Protecting eelgrass fish habitat through the use of conservation moorings

The National Oceanic and Atmospheric Administration has partnered with the Atlantic Coastal Fish Habitat Partnership, the Rhode Island Division of Fish and Wildlife, Town of Jamestown Conservation Commission, Clarks Boat Yard, Conanicut Marine Services Inc., Jamestown Boat Yard, and Aquidneck Mooring Company to protect fish habitat around Conanicut Island (Jamestown). Through this partnership, four traditional mooring systems were replaced with alternative conservation moorings that significantly reduce adverse impacts to important eelgrass fish habitat.

Natural eelgrass meadow in the Peconic Estuary, by Kimberly Manzo © Cornell Cooperative Extension Marine Program

What are conservation moorings?

A conservation mooring is a mooring system designed to avoid contact with the seafloor, thereby reducing physical damage to eelgrass. The system uses an elastic connection, akin to a bungee cord, to connect the surface buoy with the anchoring device. This eliminates any chain sweep that physically damages or eliminates the eelgrass. Depending on the seafloor, helical (i.e. screw-like) anchors may be used to replace traditional concrete mooring blocks. These significantly reduce the environmental footprint within the eelgrass habitat, and allow for eelgrass growth in the previously affected area.

Monitoring to assess eelgrass habitat recovery

Prior to installing conservation moorings, the status of eelgrass habitat around each of the existing traditional moorings was documented. After installation, the level of eelgrass recovery will be monitored and documented. This monitoring effort will help researchers understand the effectiveness of this technology as a coastal resource management tool.

Lady crab (*Ovalipes ocellatus*) in eelgrass by Kimberly Manzo
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Wave swept eelgrass in Long Island Sound, by Chris Pickerell
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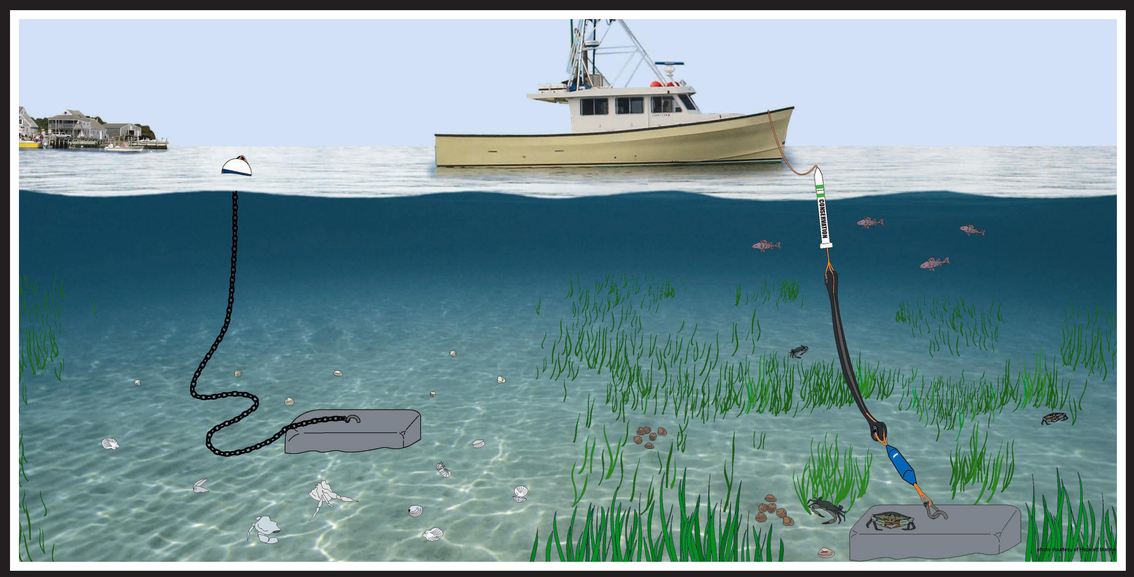

Peconic bay scallops (*Argopecten irradians*) inhabiting transplanted eelgrass
by Kimberly Manzo © Cornell Cooperative Extension Marine Program

A winter flounder (*Pseudopleuronectes americanus*) inhabiting a restored eelgrass meadow in Long Island Sound by Chris Pickerell © Cornell Cooperative Extension Marine Program

Importance of eelgrass habitat

Eelgrass is an extremely valuable spawning and nursery habitat for a variety of fish and invertebrate species, including winter flounder, summer flounder, and bay scallop. It is also an important species at the bottom of the food chain. Eelgrass habitat has been declining throughout the Northeast due to poor water quality, increased turbidity and physical alterations such as dredging, filling, and boating related activities.

Impacts to eelgrass habitat from moorings

Eelgrass habitat is vulnerable to a number of boating related activities, including prop damage and the use of traditional chain moorings. When placed within or adjacent to eelgrass beds, traditional chain moorings can severely damage habitat through physical removal of the eelgrass shoots, causing a "haloing" effect. Additionally, disturbance to the seafloor by mooring chains suspends sediment, increasing turbidity which reduces water clarity. This diminishes the amount of light penetration critically important to eelgrass growth and survival.

Conservation Commission