

## Habitat dynamics of adult winter flounder: Connectivity between estuaries and inner continental shelves influence management of human impacts associated with dredging - R/6840-0002

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### *Research Summary*

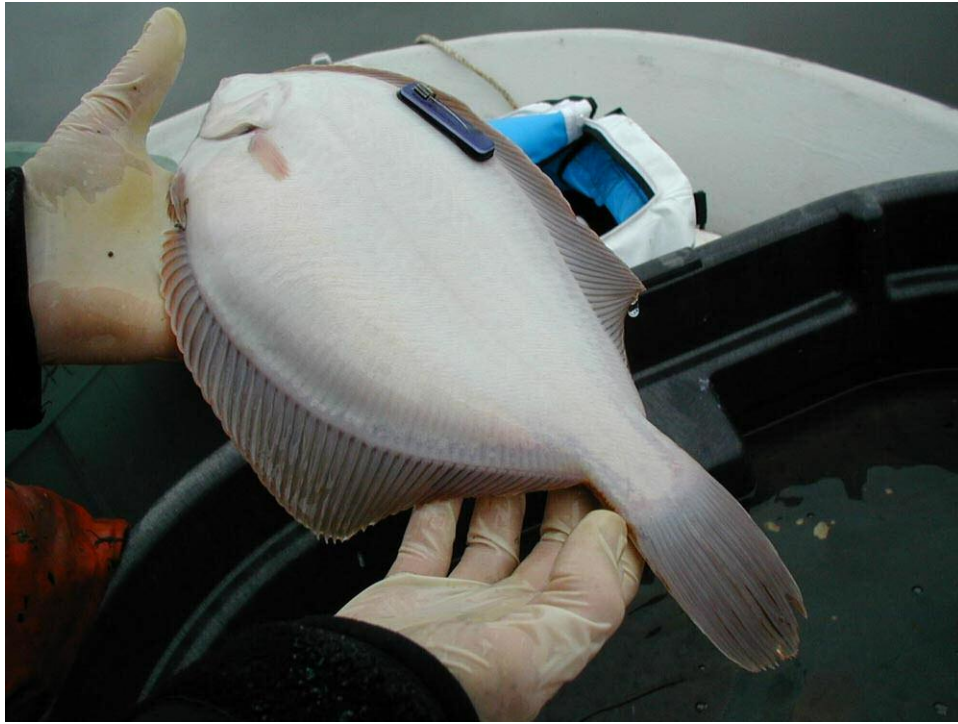
Dredging is one of the most common forms of human impact along the US East Coast, including New Jersey. Dredging is practiced in estuaries to maintain navigation channels for local commerce and recreation as well as on the inner continental shelf to mine sand for nourishment of nearby beaches. In direct conflict is the concern that

these dredging activities may negatively influence habitat quality in these ecosystems. Most attempts to evaluate the effects of dredging on important finfish resources assume that they are stationary in space and time, such as for the indicator species winter flounder

*(Over)*



Figure 1



(*Pseudopleuronectes americanus*). A current definition of winter flounder “spawning habitat” as strictly estuarine results in denial of many winter-spring dredging permits in estuaries of New England and the Mid-Atlantic states and subsequently impacts maritime industries. However, accumulating evidence suggests that this species is quite mobile, that its movements are variable, and that spawning may take place in estuaries as well as on the inner continental shelf. As a result, current attempts to define the time and location of dredging activities do not take these dynamics into consideration.

The long term goal of this project is to clarify the seasonal and annual dynamics of adult winter flounder residency/movements in

estuary/inner continental ecosystems in order to protect the habitats they use while providing an improved understanding of the timing and location of spawning relative to dredging activities in New Jersey estuaries and the ocean and elsewhere in the northeast US. This two-year study will serve as a proof of concept, utilizing telemetry of tagged winter flounder (Figure 1) to define seasonal fish-habitat associations. To this end, we will ultrasonically tag and track adults in a listening array across the inner continental shelf - estuary continuum to determine seasonal patterns of movement and the location of spawning habitat.