FINAL REPORT OF THE SURVEY OF THE WEST PEARL AND PEARL RIVERS FOR THE INFLATED HEEL-SPLITTER, *Potamilus inflatus*

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Introduction

The objective of this research was to systematically sample the West Pearl and Pearl River from White Kitchen, Louisiana, to Bogalusa, Louisiana, record the relative abundances of unionid mussels, and search for the Inflated heelsplitter, *Potamilus inflatus*. Dead shells of this threatened species had recently been collected at two sites on the West Pearl River, near the I 59 overpass, and at the southern end of the Pearl River navigation canal (George et al. 1996), and the historical range of the heelsplitter is known to have included the Pearl River (see discussion below).

The inflated heelsplitter is listed as threatened, and currently is known from only a short reach of the Amite River in Louisiana (Brown and Curole 1997) and the Tombigbee and Black Warrior Rivers in Alabama. Its thin, narrow shell and "wing" adapt it for living in silty sediments, and it is quite common in pool-like backwaters between sand bars and the shoreline in the lower Amite River (Brown and Curole 1997). Populations in the Amite River are however potentially threatened by gravel mining, which destabilizes the channel, and increases chances of stranding of mussels by low water levels (Hartfield 1993). The freshwater drum is considered the host fish for the heelsplitter. The heelsplitter has also been collected historically in the Pearl River (Frierson 1911) and in the Tangipahoa River (D. Stansberry, pers. comm. in Stewart 1993). Recent surveys have however been unsuccessful in locating heelsplitters in either river (Hartfield 1988, Brown 1996).

In this report, we present the results of year-long survey of mussel populations in the West Pearl River, and part of the Pearl River. We list the species present, and their relative abundance in a sixty mile long section of these rivers. At each of the sites we sampled, we list the number of mussels collected for each species, their mean size, the GPS location of the site, and the substratum (gravel, sand or silt).

Methods

We qualitatively sampled mussels at 49 sites along the river, at approximately 2 Km intervals, by snorkeling and hand collection. Scuba was also used to re-sample a limited number of sites where mussel diversity was greatest, and these samples were compared to those gathered by snorkeling. Each site was sampled for 45 minutes to 1 hour, by from 2 to 3 individuals. We selected sites so that we sampled all major habitat types (pools protected behind sandbars, sandbars, riffles, and stream banks) and substratum types (gravel, sand and silt).

Qualitative sampling was chosen over quantitative sampling using small quadrats for several reasons. Quadrat sampling can be better for finding smaller individuals, but requires an inordinate amount of sampling effort, especially to detect rare species. For this reason, time-limited searches are considered better for determining the distributions of rare species (Vaughn et al. 1997, Strayer et al. 1997).

Snorkeling allowed collection of mussels in water from 6 inches to 4 feet deep, and an area was searched approximately 250 feet on either side of the location of the boat. All mussels were brought to the boat for identification and measurement. The location of the site was recorded by a handheld Global Positioning System unit and noted on a map. Factors including

substrate type, water temperature, and approximate water flow rate were also recorded. The first twenty mussels of each species were measured to the nearest 0.1mm, using a dial caliper. Larger specimens (> 150mm) were estimated to the nearest millimeter using a meter stick. The remaining mussels were then counted, mean lengths computed, and the mussels were then randomly re-distributed to the area in which they were found.

Specimens of non-threatened species were taken to Louisiana State University where they were dissected and identified (using keys in Vidrine 1993). The shells were marked as to date of collection and location., and added to Dr. Brown's bivalve collection.

Additional sampling was made of deeper areas with SCUBA equipment. Sites were selected if the samples from the shallow water sampling trips indicated high diversity (~10-15 spp.) These data are used to compare shallow and deep mussel diversity at a number of sites (see Results).

Results

We found a total of 28 species of unionid mussels in the West Pearl and Pearl River. Unfortunately, the heelsplitter was not one of those species. Below we report the relative abundances of the species we did collect at each site, and in the discussion we consider whether our sampling could have failed to detect the heelsplitter. The locations of all sites are included in the 1:100,000 scale map which is attached to the report.

For simplicity, we will first group our data into two large categories, the "lower river" (with the first 25 sites), and the "upper river" with the remaining 24 sites. We found 23 species of unionids in the lower river. *Glebula rotundata* was the most common species (Fig. 1), and we collected over 200 individuals for *Potamilus purpuratus, Obliquaria reflexa,* and *Quadrula quadrula*. We collected over 10 individuals for ten additional species, and fewer than 10 individuals for the remaining nine species. Of the latter group, *Anodonta suborbiculata* may actually be another species recently introduced from China (Steve Shively, pers. comm), and the identity of *Strophitus radiatus* is debatable, since only one specimen was collected. Due to its rarity, we opted against dissecting the specimen to confirm its identity.

In the upper river, 24 species were collected. The most common species, e.g., with over a hundred individuals, in order of abundance were *Quadrula quadrula, Obliquaria reflexa, Quadrula refulgens, Potamilus purpuratus, Plectomerus dombeyanus,* and *Glebula rotundata.* Eight more species had over 10 individuals collected and the remaining 10 were fairly rare. There was no apparent longitudinal trend in species richness across stretches (Fig. 2).

For the first stretch, we began in the southern reaches of the West Pearl River, at the Highway 90 bridge near White Kitchen. The substrate was primarily mud with some sand. There were only four species found at two sites, but 12 species were found at one site in this stretch, which was revisited for deep water sampling (see Methods). See Tables 2-5 for a list of the species found at these sites.

Stretch two included sites located approximately 2 miles north and south of the I-10 overpass over the West Pearl river. The substrate was a mud and sand mix. Sites in this stretch contained from 10 to 15 species and three of the four sites were revisited for diving. See tables 6-9 for species found at these sites.

The third stretch included sites between the I-10 and I-59 bridges. Substrates in these sites were also recorded as a mud and sand mixture. Species richness varied among the sites from 5 to 12. The latter site was revisited for diving. See tables 10-13 for species found at these sites.

Stretch four ran approximately 6 miles north from the I-59 bridge overpass. Mud and sand were the primary substrate types. The number of species found at the sites in this stretch ranged only from 10 to 12. See tables 14-17 for the species found in these sites.

Sites from the southern mouth of the West Pearl River navigation canal to approximately four miles north along the West Pearl were included in stretch five. The substrate type was primarily mud with some sand. Sites in this stretch contained from 8 to 14 species. See tables 18-21 for species found at these sites.

Stretch six included only one site, approximately 4 miles from the southern mouth of the navigation canal. This site had a mud and sand substrate and 17 species of mussels were found. The species found are listed in Table 22.

Stretch seven included two sites in the upper reaches of the West Pearl River and two sites in lower Wilson Slough, a section of river flowing from east to west, and connecting the West Pearl and the Pearl Rivers. The sites had a mud or sand and gravel substrate. The number of species found ranged between 5 and 15. See Tables 23-26 for species found at these sites.

The upper section of Wilson Slough to the junction with the Pearl River comprised stretch eight. These sites had a sand and gravel substrate. Species richness ranged between 3 and 12. See Tables 27-29 for a species listing.

Approximately 5 miles of the Pearl river, north of the confluence with Wilson Slough, comprised stretch nine. These four sites had markedly different substrates, from sand/gravel mixtures to mud with leaves and sticks. The number of species found also varied widely among sites with a minimum of 2 and a maximum of 12. See Tables 30-33 for further description of the species found.

Stretch ten covered approximately 4 miles north of stretch nine. The three sites all had a mud/sand substrate. The number of mussel species found ranged from 11 to 14, with two of the sites being revisited for diving. See Tables 34, 35 and 36 for a species listing.

Stretch eleven included approximately 5 miles of the Pearl River, south of the low dam or "seal" at Pool's Bluff. This stretch had five sites with either mud or sand substrata. Species richness varied from a minimum of 2 to a maximum of 12, with the latter site being revisited for diving. See Tables 38-42 for a listing of the species found.

A length of river extending approximately five miles north of the Pool's Bluff seal was included in stretch twelve. The four sites had either mud, sand, or a mixture of both as a substrate. One site contained 13 species and was revisited for deep water sampling. See Tables 42-45 for a species list.

Stretch thirteen contained five sites from one mile north of the northernmost site of stretch eleven to approximately one mile south of the Highway 26 bridge in Bogalusa. The substrata varied from mud at two sites to sand/gravel/mud mixtures at the rest. Species richness also varied from a minimum of 4 to a maximum of 11 at three sites. One of these sites was revisited for deep water sampling. Tables 46-50 give a listing of species.

Comparing shallow water sampling of sites and later SCUBA samples (Tables 51-63 and

earlier respective tables), there did not appear to be any obvious difference in species diversity with depth. On the average (over all 13 sites sampled with SCUBA), there were 9.6 mussel species in shallow water, versus 9.1 species in deeper water. The two averages were not significantly different, based on a t test ($t = 0.52$, $P > 0.05$).

Discussion

Of the 3,004 mussels collected in the Pearl and West Pearl Rivers, none were *Potamilus inflatus*. We consider our sampling effort, with 49 sites visited by from 2 to 3 divers collecting at each site, to be adequate to detect even rare species. Furthermore, sites were selected to represent all possible habitat types and substrata. We also made a specific effort to sample habitats where heelsplitters were common in the Amite River: low current velocity, silt-bottomed pools on the down-river side of sand bars (Brown and Curole 1997). We also sampled both shallow and deep substrates, and found no difference in mussel diversity, indicating heelsplitters were not found in either shallow or deep habitats.

Although several other species were rare in our data set, including *Amblema plicata, Anodonta suborbiculata, Eliiptio crassidens, Fusconaia ebena, Lampsilis ornata, Megalonais nervosa, Toxolasma parva, Arcidens confragosus, Ligumia recta* and *Truncilla donaciformus*, these species are common in other Louisiana rivers (Brown and Curole 1997, Vidrine 1993). If our sampling effort was adequate to uncover these rare species, we assume it is adequate to locate heelsplitter populations. In the Amite River, although heelsplitters have a restricted range, within that range they are moderately abundant and commonly collected. Juveniles were also collected in that survey, indicating recruitment was occurring in the Amite River (Brown and Curole 1997).

In other studies of endangered unionids in large rivers, the endangered species, although usually found at low abundances, were most common at sites with a high diversity of other unionids. For example, Vaughn and Pyron (1995) found the Ouachita rock-pocketbook mussel, *Arkansia wheeleri*, to be rare, but present in 10 of the 12 beds with high mussel diversity sampled in the Kiamichi River in Oklahoma. Hornbach et al. (1996) found winged mapleleaves (*Quadrula fragosa*) to be rare in the St. Croix River in Wisconsin and Minnesota, but to occur again only in beds where other mussels were common. Other general studies of mussel assemblages have also indicated aggregated distributions and high microhabitat overlap for most riverine unionids (Holland-Bartels 1990, Downing and Downing 1992, Strayer 1993, Strayer et al. 1994, Layzer and Madison 1995, Vaughn and Pyron 1995, Vaughn 1997, Haag and Warren 1998). These aggregated distributions are considered to result from common host fishes being used, as mussel diversity is usually positively correlated with fish diversity (Watters 1992, Watters 1994, Haag and Warren 1998, Vaughn and Taylor, in prep.).

We certainly found a number of high diversity sites in the current survey. Given the lack of heelsplitters at these sites, the large numbers of other mussels at these same sites, our considerable sampling effort, and the variety of habitats that we sampled, we must conclude the the Inflated heelsplitter is currently absent in the stretches of the river we sampled, or is limited to a very low density at just a few sites.

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Table 1. Description of each field sampling site.

Date	Site*	GPS Location	Substrate	Mussel species found	Corresponding Table(s)
9-24-97	1+	N: 30°14'37.1" W: 89°40'20.2"	Mud	12	2 & 51
- - -	2	N: 30°15'12.8" W: 89°40'43.4"	Mud/Sand	4	3
- - -	3	N: 30°16'08.5" W: 89°41'23.3"	Mud	4	4
- - -	4	N: 30°16'49.9" W: 89°41'45.1"	Mud/Sand	8	5
10-1-97	5+	N: 30°17'13.7" W: 89°41'51.5"	Sand/Mud	15	6 & 52
- - -	6+	N: 30°18'23.5" W: 89°42'15.8"	Sand/Mud	14	7 & 53
- - -	7+	N: 30°18'59.4" W: 89°41'55.4"	Mud	10	8 & 54
- - -	8	N: 30°19'23.9" W: 89°42'02.2"	Sand/Mud	9	9
10-10-97	9+	N: 30°20'05.1" W: 89°42'22.0"	Mud/Sand	12	10 & 55
- - -	10	N: 30°21'17.1" W: 89°42'42.4"	Mud/Sand	7	11
- - -	11	N: 30°22'41.9" W: 89°43'31.7"	Mud	11	12
- - -	12	N: 30°22'43.0" W: 89°44'00.2"	Mud/Sand	5	13

Date	Site*	GPS Location	Substrate	Mussel species found	Corresponding Table
10-15-97	13	N: 30°23'27.6" W: 89°44'36.6"	Mud/Sand	12	14
- - -	14	N: 30°24'11.5" W: 89°44'36.5"	Mud/Sand	10	15
- - -	15	N: 30°25'46.0" W: 89°44'20.1"	Mud/Sand	11	16
- - -	16	N: 30°26'46.6" W: 89°45'02.5"	Mud	10	17
10-22-98	17+	N: 30°27'08.5" W: 89°45'20.7"	Sand/Mud	13	18 & 56
- - -	18	N: 30°28'19.4" W: 89°46'41.4"	Mud	8	19
- - -	19	N: 30°28'54.5" W: 89°47'05.6"	Mud/Sand	11	20
- - -	20+	N:30°29'18.5" W: 89°47'09.6"	Mud	14	21 & 57
11-24-97	21+	N: 30°30'01.8" W: 89°48'12.0"	Mud/Sand	17	22 & 58
4-17-98	22	N: 30°30'26.6" W: 89°48'00.3"	Mud/Sand	15	23
- - -	23	N: 30°32'40.2" W: 89°49'32.2"	Gravel	8	24
- - -	24	N: 30°33'11.1" W: 89°50'02.3"	Mud	6	25
- - -	25	N: 30°31'22.4" W:89°49'32.2"	Mud/Sand	5	26
5-8-98	26	N: 30°33'30.3" W: 89°49'44.6"	Mud/Sand/ Gravel	8	27

Date	Site*	GPS Location	Substrate	Mussel species found	Corresponding Table
5-8-98	27	N: 30°33'55.7" W: 89°49'18.8"	Sand	3	28
- - -	28	N: 30°34'37.0" W: 89°48'28.6"	Sand/ Gravel	12	29
5-21-98	29	N: 30°35'12.0" W:89°48'35.9"	Sand/ Gravel	12	30
- - -	30	N: 30°36'16.2" W: 89°49'23.2	Mud/Sand	8	31
- - -	31	N: 30°37'16.1" W: 89°49'49.9"	Mud/Sand/ Gravel	9	32
- - -	32	N: 30°38'40.0" W: 89°49'12.8"	Mud/Sticks /Leaves	2	33
6-8-98	33+	N: 30°39'15.4" W: 89°49'54.0"	Mud/Sand	12	34 & 59
- - -	34	N: 30°39'26.4" W: 89°50'26.0"	Mud/Sand	11	35
- - -	35+	N: 30°40'8.6" W: 89°50'17.1"	Mud/Sand	14	36 & 60
6-18-98	36	N: 30°40'11.7" W: 89°50'32.7"	Sand	2	37
- - -	37	N: 30°40'34.7" W: 89°50'17.3"	Mud	2	38
- - -	38+	N: 30°41'16.1" W: 89°50'25.5"	Mud	12	39 & 61
- - -	39	N: 30°41'41.8" W: 89°50'16.9"	Sand	4	40
- - -	40	N: 30°42'12.8" W" 89°50'19.3"	Mud	11	41
6-29-98	41	N: 30°42'50.5" W: 89°50'23.3"	Mud	10	42

Date	Site*	GPS Location	Substrate	Mussel species found	Corresponding Table
6-29-98	42+	N: 30°42'57.6" W: 89°49'58.6"	Mud/Sand	13	43 & 62
- - -	43	N: 30°43'42.7" W: 89°49'43.8"	Sand	6	44
- - -	44	N: 30°44'05.6" W: 89°50'08.8"	Sand/Mud	6	45
7-9-98	45	N: 30°44'21.8" W: 89°49'42.1"	Sand/Mud	7	46
- - -	46	N: 30°44'59.1" W: 89°49'26.5"	Mud	11	47
- - -	47	N: 30°45'19.5" W: 89°49'36.8"	Gravel/ Mud	4	48
- - -	48+	N: 30°46'57.6" W: 89°49'36.4"	Mud	11	49 & 63
- - -	49	N: 30°46'20.7" W: 89°49'39.3"	Mud/Sand	11	51

* Indicates corresponding sites on maps
+ Sites also surveyed in deep water using SCUBA at a later date

Table 2. Unionid mussel assemblage located at site 1.

Species	# Recorded	Mean Length
Glebula rotundata	65	70.41
Plectomerus dombeyansus	27	96.70
Corbicula fluminea	14	33.14
Potamilus purpuratus	14	127.67
Quadrula quadrula	10	71.06
Lampsilis teres	9	98.63
Toxolasma texasensis	3	34.60
Quadrula refulgens	2	55.20
Pyganodon grandis	2	102.95
Utterbackia imbecilis	1	32.95
Leptodea fragilis	1	28.80
Quadrula apiculata	1	37.20
Species Richness	12	

Table 3. Unionid mussel assemblage located at site 2.

Species	# Recorded	Mean Length
Corbicula fluminea	21	26.98
Potamilus purpuratus	14	136.23
Glebula rotundata	10	65.14
Lampsilis teres	2	94.25
Species Richness	4	

Table 4. Unionid mussel assemblage located at site 3.

Species	# Recorded	Mean Length
Potamilus purpuratus	6	141.22
Leptodea fragilis	5	24.20
Lampsilis teres	1	87.50
Corbicula fluminea	1	32.40
Species Richness	4	

Table 5. Unionid mussel assemblage located at site 4.

Species	# Recorded	Mean Length
Glebula rotundata	10	56.61
Potamilus purpuratus	9	134.60
Corbicula fluminea	7	20.80
Plectomerus dombeyanus	4	91.23
Quadrula quadrula	1	60.00
Lampsilis teres	1	96.80
Leptodea fragilis	1	29.50
Quadrula refulgens	1	62.00
Species Richness	8	

Table 6. Unionid mussel assemblage located at site 5.

Species	# Recorded	Mean Length
Glebula rotundata	43	69.25
Quadrula quadrula	37	67.57
Potamilus purpuratus	30	137.15
Lampsilis teres	10	99.93
Quadrula refulgens	8	43.54
Plectomerus dombeyanus	7	103.53
Obliquaria reflexa	5	44.8
Villosa lienosa	3	67.30
Megalonais nervosa	3	161.50
Leptodea fragilis	3	22.10
Elliptio crassidens	2	127.30
Corbicula fluminea	2	35.2
Pyganodon grandis	2	86.75
Species Richness	13	

Table 7. Unionid mussel assemblage located at site 6.

Species	# Recorded	Mean Length
Glebula rotundata	38	62.56
Potamilus purpuratus	27	131.92
Lampsilis teres	6	98.90
Plectomerus dombeyanus	4	115.03
Elliptio crassidens	4	114.55
Corbicula fluminea	4	23.05
Obliquaria reflexa	4	59.80
Quadrula quadrula	3	70.20
Quadrula refulgens	3	52.90
Lampsilis claibornensis	2	90.15
Villosa lienosa	2	67.40
Tritogonia verrucosa	1	120.50
Quadrula apiculata	1	30.70
Leptodea fragilis	1	24.20
Pyganodon grandis	1	97.80
Species Richness	15	

Table 8. Unionid mussel assemblage located at site 7.

Species	# Recorded	Mean Length
Glebula rotundata	22	60.03
Villosa lienosa	9	61.10
Potamilus purpuratus	6	112.60
Leptodea fragilis	5	43.27
Lampsilis teres	3	98.03

Corbicula fluminea	2	17.05
Lampsilis claibornensis	1	89.20
Obliquaria reflexa	1	27.9
Pyganodon grandis	1	67.40
Plectomerus dombeyanus	1	104.70
Species Richness	10	

Table 9. Unionid mussel assemblage located at site 8.

Species	# Recorded	Mean Length
Leptodea fragilis	12	43.27
Lampsilis teres	12	82.52
Glebula rotundata	10	56.33
Potamilus purpuratus	10	139.53
Obliquaria reflexa	9	44.50
Pyganodon grandis	3	102.00
Quadrula quadrula	1	47.50
Quadrula apiculata	1	38.80
Corbicula fluminea	1	33.60
Species Richness	9	

Table 10. Unionid mussel assemblage located at site 9.

Species	# Recorded	Mean Length
Potamilus purpuratus	11	117.53
Leptodea fragilis	11	59.00
Glebula rotundata	9	70.64
Plectomerus dombeyanus	7	107.59
Villosa lienosa	5	67.54
Toxolasma texansensis	2	48.5
Corbicula fluminea	2	10.75
Quadrula quadrula	2	62.20
Pyganodon grandis	1	72.50
Lampsilis teres	1	72.30
Obliquaria reflexa	1	37.50
Amblema plicata	1	110.20
Species Richness	12	

Table 11. Unionid mussel assemblage located at site 10.

Species	# Recorded	Mean Length
Potamilus purpuratus	6	144.12
Lampsilis teres	5	104.2
Glebula rotundata	3	72.70
Leptodea fragilis	2	30.60
Utterbackia imbecilis	2	29.20

Villosa lienosa	1	69.10
Quadrula quadrula	1	69.20
Species Richness	7	

Table 12. Unionid mussel assemblage located at site 11.

Species	# Recorded	Mean Length
Quadrula quadrula	41	67.31
Obliquaria reflexa	20	52.40
Plectomerus dombeyanus	15	107.25
Leptodea fragilis	12	89.31
Potamilus purpuratus	9	165.14
Quadrula apiculata	9	38.76
Lampsilis teres	8	106.05
Glebula rotundata	7	64.90
Lampsilis claibornensis	3	96.80
Corbicula fluminea	3	30.70
Pyganodon grandis	2	80.15
Species Richness	11	

Table 13. Unionid mussel assemblage located at site 12.

Species	# Recorded	Mean Length
Quadrula refulgens	5	48.38
Quadrula quadrula	4	68.78
Obliquaria reflexa	2	50.9
Potamilus purpuratus	2	108.30
Villosa lienosa	1	58.10
Species Richness	5	

Table 14. Unionid mussel assemblage located at site 13.

Species	# Recorded	Mean Length
Quadrula quadrula	15	70.95
Glebula rotundata	13	71.03
Potamilus purpuratus	8	143.75
Quadrula refulgens	8	53.34
Pyganodon grandis	6	99.63
Lampsilis teres	4	102.83
Villosa lienosa	4	59.58
Leptodea fragilis	3	75.25
Anadonta suborbiculata	3	119.00
Corbicula fluminea	1	42.30
Quadrula apiculata	1	53.30
Plectomerus dombeyanus	1	105.50
Species Richness	12	

Table 15. Unionid mussel assemblage located at site 14.

Species	# Recorded	Mean Length
Glebula rotundata	8	69.98
Lampsilis teres	6	102.30
Corbicula fluminea	6	23.65
Leptodea fragilis	5	34.20
Obliquaria reflexa	5	48.02
Plectomerus dombeyanus	5	111.18
Villosa lienosa	4	60.20
Toxolasma texasensis	2	41.35
Quadrula quadrula	2	45.70
Strophitus radiatus	1	38.70
Species Richness	10	

Table 16. Unionid mussel assemblage located at site 15.

Species	# Recorded	Mean Length
Quadrula regulgens	21	49.80
Quadrula quadrula	19	73.36
Lampsilis teres	8	102.74
Obliquaria reflexa	8	61.2
Glebula rotundata	7	83.76
Potamilus purpuratus	5	145.90
Leptodea fragilis	2	43.15
Lampsilis claibornensis	1	102.00
Corbicula fluminea	1	43.7
Villosa lienosa	1	67.80
Plectomerus dombeyanus	1	117.00
Species Richness	11	

Table 17. Unionid mussel assemblage located at site 16.

Species	# Recorded	Mean Length
Quadrula refulgens	13	51.15
Potamilus purpuratus	8	127.00
Quadrula quadrula	4	63.73
Utterbackia imbecilis	3	75.33
Obliquaria reflexa	2	51.32
Lampsilis teres	2	118.70
Pyganodon grandis	2	97.85
Villosa lienosa	1	49.70
Glebula rotundata	1	69.00
Lampsilis claibornensis	1	115.90
Species Richness	10	

Table 18. Unionid mussel assemblage located at site 17.

Species	# Recorded	Mean Length
Quadrula apiculata	33	46.28
Potamilus purpuratus	20	126.64
Obloquaria reflexa	17	42.15
Quadrula refulgens	14	43.85
Quadrula quadrula	9	54.58
Lampsilis teres	8	87.16
Tritogonia verrucosa	5	83.60
Pyganodon grandis	5	92.36
Villosa lienosa	4	59.28
Leptodea fragilis	4	41.07
Glebula rotundata	2	36.50
Lampsilis claibornensis	1	79.30
Lampsilis ornata	1	83.50
Species Richness	13	

Table 19. Unionid mussel assemblage located at site 18.

Species	# Recorded	Mean Length
Villosa lienosa	6	32.57
Potamilus purpuratus	5	168.00
Quadrula refulgens	2	40.90
Corbicula fluminea	2	19.90
Utterbackia imbecilis	2	45.65
Leptodea fragilis	2	82.85
Titogonia verrucosa	1	83.60
Lampsilis teres	1	96.95
Species Richness	8	

Table 20. Unionid mussel assemblage located at site 19.

Species	# Recorded	Mean Length
Quadrula refulgens	74	47.31
Potamilus purpuratus	20	145.25
Lampsilis teres	11	120.05
Obliquaria reflexa	10	47.31
Leptodea fragilis	6	82.85
Lampsilis ornata	4	83.50
Villosa lienosa	4	67.20
Corbicula fluminea	2	37.65
Quadrula quadrula	2	45.00
Megalonaias nervosa	2	N/A
Utterbackia imbecilis	1	24.10
Species Richness	11	

Table 21. Unionid mussel assemblage located at site 20.

Species	# Recorded	Mean Length
Quadrula refulgens	47	54.14
Potamilus purpuratus	10	151.67
Anadonta suborbiculata	10	94.23
Leptodea fragilis	9	N/A
Lampsilis teres	8	96.87
Villosa lienosa	5	N/A
Corbicula fluminea	4	35.00
Quadrula quadrula	3	52.00
Toxolasma parva	3	24.77
Toxolasma texasensis	2	42.45
Obliquaria reflexa	2	59.00
Glebula rotundata	1	N/A
Lampsilis ornata	1	N/A
Pyganodon grandis	1	67.80
Species Richness	14	

Table 22. Unionid mussel assemblage located at site 21.

Species	# Recorded	Mean Length
Quadrula refulgens	29	53.38
Lampsilis teres	25	96.95
Potamilus purpuratus	22	151.08
Leptodea fragilis	22	N/A
Villosa lienosa	13	58.67
Corbicula fluminea	9	43.60
Quadrula apiculata	4	60.40
Elliptio crassidens	2	N/A
Tritogonia verrucosa	2	N/A
Lampsilis claibornensis	2	76.50
Obliquaria reflexa	2	50.00
Toxolasma texasensis	1	N/A
Obovaria unicolor	1	N/A
Glebula rotundata	1	N/A
Plectomerus dombeyanus	1	N/A
Quadrula quadrula	1	N/A
Lampsilis ornata	1	N/A
Species Richness	17	

Table 23. Unionid mussel assemblage located at site 22.

Species	# Recorded	Mean Length
Potamilus purpuratus	21	128.5
Lampsilis teres	9	89.7

Glebula rotundata	1	25.7
Quadrula quadrula	21	51.2
Obliquaria reflexa	4	50.76
Quadrula apiculata	3	66.40
Lampsilis claibornensis	1	69.20
Quadrula nodulata	1	60.00
Villosa vibex	1	31.50
Quadrula refulgens	2	45.25
Lampsilis ornata	3	81.60
Tritogonia verrucosa	2	91.25
Villosa lienosa	2	60.35
Corbicula fluminea	2	33.20
Utterbackia imbecilis	1	57.00
Species Richness	15	

Table 24. Unionid mussel assemblage located at site 23.

Species	# Recorded	Mean Length
Obliquaria reflexa	1	50.70
Quadrula quadrula	7	50.74
Villosa lienosa	2	60.00
Tritogonia verrucosa	2	88.40
Plectomerus dombeyanus	1	70.00
Potamilus purpuratus	3	87.83
Lampsilis teres	1	101.70
Lampsilis claibornensis	1	74.70
Species Richness	8	

Table 25. Unionid mussel assemblage located at site 24.

Species	# Recorded	Mean Length
Pyganodon grandis	4	101.03
Potamilus purpuratus	3	136.57
Lampsilis ornata	1	99.10
Villosa lienosa	1	72.10
Lampsilis claibornensis	1	87.60
Quadrula quadrula	3	44.47
Species Richness	6	

Table 26. Unionid mussel assemblage located at site 25.

Species	# Recorded	Mean Length
Utterbackia imbecilis	1	44.30
Quadrula quadrula	34	50.93
Elliptio crassidens	1	130.70
Glebula rotundata	1	57.70

Corbicula fluminea	1	19.70
Species Richness	5	

Table 27. Unionid mussel assemblage located at site 26.

Species	# Recorded	Mean Length
Quadrula refulgens	3	44.10
Megalonaias nervosa	1	125.60
Tritogonia verrucosa	1	119.20
Elliptio crassidens	1	126.00
Potamilus purpuratus	4	89.90
Leptodea fragilis	3	69.20
Corbicula fluminea	1	30.10
Obliquaria reflexa	2	43.90
Species Richness	8	

Table 28. Unionid mussel assemblage located at site 27.

Species	# Recorded	Mean Length
Potamilus purpuratus	1	133.90
Obliquaria reflexa	4	41.90
Corbicula fluminea	1	11.40
Species Richness	3	

Table 29. Unionid mussel assemblage located at site 28.

Species	# Recorded	Mean Length
Elliptio crassidens	3	112.40
Plectomerus dombeyanus	1	108.60
Glebula rotundata	1	49.20
Fusconaia ebena	3	66.10
Toxolasma texasensis	1	36.00
Toxolasma parva	1	15.80
Plectomerus dombeyanus	5	105.78
Leptodea fragilis	1	69.50
Quadrula quadrula	8	65.20
Potamilus purpuratus	5	108.38
Obliquaria reflexa	5	57.06
Quadrula refulgens	8	53.28
Species Richness	12	

Table 30. Unionid mussel assemblage located at site 29.

Species	# Recorded	Mean Length
Plectomerus dombeyanus	5	95.50
Tritogonia verrucosa	3	83.60
Quadrula refulgens	14	48.10

Lampsilis teres	2	95.00
Lampsilis claibornensis	1	79.50
Glebula rotundata	1	50.50
Obliquaria reflexa	3	54.70
Quadrula quadrula	6	61.40
Corbicula fluminea	4	32.40
Potamilus purpuratus	7	110.10
Leptodea fragilis	11	82.85
Truncilla donaciformis	1	17.00
Species Richness	12	

Table 31. Unionid mussel assemblage located at site 30.

Species	# Recorded	Mean Length
Villosa lienosa	2	54.90
Obliquaria reflexa	2	44.00
Quadrula refulgens	9	42.90
Lampsilis claibornensis	1	83.60
Lampsilis teres	2	66.90
Potamilus purpuratus	6	126.60
Glebula rotundata	1	35.80
Corbicula fluminea	2	31.30
Species Richness	8	

Table 32. Unionid mussel assemblage located at site 31.

Species	# Recorded	Mean Length
Tritogonia verrucosa	2	113.20
Lampsilis teres	3	85.30
Leptodea fragilis	1	44.70
Potamilus purpuratus	4	106.20
Villosa lienosa	2	62.00
Glebula rotundata	1	61.60
Obliquaria reflexa	1	25.90
Quadrula quadrula	2	45.60
Quadrula apiculata	1	31.20
Species Richness	9	

Table 33. Unionid mussel assemblage located at site 32.

Species	# Recorded	Mean Length
Quadrula apiculata	1	45.10
Potamilus purpuratus	1	118.00
Species Richness	2	

Table 34. Unionid mussel assemblage located at site 33.

Species	# Recorded	Mean Length
Potamilus purpuratus	19	123.40
Plectomerus dombeyanus	32	101.00
Tritogonia verrucosa	13	104.30
Obliquaria reflexa	57	50.60
Villosa lienosa	3	69.00
Quadrula refulgens	38	50.20
Leptodea fragilis	3	54.50
Corbicula fluminea	4	30.40
Glebula rotundata	43	75.10
Fusconaia ebena	3	64.10
Quadrula apiculata	11	46.10
Quadrula quadrula	104	72.50
Species Richness	12	

Table 35. Unionid mussel assemblage located at site 34.

Species	# Recorded	Mean Length
Plectomerus dombeyanus	28	116.50
Quadrula quadrula	34	76.30
Potamilus purpuratus	5	126.00
Quadrula refulgens	21	51.70
Glebula rotundata	13	87.40
Quadrula apiculata	4	65.60
Tritogonia verrucosa	1	120.00
Lampsilis claibornensis	4	99.00
Leptodea fragilis	3	58.00
Obliquaria reflexa	8	50.10
Corbicula fluminea	2	34.40
Species Richness	11	

Table 36. Unionid mussel assemblage located at site 35.

Species	# Recorded	Mean Length
Quadrula apiculata	6	55.40
Quadrula refulgens	23	52.30
Toxolasma parva	1	43.40
Glebula rotundata	28	89.70
Plectomerus dombeyanus	9	106.50
Lampsilis claibornensis	3	63.90
Lampsilis teres	1	99.00
Villosa lienosa	2	73.50
Potamilus purpuratus	18	148.00
Arcidens confragosus	1	140.00

Tritogonia verrucossa	12	119.60
Corbicula fluminea	2	19.40
Obliquaria reflexa	70	50.90
Quadrula quadrula	141	72.30
Species Richness	14	

Table 37. Unionid mussel assemblage located at site 36.

Species	# Recorded	Mean Length
Potamilus purpuratus	4	116.90
Villosa lienosa	2	65.70
Species Richness	2	

Table 38. Unionid mussel assemblage located at site 37.

Species	# Recorded	Mean Length
Potamilus purpuratus	7	138.90
Glebula rotundata	1	54.20
Species Richness	2	

Table 39. Unionid mussel assemblage located at site 38.

Species	# Recorded	Mean Length
Plectomerus dombeyanus	33	111.80
Glebula rotundata	21	85.00
Obliquaria reflexa	23	53.60
Lampsilis claibornensis	1	102.40
Villosa lienosa	2	69.60
Quadrula quadrula	51	76.60
Quadrula apiculata	1	25.90
Tritogonia verrucosa	8	122.10
Quadrula refulgens	6	51.90
Lampsilis teres	1	97.40
Potamilus purpuratus	22	151.00
Ligumia recta	1	105.00
Species Richness	12	

Table 40. Unionid mussel assemblage located at site 39.

Species	# Recorded	Mean Length
Lampsilis teres	3	78.30
Lampsilis fragilis	2	80.05
Quadrula refulgens	2	54.90
Corbicula fluminea	1	38.20
Species Richness	4	

Table 41. Unionid mussel assemblage located at site 40.

Species	# Recorded	Mean Length
Potamilus purpuratus	17	141.50
Plectomerus dombeyanus	10	93.10
Lampsilis teres	3	89.30
Lampsilis fragilis	2	85.00
Quadrula refulgens	1	52.50
Glebula rotundata	2	72.70
Obliquaria reflexa	3	56.70
Quadrula quadrula	2	71.80
Villosa lienosa	2	63.50
Lampsilis claibornensis	1	91.10
Ligumia recta	1	78.50
Species Richness	11	

Table 42. Unionid mussel assemblage located at site 41.

Species	# Recorded	Mean Length
Plectomerus dombeyanus	16	107.60
Glebula rotundata	11	88.80
Lampsilis claibornensis	3	95.00
Corbicula fluminea	1	41.70
Potamilus purpuratus	12	149.70
Obliquaria reflexa	16	52.50
Quadrula quadrula	79	81.10
Quadrula apiculata	3	52.60
Quadrula refulgens	1	52.00
Arcidens confragosus	1	165.00
Species Richness	10	

Table 43. Unionid mussel assemblage located at site 42.

Species	# Recorded	Mean Length
Glebula rotundata	3	100.50
Lampsilis claibornensis	4	88.40
Corbicula fluminea	2	25.10
Lampsilis teres	1	93.50
Quadrula refulgens	11	56.30
Potamilus purpuratus	27	134.20
Quadrula quadrula	8	83.60
Obliquaria reflexa	14	55.50
Quadrula apiculata	1	50.60
Plectomerus dombeyanus	2	124.90
Villosa lienosa	3	62.40
Tritogonia verrucosa	1	122.30

Lampsilis fragilis	4	20.00
Species Richness	13	

Table 44. Unionid mussel assemblage located at site 43.

Species	# Recorded	Mean Length
Quadrula refulgens	1	57.00
Potamilus purpuratus	7	127.10
Obliquaria reflexa	6	58.20
Villosa lienosa	1	41.80
Leptodea fragilis	1	83.20
Lampsilis claibornensis	1	89.70
Species Richness	6	

Table 45. Unionid mussel assemblage located at site 44.

Species	# Recorded	Mean Length
Quadrula refulgens	2	47.10
Lampsilis fragilis	3	59.20
Villosa lienosa	3	75.30
Potamilus purpuratus	6	148.30
Obliquaria reflexa	2	33.10
Lampsilis teres	1	79.50
Species Richness	6	

Table 46. Unionid mussel assemblage located at site 45.

Species	# Recorded	Mean Length
Potamilus purpuratus	7	159.10
Ligumia recta	1	108.80
Lampsilis claibornensis	2	95.30
Quadrula refulgens	4	57.40
Villosa lienosa	1	75.50
Utterbackia imbecilis	2	24.30
Obliquaria reflexa	1	36.00
Species Richness	7	

Table 47. Unionid mussel assemblage located at site 46.

Species	# Recorded	Mean Length
Glebula rotundata	10	73.20
Plectomerus dombeyanus	2	103.60
Villosa lienosa	2	76.50
Lampsilis teres	1	99.70
Lampsilis claibornensis	1	110.20
Quadrula refulgens	47	58.70
Potamilus purpuratus	14	155.60

Obliquaria reflexa	27	60.70
Quadrula quadrula	44	83.60
Toxalasma texasensis	1	46.00
Leptodea fragilis	1	39.20
Species Richness	11	

Table 48. Unionid mussel assemblage located at site 47.

Species	# Recorded	Mean Length
Potamilus purpuratus	5	128.20
Leptodea fragilis	1	107.60
Quadrula refulgens	2	59.90
Villosa lienosa	2	75.80
Species Richness	4	

Table 49. Unionid mussel assemblage located at site 48.

Species	# Recorded	Mean Length
Potamilus purpuratus	6	154.00
Obliquaria reflexa	9	45.10
Lampsilis claibornensis	2	67.50
Leptodea fragilis	1	83.40
Plectomerus dombeyanus	1	74.50
Corbicula fluminea	1	15.60
Quadrula quadrula	1	74.30
Quadrula refulgens	34	48.50
Lampsilis teres	2	94.2
Toxalasma parva	1	22.40
Glebula rotundata	1	25.00
Species Richness	11	

Table 50. Unionid mussel assemblage located at site 49.

Species	# Recorded	Mean Length
Potamilus purpuratus	14	145.80
Obliquaria reflexa	14	48.50
Leptodea fragilis	2	87.10
Pyganodon grandis	1	116.00
Quadrula refulgens	33	48.80
Plectomerus dombeyanus	5	104.40
Amblema plicata	1	114.30
Tritogonia verrucosa	1	117.00
Lampsilis claibornensis	1	106.00
Lampsilis teres	6	100.10
Quadrula quadrula	16	77.50
Species Richness	11	

Table 51. Unionid mussel assemblage located at site 1 using SCUBA on 4-22-98.
Deep Water Only

Species	# Recorded	Mean Length
Pyganodon grandis	4	99.38
Corbicula fluminea	9	28.01
Lampsilis teres	12	97.18
Glebula rotundata	44	67.84
Potamilus purpuratus	1	111.60
Plectomerus dombeyanus	10	86.90
Quadrula quadrula	11	64.49
Quadrula apiculata	1	42.30
Species Richness	8	

Table 52. Unionid mussel assemblage located at site 5 using SCUBA on 4-22-98.
Deep Water Only

Species	# Recorded	Mean Length
Potamilus purpuratus	4	124.40
Plectomerus dombeyanus	9	96.43
Megalonaias nervosa	2	194.00
Glebula rotundata	76	67.25
Toxolasma texasensis	1	35.20
Pyganodon grandis	2	93.85
Obliquaria reflexa	1	54.30
Quadrula refulgens	3	56.43
Quadrula apiculata	3	58.20
Quadrula quadrula	41	65.53
Corbicula fluminea	3	26.80
Toxolasma parvus	1	23.80
Species Richness	12	

Table 53. Unionid mussel assemblage located at site 6 using SCUBA on 8-27-98.
Deep Water

Species	# Recorded	Mean Length
Potamilus purpuratus	14	146.80
Glebula rotundata	6	57.40
Elliptio crassidens	1	117.00
Amblema plicata	1	101.70
Quadrula quadrula	1	67.40
Plectomerus dombeyanus	1	91.30
Lampsilis claibornensis	1	97.10
Quadrula refulgens	1	56.00

Shallow Water

Species	# Recorded	Mean Length
Potamilus purpuratus	8	114.10
Quadrula quadrula	1	60.00
Elliptio crassidens	1	109.00
Quadrula apiculata	1	20.00
Glebula rotundata	5	67.90
Pyganodon grandis	2	87.70
Species Richness (Total)	11	

Table 54. Unionid mussel assemblage located at site 7 using SCUBA on 8-27-98.

Deep Water

Species	# Recorded	Mean Length
Potamilus purpuratus	9	135.40
Lampsilis claibornensis	1	100.80
Glebula rotundata	11	66.90
Quadrula refulgens	8	53.70
Plectomerus dombeyanus	2	99.10
Villosa lienosa	1	67.70
Quadrula apiculata	2	50.20
Quadrula quadrula	21	64.70
Tritogonia verrucosa	1	109.30
Amblema plicata	6	107.10
Eliptio crassidens	8	113.60
Lampsilis teres	1	104.00
Obliquaria reflexa	7	54.90

Shallow Water

Species	# Recorded	Mean Length
Glebula rotundata	48	68.80
Lampsilis teres	6	98.10
Potamilus purpuratus	2	160.80
Plectomerus dombeyanus	2	110.60
Quadrula quadrula	11	73.50
Obliquaria reflexa	7	57.40
Quadrula apiculata	1	50.00
Quadrula refulgens	2	54.20
Villosa lienosa	1	52.40
Corbicula fluminea	2	20.20
Species Richness (Total)	14	

Table 55. Unionid mussel assemblage located at site 9 using SCUBA on 8-27-98.

Deep Water

Species	# Recorded	Mean Length
Elliptio crassidens	1	111.70
Potamilus purpuratus	4	132.00
Quadrula refulgens	27	44.40
Plectomerus dombeyanus	4	76.20
Lampsilis teres	3	94.10
Quadrula quadrula	5	58.30
Villosa lienosa	5	63.30
Leptodea fragilis	3	86.50
Obliquaria reflexa	11	47.00
Corbicula fluminea	1	40.30
Quadrula apiculata	2	40.50

Shallow Water

Species	# Recorded	Mean Length
Potamilus purpuratus	3	88.90
Plectomerus dombeyanus	1	110.10
Lampsilis claibornensis	1	89.80
Glebula rotundata	4	58.80
Toxolasma texasensis	1	48.90
Villosa lienosa	7	61.20
Lampsilis teres	5	82.00

Species Richness (Total) 14

Table 56. Unionid mussel assemblage located at site 17 using SCUBA on 9-25-98.

Deep Water

Species	# Recorded	Mean Length
Quadrula apiculata	54	49.90
Leptodea fragilis	1	80.10
Quadrula quadrula	25	54.50
Arcidens confragosus	2	92.20
Potamilus purpuratus	2	97.10
Obliquaria reflexa	21	42.80
Amblema plicata	1	48.50
Corbicula fluminea	2	29.80
Glebula rotundata	1	32.80
Quadrula refulgens	30	42.40
Tritogonia verrucosa	3	81.70

Shallow Water

Species	# Recorded	Mean Length
Lampsilis teres	19	96.10
Amblema plicata	1	91.00
Arcidens confragosus	2	73.30
Toxolasma texasensis	5	42.50
Plectomerus dombeyanus	1	73.50
Lampsilis claibornensis	2	82.30
Quadrula refulgens	3	35.40
Villosa lienosa	7	63.20
Quadrula apiculata	19	42.80
Potamilus purpuratus	14	133.00
Quadrula quadrula	12	55.20
Leptodea fragilis	3	91.90
Anadonta suborbiculata	1	95.30
Obliquaria reflexa	21	48.90
Glebula rotundata	16	50.80
Species Richness (Total)	17	

Table 57. Unionid mussel assemblage located at site 20 using SCUBA on 9-25-98.

Deep Water

Species	# Recorded	Mean Length
Potamilus purpuratus	1	147.00
Tritogonia verrucosa	1	123.60
Lampsilis teres	1	90.60
Leptodea fragilis	2	55.80
Obliquaria reflexa	3	40.60
Pyganodon grandis	1	62.00
Quadrula refulgens	40	46.60
Corbicula fluminea	6	27.00

Shallow Water

Species	# Recorded	Mean Length
Potamilus purpuratus	7	153.60
Quadrula refulgens	26	50.60
Pyganodon grandis	1	113.30
Anadonta suborbiculata	5	72.00
Lampsilis teres	2	108.40
Corbicula fluminea	2	39.50
Obliquaria reflexa	7	52.30
Glebula rotundata	3	66.30
Quadrula quadrula	4	68.00

Species Richness (Total) 11

Table 58. Unionid mussel assemblage located at site 21 using SCUBA on 9-25-98.
Shallow Water Only

Species	# Recorded	Mean Length
Potamilus purpuratus	8	145.00
Villosa lienosa	5	70.50
Tritogonia verrucosa	5	106.90
Leptodea fragilis	2	76.70
Lampsilis claibornensis	2	90.60
Quadrula quadrula	2	69.80
Toxolasma texasensis	1	47.30
Lampsilis teres	5	98.30
Quadrula refulgens	4	40.00
Obliquaria reflexa	9	54.00
Corbicula fluminea	1	24.70

Species Richness (Total) 11

Table 59. Unionid mussel assemblage located at site 33 using SCUBA on 8-21-98.
Deep Water

Species	# Recorded	Mean Length
Tritogonia verrucosa	2	83.90
Obliquaria reflexa	5	55.40
Quadrula quadrula	4	70.00
Quadrula apiculata	1	48.10
Quadrula refulgens	2	43.30
Plectomerus dombeyanus	1	106.80
Potamilus purpuratus	2	137.70

Shallow Water

Species	# Recorded	Mean Length
Tritogonia verrucosa	4	111.80
Plectomerus dombeyanus	6	102.30
Quadrula refulgens	15	54.90
Glebula rotundata	4	70.50
Obliquaria reflexa	19	54.50
Quadrula apiculata	3	42.60
Potamilus purpuratus	3	138.70
Quadrula quadrula	45	67.50

Species Richness (Total) 6

Table 60. Unionid mussel assemblage located at site 35 using SCUBA on 8-21-98.

Deep Water

Species	# Recorded	Mean Length
Potamilus purpuratus	1	148.70
Quadrula refulgens	12	54.30
Obliquaria reflexa	5	58.80
Quadrula quadurla	4	78.60
Corbicula fluminea	1	36.20
Quadrula apiculata	4	41.10

Shallow Water

Species	# Recorded	Mean Length
Glebula rotundata	9	80.90
Tritogonia verrucosa	6	99.90
Plectomerus dombeyanus	8	96.20
Quadrula refulgens	3	53.70
Potamilus purpuratus	5	145.00
Corbicula fluminea	1	44.70
Obliquaria reflexa	16	56.20
Quadrula quadrula	11	68.30

Species Richness (Total) 9

Table 61. Unionid mussel assemblage located at site 38 using SCUBA on 8-21-98.

Shallow Water Only

Species	# Recorded	Mean Length
Glebula rotundata	1	74.90
Potamilus purpuratus	6	136.70
Plectomerus dombeyanus	1	129.10
Quadrula refulgens	1	56.30
Corbicula fluminea	4	33.80
Leptodea fragilis	1	110.00
Quadrula quadrula	9	74.40
Obliquaria reflexa	4	57.60

Species Richness (Total) 8

Table 62. Unionid mussel assemblage located at site 42 using SCUBA on 9-18-98.

Deep Water

Species	# Recorded	Mean Length
Quadrula refulgens	8	49.00
Villosa lienosa	1	68.90
Obliquaria reflexa	16	56.30

Lampsilis teres	1	101.10
Corbicula fluminea	1	36.60
Quadrula apiculata	7	72.40
Quadrula quadrula	10	81.90
Potamilus purpuratus	24	129.90
Glebula rotundata	1	102.60

Shallow Water

Species	**# Recorded**	**Mean Length**
Potamilus purpuratus	14	122.20
Plectomerus dombeyanus	6	115.70
Quadrula quadrula	1	92.40
Obliquaria reflexa	1	44.70
Villosa lienosa	2	71.90
Leptodea fragilis	2	104.80
Lampsilis teres	5	98.50
Lampsilis claibornensis	4	70.80

Species Richness (Total) 12

Table 63. Unionid mussel assemblage located at site 48 using SCUBA on 9-18-98.

Deep Water

Species	**# Recorded**	**Mean Length**
Potamilus purpuratus	9	141.70
Leptodea fragilis	1	89.40
Obliquaria reflexa	9	53.70
Quadrula refulgens	11	53.50
Quadrula apiculata	3	29.00
Quadrula quadrula	26	77.80
Plectomerus dombeyanus	1	81.00

Shallow Water

Species	**# Recorded**	**Mean Length**
Quadrula quadrula	31	84.90
Lampsilis teres	1	86.80
Lampsilis claibornensis	1	103.00
Potamilus purpuratus	12	120.50
Tritogonia verrucosa	1	111.50
Villosa lienosa	3	73.20
Quadrula refulgens	7	56.30
Obliquaria reflexa	19	53.70
Plectomerus dombeyanus	9	112.70
Glebula rotundata	14	88.10

Quadrula apiculata	3	58.90
Species Richness (Total)	12	

FIG1A MUSSELS OF THE LOWER WEST PEARL RIVER

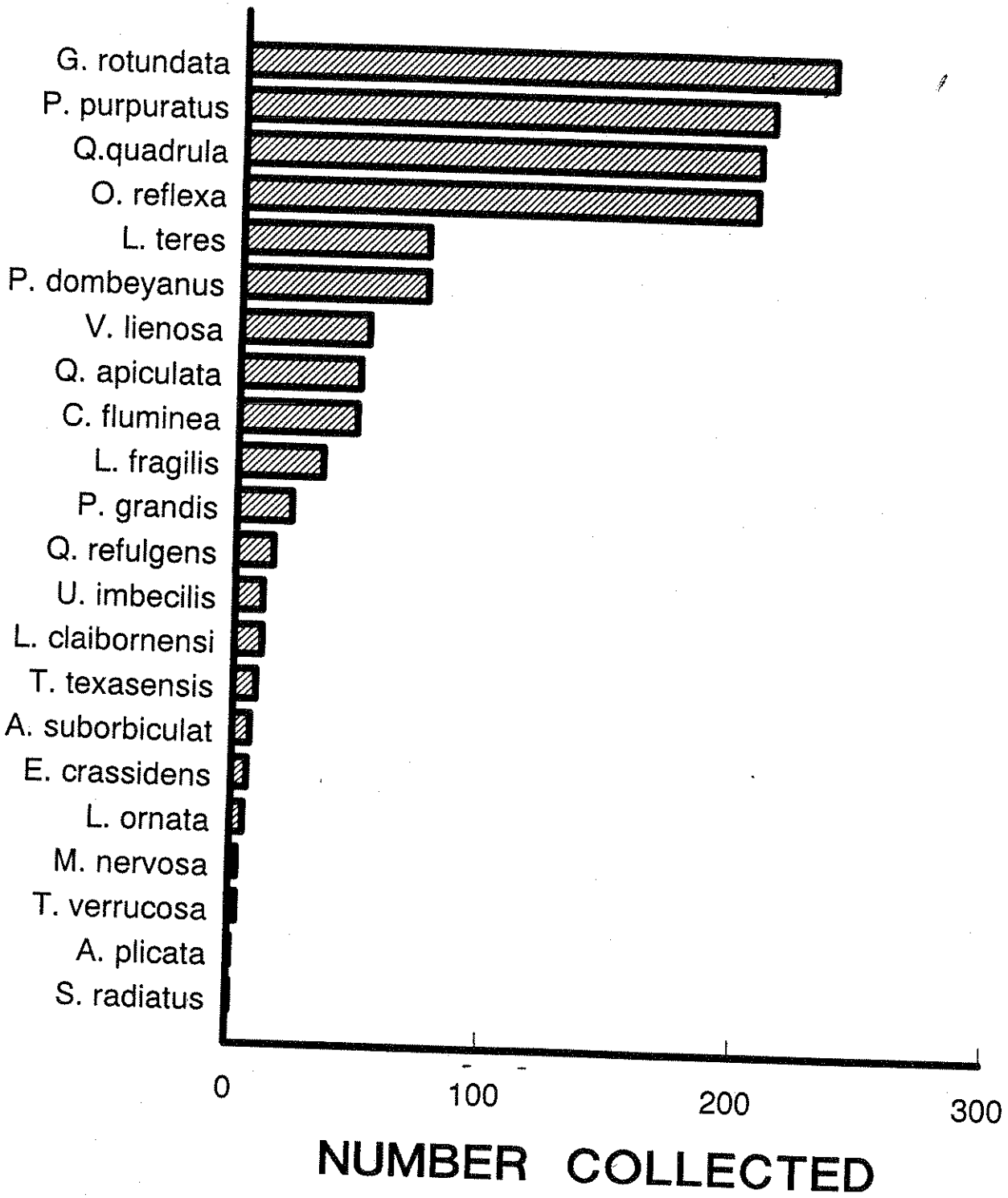


FIG1B MUSSELS OF WILSON SLOUGH AND THE PEARL RIVER

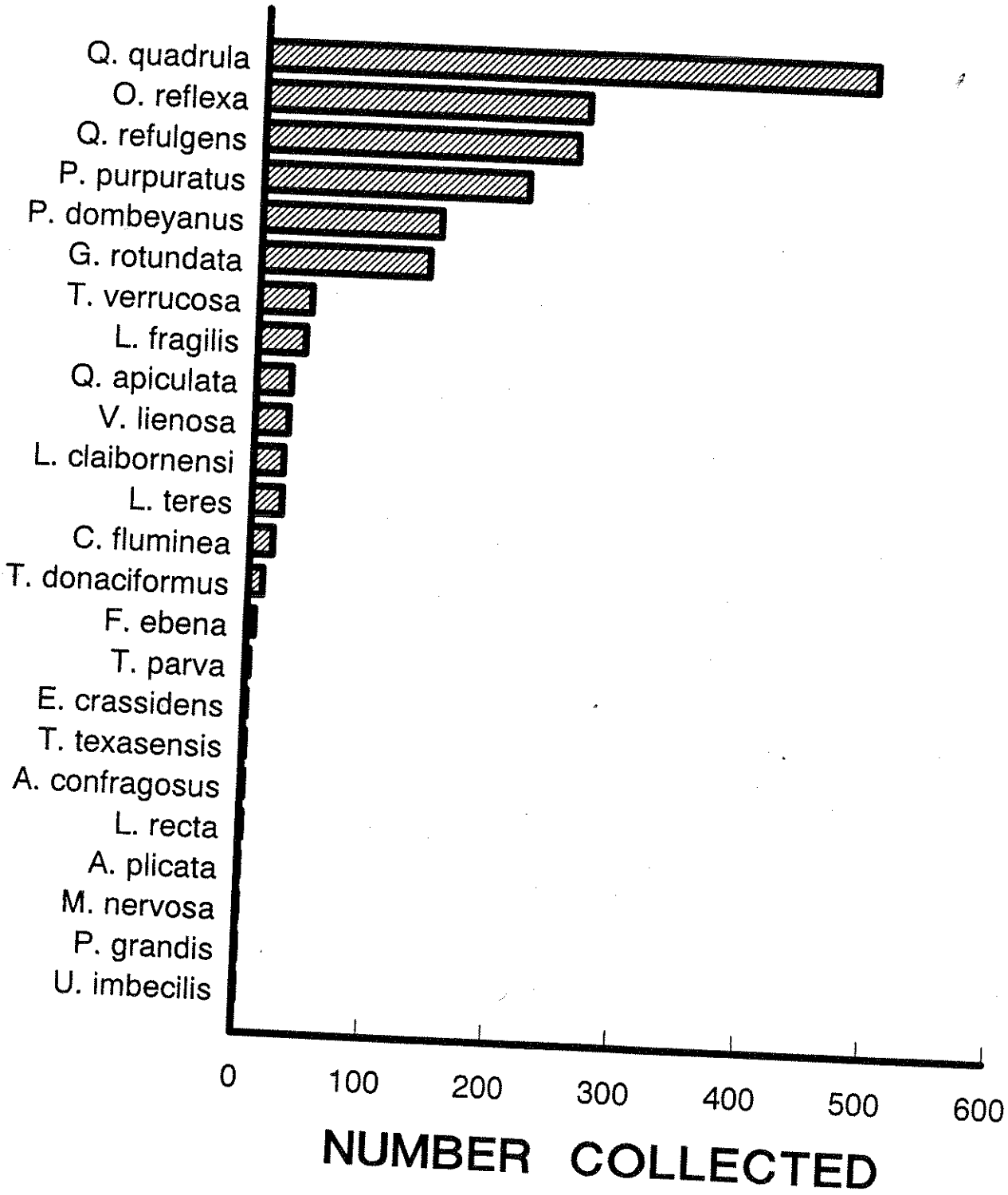
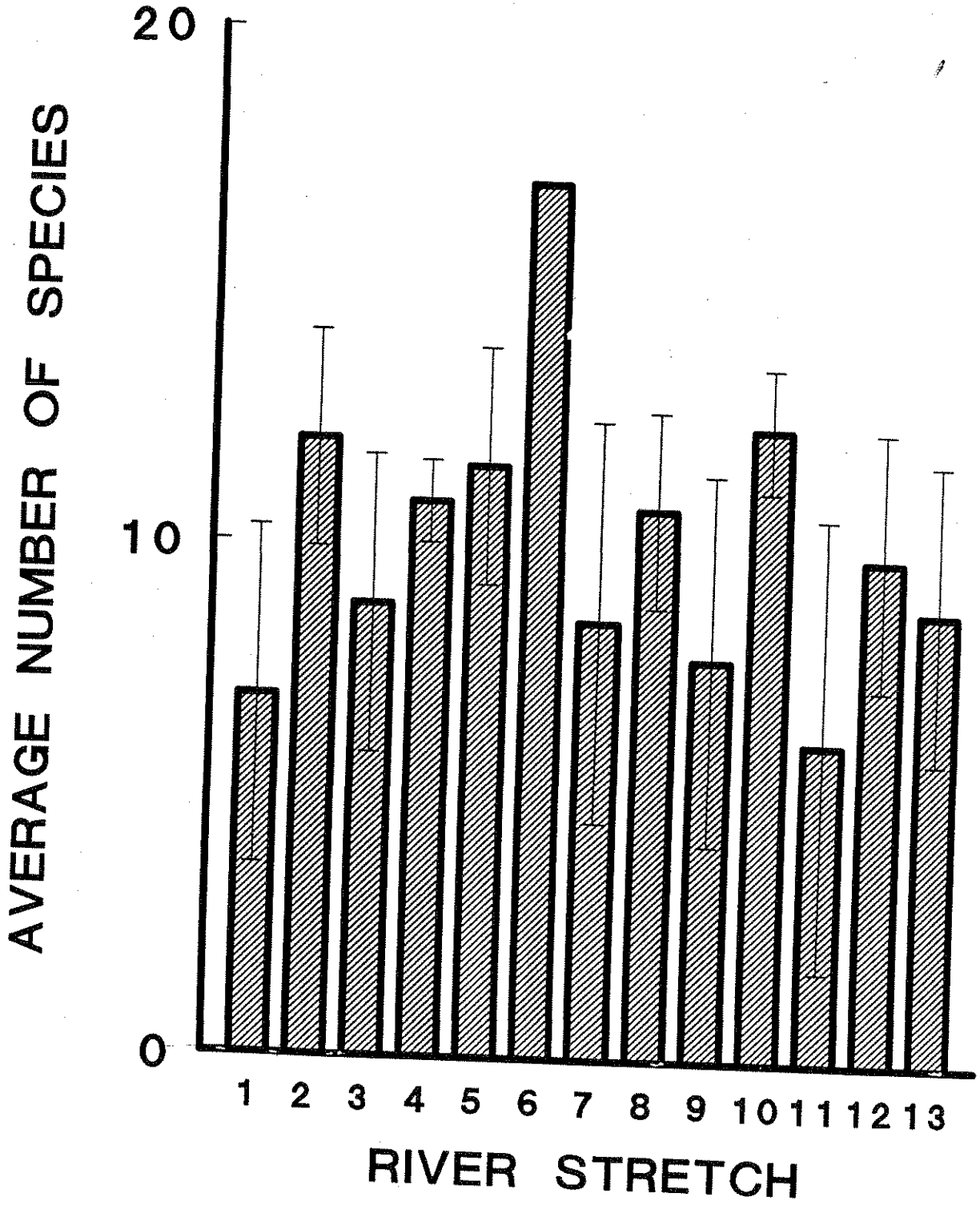
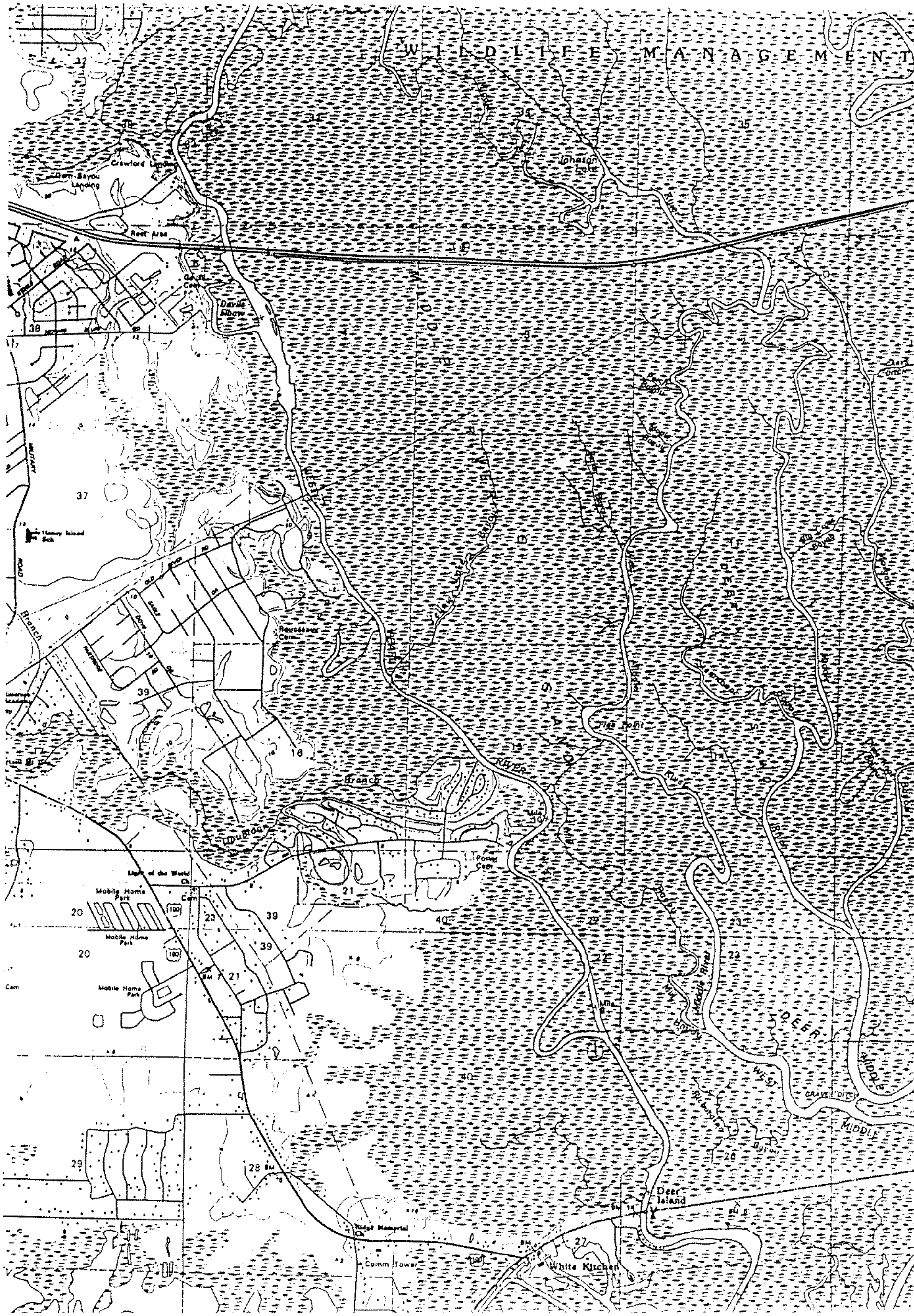
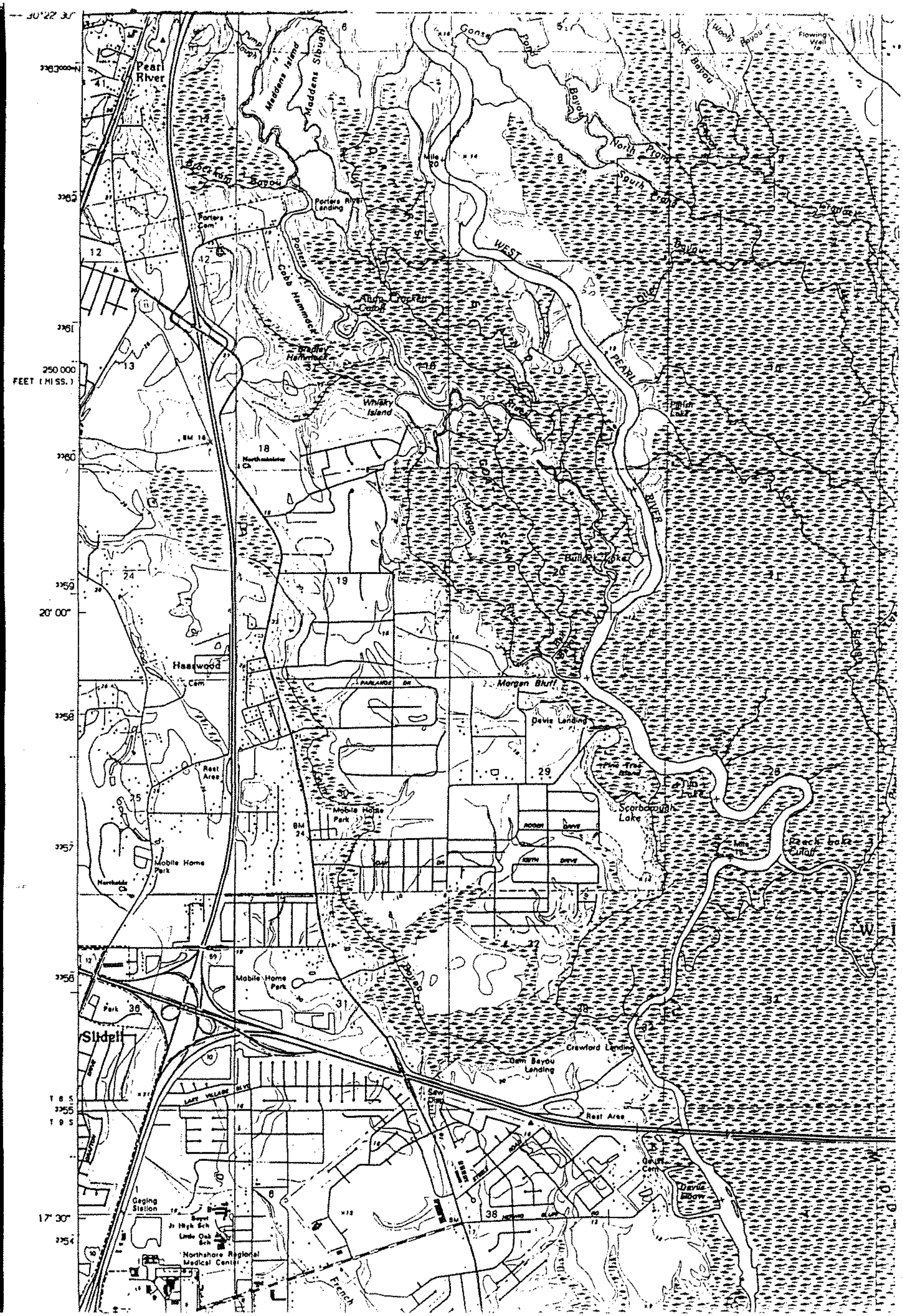


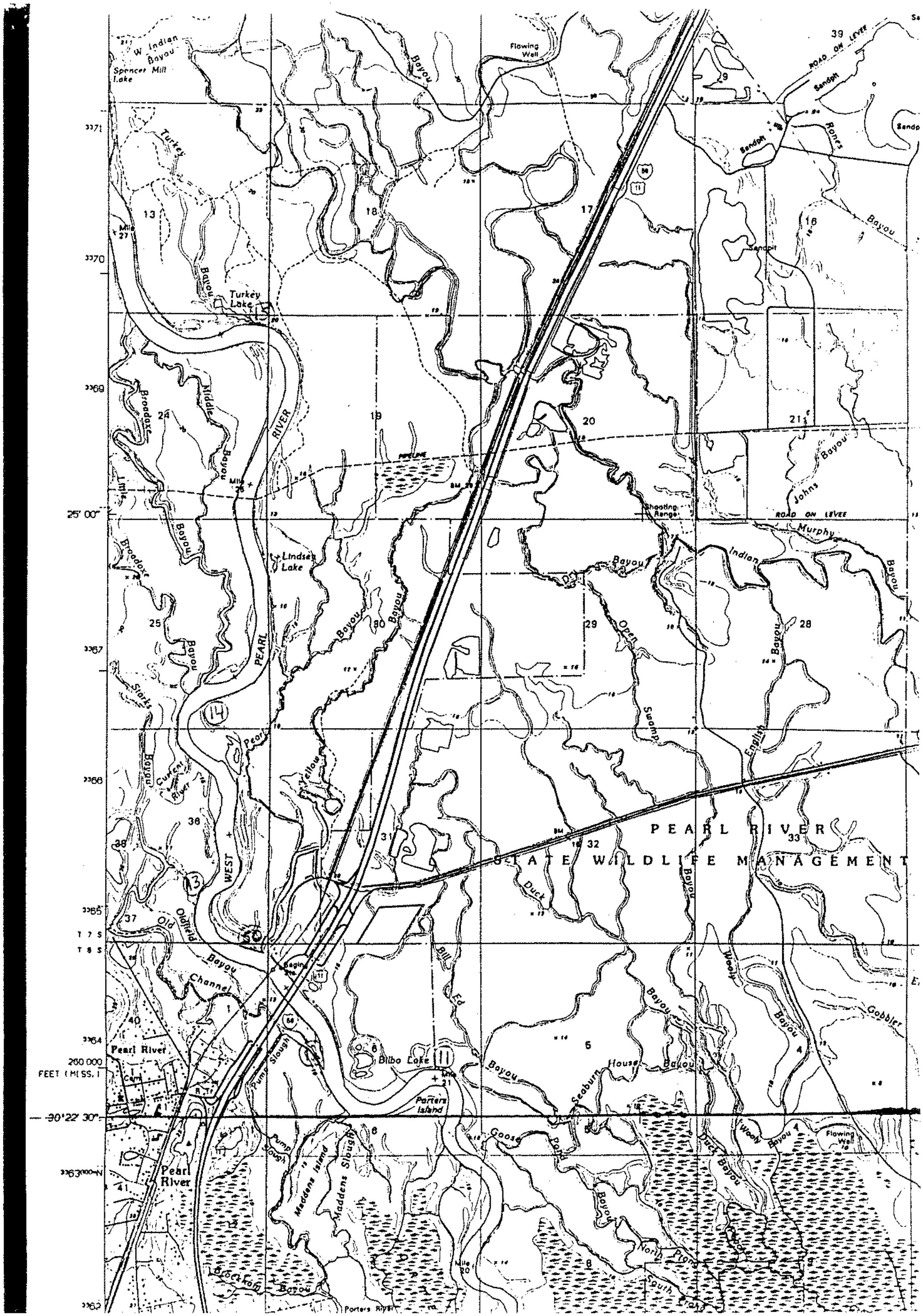
FIG 2 MUSSEL DIVERSITY VS. RIVER STRETCH




W I L D L I F E   M A N A G E M E N T
Crawford Landing
Gum Bayou Landing
Rest Area
Johnson Lake
Devils Elbow
Honey Island Sch
Rousseaux Cem
Branch
Flat Point
RIVER
Light of the World Ch
Mobile Home Park
Mobile Home Park
Mobile Home Park
Cem
Ridge Memorial Ch
Comm Tower
White Kitchen
Deer Island
DEER
WEST
MIDDLE
GRAVES DITCH
37
39
20
21
40
29
28
27


30°22'30"
Pearl River
Maddens Island
Maddens Slough
Porters River Landing
Porters Cem
Cobb Hammock
Bradley Hammock
Whisky Island
WEST
PEARL
RIVER
Goose Pond
Duck Bayou
Wooly Bayou
Flowing Well
North Prong
South Prong
Parish Lake
Bullock Lake
Morgan
250 000
FEET (MISS.)
20' 00"
Haaswood
Cem
Morgan Bluff
Davis Landing
Rest Area
Pine Tree Island
Scarborough Lake
Mobile Home Park
Peach Lake Cutoff
Northside Ch
Slidell
Park
Crawford Landing
Gum Bayou Landing
Rest Area
T 8 S
T 9 S
Davis Elbow
Gaging Station
17' 30"
Boyet Jr High Sch
Little Oak Sch
Northshore Regional Medical Center
French
2

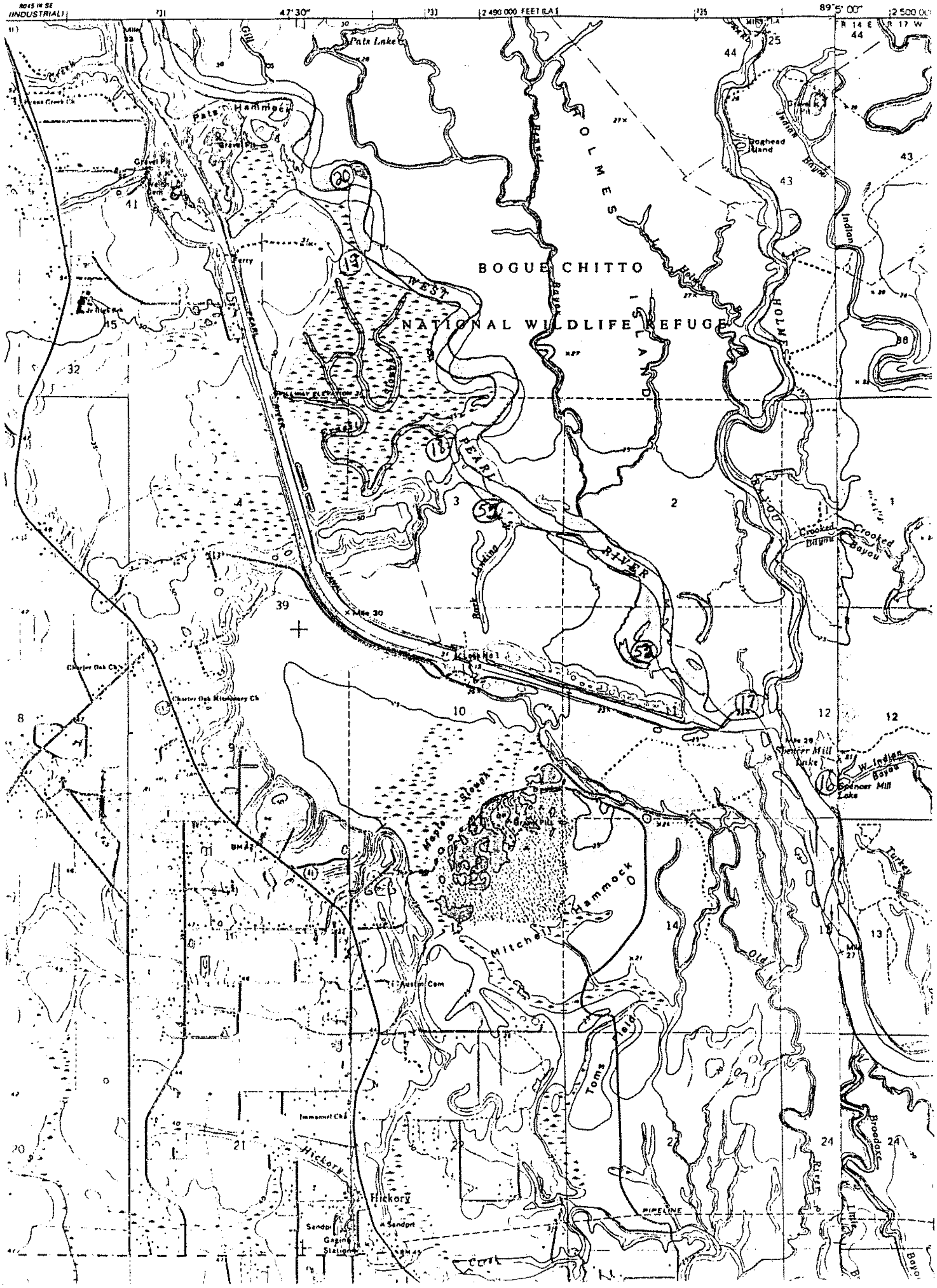
3


W. Indian Bayou
Spencer Mill Lake
Flowing Well
ROAD ON LEVEE
Sandpit
Turkey Bayou
Turkey Lake
Mile 27
Mile 26
Mile 21
Mile 20
Broadaxe Bayou
Middle Bayou
PEARL RIVER
PIPELINE
Little Bayou
Lindsey Lake
Shooting Range
Johns Bayou
Murphy Bayou
Indian Bayou
Open Swamp
English Bayou
Starks Bayou
Pearl
Yellow
Current River
WEST PEARL RIVER
PEARL RIVER STATE WILDLIFE MANAGEMENT
Duck Bayou
Old Oldfield Bayou
Channel
Bill Ed Bayou
Wooly Bayou
Gobbler
Pearl River
Pump Slough
Bilbo Lake
Seaburn House Bayou
Porters Island
Goose Pond Bayou
Maddens Island
Maddens Slough
Duck Bayou
North Prong
South Prong
Brackfort Bayou
Porters River
25' 00"
90°22' 30"
200 000 FEET (MISS.)
3363000mN
T 7 S
T 8 S
3371
3370
3369
3367
3366
3365
3364
3362

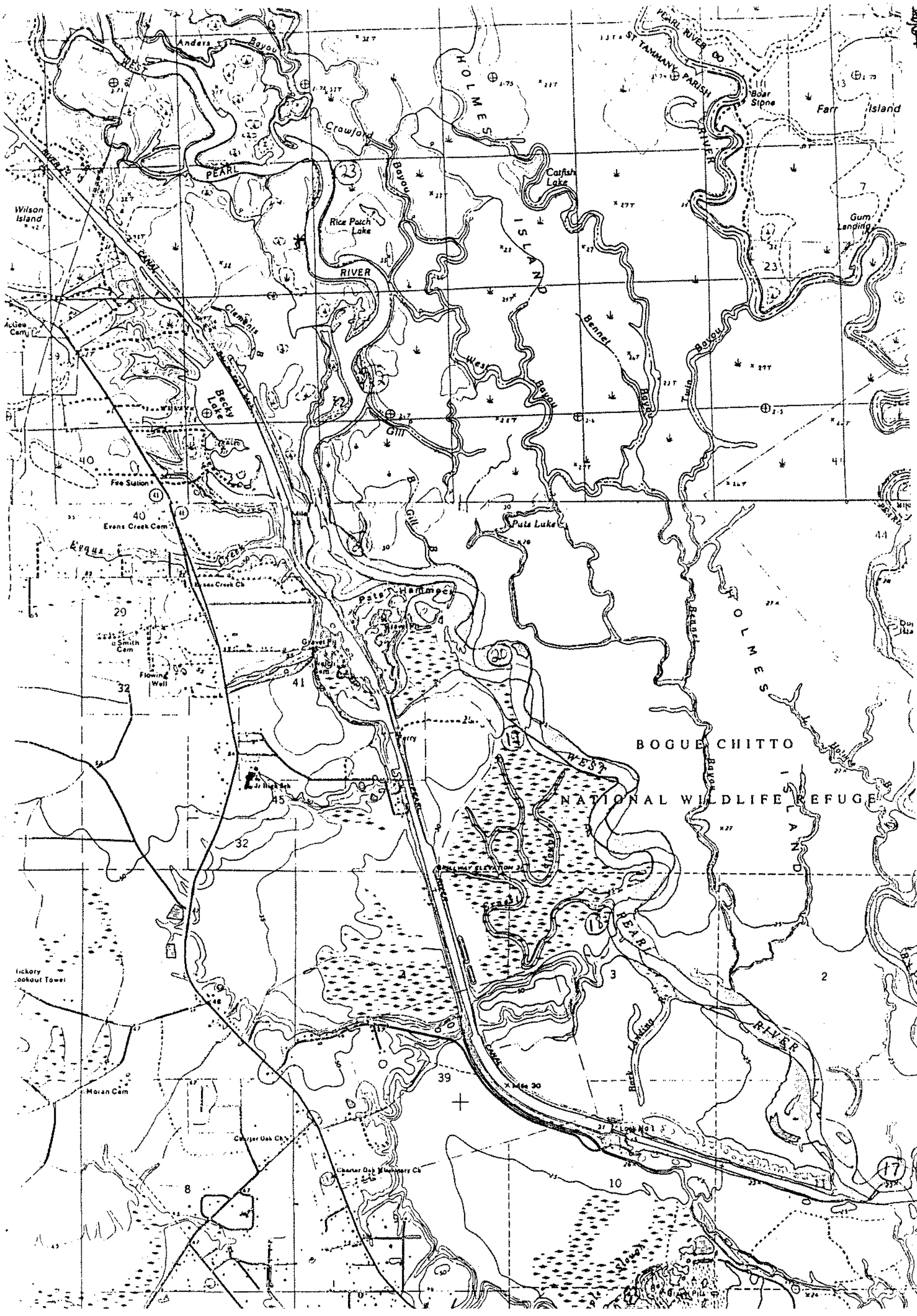
HICKORY QUADRANGLE
LOUISIANA–MISSISSIPPI
7.5 MINUTE SERIES (TOPOGRAPHIC)

UNIT
DEPARTMENT
GEOLO

4



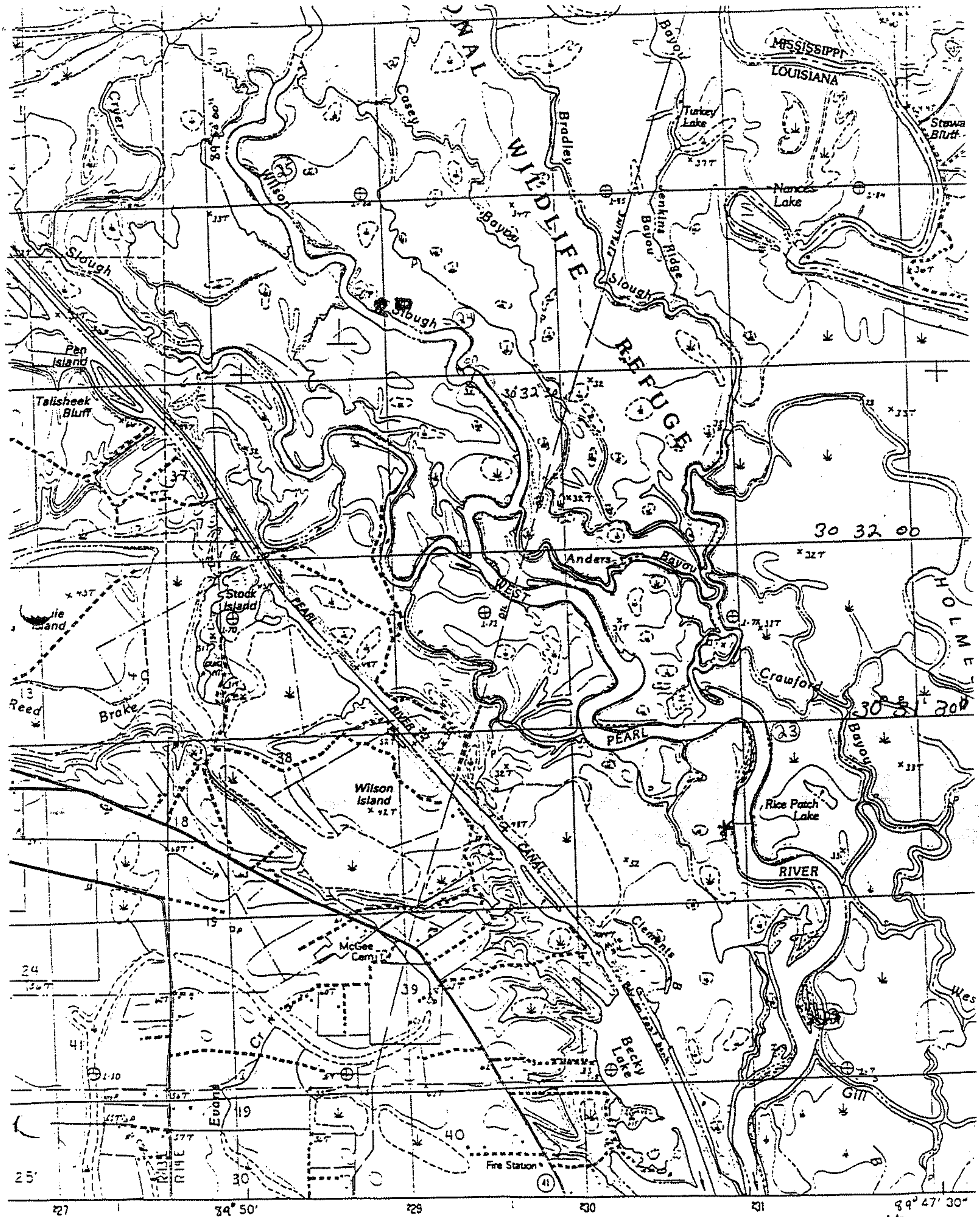
41



Anders Bayou
WEST PEARL RIVER
PEARL RIVER
ST TAMMANY PARISH
Boar Stone
Farr Island
HOLMES ISLAND
Crawford Bayou
Catfish Lake
Rice Patch Lake
Wilson Island
Gum Landing
CANAL
Clements B
Becky Lake
Bennet Bayou
Twin Bayou
West Bayou
Gill B
Fire Station
Evans Creek Cem
Evans Creek Ch
Puts Lake
Pats Hammock
Gravel Pit
Smith Cem
Flowing Well
BOGUE CHITTO
NATIONAL WILDLIFE REFUGE
RIVER
Hickory Lookout Tower
Moran Cem
Charter Oak Ch
Lock No 1

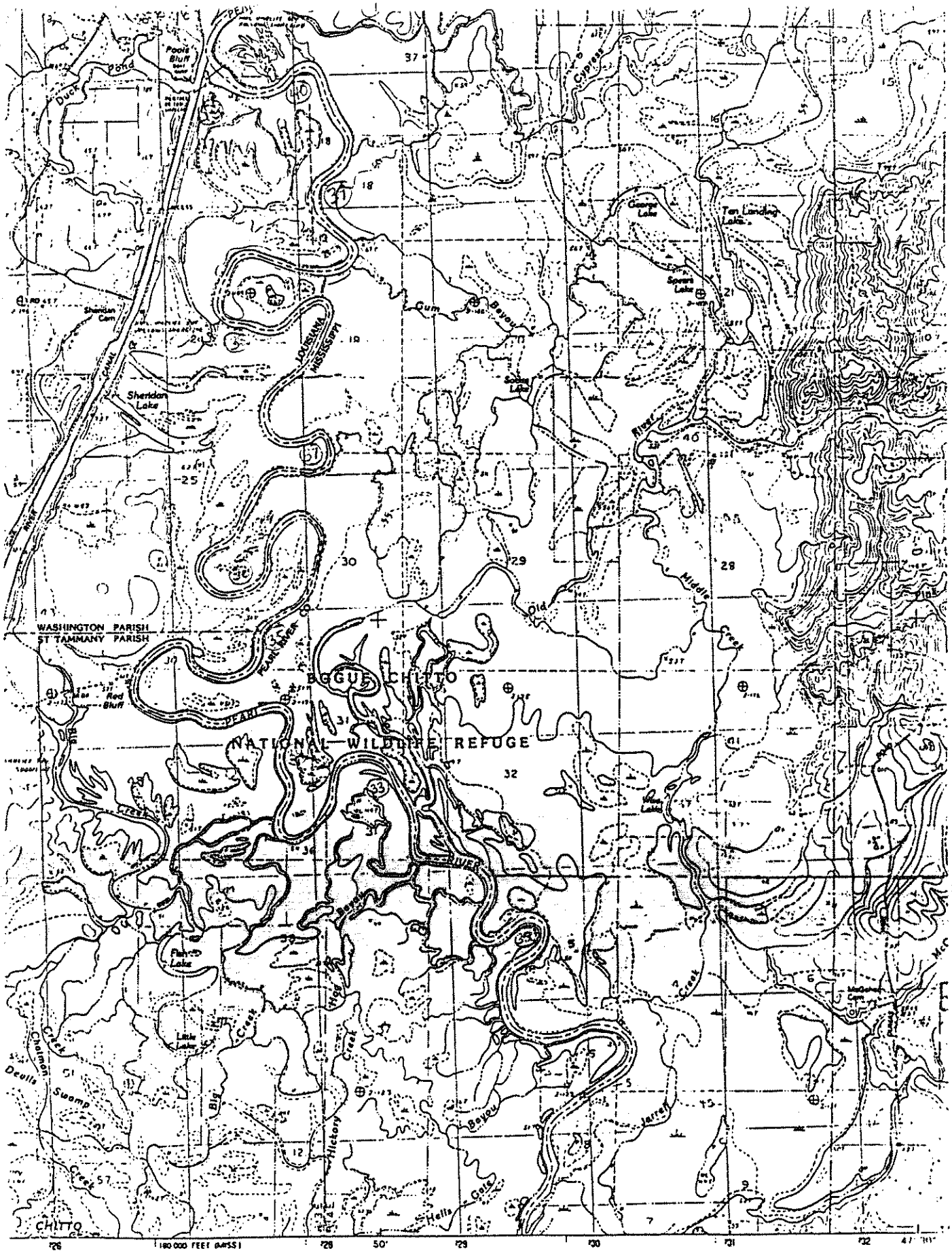
5

42



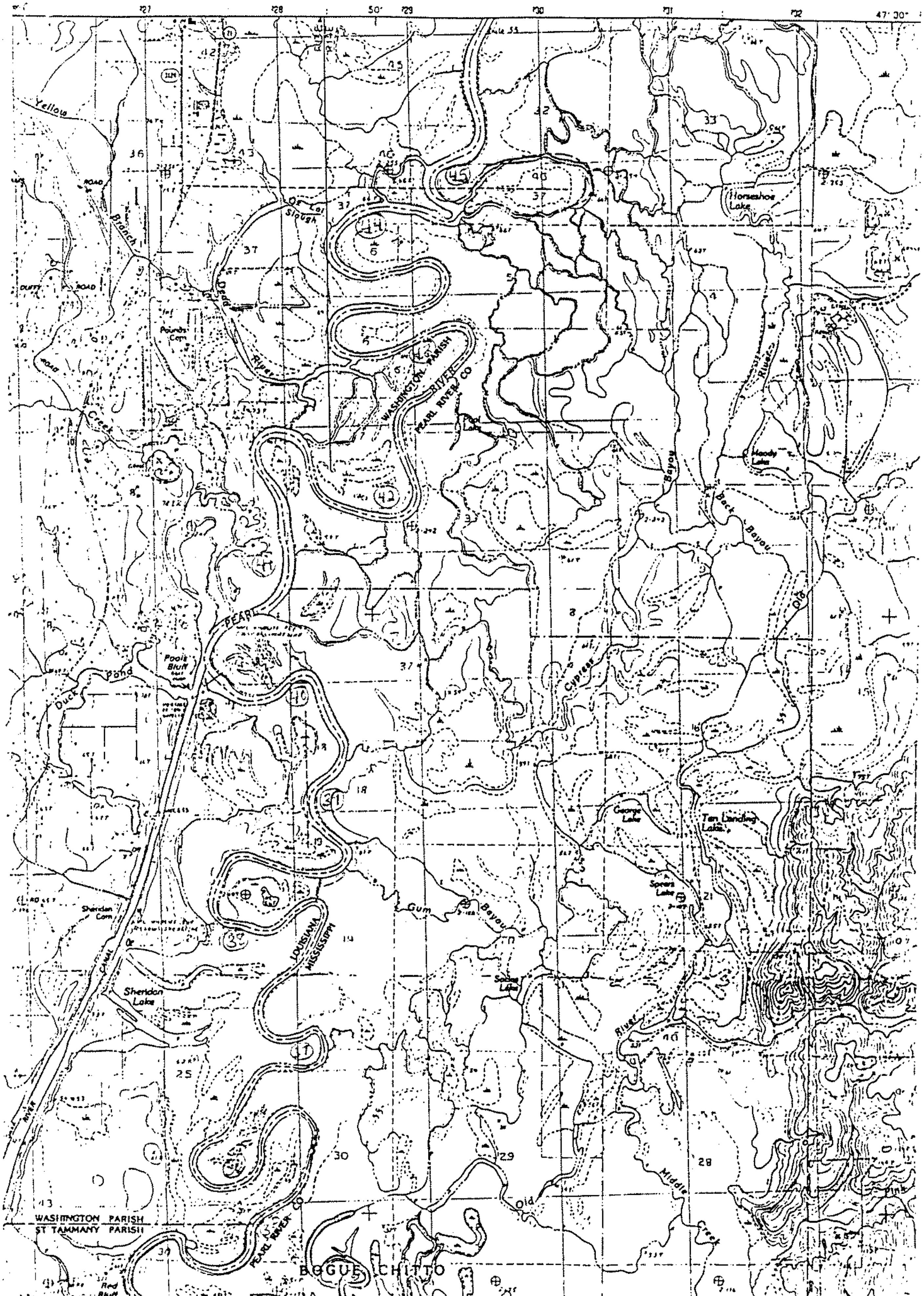
SCALE 1:24 000


180 000 FEET (MISS.)
50'
47' 30"
Creek
Bayou
McGehee
Dobson
Halls
Gate
Page Lake
BOGUE
CHITTO
Keller Cem
Nicks Pond
PEARL RIVER
ST TAMMANY PARISH
PEARL
SWAMP
East
Bogue
Chitto
BOGUE
RIVER
Middle
Black Lake
CHITTO
Cow Hammock Lake
Little
River
Big
Bayou
Porter
Bayou
NATIONAL
WILDLIFE
REFUGE
Brier
Patch
Joiner Lake
Crier
Casey
Bradley
Turkey Lake
MISSISSIPPI
LOUISIANA
Stewarts Bluff
Nances Lake
MUD SWAMP
Slough
Pen Island
Talisheek Bluff

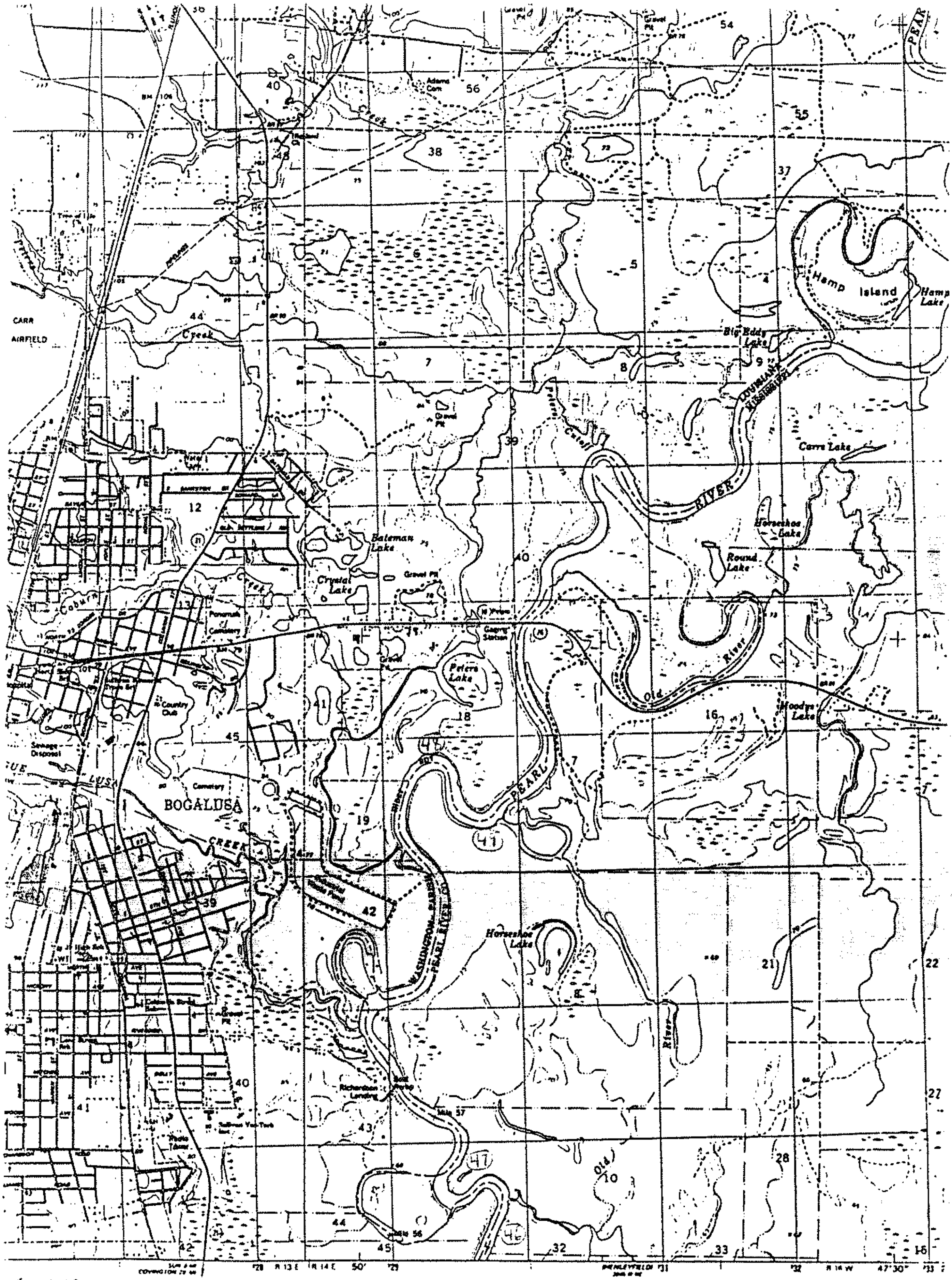


SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
SUPPLEMENTARY CONTOUR INTERVAL 5 FEET


Yellow
Branch
Dead River
Pounds Cem
Duck Pond
Pools Bluff
PEARL RIVER
WASHINGTON PARISH
PEARL RIVER CO
Horseshoe Lake
Moody Lake
Bayou
Back Bayou
Old River
Cypress
George Lake
Ten Landing Lake
Spears Lake
Gum Bayou
LOUISIANA
MISSISSIPPI
Sheridan Cem
Sheridan Lake
CANAL
Middle Creek
Old
BOGUE CHITTO
WASHINGTON PARISH
ST TAMMANY PARISH
Red Bluff

10



...e Geological Survey

...aerial photographs
...edited 1982

SCALE 1:24 000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 KILOMETER

CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS

47