



Friends of Ellisville Marsh

Spring 2022 Newsletter

Spring is on Its Way!

This was a long winter. COVID-19 continued to cramp our style with its latest incarnation – the Omicron variant. We stayed home to avoid contracting the virus. The weather seemed colder than normal just by being close to normal. Gale-force winds seemed to be with us at least once a week. The Blizzard of 2022 dropped two feet of snow and hammered the coastline. In spite of all this, there are signs of better times ahead. Streaks of sunshine make their way through the dark clouds. The rich abundance of life at Ellisville Marsh has begun to re-emerge after the long winter. And so have the Friends – see Upcoming Events.

Upcoming Events – Hold the Dates

The Friends of Ellisville Marsh are returning to in-person events!
Stay tuned for details.



Saturday, April 23

Beach and Marsh Clean-up

Join us for coffee and light clean-up work. Meet your neighbors after the long winter hibernation.



May date (TBD)

Welcome Spring! Bird Walk

Explore one of the most unique birding hot spots in southeastern Massachusetts with an expert guide.



A rare treat - Long-tailed Duck at the Ellisville Inlet, February 2022.
Photo courtesy of Diane Jordan. All rights reserved.

Inlet Maintenance Planned for This Month

As reported in our Fall 2021 newsletter, a barrier spit has formed at the mouth of the Ellisville Marsh inlet and grown to a height and length that is restricting tidal flows into and out of the salt marsh. Accordingly, the Friends' board of directors voted in February to perform periodic maintenance work to straighten the inlet and restore healthy tidal flows. This work will take place during a cyclically low tide cycle in late March. Local, state, and federal agencies have been notified and arrangements have been made with Brian Richmond to perform the work. Brian and his sons are intimately familiar with the Ellisville Marsh inlet, having performed similar work for the Friends six times since 2011.



Barrier spit increases in size and restricts tidal flows to Ellisville Marsh - the channel hook tells the story.

The Blizzard of 2022 added a large volume of sand to the spit. Aerial photo courtesy of Mike Brennan. All rights reserved.

Blue Carbon and Climate Change

Blue Carbon - What is it?

It is carbon that is captured, stored and released in or near the “ocean blue” and derived from coastal and marine habitats such as underwater sea grass/eel grass meadows, coastal salt marshes and mangrove habitats.

Why is it important?

Because of the ongoing climate crisis, whereby global temperatures are increasing due to greenhouse gas accumulation, any carbon that can be prevented from entering the atmosphere in the form of a greenhouse gas such as carbon dioxide (CO₂) will help to decrease temperature rise. Offshore eel grass and salt marsh grasses “breathe in” CO₂ to produce oxygen and at the end of the growing season and/or as a consequence of senescence an added bonus is the plant-based carbon accumulates and is stored below ground.

In a salt marsh, carbon is part of the leaves, stems, flowers and roots of all the resident grass species. At the end of the growing season, the plants lose their leaves and stems and this dead, carbon-containing material settles and begins to rot. This rotting provides necessary growing conditions for next year’s crop of salt marsh grasses, however, the amount of rot is small in comparison to the amount of carbon that remains and is buried. Eventually, a material called

humus/peat forms from this plant material that is highly condensed carbon. So condensed, that peat can and has been used for heating.

How does Blue Carbon compare to our Green Carbon reservoirs?

Blue Carbon systems are 10 times more efficient at storing carbon beneath ground surface than our forests (Green Carbon). Please refer to linked Information sheets prepared by the Restore America's Estuaries organization: <https://estuaries.org/bluecarb...>

How does the Friends of Ellisville Marsh organization help to manage Blue Carbon?

Ellisville Marsh's Blue Carbon contribution could be as much as 8 tons of CO₂ per hectare in one year (or 224 tons per year for the 28 hectare marsh). When we dredge we help maintain a balance, along with the natural tidal fluctuation, between the salt and fresh water sources that feed the marsh and provide the proper salinity for salt tolerant plant growth. We feed the Blue Carbon cycle of sequestration of carbon.

In contrast, during the period 1987 to 2003 when dredging the inlet was not allowed, the marsh experienced a loss of about 3 hectares of salt marsh plants in the landward portion of the marsh as salinity conditions became less and less favorable for salt marsh plant growth. This meant that ongoing sequestration was not occurring in that portion of the marsh and with no plant root material left to anchor the underground peat previously stored in that area, peat stored over centuries began to erode and become exposed to oxygen. Bacteria then began to "eat" the carbon-rich material. With oxygen present, bacteria metabolize their food and produce CO₂ just like we humans. It is best to keep carbon "locked up" in more oxygen-depleted conditions that exist underground and to continue to maintain healthy salt marsh plants. Thus, a healthy Ellisville Marsh is a "carbon offset" or contribution towards decreasing global warming!

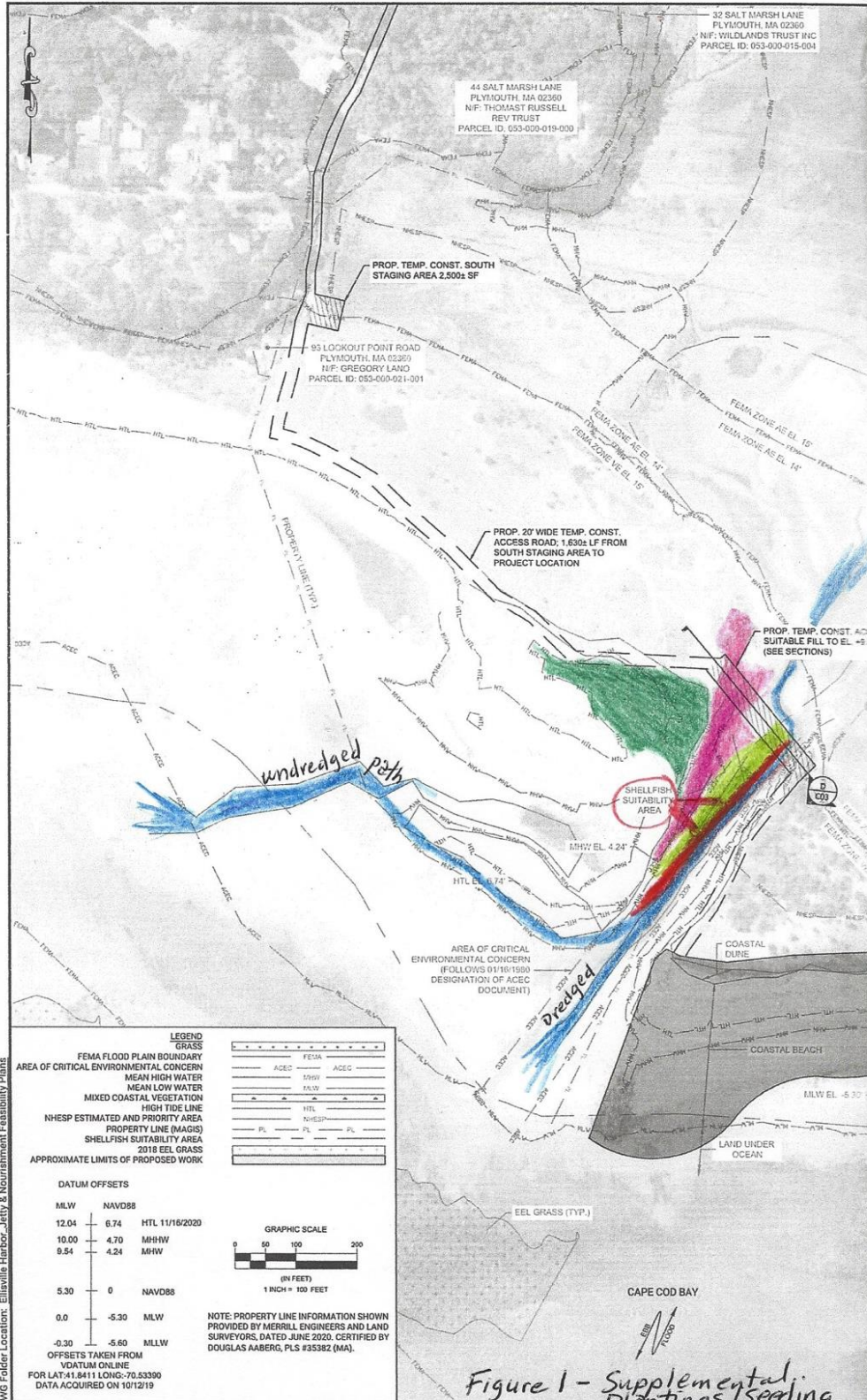
--Contributed by Dr. Ellen Russell, Friends' science advisor

Volunteer Opportunities

Looking for fresh air and camaraderie? Sign up for a work team. Opportunities include:

- Help erect protective fencing for threatened shorebird nesting (~April 1).
- Assist with threatened species nest monitoring (May - August; requires training).
- Conduct GPS mapping of natural resources.
- Measure beach elevation changes (training provided).

To express interest, email us at Info@EllisvilleMarsh.org.



Foth
APPLIED COASTAL

ELLISVILLE BEACH NOURISHMENT & JETTY RESTORATION FEASIBILITY ANALYSIS

ELLISVILLE HARBOR STATE PARK
PLYMOUTH, MA

| NO. | DATE | DESCRIPTION |
|-----|------|--------------------|
| 1 | | Channel |
| 2 | | Spartina |
| 3 | | High marsh species |
| 4 | | Dune grass |
| 5 | | Oyster Seeding |

| DATE OF PREPARATION | |
|---------------------|------------|
| BY | DATE |
| RAWN | 04/22/2021 |
| DESIGNED | 04/22/2021 |
| CHECKED | 08/17/2021 |

CONSTRUCTION ACCESS & STAGING PLAN

PROJECT NO: 19A026

SHEET NUMBER: C-101

Tuesday, October 19, 2021 8:52:45 AM
 JWC filename: ellisville_harbor_jetty_nourishment_feasibility_e101.dwg Layout: proposed staging plan
 JWC Folder Location: Ellisville Harbor Jetty & Nourishment Feasibility Plans

Sketch graphic showing areas of proposed planting and other natural treatments to stabilize the Ellisville Marsh inlet (article below).

In Search of Natural Solutions

The Friends have been interested in pilot testing nature-based approaches, which scientists also refer to as a "Living Shoreline," for

several years. Ellen Russell, Friends' director and science advisor recently laid out what this might entail at the Ellisville Marsh inlet:

- Continue Spotted Knapweed eradication begun by Wildlands Trust and the Friends in order to stabilize dune grass populations and curtail this invasive plant's spread.
- Utilize storm eroded and deposited dead cedars as wind breaks along existing dune in order to enhance accumulation of sediment.
- Plant *Spartina alterniflora* along the channel's southern shore in areas of more quiescent flow to enhance the stability of the channel.
- Plant high-elevation salt marsh species on the ocean-side of the dune to enhance recent natural colonization and aid in protecting dune from wave energy.
- Plant dune grass along the historical dredge spoil pile and constructed berm in order to enhance dune grass stabilization. This may function to unite marsh and dune in a vegetative fashion, providing dampening of erosive forces and subsequent short-circuiting of the marsh channel.
- Perform a test/pilot project for oyster colonization in the shellfish suitability area along the southern side of the channel bed to improve channel shoreline stability.
- Perform test/pilot project for reef ball channel diversion in order to determine the influence a reef ball or equivalent could exert to alter/divert direction of channel exit away from shoreline.
- Relocate storm-driven wrack to build elevation of remnant channel bed sections in order to help prevent short-circuiting of channel towards shoreline.

Russell presented the Friends' proposal to state and local environmental officials in a virtual meeting in early December. Unfortunately, feedback from those present indicated that a series of new, regulatory hurdles will need to be overcome to test any of these low-impact approaches. The Friends' board is currently weighing how to proceed.

Key Regulatory Permit Gains Extension

The global COVID pandemic has produced a modest benefit for the Friends of Ellisville Marsh. Governor Baker's COVID-19 Order #42 of July 1, 2020 automatically extended the Friends' Chapter 91 Waterways Permit. The permit is now set to expire in October 2026 rather than July 2025. The Friends have requested that the project's other MassDEP permit - a 401 Water Quality permit - be similarly extended.

Donate to the Friends HERE

The Friends of Ellisville Marsh, Inc., is a 501(c)(3) nonprofit organization. Donations are tax-deductible to the extent allowed by law. Our federal tax ID is [77-0691727](https://www.irs.gov/efile/efile-lookup).

Your comments, questions, and suggestions are always welcomed.

Contact us any time at: Info@EllisvilleMarsh.org

Visit us at: www.EllisvilleMarsh.org

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