**Determination of Effect on Essential Fish Habitat from Florida Gulf Coast Marine Fisheries Hatchery and Enhancement Center project**

### *EFH overview from Magnuson Stevens Act*

The 1996 Magnuson-Stevens Act requires cooperation among the National Marine Fisheries Service (NMFS), anglers, and federal and state agencies to protect, conserve, and enhance Essential Fish Habitat (EFH). EFH is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity. The designation and conservation of EFH seek to minimize adverse effects on habitat caused by fishing and non-fishing activities.

### *Project description*

Florida's Fish and Wildlife Conservation Commission (FWC) is proposing to construct a saltwater sport fish hatchery in Pensacola (Escambia County), Florida to supplement the Port Manatee Stock Enhancement Research Facility (SERF)—the lone saltwater hatchery in the state.

The proposed Gulf Coast Marine Fisheries Hatchery and Enhancement Center project (the hatchery project) would fund construction activities to develop a former industrial site into a saltwater sport fish hatchery and support its operation and maintenance activities for a period of five years. The facility would release up to five million juvenile red snapper (*Lutjanus campechanus*), red drum (*Sciaenops ocellatus*), and spotted sea trout (*Cynoscion nebulosus*) annually into state waters in the Gulf of Mexico.

The proposed hatchery project area is located on a ten–acre vacant lot in Escambia County at the southeast corner of Main Street and Clubbs Street in Pensacola, Florida. The construction area is north of the Bruce Beach wetland mitigation area, immediately east of the City of Pensacola Southern Bulkhead mitigation area, and just west of a bulk petroleum storage area (Figure 1).. The construction site for the hatchery consists of an upland lot with the remaining portion constructed in water.

**Figure 1. Illustration of the proposed hatchery project location in Pensacola, Florida.**

Figure 2 provides a conceptual rendering of the proposed Pensacola hatchery.

**Figure 2. Conceptual design of the proposed hatchery**

Critical project elements identified within Figure 2 include:

- **Broodstock rooms:** Where adult fish would be held in a 115,000-gallon tank for spawning in order to produce the fertilized eggs the hatchery would grow until they are large enough for release.
- **Live Feed room:** This room contains smaller tanks that grow food to feed the cultured sport fish. Depending on the species, this may include various species of phytoplankton and zooplankton.
- **Phase 1 Tank Rooms:** These rooms are where the hatchery-raised fish would complete their grow-out to the Phase I size of approximately 1.25 inches in length, at which point they would be ready for release. The Phase I tanks would be 95,000-gallon capacity.
- **Stormwater pond**: A retention pond would be developed to capture rainwater flowing from impervious surfaces on the site during storm events. This pond would be used to settle solids and allow for some groundwater recharge. Discharge would be

integrated into the waters being directly returned to Pensacola Bay from the site. Exact size of the pond and conditions and mechanisms of the return flow to Pensacola Bay would be defined in the development of the final engineering plans for the hatchery project (e.g., size of pond related to the amount of impervious surface in the final design).

- **Storage pond:** In rearing the fish, a lined storage pond up to an acre would be used to store effluent after initial filtration for solids within the facility. The pond would allow for additional settling of solids entrained in the hatchery's fish production water, and the liner would facilitate removal of fish waste and other biological material. Water from the storage pond would flow into the plant production pond.
- **Plant production pond/filtration marsh:** This approximately 2-acre created pond or marsh would receive discharge from the storage pond and be planted with native wetland species, including *Spartina alterniflora*, to uptake nutrients that improve water quality before water would be returned to Pensacola Bay as sheet flow. The wetland plants would be harvested to remove nutrients from the marsh and used to support other coastal restoration projects. To the maximum extent possible, this constructed marsh will be integrated with the existing wetland and marsh mitigation areas that are on and adjacent to the proposed hatchery location.
- **Entrance and offices:** A portion of the main facility building would contain offices for the FWC operations staff. An entrance located adjacent to the parking lot will be developed for access by staff and invited visitors. A separate service entrance would be developed for the delivery of hatchery and administrative supplies.
- **Parking lot:** An on-site lot of approximately 90,000 square feet would be developed to provide parking for hatchery staff and scheduled visitors. Access to the lot would be via Clubbs Street, which has minimal traffic and would dead-end at the facility parking lot.

The proposed Pensacola hatchery would draw on lessons the FWC has learned in the 25 years of operation of SERF, combined with technological advances in developing this hatchery project. The state-of-the-art facility would be designed to incorporate intensive aquaculture techniques and approaches, including the use of an indoor-tank-based rearing system where approximately 80 percent of the initial saltwater withdrawals from Pensacola Bay would be reused.

Sea water for the facility operations would be pumped from a bay inlet to a treatment center at the hatchery. The inlet would require construction of a pier that would support the pumping infrastructure. An occlusion devise at the water intake would prevent harm to specific marine organisms and to prevent pump malfunction or damage. A pumping station (land-based is preferable) would supply power and protect the pump(s). Details of this structure would be addressed in the development of final site plans. Any proposed structure would comply with relevant city, state, and federal permit requirements. The treatment center may include

disinfection either through chlorine or ozone, a settling tank to remove suspended solids, mechanical filtration, and a water distribution system (valves and plumbing) to direct water to specific areas of the hatchery.

Waste water from the hatchery would pass through an approximately 2-acre constructed marsh or wetland to remove suspended solids and nutrients from the waste stream. The marsh would also serve as a wetland plant supply for restoration projects. The marsh or wetland would be designed to distribute water equally to the marsh wetland plants to facilitate uniform growth of plants and nutrient stripping by the plants from the waste stream. Several species would be planted in the marsh at strategic elevations to provide the appropriate water inundation or exposure to the plants. Discharge from the marsh would be controlled seasonally by means of weir boards into a poly-lined ditch that can then lead directly to an open system such as a natural marsh, open bay, or lead to a culvert pipe that drains into the natural system. An elevated culvert pipe minimizes tidal inundation of bay waters into the drainage system that could lead to colonization of encrusting organisms in the culvert such as barnacles and oysters.

***Federally managed fisheries and EFH***

Information on designated EFH in the Gulf of Mexico was obtained in September, 2013 from the NMFS' EFH web site at *http://www.habitat.noaa.gov/protection/efh/newInv/index.html*. Table 1 provides a summary of the species identified as having designated EFH for one or more life stages within the area of potential affect for the proposed project.

**Table 1. Federally managed highly migratory species (HMS) with designated Essential Fish Habitat (EFH) in the proposed project area.**

| EFH_Category | Species |
|---|---|
| **Atlantic Highly Migratory Species** | Atlantic Sharpnose Shark-Neonate |
| | Sandbar Shark-Neonate |
| | Scalloped Hammerhead Shark-Neonate |
| | Tiger Shark-Juvenile |
| | Tiger Shark-Neonate |
| **Coastal Migratory Pelagics of the Gulf of Mexico AND South Atlantic** | Cobia |
| | King Mackerel |
| | Spanish Mackerel |
| **Gulf of Mexico Red Drum** | Red Drum |
| **Gulf of Mexico Shrimp** | Brown Shrimp |

| | |
|---|---|
| | Pink Shrimp |
| | Rock Shrimp |
| | Seabob Shrimp |
| | White Shrimp |
| **Reef Fish Resources of the Gulf of Mexico** | Almaco Jack |
| | Banded Rudderfish |
| | Black Grouper |
| | Blackfin Snapper |
| | Blueline Tilefish |
| | Cubera Snapper |
| | Gag |
| | Goldface Tilefish |
| | Gray (Mangrove) Snapper |
| | Gray Triggerfish |
| | Greater Amberjack |
| | Hogfish |
| | Lane Snapper |
| | Lesser Amberjack |
| | Mutton Snapper |
| | Nassau Grouper |
| | Queen Snapper |
| | Red Grouper |
| | Red Snapper |
| | Scamp |
| | Silk Snapper |
| | Snowy Grouper |
| | Speckled Hind |
| | Tilefish |
| | Vermilion Snapper |
| | Warsaw Grouper |
| | Wenchman |
| | Yellowedge Grouper |
| | Yellowfin Grouper |
| | Yellowmouth Grouper |

There are no Habitat Areas of Particular Concern (HAPC) identified in the proposed area of restoration activity

***Assessment of effects to EFH***

The main potential for adverse impacts to EFH from the hatchery development would be associated with the development of the sea water pumping pier. While final designs have not yet been developed, construction of this pier would involve the sinking of a series of pilings and the construction of a pier surface to support the pumping infrastructure and to allow access for inspections and maintenance. However, access to the pier will be restricted to authorized facility personnel. This will be emphasized with signage placed at potential access points by a gate to the pier on land and on the pier in areas where the signs will be clear to boaters. Further, there will be no amenities constructed to support or attract access from the water (e.g., boat tie-ups). As previously noted, the pier will be located in such a way so that the existing natural and compensatory wetland mitigation areas will not be affected.

The proposed hatchery development would also affect EFH through changes in water quality. In this case, the proposed hatchery development would improve the management of stormwater returning to the waters of Pensacola Bay compared to current conditions through the development and use of the stormwater pond and its integration with the treatment wetlands (see Figure 2). Monitoring conducted in compliance with the SERF industrial waste permit showed that water quality improved after operations commenced, resulting in a determination letter from the Florida Department of Environmental Protection that the permit was no longer required. The Gulf Coast Marine Hatchery facility has been designed to incorporate similar methods and technologies to those used a the SERF, based on experience at the SERF, this hatchery project should result in no long-term degradation of water quality. Under existing conditions, there is potential for uncontrolled surface water runoff to the bay from the property, the hatchery project is likely to have short and long-term benefits to water quality by ensuring discharge to the bay meets strict water quality criteria for nutrients and other impurities as required by an industrial waste permit. This water quality benefit would improve the overall quality of the EFH habitat in the project area.

Finally, the goal of the hatchery is to produce and release fish to support a number of important fisheries in the area. Of the species currently under consideration for rearing at the facility, two, red snapper (*Lutjanus campechanus*) and red drum (*Sciaenops ocellatus*), are species identified with EFH in the project area (see Table 1).

***Conclusion***

Construction of the pier for seawater withdrawal may lead to potentially adverse physical impacts and habitat conversion of EFH on a limited scale. The hatchery development would

likely improve water quality returning to Pensacola Bay relative to current conditions, thereby benefiting EFH. The combination of a very limited potentiall adverse impact caused by pier construction and the beneficial impacts of stormwater management and treatment, the proposed project is not likely to adversely affect EFH in the project area.