

Poplar Island Fish Tracking: An EWN[®] Project

The Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island was once a thriving community in the Maryland portion of Chesapeake Bay. Since a survey measured the island at over 1,110 acres in 1847, the combined forces of erosion, sea level rise, and subsidence reduced the area to small islets totalling only 4 acres by 1990. Federal and State partners from the US Army Corps of Engineers (USACE) and Maryland Department of Transportation, Maryland Port Administration (MDOT MPA) have jointly sponsored a project to restore this lost remote island habitat. This environmental restoration project relies on beneficial use of dredged material collected from the approach channels to Baltimore Harbor. Upon completion, the project will result in 1,715 acres of developed wetland, upland, and open water embayment habitats.



NCCOS Telemetry

Fish and other wetland organisms play a key economic and cultural role in Chesapeake Bay. Understanding their habitat preferences and movements in marshes is essential to responsibly manage coastal ecosystems and sustain healthy populations. The need is especially critical in habitat restoration projects pre-, during-, and post- construction to inform future design of engineered marshes and wetlands.

Beginning in Spring 2023, the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Coastal Ocean Science (NCCOS) will track fish movements throughout the marshes and embayments on Poplar Island to determine how fish are utilizing the restored habitats. NCCOS will attach coded transmitters to dozens of fish and other aquatic organisms and use an array of automated data loggers to track their locations over the next 2 years. The study is expected to demonstrate which aspects of the restored habitats such as creek size and shape and culvert type are most used.



US Army Corps
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MARYLAND PORT
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Target Species

The telemetry project seeks to broadly understand ecosystem function of restored wetlands as fish habitat. Therefore, a diversity of fish species and even diamondback terrapins will be tracked. Target species will represent a range of taxa that are important for economic, ecological, cultural, and other reasons such as their protected status. Candidates include:

- ❖ Striped bass
- ❖ Gizzard shad
- ❖ White perch
- ❖ Cownose rays
- ❖ Croaker
- ❖ American eel
- ❖ Diamondback terrapin



Surgically implanting a transmitter. Photo from NCCOS telemetry project in Southwest Florida

Engineering With Nature®

NCCOS and the USACE's Engineering With Nature Program (EWN) are working together to understand the power of nature to achieve a broad suite of engineering, environmental, and socio-economic benefits. With state, federal, and university partners, scientists conduct multidisciplinary, collaborative research on the use of dredged sediment for coastal habitat restoration. In this approach, multiple benefits are realized including reuse of dredged material, breakwater protection for coastal communities, and restored marsh for ecosystem and fisheries benefits.

For additional information:

[USACE Engineering with Nature®](#)

[Poplar Island Restoration](#)

[National Centers for Coastal Ocean Science \(NCCOS\)](#)

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