

# Prototype Recirculating Aquaculture System Design for Juvenile Red Drum Production as Part of the Florida Fish and Wildlife Conservation Commission's Hatchery Network Initiative

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The abundance of economically important marine sportfish has declined in Florida's waters due to factors such as over-fishing and critical habitat disturbance. Hatchery production and enhancement stocking has traditionally been used in freshwater systems as a means of mitigating for effects such as this. In the past stocking of marine systems was believed to be a fruitless effort, however, success has been recorded with marine fish stocking programs; red drum *Sciaenops ocellatus* in particular. Based on this relatively new information and on success of their stocking program in Tampa Bay, the Florida Fish and Wildlife Conservation Commission (FFWCC) is developing the Florida's New Saltwater Fish Hatchery Initiative (HNI) to expand the FFWCC's saltwater fish enhancement stocking program.

Harbor Branch Oceanographic Institution (HBOI) has partnered with the FFWCC to develop technologies necessary to successfully and economically produce red drum in intensive recirculating aquaculture systems. The conceptual designs and performance information collected in these systems, as well as in systems being developed at Mote Marine Laboratory, and at the FFWCC Stock Enhancement Research Facility (SERF), will be used to design the new hatcheries that FFWCC plans to build throughout the state of Florida. The design for a prototype system being engineered and built at HBOI will be presented. These systems will be used to complete studies to optimizing rearing densities and feeding strategies for juvenile red drum, and to measure system performance under production-scale rearing conditions. Information about performance of various system components and overall design philosophy will be discussed.

