



# St. Tammany Parish, Louisiana Feasibility Study



**Appendix C – Annex Q - Magnuson-Stevens  
Fishery Conservation and Management Act**

**July 2023**

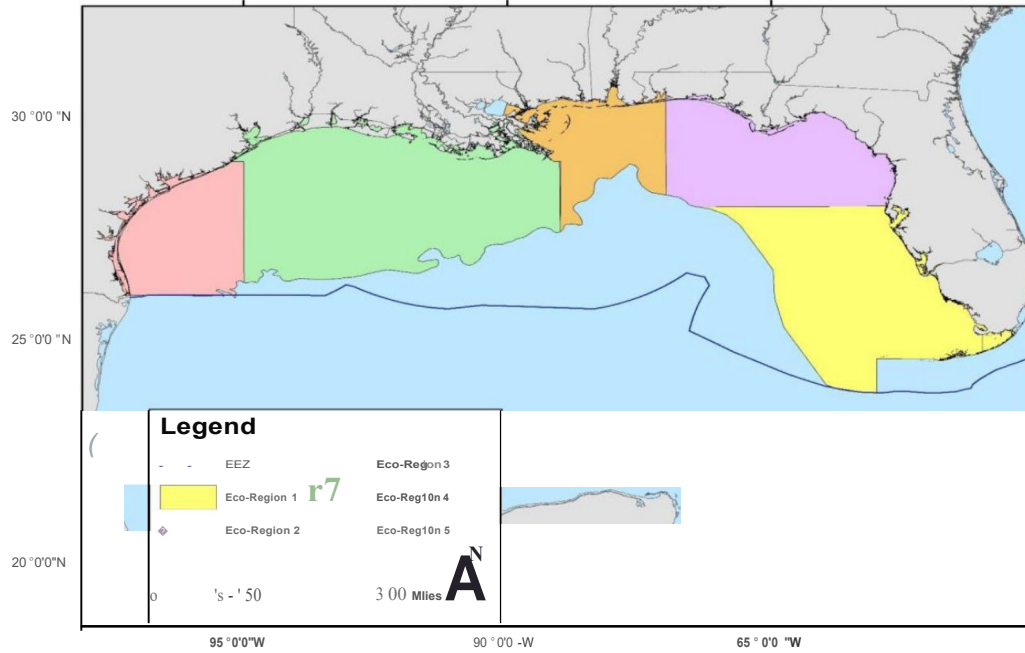
## **Essential Fish Habitat (EFH) Summary for Projects in Louisiana Waters**

The Gulf of Mexico Fishery Management Council (GMFMC) described EFH for each federally managed species, and further refined their designations by establishing five “eco-regions” subdividing the Gulf of Mexico (Figure 1). The Mississippi River serves as the line of demarcation for eco-regions 3 and 4; therefore, Louisiana’s coastal waters east of the Mississippi River are in eco-region 3, whereas those waters west of the river are in eco-region 4.

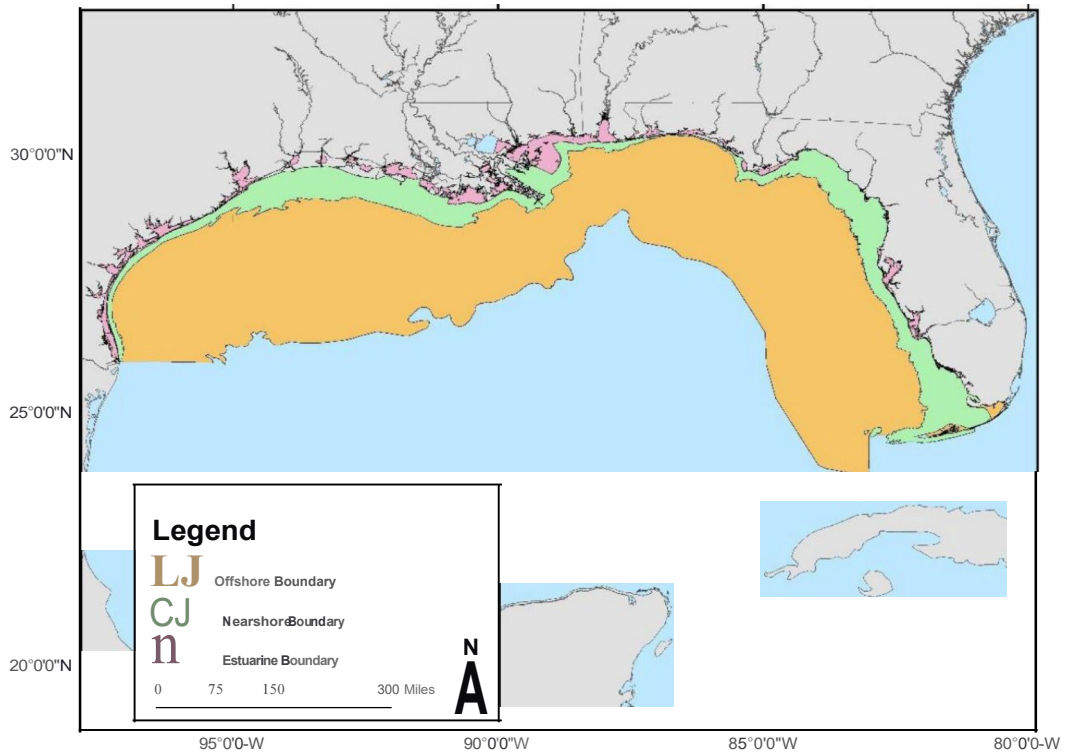
Within each eco-region EFH was further defined as occurring in estuarine, nearshore, or offshore waters (Figure 2). EFH designations for each species managed by GMFMC are based on species-specific life stage associations with different habitat types. NMFS also manages highly migratory species (HMS) such as tunas, billfish, and sharks; however, EFH designations for HMS are primarily based on species distribution data and are identified by geographical areas rather than specific habitat types.

Projects occurring in Louisiana’s estuarine and nearshore waters in eco-region 3 may potentially impact EFH for various life stages of the following federally-managed species (Tables 1-3): brown shrimp, white shrimp, pink shrimp, red drum, gray snapper, lane snapper, red snapper, vermilion snapper, gray triggerfish, Spanish mackerel, king mackerel, greater amberjack, cobia, hammerhead shark, scalloped hammerhead shark, blacktip shark, bull shark, spinner shark, Atlantic sharpnose shark, blacknose shark, and finetooth shark.

Projects occurring in Louisiana’s estuarine and nearshore waters in eco-region 4 may potentially impact EFH for various life stages of the following federally-managed species (Tables 4-6): brown shrimp, white shrimp, red drum, gray snapper, lane snapper, red snapper, vermilion snapper, gray triggerfish, king mackerel, almaco jack, greater amberjack, cobia, scalloped hammerhead shark, blacktip shark, bull shark, spinner shark, Atlantic sharpnose shark, blacknose shark, and finetooth shark.



**Figure 1.** Map of eco-regions textually described in the table above and referenced in the habitat association tables



**Figure 2.** Spatial depiction of habitat zones: estuarine (inside barrier islands and estuaries), nearshore (60 feet (18m) or less in depth) and offshore (greater than 60 feet (18m) in depth).

**Table 1. Estuarine Habitats – Gulf Council Managed Species – Eco-Region 3**  
 (● indicates habitat type designated as EFH for species' life stage)

| Estuarine Emergent Marsh               |      |        |             |                |               |       |                |
|--|------|--------|-------------|----------------|---------------|-------|----------------|
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      |        | ●           | ●              |               | ●     |                |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Brown Shrimp                           |      |        |             | ●              |               |       |                |
| White Shrimp                           |      |        |             | ●              |               |       |                |
| Mangrove                               |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Triggerfish                       |      |        |             | ●              |               |       |                |
| Lane Snapper                           |      |        |             | ●              | ●             |       |                |
| Estuarine Submerged Aquatic Vegetation |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      | ●      | ●           |                | ●             | ●     |                |
| Lane Snapper                           |      |        | ●           | ●              | ●             |       |                |
| Brown Shrimp                           |      |        |             | ●              |               |       |                |
| Pink Shrimp                            |      |        |             | ●              |               |       |                |
| Estuarine Pelagic                      |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Spanish Mackerel                       |      |        |             | ●              | ●             | ●     |                |
| Estuarine Oyster Reef                  |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Brown Shrimp                           |      |        |             | ●              |               |       |                |
| Estuarine Sand and Shell Bottom        |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      |        | ●           |                |               | ●     |                |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Lane Snapper                           |      |        |             | ●              | ●             |       |                |
| Brown Shrimp                           |      |        |             | ●              |               |       |                |
| Estuarine Mud/Soft Bottom              |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      | ●      | ●           | ●              |               | ●     |                |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Lane Snapper                           |      |        |             | ●              | ●             |       |                |
| Brown Shrimp                           |      |        |             | ●              |               |       |                |
| White Shrimp                           |      |        |             | ●              |               |       |                |

**Table 2.** Nearshore Habitats – Gulf Council Managed Species – Eco-Region 3  
 (● indicates habitat type designated as EFH for species' life stage)

| Nearshore Submerged Aquatic Vegetation |      |        |             |                |               |       |                |
|--|------|--------|-------------|----------------|---------------|-------|----------------|
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Lane Snapper                           |      |        | ●           | ●              | ●             |       |                |
| Pink Shrimp                            |      |        |             | ●              |               |       |                |
| Nearshore Hardbottom                   |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      |        |             |                | ●             | ●     |                |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Red Snapper                            |      |        |             | ●              |               |       |                |
| Vermilion Snapper                      |      |        |             | ●              | ●             |       |                |
| Nearshore Sand/Shell Bottom            |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      |        |             |                | ●             | ●     |                |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Gray Triggerfish                       |      |        |             |                |               | ●     | ●              |
| Lane Snapper                           |      |        |             | ●              | ●             | ●     |                |
| Red Snapper                            |      |        |             | ●              |               |       |                |
| Brown Shrimp                           |      |        |             |                |               | ●     |                |
| Pink Shrimp                            | ●    | ●      |             |                |               | ●     | ●              |
| White Shrimp                           | ●    |        |             |                |               |       |                |
| Nearshore Mud/Soft Bottom              |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Lane Snapper                           |      |        |             | ●              | ●             |       |                |
| Brown Shrimp                           |      |        |             |                |               | ●     |                |
| White Shrimp                           | ●    |        |             |                |               | ●     | ●              |
| Nearshore Shoal/Banks                  |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Snapper                           |      |        |             |                |               |       | ●              |
| Lane Snapper                           |      |        |             |                |               | ●     |                |
| Nearshore Reefs                        |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Snapper                           |      |        |             |                |               | ●     | ●              |
| Gray Triggerfish                       | ●    |        |             |                | ●             | ●     | ●              |
| Lane Snapper                           |      |        | ●           | ●              | ●             | ●     |                |
| Vermilion Snapper                      |      |        |             | ●              | ●             |       |                |

| Nearshore Pelagic                          |      |        |             |                |               |       |                |
|--|------|--------|-------------|----------------|---------------|-------|----------------|
| Species Common Name                        | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Cobia                                      | •    |        | •           | •              | •             | •     | •              |
| King Mackerel                              |      |        |             | •              | •             |       |                |
| Spanish Mackerel                           | •    | •      |             | •              | •             | •     | •              |
| Red Drum                                   | •    |        |             |                |               | •     |                |
| Greater Amberjack                          |      |        |             |                |               | •     |                |
| Red Snapper                                |      | •      |             |                |               |       |                |
| Pink Shrimp                                |      | •      |             |                |               |       |                |
| White Shrimp                               |      | •      |             |                |               |       |                |
| Nearshore Drift Algae ( <i>Sargassum</i> ) |      |        |             |                |               |       |                |
| Species Common Name                        | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Triggerfish                           |      | •      | •           | •              | •             |       |                |
| Greater Amberjack                          |      |        |             | •              | •             |       |                |

**Table 3.** Highly Migratory Species EFH Designations – State Waters of Eco-Region 3

| Species Common Name        | Life Stage         | EFH State Waters of Eco-Region 3  |
|----------------------------|--------------------|---|
| Atlantic Yellowfin Tuna    | Juvenile           | Mississippi River birdfoot delta  |
|                            | Adult              | Off the mouth of Mississippi River  |
| Swordfish                  | Juvenile           | Mississippi River birdfoot delta  |
| Sailfish                   | Juvenile           | Off mouth of Mississippi River  |
| Hammerhead Shark           | All                | Mississippi Sound west of Mobile Bay to Cat Island and south to Chandeleur Islands  |
| Scalloped Hammerhead Shark | Neonate            | All estuaries and nearshore waters  |
|                            | Juvenile           | Mississippi River birdfoot delta and all estuarine and nearshore waters east of Horn Island to Gulf Breeze  |
|                            | Adult              | Mississippi Sound Horn Island to Dauphin Island; nearshore waters Horn Island east to Gulf Breeze   |
| Nurse Shark                | Adult              | Nearshore and offshore Pensacola and Perdido Bays   |
| Bignose Shark              | All                | Seaward edge of state waters offshore Mississippi River birdfoot delta  |
| Blacktip Shark             | Neonate & Juvenile | All estuarine, nearshore, and offshore waters (ex. Lake Borgne)   |
|                            | Adult              | All estuarine, nearshore, and offshore waters (ex. Lake Borgne, Mobile, Perdido, and Pensacola Bays)  |
| Bull Shark                 | Neonate & Juvenile | Lake Borgne east to waters around Ship Island; Lower Mobile Bay and nearshore waters off Dauphin Island to Gulf Breeze  |
|                            | Juvenile           | All waters Mississippi River delta to Perdido Bay (ex. portions of Chandeleur Sound and Lake Borgne)  |
|                            | Adults             | Estuarine waters of birdfoot delta, Chandeleur Island; Lower Mobile Bay and Mississippi Sound around Dauphin Island and Perdido Bay; nearshore and offshore waters Hat Island east to Pensacola Bay |

| <b>Species Common Name</b> | <b>Life Stage</b>    | <b>EFH State Waters of Eco-Region 3</b>   |
|----------------------------|----------------------|---|
| Dusky Shark                | All                  | Gulf of Mexico nearshore and offshore water >30 feet off mouth of Pensacola Bay   |
| Lemon Shark                | Juvenile             | Nearshore waters off Terrebonne Bay   |
| Sandbar Shark              | Neonate              | Portions of Perdido Bay, Pensacola Bay and nearshore and offshore waters off mouth of Pensacola Bay   |
| Silky Shark                | All                  | Mississippi River birdfoot delta; nearshore and offshore waters off Escambia County   |
| Spinner Shark              | Juvenile             | Mississippi River birdfoot delta, outer Chandeleur Sound, Mississippi Sound, Mobile Bay, and Perdido Bay; nearshore waters (ex. off Pensacola Bay)                                    |
|                            | Adult                | Mississippi River birdfoot delta, waters off Chandeleur Island, and nearshore waters off Pensacola Bay into East Pensacola Bay and Santa Rosa Sound                                   |
| Tiger Shark                | Neonate              | Nearshore waters east of Gulf Shores; Perdido Bay, lower Pensacola Bay and Santa Rosa Sound   |
|                            | Juvenile             | Eastern Mississippi Sound from Pascagoula (ex. Grande and Portersville Bays), lower Mobile and Bon Secour Bays, Perdido and Escambia Bays; all nearshore waters east of Horn Island   |
| Whale Shark                | All                  | Waters off Mississippi River birdfoot delta; waters around Chandeleur Islands   |
| Bonnethead Shark           | Neonate and Juvenile | Mississippi Sound east of Ship Island; nearshore waters to 60 feet  |
|                            | Adult                | Mobile Bay; Mississippi Sound east of Ship Island; nearshore waters to 60 feet  |
| Atlantic Sharpnose Shark   | Neonate              | Estuarine, nearshore, and offshore waters to 90 feet  |
|                            | Juvenile             | All NS and offshore waters to 90 feet; Estuarine waters W of Mobile Bay (ex. Lake Borgne)   |
|                            | Adult                | Estuarine waters west of Mobile Bay, nearshore and offshore waters to 200 feet  |
| Blacknose Shark            | Juvenile             | Waters around Chandeleur and Dauphin Islands  |
|                            | Adult                | All nearshore waters Perdido Bay to Mississippi River birdfoot delta, estuarine waters of Mississippi Sound to Horn Island and seaward band of state waters around Chandeleur Islands |
| Finetooth Shark            | Neonate              | Nearshore waters west of Perdido Bay to Chandeleur Island; Mississippi Sound (ex. Lake Borgne)  |
|                            | Juvenile & Adult     | Nearshore and offshore waters Pensacola Bay to Mississippi River birdfoot delta; Mississippi Sound and Chandeleur Sound (ex. Lake Borgne)   |

**Table 4.** Estuarine Habitats – Gulf Council Managed Species – Eco-Region 4  
 (● indicates habitat type designated as EFH for species' life stage)

| Estuarine Emergent Marsh               |      |        |             |                |               |       |                |
|--|------|--------|-------------|----------------|---------------|-------|----------------|
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      |        | ●           | ●              |               | ●     |                |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Brown Shrimp                           |      |        |             | ●              |               |       |                |
| White Shrimp                           |      |        |             | ●              |               |       |                |
| Mangrove                               |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Triggerfish                       |      |        |             | ●              |               |       |                |
| Lane Snapper                           |      |        |             | ●              | ●             |       |                |
| Estuarine Submerged Aquatic Vegetation |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      | ●      | ●           |                | ●             | ●     |                |
| Lane Snapper                           |      |        | ●           | ●              | ●             |       |                |
| Brown Shrimp                           |      |        |             | ●              |               |       |                |
| Estuarine Hard Bottom                  |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| none                                   |      |        |             |                |               |       |                |
| Estuarine Oyster Reef                  |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Brown Shrimp                           |      |        |             | ●              |               |       |                |
| Estuarine Sand and Shell Bottom        |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      |        | ●           |                |               | ●     |                |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Lane Snapper                           |      |        |             | ●              | ●             |       |                |
| Brown Shrimp                           |      |        |             | ●              |               |       |                |
| Estuarine Mud/Soft Bottom              |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      | ●      | ●           | ●              |               | ●     |                |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Lane Snapper                           |      |        |             | ●              | ●             |       |                |
| Brown Shrimp                           |      |        |             | ●              |               |       |                |
| White Shrimp                           |      |        |             | ●              |               |       |                |



**Table 5.** Nearshore Habitats – Gulf Council Managed Species – Eco-Region 4  
 (● indicates habitat type designated as EFH for species’ life stage)

| Nearshore Submerged Aquatic Vegetation |      |        |             |                |               |       |                |
|--|------|--------|-------------|----------------|---------------|-------|----------------|
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Lane Snapper                           |      |        | ●           | ●              | ●             |       |                |
| Nearshore Hardbottom                   |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      |        |             |                | ●             | ●     |                |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Red Snapper                            |      |        |             | ●              |               |       |                |
| Vermilion Snapper                      |      |        |             | ●              | ●             |       |                |
| Nearshore Sand/Shell Bottom            |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                               |      |        |             |                | ●             | ●     |                |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Gray Triggerfish                       |      |        |             |                |               | ●     | ●              |
| Lane Snapper                           |      |        |             | ●              | ●             | ●     |                |
| Red Snapper                            |      |        |             |                |               | ●     |                |
| Brown Shrimp                           |      |        |             |                |               | ●     |                |
| White Shrimp                           | ●    |        |             |                |               |       |                |
| Nearshore Mud/Soft Bottom              |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Snapper                           |      |        |             |                |               | ●     |                |
| Lane Snapper                           |      |        |             | ●              | ●             |       |                |
| Red Snapper                            |      |        |             | ●              |               |       |                |
| Brown Shrimp                           |      |        |             |                |               | ●     |                |
| White Shrimp                           | ●    |        |             |                |               | ●     | ●              |
| Nearshore Shoal/Banks                  |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Snapper                           |      |        |             |                |               |       | ●              |
| Lane Snapper                           |      |        |             |                |               | ●     |                |
| Nearshore Reefs                        |      |        |             |                |               |       |                |
| Species Common Name                    | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Snapper                           |      |        |             |                |               | ●     | ●              |
| Gray Triggerfish                       | ●    |        |             |                | ●             | ●     | ●              |
| Lane Snapper                           |      |        | ●           | ●              | ●             | ●     |                |
| Vermilion Snapper                      |      |        |             | ●              | ●             |       |                |

| Nearshore Pelagic                          |      |        |             |                |               |       |                |
|--|------|--------|-------------|----------------|---------------|-------|----------------|
| Species Common Name                        | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Cobia                                      | •    |        | •           | •              | •             | •     | •              |
| King Mackerel                              |      |        |             | •              | •             |       |                |
| Red Drum                                   | •    |        |             |                |               | •     |                |
| Greater Amberjack                          |      |        |             |                |               | •     |                |
| Red Snapper                                |      | •      |             |                |               |       |                |
| White Shrimp                               |      | •      |             |                |               |       |                |
| Nearshore Drift Algae ( <i>Sargassum</i> ) |      |        |             |                |               |       |                |
| Species Common Name                        | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Almaco Jack                                |      |        |             | •              | •             |       |                |
| Gray Triggerfish                           |      | •      | •           | •              | •             |       |                |
| Greater Amberjack                          |      |        |             | •              | •             |       |                |

**Table 6.** Highly Migratory Species EFH Designations – State Waters of Eco-Region 4

| Species Common Name        | Life Stage         | EFH State Waters Eco-Region 4   |
|----------------------------|--------------------|---|
| Atlantic Yellowfin Tuna    | Juvenile           | Mississippi River birdfoot delta  |
|                            | Adults             | Off the mouth of the Mississippi River  |
| Swordfish                  | Juvenile & Adult   | Mississippi River birdfoot delta  |
| Sailfish                   | Juvenile           | Off the mouth of the Mississippi River  |
| Hammerhead Shark           | All                | Nearshore and offshore Brazoria and Galveston Counties  |
| Scalloped Hammerhead Shark | Neonate            | Galveston Bay; Vermilion Bay to West Bay; All nearshore waters to 30 fathoms  |
|                            | Juvenile           | West Galveston Bay; nearshore off Galveston Island  |
|                            | Adult              | Mississippi River birdfoot delta  |
| Bignose Shark              | All                | Seaward edge of state waters off Mississippi River birdfoot delta   |
| Blacktip Shark             | Neonate & Juvenile | Estuarine waters of Galveston, Terrebonne and Timbalier Bays; all nearshore and offshore waters   |
|                            | Adult              | Estuarine waters of Vermilion, Atchafalaya, Terrebonne and Timbalier Bays; all nearshore and offshore waters  |
| Bull Shark                 | Neonate            | All estuarine waters; nearshore waters Freeport to mouth of Sabine Lake; nearshore waters off west Cameron Parrish  |
|                            | Juvenile           | All estuarine waters; nearshore waters Freeport to mouth of Sabine Lake; nearshore waters off west Cameron Parrish; Terrebonne Bay to Mississippi River delta                                   |
|                            | Adults             | Estuarine waters Christmas Bay to Galveston Bay (ex. North Galveston/Trinity and East Bay); nearshore and offshore waters off Brazoria and Galveston Counties; Mississippi River birdfoot delta |
| Lemon Shark                | Neonate            | Estuarine waters from Freeport to Pelican Island; nearshore and offshore waters from Freeport to Pelican Island (ex. Waters off east Galveston Island)  |

| Species Common Name      | Life Stage           | EFH State Waters Eco-Region 4  |
|--------------------------|----------------------|--|
|                          | Juvenile             | Nearshore and offshore waters off Galveston and Brazoria Counties; estuarine waters of Galveston Bay, West Bay and Christmas Bay (ex. Portions of Galveston, Trinity and East Bays)  |
| Silky Shark              | ALL                  | Mississippi River birdfoot delta   |
| Spinner Shark            | Neonate              | Galveston Bay (including East, West and Trinity Bays) and nearshore waters off Brazoria, Galveston, and Chambers Counties; Terrebonne Bay and estuarine and nearshore waters to Grand Isle   |
|                          | Juvenile             | Galveston Bay (including East, West and Trinity Bays) all nearshore waters (ex. off mouth of Mermentau River and between Vermilion and Atchafalaya Bays); Terrebonne and Barataria Bays and the Mississippi birdfoot delta                     |
|                          | Adult                | Mississippi River birdfoot delta   |
| Tiger Shark              | Adult                | Nearshore waters off Mississippi River birdfoot delta  |
| Whale Shark              | All                  | Waters off Mississippi River birdfoot delta  |
| Atlantic Angel Shark     | All                  | Offshore waters at seaward edge of state waters off West Pass  |
| Bonnethead Shark         | Neonate and Juvenile | Estuarine and nearshore waters of Brazoria and Galveston Counties  |
| Atlantic Sharpnose Shark | Neonate              | All nearshore and offshore waters Freeport to the mouth of the Mississippi, Christmas Bay, Galveston Bay (incl. West, Trinity and East Bays), Vermilion, West Cote Blanche, Atchafalaya, lower Terrebonne and Timbalier Bays and Barataria Bay |
|                          | Juvenile             | All nearshore and offshore waters Freeport to the mouth of the Mississippi, Christmas Bay, West Bay, lower Terrebonne and Timbalier Bays   |
|                          | Adult                | All nearshore and offshore waters Freeport to the mouth of the Mississippi, Christmas Bay, Galveston Bay (incl. West, Trinity and East Bays), lower Terrebonne and Timbalier Bays and Barataria Bay  |
| Blacknose Shark          | Adult                | Nearshore waters off Galveston Island and Mississippi River birdfoot delta   |
| Finetooth Shark          | Neonate              | Lower Galveston Bay, West Bay and nearshore waters off Galveston Island and Boliver Peninsula; Timbalier Bay and waters offshore Timbalier islands   |
|                          | Juvenile & Adult     | Estuarine and nearshore waters E of Terrebonne Bay   |



# NOAA FISHERIES

Southeast Region – Habitat Conservation Division

## Appendix 3. Gulf of Mexico Essential Fish Habitat – Eco-Region 3 Pensacola Bay, Florida, west to the Mississippi River Delta.

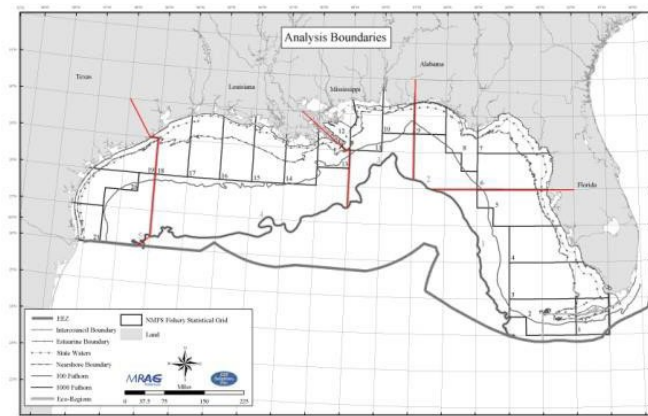
### Purpose

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires regional fishery management councils, and NOAA’s National Marine Fisheries Service (NMFS), to designate essential fish habitat (EFH) in fishery management plans for all federally managed fisheries. Some EFH designations extend beyond state territorial boundaries into the Gulf of Mexico and can extend to the 200-mile boundary of the United States’ exclusive economic zone.

The Magnuson-Stevens Act also requires federal agencies which permit/license, fund, or carry out activities which may adversely affect EFH to consult with NMFS regarding potential impacts of their actions on EFH, and respond in writing to NMFS recommendations. Because the vast majority of activities requiring consultation occur in the coastal zone, the scope of this document is focused on estuarine and nearshore state waters.

### Background Summary

The Gulf of Mexico Fishery Management Council (Gulf Council) manages over 40 species<sup>1</sup>, plus corals, in the Gulf of Mexico. During the process of analyzing, identifying, and describing EFH for each managed species, the Gulf Council refined their designations by establishing five “eco-regions” utilizing an existing statistical grid system subdividing the Gulf of Mexico. Within each eco-region EFH was further defined as occurring either in estuarine (inside barrier islands and estuaries), nearshore (waters less than 18-meters/60-feet deep) or offshore waters (greater than 18-meters/60-feet deep).



Map of NOAA Fisheries Statistical Grids (black gridlines) and Gulf Council Eco-regions (red lines).

Eco-region 3 extends from Pensacola Bay, Florida, to the Mississippi River Delta. This eco-region is subject to nearshore salinity fluctuations influenced by the Mississippi and Atchafalaya Rivers. This eco-region contains predominantly soft bottom habitats and greater amounts of marsh and oyster reefs.

<sup>1</sup> The Gulf Council designated EFH in 2005 for 55 species (plus corals) under management at that time. Since 2005, several fishery species have been identified as not requiring federal fishery management by the Gulf Council.

The Gulf Council utilized a variety of scientific literature to identify species distribution data, relative density information, and species-specific life stage associations with different habitat types. This information was analyzed to develop EFH designations for each species managed by the Council.

NMFS also manages highly migratory species (HMS) such as tunas, billfish, and sharks. EFH designations within state territorial waters of the Gulf Council's eco-region are also provided for HMS managed by NMFS. EFH designations for HMS are primarily based on species distribution data. Rather than specific habitat types, NMFS identified geographic areas as EFH. The spatial boundaries were established using a geographic information system analysis tool to designate areas containing a high percentage (95%) of spatial distribution information.

### EFH Tables

The tables on the following pages summarize EFH categories for estuarine and nearshore state waters of eco-region 3. Table 1 identifies Gulf Council managed species' life stages where distribution and density information was known and met the Gulf Council identified threshold for designating EFH (EFH was not designated for species or species life stages which did not occur, or occurred at a very low density, in an eco-region) and the preferred depth ranges, if known. Tables 2 and 3 identify estuarine and nearshore habitat types, respectively, identified and described as EFH by species' life stage. Table 4 identifies areas in state waters identified and described as EFH for HMS species.

### Questions:

Questions regarding these EFH summary tables should be directed to David Dale, Southeast Regional Office EFH Coordinator at 727-824-5317 or david.dale@noaa.gov.

### **References:**

16 U.S.C. §1853(a)(7)

50 Code of Federal Regulations Part 600

GMFMC. 1998. Generic amendment for addressing essential fish habitat requirements in the Fishery Management plans of the Gulf of Mexico. Gulf of Mexico Fishery Management Council, Tampa, Florida.

GMFMC. 2004. Final Environmental Impact Statement for the Generic Amendment to the fishery management plans of the Gulf of Mexico. Gulf of Mexico Fishery Management Council, Tampa, Florida.

GMFMC. 2005. Generic amendment for addressing essential fish habitat requirements in the Fishery Management plans of the Gulf of Mexico. Gulf of Mexico Fishery Management Council, Tampa, Florida.

NMFS. 2009. Final Amendment 1 to the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan, Essential Fish Habitat. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Sustainable Fisheries, Highly Migratory Species Management Division, Silver Spring, MD. Public Document. pp. 395.

NMFS. 2011. Fisheries of the United States 2010. National Marine Fisheries Service, Office of Science and Technology, Silver Spring, MD. 118 pages.

**Table 1. Gulf Council EFH Designations and Depth Preferences – Eco-Region 3**

| <b>EFH Designations and Depth Preferences by Life Stage in meters (m)</b>  |  |         |             |                |               |         |                |
|--|--|---------|-------------|----------------|---------------|---------|----------------|
| NOTE: Gulf Council EFH designations extend to 182-m (100 fathoms) except for royal red shrimp (585-m or 325 fathoms).  |  |         |             |                |               |         |                |
| Species Common Name  | Eggs   | Larvae  | Post Larvae | Early Juvenile | Late Juvenile | Adult   | Spawning Adult |
| Cobia  | ND   | 11-53   | 11-53       | 5-300          | 6-9           | 1-70    | 1-70           |
| King Mackerel  | 35-180   | 35-180  | ND          | 9 max          | ND            | 35 min  | 35-180         |
| Spanish Mackerel   | 50 max   | 9-84    | ND          | ND             | 50 max        | 3-75    | 50 max         |
| Red Drum   | ND   | ND      | ND          | 0-3            | 0-5           | 1-70    | 40-70          |
| Almaco Jack  | NE   | NE      | NE          | 15-160         | 15-160        | 15-160  | NE             |
| Gag Grouper  | NE   | NE      | NE          | NE             | NE            | 20-100  | 50-120         |
| Golden Tilefish  | 80-450   | 80-450  | 80-450      | 80-450         | 80-450        | 80-450  | 80-450         |
| Goldface Tilefish  | 60-256   | 60-256  | 60-256      | ND             | ND            | 60-256  | 60-256         |
| Gray Snapper   | NE   | NE      | NE          | NE             | NE            | 0-180   | 0-180          |
| Gray Triggerfish   | 10-100   | ND      | ND          | ND             | 10-100        | 10-100  | 10-100         |
| Greater Amberjack  | 1-360  | 1-360   | 1-360       | 1-360          | 1-360         | 1-360   | 1-360          |
| Lane Snapper   | 4-132  | 4-132   | ND          | 0-20           | 0-20          | 4-132   | 4-132          |
| Lesser Amberjack   | ND   | ND      | ND          | 55-130         | 55-130        | 55-130  | 55-130         |
| Red Snapper  | 18-37  | 18-37   | 18-37       | 17-183         | 20-46         | 7-146   | 18-37          |
| Vermillion Snapper   | 180-300  | 180-300 | 180-300     | 1-25           | 1-25          | 180-300 | 180-300        |
| Warsaw Grouper   | 40-525   | 40-525  | 40-525      | 20-30          | 20-30         | 40-525  | 40-525         |
| Wenchman   | 80-200   | 80-200  | 80-200      | 19-378         | 19-378        | 19-378  | 80-200         |
| Brown Shrimp   | 18-110   | 0-82    | NA          | 0-18           | NA            | 14-110  | 18-110         |
| Pink Shrimp  | 9-48   | 1-50    | NA          | 1-65           | NA            | 1-110   | 9-48           |
| Royal Red Shrimp   | 250-550  | 250-550 | NA          | 250-550        | NA            | 140-730 | 520-550        |
| White Shrimp   | 9-34   | 1-82    | NA          | 1-30           | NA            | 9-27    | 9-34           |
| Spiny Lobster  | NA   | 1-100   | NA          | NE             | NE            | NE      | NA             |
| Coral  | EFH for coral consists of the total distribution of coral species and life stages throughout the Gulf of Mexico. |         |             |                |               |         |                |
| <b>NOTES:</b><br>ND = No Data<br>NA = Post Larvae and Late Juvenile life stages not utilized for Shrimp; Eggs, Post Larvae, and Spawning Adult life stages not utilized for Spiny Lobster<br>NE = EFH not designated; presence/absence or density threshold not met in this eco-region for this life stage |  |         |             |                |               |         |                |

**Table 2. Estuarine Habitats – Gulf Council Managed Species – Eco-Region 3**

(● indicates habitat type designated as EFH for species' life stage)

| <b>Estuarine Emergent Marsh</b>               |      |        |             |                |               |       |                |
|---|------|--------|-------------|----------------|---------------|-------|----------------|
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                                      |      |        | ●           | ●              |               | ●     |                |
| Gray Snapper                                  |      |        |             |                |               | ●     |                |
| Brown Shrimp                                  |      |        |             | ●              |               |       |                |
| White Shrimp                                  |      |        |             | ●              |               |       |                |
| <b>Mangrove</b>                               |      |        |             |                |               |       |                |
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Triggerfish                              |      |        |             | ●              |               |       |                |
| Lane Snapper                                  |      |        |             | ●              | ●             |       |                |
| <b>Estuarine Submerged Aquatic Vegetation</b> |      |        |             |                |               |       |                |
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                                      |      | ●      | ●           |                | ●             | ●     |                |
| Lane Snapper                                  |      |        | ●           | ●              | ●             |       |                |
| Brown Shrimp                                  |      |        |             | ●              |               |       |                |
| Pink Shrimp                                   |      |        |             | ●              |               |       |                |
| <b>Estuarine Pelagic</b>                      |      |        |             |                |               |       |                |
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Spanish Mackerel                              |      |        |             | ●              | ●             | ●     |                |
| <b>Estuarine Oyster Reef</b>                  |      |        |             |                |               |       |                |
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Brown Shrimp                                  |      |        |             | ●              |               |       |                |
| <b>Estuarine Sand and Shell Bottom</b>        |      |        |             |                |               |       |                |
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                                      |      |        | ●           |                |               | ●     |                |
| Gray Snapper                                  |      |        |             |                |               | ●     |                |
| Lane Snapper                                  |      |        |             | ●              | ●             |       |                |
| Brown Shrimp                                  |      |        |             | ●              |               |       |                |
| <b>Estuarine Mud/Soft Bottom</b>              |      |        |             |                |               |       |                |
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                                      |      | ●      | ●           | ●              |               | ●     |                |
| Gray Snapper                                  |      |        |             |                |               | ●     |                |
| Lane Snapper                                  |      |        |             | ●              | ●             |       |                |
| Brown Shrimp                                  |      |        |             | ●              |               |       |                |
| White Shrimp                                  |      |        |             | ●              |               |       |                |

**Table 3. Nearshore Habitats – Gulf Council Managed Species**

(● indicates habitat type designated as EFH for species' life stage)

| <b>Nearshore Submerged Aquatic Vegetation</b> |      |        |             |                |               |       |                |
|---|------|--------|-------------|----------------|---------------|-------|----------------|
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Lane Snapper                                  |      |        | ●           | ●              | ●             |       |                |
| Pink Shrimp                                   |      |        |             | ●              |               |       |                |
| <b>Nearshore Hardbottom</b>                   |      |        |             |                |               |       |                |
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                                      |      |        |             |                | ●             | ●     |                |
| Gray Snapper                                  |      |        |             |                |               | ●     |                |
| Red Snapper                                   |      |        |             | ●              |               |       |                |
| Vermilion Snapper                             |      |        |             | ●              | ●             |       |                |
| <b>Nearshore Sand/Shell Bottom</b>            |      |        |             |                |               |       |                |
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Red Drum                                      |      |        |             |                | ●             | ●     |                |
| Gray Snapper                                  |      |        |             |                |               | ●     |                |
| Gray Triggerfish                              |      |        |             |                |               | ●     | ●              |
| Lane Snapper                                  |      |        |             | ●              | ●             | ●     |                |
| Red Snapper                                   |      |        |             | ●              |               |       |                |
| Brown Shrimp                                  |      |        |             |                |               | ●     |                |
| Pink Shrimp                                   | ●    | ●      |             |                |               | ●     | ●              |
| White Shrimp                                  | ●    |        |             |                |               |       |                |
| <b>Nearshore Mud/Soft Bottom</b>              |      |        |             |                |               |       |                |
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Snapper                                  |      |        |             |                |               | ●     |                |
| Lane Snapper                                  |      |        |             | ●              | ●             |       |                |
| Brown Shrimp                                  |      |        |             |                |               | ●     |                |
| White Shrimp                                  | ●    |        |             |                |               | ●     | ●              |
| <b>Nearshore Shoal/Banks</b>                  |      |        |             |                |               |       |                |
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Snapper                                  |      |        |             |                |               |       | ●              |
| Lane Snapper                                  |      |        |             |                |               | ●     |                |
| <b>Nearshore Reefs</b>                        |      |        |             |                |               |       |                |
| Species Common Name                           | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Snapper                                  |      |        |             |                |               | ●     | ●              |
| Gray Triggerfish                              | ●    |        |             |                | ●             | ●     | ●              |
| Goliath Grouper                               |      |        |             | ●              | ●             | ●     |                |
| Lane Snapper                                  |      |        | ●           | ●              | ●             | ●     |                |
| Vermilion Snapper                             |      |        |             | ●              | ●             |       |                |



| <b>Nearshore Pelagic</b>                        |      |        |             |                |               |       |                |
|---|------|--------|-------------|----------------|---------------|-------|----------------|
| Species Common Name                             | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Cobia   | •    |        | •           | •              | •             | •     | •              |
| King Mackerel                                   |      |        |             | •              | •             |       |                |
| Spanish Mackerel                                | •    | •      |             | •              | •             | •     | •              |
| Red Drum  | •    |        |             |                |               | •     |                |
| Greater Amberjack                               |      |        |             |                |               | •     |                |
| Red Snapper                                     |      | •      |             |                |               |       |                |
| Pink Shrimp                                     |      | •      |             |                |               |       |                |
| White Shrimp                                    |      | •      |             |                |               |       |                |
| <b>Nearshore Drift Algae (<i>Sargassum</i>)</b> |      |        |             |                |               |       |                |
| Species Common Name                             | Eggs | Larvae | Post Larvae | Early Juvenile | Late Juvenile | Adult | Spawning Adult |
| Gray Triggerfish                                |      | •      | •           | •              | •             |       |                |
| Greater Amberjack                               |      |        |             | •              | •             |       |                |

**Table 4. Highly Migratory Species EFH Designations – State Waters of Eco-Region 3**

| <b>Species Common Name</b> | <b>Life Stage</b>  | <b>EFH State Waters of Eco-Region 3</b>   |
|----------------------------|--------------------|---|
| Atlantic Yellowfin Tuna    | Juvenile           | Mississippi River birdfoot delta  |
|                            | Adult              | Off the mouth of Mississippi River  |
| Swordfish                  | Juvenile           | Mississippi River birdfoot delta  |
| Sailfish                   | Juvenile           | Off mouth of Mississippi River  |
| Hammerhead Shark           | All                | Mississippi Sound west of Mobile Bay to Cat Island and south to Chandeleur Islands  |
| Scalloped Hammerhead Shark | Neonate            | All estuaries and nearshore waters  |
|                            | Juvenile           | Mississippi River birdfoot delta and all estuarine and nearshore waters east of Horn Island to Gulf Breeze  |
|                            | Adult              | Mississippi Sound Horn Island to Dauphin Island; nearshore waters Horn Island east to Gulf Breeze   |
| Nurse Shark                | Adult              | Nearshore and offshore Pensacola and Perdido Bays   |
| Bignose Shark              | All                | Seaward edge of state waters offshore Mississippi River birdfoot delta  |
| Blacktip Shark             | Neonate & Juvenile | All estuarine, nearshore, and offshore waters (ex. Lake Borgne)   |
|                            | Adult              | All estuarine, nearshore, and offshore waters (ex. Lake Borgne, Mobile, Perdido, and Pensacola Bays)  |
| Bull Shark                 | Neonate & Juvenile | Lake Borgne east to waters around Ship Island; Lower Mobile Bay and nearshore waters off Dauphin Island to Gulf Breeze  |
|                            | Juvenile           | All waters Mississippi River delta to Perdido Bay (ex. portions of Chandeleur Sound and Lake Borgne)  |
|                            | Adults             | Estuarine waters of birdfoot delta, Chandeleur Island; Lower Mobile Bay and Mississippi Sound around Dauphin Island and Perdido Bay; nearshore and offshore waters Hat Island east to Pensacola Bay |
| Dusky Shark                | All                | Gulf of Mexico nearshore and offshore water >30 feet off mouth of Pensacola Bay   |
| Lemon Shark                | Juvenile           | Nearshore waters off Terrebonne Bay   |
| Sandbar Shark              | Neonate            | Portions of Perdido Bay, Pensacola Bay and nearshore and offshore waters off mouth of Pensacola Bay   |

| <b>Species Common Name</b> | <b>Life Stage</b>    | <b>EFH State Waters of Eco-Region 3</b>   |
|----------------------------|----------------------|---|
| Silky Shark                | All                  | Mississippi River Birdfoot Delta; nearshore and offshore waters off Escambia County   |
| Spinner Shark              | Juvenile             | Mississippi River birdfoot delta, outer Chandeleur Sound, Mississippi Sound, Mobile Bay, and Perdido Bay; nearshore waters (Ex. off Pensacola Bay)                                    |
|                            | Adult                | Mississippi River birdfoot delta, waters off Chandeleur Island, and nearshore waters off Pensacola Bay into East Pensacola Bay and Santa Rosa Sound                                   |
| Tiger Shark                | Neonate              | Nearshore waters east of Gulf Shores; Perdido Bay, lower Pensacola Bay and Santa Rosa Sound   |
|                            | Juvenile             | Eastern Mississippi Sound from Pascagoula (ex. Grande and Portersville Bays), lower Mobile and Bon Secour Bays, Perdido and Escambia Bays; all nearshore waters east of Horn Island   |
| Whale Shark                | All                  | Waters off Mississippi River birdfoot delta; waters around Chandeleur Islands   |
| Bonnethead Shark           | Neonate and Juvenile | Mississippi Sound east of Ship Island; nearshore waters to 60 feet  |
|                            | Adult                | Mobile Bay; Mississippi Sound east of Ship Island; nearshore waters to 60 feet  |
| Atlantic Sharpnose Shark   | Neonate              | Estuarine, nearshore, and offshore waters to 90 feet  |
|                            | Juvenile             | All NS and offshore waters to 90 feet; Estuarine waters W of Mobile Bay (ex. Lake Borgne)   |
|                            | Adult                | Estuarine waters west of Mobile Bay, nearshore and offshore waters to 200 feet  |
| Blacknose Shark            | Juvenile             | Waters around Chandeleur and Dauphin Islands  |
|                            | Adult                | All nearshore waters Perdido Bay to Mississippi River birdfoot delta, estuarine waters of Mississippi Sound to Horn Island and seaward band of state waters around Chandeleur Islands |
| Finetooth Shark            | Neonate              | Nearshore waters west of Perdido Bay to Chandeleur Island; Mississippi Sound (ex. Lake Borgne)  |
|                            | Juvenile & Adult     | Nearshore and offshore waters Pensacola Bay to Mississippi River birdfoot delta; Mississippi Sound and Chandeleur Sound (ex. Lake Borgne)   |

For more information, please visit us on the internet at:

<http://sero.nmfs.noaa.gov/>



NOAA Fisheries Service  
Southeast Regional Office  
Habitat Conservation Division  
263 13<sup>th</sup> Avenue South  
St. Petersburg, Florida 33701

U.S. Department of Commerce | National Oceanic and Atmospheric Administration

National Marine Fisheries Service



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**NATIONAL MARINE FISHERIES SERVICE**  
Southeast Regional Office  
263 13<sup>th</sup> Avenue South  
St. Petersburg, Florida 33701-5505  
<https://www.fisheries.noaa.gov/region/southeast>

July 22, 2021

F/SER46/AR:bh  
225-380-0058

Mr. Marshall K. Harper, Chief  
Environmental Planning Branch  
Regional Planning and Environment Division South  
U.S. Army Corps of Engineers  
New Orleans Environmental Branch, CEMVN-PDS-C  
7400 Leake Avenue  
New Orleans, Louisiana 70118

Dear Mr. Harper:

NOAA's National Marine Fisheries Service (NMFS) has reviewed the Draft Integrated Feasibility Report (DIFR) and Draft Environmental Impact Statement (DEIS), for the St. Tammany Parish Louisiana, Feasibility Study (Study), transmitted by your letter dated June 11, 2021. The letter indicates the DEIS represents the U.S. Army Corps of Engineers (USACE) initiation of essential fish habitat (EFH) consultation under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The DIFR and DEIS have been prepared in response to the Bipartisan Budget Act of 2018, H. R. 1892 - 13, Title IV, Corps of Engineers - Civil, Department of the Army, Investigations, which authorized the expenditure of funds necessary for the completion, or initiation and completion, of flood and storm damage risk reduction projects or studies in multiple southeast Louisiana parishes. The NMFS has agreed to serve as a cooperating agency for this project under provisions of the National Environmental Policy Act. The following is provided in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) and 600.920 of the Magnuson-Stevens Act.

Direct and indirect impacts to NMFS trust resources are anticipated through implementation of the Tentatively Selected Plan (TSP). The USACE proposes to construct and operate approximately 16.3 miles (85,900 feet) of hurricane and storm damage risk reduction levee and floodwall sections in west and south Slidell, Bayou Patassat channel improvements in Slidell, Mile Branch channel improvements in Covington, and nonstructural home elevations and flood proofing for approximately 15,800 structures in the study area. The levee and floodwall is approximately 16.3 miles and is a combination of 14 miles (73,700 feet) of levees and 2.3 miles (12,200 feet) of floodwall. The I-10 highway would be raised to the preliminary design elevation of 15 feet NAVD 88 to create a ramp over the new levee section. The levee alignment would impact a 169 acre staging area and require approximately 1,528,000 cubic yards of fill. Structures proposed for TSP implementation include five pump stations, four gate complexes, one channel floodgate, three sluice gates, seven vehicular gates, one railroad gate along the Norfolk Southern Railroad, and seven ramps.



The proposed project is in areas designated as EFH for various life stages of federally managed species, including white shrimp, brown shrimp, red drum, and bull sharks. The primary categories of EFH, affected by project implementation, are estuarine emergent marsh, estuarine water column, and estuarine mud bottoms. Detailed information on federally managed fisheries and their EFH is provided in the 2005 generic amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the Gulf of Mexico Fishery Management Council and in the 2009 Amendment 1 to the Consolidated Atlantic Highly Migratory Species Fishery Management Plan prepared by NMFS as required by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (Magnuson-Stevens Act; P.L. 104-297). The 1996 amendments to the MSA require NMFS, regional fishery management councils, and other federal agencies to identify and protect important marine and anadromous fish habitat. The EFH provisions of the MSA support one of the nation's overall marine resource management goals — maintaining sustainable fisheries. Critical to achieving this goal is the conservation and enhancement of the quality and quantity of suitable marine and estuarine fishery habitats.

In addition to being designated as EFH for various federally managed fishery species, wetlands and water bottoms in the project area provide nursery and foraging habitats for a variety of economically important marine fishery species such as blue crab, Atlantic croaker, spotted sea trout, and gulf menhaden. Some of these species serve as prey for other fish species managed under the MSA by the Gulf of Mexico Fishery Management Council (e.g., mackerels, snappers, and groupers) and highly migratory species managed by NMFS (e.g., billfishes and sharks). Wetlands in the project area also produce nutrients and detritus, important components of the aquatic food web, which contributes to the overall productivity of the Lake Pontchartrain Basin.

Based upon the limited information provided in the DIFR and DEIS, NMFS is concerned direct wetland losses from construction of project features and water control structures would adversely impact EFH and associated marine fishery resources. Additionally, the proposed construction and operation of the west and south Slidell levee and floodwall system would result in impacts to EFH while the Mile Branch channel improvements is located within a non-tidal area. The DEIS is unclear if Bayou Patassat channel improvements are tidally influenced. The NMFS does not object to hurricane protection to reduce risk to life or property. However, NMFS can not determine the total impacts of the proposed project because the DEIS does not clearly quantify impacts to EFH by habitat type. A complete EFH assessment should be provided to NMFS incorporating all activities associated with this project, including a description of measures to avoid, minimize, mitigate, or offset the adverse impacts of the proposed activities on EFH. Avoidance and minimization of direct wetland impacts should be pursued to the greatest extent practicable. The EFH assessment should also include updated details delineating and quantifying impacts to EFH by habitat type, as well as differentiating between the flood side EFH and the protected side of all structures. The NMFS recommends tabular format, maps, and KMZ files be provided to inform the EFH assessment.

The NMFS is also concerned the construction of the levee system and all gate and pump structures may induce stacking during high water events which shifts vegetative communities' aquatic resources and fisheries relying upon them for habitat and foraging. The DEIS does not include a specific operational plan or plan and cross sectional views for all structures associated with this project (e.g., pump stations, ramps, and gate complexes including slice, vehicular,

channel, and railroad gates). Cross-sectional and plan view information should be provided to fully assess impacts to EFH. The operational plan for these structures should include triggers for gate closures (e.g., named storm events in the Gulf of Mexico, fixed water level elevations, crest setting, estimated frequency of closures, and etc.). The USACE should also provide hydrological modeling results for all structures justifying: (1) how particular locations were selected for each structure, (2) why each structure is needed, and (3) how the size and type of each structure was determined.

Given the USACE will need to further refine and quantify EFH impacts to determine the mitigation required for the final EFH assessment and EIS, NMFS recommends a second draft of the EIS be published for public review to incorporate all required revisions. Unavoidable impacts to EFH will require mitigation. The NMFS recommends intermediate and brackish marsh habitats be evaluated by a functional assessment since these types of estuarine emergent wetlands will be impacted by implementation of the TSP. The DEIS states mitigation measures will be considered in the following order: (1) purchase of mitigation bank credits to offset impacts to 227 acres of marsh, and/or (2) potential USACE constructed marsh mitigation sites. If the purchase of wetland credits is not available then the USACE should develop, in coordination with NMFS, a mitigation and monitoring plan which fully compensates for all EFH impacts. This robust mitigation and monitoring plan should be presented to NMFS for review prior to release of the final EFH assessment and EIS. To avoid additional mitigation for temporal impacts, NMFS recommends implementation of the mitigation plan concurrent with the construction of the development. The preliminary mitigation analysis, approximate total acres, and functional units of impacts to EFH provided in the DEIS should be refined to verify: (1) the final assessment of acres of impacts to EFH, (2) the final WVA or functional assessment analysis, (3) the types of mitigation required, and (4) the final project design. Open water should also be included among the habitat types requiring mitigation. Estimates of all direct and indirect project related impacts to tidally influenced habitat should be refined for inclusion in the project's final EFH assessment and EIS.

Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations for any federal action or permit which may result in adverse impacts to EFH. Therefore, NMFS recommends the following to ensure the conservation of EFH and associated marine fishery resources:

### **EFH Conservation Recommendations**

1. The USACE should provide an EFH assessment which clearly characterizes, delineates, and quantifies direct and indirect impacts to EFH by habitat type, as well as differentiating between the flood side EFH and the protected side of all structures.
2. Cross sectional and plan views for all structures (e.g., pump stations, ramps, and gate complexes including slice, vehicular, channel, and railroad gates) and operation plans should be provided and be assessed to determine if construction of levees and water control structures would impact fisheries access and water exchange in the Lake Pontchartrain Basin.

3. The applicant should be required to purchase mitigation bank credits and/or develop a mitigation and monitoring plan which fully compensates for all unavoidable impacts to EFH. The mitigation plan should be presented to NMFS for review. Should a permit be issued for this project, it should require the implementation of the mitigation plan concurrent with the construction of the development.

Consistent with Section 305(b)(4)(B) of the Magnuson-Stevens Act and NMFS' implementing regulation at 50 CFR 600.920(k), your office is required to provide a written response to our EFH conservation recommendations within 30 days of receipt. Your response must include a description of measures to be required to avoid, mitigate, or offset the adverse impacts of the proposed activity. If your response is inconsistent with our EFH conservation recommendations, you must provide a substantive discussion justifying the reasons for not implementing the recommendations. If it is not possible to provide a substantive response within 30 days, the New Orleans District should provide an interim response to NMFS, to be followed by the detailed response. The detailed response should be provided in a manner to ensure that it is received by NMFS at least 10 days prior to the final approval of the action.

We appreciate your coordination with our office on this project. If you wish to discuss this project further or have questions please contact Alexis Rixner at (225) 380-0058 or by e-mail at [Alexis.Rixner@noaa.gov](mailto:Alexis.Rixner@noaa.gov).

Sincerely,



Rusty Swafford  
Acting Assistant Regional Administrator  
Habitat Conservation Division

c:  
USACE, Dixon  
LDNR, Balkum  
F/SER46, Howard  
F/SER4, Dale  
F/SER1, Silverman  
Files





**DEPARTMENT OF THE ARMY**  
**NEW ORLEANS DISTRICT, CORPS OF ENGINEERS**  
**7400 LEAKE AVENUE**  
**NEW ORLEANS, LOUISIANA 70118**

REPLY TO  
ATTENTION OF

June 11, 2021

Regional Planning and Environment  
Division South

Mr. Chris Oliver  
NMFS - Protected Species Division  
263 13th Avenue South  
St. Petersburg, Florida 33701

Dear Mr. Chris Oliver,

Draft Integrated Feasibility Report (DIFR) and Environmental Impact Statement (EIS) for the St. Tammany Parish Louisiana, Feasibility Study (Study) prepared by the U.S. Army Corps of Engineers, New Orleans District (CEMVN). The DIFR DEIS is available for your review and comment. The DIFR EIS is available online for download beginning **11 June 2021** at the following URL address: <https://www.mvn.usace.army.mil/About/Projects/BBA-2018/studies/St-Tammany/>

The DIFR EIS has been prepared in response to the Sections 1201 and 1207 of the Water Infrastructure Improvements Act of 2016 which authorize the St. Tammany Parish, Louisiana Study for water resource development and conservation that include determining the feasibility of implementing projects for multiple purposes, including but not limited to, flood risk management as set forth in the 2015 and 2016 Reports to Congress on Future Water Resources Development. The St. Tammany Parish Louisiana Feasibility Study was authorized for inclusion as a funded study in the Bipartisan Budget Act of 2018 (Pub. L. 115-123), Division B, Subdivision L Title IV (BBA 2018) in a Memorandum from the Office of the Deputy Commanding General for Civil and Emergency Operations. The Memorandum provided that plan formulation will be limited to Coastal Storm Risk Management and Flood Risk Management in accordance with BBA 2018. The Government is authorized by BBA 2018 to conduct the Study at full Federal expense to the extent that appropriations provided under the Investigations heading of the BBA 2018 are available and used for such purpose.

The DIFR EIS evaluates impacts associated with alternatives considered including the Tentatively Selected Plan (TSP) as proposed is a comprehensive plan that includes Coastal Storm Risk Management (CSRМ), Flood Risk Management (FRM), and nonstructural features to address flooding in St. Tammany Parish.

Anticipated direct and indirect impacts are discussed in the DIFR DEIS and CEMVN will continue to coordinate with resource agency partners in its efforts to minimize those effects. Indirect impacts are anticipated to be significant where drainage is obstructed by the levee, particularly any drainage that currently empties into the Big Branch National Wildlife Refuge and coordination continues to address these issues.

Due to COVID-19, CEMVN will host virtual public meetings on 28 June at 1:00 PM and 29 June 2021 at 6:00 PM to provide information on the DIFR and DEIS, and to receive verbal public comments; times and meeting details to follow in subsequent media release and advertisements. Information about public meetings, including login information, will be posted to the New Orleans District website: <https://www.mvn.usace.army.mil/Media/Public-Meetings/>

Please review the DIFR EIS from the website and provide comments within 45 days of the date of this letter. Interested parties may express their views on the TSP or proposed action. All comments postmarked on or before the expiration of the comment period will be considered.

Comments should be mailed to the attention of Mr. Everard Baker; U. S. Army Corps of Engineers Regional Planning and Environment Division South; New Orleans Environmental Branch; CEMVN PON-UDP; 7400 Leake Avenue, New Orleans, Louisiana 70119.

Comments may also be provided by emails to [everard.baker@usace.army.mil](mailto:everard.baker@usace.army.mil). Mr. Everard Baker may be contacted at (504) 862-1514.



MARSHALL K HARPER

Chief, Environmental Planning Branch