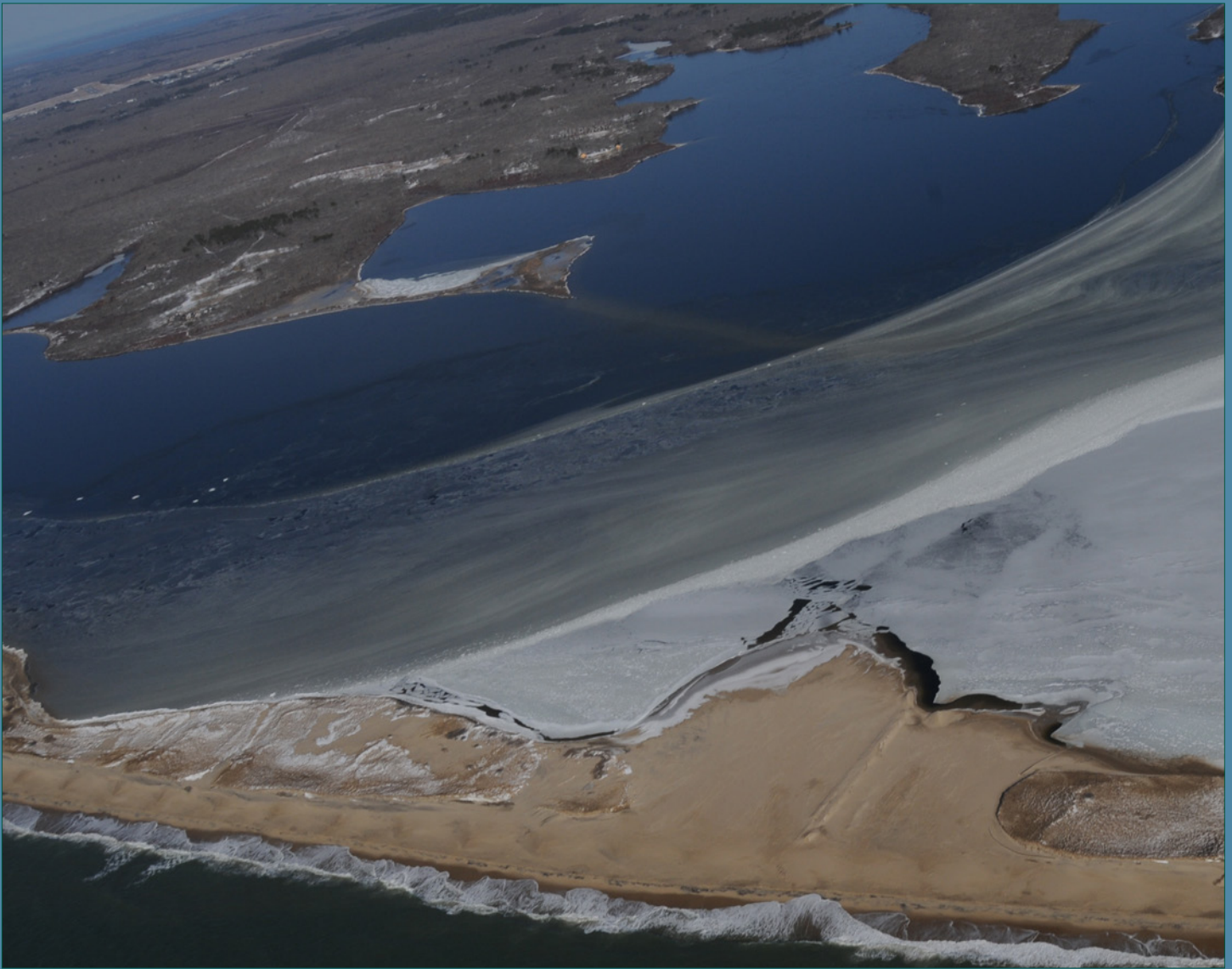


ANNUAL REPORT

July 1, 2012 - June 30, 2013

GREAT POND FOUNDATION



GREAT POND FOUNDATION

President: Thomas Wallace

Vice President: David Luening

Secretary/Treasurer: Robert Rukeyser

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Putting charitable contributions
to work for the people of
Martha's Vineyard



Grant Recipient



Dear Friends and Supporters,

I have had the pleasure this season of being able to attend a number of home owner meetings around the Pond. It has been very encouraging to see the level of interest and to hear the degree of support from riparian owners for the Great Pond Foundation. It is only with this vote of confidence and a strong donor base that we are able to pursue our mission of *enhancing the health of Edgartown Great Pond*. Major thrusts of this effort are dredging to improve the quality of openings to the sea, assisting in the Oyster Restoration Project, monitoring the effectiveness of these efforts, and advocacating on the Town level for collective efforts to keep this pond clean and viable.

The Pond was seriously impacted again this year by extreme weather events that flattened dunes, widened the barrier beach, and added significantly to the delta of shallow water inside the Pond. The two windows during which dredging is possible - early winter and early spring - were both shortened significantly due to bad weather. In spite of this limitation, empirical observations as well as monitoring and analysis indicate that dredging and oyster restoration continue to have positive effects on water quality.

Operations of the Foundation this year were fully funded by donations, mostly from riparian owners, along with several small grant awards. Meanwhile, we remain committed to broadening the sources of income in order to reduce the financial load on the present donor group and to achieve a better balance among donors. In particular, we are encouraging participation by all riparian owners around the Pond as powerful evidence of broad-based support, something that is very important to the Town as well as to prospective grantors. We continue to seek opportunities for "Nessie" to work her magic on other Island ponds. While the interest and potential are real, it is a long-term process to realize these opportunities due to individual permitting requirements.

Thank you for your continued personal support and for encouraging your neighbors to join in our commitment to preserve this valuable and cherished resource.

A handwritten signature in black ink that reads "Tom Wallace". The signature is written in a cursive, flowing style.

Thomas C. Wallace, President

Great Pond Foundation



Bob Rukeyser
Secretary/Treasurer

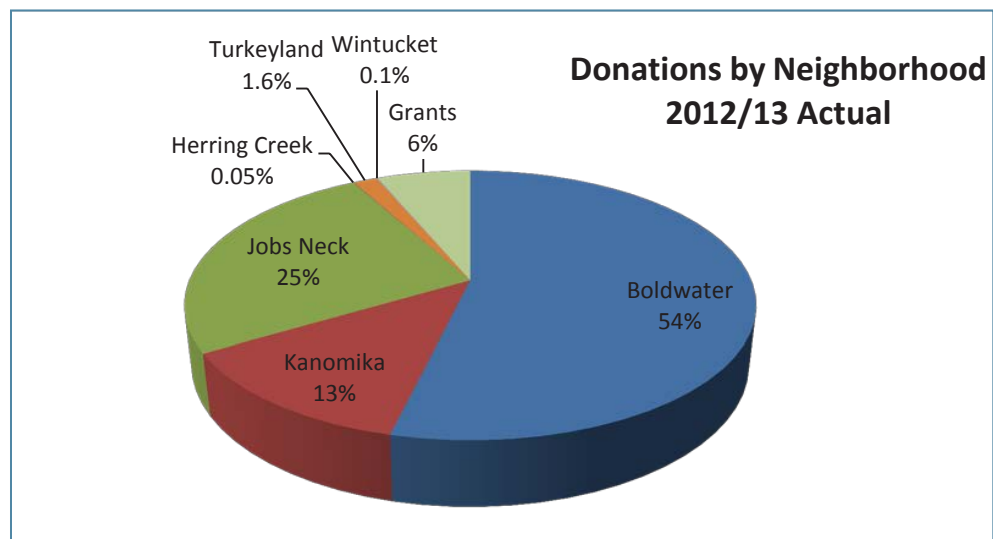
Finance...

The financial condition of the Foundation is sound. Going forward, sustained strong financial support and prudent financial management will make it possible to maintain the financial health of the organization and to continue carrying out our core mission to *enhance the health of Edgartown Great Pond*.

FISCAL YEAR 2013 (2012-2013)

In the four years since we successfully raised over \$800,000 to buy a dredge, equip her for service, and put her in operation, “Nessie” has been working hard at maintaining a channel through the delta to enable successful openings to the sea. Without an effective periodic exchange of pond and sea water, the health of the Pond would deteriorate rapidly. Restoration of the oyster population is critical as well since each of these little critters cleanses as much as 50 gallons of pond water per day.

Revenues for FY 2013 totalled \$224,179, exceeding our fundraising objective of \$210,000. Donations from generous neighbors around the Pond were supplemented by contributions from several other individuals as well as by a few grants and some investment income. This year, we were able to complete several important projects thanks to grants received from the Vineyard Golf Club Foundation, the Permanent Endowment for Martha’s Vineyard, the Edey Foundation, and the Gus Daniels Foundation.



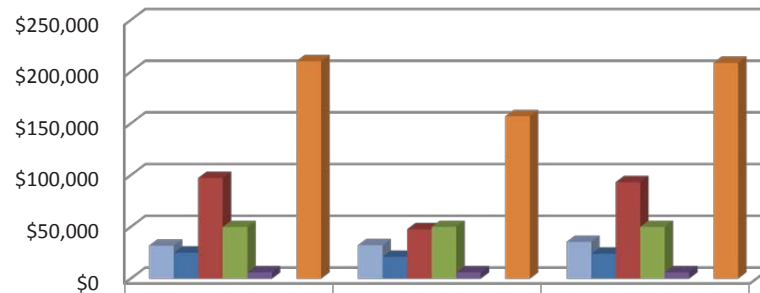


Of the \$210,000 total expense budget in FY 2013, more than 70% was allocated to operating the dredge, capital for additional tooling, and additions to reserves for major maintenance and future dredge replacement. The balance provided for other important initiatives described elsewhere in this report, including support of the Oyster Restoration project and installation of data gathering equipment to monitor and analyze water quality more systematically.

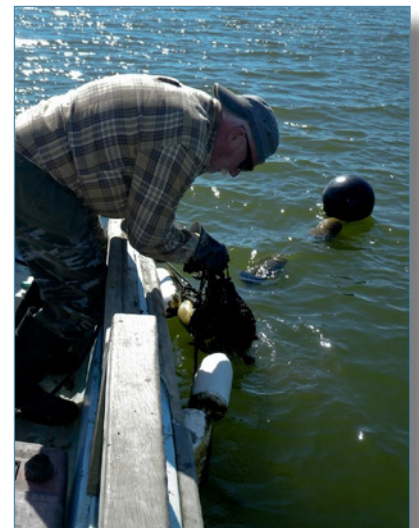
Overall, actual expenses of \$157,013 were slightly below budget for the year. Dredging expenses were lower because extreme weather conditions resulted in less dredging time than planned. Science and Education expenses were slightly below budget as well, but all planned programs were accomplished. Additional water monitoring equipment has been purchased and was installed this summer. Expenses for General Operation and Administration were slightly above budget.

Although FY'13 financials have not yet been audited, the numbers presented herein may be considered reliable estimates.

Operating & Capital Expenses



	2012/13 Budget	2012/13 Actual *	2013/14 Budget
General operating & administration	\$31,900	\$32,217	\$35,550
Science, Education, & Permitting	\$25,000	\$21,156	\$24,000
Dredge/Dredging	\$97,370	\$47,640	\$93,230
Maintenance & Reserves	\$50,000	\$50,000	\$50,000
Capital	\$6,000	\$6,000	\$6,000
Total	\$210,270	\$157,013	\$208,780





FISCAL YEAR 2014 (2013-2014)

A fund raising goal of \$205,000 has been established for FY'14. Progress was made last year in diversifying revenue sources and will continue next year with the following actions:

- ▶ broaden support from those who live around the Pond to achieve a better balance among neighborhoods;
- ▶ seek support from those who live elsewhere in the watershed;
- ▶ secure additional grants from foundations and agencies that care about our work;
- ▶ create new income opportunities by seeking private dredging contracts with other ponds;
- ▶ and build on our good relationship with the town of Edgartown to gain financial support for operating the dredge in Edgartown Great Pond.



In support of this effort and for the first time ever, we did a mass mailing this summer to all Edgartown Post Office Box holders to acquaint them with the Great Pond Foundation and to request their support.

We will be discussing these plans at neighborhood association meetings throughout the year as well as meeting with individuals or small groups of donors and potential donors. Your continued support is extremely important and is very much appreciated.



The Great Pond Foundation is a 501(c) (3) tax-exempt organization. Financial support for the organization is provided largely by contributions from individual donors. The fiscal year of the Foundation runs each year from July 1st through June 30th. Tax returns filed by the Foundation are available for public inspection on our website www.greatpondfoundation.org

POND ENHANCEMENT PROJECTS	IMPROVED CIRCULATION	INCREASED SALINITY	REDUCED NITROGEN	PARTICIPATING PARTNERS
Cut Through Barrier Beach to the Sea	X	X	X	Town of Edgartown
Oyster Restoration		X	X	Shellfish Committee, MV Shellfish Group
Dredge Delta Channel to Opening	X		X	Dredge Committee, Aquamarine, Shellfish Committee, Edgartown Harbormaster
Dredge Other Permitted Areas	X	X		Shellfish Committee, Dredge Committee
Seek Dredge Permits - Other Areas	X	X		Shellfish Committee, Dredge Committee
Water Quality Monitoring			X	Mass. Estuaries Project, Town of Edgartown
Manage Invasive Plant Species				Nature Conservancy, Sheriff's Meadow Foundation
Reduce Local Fertilizer Use			X	Property Owners in Watershed
Algal Bloom Research & Remediation			X	Woods Hole Oceanographic, URI Marine Science
Support Responsible Development Rules			X	Planning Board, MVC, Ponds Advisory Committee]
Support Existing Sewer Developments			X	Wastewater Commission
Monitor Nitrogen Plume (test wells)			X	Town of Edgartown, Nature Conservancy, MVC
Public Education Programs			X	Various
Monitor New Dentrification Technologies			X	MVC, Board of Health





John Coskie

Director of Special Projects

Dredge Permitting and Operations...

The Edgartown Great Pond (EGP) is a brackish water body located on the south coast of Martha's Vineyard. The Pond has a surface area of approximately 860 acres and is home to a variety of shellfish and finfish and many other species of flora and fauna.

For many years the Pond has been subject to several influences resulting in nitrogen loading that has negatively impacted the water quality of the Pond and compromised the health of its inhabitants. In some cases, this resulted in the development of algal mats which further contribute to nitrogen loading and poor water quality. These influences include fertilizers and pesticides used for farming and lawn maintenance, the former failed waste water treatment plant located within the EGP Watershed, acid rain and the septic systems associated with the increased housing development around the Pond.

Since the beginning of time, storms have provided relief by breaching the barrier beach and flushing the Pond. This random and occasional flushing by Mother Nature has become insufficient to mitigate the negative influences of development. For many years fisherman and concerned citizens have sought to negate the effects of these factors by manually opening the Pond to the Atlantic Ocean. Farmers and fisherman initially achieved this by using simple manual methods such as oxen pulling plows and men using shovels. Today, the Town of Edgartown seeks to open the Pond four times per year using heavy equipment. The most critical opening of the Pond occurs in the summer when rising water temperature of the Pond increases the risk of bacterial and algal growth.

The Town must consider several factors when opening the Pond in order to achieve optimal flushing. A few of them are:

- Tides – Typically a full moon or new moon will provide greatest range between high and low tides to enhance flushing.
- Weather – Ideally light winds from a northerly direction will enhance the opening. Southwest winds typically have a negative impact.
- Pond Height – A high Pond will enhance the opening by the sheer volume of water being moved through the channel. The initial cut of about fifteen feet made by the equipment may increase to over 100 feet, thus facilitating a greater exchange of water.

Each opening introduces sand into the Pond resulting in the formation of a delta inside the Pond where the cut is made. This delta can inhibit the flow during an opening. The Town has secured permits from local, state, and federal agencies to manage the delta through dredging which is permitted to occur only from November 1st through March 31st. Icing of the Pond during the winter months can reduce available dredging time significantly. In 2008, the Great Pond Foundation acquired a dredge ("Nessie") and since then has been performing dredging at the direction of the Town. Steve Ewing of Aquamarine Dock Builders and his team operate the dredge.





*November 2, 2012
channel cut*

This past year for the second straight year in a row tandem fall storms delayed our dredging. The fall/winter season started with a bang on Edgartown Great Pond. First, we experienced the wrath of Hurricane Sandy in late October. One week later a much less publicized but equally potent Nor'easter occurred. Both storms caused the ocean to wash over the barrier beach at several locations. The area of the cut and delta were expanded as sand and water were deposited into the Pond. The rain and washover resulting from the storm surges also caused the Pond level to rise to the highest levels anyone has seen.

Paul Bagnall, the Edgartown Shellfish constable who is responsible for opening the Pond, attempted to make the cut three times in mid-November and early December. All attempts failed as the beach and delta had grown significantly and the wind and tides failed to cooperate.



November 12, 2012 after Nor'easter

"Nessie" was launched and began dredging the second week in December. Fortunately, we experienced generally good weather and were able to make significant progress dredging through the sand that had been deposited into the delta with the two storms. We dredged for three weeks and were able to create a well defined channel approximately 20 feet wide and six to ten feet deep. This was the most successful dredging effort since we acquired the dredge. Hats off to Steve Ewing, Tracy Benware, Russell Wendt and Josh Kressel for a tremendous effort!

*Ground and aerial views of
successful cut July 2013*



The high Pond and lack of a fall opening required that the Town attempt to open the Pond as soon as the threat of ice and low Pond temperatures would not impact the shellfish population. On March 15th the Town successfully opened the Pond. The significant volume of water of the high Pond resulted in a productive cut that lasted for almost a week. It was then closed by high southwest winds associated with a storm. Unfortunately, these conditions prevented our dredging activities planned for March.

Nevertheless, the channel created last December was still intact and enabled a very successful ten day opening in July 2013. The width of the channel grew to over 100 feet and resulted in a significant exchange of sea and pond water. Hopefully, we will not be hit by tandem fall storms again, and we will be dredging again beginning November 1st.



Bob Woodruff
Director of Science & Education

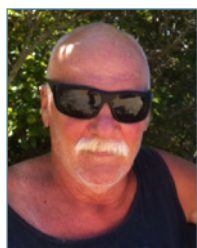
Science & Education...

Oyster Restoration Project

Now in its sixth year, the Oyster Project, headed by Rick Karney, director of the Martha's Vineyard Shellfish Group, is beginning to have a real impact on the health of the Pond. Project field manager William "Boo" Bassett said recently, that "breeding oysters can now be found in nearly all suitable habitats within the Pond, in sharp contrast to a few years ago, when the population had bottomed out."

Oysters are keystone species in estuarine ecosystems, providing stable habitats for other species and increasing biodiversity and ecosystem stability. Most importantly, oysters are filter-feeders. Each oyster can filter 15- 50 gallons of water daily and, in so doing, improve water clarity and purity and remove polluting nitrogen.

Excessive levels of nitrogen can seriously impact coastal ponds; oysters provide significant mitigation. Through their feeding, oysters remove nitrogen from the water column, both by sequestering the nitrogen in their body proteins and by depositing it in bottom sediments where it is converted to harmless gas that escapes back into the atmosphere. Boo noted that the image of adult oysters naturally filtering gallons of water a day is a hopeful one, especially in light of the increase in population.



"Boo" Bassett

Intern Program

For the past ten years the Foundation has sponsored high school and college students to assist in scientific and management projects on the Pond. The bulk of their efforts has been with the Oyster Restoration Project.

The aims of the program are to further the management and scientific work on the Pond and to give students hands-on experience with research and management of the dynamic biological system of the Pond.

Students have come from such diverse schools as MV Regional High School, Rye New York High School, Cornell University, and University of Rhode Island. Next year we are planning to have a college student assist in a study of Dermo disease, a fatal parasitic infection found in oyster populations from Cape Cod to Chesapeake Bay. [Editor's note: *Dermo is fatal to oysters but is harmless to humans.*]



*Summer interns Eva and Marco Piccone
relaxing after a long day's work*

Barrier Beach Status

Like barrier beaches along the Atlantic Coast from the Carolinas to Cape Cod, the south coast of the Vineyard was severely impacted by super-hurricane Sandy. Inspection of dunes and measurements suggest losses of 20 to 50 feet along much of the beach from Chilmark to Wasque. Widespread overwash occurred in the westerly portion of the barrier where previous storms had obliterated the dunes. It is astounding that there is as much dune as there is remaining after such a pounding.

American Beachgrass (*Ammophila breviligulata*) is a remarkable plant, without which we would likely have no dunes; however, it is no match for the likes of Sandy. It will take years of relatively tranquil conditions to restore a dune structure to the entire barrier. While the barrier is currently suffering from frequent storm damage and will not likely be able to rebuild a dune complex until and unless the current trend subsides, the barrier itself will not disappear. Instead it will continue to migrate landward as sea level rises, just as it has done for the past 15,000 years.



The Island's South Shore beaches are a dynamic geological and biological system, currently experiencing great changes from the forces of nature.

Photo on left was taken in 2010. Photo on right, taken in 2013, shows washover.



Water Quality

The Foundation has been monitoring water quality in the Pond for the past several years. Chris Carroll, who lives on the Pond, does the sampling at six stations prior to each opening of the Pond, gathering data on temperature, salinity, dissolved oxygen, and nitrogen. This information continues to be the most important indicator of the health of the Pond. While the data set is still too small to show real trends, the good news is that there have been no dramatic increases in the levels of nitrogen in the Pond over the past several years.

Widespread algal blooms, an indicator of high nitrogen levels, have not occurred since 2008. What does appear significant is that the nitrogen levels suggest that the plume from the old Wastewater Treatment plant is either sliding beneath the Pond or entering at sufficiently low concentrations to be within norms, and that residential septic systems near and distant from the Pond are not *at present* a threat. The long term inflow of nitrogen from existing and future buildout of the Town remains a concern, which has been only partially addressed through sewerage developments.

Our resident hydrologist, Craig Saunders, is now using a spreadsheet and graphs to analyze the Pond water data. Craig has installed three digital water data loggers at selected sites within the Pond to gather data on salinity, temperature, and water levels. The loggers will record data hourly for all but the winter period, when ice conditions preclude their use. The data collected will greatly improve our ability to gauge the significance of changes in the Pond over long time intervals and, coupled with the before and after water sampling with each cut, will help us better understand the physical dynamics of the Pond.

The data indicate that the Pond is in relatively good health. The goal of opening the Pond for a targeted ten to twelve days four times a year continues to be the most important action we can take to ensure good water quality. The summer opening is the most critical of all because the Pond is most active biologically at that time of year.



Installation of water data logger

On the Wild Side...

written & compiled by Bob Woodruff

Beach nesting birds are on the rise on the barrier beach

Over the past few years winter storm activity has changed Edgartown Great Pond barrier beach dramatically, creating new habitat for beach nesting birds. "It's somewhat ironic," noted Science & Education Director Bob Woodruff, "that the massive loss of beach grass because of the winter storms has created ideal nesting habitat for the birds." This year, Biodiversity Works* monitored and protected seven pairs of Piping Plovers, two pairs of American Oystercatchers and 200 pairs of Least Terns on the barrier beach.

By creating a protected area from skunks, with low wire fencing, we were able to attract a large Least Tern colony, and hatch oystercatcher chicks for the first time in at least six years. The end results of the season, however, were less encouraging. Severe thunderstorms with heavy rain and lightning caused the tern colony to abandon their nests, and Harrier Hawks and crows depredated many chicks. Some persevered, and we were able to fledge five plover chicks and ten tern chicks. Some bird parents improve in protecting their chicks from predators after experiencing chick loss in a prior year. We are hopeful that since the tern colony and oystercatchers did so well in the beginning they will return next year to try again.



**Biodiversity Works is an Island nonprofit formed in 2011. Their mission is to promote conservation of biodiversity through wildlife research and monitoring while providing opportunities for people to engage in hands-on nature study. They work on Martha's Vineyard and throughout southeastern Massachusetts. Luanne Johnson, Director and Liz Baldwin, Assistant Director of BiodiversityWorks kindly provided the information for this article.*

Pond oysters are affected by Dermo



Emma Green-Beach working on a remote set of oysters

Dermo is an oyster parasite that does not harm humans or other animals but is considered lethal to oysters, killing most within three to four years. Typically infections increase in intensity and prevalence with higher salinity and water temperature. Edgartown Great Pond has been afflicted with Dermo disease since the mid-1990s; however, the native oysters here are showing some resistance to the disease.

Since 2009, Emma Green-Beach, an Island resident who now works at the Marine Biological Laboratory in Woods Hole, has tested 30 oysters for Dermo in mid-September. In 2012, infections were more widespread (80% of oysters tested positive), but infections were all below the lethal level. The average level was higher than 2011 yet lower than 2010.

It is possible that because the weather was so abnormal in 2012 that a mortality peak could have occurred earlier than normal and prior to our sampling and would have removed the highly infected individuals from the population. This may have been the case as some mortalities of broodstock were noted in the floating spawning sanctuaries. The average loss observed in three of the floats was sixteen percent. The condition of the dead shells indicated that these mortalities were not recent but likely occurred during the summer. Without more frequent testing and mortality monitoring it is not possible to say when, if, or to what extent mortalities occur.

Ms Green-Beach hopes to continue and expand her research of the Pond oysters and Dermo in the summer of 2014.

Study sheds light on otter population

Before 2009, little was known about river otter abundance and distribution on Martha's Vineyard. In July 2009 the Biodiversity Works team began a coastal otter research project. They combed the island for otter latrine sites, sifted through otter scat, and placed cameras at latrine sites for a year-long study on river otter activity patterns. These "latrines" are the accumulation of otter waste material and can easily be identified by the areas strewn with fish bones and crab fragments. Indeed, these latrines are often the first indication of the presence of otters.

We now know a lot more about these elusive creatures that utilize our ponds. Otters love to eat fish and crabs. They need access to fresh water, quiet areas for dens, and areas to roll and leave their scent. Edgartown Great Pond offers all these resources. Seventeen percent of the otter latrine sites located on the Island lie along the shores of the Pond. Most are concentrated at the head of the coves and out on the barrier beach. Two dens were also found within the Pond area.

Of the 20 sites throughout the Island selected for the year-long camera study, the Edgartown Great Pond site was one of the busiest with 255 otter visits throughout the year. Spring is the most active season for all otters across the island. It is a time when otters are moving across the landscape looking for mates, young of the previous year are dispersing, and females are defending their territories in preparation for the birth of their young. The first pups photographed during the study were at the Pond in June.

When otters are not visiting latrine sites, they are eating. Otters have a high metabolism and need to eat ten to fifteen percent of their body weight each day. From an ongoing diet study we now know dining favorites for the Pond otters include mummichug/killifish, white perch, and blue-claw crabs. As long as we continue to care for the health of our ponds these top predators in our ecosystems will continue to thrive as they do now.



Luanne Johnson, Director and Liz Baldwin, Assistant Director of BiodiversityWorks kindly provided the information for this article.

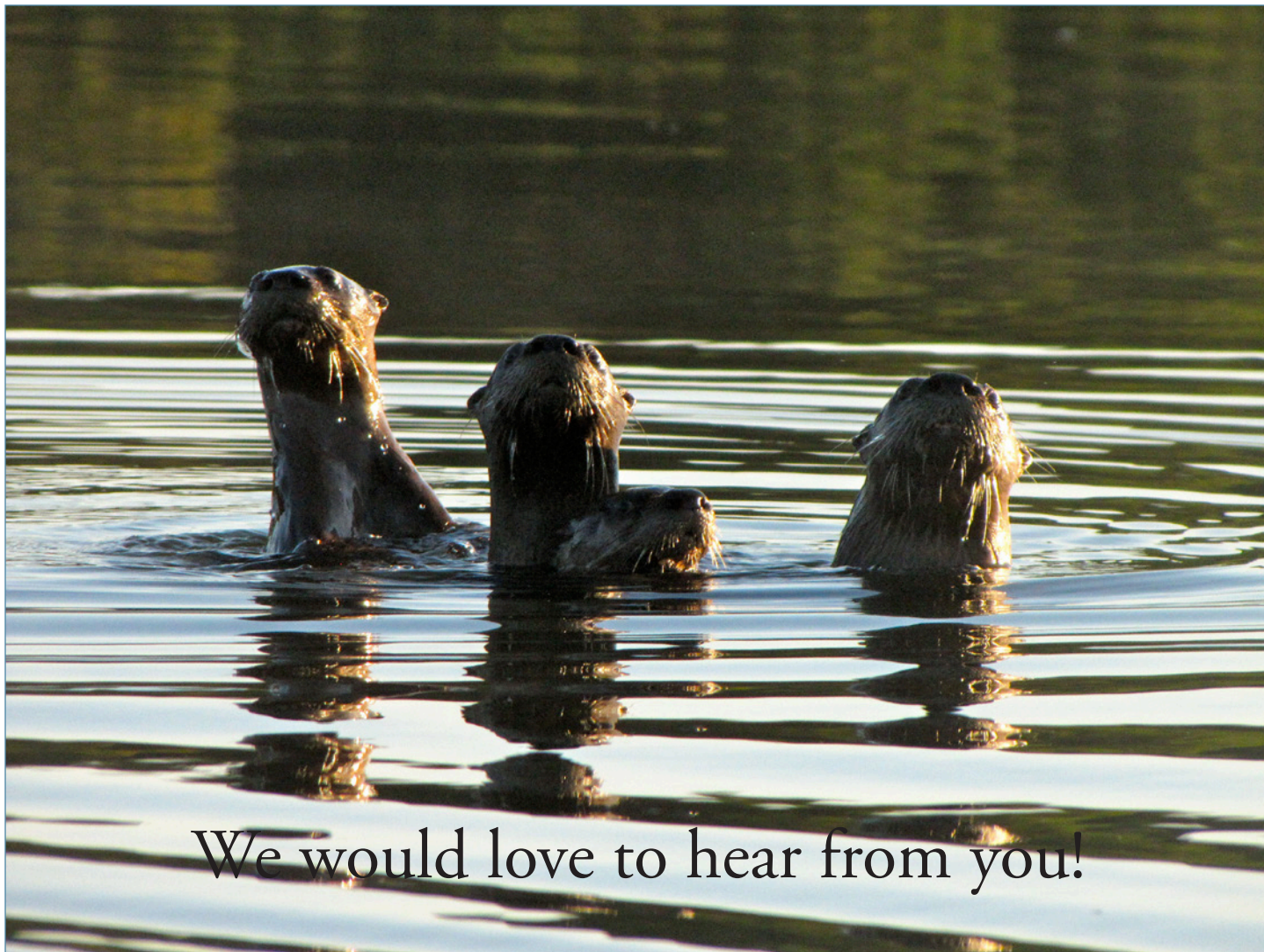


Portuguese Man O' War visit Vineyard South Shore

The recent occurrence of the Portuguese Man O' War (MOW) in Vineyard waters prompted us to do a little research on this justifiably feared, yet beautiful and mysterious creature. First, it is not a jellyfish at all but appears jellyfish-like because of the gas-filled bladder which enables it to "sail" before the wind, like the square-rigged gun-ships of the 18th century. Hence, the name Man O'War. The strikingly colorful blue-pink sail, is about the only part of a MOW that doesn't contain the stinging nematocysts, found all along the brownish, seaweed-like tentacles beneath the surface. These tentacles can be over 30 feet long! Amazingly, it is not a single organism but a complex colony of minute zooid animals so integrated that they are incapable of surviving independently.

Look for the colorful sail, either in the water or on the shore, and STEER CLEAR! There are many suggested treatments for MOW stings, most of which do not work. What does help is first carefully remove the remnants of the nematocysts if present, immediately flush the area with salt water, and then flush with hot (113 degree F.) water if possible. Vinegar and ammonia are not recommended. The painful sensation, like a bee sting, will go away in time. Immediate medical attention is advised for a severe sting

The Man O' War is a tropical creature, carried north by the Gulf Stream. Although not uncommon in the Island waters, they usually arrive in late summer. This year, unfortunately, they came just in time for the Fourth of July holiday. Beaches were closed briefly then opened for visitors who were advised to be vigilant for any remaining Man O' War.



We would love to hear from you!

Having established ourselves as a small but vibrant organization, we would like to reach out to all our neighbors in the Great Pond Watershed. We need to hear from you about anything concerning the Pond that you believe might be important. We also welcome your questions on any of our projects. We hope that you will join us in our efforts to care responsibly for this great resource. Your tax-deductible donations would be greatly appreciated as well!

Where to find us:

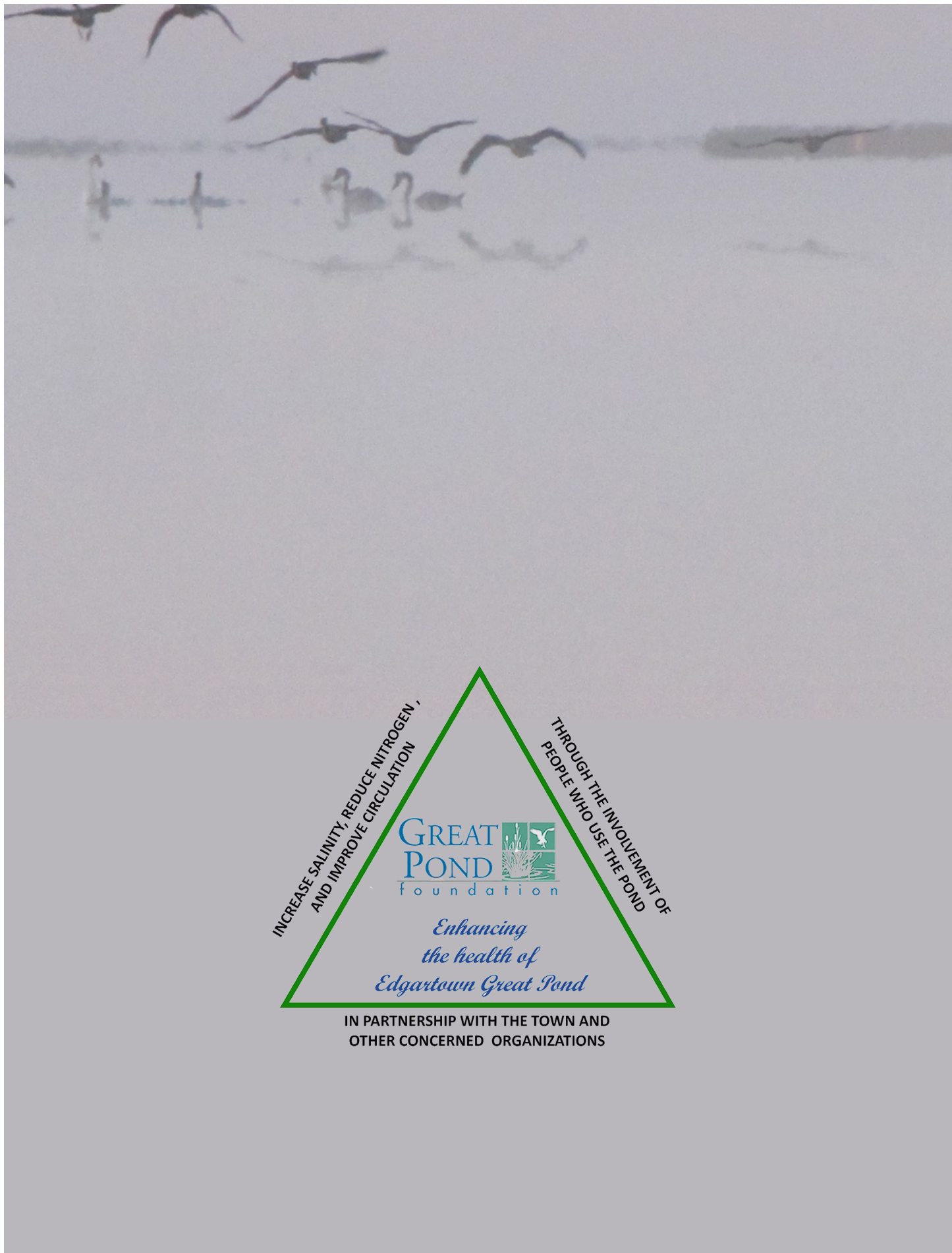
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IN PARTNERSHIP WITH THE TOWN AND
OTHER CONCERNED ORGANIZATIONS

