

A decade of research: current status of the winter flounder *Pseudopleuronectes americanus* stock enhancement program

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As we mark the 10 year anniversary of the winter flounder stock enhancement program, we reflect on the history of the project, assimilate the findings, and reexamine our goals.

The main goal of the project has not been to initiate large-scale releases, but rather, to assess the feasibility of winter flounder stock enhancement. To do this, we have conducted laboratory and field experiments to answer key questions about optimal release strategies. In particular, we have conducted a number of experiments to determine how cultured juvenile winter flounder differ from wild caught juveniles. From these studies we are confident in our abilities to rear large numbers of healthy cultured fish. We know we can pre-condition the fish in the hatchery prior to release so that they adapt to the release area. Work is still needed to determine the effectiveness of predator training and recognition conditioning. Release strategies to reduce initial stress and the characteristics of ideal release sites have been identified. There are many tagging methods that have proved successful so we are able to track these fish. Upon release, we know that cultured fish have similar diets, home ranges, and utilize similar habitats, however, post-release predation dampens stocking success.

Based on the major findings from the past 10 years, we have learned much about culturing winter flounder and optimizing release strategies yet we are still far from conducting large scale releases. Most importantly, we need to understand more thoroughly the wild population and its predators within the dynamic estuarine ecosystem. Future research investigating the interactions between hatchery and wild stocks and assessing the carrying capacity within the estuary are paramount.