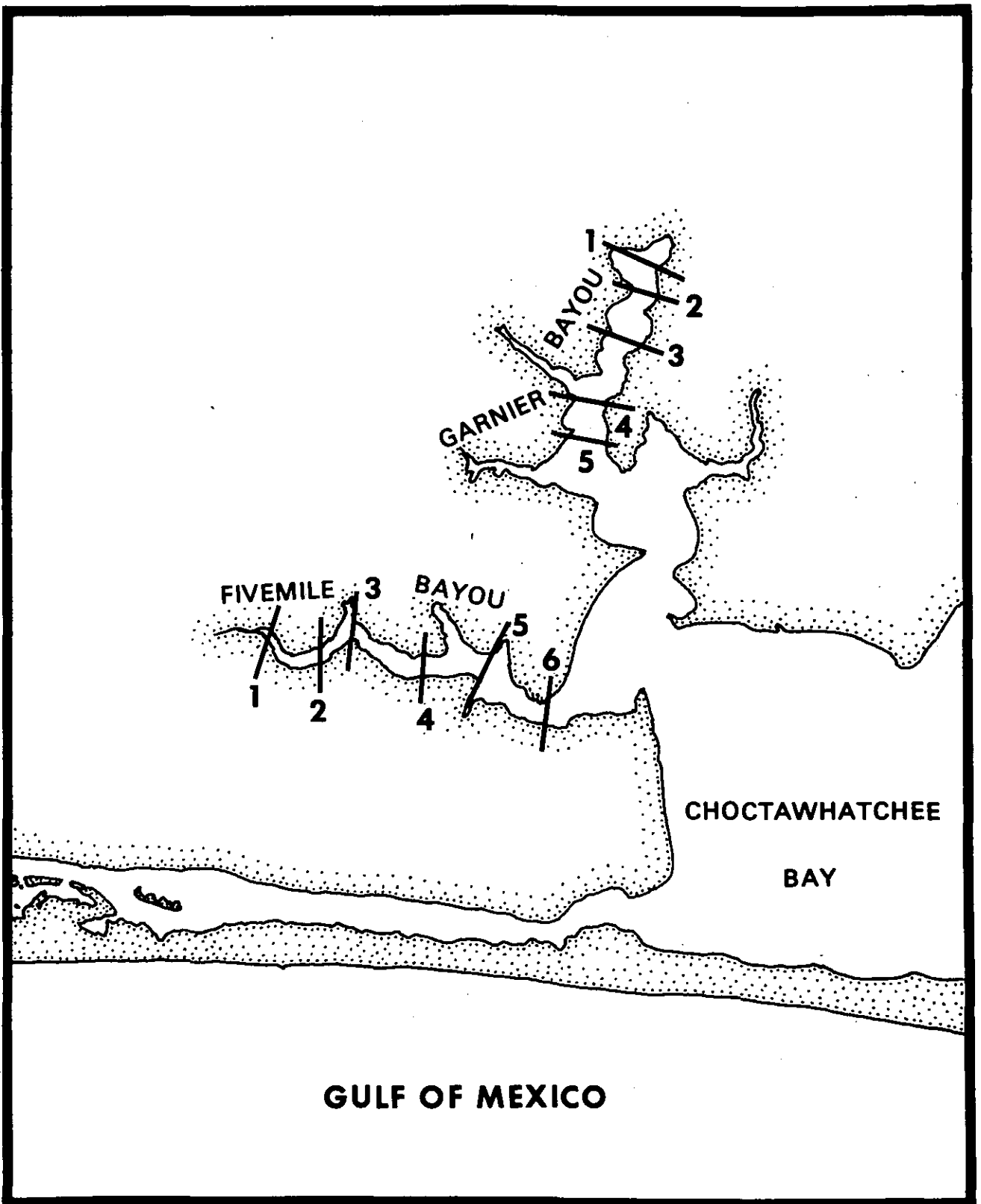


Figure 59.—Area 8: Stream 6 - Fivemile Bayou; Stream 7 - Garnier Bayou.

Stream 6 - Fivemile Bayou, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 8-5-65 Time: 1345-1515

1	100+	10.8	27.9	0
2	100+	11.3	28.2	0
3	100+	12.0	28.6	0
4	100+	12.7	28.6	0
5	100+	13.9	28.9	0
6	100+	14.6	29.3	0

Total catch----- 0

Date: 6-4-66 Time: 1130-1350

1	100+	13.5	26.6	0
2	100+	19.0	27.8	0
3	100+	19.0	27.8	0
4	100+	19.9	27.4	0
5	100+	19.5	26.4	0
6	-	-	-	-

Total catch----- 0

Stream 7 - Garnier Bayou, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-4-66 Time: 1310-1400				
1	100+	12.7	27.7	0
2	100+	16.3	27.8	0
3	100+	16.6	27.5	0
4	100+	17.7	27.1	0
5	100+	19.8	27.0	0
Total catch-----				0

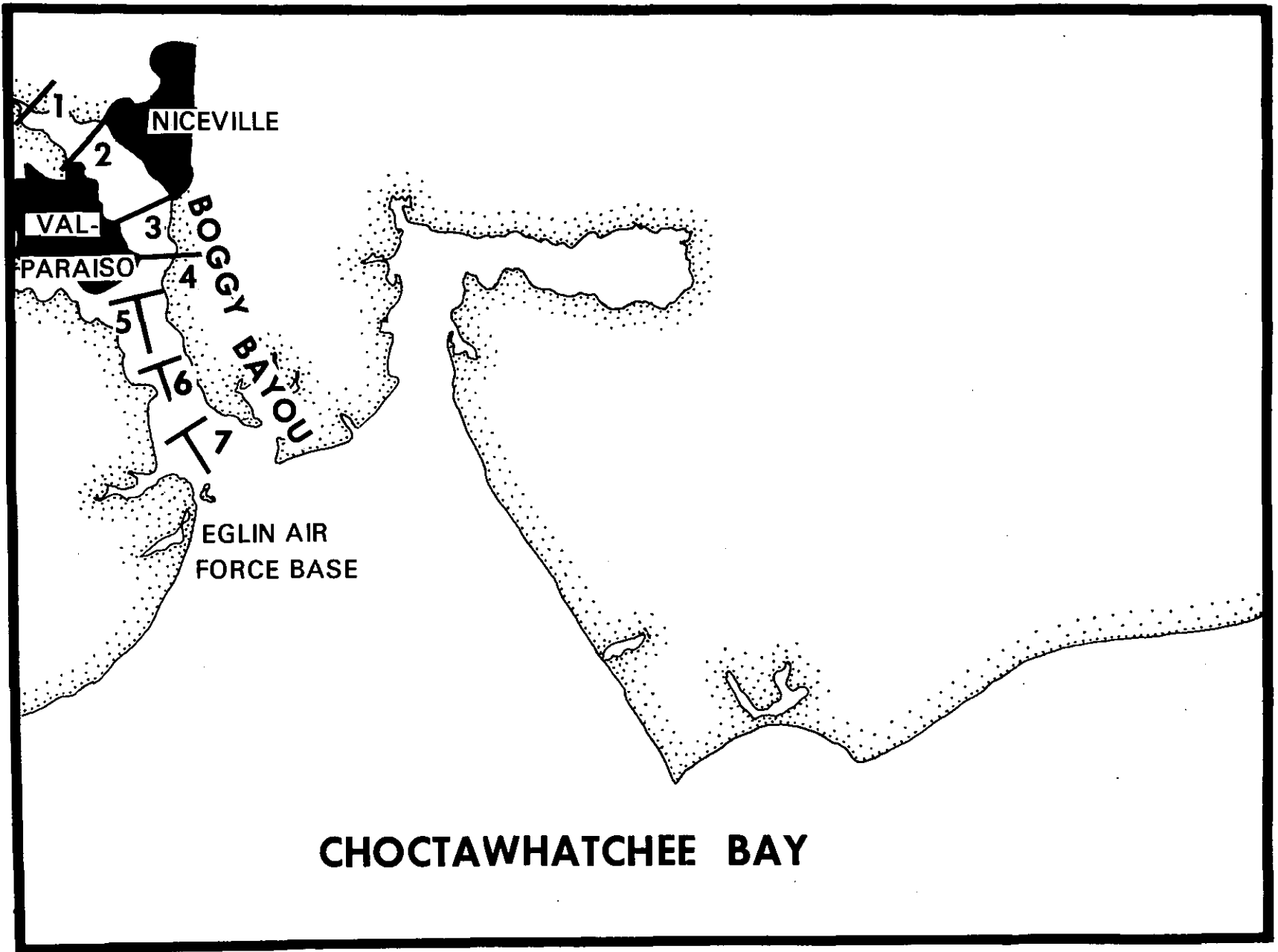


Figure 60.—Area 8: Stream 8 - Boggy Bayou.

Stream 8 - Boggy Bayou Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-5-65 Time: 1610-1800				
1	100+	0.8	26.5	0
2	100+	2.7	27.2	0
3	100+	4.4	27.4	0
4	100+	6.9	27.8	0
5	100+	7.4	28.4	0
6	100+	9.5	29.3	0
7	100+	12.1	29.3	0
Total catch-----				0
Date: 7-10-67 Time: 1805-2040				
1	100+	0.3	29.8	0
2	100+	4.7	30.2	0
3	100+	5.9	31.4	0
4	100+	10.2	30.7	0
5	100+	14.3	31.0	0
6	-	-	-	-
7	-	-	-	-
Total catch-----				0
Date: 7-3-68 Time: 0730-0900				
1	100+	22.3	31.6	0
2	100+	20.4	31.1	0
3	100+	21.8	31.2	0
4	100+	22.5	31.4	0
5	100+	23.6	31.7	0
6	-	-	-	-
7	-	-	-	-
Total catch-----				0

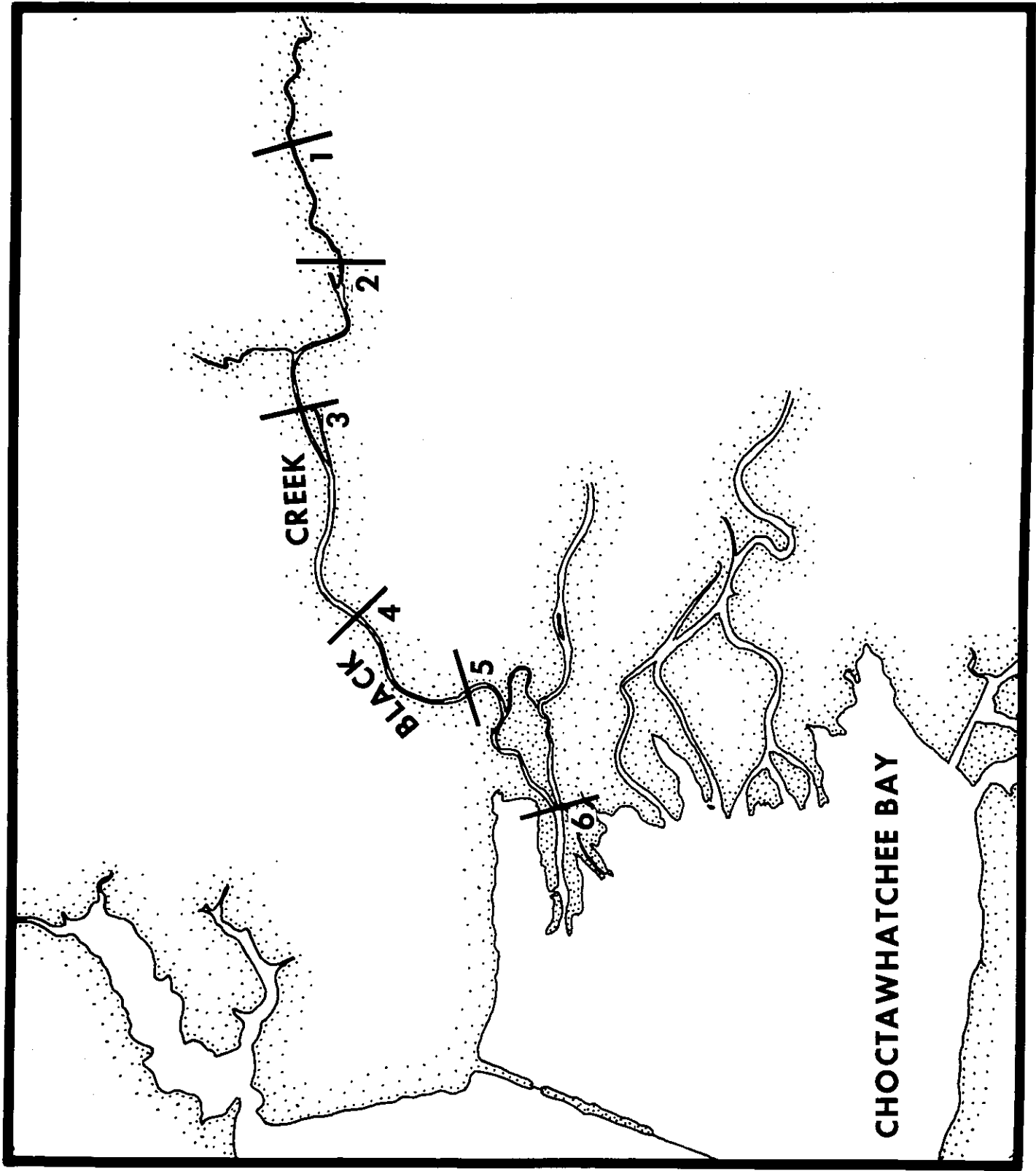


Figure 61.—Area 8: Stream II - Black Creek.

Stream II - Black Creek, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-20-67 Time: 1340-1440

1	-	-	-	-
2	100+	0.7	27.8	0
3	100+	1.0	28.4	0
4	100+	1.3	28.9	0
5	100+	3.1	27.4	0
6	-	-	-	-

Total catch----- 0

Date: 7-6-68 Time: 1605-1740

1	100+	0.5	25.4	9
2	100+	1.2	26.2	4
3	100+	1.1	26.9	11
4	100+	1.5	27.5	0
5	100+	1.7	27.5	0
6	100+	3.7	28.7	0

Total catch----- 24

Date: 7-6-68 Time: 2100-2335

1	-	0.7	25.0	7
2	-	1.1	26.1	23,118
3	-	1.6	26.2	87,220
4	-	3.2	27.5	48,396
5	-	1.9	27.0	83,757
6	-	5.3	28.0	1,502

Total catch-----244,000

Date: 7-3-69 Time: 2040-2235

1	100+ ^{1/}	0.5	31.1	0
2	100+	0.8	31.7	0
3	100+	0.9	30.9	0
4	100+	1.0	30.6	0
5	100+	1.1	30.4	0
6	100+	1.7	31.2	6

Total catch----- 6

^{1/} Secchi readings made earlier on the same day.

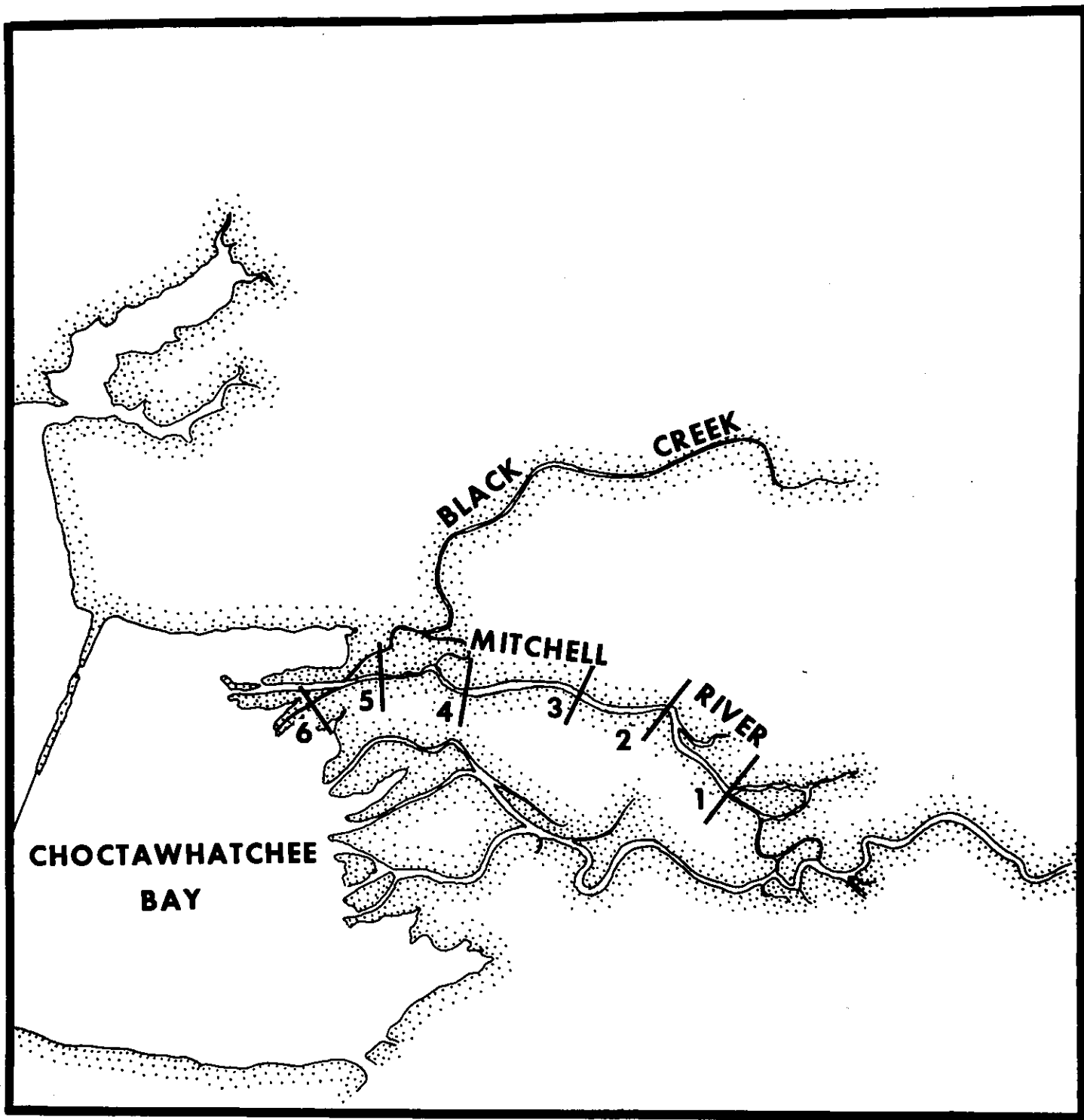


Figure 62.—Area 8: Stream III - Mitchell River.

Stream III - Mitchell River, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-9-67 Time: 0940-1140				
1	51	0.2	28.4	0
2	43	0.4	27.9	0
3	43	0.4	28.0	0
4	43	1.3	28.0	0
5	43	1.3	28.1	0
6	58	3.5	30.5	57
Total catch-----				57
Date: 7-20-67 Time: 1025-1200				
1	90	0.3	26.9	0
2	95	0.3	27.0	0
3	92	0.6	27.2	0
4	98	1.2	27.1	0
5	100+	1.7	27.3	0
6	100+	8.4	28.1	0
Total catch-----				0

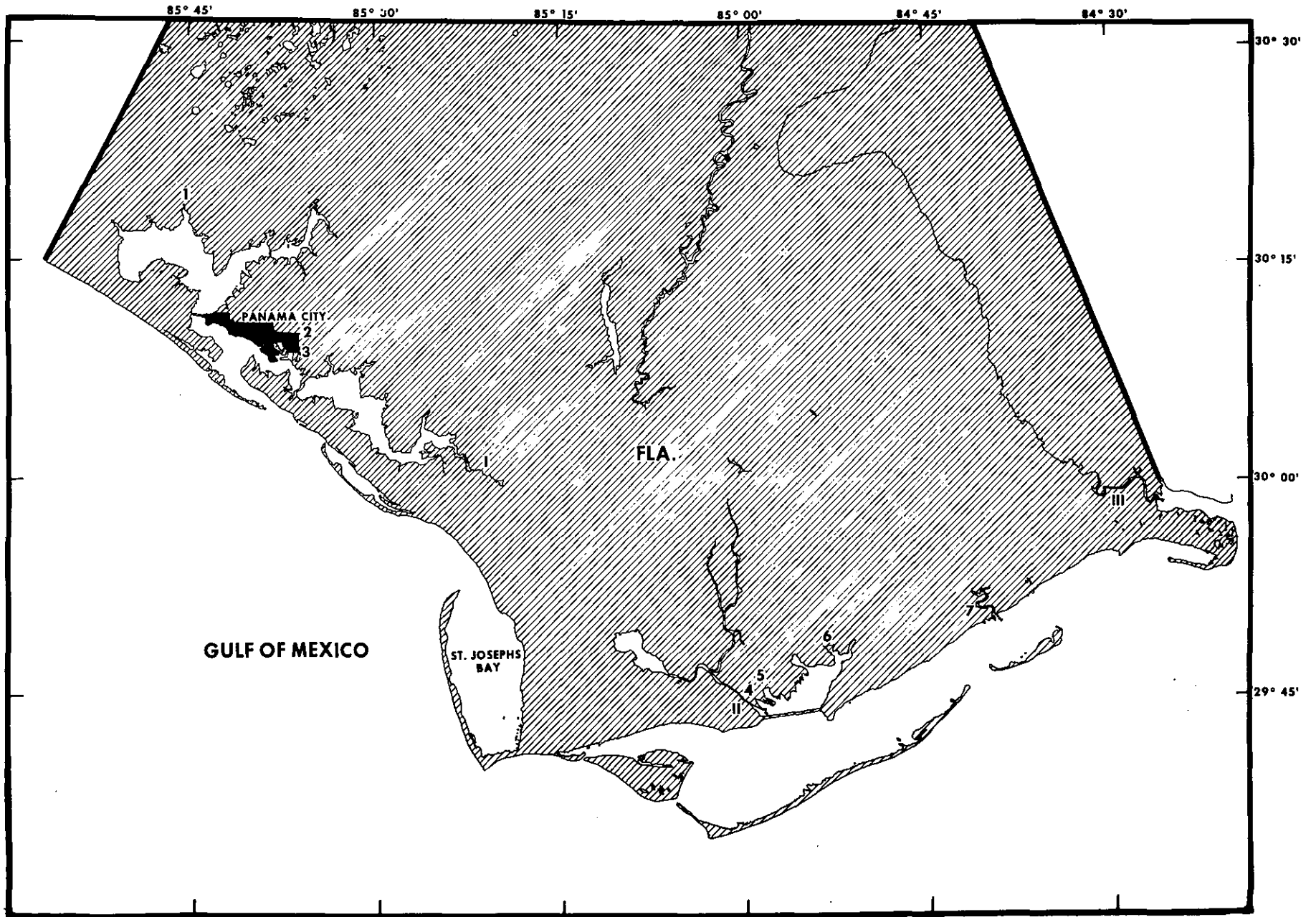


Figure 63.—Area 9: Panama City to Ochlockonee River, Fla.

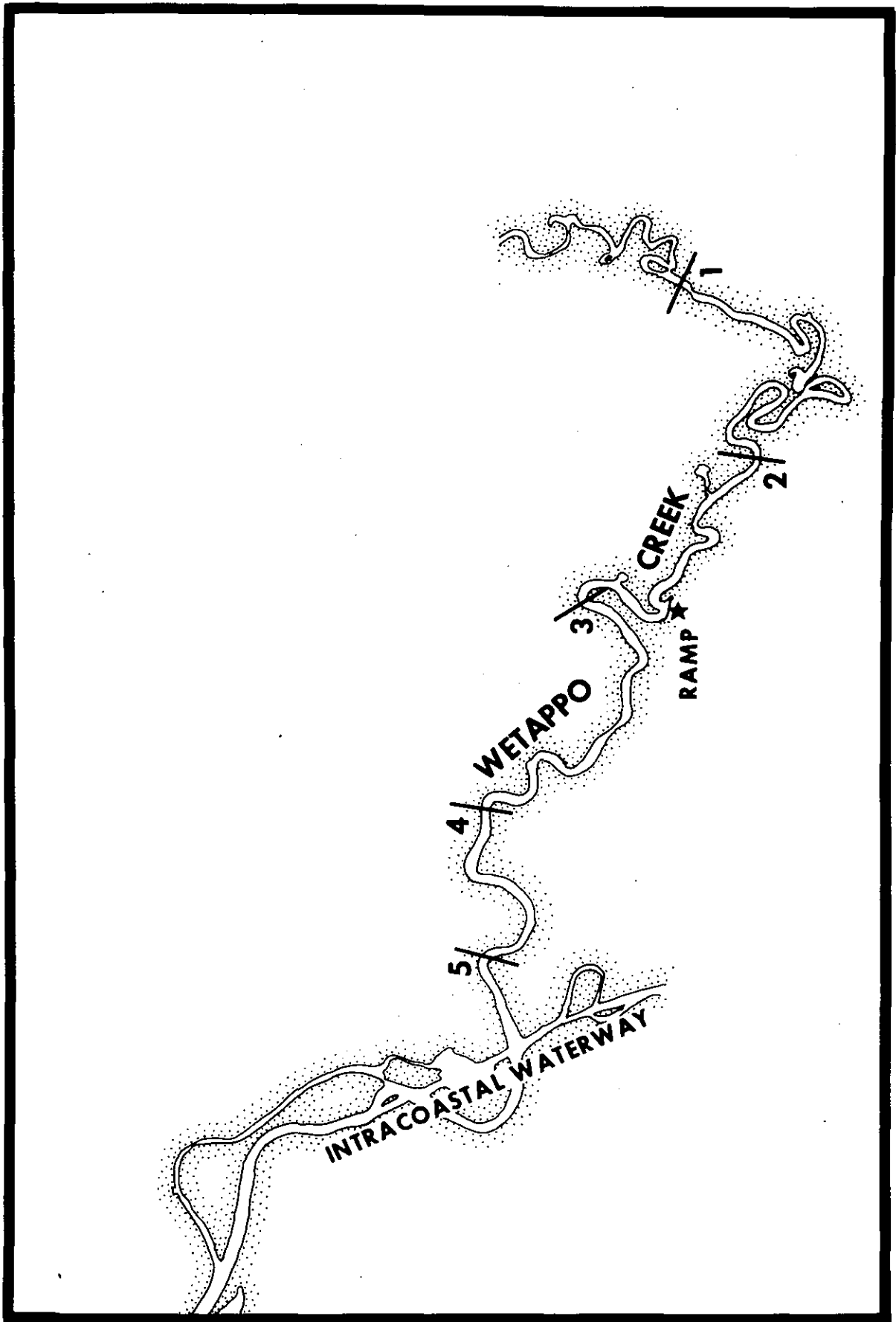


Figure 64.—Area 9: Stream 1 - Wetappo Creek.

Stream I - Wetappo Creek, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-5-69 Time: 2050-2230				
1	-	1.0	29.3	0
2	-	3.0	30.1	0
3	-	4.6	30.6	5
4	-	5.7	30.5	2
5	-	7.5	30.9	2
Total catch-----				9

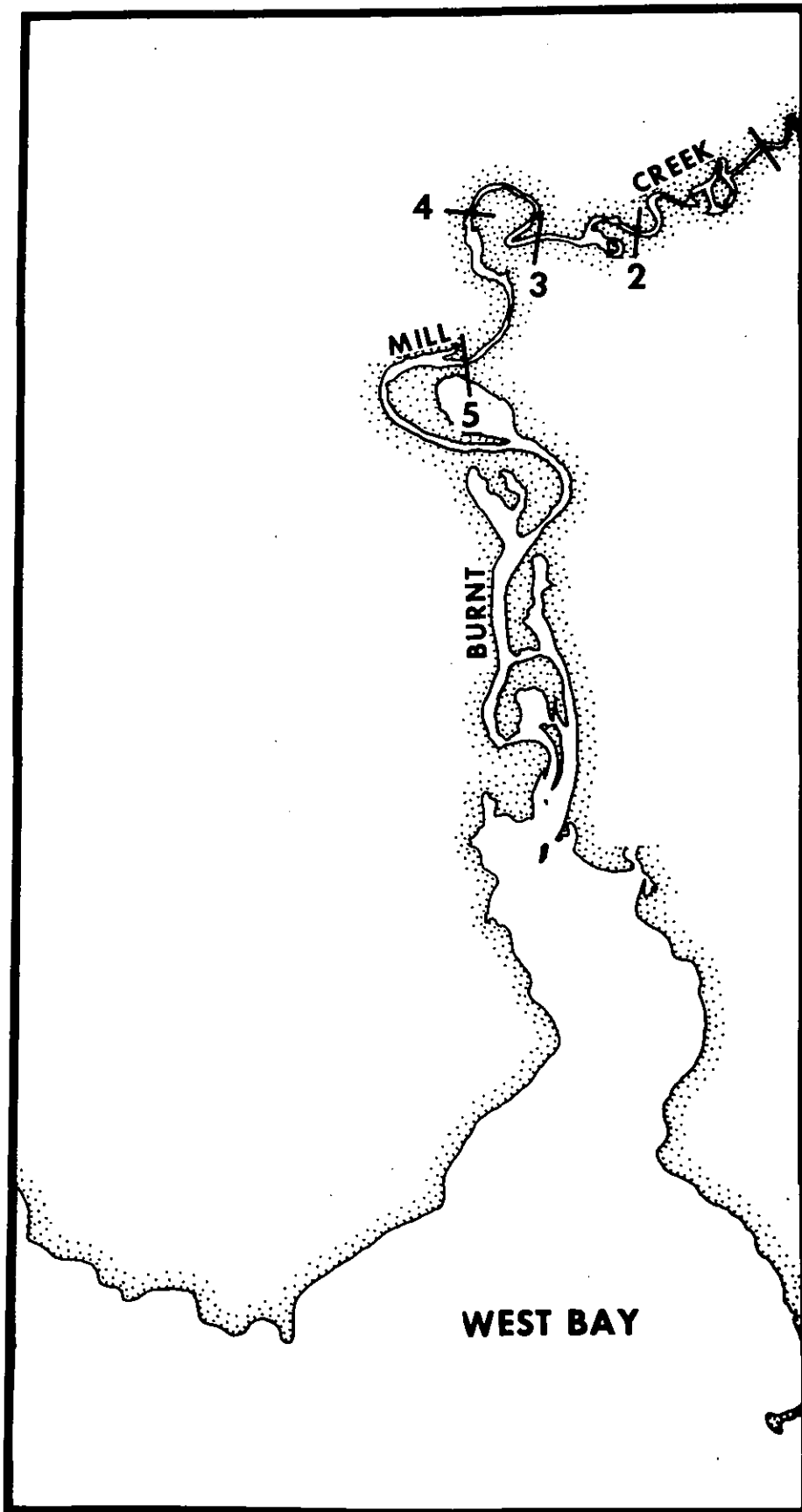


Figure 65.—Area 9: Stream 1 - Burnt Mill Creek.

Stream 1 - Burnt Mill Creek, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-10-67 Time: 1030-1140

1	100+	0.1	25.5	0
2	100+	0.5	26.0	0
3	100+	0.9	26.2	0
4	100+	1.3	26.7	0
5	100+	3.7	27.0	0

Total catch----- 0

Date: 7-3-68 Time: 1330-1500

1	100+	6.9	30.2	0
2	100+	10.4	31.0	0
3	100+	17.6	31.8	0
4	100+	23.7	32.0	0
5	100+	25.2	32.0	0

Total catch----- 0

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177

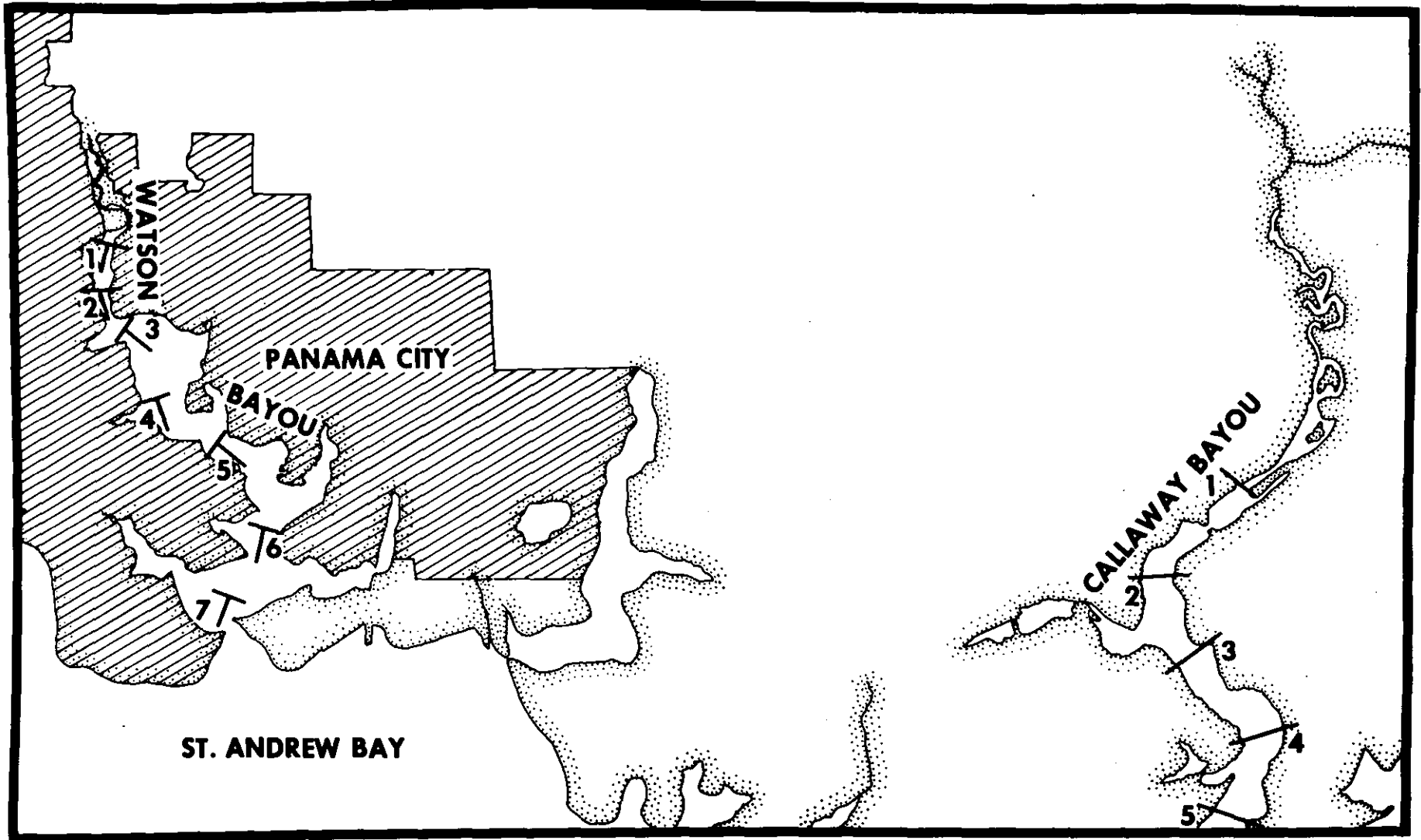


Figure 66.—Area 9: Stream 2 - Watson Bayou; Stream 3 - Callaway Bayou.

Stream 2 - Watson Bayou, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 8-12-64 Time: 1555-1645				
1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	39	6.4	32.4	39
5	43	14.7	31.3	0
6	47	14.8	31.4	0
7	63	16.3	31.0	0
Total catch-----				39
Date: 7-10-65 Time: 0730-0930				
1	-	-	-	-
2	-	-	-	-
3	53	17.5	30.1	0
4	66	17.5	39.9	0
5	62	17.4	29.6	0
6	64	17.7	30.7	0
7	45	17.1	29.3	0
Total catch-----				0
Date: 8-6-65 Time: 0800-0955				
1	48	11.7	30.3	0
2	52	10.8	28.8	0
3	73	13.0	29.4	0
4	68	12.0	28.6	0
5	70	12.7	29.0	0
6	80	13.5	29.3	0
7	85	13.6	29.3	0
Total catch-----				0

Stream 3 - Callaway Creek, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 8-12-64 Time: 1725-1755

1	41	0.3	29.0	0
2	51	13.5	29.9	0
3	52	13.7	29.8	0
4	-	-	-	-
5	-	-	-	-

Total catch----- 0

Date: 8-6-65 Time: 1030-1140

1	52	3.2	28.9	0
2	65	3.9	29.0	0
3	72	4.3	29.0	0
4	80	5.0	29.2	0
5	87	7.1	29.5	0

Total catch----- 0

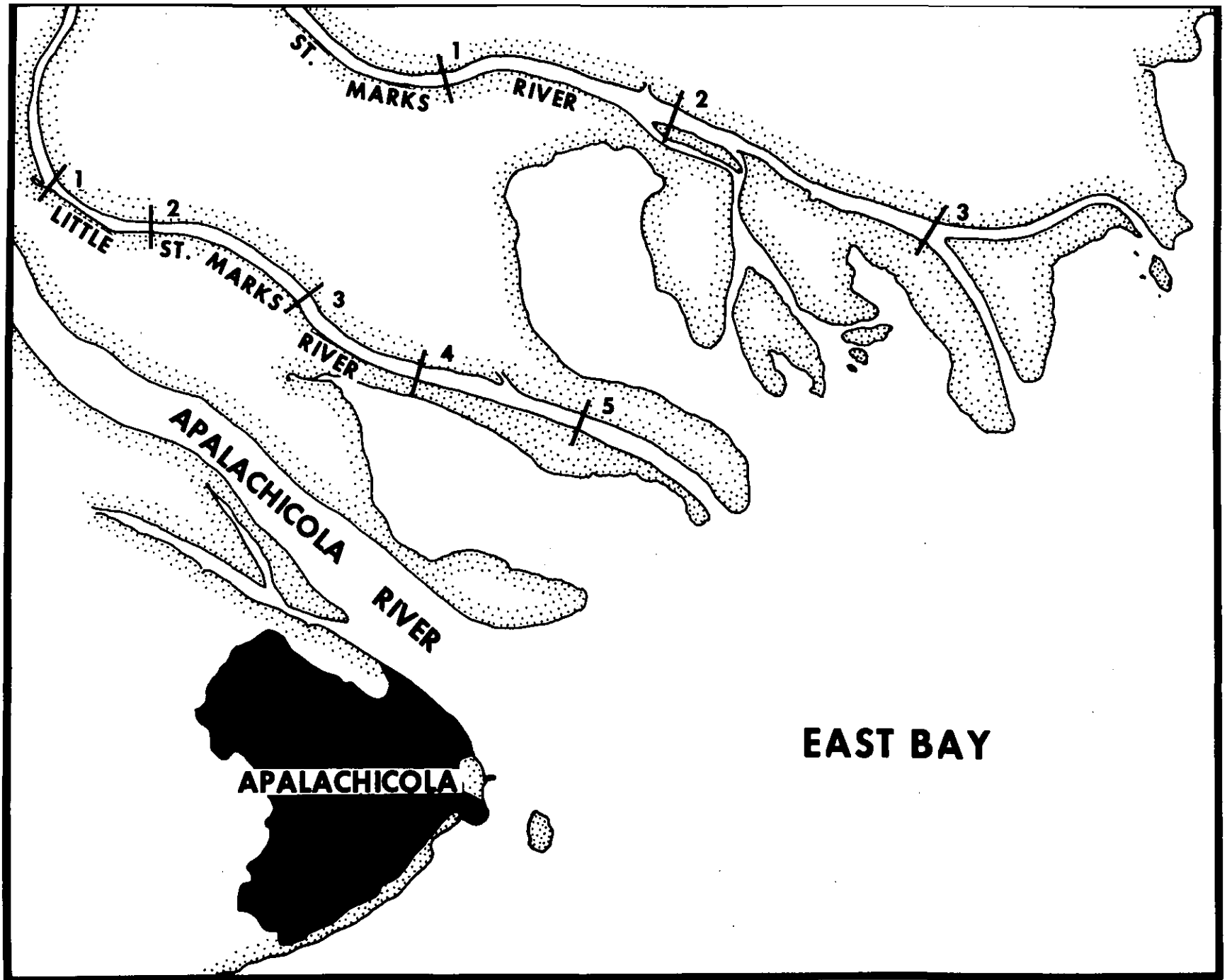


Figure 67.—Area 9: Stream 4 - Little St. Marks River; Stream 5 - St. Marks River.

Stream 4 - Little St. Marks River, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 6-3-66 Time: 1645-1820				
1	60	0.1	24.6	0
2	67	0.2	24.7	0
3	60	0.3	24.7	0
4	67	0.3	25.0	0
5	60	0.3	25.2	0
Total catch-----				0

Stream 5 - St. Marks River, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-10-65 Time: 1345-1415				
1	75	0	27.5	0
2	80	0.1	27.5	0
3	82	0	27.5	0
Total catch-----				0

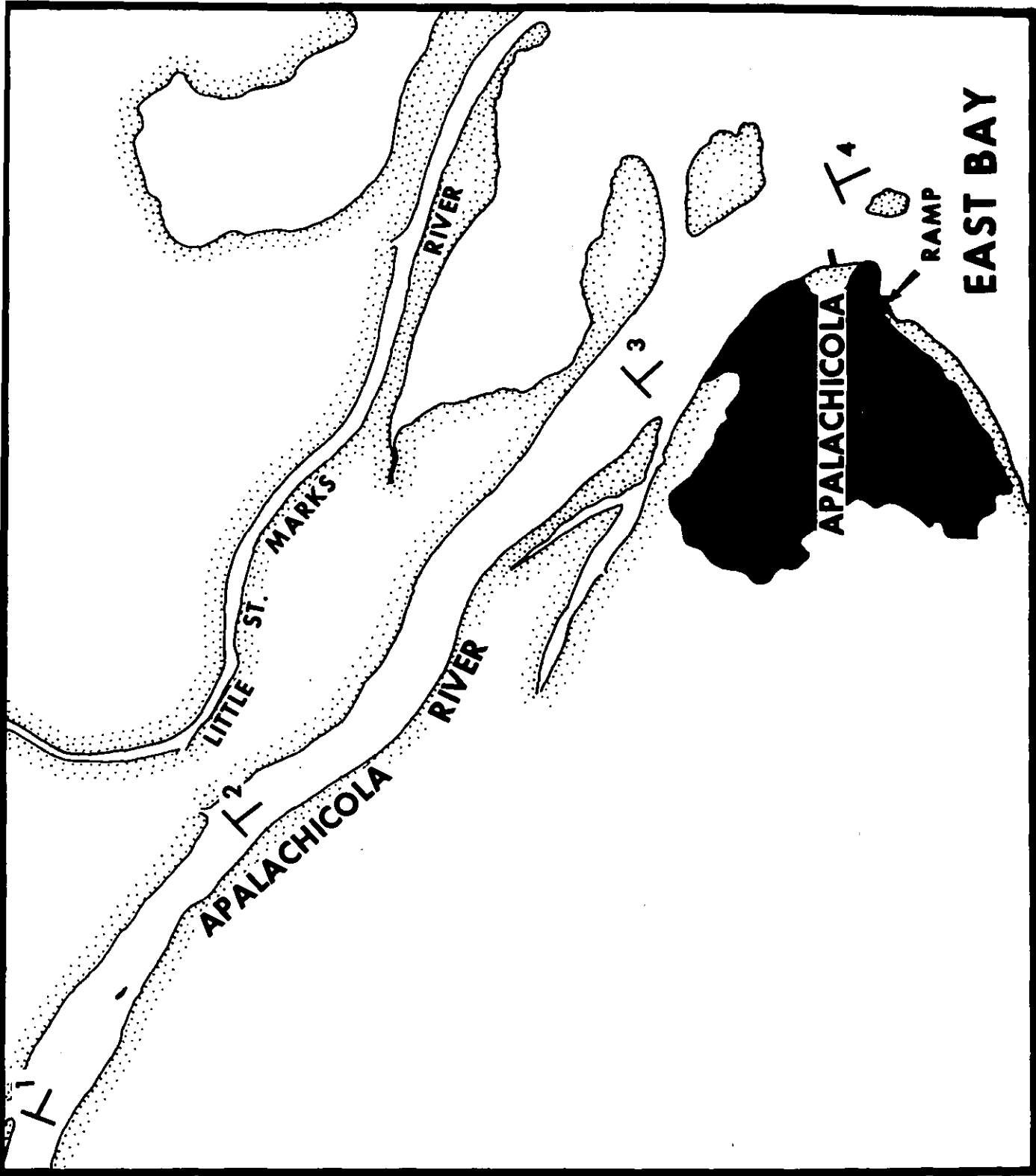


Figure 68.—Area 9: Stream II - Apalachicola River.

Stream II - Apalachicola River, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 6-15-67 Time: 1610-1705

1	100+	0	28.0	0
2	100+	0.1	28.0	0
3	100+	0.2	28.0	0
4	100+	0.7	28.0	0

Total catch----- 0

Date: 7-10-67 Time: 1200-1245

1	62	0	27.4	0
2	86	0	27.5	0
3	100+	0	27.4	0
4	100+	1.5	27.6	0

Total catch----- 0

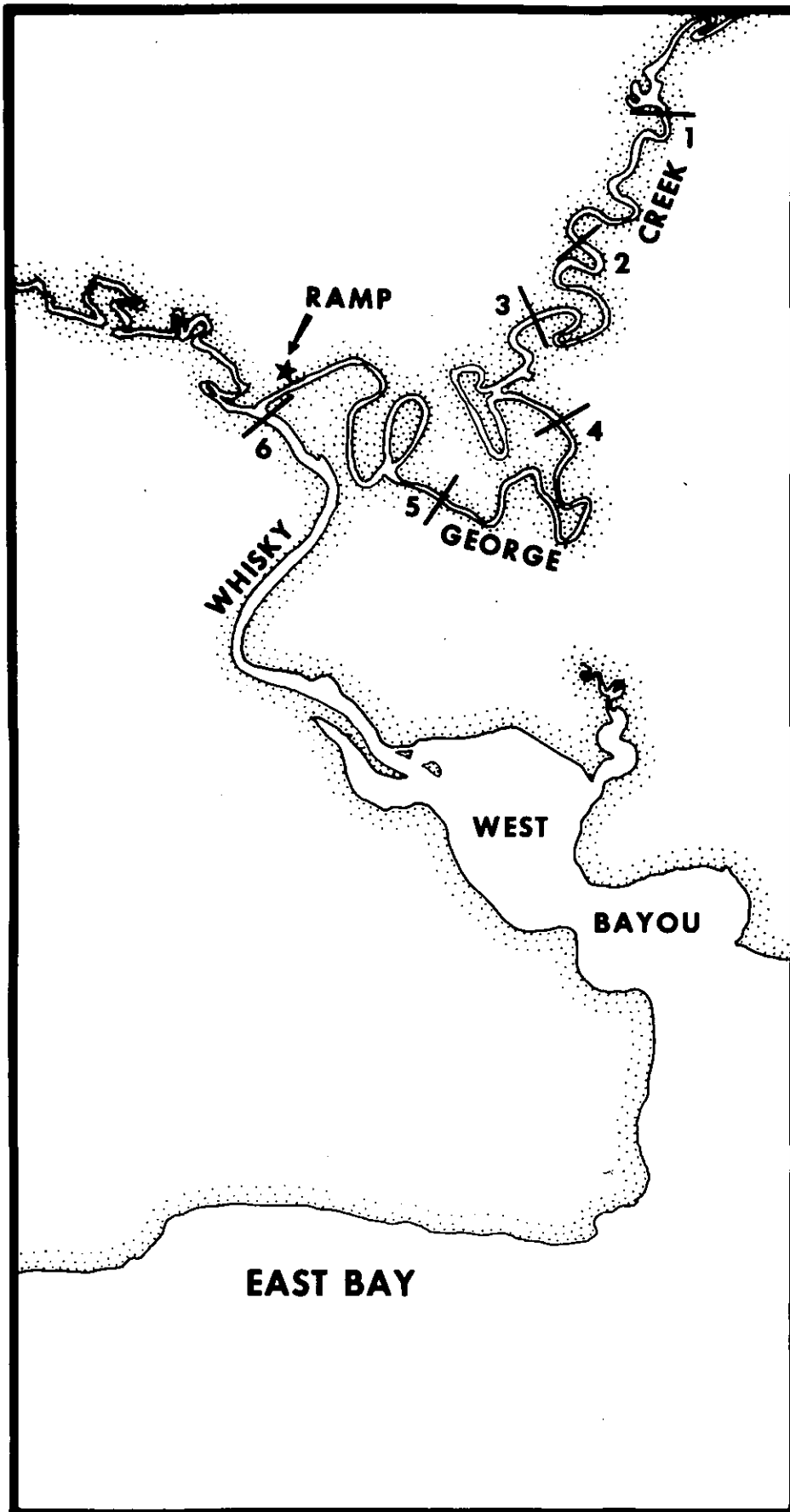


Figure 69.—Area 9: Stream 6 - Whisky George Creek.

Stream 6 - Whisky George Creek, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
Date: 7-11-67 Time: 0825-0950				
1	100+	3.1	30.1	0
2	100+	4.5	30.8	0
3	100+	6.1	30.0	0
4	100+	7.9	31.0	0
5	100+	10.4	30.8	0
6	100+	12.2	30.5	0
Total catch-----				0
Date: 7-4-68 Time: 0800-0940				
1	100+	4.3	30.5	0
2	100+	5.0	30.7	0
3	100+	5.3	30.3	0
4	100+	5.8	30.8	0
5	100+	9.9	31.0	0
6	100+	13.8	31.2	0
Total catch-----				0

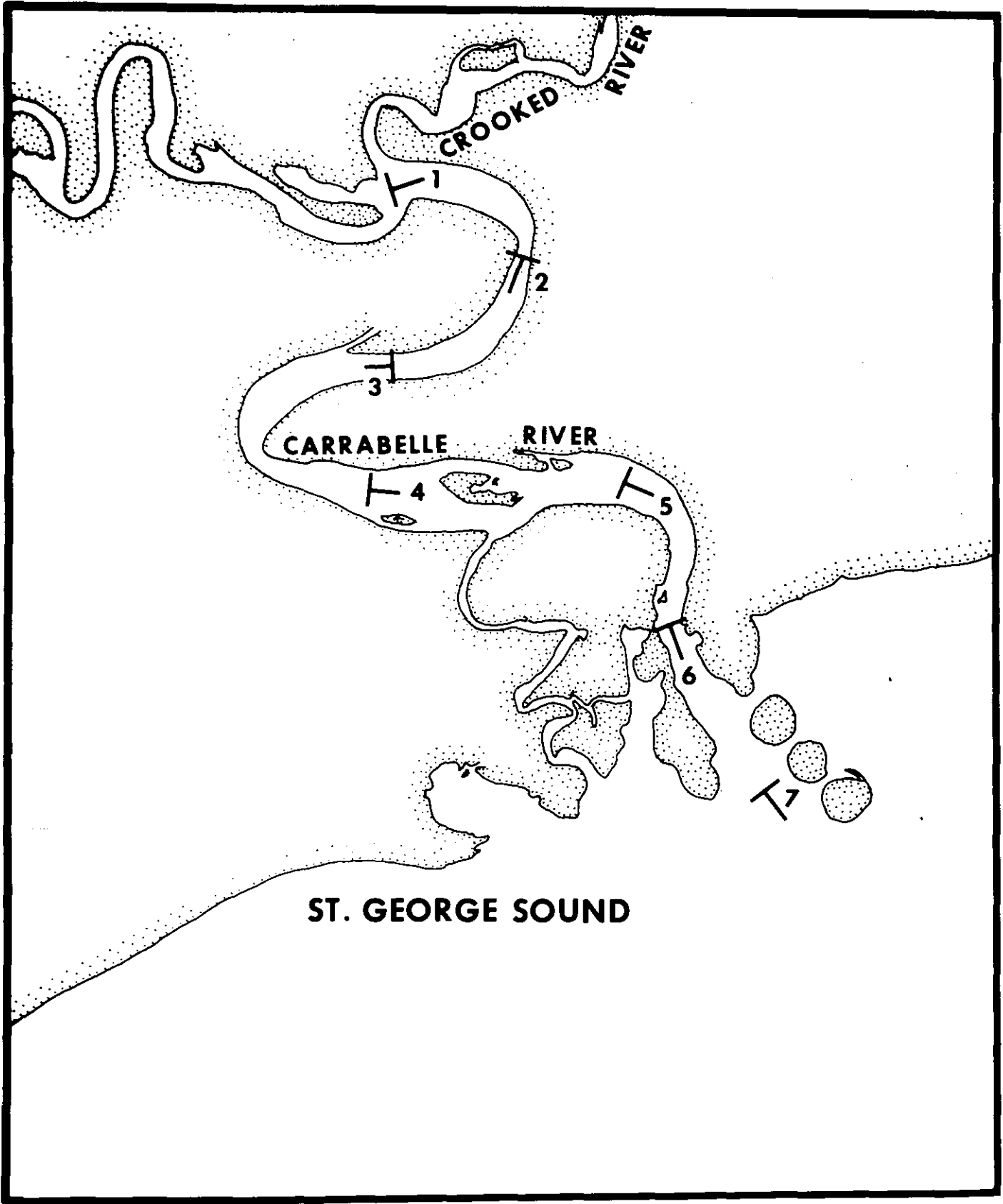


Figure 70.—Area 9: Stream 7 - Carrabelle River.

Stream 7 - Carrabelle River, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 8-13-64 Time: 1335-1430

1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	42	0	29.1	0
5	45	0.3	29.2	0
6	42	2.0	29.3	0
7	45	6.4	29.7	0

Total catch----- 0

Date: 8-6-65 Time: 1415-1620

1	55	0	26.4	0
2	54	0	26.3	0
3	45	0.1	26.2	0
4	35	0.3	26.5	0
5	50	0.6	26.5	0
6	50	1.6	26.6	0
7	60	3.9	26.6	0

Total catch----- 0

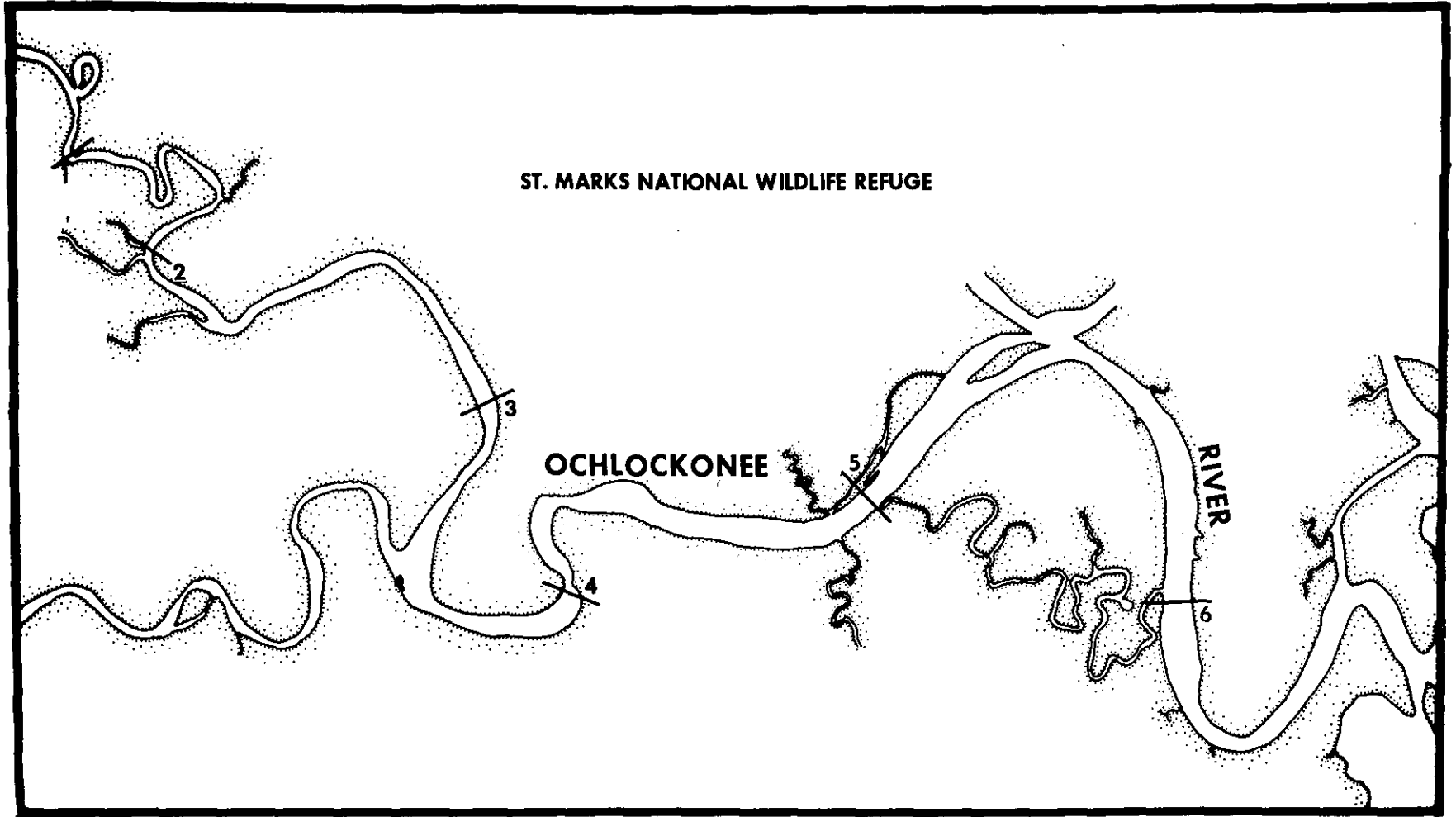


Figure 71.—Area 9: Stream III - Ochlockonee River.

Stream III - Ochlockonee River, Fla.

Station	Secchi (cm)	Salinity (o/oo)	Water temp. (C)	Menhaden catch
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Date: 7-8-68 Time: 1435-1615

1	100+	0	26.2	0
2	100+	0	26.3	0
3	100+	0	27.2	0
4	100+	0	27.7	1
5	100+	0.7	28.3	0
6	76	2.9	28.7	4

Total catch----- 5

Date: 7-8-68 Time: 2130-2345

1	-	0	26.1	0
2	-	0	26.0	2
3	-	0	26.0	0
4	-	0	26.6	9
5	-	0.2	26.9	26
6	-	1.7	27.2	69

Total catch----- 106

Date: 7-7-69 Time: 2130-2345

1	100+	0	30.9	0
2	100+	0	30.9	0
3	100+	0	30.7	0
4	100+	0	31.1	0
5	100+	0.6	31.3	0
6	100+	5.2	30.9	0

Total catch----- 0
