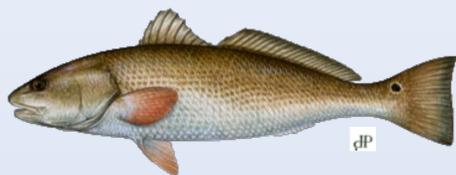


STATUS OF THE DEVELOPMENT OF OFFSHORE AQUACULTURE IN THE GULF OF AMERICA

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Abstract

At the end of 2025, there are no fully operational offshore aquaculture projects in the Gulf of America. However, over the past decade, there has been a concerted effort to increase offshore aquaculture production through the development of new projects. The result has been the development of three offshore projects, including demonstration and commercial-scale projects, that are currently in various stages of the permitting process. Here we describe each of these three projects, identify production goals, current state of production, and identify roadblocks. The first project is the Gulf Integrated Multitrophic Aquaculture (IMTA) Project located in state waters offshore of Ft. Morgan, Alabama. This is a research and demonstration project led by the Dauphin Island Sea Lab with project partners at the University of Southern Mississippi, University of New Hampshire/New Hampshire Sea Grant, and Mississippi-Alabama Sea Grant. Production will focus on Gulf native species, including red drum (*Sciaenops ocellatus*), Eastern oysters (*Crassostrea virginica*), and graceful red weed (*Gracilaria* spp.) using a floating AquaFort™ platform. The second project, currently navigating the permitting process, is also a research and demonstration project to be located in federal waters approximately 39 nm offshore of Sarasota, Florida. Known as the Vellella Epsilon Project and operated by Ocean Era, Inc. This one-year demonstration project will use a single submersible pen to grow out red drum. The final project in the region also proposes to raise red drum, however at a commercial-scale. Operated by Manna Fish Farms, Inc., this farm proposes to use Storm Safe™ submersible net pens in federal waters offshore of Pensacola, Florida. Combined, these projects are forming a solid base for offshore aquaculture production in the Gulf of America and demonstrate that the environment is ripe for growth.



Gulf Integrated Multitrophic Aquaculture (IMTA)

Location: Alabama coastal waters, 3.1 km (1.9 mi) south of the Fort Morgan Peninsula and 13 km (8 mi) southeast from Dauphin Island

Depth: ~11 m (36 ft)

Site size: 1 hectare within an approved 22 hectare area

Purpose: Demonstration project to inform the aquaculture industry, regulators, and the public on IMTA methods and systems, economic viability, and how aquaculture can be conducted in an environmentally and ecologically balanced manner, specifically in warm water environments.

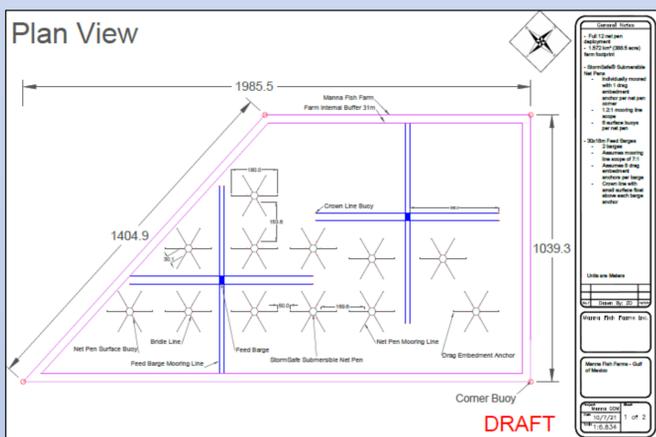
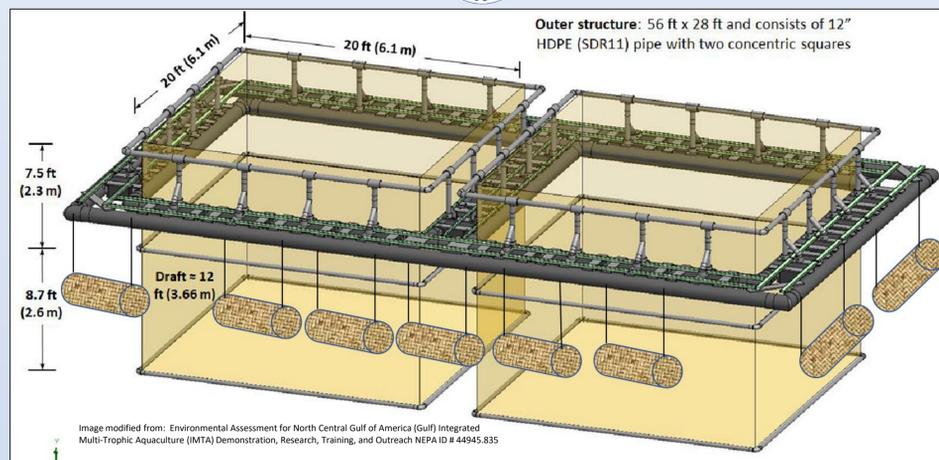
System: Fish Containment: AquaFort Framework with Copper Alloy Mesh (CAM) Oyster and Seaweed Containment: 50 – 25 L SEAPA Baskets

Species: Eastern Oyster (*Crassostrea virginica*), Graceful Red Weed (*Gracilaria* spp.), and Red Drum (*Sciaenops ocellatus*)

Estimated Maximum Annual Production : Red Drum: 1,815 kg (4,000 lb); Oyster: 6,000 ind.; Graceful Red Weed: 12 kg

Status: The frame and CAM netting have recently been installed and the facility is ready for stocking.

Project Description: The IMTA system will be deployed from October to June annual for four production cycles. During hurricane season the IMTA system will be removed for maintenance and repairs, avoiding extreme weather conditions.



From: King et al. (in prep) Analysis for Water Quality Impacts and Deposition Estimation from the Manna Fish Farm Offshore Project in the Northern Gulf of Mexico. National Center for Coastal Ocean Observations. 37p.

Manna's Gulf Fish Farm

Location: 37 km (23 mi) SSE of Pensacola, FL

Depth: 45-50 m (147-164 ft)

Site Size: 161 hectare

Purpose: Full scale commercial production farm

System: 12-14 StormSafe™ Submersible Net pens. Each net pen is a 15.2-meter-tall hexagonal prism with a 31.4 m diameter. These dimensions result in a total, useable volume of approximately 9000 m³.

Species: Red Drum (*Sciaenops ocellatus*) & and Striped Bass (*Morone saxatilis*)

Estimated Maximum Annual Production : 4,000 mt

Status: Applications have been submitted with EPA and USACE. Formal permitting and environmental review is expected to be initiated in Spring 2026. It's expected to take approximately two years to complete those processes.

Project Description: Although designed as a full scale production farm, production would ramp up over a period of five years before maximum capacity is reached. At full operational capacity, a barge-based automated feeding and monitoring systems would be used to manage feeding. The StormSafe™ buoys would be lowered 11-12 m (33-36 ft) deep during storm events. Each pen will have a six drag embedment anchor system, each with a spar buoy.

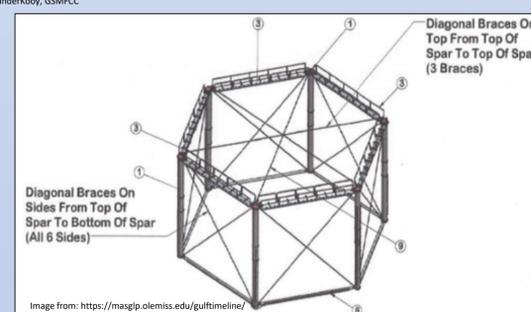


Image from: <https://masglp.olemiss.edu/gulftimeline/>



Image from: <https://www.innovasea.com/open-ocean-aquaculture/submersible-aquaculture-systems/seaproten-pen/>



Ocean Era's Vellella Epsilon Project

Location: 37 km (23 mi) SSE of Pensacola, FL

Depth: ~40 m (120 ft)

Site Size: 1 hectare within an approved 164 hectare area.

Purpose: Single year demonstration project developed to help assess the viability of aquaculture in the Gulf on a larger scale.

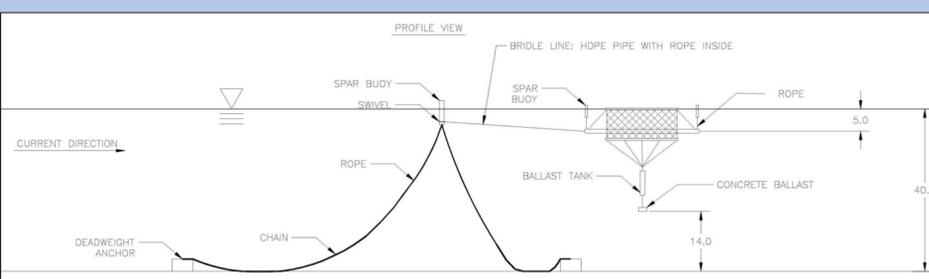
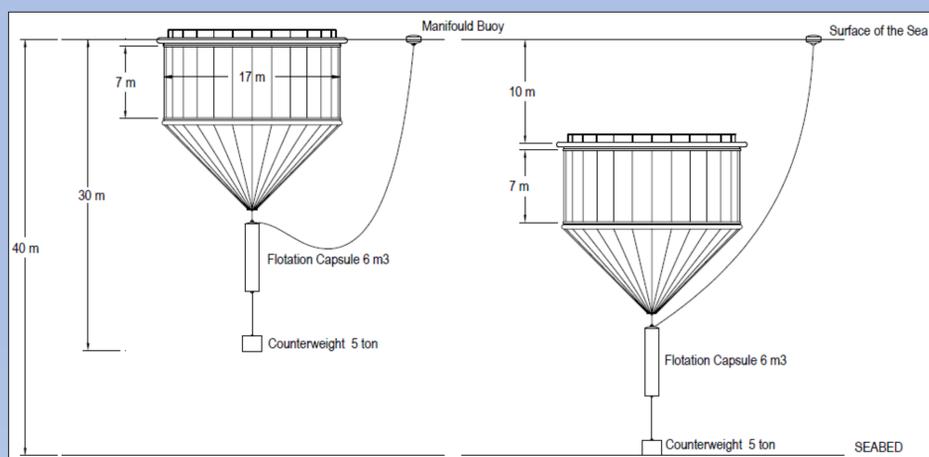
System: Offshore-strength submersible single net pen with a 26.5 m diameter x 3 m depth with an effective volume ~ 1,600 m³

Species: Red Drum (*Sciaenops ocellatus*)

Estimated Maximum Annual Production: 2.5 mt

Status: EPA issued modified NPDES permit in June 2025. USACE issued Section 10 permit in Oct. 2025. Modified NPDES permit is currently under administrative review with EPA's Environmental Review Board. Once review is complete, project will need to complete final engineering review before project deployment. Deployment: TDB

Project Description: This project was initially proposed and permitted by the EPA (2022) as a one-year demonstration project, that would produce 39,916 kg (88,000 lbs) of almaco jack (*Seriola rivoliana*) (20,000 fish), utilizing a single net-pen cage affixed to the seafloor by a swivel point mooring systems. In 2023, a modified National Pollutant Discharge Elimination System permit was requested to accommodate a change in the net-pen design to a conventional grid mooring system, and a change in production quantities and species, to produce a maximum 24,947 kg (55,000 lbs) of red drum (20,000 fish) instead of almaco jack. The net-pen is submersible to reduce its exposure to the high-energy effects of the offshore environment. The red drum will be raised to approximately 2-3 lbs each, then harvested. Following the conclusion of this one year production cycle, the demonstration project will be decommissioned and removed.



Images from: <https://www.fseagrants.org/wp-content/uploads/2022/08/POA-Peters.pdf>

