



Update #4 | September 2023

Periodic project updates like this one keep Great Bay communities and organizations informed about the Eelgrass Resilience project. You can find past project update newsletters on our [project webpage](#). [Sign up](#) to receive future updates by email.

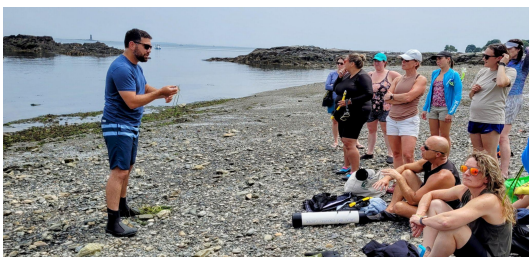
~ Project Updates ~

Our **Project Advisory Committee** met April 7 2023 for a 3-hour, in person meeting to discuss results from our first field season. The group had a number of questions and suggestions that will help us improve the way the data is analyzed and explained. A similar meeting is planned for January.

To guide how we frame final products, the project advisory committee identified aspects of the project of interest to key audiences: municipal leaders, state water quality regulators, restoration professionals, and champions for Great Bay.

In addition to our field researchers, the GBNERR **Education Team** was busy this summer. We hosted a two-day workshop for middle and high school science teachers all about Eelgrass!

Fifteen teachers went snorkeling in an eelgrass meadow, kayaked on Great Bay, inventoried the species in a salt marsh, created eelgrass paintings, and got to know scientists from PREP, Jackson Lab and Great Bay NERR.



More teacher workshop photos can be found [here](#).

In their final evaluation, one teacher wrote: *“Living on the seacoast, I can’t believe I’ve never snorkeled in the Atlantic. What an amazingly immersive experience, appreciating the beauty of eelgrass.”*

At the end of the workshop, the teachers were given a tub with all the supplies needed to play a newly developed Great Bay Eelgrass Game, a role playing game, created by a UNH intern, in which students make choices that could impact the health of the Bay using a simulated eelgrass meadow in a tank.

We were thrilled to hear comments like these from teachers at the end of the workshop: *“The eelgrass game along with the other two games will definitely become part of my classroom.”* And my favorite comment: *“This professional development feeds the souls of educators!”*

And in case you’ve missed the news, the Great Bay Discovery Center is creating a new exhibit about eelgrass! The new larger than life eelgrass

sculptures and circular tank were built with a mix of public and private funds and incorporate the science and videos generated by this project.



Great Bay Discovery Center (more info is [here](#))

~ So What ~

Rain, Osprey and Eelgrass

If you happen to follow the Great Bay Osprey Cam, you will know that it was a brutal summer for osprey families. For the first time in the 6 years that GBNERR has had a camera focused on our nesting platform, none of the osprey chicks survived to the fledgling stage.

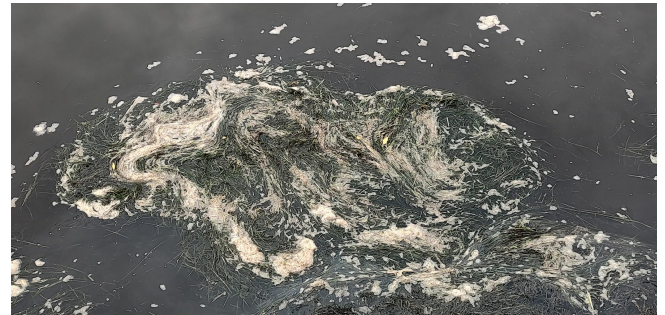
During the months of May and June, we watched the osprey parents use their wings to shelter their three chicks from the heavy rains that fell day after day. Great Bay's waters became so cloudy that osprey, which hunt by spotting fish from the air, were unable to hunt in Great Bay. In our daily tracking of the osprey cam, we noted that the parents were bringing freshwater fish back to the nest but they only had a little left to share with their chicks after their long forays up river.



Osprey family as seen on the [Great Bay Osprey Cam](#), 7/3/23

These same rains seem to have had a similarly heartbreaking impact on Great Bay's eelgrass meadows

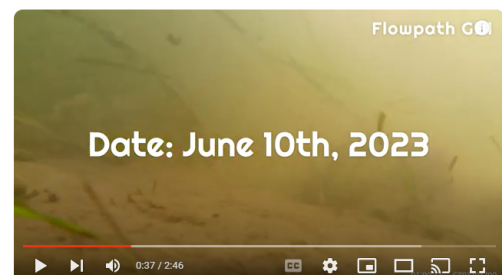
By July, only small patches of eelgrass were left on the three flowpaths monitored by the Eelgrass Resilience project and the plants were similarly absent from PREP's long term eelgrass monitoring sites. Large clumps of eelgrass shoots were seen washing out of the estuary or up onto shore.



Clumps of eelgrass shoots floating in Great Bay

We know eelgrass populations vary from year to year and we've documented the significant declines and slow recovery following the record floods of 2006 and 2007. Although the 2023 rains didn't result in as much damage to roads and homes, the impact was significant for the Estuary.

This summer's heavy rain and the resulting high river flows led to intense runoff and likely increased erosion throughout the watershed, which delivered a lot of sediment, nutrients, and colored dissolved organic matter, and churned up waters in the Bay. Cloudy - or in this case incredibly murky - water prevents light from reaching the eelgrass plants during the critical growing months, and weaker plants are more likely to get torn or uprooted in strong currents.



Watch: [Video clips from sampling in an eelgrass meadow](#)

Interestingly this pattern of decline was observed primarily in Great Bay. The eelgrass beds in Portsmouth Harbor, by Fort Foster and New Castle, fared much better where waters were never quite so cloudy and salinity levels remained stable.

Explanations for these observations are still just emerging. Ecologists will continue to dissect the

data from this unusual summer to try to tease out the patterns, and natural resource managers will ask what this means for setting recovery targets and choosing restoration methods. Like the Mother's Day floods of 2006, we will likely continue talking about this summer for years to come.

~ Get to Know Our Team and Advisors ~



Education Director: Kelle Loughlin, Great Bay NERR

Kelle is leading the education components of this project, including a teacher workshop, eelgrass traveling trunks, and exhibit that has been expanded as she's secured additional funding. As Director of the Great Bay Discovery Center, Kelle manages the exhibit space and grounds as well as a range of programming for youth, families and the public (learn more [here](#)). In her free time, Kelle loves to garden, kayak and hunt. For this project, Kelle is most excited about the way education can bridge the gap between those in the know, and those who need to know!

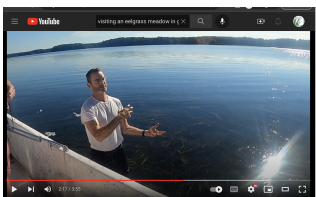


Project Advisor: Sally Soule, NH Dept of Environmental Services

As a member of the Project Advisory Committee, Sally brings a wealth of experience with watershed management and the state's Pollutant Tracking and Accounting Program. Sally has been with the NH Dept of Environmental Services for 23 years and has been managing grant programs and providing technical assistance to municipalities and others to design, implement, and monitor watershed restoration and protection projects (learn more [here](#)). In her free time, Sally enjoys spending time at her 90-year-old family camp on Sebec Lake in Maine. For this project, Sally is most excited to learn about and explore connections between nonpoint source pollution and eelgrass health.

~ Stay Engaged ~

- Read the recently released [State Of Our Estuaries Report](#) released by the Piscataqua Region Estuaries Partnership (PREP).
- View some fantastic eelgrass videos and photos (and find some data) at PREP's newly launched, still beta, [Eelgrass Data Dashboard](#).



For more information about this 3-year collaborative research project, visit our [project web page](#), watch these [project video clips](#), or reach out to a member of our Advisory Committee (see: [List](#)), which includes representatives from the municipalities and agencies that help protect Great Bay's waters.

Lynn Vaccaro and Cory Riley, Great Bay National Estuarine Research Reserve

Co-collaborative leads for the Eelgrass Resilience Project. Contact Lynn at Lynn.E.Vaccaro@wildlife.nh.gov