

178. Benthic samples taken in the general area indicate that sediment type influences the type as well as the abundance of macro-infauna. Smaller numbers of organisms were found in fine sand and clay substrates, but the individual size of each organism was larger. This relationship suggests that in the fine sand-clay substrates bivalves dominated, while polychaetes dominated the coarser substrates.

179. Essentially all of Dauphin Island is located within a Flood Prone Area as designated by the South Alabama Regional Planning Commission. However, the area is currently enrolled in the Federal Flood Insurance Program which implies restrictions on flood plain developments. Key provisions for the Federal Flood Insurance Program are outlined in Appendix A. Considering the constraints under which development is permitted under this program, implementation of the Nearshore Nourishment Plan should have no appreciable effects on flood plain development.

#### SELECTING A PLAN

180. The selection of the best plan(s) to resolve the problems and meet the needs of the study area involves the comparison of the possible alternatives within the context of the formulation criteria outlined earlier. Herein, data on storm flood and damages and erosion problems, possible solutions and the desires of local interests have been assessed. Analyses of the structural alternatives indicate that except for utilizing maintenance material dredged from the Mobile Bay entrance channel to reduce erosion on Dauphin Island, structural alternatives are either unacceptable to local interests or not economically feasible. These analyses also indicate that essentially all practical nonstructural measures offering potential

benefits have been implemented in the study area. Accordingly, the only plan indicated to be economically feasible provides for nourishment of the gulf nearshore of Dauphin Island with material removed from the Mobile Bay entrance channel as part of the ongoing maintenance program for the Federal project for Mobile Harbor. The Nearshore Nourishment Plan would provide net benefits in the form of land values saved from erosion. The plan would beneficially affect national economic development, local economic and regional development, and recreation and aesthetic values. Adverse impacts of the considered plan would be temporary in nature and similar to those occurring from the present maintenance practice. These impacts would be keyed to the periodic (1½ years) maintenance dredging program. On the basis of these findings, the Nearshore Nourishment Plan, as defined herein, is considered "The Selected Plan".

#### THE SELECTED PLAN

##### PLAN DESCRIPTION

181. On an average, the entrance channel to Mobile Bay is dredged every 1½ years as part of the maintenance program for the Mobile Harbor Navigation Project. About 396,000 cubic yards of material are removed from the entrance channel each time maintenance dredging is performed. The proposed plan provides for placing this material offshore in an area extending west about 2 miles from longitude  $88^{\circ} 7.8'$ . The shoreward and seaward boundary of the dumping area would be about the existing 26-foot depth contour and the 30-foot depth contour respectively.

When more or less than 396,000 cubic yards of material is dumped, the seaward boundary would be adjusted as required. Dumping of the material would be accomplished in such a manner as to build the bottom of the dumping area up to a depth of 26 feet. This would be accomplished as described below and illustrated on plate IV.

- a. Dredge would dispose of two loads of material along range 1 ( $n=1$ ). As shown on plate IV, range 1 is the landward most range and is located near the 26-foot depth contour.
- b. Dredge would continue to dump material along ranges 2 ( $n=2$ ) through 9 ( $n=9$ ) with the number of loads,  $N_n$  dumped on each range increasing as indicated in the table shown on plate IV.

This procedure is considered only a first order of approximation. However, the number of loads of material per range required to build the bottom up to a depth of 26 feet can be modified based on field experience.

#### DESIGN

182. The proposed plan will reduce the rate of shore erosion by partially stabilizing the slope of the nearshore zone.

183. The principal causes of shore erosion along the westernmost 11 miles of Dauphin Island are attributable to rise in sea level and maintenance dredging of the Mobile Bay entrance channel. Based on sea level stages recorded at Biloxi, Mississippi, the rates of rise of sea level between 1896 and 1972 and between 1940 and 1972 were .009 feet per year and .012 feet per year respectively. These data are shown on Plate II. Per Brunn, in the reference, Sea-Level Rise as a Cause of Shore Erosion, proposed the following formula for computing the rate of shoreline recession from the rate of sea level rise:

$$X = \frac{a b}{(e+d)}$$

X = shoreline recession per year

a = sea level rise per year

b = distance from shoreline to 60 ft. depth

c = elevation of dune line

d = 60 feet

This formula is based on the assumption that, with a rise in sea level, the slope of the nearshore zone is modified by littoral forces so as to reestablish the same depths relative to the water surface that existed prior to the sea level rise. This principal is illustrated in figure 31, obtained from the aforementioned report. Introducing in this equation data pertinent to Dauphin Island, the average shoreline recession attributable to sea level rise between 1896 and 1975 and between 1940 and 1972 is 4.57 feet per year and 6.09 feet per year respectively.

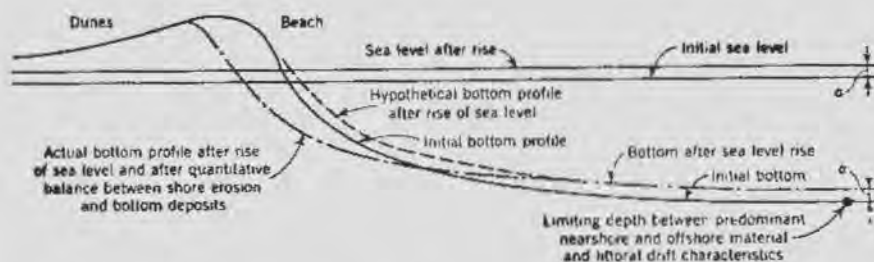


FIG. 31--INFLUENCE OF SEA-LEVEL RISE ON THE DEVELOPMENT OF BEACH AND OFFSHORE PROFILE

Considering figure 31, it follows that, if material is placed along the slope of the nearshore zone, the volume of material eroded from the slope as a result of sea level rise will be reduced by this amount. Material placed by a hopper dredge onto the slope will be moved parallel to the shore and onshore and offshore by wave action. However, it is generally accepted

that the net transport of sediment along the bottom because of the differential between onshore and offshore velocities associated with orbital motion of nearshore waves is toward the shore. In addition, it is probable that there is a seaward transport by diffusion of suspended material.

#### DUMPING PROCEDURE

184. The Corps of Engineers hopper dredge "McFarland" has a loaded draft of about 22 feet and can dump material in a water depth of about 26 feet. The dredge carries about 3,000 cubic yards of material, has hopper doors about 40 feet wide and a dump time of about 12 minutes. The dredge runs about 10 miles per hour when dumping. Thus, it follows, that the dredge would travel a distance of about 2.0 miles when dumping. The rate of dumping along a range would be about 1500 cubic yards per mile.

$$\frac{3,000 \text{ cy}}{2 \text{ mi}} = 1500 \frac{\text{cy}}{\text{mi}}$$

185. It is estimated, when the material leaves the hopper, it would be dispersed over a width of about 100 feet. Thus, each load of material dumped over a range would increase the bottom elevation of the range about .077 feet.

$$\frac{3,000 \text{ cy} \times 27 \frac{\text{cf}}{\text{cy}}}{2 \text{ mi} \times 5280 \frac{\text{ft}}{\text{mi}} \times 100 \text{ ft}} = .077$$

186. Considering the 2-mile long dumping area which extends seaward from the 26-foot depth contour, the total number of ranges,  $N_x$  required to dispose of the dredged material within the area would be as follows:

$$N_x = \left( \frac{(2V C)}{\tan a} \right)^{.5}$$

V = Total volume of material in cubic yards

C = Conversion constant =  $2.5568 \times 10^{-7}$

a = Angle of slope of the gulf bottom from the 26-foot contour.

Where  $N_n$  equals the number of loads dumped on a range and n equals the number of the range, the following relation can be developed:

$$N_n = (651.85) (n^2 - n_{-1}^2) \tan a$$

187. The total number of trips, T, required to dispose of the total volume, V, of material dredged would be as follows:

$$T = \frac{V}{3000}$$

188. Considering the volume of material, V, to be dredged to equal 396,000 cubic yards and introducing values pertinent to the proposed dumping area into the previously developed equations, the values given in the table shown on plate IV were computed.

189. In summary, the 2-mile long dumping area would have a width of about 900 feet extending seaward of the 26-foot depth contour, the material would be dumped along about 9 ranges, and the number of loads dumped along each range would vary from 2 at the landward most range (n=1) to 28 at range n=8. Only about 17 loads would be placed along the seaward most range, n=9. About 132 loads would be required to dispose of the material during each channel maintenance operation.

## ECONOMICS OF SELECTED PLAN

### COST

190. As previously indicated, costs for the selected plan would consist only of the additional charges necessary for disposal of the material dredged from the Mobile Harbor entrance channel as prescribed by the selected plan in lieu of that by the present practice. Increased costs would occur only as an annual charge since no initial construction would be involved. The increased cost would result from the increased haul distance and resulting travel time required of the hopper dredge. With the selected plan, costs of performing the required maintenance dredging of the Mobile Bay entrance channel every 1½ years will result in average annual charges increasing from \$573,000 to about \$789,000, or an increase of \$216,000.

### BENEFITS

191. The benefits that will stem from the proposed plan will accrue to the owners of the gulf front property located along the westernmost 11 miles of Dauphin Island. At present, this section of the island is losing about 13.5 acres of property per year to erosion. With the selected plan implemented, the erosion rate would be reduced from about 10.3 feet per year to about 5.7 feet per year; a loss of about 4.6 feet per year. The average equivalent annual value of the land saved by reducing erosion by 4.6 feet is estimated to be \$261,000.

## SUMMARY OF ECONOMICS

192. Benefits that would accrue in the form of the value of lands that would not be lost to erosion from implementing the selected plan are estimated at \$261,000 annually. The benefits would exceed the estimated increased annual cost of the plan by \$45,000. The resulting benefit to cost ratio would be 1.21.

## DIVISION OF PLAN RESPONSIBILITIES

193. Implementation of the selected plan, as defined herein, would only involve a modification of the present operation and maintenance practice employed for the Mobile Harbor Navigation Project. The modification is considered within the prerogative of the Chief of Engineers for operation and maintenance of the navigation project and affects no areas of local responsibility for the project. Accordingly, total responsibility for implementation of the selected plan and associated costs are a Federal responsibility.

## PLAN IMPLEMENTATION

194. Implementation of the selected plan is within the existing authority granted by the Congress to the Chief of Engineers for operation and maintenance of the existing Federal navigation project for Mobile Harbor. Therefore, further action of the Congress would not be necessary for plan implementation.

195. Implementation of the selected plan, under the operation and maintenance program for Mobile Harbor, will require administrative procedures by both the Corps of Engineers and the Environmental Protection Agency (EPA). Under the provisions



of Section 103 of Public Law 532, all ocean disposal sites will require the approval of EPA. The criteria for implementation of Public Law 532 in disposal site designations was promulgated by EPA on 11 January 1977. To date, offshore disposal sites presently in use have been given interim approval pending evaluation and approval in accordance with the newly established criteria. Therefore, continued use of the present site or the new site stipulated by the selected plan will require certain evaluations and approval by EPA. Corps of Engineers implementation of the selected plan would be contingent upon such approval by EPA.

196. Selection of the disposal site in accordance with the selected plan or continuation of the present practice will require that the following factors be determined:

- a. Geographical position, depth of water, bottom topography and distance from coast;
- b. Location in relation to breeding, spawning, nursery, feeding, or passage areas of living resources in adult or juvenile phases;
- c. Location in relation to beaches and other amenity areas;
- d. Types and quantities of wastes proposed to be disposed of, and proposed methods of release;
- e. Feasibility of surveillance and monitoring;
- f. Dispersal, horizontal transport and vertical mixing characteristics of the area, including prevailing current direction and velocity, if any;
- g. Existence and effects of current and previous discharges and dumping in the area (including cumulative effects);
- h. Interference with shipping, fishing, recreation, mineral extraction, desalination, fish and shellfish culture, areas of special scientific importance and other legitimate uses of the ocean;

i. The existing water quality and ecology of the site as determined by available data or by trend assessment or baseline surveys;

j. Potentiality for the development or recruitment of nuisance species in the disposal site;

k. Existence of or close proximity of any site of significant natural or cultural features of historical importance.

(Magnetometer Survey)

197. The results of a disposal site evaluation and/or designation study based on the criteria would be presented in an environmental assessment and would be used in the preparation of an environmental impact statement for either the existing or new site if required by the EPA.

#### COORDINATION

198. During the course of the investigation, all state and Federal agencies known to have affected interests in the study were contacted for comments and study suggestions. A public meeting and a workshop meeting were also held 31 July 1973, and 31 March 1975, to afford interested parties and the general public an opportunity to express their views concerning the improvements desired and the need and advisability of their execution. Primary concerns expressed at the public meeting pertained to erosion prevention. No particular interest in hurricane protection or flooding was indicated at that time.

199. At the workshop meeting, little interest was exhibited in implementing structural plans presented which would solve any erosion problems. There was strong opposition on the part of waterfront property owners to the establishment of public shoreline property or any measures that might restrict their

waterfront rights. However, certain interest was shown in the concept of disposal of dredged material from the Mobile Bay Navigation Project for erosion abatement. The feasibility of placing dredged material from the Mobile Ship Channel onto the eroding bay shoreline was subsequently pursued as part of the ongoing survey study for modifications of the existing Federal Navigation Project for Mobile Harbor and found to be opposed by a majority of affected interests. The results of these findings indicate that no works which would require congressional authorization and meaningfully address the study problems would be both economically feasible and acceptable to local interests. Accordingly, the congressional representative and local study sponsor were notified that the ongoing beach erosion and hurricane protection study for Mobile County would be concluded on the basis of those findings. Pertinent correspondence relating to these coordination efforts is contained in Appendix B.

#### CONCLUSIONS

200. In Mobile County, there is significant erosion occurring along the Mobile Bay shoreline and along the southern shores of Dauphin Island. There is also a potential for substantial hurricane flood damage along much of the county's low-lying coast. However, analysis of structural alternatives indicate that, except for utilizing maintenance material dredged from the Mobile Bay entrance channel to reduce erosion on Dauphin Island, such alternatives are either unacceptable to local interests or not economically feasible. Analyses also indicate that essentially all practical nonstructural measures offering potential benefits have been implemented in the study area.

Accordingly, the only plan indicated to be economically feasible provides for nourishment of the gulf nearshore of Dauphin Island with material removed from the Mobile Bay entrance channel as part of the ongoing maintenance program for the Federal project for Mobile Harbor.

201. The selected plan for nearshore nourishment of the littoral system along the southwestern shore of Dauphin Island with maintenance material dredged from the navigation project would only be a partial solution to erosion. However, the plan could be implemented at an additional annual maintenance cost for the navigation project of \$216,000 and annual savings in the loss of lands of \$261,000. Accordingly, the plan would have net benefits of \$45,000 and a benefit to cost ratio of 1.21. The environmental impacts are not indicated to be significant or substantially different from those occurring from the present maintenance practice. Further, the selected plan could be implemented under the operation and maintenance authority of the Chief of Engineers for the existing Federal Navigation Project for Mobile Harbor, subject to EPA approval of site selection, without further action by the Congress.

202. After considering all technical information, public views and, in particular, the economic, environmental and social well-being impacts, it is concluded that the selected plan warrants implementation. There is no more appropriate alternative to the proposed action that could more meaningfully address the problems of the area at this time.

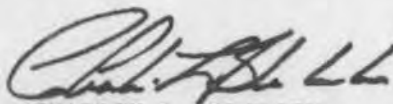
## RECOMMENDATIONS

### FOR THE CONGRESS

203. On the basis of studies presented herein, it is concluded that structural plans to meet the needs of the area that would require authorization by the Congress are either unacceptable to local interests or not economically feasible. On the basis of these findings, the District Engineer recommends that no additional improvements for beach erosion control and hurricane protection for Mobile County be authorized by the Congress at this time.

### FOR THE CHIEF OF ENGINEERS

204. Studies herein indicate that the only acceptable measures that would be economically feasible that would partially resolve any of the flooding or erosion problems of the area would be the Nearshore Nourishment Plan defined herein as The Selected Plan. This plan would produce net economic benefits, is considered environmentally acceptable and subject to EPA approval of the disposal site designation, could be implemented under the authority of the Chief of Engineers for operation and maintenance of Mobile Harbor without additional authority from the Congress. Accordingly, the District Engineer recommends that the Chief of Engineers modify the present maintenance dredging practice for the entrance channel to Mobile Harbor to conform to the procedures outlined herein for the Selected Plan as soon as practical with such other modifications as he may deem appropriate.



CHARLIE L. BLALOCK  
Colonel, CE  
District Engineer

Mobile County References

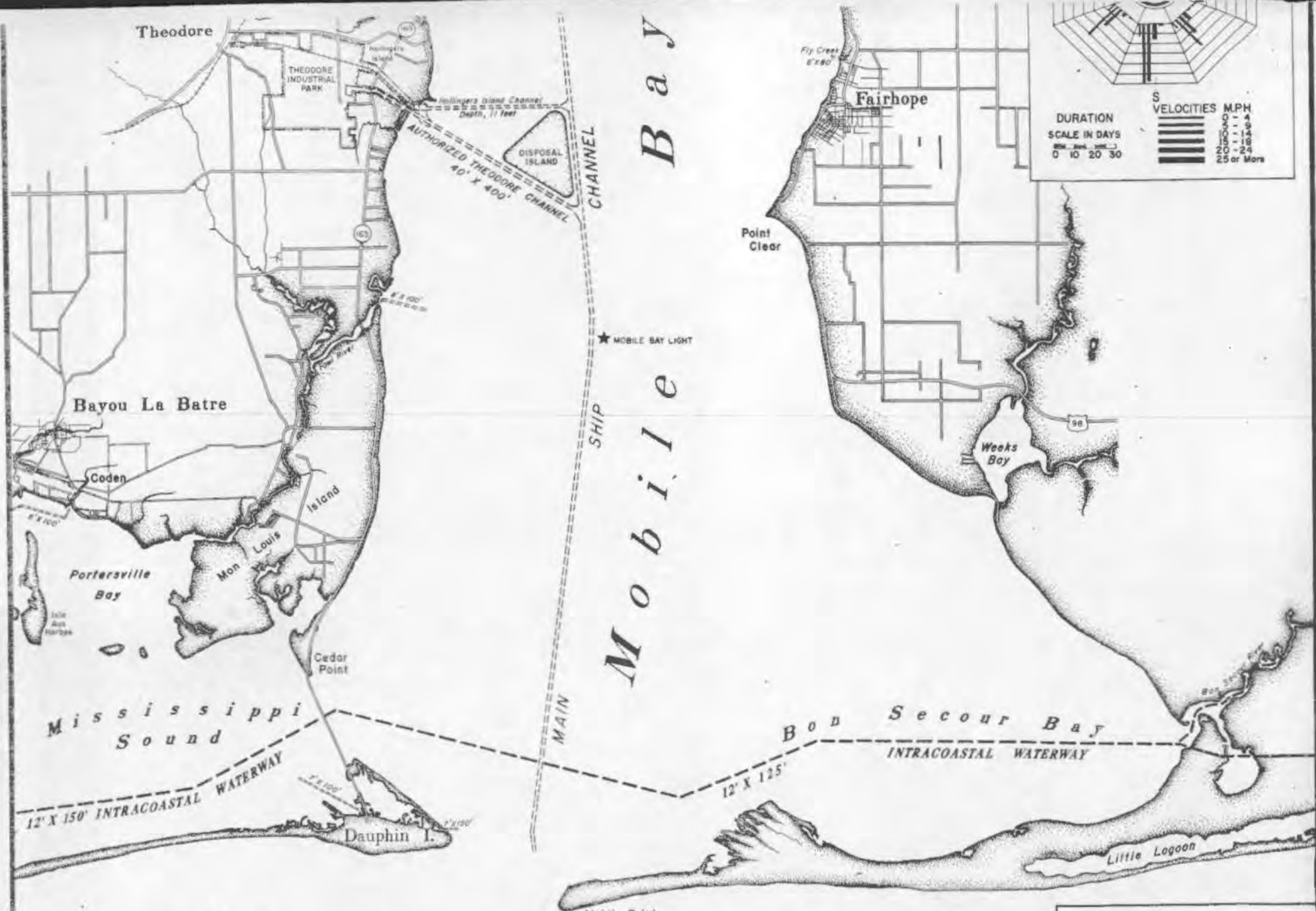
- <sup>1</sup> G.B. Austin, On the Circulation and Tidal Flushing of Mobile Bay, unpublished (Texas, 1954), 28p
- <sup>2</sup> Austin, 28p
- <sup>3</sup> Todd Walton, Calculation of Littoral Drift Roses For the Alabama and Mississippi Gulf Coastline (Gainesville, Fla., 1974) 26p.
- <sup>4</sup> J. Crance, Description of Alabama Estuarine Area - Co-operative Gulf of Mexico Estuarine Inventory (Dauphin Island, Ala. 1971), 85p
- <sup>5</sup> J. Lackey, T. Duncan, J. Fox, J. Markey, J. Sullivan, A Study of the Effects of Maintenance Dredging in Mobile Bay, Ala. on Selected Biological Parameters (Gainesville, Fla., 1973) 53p
- <sup>6</sup> E. Jones, The Protozoa of Mobile Bay, Alabama (Mobile, Ala., 1974) 113p
- <sup>7</sup> Lakey, et al, A Study of the Effects of Maintenance Dredging in Mobile Bay, Ala. on Selected Biological Parameters 53p
- <sup>8</sup> R. Parker, Additions to "An Environmental Study of Offshore Alabama as Related to Drilling for Oil and Gas" (Fort Worth, Texas, 1974).
- <sup>9</sup> E. May, Environmental Effects of Hydraulic Dredging in Estuaries (Dauphin Island, Ala., 1973)
- <sup>10</sup> Parker, Additions to "An Environmental Study of Offshore Alabama as Related to Drilling for Oil and Gas".

References (Cont'd)

- 11 Lackey, 1973, 53p
- 12 H. Swingle, Biology of Alabama Estuarine Areas.- Cooperative Gulf of Mexico Estuarine Inventory (Dauphin Island, Ala., 1971).
- 13 C.W. Wade, Survey of the Alabama Marine Recreational Fishery, Marine Resource Bull. 12 (Dauphin Island, Alabama 1977) 1-22 pg.
- 14 J. D. Hardin, C.D. Sapp, J. L. Emplaincourt, K.E. Richter, Shoreline and Bathymetric Changes In the Coastal Area of Alabama, (Tuscaloosa, Ala., 1976), 125pp.
- 15 E. Wilson, Historic Dauphin Island. - (Mobile, Ala., 1971), Map.
- 16 National Aeronautic and Space Administration Earth Resources Laboratory, Selected Surface Characteristics of the Mississippi Sound, (Mississippi Test Facility, 1974) 14pp + plates.
- 17 G.M. Lamb, Distribution of Holocene Foraminiferida in Mobile Bay and the Effects of Salinity Changes, (Alabama, 1972) 12p
- 18 R. M. McPherson Jr., The Hydrography of Mobile Bay and Mississippi Sound, Alabama (Dauphin Island, 1970) 83pp.

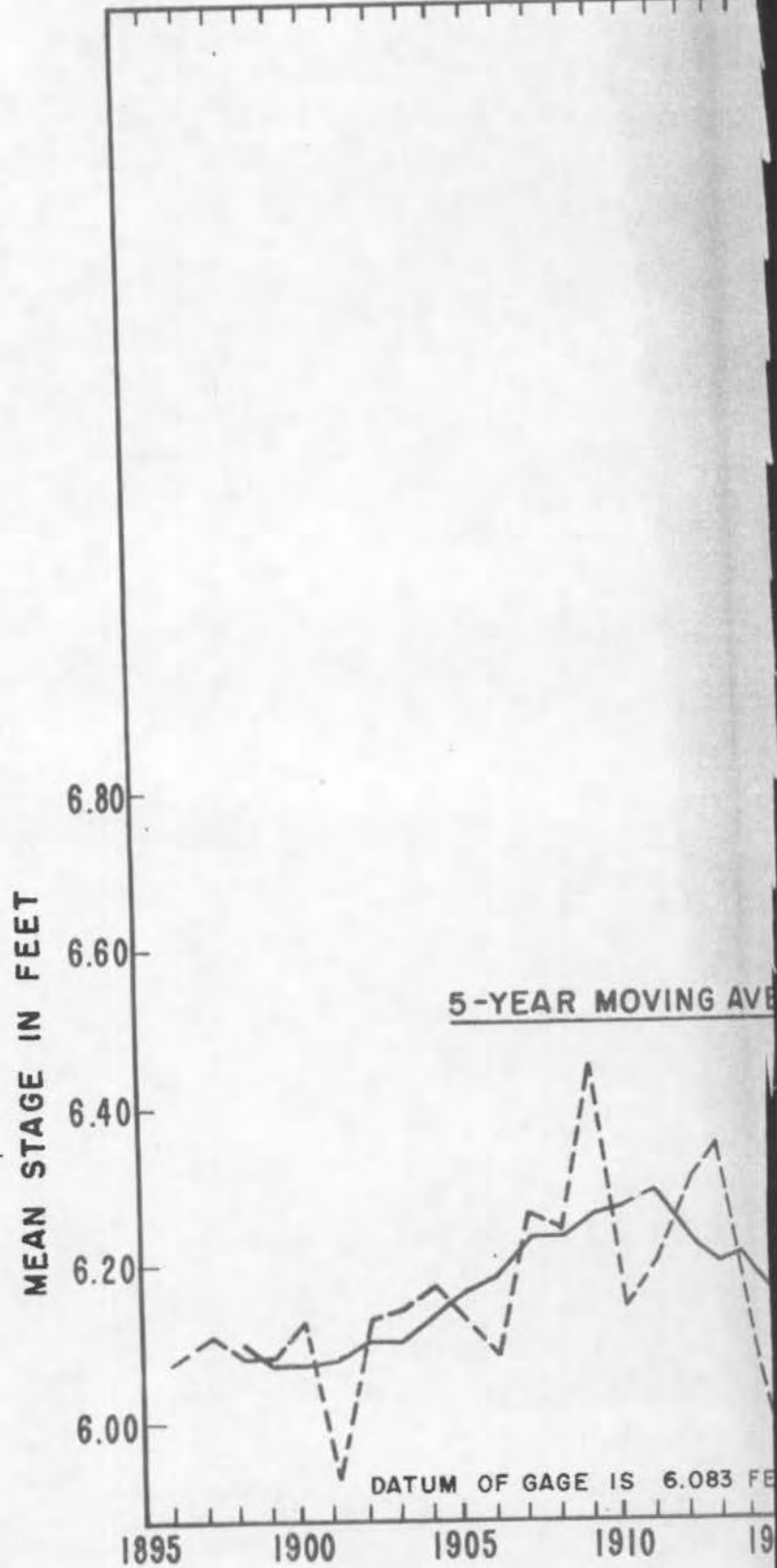




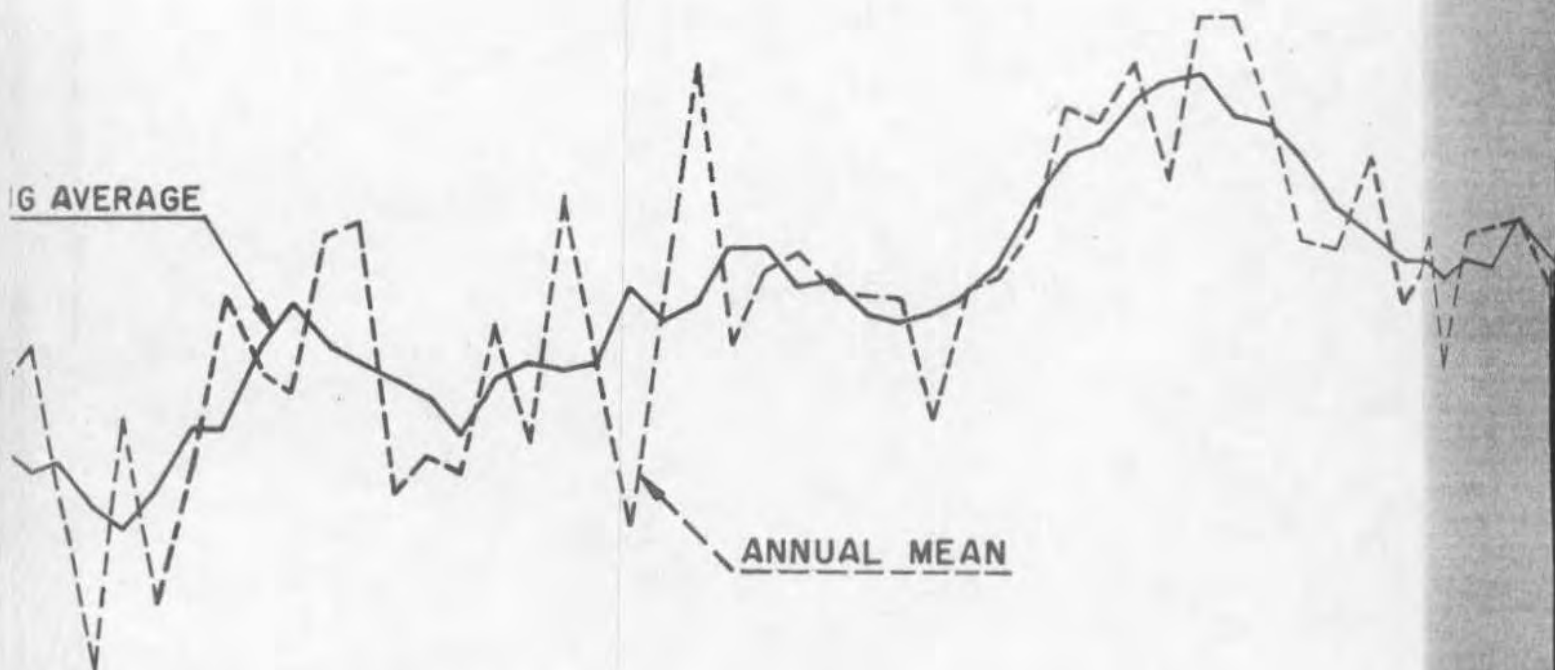


*Gull*

SURVEY REPORT ON



16 AVERAGE



83 FEET BELOW M.S.L., DATUM OF 1929 ADJ.

1915

1920

1925

1930

1935

1940

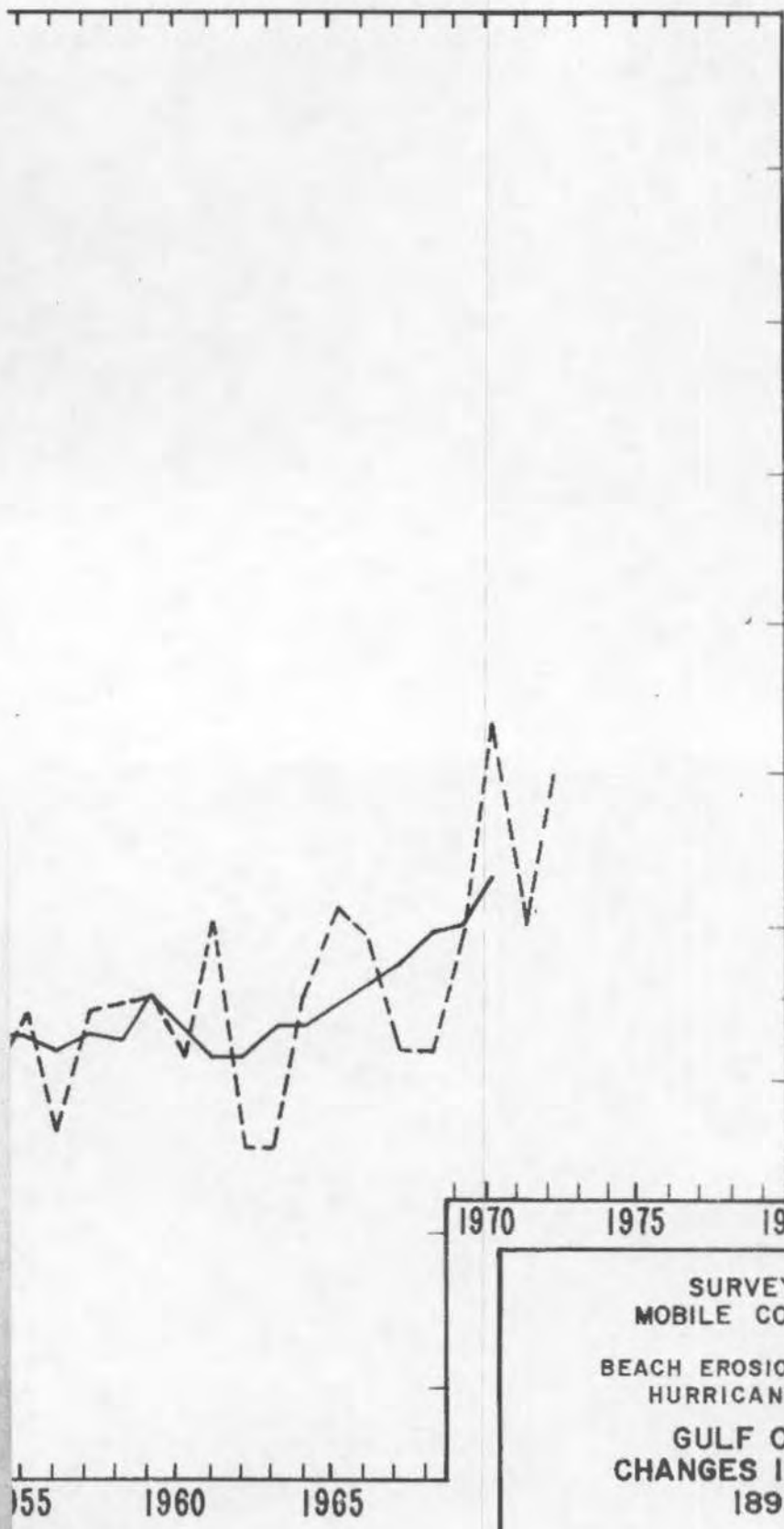
1945

1950

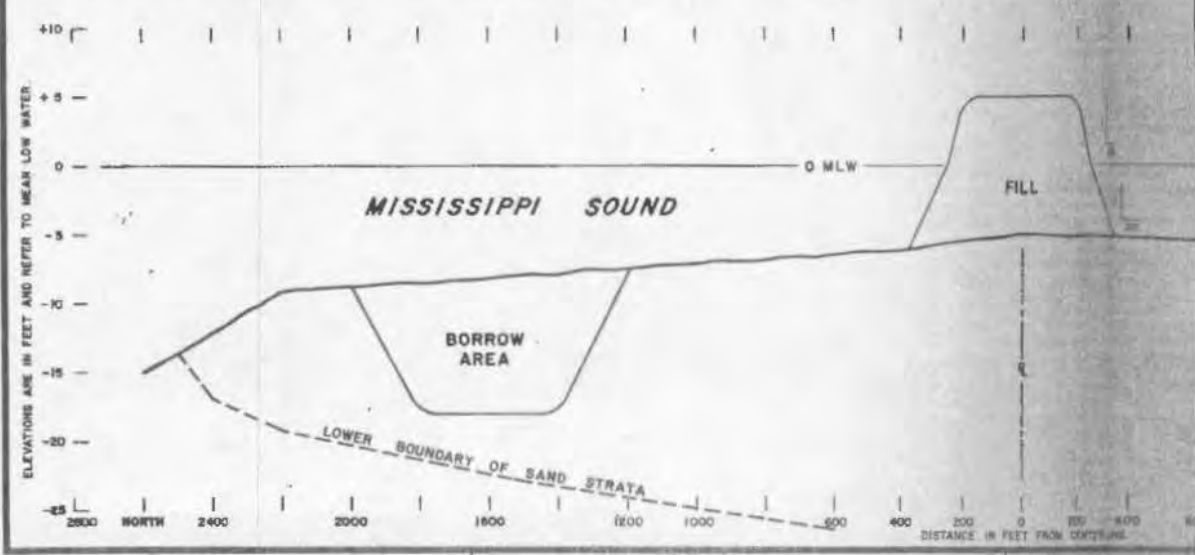
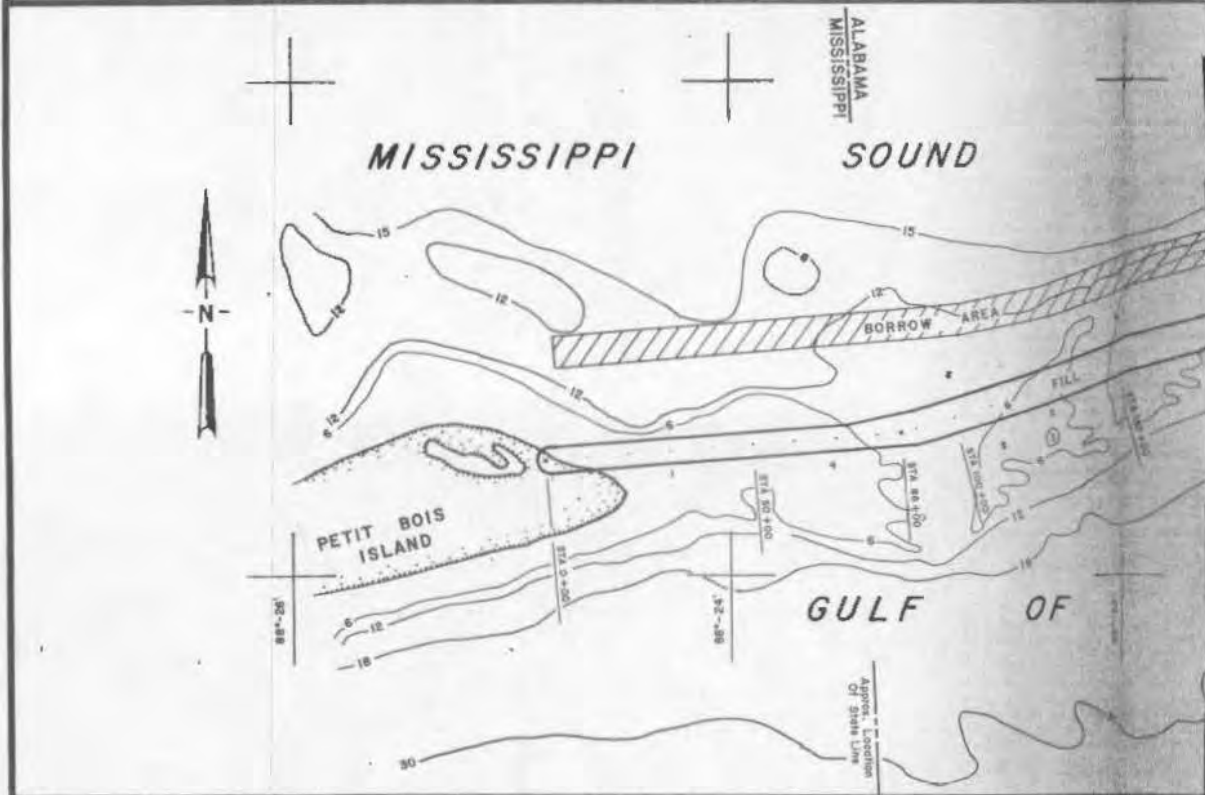
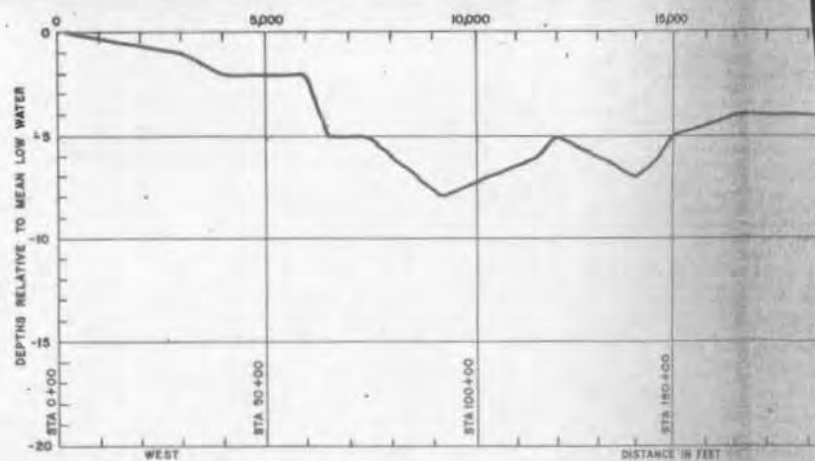
1955

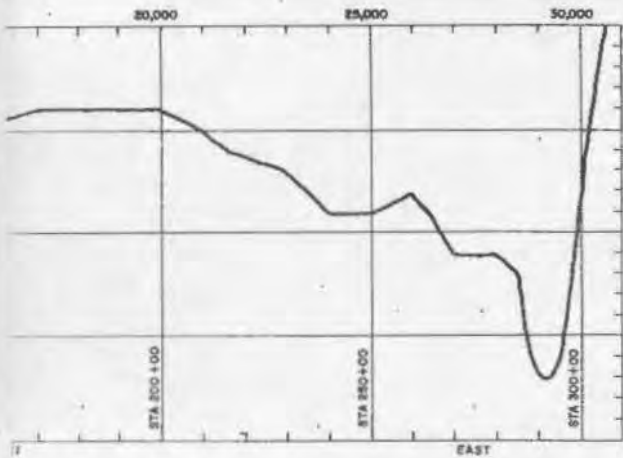
1960

BILOXI, MISSISSIPPI



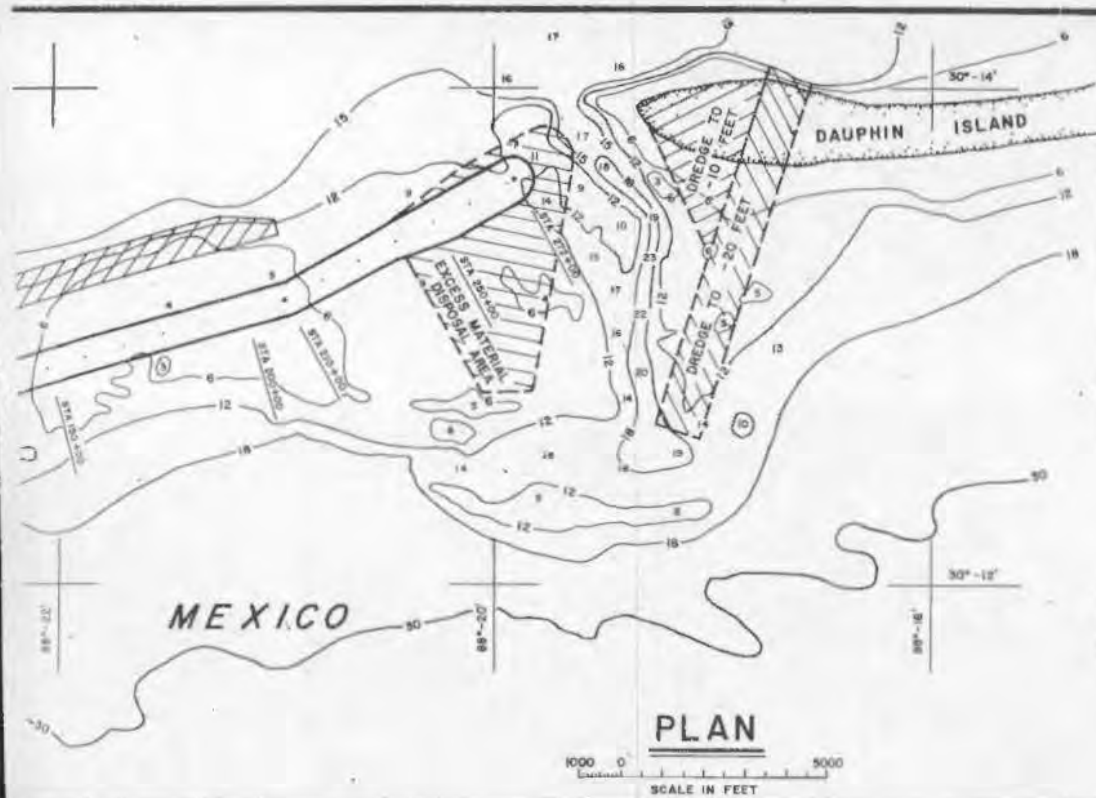
SURVEY REPORT ON  
 MOBILE COUNTY, ALABAMA  
 FOR  
 BEACH EROSION CONTROL AND  
 HURRICANE PROTECTION  
 GULF OF MEXICO  
 CHANGES IN SEA LEVEL  
 1895-1974  
 PLATE II



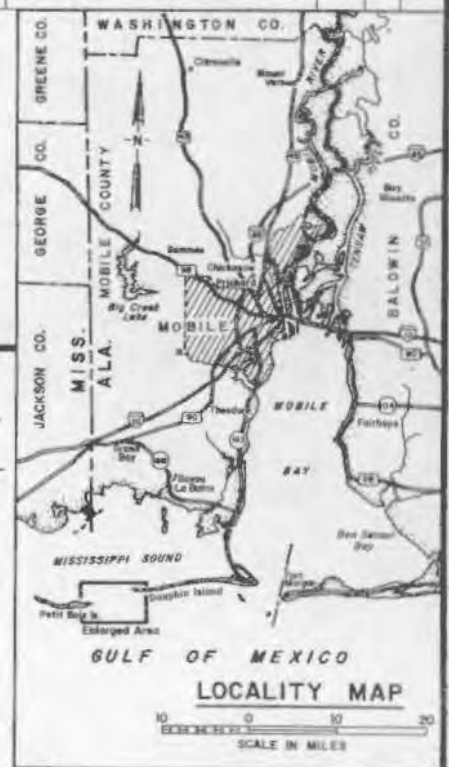


**BOTTOM PROFILE**  
ALONG CENTERLINE OF FILL

REVISIONS			
BY	DATE	DESCRIPTION	APPROVED

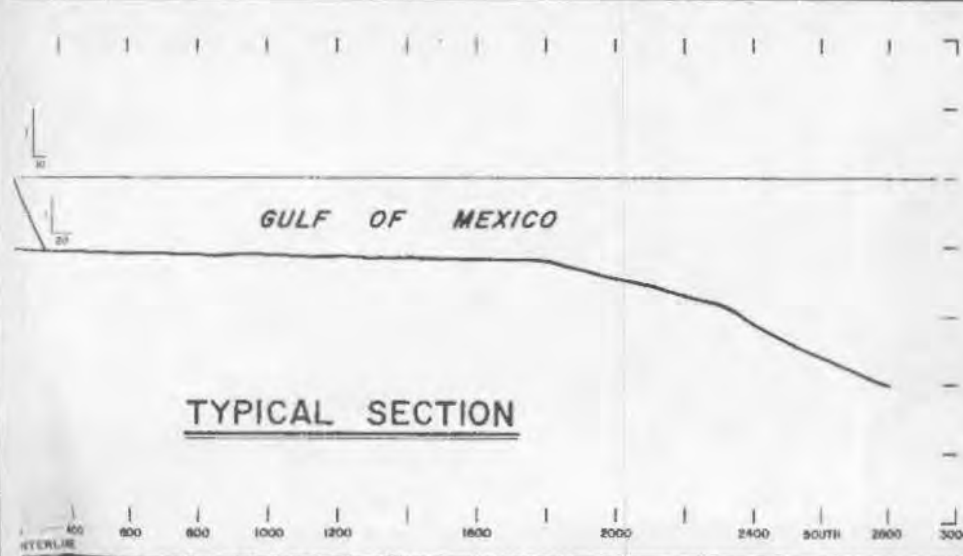


**PLAN**



**LOCALITY MAP**  
SCALE IN MILES

**NOTES:**  
DEPTHS ARE IN FEET BELOW MEAN LOW WATER.  
DEPTHS WERE TAKEN FROM NAUTICAL CHART 11374 DATED NOVEMBER 1970, NOAA, U.S. DEPT OF COMMERCE.

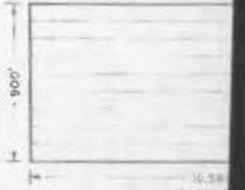


**TYPICAL SECTION**

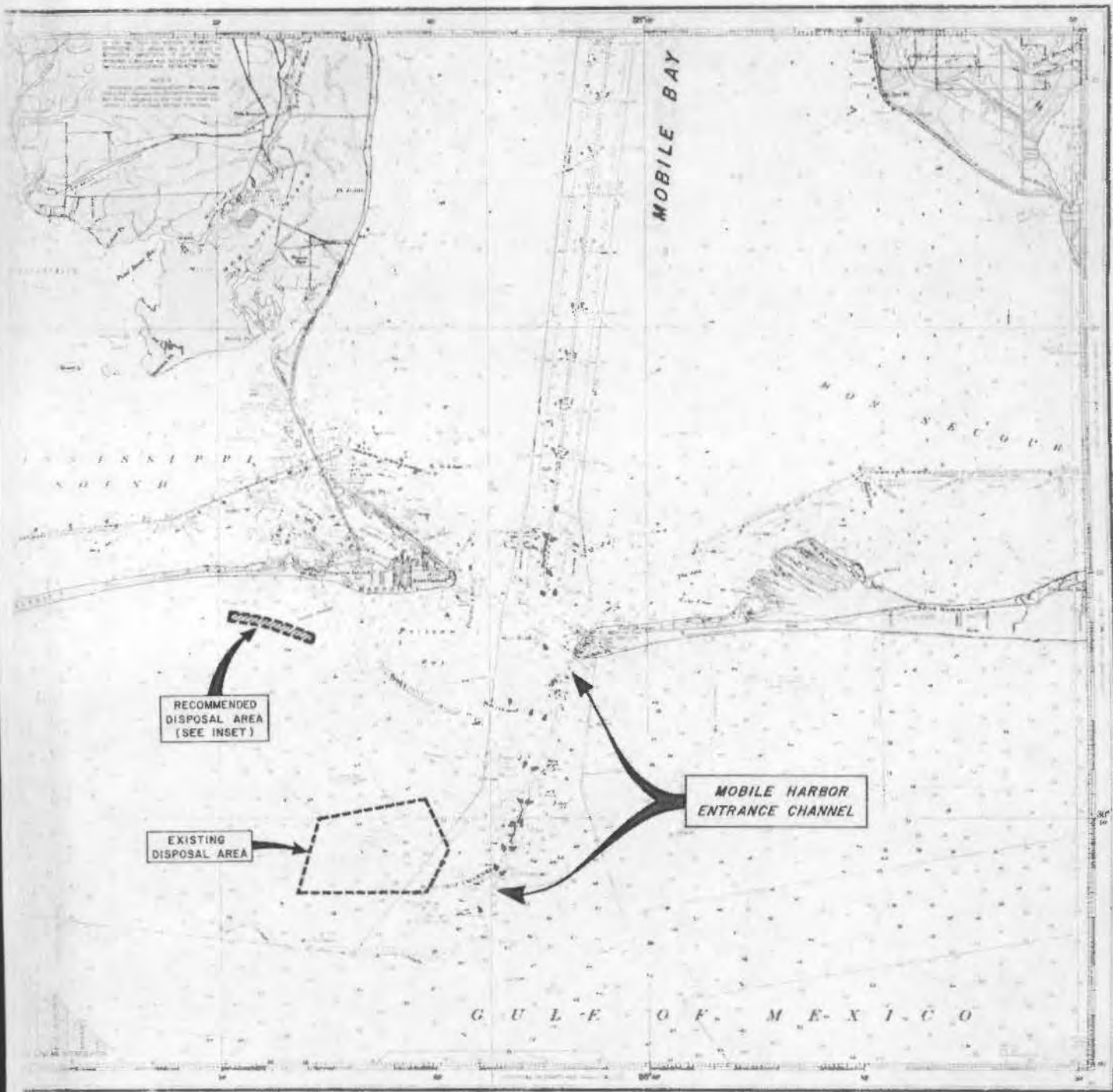
U.S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS BIRMINGHAM, ALA.			
PARTIAL CLOSURE PETIT BOIS PASS, ALABAMA AND MISSISSIPPI			
DESIGNED BY: E.H.	CHECKED BY: D.P.	<b>PLATE III</b>	
DRAWN BY: E.H.	SUPERVISED BY: H.J.L.	SHEET NO.:	DATE:
MADE AS SHOWN DATE:			



INSE



RECOMMENDED DISP



**INSET**

RANGE	NUMBER OF LOADS / RANGE
1	$N_0 + 2$
2	6
3	9
4	15
5	17
6	20
7	24
8	28
9	17

10,560' (2 MILES)

DISPOSAL AREA

**NOTE:**

$n$  = Range, 100 feet wide  
 $N_0$  = Number of loads of dredged material per range

SURVEY REPORT ON  
 MOBILE COUNTY, ALABAMA  
 FOR  
 BEACH EROSION CONTROL AND  
 HURRICANE PROTECTION  
**SELECTED PLAN**



ATTACHMENT 1  
SPECIES LIST OF ALGAE, PLANTS AND ANIMALS  
IN THE MOBILE BAY AREA

ALGAE IN MOBILE BAY

Blue Green Algae

Anabaena sp.  
Aphanizomenon sp.  
Borizia trilocularis  
Chroococcus planetonia  
Coccochloris sp.  
Gleocapsa sp.  
Lyngbya aestuarii  
Lyngbya contorta  
Lyngbya sp.  
Merismopedia punctata  
Microcystis incerta  
Oscillatoria tenuis  
Schizothrix calcicola

Green Algae

Actinastrum hantschii  
Ankistrodesmus convolutus  
Ankistrodesmus falcatus  
Closterium acicularis  
Closteriopsis longissima  
Coelastrum cambricum  
Coelastrum microporum  
Crucigenia apiculata  
Dictyosphaerium ehrenbergi  
Dictyosphaerium nsegelianum  
Docidium sp.  
Kirchneriella obesa  
Oocystis spp.  
Scenedesmus spp.

Schroederia setigera  
Tetraedron muticum  
Tetraedron trigonum  
Tetralantos lagerhermii  
Tetrastrum heteracanthum  
Treubaria triappendiculata  
Trochischia sp.  
Westella botryoides  
Unid.

Table (1). Vegetative inventory of significant vascular plants in the ecosystems of the Mobile Bay area.

Species	Abundance in Region	Use for Wildlife	Other Values
SUBMERGED PLANTS			
Pondweed <u>Potamogeton ephedrus</u>	Abundant	Waterfowl food	Part of biomass
Longleaf pondweed <u>P. amogeton nodosus</u>	Abundant	Waterfowl food	Part of biomass
Variable pondweed <u>Potamogeton gramineus</u>	Abundant	Waterfowl food	Part of biomass
Clasping-leaf pondweed <u>Potamogeton perfoliatus</u>	Abundant	Waterfowl food	Part of biomass
Gray-duck moss <u>Potamogeton foliosus</u>	Very abundant	Waterfowl food	Part of biomass
Broadleaf pondweed <u>Potamogeton pulcher</u>	Uncommon	Waterfowl food	Part of biomass
Sago pondweed <u>Potamogeton pectinatus</u>	Uncommon	Waterfowl food	Part of biomass
Pondweed <u>Potamogeton americanus</u>	Abundant	Waterfowl food	Part of biomass
Fern pondweed <u>Potamogeton robbinsii</u>	Common	Waterfowl food	Part of biomass
Horned pondweed <u>Zannichellia palustris</u>	Very abundant	Waterfowl food	Part of biomass
Southern naid <u>Najas guadalupensis</u>	Very abundant	Waterfowl food, fish cover	Part of biomass
Widgeon-grass <u>Ruppia maritima</u>	Rare	Nursery ground for fish and shrimp	Part of bay ecosystem
Waterweed <u>Elodea canadensis</u>	Uncommon	...	Part of biomass
Wild celery <u>Vallisneria americana</u>	Very abundant	Waterfowl food	Aesthetic

Table B (1). (continued)

Species	Abundance in Region	Use for Wildlife	Other Values
Bogmoss <u>Mayaca Aubletii</u>	Rare	...	Aesthetic
Water-stargrass <u>Heteranthera dubia</u>	Abundant	...	Part of biomass
Bladderwort <u>Utricularia</u> spp.	Rare	...	...
Mares-tail <u>Myriophyllum</u> spp.	Abundant	...	Part of biomass
Quillwort <u>Isoetes</u> spp.	Rare	...	...
Common hornwort (coontail) <u>Ceratophyllum demersum</u>	Abundant	Waterfowl food, fish cover	Aesthetic
Muskgrasses <u>Nitellas</u> spp.	Very abundant	Waterfowl food	Significant part of biomass
<u>Halodule Beaudettei</u> formerly <u>Diplanthera Wrightii</u>	Uncommon	...	...
FLOATING PLANTS			
Mosquito fern <u>Azolla caroliniana</u>	Rare	...	...
Frogbit <u>Limnobium spongia</u>	Rare	Waterfowl food	...
Duckweed <u>Lemna</u> spp.	Rare	Waterfowl food	...
Water-hyacinth <u>Eichornia crassipes</u>	Abundant	Muskrat food	Aesthetic, rapid growth
Cow-lily <u>Nuphar advena</u>	Rare	Waterfowl food	...
Lotus <u>Nelumbo lutea</u>	Rare	Waterfowl food	Aesthetic, edible seed
Floating bladderwort <u>Utricularia inflata</u>	Rare	...	...

Table (1). (continued)

Species	Abundance in Region	Use for Wildlife	Other Values
White water-lily <u>Nymphaea odorata</u>	Rare	...	Aesthetic
Floating-heart <u>Nymphoides aquaticum</u>	Rare	...	Aesthetic
TIDAL EMERGENTS			
Narrow-leaved cattail <u>Typha angustifolia</u>	Very abundant	Muskrat food	Part of biomass
Duck potato <u>Sagittaria falcata</u>	Very abundant	Waterfowl and muskrat food	Part of biomass
Arrowhead <u>Sagittaria graminea</u>	Common	Waterfowl and muskrat food	Aesthetic
Bulltongue <u>Sagittaria lancifolia</u>	Common	Waterfowl and muskrat food	Aesthetic
Broadleaf arrowhead <u>Sagittaria latifolia</u>	Common	Waterfowl and muskrat food	Aesthetic
Wildrice <u>Zizania aquatica</u>	Abundant	Waterfowl and muskrat food	Part of biomass
Cutgrass <u>Zizaniopsis miliacea</u>	Very abundant	Muskrat food, cover	Slows erosion
Sweet rush <u>Cyperus virens</u>	Common	...	...
Cuban rush <u>Scirpus cubensis</u>	Rare	...	...
Giant bulrush <u>Scirpus validus</u>	Very abundant	Cover	Traps sediment
Rush fuirena <u>Fuirena scirpoidea</u>	Rare	...	...
Horned-rush <u>Rhynchospora corniculata</u>	Rare	...	...

Table B (1). (continued)

Species	Abundance in Region	Use for Wildlife	Other Values
Horned-rush <u>Rhynchospora miliacea</u>	Rare	...	...
Saw-grass <u>Cladium jamaicense</u>	Abundant	Waterfowl food, protective cover	Stabilize banks
Sedge <u>Carex glaucescens</u>	Common	...	...
Sedge <u>Carex hyalinolepis</u>	Common	...	...
Never wet <u>Orontium aquaticum</u>	Common	...	...
Arrow-arnum <u>Peltandra virginica</u>	Common	Waterfowl food	Aesthetic
Pickereel-weed <u>Pontederia cordata</u>	Common	...	Aesthetic
Rush <u>Juncus coriaceous</u>	Rare	...	Filtering mechanism
Floating rush <u>Juncus repens</u>	Rare	...	...
Needle rush <u>Juncus Roemerianus</u>	Common	...	...
Slender-rush <u>Juncus tenuis</u>	Rare	...	...
Spider-lily <u>Hymenocallis coronaris</u>	Common	...	Aesthetic, showy ornamental
Wild flag <u>Iris virginica</u>	Common	...	Aesthetic, showy ornamental
Lizard's-tail <u>Saururus cernuus</u>	Common	...	Aesthetic, ornamental
Dotted smartweed <u>Persicaria punctata</u>	Rare	Waterfowl food	Fish toxin

Table (1). (continued)

Species	Abundance in Region	Use for Wildlife	Other Value
Alligator grass <u>Alternanthera philoxeroides</u>	Very abundant	Cover	Rapid growth
Water primrose <u>Ludwigia leptocarpa</u>	Rare	...	Aesthetic, ornamental
Saltgrass <u>Distichlis spicata</u>	Common	Waterfowl food, cover	Filters nutrients and pollutants
HIGH MARSH PLANTS			
Royal fern <u>Osmunda regalis</u>	Common	...	Aesthetic, ornamental
Fern <u>Dryopteris Thelpteris</u>	Common	...	Aesthetic, ornamental
Broadleaf cat-tail <u>Typha latifolia</u>	Abundant	Cover	Aesthetic
Big cordgrass <u>Spartina cynosuroides</u>	Very abundant	Muskrat food, cover	Filters nutrients, grazing, soil and water control
Smooth cordgrass <u>Spartina alterniflora</u>	Common	...	Filters nutrients and pollutants
Saltmeadow cordgrass <u>Spartina patens</u>	Common	Waterfowl food	Filters nutrients and pollutants
Switchgrass <u>Panicum virgatum</u>	Very abundant	Muskrat food, cover	Filters nutrients, soil and water control
Wild millet <u>Echinochloa crusgalli</u>	Rare	Waterfowl food	...
Walter millet <u>Echinochloa Walteri</u>	Rare	Waterfowl food	...
Common cane <u>Phragmites communis</u>	Very abundant	Muskrat food, cover	Aesthetic

Table B (1). (continued)

Species	Abundance in Region	Use for Wildlife	Other Values
Giant foxtail <u>Setaria magna</u>	Common	Songbird food	Aesthetic
Glaucous foxtail <u>Setaria glauca</u>	Common	Songbird food	Aesthetic
Prairie wedgescale grass <u>Sphenopholis obtusata</u>	Common	...	...
Spike grass <u>Uniola ornithorycha</u>	Rare	...	...
Three-square bulrush <u>Scirpus americanus</u>	Very abundant	Muskrat food	Aesthetics, filters nutrients, grazing
Three-square <u>Scirpus Olneyi</u>	Very abundant	Muskrat food	Aesthetics, filters nutrients, grazing
Wax-myrtle <u>Myrica cerifera</u>	Common	...	...
Swamp dock <u>Rumex berticillata</u>	Common	...	...
Partridge pea <u>Chamaecrista fasciculata</u>	Common	Upland game food	...
Indigo bush <u>Amorpha fruticosa</u>	Common	...	Nitrogen fixation
Bladder pod <u>Glottidium vesicarium</u>	Common	...	Nitrogen fixation
Cow pea <u>Vigna repens</u>	Very abundant	Waterfowl and upland game food	Nitrogen fixation
Mallow <u>Hibiscus incanus</u>	Common	...	Aesthetic, ornamental
Rose-mallow <u>Hibiscus militaris</u>	Common	...	Aesthetic, ornamental
Marsh pennywort <u>Hydrocotyle umbellata</u>	Common	...	...



Table (1). (continued)

Species	Abundance in Region	Use for Wildlife	Other Values
Mock bishop's weed <u>Ptilimnium capillaceum</u>	Rare	....	Aesthetic, ornamental
Silkweed <u>Asclepias lanceolata</u>	Rare	Food for larval monarch butterflies	Aesthetic, ornamental
Marsh bindweed <u>Convolvulus repens</u>	Common	Upland game food	Aesthetic, ornamental, hallucigenic
Pink morning glory <u>Ipomoea sagittata</u>	Common	...	Aesthetic, ornamental
False dragon-head <u>Physostegia virginiana</u>	Rare	...	Aesthetic, ornamental
Buttonbush <u>Cephalanthus occidentalis</u>	Common	Waterfowl food	Aesthetic, shrubs, trees
Wild honeysuckle <u>Lonicera spinosissimum</u>	Rare	Cover, forage	Aesthetic, winter green
Buckbrush <u>Paccharis halimifolia</u>	Rare	...	...
Bur-marigold <u>Bidens laevis</u>	Common	Cover	Colonizes sandy areas
Doll's daisy <u>Boltonia asteroides</u>	Common	...	Aesthetic, ornamental
Bull thistle <u>Cirsium spinosissimus</u>	Common	...	Aesthetic, ornamental
Sneezeweed <u>Helenium autumnale</u>	Common	...	Aesthetic, ornamental
Bitterweed <u>Helenium tenuifolium</u>	Common	...	Aesthetic, ornamental, stabilizes sandy areas
Climbing hemp-weed <u>Mikania scandens</u>	Common	...	Aesthetic, ornamental

Table B (1). (continued)

Species	Abundance in Region	Use for Wildlife	Other Values
Daisy fleabane <u>Erigeron ramosus</u>	Common	...	...
Marsh fleabane <u>Pluchea fuetida</u>	Common	...	Aesthetic, ornamental
Wild lettuce <u>Lactuca villosa</u>	Common	Songbird food	Aesthetic, ornamental
False dandelion <u>Pyrhopappus carolinianus</u>	Abundant	Songbird food	Aesthetic, ornamental
Rosemary <u>Ceratiola ericoides</u>	Common	...	Aesthetic, aromatic herb
SWAMPS			
Black-gum <u>Nyssa biflora</u>	Common	Upland game food, cover	Aesthetic, tree form
White bay <u>Magnolia glauca</u>	Common	Cover for songbirds and upland game	Aesthetic, fragrant flowers
Bald cypress <u>Taxodium distichum</u>	Common	Cover for songbirds	Aesthetic, tree form
Red maple <u>Acer rubrum</u>	Common	Upland game food	Aesthetic
Tupelo gum <u>Nyssa aquatica</u>	Common	Upland game food	Aesthetic
Ash <u>Fraxinus spp.</u>	Abundant	Cover, roosts	Aesthetic, wood for tools
Swamp cottonwood <u>Populus heterophylla</u>	Common	Cover, roosts	Aesthetic
Overcup oak <u>Quercus lyrata</u>	Common	Upland game food	Aesthetic
Water hickory <u>Carya aquatica</u>	Uncommon	Upland game food	Edible nut, useful wood

Table B (1). (continued)

Species	Abundance in Region	Use for Wildlife	Other Values
Red bay <u>Persea Borbonia</u>	Uncommon	Cover	Aesthetic
Black willow <u>Salix nigra</u>	Abundant	Cover	Aesthetic, soil stabilization

FLATS AND HAMMOCKS

Swamp pine <u>Pinus Elliottii</u>	Common	Cover, roosts	Aesthetic, lumber
Southern magnolia <u>Magnolia grandiflora</u>	Common	Cover, roosts	High aesthetic value, lumber, ornamental
American holly <u>Ilex opaca</u>	Common	Cover, roosts	Aesthetic
Water oak <u>Quercus nigra</u>	Common	Waterfowl, upland and big game food, roosts	Aesthetic
Laurel oak <u>Quercus laurifolia</u>	Common	Waterfowl, upland and big game food, roosts	Aesthetic
Live oak <u>Quercus virginiana</u>	Abundant	Waterfowl, upland and big game food, winter cover, roosts	High aesthetic value
Titi (buckwheat-tree) <u>Cliftonia monophylla</u>	Common	...	...
Leatherwood <u>Cyrilla racemiflora</u>	Common	...	...

GRASSES--THROUGHOUT THE MOBILE BAY AREA

Bushy beardgrass <u>Andropogon blomeratus</u>	...	...	Ground cover
Three-awn grass <u>Aristida longespica</u>	Common	...	Stabilizes sandy areas

Table B (1). (continued)

Species	Abundance in Region	Use for Wildlife	Other Values
Coast sandbur <u>Cenchrus incertus</u>	Common	...	Reclaim disturbed sandy areas
Fingergrass <u>Chloris petraea</u>	Seasonally common	...	Stabilizes sandy areas
Dwarf crabgrass <u>Digitaria serotina</u>	Rare	...	Stabilizes sandy areas
Millet <u>Echinochloa</u> spp.	Rare	Waterfowl food	...
Lovegrass <u>Eragrostis Elliottii</u>	Rare	...	...
Beach panic <u>Panicum amarulum</u>	Rare	...	Stabilizes sandy areas
Panic grass <u>Panicum nitidum</u>	Common	...	...
Panic grass <u>Panicum oligosanthos</u>	Common	...	...
Panic grass <u>Panicum repens</u>	Rare	...	Stabilizes sandy areas
Panic grass <u>Panicum tenerum</u>	Rare	...	...
Florida paspalum <u>Paspalum floridanum</u>	Common	...	Palatable forage
Walter's paspalum <u>Paspalum membraceum</u>	...	...	...
Long-peduncled paspalum <u>Paspalum setaceum</u> <u>longependunculatum</u>	Common	Upland game food	Stabilizes sandy areas, palatable forage
Salt joint-grass <u>Paspalum vaginatum</u>	Common	Waterfowl food	Palatable forage
Fringeleaf paspalum <u>Paspalum ciliatifolium</u>	Common	Upland and big game food	Fair forage

Table B (1). (continued)

Species	Abundance in Region	Use for Wildlife	Other Values
Knotgrass <u>Paspalum distichum</u>	Abundant	Waterfowl food	Palatable forage
Longton <u>Paspalum lividum</u>	Common	Waterfowl food	Forage and hay
Brown seed paspalum <u>Paspalum plicatum</u>	Common	Waterfowl and upland game food	Palatable forage
Foxtail <u>Setaria</u> spp.	Common	Songbird food	Aesthetic
Cordgrass <u>Spartina</u> spp.	Common	Muskrat and waterfowl food, cover	Filters nutrients and pollutants
Coastal dropseed <u>Sporobolus virginicus</u>	Common	Waterfowl food	Palatable forage
Poverty grass <u>Sporobolus vaginiflorus</u>	Common	...	...
Sea oats <u>Uniola paniculata</u>	Common	...	Stabilizes sandy areas

Table (2). List of benthic algae and seagrass species in the vicinity of Alabama's coastal waters

#### DIVISION CYANOPHYTA

- Agmenella thermale* (Kützing) Drouet & Dailey
- Anacystis dimidiata* Drouet & Dailey
- Arthrospira brevis* (Kützing) Drouet
- Calothrix crustacea* Schousboe & Thuret
- Coccolithus elabens* Drouet & Dailey
- Entophysalis conferta* Drouet & Dailey
- E. deusta* Drouet & Dailey
- Microcoleus lyngbyaceus* (Kützing) Crouan
- M. vaginatus* (Vaucher) Gomont
- Oscillatoria erythraea* (Ehrenberg) Kützing
- O. lutea* C. Agardh
- O. submembranacea* Ardissonne & Strafforello
- Porphyrosiphon kurzii* (Zeller) Drouet
- P. miniatus* (Hauck) Drouet
- P. notarisii* (Meneghini) Kützing
- Schizothrix arenaria* (Berkeley) Gomont
- S. calcicola* (C. Agardh) Gomont
- S. friesii* (C. Agardh) Gomont
- S. mexicana* Gomont
- S. tenerrima* (Gomont) Drouet
- Spirulina subsalsa* Oersted

#### DIVISION CHLOROPHYTA

- Acetabularia crenulata* Lamouroux
- Acicularia schenckii* (Möbius) Solms-Laubach
- Anadyomene menziesii* Harvey
- A. stellata* (Wulfen) C. Agardh
- Aurainvillea levis* Howe
- Batophora oerstedii* J. Agardh
- Bryopsis pennata* Lamouroux
- Caulerpa ashmeadii* Harvey
- C. oupressoides* (West) C. Agardh
- C. mexicana* (Sonder ex Kützing) J. Agardh
- C. prolifera* (Forsskål) J. Agardh
- C. sertularioides* (Gmelin) Howe
- Chaetomorpha aerea* (Dillwyn) Kützing
- C. brachygona* Harvey
- C. linum* (Müller) Kützing
- Cladophora delicatula* Montagne
- C. fasciolaris* (Mertens) Kützing
- C. fuliginosa* Kützing
- C. glaucascens* (Griffiths) Harvey
- C. gracilis* (Griffiths) Kützing

Table (2). (continued)

*Cladocodiumopsis membranacea* (C. Agardh) Børgesen  
*Codium accortioatum* (Woodward) Howe  
*Codium sthmodium* Vickers  
*Carbesia vaucheriaeformis* (Harvey) J. Agardh  
*Enteromorpha clathrata* (Roth) Greville  
*E. flexuosa* (Wulfen in Roth) J. Agardh  
*E. intestinalis* (Linnaeus) Nees  
*E. lingulata* J. Agardh  
*E. plumosa* Kützting  
*E. prolifera* (Müller) J. Agardh  
*E. ramulosa* (J. E. Smith) Carmichael in Hooker  
*E. salina* Kützting  
*Entocladia viridis* Reinke  
*E. wittrockii* Wille  
*Gomontia polyrhiza* (Lagerheim) Bornet & Flahault  
*Ostreobium quekettii* Bornet & Flahault  
*Phaeophila dendroides* (Crouan) Batters  
*Rhizoclonium kochianum* Kützting  
*R. riparium* (Roth) Harvey  
*Stichococcus marinus* (Wille) Hazen  
*Ulva fasciata* Delile  
*U. lactuca* Linnaeus  
*Ulvella lens* Crouan fr.

DIVISION PHAEOPHYTA

*Ascoocylus orbicularis* (J. Agardh) Magnus  
*Asperococcus fistulosus* (Hudson) Hooker  
*Rachelotia antillarum* (Grunow) Gerloff  
*Cladosiphon occidentalis* Kylin  
*C. zosteriae* (J. Agardh) Kylin  
*Dictyota carvicornis* Kützting  
*D. dichotoma* (Hudson) Lamouroux  
*Ectocarpus dasycarpus* Kuckuck  
*E. elachistaeformis* Heydrich  
*E. intermedius* Kützting  
*E. siliculosus* (Dillwyn) Lyngbye  
*Giffordia indica* (Sonder) Papenfuss & Chihara  
*G. mitchelliae* (Harvey) Hamel  
*G. rallsiae* (Vickers) Taylor  
*Myriotrichia subcorymbosa* (Holden) Blomquist  
*Nereia tropica* (Taylor) Taylor  
*Padina vickersiae* Hoyt  
*Rosenvingea intricata* (J. Agardh) Børgesen  
*R. orientalis* (J. Agardh) Børgesen  
*Sargassum peltatum* (C. Agardh)  
*S. platyneuron* J. Agardh  
*S. natans* (Linnaeus) Gaillon

Table B (2). (continued)

*Sphacelaria furcigera* Kützing  
*S. tribuloides* Meneghini  
*Stilophora rhizodes* (Turner) J. Agardh

DIVISION PHODOPHYTA

*Acrochaetium flexuosum* Vickers  
*A. seriatum* Børgesen  
*Agardhiella tenera* (J. Agardh) Schmitz  
*Bostrychia moritziana* (Sonder) J. Agardh  
*B. radicans* Montagne ex Kützing  
*B. rivularis* Harvey  
*B. tenella* (Vahl) J. Agardh  
*Caloglossa lepriurii* (Montagne) J. Agardh  
*Centroceras clavulatum* (C. Agardh) Montagne  
*Ceramium byssoideum* Harvey  
*C. fastigiatum* (Roth) Harvey  
*Compsopogon caeruleus* (Balbis ex C. Agardh)  
*Dasya pedicellata* (C. Agardh) C. Agardh  
*Digenia simplex* (Wulfen) C. Agardh  
*Erythrotrichia carnea* (Dillwyn) J. Agardh  
*Fosliella farinosa* (Lamouroux) Howe  
*F. lejolisii* (Rosanoff) Howe  
*Gelidium corneum* (Hudson) Lamouroux  
*G. crinale* (Hare ex Turner) Lamouroux  
*Goniotrichum alsidii* (Zanardini) Howe  
*G. caudata* J. Agardh  
*G. foliifera* (Forsskål) Børgesen  
*Grateloupia filicina* (Wulfen) C. Agardh  
*Griffithsia tenuis* C. Agardh  
*Grinnellia americana* (C. Agardh) Harvey  
*Gymnogongrus tenuis* J. Agardh  
*Herposiphonia secunda* (C. Agardh) Ambronn  
*Hypnea cervicornis* J. Agardh  
*H. musciformis* (Wulfen) Lamouroux  
*H. pannosa* J. Agardh  
*Kylinia crassipes* (Børgesen) Kylin  
*Laurencia poitei* (Lamouroux) Howe  
*Lophosiphonia saccorhiza* Collins & Hervey  
*Melobesia membrarosa* (Esper) Lamouroux  
*Polysiphonia denudata* (Dillwyn) Kützing  
*P. echinata* Harvey  
*P. harveyi* Bailey  
*P. havanensis* Montagne  
*P. howei* Hollenberg  
*P. ramentacea* Harvey  
*P. subtilissima* Montagne



Table (2). (continued)

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*Spyridia filamentosa* (Mulfen) Harvey

DIVISION TRACHEOPHYTA

*Salodula wrightii* Ascherson

*Halophila baillonis* Ascherson ex Dickie in Hooker

*H. engelmannii* Ascherson in Neumayer

*Ruppia maritima* Linnaeus

*Syringodium filiforme* Kützing in Hohenacker

*Thalassia testudinum* König

Table (3). List of diatom species reported from the Gulf of Mexico in the vicinity of Alabama's coastal waters

- Achnanthes manifera* Brun  
*Aotinoxylum ehrenbergii* Ralfs  
*Aotinoxylum senarius* (Ehrenberg) Ehrenberg [= *A. undulatus* (Bailey) Ralfs]  
*A. splendens* (Shadbolt) Ralfs  
*Amphiprora gigantea* var. *sulcata* (O'Meara) Cleve  
*Amphora arenaria* Donkin  
*A. mioans* A. Schmidt  
*A. sulcata* A. Schmidt  
*Asterionella glacialis* Castracane (= *A. japonica* Cleve & Möller)  
*A. gracillima* (Hantzschel) Heiberg  
*Asteromphalus heptactis* (de Brébisson) Ralfs  
*Auliscus caelatus* Bailey  
*A. caelatus* Bailey var. *latecostata* A. Schmidt  
*A. confluens* Grunow  
*A. pruinosis* Bailey  
*A. punctatus* Bailey  
*Bacillaria paxillifer* (O.F. Müller) Hendeby [= *Nitsochia paradoxa* (Gmelin) Grunow]  
*Bacteriastrum ocosum* Pavillard  
*B. delioatulum* Cleve  
*B. elongatum* Cleve  
*B. hyalinum* Lauder  
*B. varians* Lauder var. *hispida* (Castracane) Schröder  
*Bellerophon malleus* (Brightwell) Van Heurck  
*Biddulphia alternans* (Bailey) Van Heurck  
*B. aurita* (Lyngbye) de Brébisson & Godey  
*B. chinensis* Greville (= *B. sinensis*)  
*B. dubia* (Brightwell) Cleve  
*B. levis* Ehrenberg  
*B. mobiliensis* (Bailey) Grunow  
*B. obtusa* (Kützing) Ralfs  
*B. pulchella* Gray  
*B. rhombus* (Ehrenberg) W. Smith  
*B. smithii* (Ralfs) Van Heurck  
*Campylodiscus punctulatus* Grunow  
*C. samoensis* Grunow  
*Campylosira cymbelliformis* (A. Schmidt) Grunow  
*Cerataulina pelagica* (Cleve) Hendeby [= *C. bergonii* (Peragallo) Schütt]  
*Chaetoceros affine* Lauder  
*C. affine* var. *willei* (Gran) Hustedt  
*C. atlanticum* Cleve  
*C. breve* Schütt  
*C. coarctatum* Lauder  
*C. compressum* Lauder  
*C. conoideum* Mangin

Table (3). (continued)

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<i>Chaetoceros striatum</i> Gran
<i>C. convolutum</i> Castracane
<i>C. convolutum</i> f. <i>trisetosa</i> Brunel
<i>C. costatum</i> Pavillard
<i>C. curvisetum</i> Cleve
<i>C. danicum</i> Cleve
<i>C. debile</i> Cleve
<i>C. decipiens</i> Cleve
<i>C. decipiens</i> f. <i>singularis</i> Gran
<i>C. diochaeta</i> Ehrenberg
<i>C. didymum</i> Ehrenberg
<i>C. diversum</i> Cleve
<i>C. glandazii</i> Mangin
<i>C. gracile</i> Schütt
<i>C. laeve</i> Leuduger-Fortmorel
<i>C. lorenzianum</i> Grunow
<i>C. messanense</i> Castracane
<i>C. pelagicum</i> Cleve
<i>C. peruvianum</i> Brightwell
<i>C. pseudocurvisetum</i> Mangin
<i>C. simile</i> Cleve
<i>C. sociale</i> Lauder
<i>C. teres</i> Cleve
<i>C. vanheurckii</i> Gran
<i>C. vistulae</i> Apstein
<i>Climacodium biconocum</i> Cleve
<i>Climacosphenia moniligera</i> Ehrenberg
<i>Cocconeis diminuta</i> Pantocsek
<i>C. disculoides</i> Hustedt
<i>C. placentula</i> Ehrenberg
<i>C. scutellum</i> Ehrenberg
<i>C. scutellum</i> var. <i>stauroneiformis</i> W. Smith
<i>Corethron criophilum</i> Castracane
<i>Coscinodiscus centralis</i> Ehrenberg
<i>C. concinnus</i> W. Smith
<i>C. curvisettus</i> Grunow
<i>C. denarius</i> A. Schmidt
<i>C. grantii</i> Gough
<i>C. kützingerii</i> A. Schmidt
<i>C. lineatus</i> Ehrenberg
<i>C. marginatus</i> Ehrenberg
<i>C. nitidus</i> Gregory
<i>C. oculus-iridis</i> Ehrenberg
<i>C. radiatus</i> Ehrenberg
<i>Cycolotella antiqua</i> W. Smith
<i>C. ...</i> Eulenstein
<i>C. ...</i> Grunow

Table B (3). (continued)

*Cydotella comta* (Ehrenberg) Kützing  
*C. meneghiana* Kützing  
*C. operculata* (Agardh) Kützing  
*Diatoma hemale* (Lyngbye) Heiberg  
*D. vulgare* Gory  
*Diploneis interrupta* (Kützing) Cleve  
*Ditylum brightwelli* (West) Grunow  
*Epithemia zebra* (Ehrenberg) Kützing  
*Eucampia cornuta* (Cleve) Grunow  
*E. zodiacus* Ehrenberg  
*Eupodiscus radiatus* Bailey  
*Fragilaria orotonensis* Kitton  
*Grammatophora marina* (Lyngbye) Kützing  
*G. oceanica* (Ehrenberg) Grunow  
*Guinardia flaccida* (Castracane) Peragallo  
*Gyrosigma spencerii* (Quekett) Cleve  
*Hemiaulus hauckii* Grunow  
*H. membranaceus* Cleve  
*H. sinensis* Greville  
*Hemidiscus hardmanianus* (Greville) Mann  
*Lauderia borealis* Gran  
*Leptocylindrus danicus* Cleve  
*Licmophora abbreviata* Agardh  
*Lithodesmium undulatum* Ehrenberg  
*Melosira ambigua* (Grunow) O. Müller  
*M. distans* (Ehrenberg) Ralfs  
*M. dubia* Kützing  
*M. granulata* (Ehrenberg) Ralfs  
*M. islandica* O. Müller  
*M. moniliformis* (Müller) Agardh  
*M. nummuloides* (Dillwyn) Agardh  
*M. sulcata* (Ehrenberg) Kützing (= *Paralia sulcata*)  
*Navicula distans* (W. Smith) A. Schmidt  
*N. gracilis* Ehrenberg  
*N. membranacea* Cleve  
*N. rhyncocephala* Kützing  
*N. simplex* Krackbe  
*Nedium affine* Pfitzer  
*Nitzschia olosterium* (Ehrenberg) W. Smith  
*N. insignis* Gregory  
*N. longissima* (de Brébisson) Ralfs  
*N. pacifica* Cupp  
*N. palea* (Kützing) W. Smith  
*N. pungens* var. *atlantica* Cleve  
*Nitzschia seriata* Cleve?  
*Pinnularia viridis* (Nitzsch) Ehrenberg

Table 8 (3). (continued)

- Plagiogramma inornate* Greville  
*P. tessellatum* Greville  
*P. vanheurnckii* Grunow  
*Pleurosigma balticum* (Ehrenberg) W. Smith [= *Gyrosigma balticum* (Ehrenberg) Cleve]  
*P. decem* W. Smith  
*P. elegantum* W. Smith  
*P. normanii* Ralfs  
*Pseudauliscus radiatus* (Bailey) Pattray  
*Pseudoeunotia doliolus* (Wallich) Grunow  
*Rhabdonema adriaticum* Kützing  
*Rhizosolenia acuminata* (Peragallo) Gran  
*R. alata* Brightwell  
*R. bergonii* Peragallo  
*R. calcar-avis* Schultze  
*R. castracanei* Peragallo  
*R. cylindrus* Cleve  
*R. hebetata* f. *semispina* (Hensen) Gran  
*R. imbricata* Brightwell  
*R. robusta* Norman  
*R. setigera* Brightwell  
*R. stolterfothii* Peragallo  
*R. styliformis* Brightwell  
*Schroederella delicatula* (Peragallo) Pavillard  
*Skeletonera costatum* (Greville) Cleve  
*Stauroneis anceps* Ehrenberg  
*Stephanopyxis palmeriana* (Greville) Grunow  
*S. turris* (Greville & Arnott) Ralfs  
*Streptotheca thamesis* Shrubsole  
*Striatella delicatula* (Kützing) Grunow  
*S. interrupta* (Ehrenberg) Heiberg  
*S. unipunctata* (Lyngbye) Agardh  
*Surirella fastuosa* (Ehrenberg) Kützing  
*S. fastuosa* var. *recedens* (A. Schmidt) Cleve  
*Synedra actinastroides* Lemmermann  
*S. fulgens* (Greville) W. Smith  
*S. ulna* (Nitzsch) Ehrenberg  
*Tabellarii fenestrata* (Lyngbye) Kützing  
*T. fenestrata* var. *asterionelloides* Grunow  
*Terpsinoë musica* Ehrenberg  
*Thalassionema nitzschioides* Grunow  
*Thalassionira decipiens* (Grunow) Jörgensen  
*T. eccentrica* (Ehrenberg) Cleve (= *Coscinodiscus excentricus* Ehrenberg)  
*T. polychorda* (Gran) Proshkina-Lavrenko  
*T. rotula* Meunier  
*Thalassiothrix delicatula* Cupp

Table B (3). (continued)

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*Thalassiothrix frauenfeldii* Grunow  
*T. longissima* Cleve & Grunow  
*T. mediterranea* Pavillard  
*T. mediterranea* var. *pacifica* Cupp  
*Trachyneis aspera* (Ehrenberg) Cleve  
*Triceratium broeckii* Leuduger-Fortmorel  
*T. favus* Ehrenberg  
*T. reticulum* Ehrenberg  
*Tropidoneis lepidoptera* (Gregory) Cleve  
*T. maxima* (Gregory) Cleve

Table (4)

SYSTEMATIC ACCOUNT OF INVERTEBRATES IN MOBILE BAY  
AND ADJACENT WATERS

Protozoa

Dinoflagellata

Ceratium macrocerus

Ceratium sp.

Ceratium tripos

Noctiluca sp.

Porifera

Demospongiae

Microcionidae

Microciona prolifera

Coelenterata

Hydrozoa

Bougainvillidae

Bougainvillia carolinensis

Memopsis bachei

Campanularidae

Philidium sp.

Eutinidae

Eutima mira

Geryonidae

Liriope tetraphylla

Siphonophoridae

Muggiaca kochi

Scyphozoa

Pelagidae

Chrysaora quinquacircha

Physaliidae

Physalia physalis

Table B (4) (cont'd)

Rhizostomatidae

Stomolophus meleagris

Chiropodiidae

Chiropsalmus quadrumanus

Astrangiidae

Astrangia astreiformis

Hornathiidae

Calliactis polypus

Renillidae

Renilla mulleri

Ctenophora

Mnemiidae

Mnemiopsis mccradyi

Beroidea

Beroe ovata

Ectoprocta

Bicellaridae

Bugula neritina

Vesiculariidae

Anathia sp.

Zoobotryon pellucidum

Mollusca

Gastropoda

Arminidae

Armina tigrina

Buccinidae

Cantharus cancellarius

Calyptraeidae



Table B (4) (cont'd)

Crepidula plana

Crepidula convexa

Columbellidae

Anachis svara

Anachis lunata

Anachis obesa

Anachis semiplicata

Mitrella lunata

Thais haemastoma

Nassariidae

Nassarius acutus

Nassarius vibex

Naticidae

Polinices duplicatus

Dorididae

Doride verrucosa

Muricidae

Thais haemastoma

Sinum perspectivum

Meritidae

Meritina reclinata

Atyidae

Haminoea succinea

Olividae

Oliva sayana

Oliva nivea

Oliva mutica

Retusidae

Retusa canaliculata

Table B (4) (cont'd)

Littorinidae

Littorina irrorata

Melongenidae

Busycon perversum

Busycon spiratum

Terebridae

Terebra dislocata

Terebra salleana

Bullidae

Bulla striata

Pelecypoda

Nuculanidae

Nuculana acuta

Petricolidae

Petricola pholadiformis

Sanguinolariidae

Tagelus divisus

Tagelus plebeius

Diplodontidae

Diplodonta punctata

Crassatellidae

Cuna dulli

Lucinidae

Anadontia alba

Lyonidae

Lyonia floridana

Limidae

Lima pellucida

Table B (4) (cont'd)

Arcidae

Anadara ovalis

Anadara transversa

Corbiculidae

Corbicula lasna

Donacidae

Donax variabilis

Donax spp.

Mastridae

Rangia cuneata

Mulinia lateralis

Mulinia pontchartraineensis

Spisula solidissima

Ostreidae

Crassostrea virginica

Ostrea equestris

Pectinidae

Aequipecten irradians

Tellinidae

Macoma constricta

Macoma mitchilli

Veneridae

Mercenaria campechiensis

Nytilidae

Amysdalum parvum

Brachidontes recurvus

Musculus lateralis

Solenidae

Ensis minor

Table B (4) (cont'd)

Dreissenidae

Congeria leucophaea

Cephaloda

Lolliginidae

Lolligincula brevis

Annelida

Polychaeta

Onuphidae

Diopatra cuprea

Flabelligeridae

Semiodera roberti

Nereidae

Laonereis culveri

Nereis succinea

Platynereis dumerilii

Tomopteridae

Tomopteris sp.

Ampharetidae

Hypaniola floridana

Amphinomidae

Paramphinome sp.

Capitellidae

Heteromastus filiformis

Notomastus latericeus

Flabelligeridae

Semiodera roberti

Glyceridae

Glycera americana

Glycera tessellata

Table B (4) (cont'd)

Goniadidae
<u>Glycinde solitaria</u>
Lumbrineridae
<u>Lumbrineria sp.</u>
Maldanidae
<u>Branchioychia americana</u>
Nephtyidae
<u>Nephtys bucera</u>
<u>Nephtys picta</u>
<u>Agalaphanus verilli</u>
Opheliidae
<u>Amotrypane aulegaster</u>
Oweniidae
<u>Owenia fusiformis</u>
Pectinariidae
<u>Cistenides gouldii</u>
Orbiniidae
<u>Scoloplos fragilis</u>
<u>Scoloplos robustus</u>
Phyllodocidae
<u>Eteone lactea</u>
<u>Paranastis sp.</u>
Pilargiidae
<u>Loandalia fauveli</u>
Polynoidae
<u>Lapidonotus sublevis</u>
Polyodontidae
<u>Polyodontes lupina</u>

Table B (4) (cont'd)

**Serpulidae**

Hydroides decora

Hydroides sp.

**Spionidae**

Paraprionospio pinnata

Scolecopia squamata

**Arthropoda**

**Crustacea**

**Calanidae**

Undinula vulgaris

Mannocalanus minor

**Eucalanidae**

Eucalanus attenuatus

Eucalanus pileatus

Rhincalanus cornutus

**Paracalanidae**

Paracalanus parvus

**Euchaetidae**

Euchaeta marina

**Centropagidae**

Centropagus furcatus

Centropagus hamatus

**Diaptomidae**

Pseudodiaptomus coronatus

**Temoridae**

Temora turbinata

Temora stylifera

Burytemora hirundoidea

Table (4) (cont'd)

Pontellidae

Calanopia americana

Pontella meadi

Labidocera aestiva

Anomalocera ornata

Acartiidae

Acartina tonsa

Oithonidae

Oithona brevicornis

Oithona plumifera

Oncaeiidae

Oncaea venusta

Oncaea sp.

Corycaeiidae

Corycaeus catus

Corycaeus subulatus

Corycaeus amazonicus

Sapphirinidae

Sapphirina nigromaculata

Copilia mirabilis

Tachidiidae

Euterpina acutifrons

Macrosetellidae

Macrosetella gracilis

Clytemnestridae

Clytemnestra scutellata

Argulidae

Argulus sp.

Table B (4) (cont'd)

Caligidae

Caligus spp.

Lernaeidae

Lernaeenicus radiatus

Lepadidae

Conchoderma virgatum

Sacculinidae

Loxothylacus texanus

Squillidae

Squilla empusa

Mysidae

Gastrosaccus dissimilis

Mysidopsis alvra

Diastylidae

Oxyurostylis smithi

Cymothoidae

Livonaca ovalis

Merocila acuminata

Olencira pragustator

Aegathon oculata

Sphaeromidae

Ancinus depressus

Sphaeroma destructor

Sphaeroma quadridentatum

Iodontheidae

Erichsonella attenuata

Caprellidae

Caprella carolinensis

Hemiaegina minuta



Table B (4) (cont'd)

Gammaridae

Carinogammarus micronatus

Melita fresneli

Carophidae

Corophium louisianum

Erichthonius brasiliensis

Haustoriidae

Haustorium asenarius

Ampeliscidae

Ampelisca holmesii

Oedicerotidae

Monoculoides edwardsi

Batea

Batea catherinensis

Hippolytidae

Hippolyte pleuracantha

Latreutes fucorum

Latreutes parvulus

Tozeuma carolinense

Sergistidae

Actes americanus

Actes carolinae

Lucifer faxoni

Penaeidae

Penaeus arcticus

Penaeus duorarum

Penaeus setiferus

Sicyonia brevirostris

Sicyonia dorsalis

Table B (4) (cont'd)

Xiphopenus kravari

Trachypeneus constrictus

Trachypeneus similis

Alpheidae

Alpheus heterochaelis

Ogyrididae

Ogyrides limicola

Palaemonidae

Macrobrachium acanthurus

Macrobrachium ohione

Palaemonetes kadiakensis

Palaemonetes paludosus

Palaemonetes pugio

Palaemonetes vulgaris

Periclimenes longicaudatus

Leucosiidae

Persephone punctata

Persephone crinita

Majidae

Libinia dubia

Libinia emarginata

Metoporphaphis calcarata

Pinnotheridae

Pinnixa chaetoperana

Pinnotheres maculatus

Paguridae

Clibanarius vittatus

Pagurus annulipes

Table B (4) (cont'd)

Pagurus pollicaris

Clappidae

Hepatus opheliticus

Portunidae

Arenaeus cribrarius

Callinectes similis

Callinectes sapidus

Ovalipes guadulpensis

Portunus gibbesii

Portunus spinimanus

Xanthidae

Eurytium limosum

Eurypanopeus depressus

Lobopilumnus agassizii

Menippe mercenaria

Neopanope texana

Rhithropanopeus harrisi

Panopeus herbstii

Panopeus occidentalis

Pilumnus dasypodus

Hippidae

Emerita talpoida

Paguridae

Clibanarius vittatus

Pagurus annulipes

Pagurus longicarpus

Pagurus pollicaris

Porcellanidae

Petrolisthes armatus

Table B (4) (cont'd)

Polyphemidae

Podon sp.

Evadne sp.

Sididae

Penilia avirostris

Echinodermata

Asteroidca

Astropectinidae

Lucidia clathrata

Ophiuroidea

Amphiuridae

Hemipholas elongatus

Echinoidae

Scutellidae

Mellita quinquiesperforata

Holothuroidea

Cucumariidae

Thyone mexicana

Chaetognatha

Sagitta enflata

Sagitta helenae

Sagitta tenuis

Hemichordata

Enteropneusta

Harrimanidae

Saccoglossus kowalevskii

Table B (4) (cont'd)

Chordata

Larvacea

Oikopleuridae

Oikopleura dioica

Thaliacea

Doliolidae

Doliolum sp.

Lepto cardii

Branchiostomidae

Branchiostoma caribaeum

Sources: Christmas et al. (1973) and Swingle (1971)

Table (5). Inventory of animals that might inhabit the lower Mobile Bay region.

Species	Habitat and/or Biological Status	Range in Alabama or State	Abundance in Florida	Range in Contiguous United States	Project Impact
<b>Opossum</b> <i>Didelphis macrmlalle fiera</i> Bangs	Wide variety of habitats Permanent resident	Statewide	Common	Species: Most of area Subspecies: Carolinas to Louisiana	None
<b>Carolinian short-tailed shrew</b> <i>Blarina brevicauda carolinensis</i> (Beckman)	Moist woodlands, along swamps, streams Permanent resident	Statewide	Common	Eastern portion	None
<b>Least shrew</b> <i>Cryothollis parva parva</i>	Dry grassy meadows Permanent resident	Statewide	Common	Eastern portion	None
<b>Hopewell mole</b> <i>Scalopus aquaticus hopewelli</i> Jackson	Wide variety of habitats Permanent resident	Statewide	Common	Eastern portion	None
<b>Star-nosed mole</b> <i>Condylura cristata cristata</i> (Linnaeus)	Low, wet ground Permanent resident	Southern extremity of state	Rare	Southeast, and eastern portion	None
<b>Scolecaster, myotis</b> <i>Myotis macrosternus macrosternus</i> (Meads)	Buildings, bridges, requires open exposure of water Permanent resident	Statewide	Rare	South-central and east Gulf coast	Minimal
<b>Big brown bat</b> <i>Myotis fuscus fuscus</i> (Brewster)	Buildings, wooded areas Permanent resident and migrant	Statewide	Common	All of area	None
<b>Red bat</b> <i>Lasiurus borealis borealis</i> (Miller)	Wooded areas Permanent resident and migrant	Statewide	Very common	Most of area except Rocky Mountains	None
<b>Seminole bat</b> <i>Lasiurus seminolus</i> (Meads)	Wooded areas Permanent and migrant	Statewide	Discomon	Eastern, southeastern, and Gulf states	None
<b>Hoary bat</b> <i>Lasiurus cinereus cinereus</i> (Pallies de Bezevoles)	Wooded areas Permanent and migrant	Statewide	Rare	All of area	None

Table B (5). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Continental United States	Project Impact
Florida yellow bat <u>Myotis intermedius floridanus</u> (B. Allen)	Wooded areas Permanent resident	Southern quarter	Rare	Eastern Gulf	None
Evening bat <u>Myotis humeralis humeralis</u> (Kirtland)	Buildings and trees Permanent resident	Statewide	Common	Eastern portion	None
Brazilian free-tailed bat <u>Tadarida brasiliensis cyanocephala</u> (LeConte)	Caves and buildings Migrates in winter	southwestern	Rare	southwestern and southern states	None
Nine-banded armadillo <u>Dasypus novemcinctus mexicanus</u> Peters	Woods, brush, open areas Permanent resident	Southern	Common	Southeast and southeast Gulf states	None
Marsh rabbit <u>Sylvilagus palustris palustris</u> (Bechman)	Salt marshes Permanent resident	Southeastern	Common	Southeastern Gulf states	Minimal but potentially significant
Eastern cottontail <u>Sylvilagus floridanus alpegi</u> (Bangs)	Wide variety of habitats Permanent resident	Statewide	Common	Eastern two-thirds portion	None
and/or intergrades with <u>Sylvilagus floridanus millorum</u> (Thomas)	Endemic to locality Permanent resident	Statewide	Common	Eastern two-thirds portion	None
Swamp rabbit <u>Sylvilagus aquaticus aquaticus</u> (Bechman)	Wetlands--fresh and salt Permanent resident	Statewide except southeast	Common	South and south-central states	Minimal
Swamp rabbit <u>Sylvilagus aquaticus lirtoralle</u> Wilson	Salt marshes Permanent resident	Confined to narrow coastal strip	Common	Southeast, Gulf coast	Minimal but potentially significant
Gray squirrel <u>Sciurus carolinensis carolinensis</u> Cassin	All local woodlands Permanent resident	Statewide	Very abundant	Eastern portion	None
Bechman fox squirrel <u>Sciurus niger bechmani</u>	Forests				

Table B (5). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Contiguous United States	Project Impact
Bayou Gray squirrel <u>Sciurus carolinensis fuliginosus</u> Bechmar	Deltaic and lowland woodlands Permanent resident	Southwestern extremity	Common	South-central Gulf coast	Minimal but potentially significant
Southern living squirrel <u>Glaucomys volans saturatus</u> A. N. Howell	All local woodlands Permanent resident	Statewide	Common	Eastern portion	None
Beaver <u>Castor canadensis carolinensis</u> Rhowe's	Fresh wooded lowlands Permanent resident	Statewide	Common	Most of area	None
Marsh rice rat <u>Oryzomys palustris palustris</u> (Harlan)	Marshy fields, wooded swamps salt marshes	Statewide in suitable wet areas	Abundant	Southeastern portion	Minimal
Eastern harvest mouse <u>Pezomachus humilis</u>	Fields, marshes, wet meadows Permanent resident	Statewide	Rare	Southeastern portion	None
Oldfield mouse <u>Peromyscus polionotus polionotus</u> (Wagner)	Crop fields, mid-open tilled areas Permanent resident	Eastern half only	Abundant	South Carolina, Georgia, Florida, Alabama	None
White-fronted beach mouse <u>Peromyscus polionotus mimobates</u> Howen	Coastal dunes Permanent resident	Southern extremity	Rare	Southeast Gulf beaches	Moderate
Florida beach mouse <u>Peromyscus polionotus triaxillensis</u> Howen	Coastal dunes Permanent resident	Southern extremity of Baldwin County only	Rare	Alabama and Florida	Moderate
Cotton mouse <u>Peromyscus gossypinus gossypinus</u> (LeConte)	Timbered swamps Permanent resident	Statewide	Abundant	Southeastern portion	Minimal
Golden mouse <u>Ochrotomys nuttalli aureolus</u> (Audubon and Bachman)	Scraggy woodland Permanent resident	Mobile County, and southern Baldwin county	Common	Southeastern portion	Minimal



Table B (5). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Continental United States	Project Impact
Hispid cotton rat <u>Sigmodon hispidus hispidus</u> Say and Ord	Ubiquitous Permanent resident	Statewide	Very abundant	Southern tier of states	None
Eastern wood rat <u>Neotoma floridana illinoensis</u> A. R. Howell	Swamps and palmettos Permanent resident	Statewide	Abundant	Southeastern portion	...
Louisiana muskrat <u>Ondatra sibiricus rivalis</u> (Bangs)	Coastal marshes Permanent resident	Coastal region	Abundant	Central Gulf coast	Minimal
Black rat <u>Rattus rattus raitus</u> (Linnaeus)	Buildings Permanent resident	Southeastern	Common	Extreme south portion	Minimal
Norway rat <u>Rattus norvegicus norvegicus</u> (Beskernhout)	Settled areas but also fields Permanent resident	Statewide	Common	All of area	Minimal
House mouse <u>Mus musculus brevirostris</u> Waterhouse	Buildings, but also fields and weedy areas Permanent resident	Statewide	Abundant	All of area	Minimal
Nutria <u>Myocastor coypus bonariensis</u> (R. Geoffroy St. -Hilaire)	Wetlands--fresh and salt Permanent resident	Statewide	Abundant	Most of southern and coastal areas	Minimal
Atlantic bottle-nosed dolphin <u>Tursiops truncatus</u> (Montagu)	Salt water Resident	Marine coastal	Common	Atlantic coast	Moderate
Rough-Toothed Dolphin <u>Steno bredanensis</u>	Open Gulf	Oceanic	Rare	Atlantic and Indian Oceans	None
Spotted Dolphin <u>Stenella flaggiodon</u>	Open Gulf	Oceanic	Rare	Atlantic Ocean and Gulf of Mexico	None
Common Dolphin <u>Delphinus delphis</u>	Open Gulf	Coastal	Common	Atlantic and Pacific Coast	Moderate
Black pilot whale <u>Globicephala</u> sp.	Salt water Occasional visitor	Marine coastal	Only one specimen recorded	Atlantic coast	None

Table B (5). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Contiguous Palted States	Project Impact
<u>Finback whale</u> <u>Melaenoptera physalis</u>	Open Gulf	Oceanic	Rare	Atlantic and Pacific Coasts	None
<u>Short-Finned Pilot Whale</u> <u>Globicephala macrorhyncha</u>	Open Gulf	Oceanic	Common	Atlantic and Gulf	None
<u>Sperm whale</u> <u>Physeter catodon</u>	Open Gulf	Oceanic	Common	Atlantic and Pacific Coasts	None
<u>Coyote</u> <u>Canis latrans</u>	Wide variety of habitats Unknown status	Baldwin County	Rare, occurrence doubtful	Most areas west of Mississippi River	None
<u>Red wolf</u> <u>Canis rufus x canis latrans--hybrid</u>	Coastal marshes Unknown status	Mobile County	Rare	Gulf coastal area	Minimal
<u>Bad fox</u> <u>Vulpes fulva fulva</u> (Dummerest)	Wide variety of terrestrial habitats Permanent resident	Statewide	Common	Most of area	None
<u>Grey fox</u> <u>Urocyon cinereostratus floridanus</u> Moore	Wide variety of terrestrial habitats Permanent resident	Statewide	Common	About three-fourths of areas	None
<u>Florida black bear</u> <u>Ursus americanus floridanus</u> Merrill	Swamps, flooded bottoms Permanent resident	Southern tier of counties	Rare	Coastal counties in Florida and Alabama	Minimal
<u>Raccoon</u> <u>Procyon lotor varius</u> Holson and Goldman	Wide variety of habitats Permanent resident	Statewide	Abundant	Most of area	None
<u>Long-tailed weasel</u> <u>Mustela erminea olivacea</u> Howell	Timbered swamps Permanent resident	Statewide in suitable habitat	Very rare	Most of area in suitable habitat	None
<u>Blind</u> <u>Mustela vison alba</u> Faulk and Pailson de Beauvois	Preswamp wetlands, streams Permanent resident	Statewide	Scarce	All but southwest region	None

Table B (3). (continued)

Species	Habitat and/or Seasonal Status	Range in State	Abundance in Region	Range in Continental United States	Project Report
Spotted skunk <u>Spilaxis pectoris pectoris</u> (Linnaeus)	Wide variety of habitats Permanent resident	Statewide	Scarc	All except extreme north	None
Striped skunk <u>Mephitis mephitis elegans</u> <u>B. J. R.</u>	Coastal habitats Permanent resident	Coastal region only	Common	Most of area	None
River otter <u>Lutra canadensis canadensis</u> (Schreber)	Remote wetlands Permanent resident	Statewide	Rare	Most of area in suitable habitat (remote areas only)	None
Mountain lion <u>Felis concolor coryi</u> <u>Bangs</u>	Remote undisturbed areas Permanent resident	Southern	Rare	Most of area	None
Bobcat <u>Lynx rufus floridanus</u> <u>Meffenque</u>	Wide variety of habitats Permanent resident	Statewide	Common	About three-fourths of area	None
White-tailed deer <u>Odocoileus virginianus pecora</u> (Bangs)	Variety of habitats Permanent resident	Marine coastal region	Abundant	Marine coastal regions of Florida and Alabama	None
and <u>Odocoileus virginianus virginianus</u> <u>Linnaeus</u>					

Table (c). Inventory of birds that are likely to be observed in lower Mobile Bay region.

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Common loon <u>Gavia immer</u>	Open water Winters here	Statewide	Common	Most of area	Minimal
Red-throated loon <u>Gavia stellata</u>	Open water Accidental winter visitor	Statewide	Uncommon	Eastern portion	None
Horned grebe <u>Podiceps auritus</u>	Open water Winters here	Statewide	Common	Central portion	Minimal
Eared grebe <u>Podiceps caspicus</u>	Open water Winter migrant	Coastal	Uncommon	West-central portion	None
Least grebe <u>Podiceps dominicus</u>	Permanent and migrant	Statewide	Very uncommon	All of area	Minimal
Pied-billed grebe <u>Podilymbus podiceps</u>	Open water, breeds in freshwater Permanent and migrant	Statewide	Common	All of area	Minimal
White-tailed tropic-bird <u>Phaethon lepturus</u>	Open ocean Accidental after storms	Marine coast	Rare	Southeast coast	None
White pelican <u>Pelecanus erythrorhynchos</u>	Open water Winters here	Migrates through	Common	Eastern two-thirds and Gulf coast	Minimal
Brown pelican <u>Pelecanus occidentalis</u>	Open water Permanent resident Formerly bred here	Gulf coast	Rare	Coastal areas	Potentially significant
Brown booby <u>Sula leucogaster</u>	Open ocean Visitor	Gulf coast	Common	Gulf and west coasts	None
Gannet <u>Morus bassanus</u>	Open ocean Winters on ocean	Gulf coast	Common	Gulf and east coasts	None

Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Contaminated United States	Project Impact
Double-crested cormorant <u>Phalacrocorax auritus</u>	Open water Winters here	Statewide	Common	All coasts and north-central land area	Minimal
Anhinga (water-turkey) <u>Anhinga anhinga</u>	Swamps, ponds, lakes, streams Breeds and winters here	Statewide	Common	Southeast and Gulf coast	None
Magnificent frigate-bird <u>Fregata magnificens</u>	Open ocean Occasional visitor	Gulf coast	Rare	Southeast Gulf, and west coast	None
Great white heron <u>Ardea occidentalis</u>	Salt water Permanent resident	Statewide	Common	All coastal areas and central region	Minimal
Great blue heron <u>Ardea herodias</u>	Salt marshes, beaches, mudflats Permanent and breeding resident	Statewide	Common	All of area	Minimal
Green heron <u>Butorides virescens</u>	Salt marshes Summer and breeding resident	Statewide	Locally abundant	Eastern half and all coasts	Minimal
Little blue heron <u>Florida ceryle</u>	Salt marshes, beaches, mudflats Summer and breeding resident	Southern portion	Common	Eastern and Gulf coasts	Minimal
Cattle egret <u>Buliacus ibis</u>	Salt marshes, fields Summer and breeding resident	Statewide	Common	Southeast	None
Reddish egret <u>Michrysomassa rufescens</u>	Beaches and mudflats Late summer migrant	Gulf coast	Uncommon	Southeast extremity	None
Common egret <u>Casmerodius albus</u>	Salt marshes, beaches and mudflats Permanent and breeding resident	Statewide	Common	East half and west coast	Minimal
Snowy egret <u>Leucoroeus thula</u>	Salt marshes, beaches, and mudflats Permanent and breeding resident	Southern portion	Common	Most of southern portion	Minimal

Table B (c). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Louisiana heron <u>Hydranassa tricolor</u>	Salt marshes, beaches Summer and breeding resident	Gulf coast	Uncommon	Southeast and Gulf coasts	Minimal
Black-crowned night heron <u>Nycticorax nycticorax</u>	Salt marshes Permanent and breeding resident	Statewide	Common	Most of the area	Minimal
Yellow-crowned night heron <u>Nyctanassa violacea</u>	Beaches and mudflats Salt marshes Fresh water swamps Summer resident	Statewide, winters near coast or in swamps	Uncommon	Non-mountainous areas of Southeast, East, & South Central United States	Slight
Least bittern <u>Inobrychus exilis</u>	Salt marshes Summer and breeding resident	Statewide	Common	Eastern portion	Minimal
American bittern <u>Botaurus lentiginosus</u>	Fresh and salt marshes Migrant	Statewide	Uncommon	All of area	None
White-faced ibis <u>Plegadis chihi</u>	Salt marshes, beaches, and mudflats Casual visitor	Gulf coast only	Uncommon	Southwest	None
White ibis <u>Eudocimus albus</u>	Beaches and mudflats Summer and breeding resident	Gulf coast only	Locally abundant	Southeast and Gulf coasts	Minimal
Roseate spoonbill <u>Aiaia ajaja</u>	Beaches and mudflats Casual winter visitor	Gulf coast only	Rare	Gulf coast, Florida's Atlantic coast	None
Whistling snan <u>Oler columbianus</u>	Open water Casual winter visitor	Gulf coast only	Rare	Northern portion and coastal areas	None
Canada goose <u>Brenta canadensis</u>	Open water, coastal prairies Migrant	Statewide in migrations	Common	All of area	Minimal
White-fronted goose <u>Anser albifrons</u>	Open water Casual visitor	Gulf coast only	Uncommon	Central and Gulf coasts	None

Table B (b). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Snow goose <u>Chen hyperborea</u>	Open water Migrant	Gulf coast primarily	Uncommon	Central and coastal areas	None
Blue goose <u>Chen caerulescens</u>	Open water Migrant	Gulf coast	Uncommon	Central and Gulf coast areas	None
Fulvous tree duck <u>Dendrocygna bicolor</u>	Salt marshes Casual winter visitor	Gulf coast only	Common	Southern east and west coasts and Gulf coast	None
Mallard <u>Anas platyrhynchos</u>	Open water (freshwater) Winter visitor	Statewide	Common	All of area	None
Black duck <u>Anas rubripes</u>	Salt marsh and open water Winter visitor	Statewide	Abundant	Eastern portion	None
Mottled duck <u>Anas fulvigula</u>	Salt marsh Permanent resident	Gulf coast only	Common	Gulf and Florida coasts	Minimal but potentially great
Gadwall <u>Anas strepera</u>	Salt marshes and open water Winter visitor	Statewide	Uncommon	All of area	None
Pintail <u>Anas acuta</u>	Salt marsh and open fresh water Winter visitor	Statewide	Common	All of area	None
Green-winged teal <u>Anas carolinensis</u>	Open water, ponds Winter visitor	Statewide	Common	All of area	None
Blue-winged teal <u>Anas discors</u>	Open water and salt marshes Winter visitor and migrant	Statewide	Common	All of area	None
American widgeon <u>Mareca americana</u>	Open water Winter visitor	Statewide	Common	All of area	None

Table B (b). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Shoveler <u>Spacula clypeata</u>	Open water Migrant	Statewide	Common	All of area	None
Wood Duck <u>Aix sponsa</u>	Fresh water swamps Permanent resident	Statewide	Uncommon	Eastern United States & extreme northwest	Moderate
Redhead <u>Aythya americana</u>	Open water Winter visitor	Statewide	Common	All of area	None
Ring-necked duck <u>Aythya collaris</u>	Open water Winter visitor	Statewide	Common	All of area	None
Canvasback <u>Aythya valisineria</u>	Open water Winter visitor	Statewide	Common	All of area	None
Greater scaup <u>Aythya marila</u>	Open water Winter visitor	Statewide	Common	All of area	None
Lesser scaup <u>Aythya affinis</u>	Open water Winter visitor	Statewide	Abundant	All of area	None
Common goldeneye <u>Bucephala clangula</u>	Open water, deep water Winter visitor	Statewide	Common	All of area	None
Bufflehead <u>Bucephala albeola</u>	Open water Winter visitor	Statewide	Common	All of area	None
Oldsquaw <u>Clangula hyemalis</u>	Open water, open ocean Winter visitor	Coastal regions	Uncommon	Any coastal region	None
White-winged scoter <u>Melanitta deglandi</u>	Open water, open ocean Winter visitor	Coastal regions	Uncommon	Any coastal region	None
Surf scoter <u>Melanitta perspicillata</u>	Open water Winter visitor	Coastal regions	Uncommon	Coastal regions	None
Common scoter <u>Oidemia nigra</u>	Open water Winter visitor	Coastal regions	Rare	Coastal regions	None
Ruddy duck <u>Oxyura jamaicensis</u>	Open water Winter visitor	Statewide	Common	All of area	None



Table 3 (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Continental United States	Project Impact
<u>Hooded merganser</u> <u>Lophodytes cucullatus</u>	Open water, wooded lakes and streams Winter visitor	Statewide	Moderately Common	Coastal regions, northern and eastern areas	None
Common Merganser <u>Mergus merganser</u>	Bartrials Winter visitor	Statewide	Accidental	All except South	None
Red-breasted merganser <u>Mergus serrator</u>	Open water Winter visitor	Statewide	Common	Most of area	None
Turkey vulture <u>Cathartes aura</u>	Salt marshes, beaches and mudflats Permanent and breeding resident	Statewide	Common	All of area	None
Black vulture <u>Corvus stratus</u>	Fresh water swamps Open fields Forests Permanent resident	Statewide	Uncommon	Southeast through Texas	None
Swallow-tailed kite <u>Elanoides forficatus</u>	Beaches and mudflats Casual visitor	Southern portion	Common	Gulf and southeast coasts	None
Mississippi kite <u>Ictinia mississippiensis</u>	Beaches and mudflats Winter visitor	Coastal region	Uncommon	Gulf and southeast coasts, south-central region	None
Sharp-shinned hawk <u>Accipiter striatus</u>	Open woods, woodland edges Permanent resident	Statewide	Common	All of area	None
Cooper's hawk <u>Accipiter cooperii</u>	Open woods, woodland edges Permanent resident	Statewide	Uncommon	All of area	None
Red-Tailed Hawk <u>Buteo jamaicensis</u>	Open fields Forests Permanent resident	Statewide	Common	All	None
Red-shouldered hawk <u>Buteo lineatus</u>	Moist woods, open fields Permanent resident	Statewide	Common	All of area	Minimal

Table B (9). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Continental United States	Project
Broad-winged hawk <u>Buteo platypterus</u>	Open fields Forests Permanent resident	Statewide	Uncommon	Rare	Minimal
Brown-legged hawk <u>Buteo lagopus</u>	Open fields Casual and winter visitor	North Alabama	Accidental	All except South	None
Golden eagle <u>Aquila chrysaetos</u>	Open areas Rare visitor	Statewide	rare	Most of area	Minimal
Bald eagle <u>Haliaeetus leucocephalus</u>	Beaches & mudflats, streams Rare visitor	Statewide	rare	Most of area	None
Marek hawk <u>Circus cyaneus</u>	Salt marshes, coastal prairies Migrant and winter visitor	Statewide	Common	All of area	None
Oopsey <u>Falco balliurus</u>	Beaches, mudflats Breeds here Permanent and migrant	Statewide	Rare	All of area	Potentially significant
American peregrine falcon <u>Falco peregrinus anatum</u>	Open areas Casual visitor	Statewide	Rare	All of area	None
Arctic peregrine falcon <u>Falco peregrinus tundrius</u>	Coasts, woods Rare winter visitor	Statewide	Rare	All of area	None
Pigeon Hawk <u>Falco columbarius</u>	Beaches and mudflats Open fields Forests and migrant	Statewide	Rare	All of area	None
Sparrow Hawk <u>Falco sparverius</u>	Open fields Permanent resident	Statewide	Common	All of area	None
Bobwhite <u>Colinus virginianus</u>	Open woods, fields Permanent resident	Statewide	Abundant	Eastern three-fourths of area	None
Wild ca. hawk <u>Melospiza palmarum</u>	Woods, fields Permanent resident	Statewide	Abundant	Most of area in suitable habitat	None

Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Sandhill crane <u>Grus canadensis</u>	Marshes, open pine woods Rare visitor	Gulf coast only	Rare	Western two-thirds of area	None
King rail <u>Rallus elegans</u>	Salt marsh Permanent and breeding resident	Statewide	Common	All of area	None
Clapper rail <u>Rallus longirostris</u>	Salt marsh Permanent and breeding resident	Coastal regions only	Abundant	Most coastal areas	None
Virginia rail <u>Rallus limicola</u>	Salt marsh Winter migrant	Statewide	Common	All of area	None
Sora <u>Porzana carolina</u>	Salt marsh Migrant	Statewide	Common but not often seen	All of area	None
Yellow rail <u>Coturnicops noveboracensis</u>	Salt marsh Winter visitor	Statewide	Uncommon	Most of area	None
Black rail <u>Lateralus jamaicensis</u>	Salt marsh Winter visitor	Statewide	Common	Eastern portion	None
Purple gallinule <u>Porphyrio martinica</u>	Salt marsh Summer and breeding resident	Southern portion	Uncommon	Southeast and Gulf coasts	None
Common gallinule <u>Gallinula chloropus</u>	Salt marsh Summer and breeding resident	Statewide	Common	Eastern portion	None
American coot <u>Fulica americana</u>	Open water (bays) Winters in area	Statewide	Abundant	All of area	None
American oystercatcher <u>Haematopus palliatus</u>	Beaches, mudflats Permanent resident	Statewide	Uncommon	Eastern and Gulf coasts	None
Scalpated plover <u>Charadrius semipalmatus</u>	Beaches, mudflats Winters in area	Statewide	Common	Eastern two-thirds	None

Table B (6) (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Piping plover <u>Charadrius melodus</u>	Beaches, mudflats Winters in area	Statewide	Uncommon	East and Gulf coasts, central region	None
Snowy plover <u>Charadrius alexandrinus</u>	Beaches, mudflats Permanent resident	Coastal region	Common	Gulf end and west coasts, western third	None
Wilson's plover <u>Charadrius wilsonia</u>	Beaches, mudflats Permanent and winter migrant	Coastal region	Uncommon	East and Gulf coasts	None
Killdeer <u>Charadrius vociferus</u>	Open fields Permanent resident	Statewide	Common	All of area	None
American plover <u>Pluvialis dominica</u>	Beaches, mudflats Migrant	Coastal region	Common	Gulf coast and central region	None
Black-bellied plover <u>Squatarola squatarola</u>	Beaches, mudflats Winter visitor	Statewide	Common	All of area	None
Ruddy turnstone <u>Arenaria interpres</u>	Beaches, mudflats Winters in area	Statewide	Common	Eastern portion	None
American Woodcock <u>Totanus minor</u>	Fresh water swamps Forests Permanent resident	Statewide	Uncommon	Eastern portion	None
Common snipe <u>Coereba mollissima</u>	Beaches, mudflats Winters in area	Statewide	Common	All of area	None
Long-billed curlew <u>Dominicus americanus</u>	Beaches, mudflats Migrant	Coastal areas	Common on beaches and mudflats	Western portion	None
Whimbrel <u>Numenius phaeopus</u>	Beaches, mudflats Migrant	Coastal region	Uncommon	Eastern seaboard and Gulf coast	None
Upland Plover <u>Puffinus tenuirostris</u>	Open fields Migrant	Accidental	Accidental (rare)	West coast and Northcentral	None
Spotted sandpiper <u>Actitis macularia</u>	Beaches, mudflats Migrant	Entire state	Common	All of area	None

Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Solitary sandpiper <u>Tringa solitaria</u>	Beaches, mudflats Migrant	Entire state	Common	All of area	None
Willet <u>Catoptrophorus semipalmatus</u>	Beaches, mudflats Permanent resident	Coastal areas	Common	All coasts and western portion	None
Greater yellowlegs <u>Totanus melanoleucus</u>	Beaches Migrant	Entire state	Common	All of area	None
Lesser yellowlegs <u>Totanus flavipes</u>	Beaches, mudflats Migrant	Entire state	Common	All of area	None
Knot <u>Calidris canutus</u>	Beaches, mudflats Migrant	Southern portion	Uncommon	All coasts	None
Pectoral sandpiper <u>Erolia melanotos</u>	Beaches, mudflats Migrant	Entire state	Uncommon in Alabama, abundant in Louisiana	All of area	None
Baird's sandpiper <u>Erolia bairdii</u>	Beaches, mudflats Casual visitor	Coastal areas	Rare	Gulf coast, and central portion	None
Least sandpiper <u>Erolia minutilla</u>	Salt marshes, beaches Winters in area	Statewide	Common	All of area	None
Dunlin <u>Erolia alpina</u>	Beaches, mudflats Winter migrant	Statewide	Common	Eastern portion	None
Short-billed dowitcher <u>Limnodromus griseus</u>	Beaches, mudflats Winter migrant	Statewide	Common	Eastern portion	None
Long-billed dowitcher <u>Limnodromus scolopaceus</u>	Beaches, mudflats Winters in area	Statewide	Common	All of area	None
Stilt sandpiper <u>Micropalama himantopus</u>	Beaches, mudflats Winter migrant	Statewide	Uncommon	Eastern portion	None
Semipalmated sandpiper <u>Ereunetes pusillus</u>	Beaches, mudflats Winter migrant	Statewide	Abundant	Eastern two-thirds of area	None

Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Continental United States	Project Impact
Western sandpiper <u>Ereunetes aurifrons</u>	Beaches, mudflats Winter migrant	Statewide	Common	All of area	None
Buff-breasted sandpiper <u>Tryngites subruficollis</u>	Salt marshes Migrant	Coastal area	Rare	Central portion, east and Gulf coastal areas	None
Marbled godwit <u>Limosa fedoa</u>	Salt marshes Migrant	Coastal areas	Rare	All coasts, western portion	None
Sanderling <u>Crocethia alba</u>	Beaches, salt marshes Winter visitor	Statewide	Common	Most of area	None
American avocet <u>Recurvirostra americana</u>	Shores, salt marshes Migrant	Coastal areas	Common	Western portion	None
Black-necked stilt <u>Himantopus mexicanus</u>	Salt marshes Casual visitor	Coastal areas	Common	Florida coast, Gulf coast, southwest region	None
Red phalarope <u>Phalaropus fulicarius</u>	Open ocean Winter visitor	Coastal areas	Uncommon	All coasts	None
Wilson's phalarope <u>Steganopus tricolor</u>	Shores, inland areas, salt marshes Migrant	Coastal areas	Uncommon	Western portion	None
Pomarine Jaeger <u>Stercorarius pomarinus</u>	Open gulf Winter visitor	Coastal areas	Accidental	East and West coast	None
Parasitic Jaeger <u>Stercorarius parasiticus</u>	Open ocean Winter visitor	Coastal region	Uncommon	All coasts	None
Great black-backed gull <u>Larus marinus</u>	Beaches, mudflats, open water Casual winter visitor	Coastal region	Rare	East coast, eastern Gulf coast	None
Merring gull <u>Larus argentatus</u>	Beaches, mudflats, open water Winter visitor	Statewide	Abundant	All of area	None

Table B (~). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Continental United States	Project Impact
Ring-billed gull <u>Larus delawarensis</u>	Beaches, mudflats, open water Winters in area	Statewide	Common	All of area	None
Laughing gull <u>Larus atricilla</u>	Beaches, mudflats, open water Permanent resident	Coastal areas	Common	East coast, Gulf coast, southern Arizona	None
Bonaparte's gull <u>Larus philadelphia</u>	Beaches, mudflats, open water Winter visitor	Statewide	Common	Eastern two-thirds	None
Gull-billed tern <u>Gelochelidon nilotica</u>	Salt marshes, beaches, mudflats, open water Summer breeding resident and migrant	Coastal areas	Uncommon	East and Gulf coasts	None but potentially significant
Forster's tern <u>Sterna forsteri</u>	Salt marshes, beaches, mudflats Permanent resident	Statewide	Common	Most of area	None but potentially significant
Common tern <u>Sterna hirundo</u>	Beaches, mudflats, open water Permanent resident	Statewide	Abundant	Eastern portion	None
Roseate Tern <u>Sterna dougalli</u>	Estuaries, beaches and mudflats Migrant	Coastal areas	Uncommon	Localized in Coastal areas of East & Gulf	None
Sooty tern <u>Sterna fuscata</u>	Open ocean Casual visitor	Accidental	Rare	Southeast east-coasts	None
Least tern <u>Sterna albifrons</u>	Beaches, mudflats Summer breeding resident	Coastal areas	Common	East and Gulf seacoasts	Minimal potentially significant
Royal tern <u>Thalasseus maximus</u>	Beaches, mudflats, open water Permanent resident	Coastal areas (salt water only)	Common	Most sea coasts	Minimal

Table 8 (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Continental United States	Project Impact
Sanderling term <u>Thalasseus sandvicensis</u>	Beaches, mudflats Summer resident breeding population	Coastal areas	Uncommon	East and Gulf seacoasts	Minimal
Caspian tern <u>Hydroprogne caspia</u>	Salt marshes, beaches mudflats Winter visitor	Statewide	Common	Eastern and northwestern portions	None
Black tern <u>Chlidonias niger</u>	Beaches, mudflats Migrant	Statewide	Common	All of area	None
Black skimmer <u>Rynchops nigra</u>	Beaches, mudflats Permanent and winter resident	Coastal areas	Common	Seacoasts	None
Rock dove (domestic pigeon) <u>Columba livia</u>	Farms, urban and industrial areas Permanent resident	Statewide	Abundant	All of area	Slight INCR
White-winged dove <u>Zenaidura macroura</u>	Open fields Forests Winter visitor	Coastal islands	Accidental but regular	Southwest	None
Mourning dove <u>Zenaidura macroura</u>	Fields, brush, open woods, urban areas Permanent resident and migrant	Statewide	Abundant	All of area	None
Ground dove <u>Columbigallina passerina</u>	Brush, fields Permanent resident and migrant	Southern extremity	Common	Extreme south	None
Yellow-billed cuckoo <u>Coccyzus americanus</u>	Forests Summer resident	Statewide	Common winter	All of area	Moderate
Black-billed cuckoo <u>Coccyzus erythrophthalmus</u>	Forests Migrant	All (migration)	Discreet	North & Northeastral	Minimal



Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Barn owl <u>Tyto alba</u>	Open field, forests Permanent resident	All of area	Common resident	All except north Rockies	Could increase
Screech owl <u>Otus asio</u>	Forests Permanent resident	All of area	Common	All of area	None
Great horned owl <u>Bubo virginianus</u>	Forests Permanent resident	All of area	Common	All of area	None
Burrowing owl <u>Speotyto cucularia</u>	Beaches, mudflats Casual visitor	Southern extremity	Uncommon	Western portion	None
Barred owl <u>Strix varia</u>	Marshes, rivers Winter visitor	Statewide	Common	All of area	None
Short-eared owl <u>Asio flammeus</u>	Marshes, plains Winter visitor	Statewide	Common	All of area	None
Chuck-will's-Widow <u>Caprimulgus carolinensis</u>	Forests Summer resident	Statewide	Uncommon	East except extreme N. N	Moderate
Whip-poor-will <u>Caprimulgus vociferus</u>	Beaches and mudflats Forests Winter visitor				
Common nighthawk <u>Chordeiles minor</u>	Open air Summer resident	Statewide	Common	All of area	None
Chimney Swift <u>Chaetura pelagica</u>	Forests Summer resident	Statewide	Common	East	Probable increase
Ruby-thrsted hummingbird <u>Archilochus colubris</u>	Salt marshes, fresh water swamps Forests Migrant Summer resident	Statewide	Common	East	Probable increase

Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Contiguous United States	Project Impact
Belted kingfisher <u>Megasceryle alcyon</u>	Streams, sloughs, ponds Present all year, joined by northern migrants in winter	Statewide	Common	All of area	None
Yellow-shafted flicker <u>Colaptes auratus</u>	Forests Permanent resident	Statewide	Common	East	Slight decrease
Pileated Woodpecker <u>Dryocopus pileatus</u>	Fresh water swamps Forests Permanent resident	Statewide	Common	East & Northwest	Definite decrease
Red-bellied woodpecker <u>Centurus rubicollis</u>	Forests Permanent resident	Statewide	Common	East except extreme north	Slight decrease
Red-headed woodpecker <u>Melanerpes erythrocephalus</u>	Forests Permanent resident	Statewide	Common	East	None
Yellow-bellied sapsucker <u>Sphyrapicus varius</u>	Forests Winter visitor	Statewide	Common in winter	All of area	None
Hairy woodpecker <u>Dendrocopos villosus</u>	Forests Permanent resident	Statewide	Common	All of area	None
Grey woodpecker <u>Dendrocopos pubescens</u>	Shade trees, orchards woods Permanent resident	Entire state	Common	All of area	None
Red-cockaded woodpecker <u>Dendrocopos borealis</u>	Longleaf, pine woods Permanent resident	Most of state	Rare	Southeast	Minimal
Eastern kingbird <u>Tyrannus tyrannus</u>	Open fields Forests Summer resident	Statewide	Common	East of Rockies	Probable increase
Grey kingbird <u>Tyrannus dominicensis</u>	Beaches, mudflats Summer resident, Breeds here	Coastal only	Rare	Only in Florida and Alabama coastal regions	None

Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Continental United States	Project Impact
Western Kingbird <u>Tyrannus verticalis</u>	Beaches and mudflats Open fields Winter visitor	Coastal	Frequent but accidental	West	None
Scissor-tailed flycatcher <u>Melanerpes formicivorus</u>	Beaches and mudflats Open fields Winter visitor	Coastal	Frequent but accidental	South central	None
Great crested flycatcher <u>Myiarchus cinerascens</u>	Forests Summer resident	Statewide	Common	East	Slightly adverse to beneficial
Am-throated flycatcher <u>Myiarchus cinerascens</u>	Open fields Forests Casual	South Alabama	Rare accidental	West and Southwest	None
Eastern phoebe <u>Sayornis phoebe</u>	Open fields Forests Winter visitor	Statewide	Common	East of Rockies	Slightly adverse to beneficial
Yellow-bellied flycatcher <u>Empidonax flaviventris</u>	Forests Migrant	Statewide	Uncommon	East	None
Acadian flycatcher <u>Empidonax virens</u>	Fresh water swamps Forests Migrant	Statewide	Common	East	Slight
Traill's flycatcher <u>Empidonax traillii</u>	Forests Migrant	Statewide	Common during migration	All	None
Least flycatcher <u>Empidonax minimus</u>	Forests Migrant	Statewide	Common during migration	East	None
Eastern Wood Pewee <u>Geothlypis trichas</u>	Forests Summer resident	Statewide	Common	East	Slight
Olive-sided flycatcher <u>Motacilla alba borealis</u>	Forests Migrant	Statewide	Accidental during migration	All except southeast	None
Vermillion flycatcher <u>Pyrocephalus rubinus</u>	Beaches and mudflats Fresh water swamps Forests Casual & winter visitor	South Alabama	Accidental during migration	Southwest	None
Brewer's lark <u>Emmottia alpestris</u>	Beaches Migrant	Statewide	Uncommon	All of area	None

Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Contemporaneous United States	Project Impact
Tree swallow <i>Iridoprocne bicolor</i>	Marshes Migrant	Statewide	Common	All of area	None
Bank swallow <i>Hirundo lunifrons</i>	Steep banks Migrant	Statewide	Common	All of area	None
Rough-winged swallow <i>Stelgidopteryx ruficollis</i>	Rear water Summer resident	Statewide	Common	All of area	None
Barn swallow <i>Hirundo lunifrons</i>	Fresh water swamps Open fields Summer resident	Statewide	Common	All of area	None to beneficial
Cliff swallow <i>Petrochelidon erythrogaster</i>	Fresh water swamps Open fields Migrant	Statewide	Seasonally common	All of area	None
Purple martin <i>Progne subis</i>	Open fields Summer resident	Statewide	Common to rarer	All except Rockies	Beneficial
Blue jay <i>Cyanocitta cristata</i>	Woodlands Permanent resident	Statewide	Common	Eastern portion	None
Common crow <i>Corvus brachyrhynchos</i>	Urban areas Permanent resident	Statewide	Abundant	All of area	None
Field crow <i>Corvus ossifragus</i>	Woodlands, woodlands Permanent resident	Southern portion	Common	Southeast and Gulf seacoasts	None
Carolina Chickadee <i>Parus carolinensis</i>	Forests Permanent resident	Statewide	Common	East except far north	Slightly adverse
Tufted titmouse <i>Parus bicolor</i>	Forests Permanent resident	Statewide	Common	East	Slightly adverse
White-breasted nuthatch <i>Sitta carolinensis</i>	Forests Permanent and casual	Statewide	Common	All of area	Slightly adverse

Table B (f). (continued)

Species	Habitat and/or Seasonal Status	Range in Region of State	Abundance in Region	Range in Conterminous United States	Project Impact
Red-breasted nuthatch <u>Sitta canadensis</u>	Forests Winter visitor	Statewide	Common in winter	All of area	Slightly adverse
Brown-headed nuthatch <u>Sitta pusilla</u>	Forests Permanent	Statewide	Common	Southeast	Slightly adverse
Brown creeper <u>Certhia familiaris</u>	Forests Winter visitor	Statewide	Common in winter	All of area	Slightly adverse
House wren <u>Troglodytes aedon</u>	Fresh water swamps Forests Winter visitor	Statewide	Common in winter	All of area	Slightly adverse
Winter Wren <u>Troglodytes troglodytes</u>	Forests Winter visitor	Statewide	Common in winter	East & northwest	Slightly adverse
Bewick's wren <u>Troglodytes bewicki</u>	Forests Winter visitor	Statewide	Common especially in winter	Southeast, south-central & southwest	Slightly adverse
Carolinian wren <u>Troglodytes carolinianus</u>	Fresh water swamps Open fields Forests Permanent resident	Statewide	Common	East	Slightly adverse
Long-billed marsh wren <u>Icthyophaga missouriensis</u>	Marshes Permanent breeding resident	Statewide	Abundant where it occurs	All of area	None
Short-billed marsh wren <u>Icthyophaga stansburiana</u>	Marshes Winter visitor	Statewide	Decommon	Eastern portion	None
Mockingbird <u>Mimus polyglottus</u>	Open fields Forests Permanent resident	Statewide	Abundant	Southeast, south-central & east part	None
Catbird <u>Dumetella carolinensis</u>	Open fields Forests Winter and migrant	Statewide	Common	All except for north and southeast	Slightly detrimental

Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Contiguous United States	Project Impact
Brown thrasher <u>Troglodytes rufum</u>	Open fields Forests Permanent	Statewide	Common	East	Slightly adverse
Sage thrasher <u>Oreoscoptes montanus</u>	Open fields Casual Winter visitor	Coastal	Accidental during winter	West	Poor
Robin <u>Turdus migratorius</u>	Fields, urban areas woods Permanent breeding resident	Statewide	Abundant	All of area	None
Hood thrush <u>Hylocichla ustulata</u>	Forests Summer resident	Statewide	Common	East	Slightly adverse
Hermit thrush <u>Hylocichla guttata</u>	Forests Winter visitor and migrant	Statewide	Common	All	Slightly adverse
Seminole's thrush <u>Hylocichla ustulata</u>	Evergreen woods Migrant	Statewide	Common	All of area	None
Gray-cheeked thrush <u>Hylocichla minima</u>	Forests Migrant	Statewide	Common during migration		
Veery <u>Hylocichla fuscescens</u>	Wet areas, evergreen woods Migrant	Statewide	Common	Eastern two-thirds of area	None
Eastern bluebird <u>Sialia sialis</u>	Open fields Forests Permanent resident	Statewide	Common but local	East of Rockies	Beneficial
Blue-grey gnatcatcher <u>Pollotia caerulea</u>	Wet woods Winter visitor	Statewide	Common	East and southwest areas	None

Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Continental United States	Project Impact
Golden-crowned kinglet <u>Troglodytes aedon</u>	Pinewoods Winter visitor	Statewide	Common	All of area	None
Ruby-crowned kinglet <u>Troglodytes mexicanus</u>	Pinewoods Winter visitor	Statewide	Common	All of area	None
Water Pipit <u>Anthus spinoletta</u>	Open fields Winter visitor	Statewide	Common in winter	All of area	None
Cedar waxwing <u>Bombus cedrorum</u>	Forests Winter visitor	Statewide	Common in winter	All of area	Slight
Loggerhead shrike <u>Lanius ludovicianus</u>	Open fields Forests Permanent resident	Statewide	Common especially in winter	All of area	Slightly beneficial
Starling <u>Sturnus vulgaris</u>	Open fields Forests Permanent resident	Statewide	Common	All of area	Beneficial
White-eyed vireo <u>Vireo alpestris</u>	Forests Permanent resident	Statewide	Common	East	Slightly detrimental
Bell's vireo <u>Vireo bellii</u>	Forests Casual Migrant	South Alabama	Accidental in winter	Central and southwest	None
Solitary vireo <u>Vireo solitarius</u>	Forests Winter visitor	Statewide	Common in winter	All of area	Slightly detrimental
Yellow-throated vireo <u>Vireo flavifrons</u>	Forests Migrant and winter visitor	Statewide	Uncommon	East	Slightly detrimental
Black-whiskered vireo <u>Vireo altiloquus</u>	Forests Casual	Coastal	Very rare (3 or 4 records)	Florida mangroves	None
Red-eyed vireo <u>Vireo olivaceus</u>	Forests Summer resident	Statewide	Common	All except southwest	Slightly detrimental

Table E .6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
<u>Philadelphia vireo</u> <u>Vireo philadelphicus</u>	Forests Migrant	Statewide	Uncommon	East	None
<u>Wrestling vireo</u> <u>Vireo gilvus</u>	Forests Migrant	Statewide	Common during migration	All of area	Slightly detrimental
<u>Black-and-white warbler</u> <u>Mniotilta varia</u>	Forests Migrant	Statewide	Common during migration	All of area	Slightly detrimental
<u>Prothonotary warbler</u> <u>Protonotaria citrea</u>	Fresh water swamps Forests Summer resident	Statewide	Common in swamps	East	Detrimental
<u>Swainson's warbler</u> <u>Limothlypis swainsoni</u>	Fresh water swamps Summer resident	Statewide	Uncommon in swamps	Southeast	Detrimental
<u>Worm-eating warbler</u> <u>Helminthophila vermivorus</u>	Forests Migrant	Statewide	Rare	East	Detrimental
<u>Golden-winged warbler</u> <u>Vermivora chrysoptera</u>	Forests Migrant	Statewide	Rare	East	None
<u>Blue-winged warbler</u> <u>Vermivora pinus</u>	Open fields Migrant	Statewide	Rare	East	None
<u>Tennessee warbler</u> <u>Vermivora peregrina</u>	Forests Migrant	Statewide	Common migrant	East	None
<u>Orange-crowned warbler</u> <u>Vermivora celata</u>	Forests Winter visitor	Statewide	Common in winter	All of area	Slightly detrimental
<u>Nashville warbler</u> <u>Vermivora ruficapilla</u>	Forests Migrant	Statewide	Uncommon	All except Rockies	Slightly detrimental
<u>Parula warbler</u> <u>Parula americana</u>	Fresh water swamps Forests Summer residents	Statewide	Common	East	Slightly detrimental



Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Yellow warbler <u>Dendroica petechia</u>	Fresh water swamps Open fields Forests Migrant	Statewide	Common migrant	All of area	Slightly beneficial
Magnolia warbler <u>Dendroica magnolia</u>	Forests Migrant	Statewide	Common migrant	East	Slight
Cape may warbler <u>Dendroica tigrina</u>	Forests Migrant	Statewide	Uncommon migrant	East	Slight
Black-throated blue warbler <u>Dendroica caerulescens</u>	Forests Migrant	Statewide	Uncommon migrant	East	Slight
Yellow-rump warbler <u>Dendroica coronata</u>	Fresh water swamps Forests Winter visitor	Statewide	Abundant winter bird	All of area	Slight
Black-throated gray warbler <u>Dendroica nigrescens</u>	Forests Casual Migrant	Statewide	Accidental	Far West	None
Black-throated green warbler <u>Dendroica virens</u>	Forests Migrant	Statewide	Common	East	Slight
Cerulean warbler <u>Dendroica cerulea</u>	Forests Migrant	Statewide	Common	East	Slight
Blackburnian warbler <u>Dendroica fusca</u>	Forests Migrant	Statewide	Common	East	Slight
Yellow-throated warbler <u>Dendroica dominica</u>	Forests Winter visitor Migrant	Statewide	Uncommon	East	Slight

Table 5 (b). (continued)

Species	Habitat and/or Seasonal status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Chestnut-sided warbler <u>Dendroica pensylvanica</u>	Forests Migrant	Statewide	Common during migration	East	Slight
Bay-breasted warbler <u>Dendroica castanea</u>	Forests Migrant	Statewide	Common during migration	East	Slight
Blackpoll warbler <u>Dendroica striata</u>	Forests Migrant	Statewide	Very common during migration	East	Slight
Pine warbler <u>Dendroica pinus</u>	Forests Permanent residents	Statewide	Common	East	Moderate
Prairie warbler <u>Dendroica discolor</u>	Open fields Forests Migrant	Statewide	Common	East	Moderate
Palm warbler <u>Dendroica palmarum</u>	Open fields Forests Winter visitor	Statewide	Common	East	Slight
Ovenbird <u>Seiurus aurocapillus</u>	Forests Migrant	Statewide	Common during migration	East	Slight
Northern waterthrush <u>Seiurus noveboracensis</u>	Open fields Forests Migrant	Statewide	Common	East	Slight
Louisiana waterthrush <u>Seiurus motacilla</u>	Open fields Forests Migrant	Statewide	Common	East	Slight
Kentucky warbler <u>Oporornis formosus</u>	Forests Migrant	Statewide	Common during migration	East	Slight
Connecticut warbler <u>Oporornis agilis</u>	Forests Casual Migrant	Statewide	Common for a limited time during migration	Extreme east	Slight

Table B (b). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Mourning warbler <u>Oootornis phalaenoptera</u>	Forests Casual Migrant	Statewide	Uncommon during short migration period	East	Slight
Yellowthroat <u>Geothlypis trichas</u>	Fresh water swamps Forests Permanent resident	Statewide	Abundant	All of area	Moderate
Yellow-breasted chat <u>Icteria virens</u>	Open fields Forests Migrant	Statewide	Common during migration	All of area	Slight
Hooded warbler <u>Wilsonia citrina</u>	Forests Summer resident	Statewide	Common during migration	East	Slight
Wilson's warbler <u>Wilsonia pusilla</u>	Forests Migrant	Statewide	Common	All of area	Slight
Canada warbler <u>Wilsonia canadensis</u>	Forests Migrant	Statewide	Uncommon	East	Slight
American redstart <u>Setophaga ruticilla</u>	Forests Migrant	Statewide	Common during migration	All except far west	Slight
House sparrow <u>Passer domesticus</u>	Open fields Forests Permanent resident	Statewide	Abundant	All of area	highly beneficial
Bobolink <u>Dolichonyx oryzivorus</u>	Open fields Migrant	Statewide	Common	East	Possibly will be benefitted
Eastern meadowlark <u>Sturnella magna</u>	Marshes Permanent breeding resident	Statewide	Common	Eastern portion	None
Western meadowlark <u>Sturnella neglecta</u>	Marshes Winter visitor	Coastal only	Uncommon	Western portion	None

Table B (c). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Redwinged blackbird <u>Agelaius phoeniceus</u>	Marshes Permanent resident	Entire state	Common	All of area	None
Orchard oriole <u>Icterus spurius</u>	Marshes, wooded swamps Summer visitor	Statewide	Common	Eastern portion	None
Baltimore Oriole <u>Icterus galbula</u>	Forests Migrant	Statewide	Abundant	East	Possibly beneficial
Bullock's Oriole <u>Icterus bullocki</u>	Forests Casual Migrant	Coastal	Accidental for fall & spring	West	None
Rusty blackbird <u>Euphagus carolinus</u>	Wet woods Winter visitor	Statewide	Common	Eastern two-thirds of area	None
Brewer's blackbird <u>Euphagus cyanocephalus</u>	Open fields Winter visitor	Statewide	Uncommon	Eastern two-thirds of area	Slightly detrimental
Boat-tailed grackle <u>Cassidix mexicanus</u>	Marshes, beaches Permanent resident	Coastal region	Common	Gulf coast and central areas	None
Common grackle <u>Quiscalus quiscula</u>	Farmlands, pinewoods, urban areas Permanent resident	Statewide	Common	Eastern portion	None
Brown-headed cowbird <u>Molothrus ater</u>	Open fields Forests Winter visitor	Statewide	Common	All of area	Possibly beneficial
Western tanager <u>Piranga ludoviciana</u>	Forests Casual Migrant	Coastal	Accidental	Far west	None
Scarlet tanager <u>Piranga olivacea</u>	Forests Migrant	Statewide	Abundant during migration	East	Slight

Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Summer tanager <u>Tyrannus rubra</u>	Wooded streams Summer breeding resident	Statewide	Common	East and southwest areas	None
Cardinal <u>Richmondia cardinalis</u>	Woods, urban areas Summer resident and breeding population	Statewide	Common	Eastern portion and part of southwest	None
Rose-breasted grosbeak <u>Phoebastria ludoviciana</u>	Forests Migrant	Statewide	Abundant during migration	East	Possibly beneficial
Black-headed grosbeak <u>Phoebastria melanocephalus</u>	Forests Casual Winter visitor	Statewide	Accidental	West	None
Blue grosbeak <u>Quiscalus cyreus</u>	Open fields Forests Migrant	Statewide	Common	South East to West	Possibly beneficial
Indigo bunting <u>Passerina cyanea</u>	Open fields Forests Migrant	Statewide	Common	East	Possibly beneficial
Painted bunting <u>Passerina ciris</u>	Forests Migrant	Statewide	Common during migration	South central	Possibly beneficial
Dickcissel <u>Spiza americana</u>	Open fields Migrant	Statewide	Rare	East	Some benefits
Purple finch <u>Carpodacus purpureus</u>	Forests Winter visitor	Statewide	Common	All of area	Some benefits
Pine siskin <u>Spizella pinus</u>	Forests Casual Winter visitor	Statewide	Rare	North East to West	Slightly detrimental
American goldfinch <u>Spizella tristis</u>	Open fields Forests Winter visitor	Statewide	Very common in winter	All of area	Possibly beneficial

Table B (b). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Continental United States	Project Impact
Rufous-sided towhee <u>Pipilo erythrophthalmus</u>	Forests Permanent resident	Statewide	Abundant	All of area	Detrimental
Savannah sparrow <u>Passerculus sandwichensis</u>	Open fields Winter visitor	Statewide	Common	All of area	Slightly beneficial
Crowsnapper sparrow <u>Ammodramus savius</u>	Open fields Winter visitor	Statewide	Common	All of area	Slightly beneficial
LeCointe's sparrow <u>Passertherobulus caudatus</u>	Open fields Winter visitor	Statewide	Common	East	Slightly adverse
Henslow's sparrow <u>Passertherobulus henslowi</u>	Fresh water swamps Open fields Winter visitor	Statewide	Rare winter resident	East	Slightly beneficial
Sharp-tailed sparrow <u>Ammodramus caudatus</u>	Marshes Winter visitor	Statewide	Common	Eastern portion	None
Seaside sparrow <u>Ammodramus maritimus</u>	Marshes Permanent resident	Coastal only	Common	East and Gulf seacoasts	None
Vesper sparrow <u>Pooecetes gramineus</u>	Open fields Winter visitor	Statewide	Common	All of area	Beneficial
Lark sparrow <u>Chondestes alpestris</u>	Open fields Migrant	Statewide	Uncommon	All of area	Beneficial
Bobwhite's sparrow <u>Ammodramus aestivalis</u>	Forest Permanent resident	Statewide	Uncommon to rare	East	Beneficial
State-colored junco <u>Junco hyemalis</u>	Open fields Forests Casual Winter visitor	Statewide	Abundant to common	All of area	Beneficial

Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project
Chipping sparrow <u>Spizella passerina</u>	Open fields Winter visitor	Statewide	Abundant	All of area	Very beneficial
Mass-colored sparrow <u>Spizella pallida</u>	Forests Casual Winter visitor	Statewide	Accidental	Great Plains	None
Field sparrow <u>Spizella pusilla</u>	Open fields Winter visitor	Statewide	Common in winter	East	Beneficial
White-crowned sparrow <u>Zonotrichia leucophrys</u>	Open fields Forests Casual Winter visitor	Statewide	Rare winter visitor	All except southeast	Beneficial
White-throated sparrow <u>Zonotrichia albicollis</u>	Forests Winter visitor	Statewide	Very common in winter	East and Southwest	Very beneficial
Fox sparrow <u>Passerella iliaca</u>	Forests Casual Winter visitor	Statewide	Common in winter	All of area	Detrimental
Lincoln's sparrow <u>Melospiza lincolni</u>	Forests Casual Winter visitor	Statewide	Accidental winter visitor	All except southeast	Detrimental
Sump sparrow <u>Melospiza georgiana</u>	Fresh water swamps Open fields Winter visitor	Statewide	Abundant especially in winter	East	Detrimental
Song sparrow <u>Melospiza melodia</u>	Open fields Forests Winter resident	Statewide	Abundant especially in winter	All of area	Detrimental

Table (7). Inventory of reptiles and amphibians that might inhabit the Mobile Bay region.

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
American alligator <u>Alligator mississippiensis</u>	Freshwater, wetland areas, occasionally in brackish water Permanent resident	Southern half	Moderate populations	Southern portion	Potentially significant
Common snapping turtle <u>Chelydra serpentina serpentina</u>	Any fresh water Permanent resident	Statewide	Abundant	Eastern portion	Minimal
Alligator snapping turtle <u>Macrochelys temminckii</u>	Any moderately deep fresh water Permanent resident	Southern half	Abundant	South and south-central states	Minimal
Stinkpot <u>Sternotherus odoratus</u>	Fresh water Permanent resident	Statewide	Extraordinarily abundant	Eastern portion	Minimal
Striped-necked musk turtle <u>Sternotherus minor peltifer</u>	Rivers, creeks Permanent resident	Statewide	Common	Parts of Louisiana, Alabama, Tennessee	Potentially significant
Eastern mud turtle <u>Kinosternon subrubrum subrubrum</u>	Salt marshes, shallow water, tidal waters Permanent resident	Most of state	Common	Southeast	Minimal
Gulf coast box turtle <u>Terrapene carolina major</u>	Mostly terrestrial Permanent breeding resident	Southern portion	Common	Gulf coast, Florida panhandle to east Texas	Minimal
Mississippi diamondback terrapin <u>Malaclemys terrapin pileata</u>	Marshes, streams, passes, also travels along estuaries Permanent breeding resident	Seacoasts and estuaries	Common	Alabama, Mississippi, Louisiana	Minimal
Alabama map turtle <u>Graptemys pulchra</u>	Streams Permanent resident	Southeast	Common	Gulf tributaries from west Florida to east Louisiana	Potentially significant
Black-knobbed sawback <u>Graptemys nigrinoda</u>	Sluggish streams Permanent resident	Southeast	Moderately common	Southeast Alabama only	Potentially significant



Table 2 (7). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Yellow-bellied pond slider <u>Pseudemys scripta scripta</u>	Ubiquitous Permanent breeding resident	Statewide	Common	Southeast	Minimal
Red-eared pond slider <u>Pseudemys scripta elegans</u>	Quiet water Permanent breeding resident	Statewide	Common	South-central	Minimal
Mobile cooter <u>Pseudemys concinna mobilensis</u>	Streams Permanent breeding resident	Southern portion	Common	Gulf tributaries, west Florida to extreme southeast Texas	Minimal
Florida cooter <u>Pseudemys floridana floridana</u>	Marshes, streams, ponds Permanent breeding resident	Southern half	Common	Coastal plain, Maryland to Alabama but excluding peninsular Florida	Minimal
Missouri slider <u>Pseudemys floridana hoyi</u>	Marshes, streams, ponds Permanent breeding resident	Southern half	Common	Alabama to Texas and north to Miss. Valley	Minimal
Alabama red-bellied turtle <u>Pseudemys alabamensis</u>	Rivers, ponds Permanent breeding resident	Southern extremity	Rare	Coastal Alabama	Potentially significant
Eastern chicken turtle <u>Deirochelys reticularia reticularia</u>	Marshes, sloughs Permanent breeding resident	Southern half	Common	Southeast coastal plains	Potentially significant
Gulf Coast smooth softshell turtle <u>Trionyx muticus calvatus</u>	Streams Permanent breeding resident	Western half	Common	Central portion	Minimal
Gulf coast softshell turtle <u>Trionyx spinifer asper</u>	Streams, ponds Permanent breeding resident	Statewide	Common	Southeast coastal plains	Minimal
Florida softshell turtle <u>Trionyx ferox</u>	Quiet streams, slough Permanent breeding resident	Southern extremity	Rare	Extreme southern Alabama only	Potentially significant
Gopher tortoise <u>Gopherus polyphemus</u>	Stream banks Permanent breeding resident	Southern quarter	Rare	Southeast Atlantic and Gulf areas	Minimal

Table 3.1). (continued)

Species	Habitat & /or Seasonal Status	Range in Region or State	Abundance in Region	Range in Contiguous United States	Project Impact
Atlantic green turtle <u>Chelonia mydas mydas</u>	Shallow sea water Visitor and migrant	Coastal only	Rare	Gulf and Atlantic coasts north to Massachusetts	None
Atlantic hawksbill <u>Eretmochelys imbricata imbricata</u>	Shallow sea water Visitor and migrant	Coastal only	Rare	Gulf and Atlantic coasts north to Massachusetts	None
Atlantic loggerhead <u>Caretta caretta caretta</u>	Beaches, warm coastal sea water Beaches could be used for nesting Visitor and migrant	Coastal only	Rare	From Gulf of Mexico north to North Carolina	None
Atlantic ridley <u>Lepidochelys keayi</u>	Beaches and associated sea water Visitor	Coastal only	Rare	Gulf of Mexico north to Nova Scotia	None
Atlantic leatherback <u>Dermochelys coriacea coriacea</u>	Open seas Visitor and may nest here	Coastal only	Rare	Warm Gulf of Mexico and Atlantic north to Nova Scotia	None
Green anole <u>Anolis carolinensis carolinensis</u>	Trees, shrubs, vines Permanent resident	Statewide	Abundant	Florida, Gulf and Atlantic coastal plains north to Virginia	Minimal
Southern fence lizard <u>Sceloporus undulatus undulatus</u>	Trees, logs, buildings Permanent resident	Southern half	Common	South Carolina to Florida and central Louisiana	Minimal
Six-lined racerunner <u>Cnemidophorus sexlineatus</u>	Flood plains, sandy areas, open fields Permanent resident	Statewide	Common	Southern and south-central areas	Minimal
Ground skink <u>Lygocheilus laterale</u>	Woods Permanent resident	Statewide	Common	Southern New Jersey to Florida Keys, west to east Kansas and central Texas	Minimal

Table B (7). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Five-lined skink <u>Eumeces fasciatus</u>	Cutover woods, piles of drift wood Permanent resident	Statewide	Common	Eastern portion exclusive of Florida	Minimal
Broad-headed skink <u>Eumeces laticeps</u>	Swampy woods Permanent resident	Statewide	Common	Most of eastern portion exclusive of south Florida	Minimal
Southeastern five-lined skink <u>Eumeces inexpectatus</u>	Wide variety including barren seashore islands Permanent resident	Statewide	Common	Virginia to Florida Keys, west to Louisiana	Minimal
Southern coal skink <u>Eumeces anthracinus pluvialis</u>	Humid woods Permanent resident	Small distinct areas in southwest and north-central Alabama	Uncommon	Restricted areas in south-central region	Minimal
Striped red-tailed skink <u>Eumeces egregius egregius</u>	Driftwood, and tidal wrack Permanent resident	Extreme southeast coastal only	Rare	South Georgia, north Florida to Mobile Bay, Alabama	Potentially significant
Eastern glass lizard <u>Ophisaurus ventralis</u>	Wet meadows, pine flatwoods Permanent resident	Southern half	Uncommon	North Carolina to Florida west to Louisiana	Potentially significant
Eastern slender glass lizard <u>Ophisaurus attenuatus</u>	Open woods, grasslands Permanent resident	Statewide	Uncommon	Southeast Virginia to south Florida to Mississippi River	Minimal
Green water snake <u>Natrix cyclopiion cyclopiion</u>	Marshes, bayous, swamps Permanent resident	Southern extremity	Uncommon	South Illinois to Gulf, Florida panhandle to southeast Texas	Minimal
Florida green water snake <u>Natrix cyclopiion floridana</u>	Marshes, swamps, quiet water Permanent resident	Only on east shores of Mobile Bay	Rare	South of South Carolina to east Mobile Bay, Alabama	Potentially significant
Brown water snake <u>Natrix taxispilota</u>	Swamps and large rivers Permanent resident	Extreme southeast only	Uncommon	Virginia to south Alabama and south to tip of Florida	Minimal

Table B (7). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Diamond-backed water snake <u>Matrix rhombifera rhombifera</u>	Ubiquitous Permanent resident	Western strip north to south	Common	Mississippi Valley from southeast Iowa to Gulf, west Alabama to central Texas	Minimal
Yellow-bellied water snake <u>Matrix erythrogaster flavigaster</u>	Marshes, swamps, river bottoms Permanent resident	Southern three-fourths	Common	North-central Georgia and southeast Iowa to east Texas and the Gulf	Minimal
Midland water snake <u>Matrix sipedon pleuralis</u>	Marshes, streams, ponds Permanent resident	All but southeast portion	Common	Middle portion from the Gulf to the Carolinas and Oklahoma	Minimal
Banded water snake <u>Matrix sipedon fasciata</u>	Fresh water and offshore coastal islands Permanent resident	Southern half	Common	Coastal plains, North Carolina to Mississippi	Minimal
Gulf salt marsh snake <u>Matrix sipedon clarki</u>	Beaches, marshes, swamps, rarely in fresh water Permanent resident	Coastal only	Rare since 1969 hurricane	Gulf coast from west-central Florida to south Texas	Minimal
Gulf glossy water snake <u>Regina rigida sialcoides</u>	Low areas, swamps Permanent resident	Southern half	Uncommon, seldom seen	Coastal plains, Virginia to north-central Florida and west to east-central Texas	Minimal
Midland brown snake <u>Storeria dekayi wrightorum</u>	Swamps, bogs, marshes, wet woods, urban areas Permanent resident	Statewide	Common but seldom seen	Wisconsin to the Carolinas and Gulf coast	Minimal
Northern red-bellied snake <u>Storeria occipitomaculata occipitomaculata</u>	Sea level to high mountains Permanent resident	Statewide	Common	Eastern portion except parts of Florida and Georgia	Minimal
Eastern garter snake <u>Thamnophis sirtalis sirtalis</u>	Wide variety of damp habitats Permanent resident	Statewide	Common	Eastern portion	Minimal

Table 5 (T). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Eastern ribbon snake <u>Thamnophis sauritus sauritus</u>	Semi-aquatic Permanent resident	Extreme south	Abundant	South of South Carolina to south Wisconsin to tip of Florida and lower Keys	Minimal
Rough earth snake <u>Halcon striatula</u>	Drifts of trash or wood Permanent resident	Statewide	Common but seldom seen	Virginia to North Florida, west to Kansas and Texas	Minimal
Eastern smooth earth snake <u>Virginia valeriae valeriae</u>	Undisturbed areas Permanent resident	Statewide	Common but seldom seen	Southeast portion except southern Florida	Minimal
Western smooth earth snake <u>Virginia valeriae elegans</u>	Undisturbed areas Permanent resident	Southwest	Common but seldom seen	Alabama to Texas and north to Miss. Valley	Minimal
Eastern hognose snake <u>Heterodon platyrhinos</u>	Sandy area Permanent resident	Statewide	Common	Eastern portion	Minimal
Southern hognose snake <u>Heterodon simus</u>	Sandy woods, flood plains Permanent resident	Southern one-third	Common	Southeast North Carolina to south-central Florida and south Mississippi	Minimal
Yellow-lipped snake <u>Rhadinaea flavilata</u>	Swamps, flatwoods Permanent resident	Southeast coastal	Uncommon	Coastal North Carolina to east Louisiana and south Florida	Minimal
Southern ringneck snake <u>Diadophis punctatus punctatus</u>	Wet swamps, damp woods Permanent resident	Southeast and coastal	Uncommon	South New Jersey to Florida Keys, west to central Alabama	Minimal
Mississippi ringneck snake <u>Diadophis punctatus stictogenys</u>	Wet swamps, damp woods Permanent resident	Western extremity	Uncommon	South Illinois to Gulf to east Texas	Minimal
Rainbow snake <u>Abastor erythrogrammus</u>	Streams, swamps, sandy fields Permanent resident	Southern half	Rare	South Maryland to central Florida and east Louisiana	Minimal
Western mud snake <u>Farancia abacura reinhardtii</u>	Swamps, and lowlands Permanent resident	Southwest portion	Common	Alabama to east Texas north to south Illinois	Minimal

Table B (?). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Southern black racer <u>Coluber constrictor priapus</u>	Wide variety of habitats Permanent resident	Southern half	Abundant	Southeast and north to Indiana	Minimal
Eastern coachwhip <u>Masticophis flagellum flagellum</u>	Wide variety of habitats Permanent resident	Statewide	Abundant	Southeast	Minimal
Rough green snake <u>Ophiodrys aestivus</u>	Shallow water and dense vegetation Permanent resident	Statewide	Common	Southeast	Minimal
Eastern indigo snake <u>Drymarchon corais couperi</u>	Undisturbed areas Permanent resident	South portion, very limited areas in disjunct colonies	Uncommon	Disjunct colonies from southeast Georgia to south Alabama	Potentially significant
Corn snake <u>Elaphe guttata guttata</u>	Pinewoods Permanent resident	Statewide	Common	Southeast portion	Minimal
Gray rat snake <u>Elaphe obsoleta spiloides</u>	Coastal plains, low elevations Permanent resident	All but northeast	Common	Southwest Georgia to Louisiana, north to Indiana	Minimal
Florida pine snake <u>Pituophis melanoleucus mugitus</u>	Dry sands, pine woods Permanent resident	Southern fourth	Rare	South of South Carolina to Alabama and south Florida	Minimal
Black pine snake <u>Pituophis melanoleucus lodigi</u>	Longleaf pinewoods Permanent resident	Only in small southeastern portion	Rare	Only in very small areas of southwestern Alabama and southeastern Mississippi	Minimal
Eastern kingsnake <u>Lampropeltis getulus getulus</u>	Stream banks, steep edges Permanent resident	South and southeast portions	Common	South New Jersey to north Florida, west to Appalachians and south Alabama	Minimal
Scarlet kingsnake <u>Lampropeltis triangulum elegans</u>	Pinewoods Permanent resident	Almost statewide	Common but seldom seen	Southeast Atlantic and Gulf states from North Carolina to Louisiana	Minimal

Table B (7). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Noke snake <u>Lampropeltis calligaster rhomboneculata</u>	Wide variety of habitats Permanent resident	Statewide	Common	Maryland to north-central Florida, west to east Tennessee and Mississippi	Minimal
Southeastern scarlet snake <u>Cemophora coccinea copei</u>	Sandy soils Permanent resident	Statewide	Common	Southeast Atlantic and Gulf states	Minimal
Southeastern crowned snake <u>Tantilla coronata coronata</u>	Wide variety of habitats Permanent resident	Statewide	Common	Southeast portion except peninsula Florida	Minimal
Eastern coral snake <u>Micruerus fulvius fulvius</u>	Pinewoods, and hammocks Permanent resident	Southern half	Common	Southeast Atlantic and Gulf states	Minimal
Southern copperhead <u>Agkistrodon contortrix cambertrix</u>	Swamps, cypress-bordered streams Permanent resident	Southern two-thirds	Abundant	Southeast Atlantic and Gulf states except peninsula Florida	Minimal
Western cottonmouth <u>Agkistrodon piscivorus leucostomus</u>	Swamps, lakes, rivers, any lowlands Permanent resident	Southwest coastal area	Abundant	South-central portion	Minimal
Dark pigmy rattlesnake <u>Sistrurus miliaris barbieri</u>	Marshes, flatwoods, lowlands Permanent resident	Southern half	Uncommon	Southeast North Carolina to central Mississippi	Minimal
Canebrake rattlesnake <u>Crotalus horridus atricaudatus</u>	Lowlands, swamplands Permanent resident	Rest of state	Common	Southeast Atlantic and all Gulf states	Minimal
Eastern diamondback rattlesnake <u>Crotalus adamanteus</u>	Pinewoods, flatwoods, occasionally in salt water Permanent resident	Extreme south	Common	Southeast Atlantic and west-central Gulf coasts	Minimal

Table (8). Inventory of amphibians that might inhabit the lower Mobile Bay region.

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Alabama waterdog <u>Necturus beyeri alabamensis</u>	Streams in sandy areas Permanent resident	Most of state	Uncommon	Gulf tributary streams from west Georgia to northeast Mississippi	Potentially significant
Mobile waterdog <u>Necturus punctatus lodingi</u>	Sluggish streams in sandy areas Permanent resident	Southern fourth	Uncommon	Gulf tributary streams from west-central Georgia to Mobile Bay	Potentially significant
Eastern lesser siren <u>Siren intermedia intermedia</u>	Shallow water Permanent resident	Southern coastal area	Uncommon	South Carolina to central Florida, west to east Louisiana	Minimal
Two-toed amphiuma <u>Amphiuma means means</u>	Marshes, swamps, streams Permanent resident	Southern half	Uncommon	Southeast Virginia to extreme south Florida and west to south Mississippi	Minimal
Three-toed amphiuma <u>Amphiuma tridactylum</u>	Marshes, swamps, streams Permanent resident	Eastern fringe	Very rare	Southeast Missouri and extreme southeast Oklahoma to Gulf of Mexico	Potentially significant
Reticulated flatwoods salamander <u>Ambystoma cingulatum bishopi</u>	Pinewoods, flatwoods Permanent resident	South on coastal plains	Common	Gulf coastal plains from Florida panhandle to Mobile, Alabama	Minimal
Small-mouthed salamander <u>Ambystoma texanum</u>	Swamps, ponds, river bottoms Permanent resident	Most of state	Common	Gulf to south Iowa Illinois to Gulf	Minimal
Mole salamander <u>Ambystoma talpoideum</u>	Wet places Permanent resident	Southern half	Common	Most of southeast coastal states. Disjunct colonies in Oklahoma, Illinois, North Carolina, Tennessee, and Arkansas	Minimal
Marbled salamander <u>Ambystoma opacum</u>	Wide variety of habitats Permanent resident	Statewide	Common	All of southeast portion except southern Florida	Potentially significant



Table B (6). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Spotted salamander <u>Ambystoma maculatum</u>	Ponds, wet areas Permanent resident	Statewide	Common	Southeast portion except Florida and south Georgia	Minimal
Eastern tiger salamander <u>Ambystoma tigrinum tigrinum</u>	Deep water, ponds Permanent resident	Most of state	Common	Most of eastern portion but absent from Appalachians	Minimal
Central neot <u>Notopthalmus virid-viceus louisianensis</u>	Swamps, woodland ponds, river bottoms Permanent resident	Southern portion	Common	Central portion and much of southern coastal states	Minimal
Southern dusky salamander <u>Desmognathus fuscus auriculatus</u>	Stagnant, acid ponds Permanent resident	Southern portion	Common	Coastal plains, Virginia to Louisiana	Minimal
Slimy salamander <u>Plethodon glutinosus glutinosus</u>	Woodlands Permanent resident	Statewide	Common	South-central and southwest areas	Minimal
Gulf coast mud salamander <u>Pseudotriton montanus flavissimus</u>	Muddy areas Permanent resident	Southern portion	Common	South Carolina to extreme east Louisiana	Potentially significant
Southern red salamander <u>Pseudotriton ruber vioscai</u>	Small streams, springs Permanent resident	Southern two-thirds	Common	West-central South Carolina; southeast Louisiana and west Tennessee	Potentially significant
Southern two-lined salamander <u>Eurycea bislineata cirrigera</u>	Small streams Permanent resident	Most of state	Common	North Carolina to north Florida and west to Mississippi	Minimal
Three-lined salamander <u>Eurycea longicauda guttolineata</u>	Swamps, streams Permanent resident	Statewide	Common	Southeast and south-central portion except peninsular Florida	Minimal
Dwarf salamander <u>Pleurodeles quadrifidatus</u>	Swamps Permanent resident	Southern fourth	Common	Southeast and Gulf coastal plains states	Minimal
Eastern spadefoot <u>Scaphiopus holbrookii</u>	Sandy areas Permanent resident	Most of state	Common	Most of south part	Minimal

Table B (S) (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Southern toad <u>Bufo terrestris</u>	Sandy areas Permanent resident	Southern fourth	Abundant	Atlantic and Gulf coastal plains to Louisiana	Minimal
Gulf coast toad <u>Bufo valliceps</u>	Ditches, swamps, streams, Permanent resident	Southwest	Rare	South-central United States	Minimal
Fowler's toad <u>Bufo woodhousei fowleri</u>	Sandy areas Permanent resident	Statewide	Extremely abundant	Central New England to Gulf coast, west to Michigan, east Louisiana. Absent from southern Atlantic coastal plain	Minimal
Oak toad <u>Bufo quercicus</u>	Pinewoods Permanent resident	Southern half	Abundant	South Atlantic and east Gulf coastal plain	Minimal
Southern cricket frog <u>Acris gryllus gryllus</u>	Swamps, lowlands, bogs Permanent resident	Southern two-thirds	Common	South Atlantic and east Gulf coastal plain	Minimal
Northern cricket frog <u>Acris crepitans crepitans</u>	Swamps, lowlands, bogs Permanent resident	Statewide	Common	Eastern United States	Minimal
Northern spring pepper <u>Hyla crucifer crucifer</u>	Swamps, woods Permanent resident	Statewide	Common	Eastern portion except Florida and southern Georgia	Minimal
Northern green treefrog <u>Hyla cinerea cinerea</u>	Swamps, lakes, streams Permanent resident	Southern two-thirds	Common	Central portion and south Atlantic and Gulf coastal plains	Minimal
Pine woods treefrog <u>Hyla femoralis</u>	Pine flatwoods Cypress swamps Permanent resident	Southern fourth	Common	South Atlantic and Gulf coastal plains to Louisiana	Potentially significant
Squirrel treefrog <u>Hyla squirellis</u>	Ubiquitous Permanent resident	Southern half	Common	South Atlantic and Gulf coastal plains	Minimal
Eastern gray treefrog <u>Hyla versicolor versicolor</u>	Vegetation near shallow water Permanent resident	Statewide	Common	Most of eastern half	Minimal
Western bird-voiced treefrog <u>Hyla avivoca avivoca</u>	Wooded swamps, streams Permanent resident	Southern two-thirds	Common	Swamps on streams of central Gulf drainage	Minimal

Table 6 (B). (continued)

Species	Habitat and/or Seasonal Status	Range in Region or State	Abundance in Region	Range in Conterminous United States	Project Impact
Barking treefrog <u>Hyla gratiosa</u>	Wooded areas Permanent resident	Southern fourth	Common	South Atlantic and central Gulf coastal plains	None
Southern chorus frog <u>Pseudacris nigrita nigrita</u>	Pine flatwoods, wet woods Permanent resident	Southern portion	Common	east North Carolina to North Florida and south Mississippi	Potentially significant
Ornate chorus frog <u>Pseudacris ornata</u>	Flatwoods, pinewoods ponds, ditches Permanent resident	Southern half	Common	South Atlantic and central Gulf coastal plains	Potentially significant
Eastern narrow-mouthed toad <u>Gastrophryne carolinensis</u>	Borders of swamps, streams Permanent resident	Statewide	Common	Southeast and south-central areas	Minimal
Bullfrog <u>Rana catesbeiana</u>	Aquatic. Prefers large bodies of water Permanent resident	Statewide	Abundant	East and south-central areas	Minimal
River frog <u>Rana heckscheri</u>	Creek swamps and bayous Permanent resident	Southern coastal only	Uncommon	South of South Carolina to north-central Florida and south Mississippi	Potentially significant
Pig frog <u>Rana grylio</u>	Aquatic. Marshes, lakes, cypress bays Permanent resident	Only in extreme southern coastal area	Common	Southern South Carolina to extreme southeast Texas	Minimal
Bronze frog <u>Rana clamitans clamitans</u>	Swamps, streams, hammocks Permanent resident	Southern half	Common	Coastal plains from North Carolina to east Texas except southern Florida	Minimal
Southern leopard frog <u>Rana pipiens sphenoccephala</u>	Marshes, shallow water Permanent resident	Most of state	Common	Southeast	Minimal
Dusky gopher frog <u>Rana areolata sevosia</u>	Lowlands Permanent resident	Southern coastal only	Common	Gulf coast from west Florida to east Louisiana	Potentially significant

Table (9). Fish

Species	Habitat	Probable Abundance in Region	Range in Region or State	Range in U.S.	State Province Report
<u>Finetooth shark</u> <u>Alopias lewini</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	New York to northern Gulf of Mexico	ME
<u>Blacknose shark</u> <u>Carcharhinus acronotus</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays	North Carolina to northern Gulf of Mexico	N.C.
<u>Blacktip shark</u> <u>Carcharhinus limbatus</u>	Marine entering estuary	Uncommon	Gulf of Mexico	New England to Gulf of Mexico	ME
<u>Atlantic sharpnose shark</u> <u>Rhizoprionodon terraenovae</u>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and lower portions of rivers	Bay of Fundy to northern Gulf of Mexico	ME
<u>Scalloped hammerhead</u> <u>Sphyrna lewini</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	New Jersey to northern Gulf of Mexico	ME
<u>Bonnethead</u> <u>Sphyrna tiburo</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays	Wentworth Sound to northern Gulf of Mexico	N.H.
<u>Smooth hammerhead</u> <u>Sphyrna tiburo</u>	Marine only	Uncommon	Gulf of Mexico and adjoining bays	Massachusetts Bay to north central Gulf of Mexico	ME
<u>Atlantic guitarfish</u> <u>Xiphiopsis leuciscopus</u>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays	North Carolina to northwestern Gulf of Mexico	ME
<u>Least electric ray</u> <u>Narcine brasiliensis</u>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays	North Carolina to northern Gulf of Mexico	ME
<u>Clearnose skate</u> <u>Raja eglanteria</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Massachusetts Bay to northwestern Gulf of Mexico	ME
<u>Round skate</u> <u>Raja caxoia</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Gulf of Mexico	ME
<u>Atlantic stingray</u> <u>Dasyatis sabina</u>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays	Chesapeake Bay to Florida and northern Gulf of Mexico	Med.
<u>Bluntnose stingray</u> <u>Dasyatis sayi</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Southern Massachusetts to northern Gulf of Mexico	ME
<u>Smooth butterfly ray</u> <u>Gymnura microps</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	New England to northern Gulf of Mexico	ME
<u>Spotted eagle ray</u> <u>Aetobatus narinari</u>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays	Chesapeake Bay to northern Gulf of Mexico	ME
<u>Common ray</u> <u>Rhinoptera bonasus</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Cape Cod to northern Gulf of Mexico	ME
<u>Atlantic manta</u> <u>Manta birostris</u>	Marine entering estuary	Scarce	Gulf of Mexico	New England to northern Gulf of Mexico	ME
<u>Atlantic sturgeon</u> <u>Acipenser oxyrinchus</u>	Marine entering estuary, euryhaline	Scarce	Gulf of Mexico, adjoining bays, and lower portions of rivers	Labrador to northern Gulf of Mexico	Sig.
<u>Paddlefish</u> <u>Polyodon spathula</u>	Freshwater entering estuary	Scarce	Tributary rivers of the Gulf of Mexico	Mississippi Valley and adjacent coastal streams	Sig.
<u>Spotted gar</u> <u>Lepisosteus oculatus</u>	Freshwater entering estuary	Uncommon	Tributary rivers of the Gulf of Mexico	Mississippi Valley and Gulf Coast	Sig.
<u>Longnose gar</u> <u>Lepisosteus osseus</u>	Freshwater entering estuary	Common	Tributary rivers and estuaries of the Gulf of Mexico	Maryland through Florida, west to Louisiana and Mississippi, and north into the Great Lakes	Sig.
<u>Alligator gar</u> <u>Lepisosteus spatula</u>	Freshwater entering estuary, euryhaline	Uncommon	Tributary rivers and estuaries of the Gulf of Mexico	Streams entering Gulf of Mexico east to the Chesapeake River	Med.
<u>Ladyfish</u> <u>Elops saurus</u>	Marine entering estuary, euryhaline	Uncommon	Gulf of Mexico and adjoining bays and lower portions of rivers	Southern New England throughout Gulf of Mexico	N.C.
<u>Torpedo</u> <u>Marulius atlanticus</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and lower portions of rivers	Gulf of Maine to Gulf of Mexico	N.H.
<u>American eel</u> <u>Anguilla rostrata</u>	Marine entering freshwater, euryhaline	Common	Gulf of Mexico and adjoining bays and tributary waters	Atlantic Ocean and Gulf of Mexico	Med.
<u>Blackchin shiner</u> <u>Menidia menidia</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Northern Florida west through Gulf of Mexico	N.H.
<u>Silver snapper</u> <u>Menidia menidia</u>	Marine, pelagic	Uncommon	Gulf of Mexico and adjoining bays	Northern to southwestern Gulf of Mexico	N.H.
<u>Bonnetmouth snapper</u> <u>Arietta trutta</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Cape Hatteras to northern Gulf of Mexico	N.H.
<u>Yellow snapper</u> <u>Oreochromis ferox</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Gulf of Mexico	N.H.
<u>Marginal snapper</u> <u>Parachanna sordidus</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Northwestern Gulf of Mexico	N.H.
<u>Whip eel</u> <u>Muraenichthys punctata</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	North Carolina to Florida and northern Gulf of Mexico	N.H.
<u>Speckled worm eel</u> <u>Muraenichthys punctata</u>	Resident estuarine, euryhaline	Common	Gulf of Mexico and adjoining bays and lower portions of rivers	North Carolina to northern Gulf of Mexico	Sig.
<u>Shrimp eel</u> <u>Ophichthys punctata</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Massachusetts to northern Gulf of Mexico	N.H.
<u>Pinkspotted eel</u> <u>Ophichthys punctata</u>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays	North Carolina to northwestern Gulf of Mexico	N.H.
<u>Alabama shad</u> <u>Alosa aliciae</u>	Freshwater entering estuary	Scarce	Gulf of Mexico and adjoining bays and lower portions of rivers	Along the Gulf of Mexico coast from the Mississippi River to western Florida	Sig.

Table B (9). (continued)

Species	Habitat	Probable Abundance in Region	Range in Region or State	Range in U.S. 1	Direct Project Impact 2
Sligjack herring <i>Alosa chrysochloris</i>	Marine entering estuary, euryhaline	Uncommon	Gulf of Mexico and adjoining bays and tributary rivers	Gulf of Mexico coast into western Florida and north to the Great Lakes	Min.
Gulf menhaden <i>Brevoortia patronus</i>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays	Tampa, Florida into the Gulf of Mexico	Min.
Scup fish <i>Cynoscion nebulosus</i>	Freshwater entering estuary, euryhaline	Uncommon	Gulf of Mexico and adjoining bays and tributary rivers	Cape Cod to Florida and throughout the Gulf of Mexico	Med.
Threadfin shad <i>Menidia menidia</i>	Freshwater entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays and tributary rivers	Gulf Coast from Florida to Texas, northward in Mississippi Valley to Tennessee	Med.
Striped sardine <i>Morone saxatilis</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays	Key West, Florida to northern Gulf of Mexico	Min.
Atlantic thread herring <i>Opisthonema oglinum</i>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays	Gulf of Mexico to southern Gulf of Mexico	Min.
Spanish sardine <i>Sardinella auroby</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	New Jersey south throughout the Gulf of Mexico	Min.
Striped anchovy <i>Anchoa hepsetus</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays	Nova Scotia to southern Gulf of Mexico	Min.
Weakly anchovy <i>Anchoa lyolepis</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	North Carolina to northern Gulf of Mexico	Min.
Bay anchovy <i>Anchoa mitchilli</i>	Resident estuarine, euryhaline	Common	Gulf of Mexico and adjoining bays and lower portions of rivers	South Carolina to Gulf of Mexico	Med.
Flat anchovy <i>Archivalia perfaciata</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays	New York to southern Gulf of Mexico	Min.
Shore lizardfish <i>Synodus foetens</i>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays	Cape Cod to Gulf of Mexico	Min.
Scupfish <i>Trachirocephalus scupus</i>	Marine pelagic	Scarce	Gulf of Mexico and adjoining bays	New England to Gulf of Mexico	Min.
Crayfish <i>Libinia emarginata</i>	Freshwater entering estuary	Scarce	Tributary waters of the Gulf of Mexico	Widely introduced in continental U.S.	Sig.
Silver chub <i>Hypoclinemus strigatus</i>	Freshwater entering estuary	Scarce	Tributary waters of the Gulf of Mexico	Mississippi Valley and adjacent Gulf Coast streams	Sig.
Golden shiner <i>Notropis cyathostomus</i>	Freshwater entering estuary	Scarce	Tributary waters of the Gulf of Mexico	East of the Rocky Mountains to the Gulf of Mexico	Sig.
Coastal shiner <i>Notropis petersoni</i>	Freshwater entering estuary	Uncommon	Tributary waters of the Gulf of Mexico	North Carolina to Mississippi	Sig.
Silverband shiner <i>Notropis shumardi</i>	Freshwater entering estuary	Uncommon	Mobile River drainage	Lower Mississippi Valley and Mobile River	Sig.
Blue sucker <i>Catostomus commersoni</i>	Freshwater entering estuary	Scarce	Mobile River drainage	Mississippi Valley and adjacent Gulf of Mexico coastal streams.	Sig.
Walton's buffalo <i>Ictalurus nebulosus</i>	Freshwater entering estuary	Uncommon	Tributary waters of the Gulf of Mexico	Mississippi Valley and coast of Gulf of Mexico	Sig.
Blacktail redhorse <i>Moxostoma valenciennianum</i>	Freshwater entering estuary	Scarce	Tributary waters of the Gulf of Mexico	Western Florida along coast of Gulf of Mexico to eastern Texas	Sig.
Blue catfish <i>Ictalurus punctatus</i>	Freshwater entering estuary	Uncommon	Tributary waters of the Gulf of Mexico	Mississippi Valley and adjacent coastal streams of the Gulf of Mexico	Sig.
Channel catfish <i>Ictalurus punctatus</i>	Freshwater entering estuary	Uncommon	Tributary waters of the Gulf of Mexico	New almost anywhere in lakes and rivers of the U.S.	Sig.
Sea herring <i>Ammocetes</i>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays and lower portions of rivers	Cape Cod to Gulf of Mexico	Min.
Gulf openbill catfish <i>Bagr. marinus</i>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays and lower portions of rivers	Cape Cod to Gulf of Mexico	Min.
Gulf toadfish <i>Opsanus beta</i>	Resident estuarine	Common	Gulf of Mexico and adjoining bays	Gulf of Mexico	Sig.
Atlantic menhaden <i>Brevoortia patronus</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays	Gulf of Mexico	Med.
Skull catfish <i>Cottus bairdii</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays	New Jersey to Gulf of Mexico	Min.
Slig spot frogfish <i>Amia nuda</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Gulf of Mexico	Min.
Pinkish herring <i>Melogramma aliciae</i>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	Rhode Island to northeastern Gulf of Mexico	Min.
Shinnock herring <i>Urophycis regia</i>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays	North Carolina to Gulf of Mexico	Min.
Porter-dot herring <i>Urophycis regia</i>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	North Carolina to northeastern Gulf of Mexico	Min.
Southern hake <i>Urophycis regia</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays	North Carolina to Florida to the northeastern Gulf of Mexico	Min.
Spotted hake <i>Urophycis regia</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays	New England to Florida to the northern Gulf of Mexico	Min.
Western hake <i>Urophycis regia</i>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	Florida Keys to northern Gulf of Mexico	Min.
Coarcted cusk-eel <i>Ophiodon elongatus</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	New Jersey to Florida and northern Gulf of Mexico	Min.

Table B (9). (continued)

Species	Habitat	Probable Abundance in Region	Range in Region or State	Range in U.S.	Direct Project Impact <sup>1</sup>
Belted sandfish <i>Ammocetes rubricornis</i>	Marine only, pelagic	Uncommon	Gulf of Mexico and adjoining bays	North Carolina south to Florida and west to Texas	Min.
Bluespotted snailfish <i>Paralichthys olivaceus</i>	Freshwater entering estuary	Uncommon	Tributaries and estuaries of the Gulf of Mexico	New York to Florida to Mississippi	Sig.
Warmouth <i>Lepomis microlophus</i>	Freshwater entering estuary	Uncommon	Tributaries and estuaries of the Gulf of Mexico	Eastern and southeastern U.S.	Sig.
Bluegill <i>Lepomis macrochirus</i>	Freshwater entering estuary	Common	Tributaries and estuaries of the Gulf of Mexico	Southern U.S. through Mississippi Valley to the Gulf of Mexico	Sig.
Redear sunfish <i>Lepomis microlophus</i>	Freshwater entering estuary	Common	Tributaries and estuaries of the Gulf of Mexico	Mississippi River Basin in Indiana and Missouri south to Alabama, Florida, Louisiana, and Texas	Sig.
Spotted sunfish <i>Lepomis punctatus</i>	Freshwater entering estuary	Common	Tributaries and estuaries of the Gulf of Mexico	North Carolina to Texas and in Mississippi River Basin from the Gulf Coast to Indiana	Sig.
Largemouth bass <i>Micropterus salmoides</i>	Freshwater entering estuary	Common	Tributaries and estuaries of the Gulf of Mexico	Virginia to southern Florida west through the Mississippi Valley, widely introduced	Sig.
Black crappie <i>Pomoxis nigromaculatus</i>	Freshwater entering estuary	Uncommon	Tributaries and estuaries of the Gulf of Mexico	North Dakota to New York to Florida to Texas	Sig.
Bigeye <i>Pseudocaranx dentatus</i>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	Massachusetts to Gulf of Mexico	Min.
Bluefish <i>Pomatomus saltatrix</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining estuaries and tributaries	Atlantic coast to Gulf of Mexico, also found on west coast	NE
Cobia <i>Reinhardtius taylori</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining estuaries	Massachusetts to Gulf of Mexico, west coast	Min.
African pompano <i>A. setiferus</i>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining estuaries	Massachusetts to Gulf of Mexico	NE
Blue runner <i>Cynoscion regalis</i>	Marine only, shoreline	Uncommon	Gulf of Mexico and adjoining bays	Atlantic Coast to Gulf of Mexico	NE
Crocodile jack <i>Cynoscion nebulosus</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Atlantic Coast to Gulf of Mexico, west coast	NE
Horse-eye jack <i>Trachurus latus</i>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	New Jersey to Gulf of Mexico, west coast	NE
Atlantic bumper <i>Chloroscypha chrysura</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	NE
Round scad <i>Brevoortia patronus</i>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	Atlantic Coast to Gulf of Mexico	NE
Bluntnose jack <i>Brevoortia amblyrhynchus</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	North Carolina to northern Gulf of Mexico	NE
Leatherjacket <i>Stomatopoda armata</i>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico to Gulf of Mexico	NE
Bigeye scad <i>Seriola lalandi</i>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	Atlantic Ocean to Gulf of Mexico, Pacific Coast	NE
Leahdown <i>Seriola venter</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	Atlantic Coast	NE
Gemeter amberjack <i>Seriola lalandi</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	Min.
Almoco jack <i>Seriola rivoliana</i>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico	NE
Florida pompano <i>Trachinotus carolinus</i>	Marine only, pelagic	Common	Gulf of Mexico and adjoining bays	Massachusetts to Gulf of Mexico	NE
Parrot <i>Trachinotus falcatus</i>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	NE
Palmetto <i>Trachinotus goodii</i>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	Virginia to Gulf of Mexico	NE
Wagh scad <i>Trachurus lalandi</i>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	Maine to Gulf of Mexico	NE
Atlantic seafoam <i>Ummetia setacea</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Atlantic Coast to Gulf of Mexico	NE
Dolphin <i>Coryphaena hippurus</i>	Marine only, pelagic	Common	Gulf of Mexico and adjoining bays	Atlantic Coast to Gulf of Mexico, Pacific Coast	NE
41 snapper <i>Lepomis campechanus</i>	Marine only, pelagic	Uncommon	Gulf of Mexico and adjoining bays	Massachusetts to Gulf of Mexico	Min.
79 snapper <i>Lepomis griseus</i>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	Min.

Table 3 (9). (continued)

Species	Habitat	Probable Abundance in Region	Range in Region or State	Range in U.S.	Stewart-Peterson Category
Lane snapper <u>Lutjanus synagris</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	North Carolina to Gulf of Mexico, Pacific Coast	Ma.
Tripletail <u>Sebastes trilineatus</u>	Marine only, pelagic	Uncommon	Gulf of Mexico and adjoining bays	Massachusetts to Gulf of Mexico	II
Spotfin sejarra <u>Sciaenops ocellatus</u>	Marine entering estuary euryhaline	Uncommon	Gulf of Mexico and adjoining bays and estuaries	New Jersey to Gulf of Mexico	III
Silver jenny <u>Sciaenops ocellatus</u>	Marine entering estuary euryhaline	Scarce	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	III
Twospine <u>Nezumia au lineatus</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays	Gulf of Mexico	III
Flgfish <u>Orthopristis chrysoptera</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	III
Sheepshead <u>Archosargus probatocephalus</u>	Marine entering estuary euryhaline	Common	Gulf of Mexico and adjoining bays and estuaries	Atlantic Coast to Gulf of Mexico	III
Pinfish <u>Lagodon rhomboides</u>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	III
Longspine porgy <u>Stenotomus capricornis</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	North Carolina to Gulf of Mexico	III
Silver perch <u>Bairdiella chrysoura</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	New York to Gulf of Mexico	III
Sand seatrout <u>Cynoscion argus</u>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico	III
Spotted seatrout <u>Cynoscion nebulosus</u>	Resident estuarine, euryhaline	Common	Estuaries and lower portions of rivers along Gulf of Mexico	New York to Gulf of Mexico	Sig.
Silver seatrout <u>Cynoscion nothus</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Maryland to Gulf of Mexico	III
Cubby <u>Equetus umbrosus</u>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	North Carolina to Gulf of Mexico	III
Banded drum <u>Lagodon leucostictus</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	III
Spot <u>Leiostomus xanthurus</u>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico to Gulf of Mexico	III
Southern kingfish <u>Menticirrhus americanus</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	New York to Gulf of Mexico	III
Weakfish <u>Menticirrhus focaliger</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico	III
Gulf kingfish <u>Menticirrhus littoralis</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	Virginia to Gulf of Mexico	III
Atlantic croaker <u>Micropogonias undulatus</u>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	III
Black drum <u>Pogonias cromis</u>	Resident estuarine, euryhaline	Common	Estuaries and lower portions of rivers adjoining Gulf of Mexico	Massachusetts to Gulf of Mexico	Sig.
Red drum <u>Sciaenops ocellatus</u>	Marine entering estuary, euryhaline	Uncommon	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	III
Scar drum <u>Trachinotus lacedaemon</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	Virginia to Gulf of Mexico	III
Dwarf gonifish <u>Upeneus parvus</u>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	Atlantic Coast of Florida to Gulf of Mexico	III
Atlantic spadefish <u>Chaetodontidactylus faber</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	III
Painted wrasse <u>Hilichthys caudalis</u>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico	III
Emerald parrotfish <u>Nicholsia seta</u>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	New Jersey to Gulf of Mexico	III
Striped mullet <u>Mullus cephalus</u>	Marine entering estuary euryhaline	Common	Gulf of Mexico and adjoining bays, estuaries, and lower portions of rivers	Atlantic Coast to Gulf of Mexico	III

Table E (9). (continued)

Species	Habitat	Probable Abundance in Region	Range in Region or State	Range in U.S.	Stream Support Index <sup>2</sup>
White rail <i>Mugil curema</i>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays and estuaries	Atlantic Coast to Gulf of Mexico	Min.
Great snizzard <i>Sphyrna bergracuda</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	Min.
Northern snonet <i>Sphyrna borealis</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to the north central Gulf of Mexico	Min.
Cuaguanche <i>Sphyrna guachancho</i>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	Min.
Atlantic threadfin <i>Polydora yam octonema</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	Min.
Southern starfisher <i>Astroblepus y-glaucus</i>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	North Carolina to northern Gulf of Mexico	Min.
Inner corgoser <i>Kathetostoma albigutta</i>	Marine only pelagic	Scarce	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico	Min.
Striped blenny <i>Chasmodes bosquianus</i>	Resident estuarine	Uncommon	Estuaries and bays adjoining the Gulf of Mexico	New York to Gulf of Mexico	Sig.
Prealar blenny <i>Hypobramblius ionthas</i>	Resident estuarine	Common	Estuaries and bays adjoining the Gulf of Mexico	Gulf of Mexico	Sig.
Fat sleeper <i>Gerrhonotus maculatus</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	North Carolina to Gulf of Mexico	Min.
Spinyfin sleeper <i>Eleotris [?]</i>	Marine entering estuary, euryhaline	Uncommon	Gulf of Mexico and adjoining bays, estuaries, and lower portions of rivers	South Carolina to Gulf of Mexico	Min.
Emerald sleeper <i>Stella amaradon</i>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays, and estuaries	Florida Keys to northern Gulf of Mexico	Min.
Illin goby <i>Archybatius s. parvator</i>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	North Carolina to Florida and west in the Gulf of Mexico to Coryno Christi, Texas	Min.
Lyre goby <i>Evertinia lyrice</i>	Marine entering estuary, euryhaline	Uncommon	Gulf of Mexico and adjoining bays and estuaries	Chesapeake Bay to Gulf of Mexico	Min.
Violet goby <i>Gobionella broussoneti</i>	Marine entering estuary, euryhaline	Uncommon	Gulf of Mexico and adjoining bays, estuaries, and lower portions of rivers	Eastern Gulf of Mexico	Min.
Narrow goby <i>Gobionella us holozona</i>	Resident estuarine, euryhaline	Common	Estuaries, bays, and lower portions of rivers adjoining the Gulf of Mexico	North Carolina to northern Gulf of Mexico	Sig.
Sharptail goby <i>Gobionella us heatatus</i>	Resident estuarine, euryhaline	Common	Estuarine, bays, and lower portions of rivers adjoining the Gulf of Mexico	North Carolina to Gulf of Mexico	Sig.
Freshwater goby <i>Gobionella us shufeldti</i>	Resident estuarine, euryhaline	Common	Estuaries, bays, and lower portions of rivers adjoining the Gulf of Mexico	North Carolina to northern Gulf of Mexico	Sig.
Naked goby <i>Gobionella us basci</i>	Resident estuarine, euryhaline	Common	Estuaries, bays, and lower portions of rivers adjoining the Gulf of Mexico	Massachusetts to Gulf of Mexico	Sig.
Clown goby <i>Microgobius gulosus</i>	Resident estuarine, euryhaline	Uncommon	Estuaries, bays, and lower portions of rivers adjoining the Gulf of Mexico	Atlantic Coast of Florida to northern Gulf of Mexico	Sig.
Green goby <i>Microgobius thalassinus</i>	Resident estuarine	Uncommon	Estuaries and bays adjoining the Gulf of Mexico	South Carolina to the Gulf of Mexico	Sig.
Pink wormfish <i>Microgobius longinervis</i>	Resident estuarine	Scarce	Estuaries and bays adjoining the Gulf of Mexico	Northeastern Gulf of Mexico	Sig.
Enchler <i>Lepidocybium flavobrunneum</i>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	Atlantic Coast to Gulf of Mexico, Pacific Coast	Min.
Atlantic cutlassfish <i>Trichurus lepturus</i>	Marine entering estuary	Common	Estuaries and bays adjoining the Gulf of Mexico	Massachusetts to Gulf of Mexico, Pacific Coast	Min.
<i>Myxine scolarderi</i>	Marine only, pelagic	Uncommon	Gulf of Mexico and adjoining bays	New Jersey to Gulf of Mexico	Min.
<i>Myxine scolarderi</i>	Marine only, pelagic	Common	Gulf of Mexico and adjoining bays	Gulf of Maine to Gulf of Mexico	Min.



Table B (9). (continued)

Species	Habitat	Probable Abundance in Region	Range to Region or State	Range in U.S.	State or Federal Impact
Atlantic tomcod <u>Microgadomus aoteanus</u>	Marine only, pelagic	Common	Gulf of Mexico and adjoining bays	Atlantic Coast to Gulf of Mexico	MS
King mackerel <u>Scomberomorus cavalla</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico to Gulf of Mexico	MS
Spanish anchovy <u>Engraulis mordax</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Water to the Gulf of Mexico	MS
Barfin <u>Scorpaenopsis brasiliensis</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	New Jersey to Gulf of Mexico	MS
Smoothhead scorpionfish <u>Scorpaenopsis californica</u>	Marine only, pelagic	Uncommon	Gulf of Mexico and adjoining bays	Chesapeake Bay to Gulf of Mexico	MS
Normal scorpionfish <u>Scorpaenopsis diabolus</u>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	North Carolina to Gulf of Mexico	MS
Slender scorpionfish <u>Scorpaenopsis diabolus</u>	Marine only, benthic	Scarce	Gulf of Mexico and adjoining bays	New Jersey to Gulf of Mexico	MS
Mexican scorpionfish <u>Scorpaenopsis diabolus</u>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	Gulf of Mexico	MS
Blackfin scorpionfish <u>Scorpaenopsis diabolus</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico	MS
Discus scorpionfish <u>Scorpaenopsis diabolus</u>	Marine only, pelagic	Uncommon	Gulf of Mexico and adjoining bays	North Carolina to Gulf of Mexico	MS
Leopard scorpionfish <u>Scorpaenopsis diabolus</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	North Carolina to Gulf of Mexico	MS
Shortwing scorpionfish <u>Scorpaenopsis diabolus</u>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	Gulf of Mexico	MS
Sighted scorpionfish <u>Scorpaenopsis diabolus</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	North Carolina to Gulf of Mexico	MS
Ocellated flounder <u>Paralichthys ocellatus</u>	Marine only, benthic	Uncommon	Gulf of Mexico and adjoining bays	South Carolina to Gulf of Mexico	MS
Spotted whiff <u>Citharus linguatula</u>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico	MS
Bay whiff <u>Citharus linguatula</u>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays, estuaries, and lower portions of rivers	New Jersey to Gulf of Mexico	MS
Mexican flounder <u>Citharus linguatula</u>	Marine only, benthic	Scarce	Gulf of Mexico and adjoining bays	Gulf of Mexico	MS
Fringed flounder <u>Citharus linguatula</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico	MS
Southern flounder <u>Paralichthys lethostigma</u>	Marine entering estuary, euryhaline	Common	Gulf of Mexico and adjoining bays, estuaries, and lower portions of rivers	North Carolina to Gulf of Mexico	MS
Broad flounder <u>Paralichthys lethostigma</u>	Marine only, benthic	Uncommon	Gulf of Mexico and adjoining bays	Gulf of Mexico	MS
Small flounder <u>Paralichthys lethostigma</u>	Marine entering freshwater	Scarce	Gulf of Mexico and adjoining bays, estuaries, and lower portions of rivers	Gulf of Mexico	MS
Woody flounder <u>Paralichthys lethostigma</u>	Marine only, benthic	Scarce	Gulf of Mexico and adjoining bays	South Carolina to Gulf of Mexico	MS
Lined sole <u>Ammocetea lineata</u>	Marine only, benthic	Uncommon	Gulf of Mexico and adjoining bays	Gulf of Mexico	MS
Fringed sole <u>Ammocetea lineata</u>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico	MS
Hogchoker <u>Trigloporus setirostris</u>	Resident estuarine, euryhaline	Common	Estuaries and lower portions of rivers adjoining the Gulf of Mexico	New England to the Gulf of Mexico	MS
Offshore tonguefish <u>Symphurus carolinus</u>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	North Carolina to Gulf of Mexico	MS
Blackback tonguefish <u>Symphurus carolinus</u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	New York to the Gulf of Mexico	MS
Orange filefish <u>Ajuparus gichoppfi</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	Atlantic Coast to Gulf of Mexico	MS
Gray triggerfish <u>Balistes caprinus</u>	Marine only, pelagic	Scarce	Gulf of Mexico and adjoining bays	Atlantic Coast to Gulf of Mexico	MS
Pinkhead filefish <u>Paralichthys hiepidus</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	Atlantic Coast to Gulf of Mexico	MS
Scrawled cowfish <u>Lecophrys quadricornis</u>	Marine entering estuary	Uncommon	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	MS

Table B (9). (continued)

	Habitat in State	Probable Abundance in Region	Range in Region or State	Range in U.S. <sup>1</sup>	Direct Impact <sup>2</sup>
<del>Southern puffer</del> <u><i>Lagocephalus laurionus</i></u>	Marine entering estuary	Discommon	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	N/A
<del>Marbled puffer</del> <u><i>Sphoeroides argus</i></u>	Marine entering estuary	Scarce	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico	N/A
<del>Southern puffer</del> <u><i>Sphoeroides orbatus</i></u>	Marine entering estuary	Common	Gulf of Mexico and adjoining bays and estuaries	Gulf of Mexico	N/A
<del>Striped burrfish</del> <u><i>Chlorostichus aeneus</i></u>	Marine entering estuary	Discommon	Gulf of Mexico and adjoining bays and estuaries	Massachusetts to Gulf of Mexico	N/A

<sup>1</sup> Not including Alaska and Hawaii

<sup>2</sup> D = temporary displacement

ED = habitat destruction

N/A = minimal negative impact

Mod. = moderate negative impact

Sig. = significant negative impact

NE = no effect

Source: Gulf South Research Institute

ATTACHMENT 2  
THREATENED FISH AND WILDLIFE

MOBILE BAY  
U.S. ENDANGERED AND THREATENED SPECIES

Indiana bat 1/  
Eastern cougar  
Florida panther  
Mississippi sandhill crane  
Blue whale 2/  
Finback whale  
Humpback whale  
Sperm whale  
Southern bald eagle  
American peregrine falcon  
Arctic peregrine falcon  
Brown pelican  
Bachman's warbler  
Ivorybilled woodpecker  
Red-cockaded woodpecker  
American alligator  
Atlantic Ridley sea turtle  
Hawksbill sea turtle  
Leather back sea turtle  
Loggerhead turtle

1/ Collected in area but habitat unavailable

2/ Gulf record is suspect

ENDANGERED

Rhynchospora crinipes Gale  
Lilium eridollae M. G. Henry  
Epidendrum conopseum R. Br.  
Ilex amelanchier M. A. Curtis  
Psoralea simplex Nutt.  
Oenothera grandiflora Ait.

THREATENED

Canna flaccida Salisb.  
Cleistes divaricata (L) Ames  
Xyris drummondii Malme.  
Coreopsis gladiata Walter  
Warea sessilifolia Nash  
Sabatia brevifolia Raf.  
Hypericum nitidum Lam.  
Ludwigia arcuata Walter  
Sageretia minutifolia (Michx.) Trel.  
Sarracenia psittacina Michx.  
Gordonia lasianthus (L) Ellis  
Momisia iguanea (L) Rose and Standley

SPECIAL CONCERN

Lycopodium cernuum L.  
Lycopodium flabelliforme (Feon.) Blanchard  
Ophroglossum crotalophorioides Walt.  
Chamaecyparis thyoides (L.) BSP  
Eriocaulon lineare Small  
E. texense Korn.  
Pilea tenuifolia Michx.  
Habenaria integra (Nutt.) Spreng.  
Marrubium tuberculosa Nash  
Liatris chapmanii (T & G) Kuntze  
Cleome tenuifolia Le Conte ex T. and G.  
Clethra alnifolia var. alnifolia L.  
Kalmia hirsuta Walt.  
Rhododendron atlanticum (Ashe) Rehder  
Quercus pumila Walt.  
Eustoma exaltatum (L.) Griseb.  
Sabatia foliosa Fernald  
Hypericum reductum (Svenson) Adams  
Pinguicula planifolia Chapm.  
Pinguicula primulifolia Wood and Godfrey  
Agalinus pseudophylla (Fennell) Shinnars  
Penstemon multiflorus Chapm.

ENDANGERED AND THREATENED PLANTS AND ANIMALS OF ALABAMA<sup>1/</sup>

ENDANGERED FISH

Alabama shovelnose sturgeon

THREATENED

Atlantic sturgeon  
Blue sucker  
Crystal darter  
Freckled darter

SPECIAL CONCERN

Pygmy killifish

AMPHIBIAN AND REPTILES

ENDANGERED

Flatwoods salamander  
Eastern indigo snake (probably extinct in Alabama)  
Black pine snake  
Florida pine snake  
Atlantic loggerhead turtle  
Green sea turtle

THREATENED

Dusky gopher frog  
Alabama red-bellied turtle  
Gopher turtle

SPECIAL CONCERN

River frog  
Greater siren  
Pine woods snake  
Florida green water snake  
Florida softshell turtle

<sup>1/</sup> Species listed on Federal list are not duplicated.

BIRDS

ENDANGERED

Golden eagle  
Osprey  
Snowy plover

THREATENED

Reddish egret  
Mottled duck

SPECIAL CONCERN

Little blue heron  
Black-crowned night heron  
Wood stork  
Swallow-tailed kite  
Cooper's hawk  
Red-shouldered hawk  
Merlin  
Sandhill crane  
Black rail  
American oyster catcher  
Swainson's warbler

ATTACHMENT 3

OTHER STORMS AFFECTING ALABAMA



ATTACHMENT 3  
OTHER STORMS AFFECTING ALABAMA

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1. 11-13 September 1711.- The City of Mobile was originally established in 1702 at a site on the Mobile River 27 miles above its mouth. Flooding caused by excessive rainfall during the 1711 storm overflowed the settlement, and the resulting disaster was one of the reasons for the town being relocated to its present site. The same storm reportedly destroyed St. Louis Cathedral in New Orleans.
  
2. 1711 to 1740.- Three hurricanes occurred along the east central Gulf coast during this period, in 1722, 1732, and 1736; however, no data concerning their effect on Alabama are available.
  
3. 12 September 1740.- Details of this storm are incomplete, but an indication of its intensity can be obtained from the fact that a four-pounder cannon in front of the guard house on Dauphin Island was blown 16 feet by the wind. A number of houses in Mobile were blown down, and about 300 head of cattle were drowned.
  
4. 1740 to 1772. - Two hurricanes affected the east central Gulf coast during this period, in 1759 and 1766. Although Pensacola was principally affected, it is probable that some damage was incurred along the Alabama coast.
  
5. 4 September 1772. - According to Tannehill, this storm could be classed among the most intense to strike the Gulf coast. Enroute to the mainland, it had passed over the West Indies, causing considerable damage among the Leeward Islands. At Mobile, vessels, boats, and logs were driven into the heart of town. Vegetable crops were ruined by salt water and houses were filled with water several feet deep. The exact height of

the tide is not known, but a later newspaper account indicates that it reached about 8.2 feet above mean sea level. Spray from the surf in the Gulf and Mobile Bay was reportedly carried 4 to 5 miles inland by the winds.

6. 1772 to 1852. - Records indicate that 16 hurricanes reached the east central Gulf coast during this 80-year period, but detailed accounts of their effect on the Alabama coast are unavailable.

7. 23 August 1852. - A tide of 8.0 feet above mean sea level occurred at Mobile during this storm. Severe damage occurred in the wholesale district near the waterfront.

8. 12 August 1856.- This storm caused serious damage and loss of life along the Louisiana coast, but its effects in Alabama were, apparently, not severe.

9. 30 August 1856.- Moving westward across Cuba and recurving in the north central Gulf, this hurricane passed inland near Mobile on 30 August; however, details as to its effect on coastal areas are lacking.

10. 11 August 1860.- A tide of 6.4 feet above sea level occurred at Mobile during this hurricane. No other data are available.

11. 15 September 1860.- This storm caused a tide of 7.0 feet above mean sea level at Mobile, but detailed accounts are lacking.

12. 30 July 1870. - This small radius, early-season storm caused the tide to rise to an elevation of 7.0 feet above mean sea level, bringing many alligators and snakes into the main part of town. During the 2-hour duration of the storm, a drydock was torn loose and wrecked several ships. The city suffered damages estimated at \$250,000, the major portion of which was sustained by shipping.
13. 21 September 1877. - This storm caused considerable flooding along the Black Warrior and Tombigbee Rivers in Alabama. The Black Warrior River reportedly rose about 14 feet above flood stage. Corn and cotton crops were destroyed in the Mobile area, and the City of Tuscaloosa suffered extensive damages from flooding.
14. 26-30 August 1880.- The coastal area from Mobile to Pensacola is reported to have been affected by this hurricane, but details as to its intensity are lacking.
15. 10 September 1882. - The center of this hurricane passed south of Mobile in the vicinity of the mouth of Dog River. Most of the heavy rainfall accompanying the storm fell on Mobile and Pensacola. Additional details are lacking.
16. 19 October 1887. - Moving westward from the Atlantic, this hurricane passed over the Greater Antilles, recurved in the north central Gulf, and passed inland in the vicinity of Grand Isle, La. It subsequently passed over New Orleans and Mobile, causing damage to communication lines and railroads along the Alabama coasts. Barometric pressure at Mobile fell to 28.94 inches.

17. 19 August 1888. - This storm entered the Gulf after crossing the southern tip of Florida and passed inland near Lake Charles, La. High tides and 57 mile per hour winds were experienced at Mobile. The waterfront section of town was inundated by a tide of 7.2 feet above mean sea level and all transportation was suspended.

18. 23 September 1889. - First observed in the western Atlantic on the 11th, this tropical cyclone moved through the Caribbean, crossed the Yucatan Peninsula and entered the Gulf on the 19th. The storm continued toward the coast of Mexico, but turned northward on the 20th and then assumed a northeasterly course. The hurricane crossed the Mississippi River delta near Burroughs and struck the mainland near Pensacola, Fla. No detailed information regarding the extent of damages in Alabama is available but it is believed to have been minor.

19. 2 October 1893. - Crossing the Yucatan Peninsula on 29 September, this storm continued northwestward, recurved in the Gulf, crossed the Mississippi River near Pilottown, La., and passed inland near Pascagoula, Miss., on 2 October. At Mobile, the wind reached an extreme velocity of 80 miles per hour and the tide attained an elevation of 8.4 feet above mean sea level. Barometric pressure fell to 29.16 inches, and 9.58 inches of rainfall added to widespread flooding caused by the abnormal tide. The wholesale business district of the city was inundated, several vessels were washed ashore, trees were uprooted, and all railroad and electric-car service was suspended. In the truck farming section of Mobile County many farms were left in ruins. Seven lives were reported lost. The estimated value of damages in Mobile included \$100,000 caused by tides and \$50,000 by wind.

20. 15 August 1901. - Spawned in the Atlantic, this storm crossed the southern part of Florida and reached hurricane intensity as it moved across the Gulf. It passed inland west of the mouth of the Mississippi River and moved northeasterly over Pass Christian, Miss. Mobile experienced 61 mile per hour winds and a high tide of 7.4 feet above mean sea level, a barometric pressure of 29.32 inches, and rainfall of 5.84 inches. A Mobile tide damage was estimated at \$74,000, and damage from the wind at \$25,000.

21. 20 September 1909. Approaching from the southeast after inception in the Caribbean, this storm crossed the coast about midway between the mouths of the Mississippi and Atchafalaya Rivers and, continuing northward, passed near Little Rock, Ark. Damages in Mobile were relatively light because there was sufficient warning of the storm's approach for merchants to remove freight from wharves and goods from lower warehouse floors, and for water craft to seek refuge in the Mobile River north of town. The storm hit Mobile on the morning of the 20th, and by 4:00 a.m. on the 21st the tide had reached its maximum of 7.0 feet above mean sea level. The following tabulation illustrates the minor degree of damage in Mobile.

<u>Type of Damage</u>	<u>Damages</u>
Shipping . . . . .	\$3,000
Property <u>1/</u> . . . . .	<u>5,000</u>
Total. . . . .	\$8,000

1/ Reported to have been reduced by \$400,000 by removal of goods from warehouses and wharves along the waterfront.

22. 14 September 1912. - Originating in the Gulf on the 11th and moving rapidly toward the northwest, this storm passed inland shortly after midnight of the 13th, about 20 miles west of Mobile, where 60 mile per hour winds caused an estimated \$12,000 in damages. A number of small craft were destroyed and a river steamer sank. Tides were comparatively low and no heavy rainfall was reported. One person drowned at Mobile.

23. 29 September 1915. - During the morning of the 29th, one of the most intense hurricanes to visit the Gulf coast passed inland a short distance west of the mouth of the Mississippi River. At that time, the storm was about 7 days old, having traveled from the West Indies across the Caribbean Sea, the Yucantan channel, and the Gulf of Mexico en route to the mainland. Winds in Mobile were reported at 49 to 60 miles per hour from the southeast with an average velocity of 52 miles per hour. Most of the estimated \$75,000 in damages along the Alabama coast were caused by high tides. In Mobile the tide reached an elevation of 6.4 feet above mean sea level, inundating streets leading to the city wharf. Sixty mile per hour winds were reported at Coden, Ala., where piers and bath houses were demolished, two launches sunk, and other small craft destroyed. The tide there reportedly reached 10 feet above normal high tide.

24. 18 October 1916. - Sustained winds of 115 miles per hour, with gusts to 128, struck Mobile on the 18th when this storm passed inland just east of the town. One person in Mobile was killed by a live wire, but wind and tide damage to property and shipping was relatively light, amounting to less than \$10,000. At Andalusia, Ala., 65 miles inland, the storm caused one death and an estimated \$1,000,000 in property damage.



25. 28 September 1917. - This storm originated in the Atlantic Ocean on the 21st and moved in a northwesterly direction through the Yucatan channel toward the mouth of the Mississippi River. Curving to the right about 50 miles south of Port Eads, La., it crossed the coast east of Pensacola. Maximum winds of 96 miles per hour were recorded at Mobile; however, damages were comparatively minor. At Fort Morgan waves over-topped the sea wall, flooding the northern end of the reservation to a depth of 3 feet. No lives were lost there, but the high tide and 90 mile per hour winds caused an estimated \$100,000 in damages.

26. 1 September 1932. - Following a northwesterly path across the southern tip of the Florida peninsula, this storm reached hurricane intensity in the Gulf and passed inland along the Alabama-Mississippi State line a few miles west of Mobile, where the tide reached 4.5 feet above mean sea level and the maximum winds never exceeded 57 miles per hour. The effects of the hurricane were relatively minor in the city, with the greatest damages being signs blown down, trees uprooted, and roofs torn off. Along the bay front, however, two people were killed, pleasure wharves and bath houses were blown down, several racing sloops were sunk, and numerous small boats were overturned at their moorings.

27. 19 September 1947. - The most destructive hurricane to reach the east central Gulf coast in 21 years crossed the southeast coast of Louisiana about 50 miles south of Bay St. Louis, Miss., and passed directly over the business district of New Orleans early in the morning of the 19th. The storm struck the coast with a forward speed of translation of 18 miles per hour. Diameter of the eye was 25 miles. While the Mississippi

coast was experiencing 100 mile per hour winds, the maximum wind in Mobile was 43 miles per hour with extreme gusts of 53 miles per hour. The lowest barometric pressure in Mobile was 29.54 inches, and the maximum tide recorded was 4.7 feet above mean sea level. The mass evacuation of persons in vulnerable areas is credited with preventing injuries and loss of lives along the Alabama coast. Wave action and eighty mile per hour winds caused an estimated \$50,000 in damages to waterfront property at the mouth of Dog River. Appraised wind and tide damages in Alabama are detailed as follows:

TABLE 3-1

Summary of Damages in Alabama 1947 Storm

<u>Property Damaged</u>	<u>Amount</u>
Public property . . . . .	\$ 10,000
Shipping . . . . .	8,000
Utilities . . . . .	53,000
Transportation . . . . .	2,000
Commercial . . . . .	69,000
Fisheries and seafood . . . . .	25,000
Private property . . . . .	175,000
Agricultural <sup>1/</sup> . . . . .	<u>870,000</u>
Total. . . . .	\$1,212,000

<sup>1/</sup> Damages to pecan crop, \$650,000; livestock, \$20,000; and other crops, \$200,000.

---

28. 4 September 1948. - The tide reached a maximum stage of 4.4 feet above mean sea level in Mobile as this hurricane passed inland over the sparsely settled coastal area near Grand Isle, La., and directly over New Orleans in a north-easterly direction. Winds in Mobile reached a maximum velocity of 42 miles per hour, with gusts from 45 to 50 miles

per hour. The tides at Coden and Bayou La Batre were reported to be 6 feet above normal. Total property and crop damage in Alabama was estimated at \$88,000.

29. 30 August 1950. - Hurricane "Baker" moved inland between Mobile and Pensacola during the night of 30 August, approximately 10 days after it originated in the Atlantic Ocean. The maximum reported wind velocity was 75 miles per hour at Fort Morgan. Gusts of 50 miles per hour were recorded as far inland as Birmingham, where one person was killed and two injured by fallen live wires. A 300-foot wharf at Gulf Shores was destroyed, and all houses along the waterfront there suffered roof damage. Extensive wharf damage was suffered along the eastern shore of Mobile Bay. Total damages in Alabama were appraised at \$500,000.

30. 24 September 1956. - Originating in the Caribbean on the 21st, hurricane "Flossy" moved in a northwesterly direction across the Yucatan peninsula; entered the Gulf on the 22nd, curved northeasterly on the 23rd, and passed inland in the vicinity of Fort Walton Beach, Fla., on the 24th. The maximum tide at Mobile was 2.2 feet above mean sea level, and the maximum recorded wind was 50 miles per hour with gusts up to 58 miles per hour. The storm caused one fatality in Mobile, when a construction worker was electrocuted by a live wire. Dauphin Island and the Mobile Bay area sustained the greatest damages from the storm. Winds estimated at 60 miles per hour and a tide 3.3 feet above mean sea level inflicted severe damages to boats at Dauphin Island, where 22 cruisers were sunk and the majority of boats remaining afloat were heavily damaged. No deaths or injuries occurred on the island, since

most of the residents were evacuated before the storm struck. Residents were also evacuated from the Bayou La Batre, Coden, and Gulf Shores areas. In Mobile Bay, 2 tugboats were sunk and 2 persons drowned. Property losses in inland areas consisted mainly of damage to roofs, trees and shrubbery and miscellaneous damage caused by flying debris and wind-blown sand. The estimated property losses in Alabama, exclusive of crop and timber losses, are itemized by localities as follows:

TABLE 3-2  
Summary of Damages in Alabama-Hurricane "Flossy" (1956)

Location	Damage From Wind	Damage from waves and tides	Damage from rainfall	Total
Bayou La Batre	\$ 6,500	-	\$ 500	\$ 7,000
Dauphin Island area	4,800	\$200,400	-	205,200
West Mobile Bay	-	-	600	600
Gulf Shores area	28,700	9,600	-	38,300
Mobile	<u>100,000</u>	<u>90,000</u>	<u>3,900</u>	<u>193,900</u>
Total	\$140,000	\$300,000	\$5,000	\$445,000

31. 15 September 1960. - Hurricane "Ethel" developed rapidly in the lower Gulf of Mexico north of the Yucatan peninsula on the 14th, and began moving northward through the Gulf with 150 mile per hour winds at its center. On the 15th it shifted to a northeastward direction and began diminishing in intensity. The storm passed inland near the Alabama-Mississippi border around noon with less than hurricane intensity, causing only minor damage along the Alabama coast. Maximum wind velocities in Mobile reached 30 miles per hour with gusts up to 50 miles per hour. Fort Morgan and Dauphin Island experienced some gusts as high as 74 miles per hour, but no serious damages were sustained in those areas. Tides along the Alabama coast were generally 3 to 4 feet above normal, with a maximum tide of 3.9 feet above mean sea level recorded at Mobile.

32. 3 October 1964 (Hilda). - After developing off the southern coast of western Cuba on the morning of September 28, this tropical cyclone moved slowly westward and reached storm intensity in the extreme southeastern Gulf. Gradually intensifying, the storm reached hurricane force on the 30th and maximum intensity on the 1st, when about 350 miles south of New Orleans. Hilda then took a northward course and passed inland along the central Louisiana coast near Franklin on the afternoon of the 3rd. Continuing northward, the storm encountered a large mass of cold air near Baton Rouge, which diverted it toward the east. The hurricane weakened rapidly as it moved easterly across Mississippi, Alabama, and Florida, and entered the Atlantic north of Jacksonville. Damages in Alabama from the hurricane on 3 October were estimated at \$50,000, but as the storm and an accompanying cold front passed near Mobile on the 4th, strong northerly winds associated primarily with the front caused over \$550,000 in damages to property and agriculture in Baldwin and Mobile Counties. Waves generated by winds with gusts up to 80 miles per hour damaged numerous piers in the Fairhope area and caused extensive beach erosion from Point Clear to Mullet Point and along the Fort Morgan peninsula. In Baldwin County damages attributed to the cold front were appraised at \$250,000 and those due to the hurricane itself were estimated at \$25,000. Considerable damage was reported at Dauphin Island, where roofs, trees, signs, and boats were damaged. A shrimp boat was sunk and others damaged by floating debris at Bayou La Batre. A 5.2-foot tide closed U. S. Highway 90 causeway for several hours but damages there were minor. Tides rose to elevations of 5.5 feet at Bayou La Batre, 3.5 feet at Dauphin Island, 3.1 feet at Perdido Pass, and 4.3 feet at Mobile. At Mobile primary damages were to utility lines, roofs, television antennae, and signs, caused by wind. Agricultural losses in Mobile County were approximately \$100,000.

MOBILE COUNTY, ALABAMA  
(INCLUDING DAUPHIN ISLAND)

FEASIBILITY REPORT  
FOR BEACH EROSION CONTROL AND  
HURRICANE PROTECTION

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FLOOD HAZARD  
INFORMATION REPORT

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DEPARTMENT OF THE ARMY  
PREPARED BY THE  
MOBILE DISTRICT, CORPS OF ENGINEERS

APPENDIX A

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EVACUATION ROUTES	1
BUILDING ORDINANCES	1

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A-I	MAP INDEX, MOBILE CO., AL
A-II	MAP INDEX, CITY OF BAYOU LA BATRE, AL
A-III	MAP INDEX, CITY OF CHICKASAW, AL
A-IV	MAP INDEX, CITY OF MOBILE, AL

## FLOOD HAZARD MAPS

1. Stage frequency relations were not developed as part of this feasibility study. During the study the stage frequency relations contained in the Federal Insurance Administration's (FIA) 1971 Flood Insurance Study for Mobile County were used. Based on data in the 1971 report the FIA has prepared flood hazard boundary and flood insurance rate maps for Mobile County. Indices for these maps are shown on Plates A-I through A-IV. The maps are distributed by :

Alabama Development Office  
Special Studies Divisions  
State Office Building  
Montgomery, Alabama 36104

Also, these maps are on file in the offices of the building inspectors for Mobile County and the cities of Bayou La Batre, Chickasaw and Mobile.

## EVACUATION ROUTES

2. Storm evacuation maps for Mobile County have been prepared by the National Ocean Survey for the National Weather Service. These maps are distributed by:

Mobile Civil Defense  
348 North McGregor  
Mobile, Alabama 36608

## BUILDING ORDINANCES

3. Mobile County and the cities of Bayou La Batre, Chickasaw and Mobile have implemented the Federal Insurance Program.



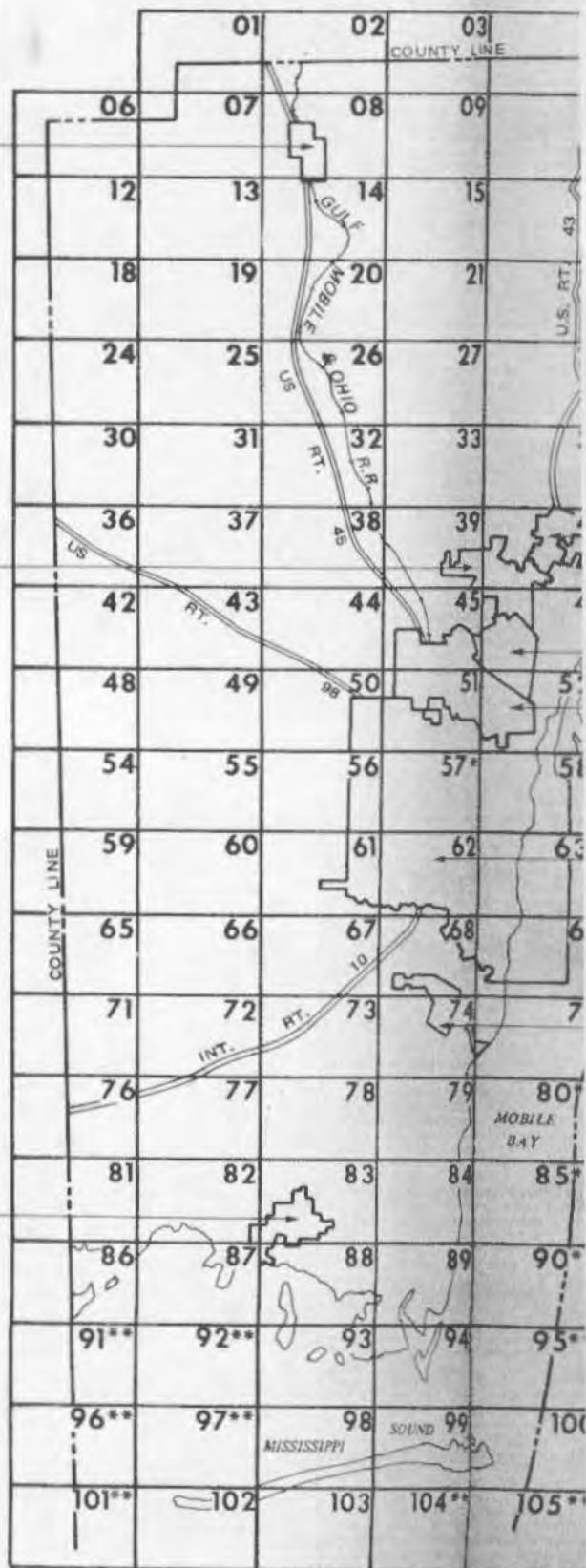
Consequently, all construction within the 100 year flood plain is controlled by building codes. These building codes are based on requirements specified in Section 1910.3 of the December 1976 Federal Register and the Southern Building Code. Information concerning these building codes can be obtained through the offices of the building inspectors of the county and previously mentioned cities.

AREA NOT INCLUDED  
CITRONELLE

AREA NOT INCLUDED  
SARALAND

AREA NOT INCLUDED  
BAYOU LA BATRE

\*NOT PRINTED (AREA NOT INCLUDED)  
\*\*NOT PRINTED (ALL ZONE V)





AREA NOT INCLUDED  
MOUNT VERNON

AREA NOT INCLUDED  
SATSUMA

AREA NOT INCLUDED  
CHICKASAW

AREA NOT INCLUDED  
PRICHARD

AREA NOT INCLUDED  
MOBILE

AREA NOT INCLUDED  
U.S. GOVERNMENT INSTALLATION

**NOTE:**  
This drawing is taken from a map prepared by the  
Department of Housing and Urban Development,  
Federal Insurance Administration, Community No.  
015008A.



CONSULT NFIA SERVICING COMPANY OR LOCAL INSURANCE  
AGENT OR BROKER TO DETERMINE IF PROPERTIES IN THIS  
COMMUNITY ARE ELIGIBLE FOR FLOOD INSURANCE.

INITIAL IDENTIFICATION DATE: JANUARY 8, 1972

INTERIM MAP REVISION EFFECTIVE JULY 1, 1974  
TO CHANGE ZONE DESIGNATIONS.

MAP REVISED DECEMBER 17, 1976  
TO REFLECT CURVILINEAR FLOOD BOUNDARIES  
AND TO ADD SPECIAL FLOOD HAZARD AREA.

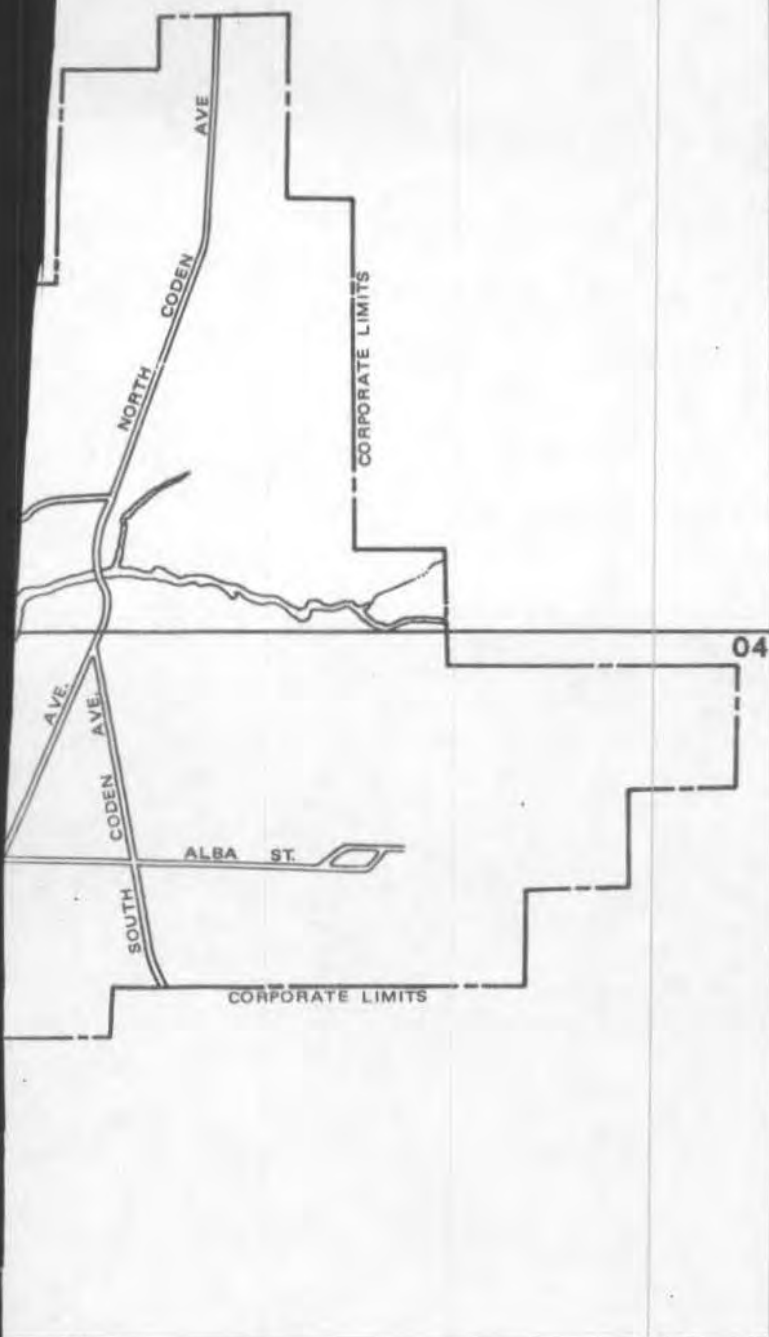
FLOOD HAZARD BOUNDARY MAP H -01-105  
FLOOD INSURANCE RATE MAP I -01-105

**MAP INDEX**

**MOBILE CO., AL\***  
(UNINC AREAS)



02



CONSULT NFIA SERVICING COMPANY OR LOCAL INSURANCE AGENT OR BROKER TO DETERMINE IF PROPERTIES IN THIS COMMUNITY ARE ELIGIBLE FOR FLOOD INSURANCE.

INITIAL IDENTIFICATION DATE: MARCH 18, 1972

INTERIM MAP REVISION  
EFFECTIVE JULY 1, 1974,  
TO CHANGE ZONE DESIGNATIONS.

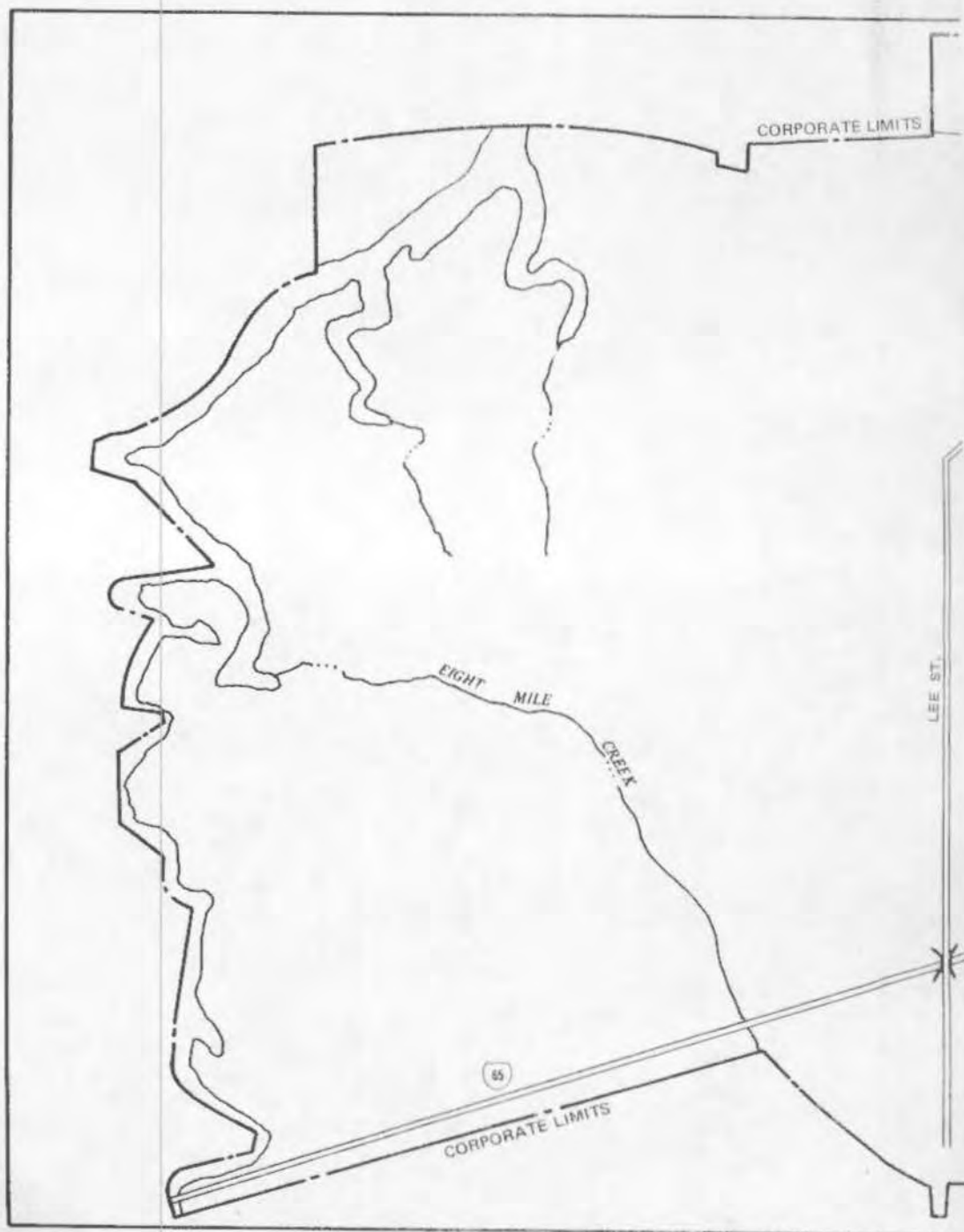
MAP REVISED APRIL 2, 1976  
TO REFLECT CURVILINEAR FLOOD BOUNDARY  
AND CHANGE CORPORATE LIMITS.

FLOOD HAZARD BOUNDARY MAP H - 01-04  
FLOOD INSURANCE RATE MAP I - 01-04

**MAP INDEX**

**CITY OF BAYOU LA BATRE, AL**  
**(MOBILE CO.)**

ing is taken from a map prepared by the Department of  
nd Urban Development, Federal Insurance Administration,  
y No. 015001A.



**NOTE:**

This drawing is taken from a map prepared by the Department of Federal Insurance Administration, Community No. 0150C



01

LIMITS

SOUTHERN A.T. & N. R.R.

LEE ST.

CORPORATE LIMITS

CONSULT NFIA SERVICING COMPANY OR LOCAL INSURANCE AGENT OR BROKER TO DETERMINE IF PROPERTIES IN THIS COMMUNITY ARE ELIGIBLE FOR FLOOD INSURANCE.

INITIAL IDENTIFICATION DATE:  
APRIL 27, 1972

INTERIM MAP REVISION  
EFFECTIVE JULY 1, 1974  
TO CHANGE ZONE DESIGNATIONS

MAP REVISION EFFECTIVE OCTOBER 24, 1975  
TO REFLECT CURVILINEAR FLOOD BOUNDARY

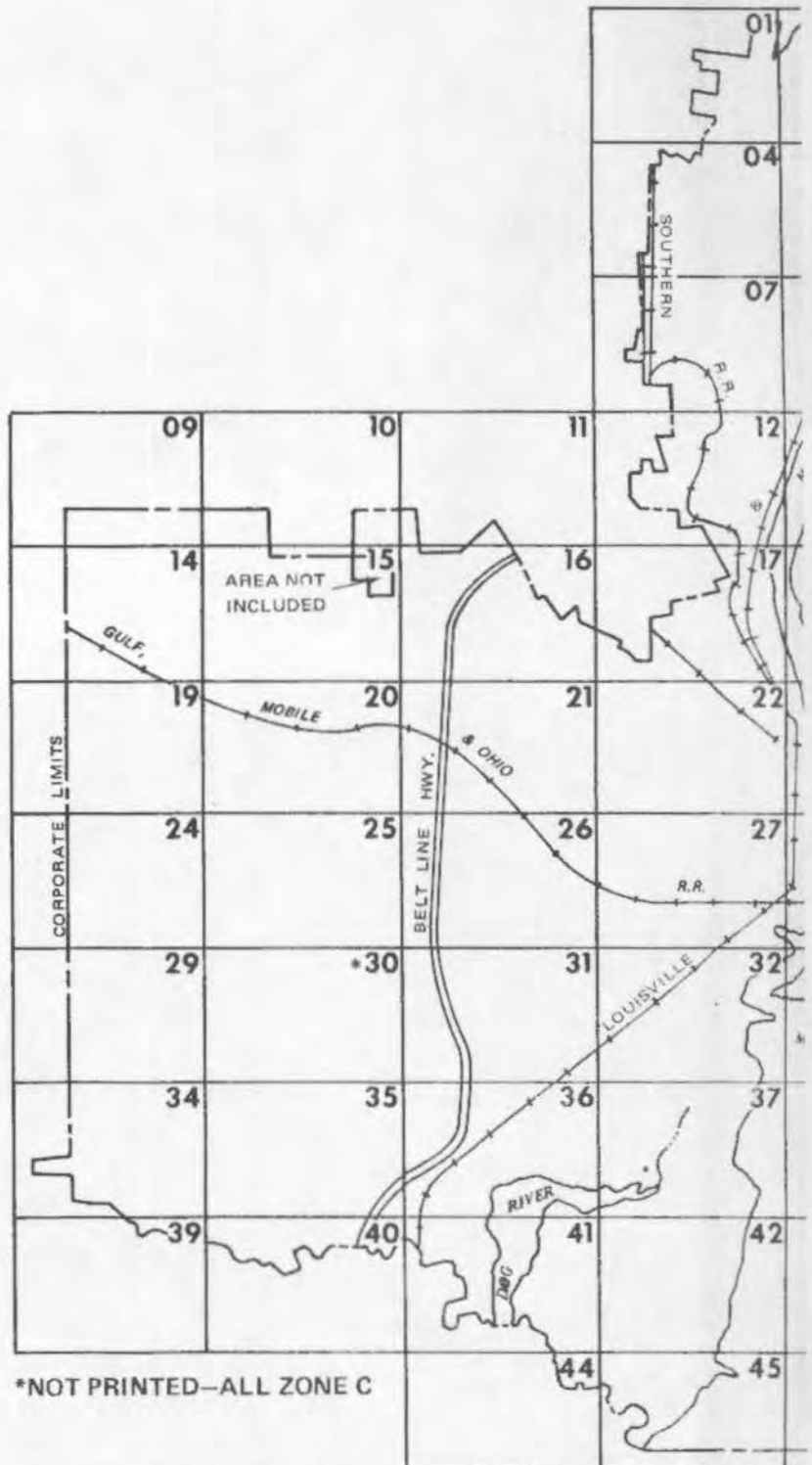
FLOOD HAZARD BOUNDARY MAP H - 01  
FLOOD INSURANCE RATE MAP I - 01

MAP INDEX

CITY OF CHICKASAW, AL  
(MOBILE CO.)

U.S. Department of Housing and Urban Development,  
H.U.D. Form 15003 A.

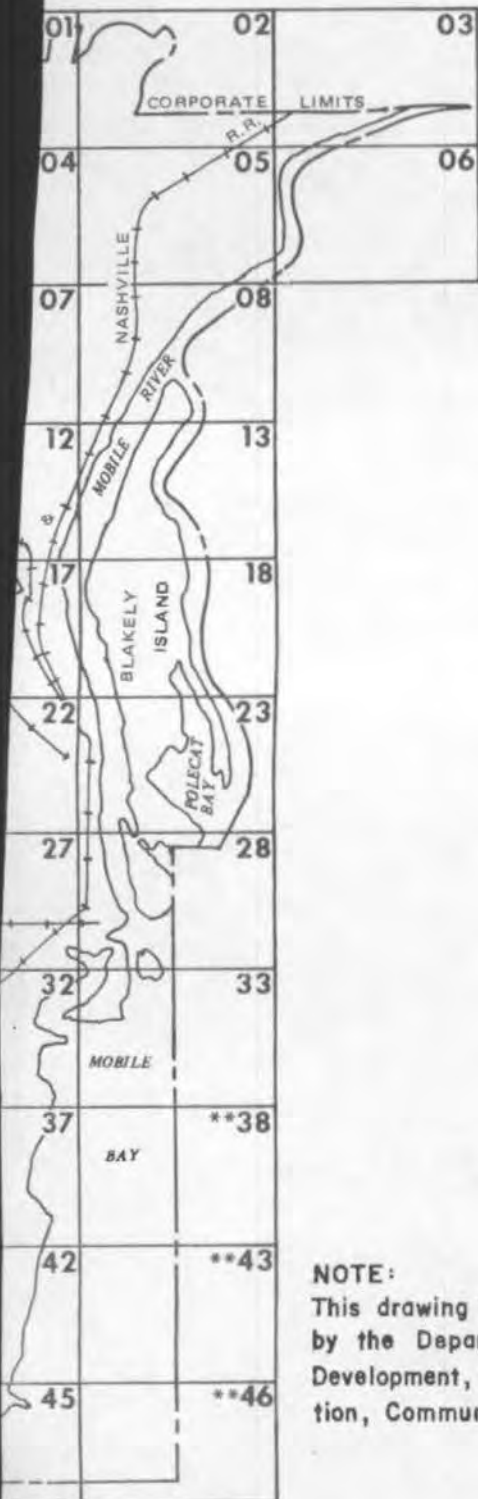
PLATE A-III



\*NOT PRINTED—ALL ZONE C

\*\*NOT PRINTED—ALL ZONE A9, (EL. 10 FT. MSL),  
9/15/72 IDENTIFICATION DATE





**NOTE:**  
 This drawing is taken from a map prepared by the Department of Housing and Urban Development, Federal Insurance Administration, Community No. 015007A.

CONSULT NFIA SERVICING COMPANY OR LOCAL INSURANCE AGENT OR BROKER TO DETERMINE IF PROPERTIES IN THIS COMMUNITY ARE ELIGIBLE FOR FLOOD INSURANCE.

INITIAL IDENTIFICATION DATE: SEPTEMBER 15, 1972

INTERIM MAP REVISION EFFECTIVE JULY 1, 1974 TO CHANGE ZONE DESIGNATIONS

MAP REVISION EFFECTIVE MAY 7, 1976 TO REFLECT CURVILINEAR FLOOD BOUNDARY AND TO ADD SFHA

FLOOD HAZARD BOUNDARY MAP H - 01-46  
 FLOOD INSURANCE RATE MAP I - 01-46

**MAP INDEX**

**CITY OF MOBILE, AL**  
 (MOBILE CO.)

MOBILE COUNTY, ALABAMA  
(INCLUDING DAUPHIN ISLAND)

FEASIBILITY REPORT  
FOR BEACH EROSION CONTROL AND  
HURRICANE PROTECTION

PERTINENT CORRESPONDENCE

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D

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B

DEPARTMENT OF THE ARMY  
PREPARED BY THE  
MOBILE DISTRICT, CORPS OF ENGINEERS

APPENDIX B

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9 July 1975

Honorable Jack Edwards  
House of Representatives  
Washington, DC 20515

Dear Mr. Edwards:

For your information I am inclosing a copy of the transcript of the Workshop Meeting on Beach Erosion Control and Hurricane Protection for Mobile County held at Bayley's Ranch on 31 March 1975. I appreciate your attendance at the meeting and interest you have demonstrated in this study.

As you recall, little interest was exhibited at the meeting for structural plans that could be implemented under existing Federal authorities for beach erosion control. These authorities require the establishment of public property and public access to the shoreline as a condition for any significant Federal financial participation in a beach erosion control project. As indicated at the meeting, the establishment of public shoreline property would be strongly opposed by existing waterfront property owners. Furthermore, preliminary studies indicate that protection of the sparsely developed shoreline would not result in the necessary economic benefits to justify the construction of costly structures for beach erosion control and hurricane protection.

While structural measures specifically for beach erosion control are indicated to be economically unjustified and to have unacceptable social and community impacts, the need for protection of the shoreline was emphasized. Substantial interest was indicated in the concept of deposition of unconfined dredged material from the ship channel along the west bay shoreline and Dauphin Island for the abatement of erosion.

The prospect for satisfactorily alleviating erosion problems on Dauphin Island by depositing the sandy material dredged from the Mobile Bay entrance channel upon the Gulf shoreline of the island appears promising and will be pursued. The viability of depositing future "new work" material dredged from the ship channel within Mobile Bay upon the western shoreline cannot be determined without estuarian and other environmental impact studies but is considered meritorious of further consideration. Under the above concepts the eroding shorelines would be nourished by the

9 July 1975

Honorable Jack Edwards

dredged material primarily as disposal areas in support of the maintenance and modification of the Mobile Harbor navigation project. This plan would preserve any accreted land as the property of adjoining land owners and limit local costs resulting from the accreted land, to the amount required for necessary stabilization and a portion of the cost allocated to land enhancement. Therefore, the options for nourishment of the eroding shorelines with material dredged from the ship channel would be more appropriately considered under our ongoing study of navigation modifications for Mobile Harbor rather than under the study for beach erosion control and hurricane protection.

In view of the indications of the workshop meeting, further consideration for deposition of the dredged material from the ship channel along the eroding shorelines under the ongoing survey study for modification of the existing Federal project for Mobile Harbor is indicated to be warranted in lieu of the authorized beach erosion control and hurricane protection study. Since our study has not indicated any other likely structural alternatives for beach erosion control and hurricane protection, and in accordance with Corps' policy to apply our limited study funds where they can be most productive, I am proposing to conclude our beach erosion and hurricane protection study for Mobile County. A concise report which will address the foregoing considerations along with the finding that no additional Federal structural improvements are warranted at this time in the interest of beach erosion control and hurricane protection can be completed with programmed fiscal 1976 study funds. Any remaining surplus funds could be transferred to other studies. In lieu of this option, deferral of future studies into an inactive study category is indicated.

I plan to notify the Mobile City and County Commissions of our proposal to terminate the study in the near future, but, in the interim, would appreciate any views or comments you may have regarding the study and proposed course of action.

Sincerely yours,

1 Incl  
As stated

DRAKE WILSON  
Colonel, CE  
District Engineer

Appendix B

2

2



STATE OF ALABAMA

GOVERNOR'S OFFICE

MONTGOMERY 36104

GEORGE C. WALLACE  
GOVERNOR

September 16, 1975

Colonel Drake Wilson  
District Engineer  
U. S. Army Corps of Engineers  
Post Office Box 2288  
Mobile, Alabama 36628

Dear Colonel Wilson:

It is our understanding that your district office is presently engaged in a study of beach erosion in Mobile County. We would like to request that your technical personnel include a study of the feasible methods of closing Petit Bois Pass in the beach erosion project. The erosion of the beaches of Petit Bois and Dauphin Islands has resulted in the pass presently being in excess of 5.4 miles wide.

Most of the increase in width has occurred in fairly recent times as the Coast and Geodetic Survey of 1918 showed the pass to be only 2.02 miles in width. The recent increase in the width of the pass has destroyed the oyster fishery in Portersville Bay by allowing saltwater intrusion into this area. The increased salinity has resulted in adverse environmental conditions for oyster production.

It appears to us that some sort of structures, such as rock jetties, could be placed in the pass to provide for natural accretion of the beach sands that

Appendix B

Colonel Drake Wilson  
September 16, 1975  
Page Two

would eventually close the pass. We would appreciate your technical personnel providing us with a project outline and cost estimate.

With kind personal regards, I am

Sincerely yours,

*George C. Wallace*

George C. Wallace  
Governor  
State of Alabama

GCW:bj

cc: Representative Bob Glass  
Mr. Claude D. Kelley  
Mayor J. A. Wintzell

District Engineer's note:

The studies requested above are addressed on page 108 of the main report.

Appendix B

21 July 1975

Mobile County Commission  
P. O. Box 1443  
Mobile, AL 36601

Dear Sirs:

Pursuant to a Congressional resolution adopted by the Senate Public Works Committee on 27 October 1970, the Corps of Engineers has underway a study to determine if justifiable steps can be taken to provide beach erosion control and hurricane protection measures for the shores of Mobile County, including Dauphin Island. In connection with this study a workshop meeting was held at Bayley's Ranch on 31 March 1975 to discuss with shoreline property owners possible erosion control and hurricane protection alternatives and the ramifications of the various plans. As a local government entity having jurisdiction over portions of the study area, I am inclosing for your information a copy of the transcript of the recent meeting.

Little interest was exhibited at the meeting for structural plans that could be implemented under existing Federal authorities for beach erosion control. These authorities require the establishment of public property and public access to the shoreline as a condition for any significant Federal financial participation in a beach erosion control project. As indicated at the meeting, the establishment of public shoreline property would be strongly opposed by existing waterfront property owners. Furthermore, preliminary studies indicate that protection of the sparsely developed shoreline would not result in the necessary economic benefits to justify the construction of costly structures for beach erosion control and hurricane protection.

While structural measures specifically for beach erosion control are indicated to be economically unjustified and to have unacceptable social and community impacts, the need for protection of the shoreline was emphasized. Substantial interest was indicated in the concept of deposition of unconfined dredged material from the ship channel along the west bay shoreline and Dauphin Island for the abatement of erosion.

Appendix B



21 July 1975

The prospect for satisfactorily alleviating erosion problems on Dauphin Island by depositing the sandy material dredged from the Mobile Bay entrance channel upon the gulf shoreline of the island appears promising and will be pursued. The viability of depositing future "new work" material dredged from the ship channel within Mobile Bay upon the western shoreline cannot be determined without estuarian and other environmental impact studies but is considered meritorious of further consideration. Under the above concepts the eroding shorelines would be nourished by the dredged material primarily as disposal areas in support of the maintenance and modification of the Mobile Harbor navigation project. This plan would preserve any accreted land as the property of adjoining landowners and limit local costs resulting from the accreted land, to the amount required for necessary stabilization and a portion of the cost allocated to land enhancement. Therefore, the options for nourishment of the eroding shorelines with material dredged from the ship channel would be more appropriately considered under our ongoing study of navigation modifications for Mobile Harbor rather than under the study for beach erosion control and hurricane protection.

In view of the indications of the workshop meeting, further consideration for deposition of the dredged material from the ship channel along the eroding shorelines under the ongoing survey study for modification of the existing Federal project for Mobile Harbor is indicated to be warranted in lieu of the authorized beach erosion control and hurricane protection study. Since our study has not indicated any other likely structural alternatives for beach erosion control and hurricane protection, and in accordance with Corps' policy to apply our limited study funds where they can be most productive, I am proposing to conclude our beach erosion and hurricane protection study for Mobile County. A concise report which will address the foregoing considerations along with the finding that no additional Federal structural improvements are warranted at this time in the interest of beach erosion control and hurricane protection will be completed with programmed fiscal 1976 study funds.

I will be happy to meet with you to discuss the above proposal further or provide you any additional available information, if you desire.

Sincerely yours,

1 Incl  
As stated

DRAKE WILSON  
Colonel, CE  
District Engineer

HOWARD E. YEAGER, PRESIDENT

BAY HAAS, MEMBER

CLYDE SMITH, TREASURER



W. C. HELVESTO  
ADMINISTRATOR

DOUGLAS L. MOOL  
DEPUTY ADMINISTRATOR

## MOBILE COUNTY COMMISSION

POST OFFICE BOX 1443, MOBILE, ALABAMA 36601

October 1, 1975

Colonel Drake Wilson, C. E.  
District Engineer  
U. S. Army Corps of Engineers  
109 St. Joseph Street  
Mobile, Alabama 36602

Re: Beach Erosion and Hurricane  
Protection Study for Mobile  
County

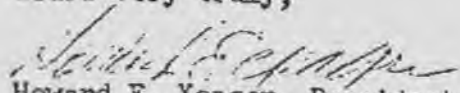
Dear Colonel Wilson:

The Mobile County Commission does hereby concur with your proposed actions with regards to the above referenced study as stated in your letter dated July 21, 1975.

We feel your decision to end this study upon finishing a report of your findings during this study is warranted due to the public's negative reaction at the public workshop held to introduce your solutions to the problem. We also feel your consideration of the deposition of the dredged material from the ship channel along the eroding shorelines is definitely a necessary part of the survey study for modifications of the existing Federal project for Mobile Harbor.

The Commission well understands that the work involved in a study such as this is often a thankless job, so we therefore want to take this opportunity to thank the U. S. Army Corps of Engineers and you, Colonel Wilson, for the fine work that has been done during this study. We look forward to seeing the final report for this study and any information from the Mobile Harbor Study.

Yours very truly,

  
Howard E. Yeager, President

Bay Haas, Commissioner

Appendix B

21 July 1975

Commissioners  
City of Mobile  
P. O. Box 1827  
Mobile, AL 36601

Dear Sirs:

Pursuant to a Congressional resolution adopted by the Senate Public Works Committee on 27 October 1970, the Corps of Engineers has underway a study to determine if justifiable steps can be taken to provide beach erosion control and hurricane protection measures for the shores of Mobile County, including Dauphin Island. In connection with this study a workshop meeting was held at Bayley's Ranch on 31 March 1975 to discuss with shoreline property owners possible erosion control and hurricane protection alternatives and the ramifications of the various plans. As a local government entity having jurisdiction over portions of the study area, I am inclosing for your information a copy of the transcript of the recent meeting.

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21 July 1975

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I will be happy to meet with you to discuss the above proposal further or provide you any additional available information, if you desire.

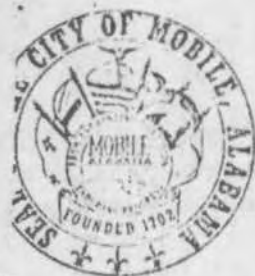
Sincerely yours,

1 Incl  
As stated

DRAKE WILSON  
Colonel, CE  
District Engineer

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Appendix B



# CITY OF MOBILE

MOBILE, ALABAMA

July 31, 1975

PLEASE ADDRESS REPLY TO:

P. O. Box 1827  
Mobile, Al. 36601

COMMISSIONERS

GARY A. GREENOUGH  
MAYOR

ROBERT B. DOYLE JR.  
PUBLIC SAFETY

LAMBERT C. HIMS  
PUBLIC WORKS

Drake Wilson, Colonel, CE  
Dist. Engineer  
Dept. of the Army  
Corps of Engineers  
P. O. Box 2288  
Mobile, Al. 36628

Dear Col. Wilson:

The Board of Commissioners in conference, Tuesday, July 29, 1975, instructed that I gratefully acknowledge receipt of your letter dated July 21, 1975, advising of a study that is underway to determine if justifiable steps can be taken to provide beach erosion control and hurricane protection measures, for the shores of Mobile County.

I am taking the liberty of forwarding a copy of your letter to Mr. Thomas K. Peavy, Public Works Director, for his information, by attaching a copy to a copy of this letter to you.

Sincerely,

*Richard L. Smith*

Richard L. Smith  
City Clerk

RLS/kap

cc: Mr. Thomas K. Peavy w/att  
Public Works Director  
City of Mobile

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