

## **OVERVIEW OF THE USDA-ARS MARINE FINFISH REPRODUCTION AND LARVICULTURE RESEARCH PROGRAM AT HARBOR BRANCH OCEANOGRAPHIC INSTITUTION**

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As is the case with most marine finfish species, development of captive breeding and larval production methods to ensure a consistent and reliable source of seed stock is essential to industry expansion. In 2004, USDA-ARS began work to establish a research program at Harbor Branch Oceanographic Institution with the goal of developing sustainable methods for the production of Florida pompano and black sea bass using recirculating aquaculture system (RAS) technologies. To date the program has:

- Designed and installed RAS based broodstock conditioning and larval rearing facilities
- Established captive pompano and black sea bass broodstock populations
- Developed methods for tank spawning of both species via hormonal induction
- Evaluated various conditioning strategies for out of season spawning
- Developed template rearing protocols for larvae and live feeds
- Determined effects of salinity, ammonia, nitrite, and copper to early developmental stages and juveniles
- Characterized growth and development of larvae and developed feeding regime
- Demonstrated feasibility of recirculating larviculture
- Compared growth and survival of larvae fed rotifers enriched with various commercial diets

Ongoing and future reproduction research projects include identification of environmental cues to initiate natural spawning and establishing a selective breeding program using animals produced on site. Regarding larviculture, research is being or will be conducted to compare commercially available Artemia enrichment diets; to evaluate alternative live feed organisms and probiotic formulations; to determine optimal light, water flow, and aeration levels; to establish optimal larval density; and to develop weaning and grading procedures.



*Post-metamorphic pompano (l) and black sea bass (r) juveniles*