

Give the Bays a hand!

THREE BAYS PRESERVATION

Three Bays Preservation, Inc.
864 Main Street
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www.3bays.org

Help us continue our important work — such as the demonstration shellfish project (shown in the photo to the right).

Please donate to our 2016 Annual Appeal.

Thank you!

THREE BAYS PRESERVATION, INC.

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SAVE OUR STRUGGLING ECOSYSTEM

We sure had one hot, humid summer. It was ideal for swimming, boating and fishing; unfortunately, it was also ideal for big algae blooms. In mid-August a microscopic organism, *Cochlodinium polykrikoides*, resulted in a vast algae bloom, covering the 1,251-acre surface of North Bay, West Bay and Cotuit Bay. The rust-brown blooms depleted the water of oxygen and caused the death of 42 scup and flounder (and one eel).

“I’ve never seen it quite this bad,” Lindsey Counsell, Executive Director of Three Bays Preservation, said in a *Cape Cod Times* article. “It was a perfect storm of algae blooms. The weather conditions were right, and the nutrients were there in abundance. We’ve been monitoring oxygen levels in the bays and they are trending below what is needed for sea life to survive.”



Algae blooms are merely a symptom of the problem facing the estuary, exacerbated by excessive nitrogen in our waters coming from septic systems, road runoff, use of detergents, and lawn fertilizers.

“We have been warning the community this would happen,” said Board President Mike Egan. “We now witness fish kills from oxygen depletion. Shellfish will die next.”



(above): Cape Cod Academy freshmen sort and cull oysters as part of our shellfish demonstration project.

(page 4): Shellfish technician Josiah Bartley tends to the oyster bags after the seeds first went in. [Photo by Max Moynihan]

The eelgrass is already dead. We need to improve our wastewater management to prevent nitrogen from septic systems from entering the estuary.”

A comprehensive plan to restore the three bays by decreasing nitrogen in our waters advocates a combination of traditional methods (such as conventional sewerage) and newer alternatives (such as rain gardens) to filter rainwater before it flows into the bays, artificial floating wetlands that absorb and dissolve nutrients, and restoration projects designed to return impaired ecosystems to a healthier state.

These innovative technologies are part of the Town’s Section 208

Water Quality Management Plan, which Three Bays Preservation helped draft. The fish-killing algae bloom that grabbed our attention this summer is a wake-up call, an in-your-face example of the difficulties besetting our bays. Although algae blooms are not harmful to humans, no one wants to see, smell or swim with the *Cochlodinium*.

Trillions of algae spores lurk in the sediment, waiting to bloom again next summer. *The time to act is now!* Contact us about how you can help spread awareness and advocate for the three bays.

As part of a demonstration shellfish project, last spring Three Bays Preservation bought 200,000 oyster seeds and began growing them in Middle Cove, off North Bay. Shellfish are efficient filter feeders, removing nitrogen from the waters where they are grown. When the rust algae bloom hit, we moved the oysters to the east side of North Bay to protect them as they grew. When we sorted them in October, we found the mortality rate was 29%, considered good in light of the devastating bloom. Data thus far shows that North Bay is an excellent growing area due to an abundance of nutrients from the groundwater. We hope this program leads to increased shellfish propagation in the northern embayment, improving water quality through increased numbers of shellfish.

The Newsletter of
Three Bays
Preservation, Inc.

Monitor



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Cotuit Town Dock Rain Garden Update

We've got good news to report about the two 50'-long by 3'-wide bioretention beds we built at the Cotuit Town Dock last spring. For the most part, the "rain garden" plants made it through the hot, dry summer. The beds look quite nice... if we do say so ourselves! Although lack of rain limited our ability to monitor how the beds were functioning, we are now in the process of water sampling and testing.

The bioretention beds are part of a green infrastructure pilot program developed by Three Bays Preservation and the Barnstable Department of Public Works. This was one of our first projects to leave the starting gate and is designed as an alternative to conventional storm drainage sewerage.

Last May four Cape Cod Academy students helped us build and plant the beds, along with Executive Director Lindsey Counsell and consultant Scott Horsley. After filling the beds with gravel, soil and peat moss, we planted eight species of indigenous, salt-tolerant plants and installed a subsurface drip irrigation system. The hope is that the gardens will remove significant amounts of nitrogen, pathogens, oils and other pollutants before reaching the waters of Cotuit Bay.



Dead Neck/Sampson's Island 2016 Bird Report

Three Bays Preservation and Mass Audubon co-manage Dead Neck/Sampson's Island (DNSI), working together to preserve the fragile environment and protect the birds that forage and nest there. As part of that effort, Mass Audubon produces an annual Coastal Waterbird Program Field Summary. Here are this year's findings.

Compared to 2015, the number of Piping Plovers decreased by 13%. With six fledglings, this year's rate increased slightly – from 0.75 chicks per pair to 0.86 per pair. Hatching success was reduced primarily by avian predation and storm overwash.

Thirty pairs of Least Terns nested on the tip of Sampson's Island; due to gull predation, only five birds fledged. As was the case last year, there were no American Oystercatchers, likely due again to lack of suitable habitat. Willets, Spotted Sandpipers and Bank Swallows were seen on the island this summer. Spring and fall migrations were busy with Sanderlings, Semipalmated Plovers, Semipalmated Sandpipers, Least Sandpipers, Ruddy Turnstones and

Whimbrel seen staging. Fall migration brought flocks of 200-400 Barn and Tree Swallows plus Purple Martins and Northern Rough-winged Swallows.

The biggest challenge is the impact of people and dogs. We continue installing signs and symbolic fencing to discourage cutting through sensitive areas. Three Bays Preservation and Audubon monitors were also present throughout the season to inform beach-goers about the birds and ways to protect this special habitat.

Nest predation is taking a toll with crows and gulls topping the list of offenders. Grackles present less of a problem but increased grackle activity was noticed at the end of June and beginning of July; one nest was lost to grackle predation.

We are awaiting approvals from state and federal agencies to begin the planned dredging and restoration of DNSI. After restoration efforts in 2009, the birds returned in droves. We hope this necessary work will greatly increase the numbers of birds that thrive here by building new, much-needed habitat.



Look closely! How many well-camouflaged plovers do you see?

Summertime 2016

It was a fabulous summer to get outside! Our ongoing educational programs were well attended. Summer activities included Bayside Explorers at Dowdes Beach, St. Peter's Nursery School classes, and a table at Osterville Village Day featuring tattoos and bubble blowing!



"Fishing" for crabs with a seine net at Dowdes Beach during a Bayside Explorers expedition



A budding bayside explorer checking out aquatic critters at low tide



We were honored to have Governor Charlie Baker speak at a fundraiser, sponsored by our President Michael Egan last June. The Governor expressed his appreciation for the work that Three Bays Preservation is doing and for the entire 208 Water Quality Management Plan process. Gov. Baker has pledged his support of our ongoing efforts to rid our waterways of excess nitrogen.



Three Bays Preservation Summer Rangers on the water (l-r): Bailey Bowman, University of Maine; Emmalisa Belfiore, Franklin Pierce College; Kathleen Mason, Colby College; Meg Materne, UMASS Amherst Environmental Science graduate and Three Bays Preservation's new Program Assistant. We wish the students the best of luck in school and welcome Meg aboard!



(above): It was a fantastic day for **RACE Cape Cod** with about 75 participants who headed out on the water in September. We tried crowd-source fundraising for the first time this year and it was a great success! Thanks to everyone involved in "paddling for the bays." [Photo by David Burleson]



(left): Josiah Bartley and Meg Materne plant oysters in October after the shellfish had been culled onshore