



Special Storm Update

March, 2013

Mother Nature Plays Hardball This Winter

Was the winter of 2012-13 a harbinger of climate change or just a dramatic demonstration of Mother Nature's erratic behavior? We may not know for several years. One thing is for certain though – the coast of Massachusetts has been battered and bruised by a series of severe, if not historic, storms since late October. First came Superstorm Sandy, which hit on Monday, October 29th with its hurricane force winds and heavy surf. Only a week later, a powerful nor'easter rolled in on Election Day. The latter storm hit Ellisville with more raw violence than Sandy and formed a new barrier spit that partially blocked the Ellisville inlet and began restricting tidal flows into and out of the marsh. It is this tidal restriction that the Friends work to prevent, and to alleviate when it occurs, in order to maintain a tidal range conducive for recovery of native marsh plants and fisheries.

January Inlet Maintenance

The Friends responded with several days of inlet maintenance work in early January, again contracting with George Richmond, Inc. of Manomet. Brian Richmond and his sons reopened the blocked inlet and repaired the berm that serves as the south channel wall, keeping the flow straight to enable the channel to self-scour when sediment gets washed in by tidal action. The work began on Monday, January 7th and was completed in three days. The January work was covered by the Friends' regular operating fund.

Nature Strikes Again

Not to be denied, Mother Nature struck again in the form of Winter Storm Nemo (also known as the Blizzard of 2013), which came ashore February 8th and 9th. This was a mighty storm, rivaling the so-called 'Perfect Storm,' aka 'No Name Storm' of 1991. Enormous waves driven by powerful northeasterly gale force winds overpowered the rock jetty at Ellisville Harbor State Park and poured millions of gallons of sand-laced water over and into the channel. The sand and cobble berm that holds the Ellisville channel in place never stood a chance. Overnight, a huge barrier spit re-formed, instantly reaching as high as six to eight feet above mean low water and perhaps 100 feet wide. Within days, water was beginning to back up in Ellisville harbor as the newly formed spit prevented the marsh from emptying sufficiently at low tide. With successive tides, the new spit quickly extended to a length of about 300 feet.

Pilgrim Station Comes to the Aid of Ellisville Marsh

After some wrangling with the MassDEP, permit amendments were issued to the Friends that allowed one-time, emergency inlet repair outside the normal maintenance window that ends February 1st. However, the balance in the regular operating fund was not sufficient to enable another three days of work and the board was reluctant to draw from the long-term endowment fund for emergency inlet repair. Fortunately, Pilgrim Station, owned and operated by Entergy Corporation, responded favorably to the Friends' application for an emergency grant to cover the unanticipated cost of a second dredging event within two months. We are very appreciative of the company's

willingness to expedite consideration of our application and to fund this work. Entergy has been a steadfast supporter of the project to restore Ellisville Marsh since 2008. Brian Richmond also included in his invoice a credit allowance as a donation, for which the Friends are very grateful.

Emergency Inlet Repair

Work to re-breach the barrier spit and repair the south channel berm began on Monday, March 4th and was completed by Wednesday, again fully restoring tidal flows to the marsh. However, midway through this work it became apparent the storm that had been forecast to pass south of New England was going to strike at least a glancing blow to Massachusetts. The rest is history. Another powerful nor'easter hit the Massachusetts coast, destroying homes, eroding bluffs and leaving other coastal devastation in its wake. As a result, our work to maintain full tidal flows to the marsh was not entirely successful. A barrier spit remains, albeit smaller in size, and we will need to address that next winter. Nevertheless, our interventions undoubtedly lessened the severity of the inlet blockage. It is entirely possible that the barrier spit would be 1,000 feet in length by now if it had not been breached twice. A spit of that size has been shown by hydrodynamic modeling to have a negative impact on Ellisville Marsh's vegetation and water quality.



Ellisville Inlet Reopened Prior to March Nor'easter.
Photo courtesy of Diane Fletcher ©2013

What Have We Learned?

- We need to argue for an extension of the annual dredging window from February 1st to April 1st. This will involve discussions with the Division of Marine Fisheries over their shellfish protection policy and the specific, local conditions at Ellisville. This winter, the risk inherent in dredging in January, when late-winter storms may wipe out the value of the investment, became all too real.
- A long-term solution is needed to counter what appears to be an emerging pattern of increasingly severe storms if we are to keep the inlet open and maintain a healthy tidal range. We intend to initiate the needed discussions with the Commonwealth about this. Two past Secretaries of Environmental Affairs have stated formally and publicly that this is the Commonwealth's responsibility, yet to date no steps have been taken to plan, design or implement a sustainable, long-term solution.
- The state park rock jetty is, as we already knew, a major culprit in the periodic blockage of the Ellisville Inlet. It stores copious amounts of sand on its north side, all of which is pushed over and into the channel when major nor'easters hit. Consideration of its key role in inlet blockage and how to mitigate these effects must be part of the discussion with the state.
- A berm made entirely of sand, as we are limited to under our current permits, will not stop storms like the ones we have experienced this winter from diverting the inlet. What is needed is a serious investigation into more sustainable alternatives. The Friends believe now is the time to consider approaches that have been tested and proven elsewhere, especially those that are naturally sustainable.

Your feedback and comments are invited. We welcome your input as the Friends pursue these additional avenues to assure the continuing recovery of Ellisville Marsh. Email us at Board@EllisvilleMarsh.org