Bagged oyster shells

Shellfish Enhancement

Project Contact:

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Project Status: Ongoing

Project Summary

Background

Oysters are one of the most easily recognizable organisms in the Inland Bays. Often labeled as "ecosystem engineers," oysters play a vital role in creating habitats for various species and purifying water through their filtration process. With one adult oyster capable of filtering 50 gallons of water daily, these bivalves help control nutrient and sediment pollution. Thriving populations of native oysters and clams are critical for restoring and maintaining good water quality and healthy ecosystems in the Bays. Oysters and other shellfish are threatened by climate change and the resulting ocean acidification. The rising acidity of the ocean and Bays can damage and slow the growth of new shells.

Don't Chuck Your Shucks

The Center incorporates recycled oyster shells into various restoration projects, including living shorelines and oyster reefs. These shells are collected through our Don't Chuck Your Shucks program, a community-wide partnership with over 25 participating restaurants. DCYS collects over 4,000 bushels of shells from local restaurants each year.

Aquaculture

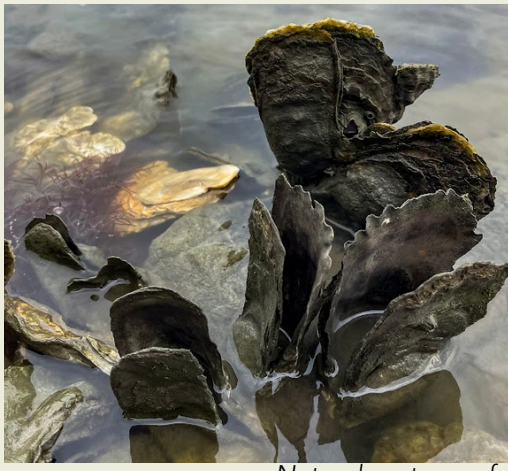
In 2013, the recognition of both the environmental and economic benefits of shellfish aquaculture led to the passage of legislation to allow shellfish farming in the Inland Bays. In 2021, ten growers harvested and sold over 400,000 oysters—contributing over $1.4 million to the local economy and helping to keep our Bays healthy.

Oyster Reefs

Natural oyster reefs are formed slowly over time as oysters attach to a hard surface and new oysters, called spat, begin to grow on the shells of the older oysters. Due to overharvesting and poor water quality, few natural oyster reefs are found in the Inland Bays. To encourage the growth of new oysters, the Center created three artificial reefs using concrete structures and recycled shells to help provide a structural habitat for oysters to thrive.

Purple sea urchin

Volunteers bagging oyster shells



Natural oyster reef

Project site map

Future Plans

The Center is now in the final stage of permitting for the construction of a new oyster reef near Pasture Point. This will be the largest artificial reef in the Bays at just under 3,725 square feet. Construction of the reef will incorporate loose shell, a simpler building method that more closely mimics a natural oyster reef. The expansion of our spat monitoring efforts will help us better understand where wild oysters are most successfully living and reproducing within the Bays to help identify future artificial reef locations.

Did You Know?

Oysters have been a part of human diets for over 150,000 years. Native American middens (trash pits) dating back to 500 BCE unearthed in present-day Ocean View contained significant amounts of oyster shells. Other similar middens in the coastal United States have been found to contain the shells of billions of oysters.

Oyster Reef Current Outcomes

In 2019, the Center constructed three test reefs at Big Bacon Island, Camp Arrowhead, and Fenwick Island State Park. After 3+ years of monitoring, we observed that wild oyster larvae were not settling on the reefs in high enough numbers to sustain a population. The reefs and oysters living on them faced major stressors, like dense sediment coverage and natural predators. Through these pilot reefs, we learned that future artificial reefs should be taller and more resilient to reduce the risk of sand burying the reef. Additionally, it's imperative to increase the density of oysters stocked on the reefs, since we cannot rely solely on wild oysters to naturally populate the reefs.

Large oyster

Oyster toadfish

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The Delaware Center for the Inland Bays is a non-profit organization established in 1994 to promote the wise use and enhancement of the Inland Bays and its watershed. With its many partners, the Center conducts public outreach and education, develops and implements restoration projects, encourages scientific inquiry and sponsors research. To learn how you can get on board with the bays go to inlandbays.org.