



The Watershed

Vol. 16, No. 1

The Oyster Pond Environmental Trust Newsletter
OPET, P.O. Box 496, Woods Hole, MA 02543-0496

Summer 2012
www.opet.org

A Message from the OPET President



Dear All,

You may be surprised hearing from me rather than from Steve Leighton who has led our organization so ably for the past two years. Steve was appointed by the Falmouth Board of Selectmen last

fall to serve on the town's Water Quality Management Committee which is charged with exploring solutions to the water quality problems of Falmouth's estuaries. He felt correctly that it was a conflict of interest to lead OPET and serve on this critical committee, and so I am presently your Acting President. Elsewhere in this newsletter is an article by Steve describing the deliberations of the committee.

Our organization continues to flourish. Wendi Bueseler, our Executive Director, is doing a wonderful job: everything from sampling the pond, to removing the invasive plants, to writing grant proposals and so forth. How did we get anything done before Wendi joined us? Peter Valtin, even from California, serves as our Secretary-Treasurer, joining our meetings by Skype, keeping us solvent and writing superb meeting notes. Many thanks to our Board members who gather each month to discuss the pond and OPET issues.

The pond continues to do well. Led by Lou Turner, a group monitors the herring both entering the pond to spawn as well as leaving the pond as fry. This spring over 4,000 adult herring entered the pond, the most since we began this monitoring in 2007. We expect a record number of fry leaving the pond this summer and fall. The white perch population is also robust nearing levels, as best I can tell from my infrequent fishing, that we haven't seen since the early 80s.

Another success has been the removal of phragmites, especially along the southern shore of the pond. We estimate that 90-95% of these highly invasive plants have been removed and now we see native plants bursting forth. Many thanks again to volunteers.

We are grateful for your generous donations to OPET! We are rapidly moving from red ink to black! We have

"You 'otta Know About Your Otters"



A Martha's Vineyard otter "caught" on a wildlife camera.

Did you know there are river otters on Oyster Pond? If you are lucky, you may have spotted some fishing for herring at the weir or crossing the bike path in the early morning. Luanne Johnson, a wildlife biologist and director of Biodiversity-

Works, a Martha's Vineyard non-profit will present "You 'otta Know About Your Otters", a talk about the natural history of coastal river otters inhabiting our watersheds and what you can do to help them. She is the featured speaker at the **OPET 2012 Annual Meeting on Thursday, August 16th at 7pm** at the **Falmouth Artists Guild** at 137 Gifford Street in Falmouth. Luanne will show some of the amazing photographs and videos of these charismatic animals captured on wildlife cameras set up around the island.

In 2009, together with Liz Baldwin (Antioch University New England), and Chris Neill (MBL Ecosystems Center), they began the first monitoring and research project of coastal river otters inhabiting the Martha's and Elizabeth Islands. They recently expanded their efforts to the Woods Hole and Falmouth area. They survey ponds, wetlands, and shoreline for otter tracks, scats, and trails to gather baseline data on the distribution of this top predator in our watersheds.



Luanne setting up a wildlife camera on Martha's Vineyard.

Luanne has spent much of her 20 year field career working to recover endangered birds, such as the Atlantic coast Piping plover and Palila (a finch-billed Hawaiian honeycreeper). Her doctoral research was on coastal striped skunks inhabiting Piping plover nesting beaches.

also received substantial grants from foundations this year, and we are delighted in this recognition of our work. For the first time we will have OPET runners in the Falmouth Road Race. The runners will be asking for small donations for OPET, so if you can spare an extra \$25 dollars or more, please support them on the Membership page of our secure web site.

And last, but certainly not least, we lost one of our most enthusiastic and active OPET members, Bob Livingstone. Bob is very much missed by all of us.

Best wishes and I look forward to seeing you on the 16th, **John Dowling**

Oyster Pond Environmental Trust

Summer 2012

WQMC—WORKING ON IMPROVING WATER QUALITY FOR OYSTER

POND BY STEVE LEIGHTON

Steve Leighton is the former President of OPET. He stepped down as President when he was appointed to the Water Quality Management Committee by the Board of Selectmen.

Readers of this newsletter may be interested in what is going on at the town level to improve the water quality in Oyster Pond. Below is an outline. The first and second parts are a possibly tedious account of the legal background and bureaucratic realities. The third section tries to explain what may happen in the future in the 'physical' world aka your backyard.

LEGAL BACKGROUND

Falmouth's increase in population, their septic systems and the associated nitrogen flowing through the ground water into the ponds has resulted in algal blooms and other problems with normal pond life. (Title 5 septic systems remove the pathogens, but not the nitrogen.) The federal Clean Water Act mandates that the states and towns restore the water quality in places like the Falmouth estuaries primarily by reducing the amount of nitrogen entering the ponds. In fact, total maximum daily loads (TMDL's) of nitrogen have been set. (Warning: if you don't like acronyms then these issues are not for you - sorry, they go with the territory.) To meet those requirements, the Falmouth Water

Quality Management Committee (WQMC) was formed by the town to determine how to remove the excess nitrogen ("meet the TMDL's") in the most equitable and cost effective way for the residents of Falmouth.

PLANNING PROCESS

The WQMC has been meeting for almost a year to carry out specific tasks related to nitrogen reduction spelled out by Town Article 17 passed in the spring of



The watershed and sub-watersheds of Oyster Pond. Effluent from septic systems within the colored areas flow into Oyster Pond and the Lagoon.

2011. One of the tasks is to develop a Comprehensive Water Management Plan (CWMP) for Oyster Pond, as well as for the other Falmouth Estuaries. The CWMP's serve several purposes. They are memos of understanding to show the good faith and intent of the town to spend money to clean up the water bodies, they are loan applications so the towns can borrow that money from the state at favorable rates (2% or 0%), and they are "building permits" so the state can review the technical plans. The latter gives the town some feedback on the feasibility of its proposed methods for clean up and provides uniform standards for fairness among the towns.

For historical reasons beyond the scope of this article, the Oyster Pond CWMP will be developed a couple of years behind the schedule for some of the other estuaries, but perhaps before some of the others. This is not bad for us as we may benefit from some of the experiences of the pioneering estuaries and may act as a model for the lagging ones.

The actual CWMP will be prepared by a consulting engineering firm to be chosen by the town. The Request for Proposals (RFP) to procure this firm has been drafted by the WQMC and is expected to be issued this summer. At an OPET meeting earlier this year I as a representative of the WQMC presented some

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Officers & Directors 2011—2012

Acting President - John Dowling	Ron Breteler
Acting Vice Pres. - Linda Calmes Jones	Kate Bulygina
Treasurer - Peter Valtin	William Kerfoot
Clerk - Peter Valtin	Steve Leighton
Executive Director - Wendi Buessler	Martin Monk
Directors:	Dana Rodin
Alfred Allenby	Rudolf Rottenfesser
	David Sykes
	Jonathan Smith
	Lou Turner

OPET Board meetings are open to all OPET members. Meetings are usually held on the third Sunday of the month, at 4:30 pm in the winter and 7:00 pm in the summer at the Treetops Clubhouse.

We'd love to have you come!

OPET does not have an official phone, but you can leave a message at 508-540-3263. We'll gladly get back to you!

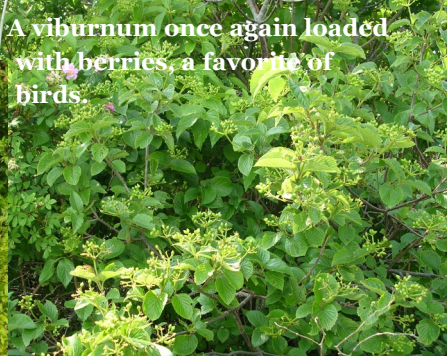
Or email: info@opet.org

Update: OPET's Shoreline Habitat Preservation Project

OPET has successfully removed 90-95% of the invasive plant phragmites in treated areas of the shoreline adjacent to the bike path. We are starting to see the fruits of our labor—literally! Native plants are bursting through where once only phragmites existed.



Back in 2006, views of the pond were completely blocked by phragmites



A viburnum once again loaded with berries, a favorite of birds.



Native plants bursting through old phragmites debris.

A Young Scientist on Oyster Pond by Emily Olmsted

OPET and the Woods Hole Research Center are very fortunate that Emily Olmsted has returned for an internship for a second summer. This is an account of her vital work sampling the water quality of Oyster Pond. She recently graduated from U Mass Amherst.

Summer has returned to Falmouth, just as I have also returned to my research on Oyster Pond. My research of the pond combines an incomparable learning experience of scientific methods with the unmatched beauty of Falmouth. Nothing could be better for a scientist to be able to collect and analyze samples from such a glorious location.

Mornings are always beautiful on Oyster Pond. We are able to see the graceful swans and we were lucky enough to see cygnets this June. On several occasions we have seen an osprey catch a fish and carry it away to the nest. The weir, which allows water to flow between the southern end of Oyster Pond and the Lagoon, once held a curious fish with a needle-like snout and a long, thin body. This fish seemed rather friendly and bold, as it did not mind us coming close to get a good look as it basked and fed near the surface. Besides observing wildlife, we pay attention to the plants, native and invasive, around Oyster Pond. We have

seen an assortment of flowers, but we have also seen invasive species such as knotweed growing around the shore of the pond. This is an ongoing battle but it is important to be on the watch for invasive species.

Sampling days are long days, but I always enjoy them. After spending a few hours collecting water from 15 different locations on Oyster Pond (six of which are at depths below the surface of the water), I take them back to the laboratory at the Woods Hole Research Center and filter the water. This is a somewhat tiring task because the samples must be filtered within 24 hours of their collection time, and it takes around 20 minutes to filter and organize the water for just one location. Multiply those 20 minutes by 15 samples and the filtering process takes me around five hours. From there, I later analyze them for several different parameters including nitrogen, phosphorus and total suspended solids.

I have been extremely lucky to have this experience for two summers. I hope that my research can benefit Oyster Pond and the health of the ecosystem in the long term.



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of the ideas that went into the RFP and they were generally approved by the OPET board and others in attendance. The task of the consultant will be to study the pond and its environment and the nitrogen removal requirements (TMDL's) and to suggest various methods by which the TMDL's might be met. These suggestions will be presented to the surrounding residents for comment and review. Based on those comments and advice from the WQMC, a preferred method will be described in a CWMP.

The CWMP will then be sent to the selectmen for review and then sent to the Massachusetts Department of Environmental Protection (Mass DEP) for their approval. This process will take several years and will include Falmouth ballot initiatives to approve the capital expenditures. Of course, there will also be town wide discussion of funding mechanisms such as betterments, sewer fees and/or tax increases. It is also possible that financing can replace debt being retired so that there will be "no new taxes".

TECHNOLOGIES BEING CONSIDERED

There are a variety of technologies being studied for the various estuaries but not all can be applied to all of the ponds. For instance, although there will be a demonstration project to show how much nitrogen can be removed from Little Pond by oyster culture, ironically that method cannot be used in Oyster Pond since its salinity must remain low to provide a spawning ground for the river herring. Likewise, inlet widening to increase tidal flushing is not feasible for Oyster Pond since it would increase the salinity and change the basic character of the pond. Permeable reactive barriers (trenches

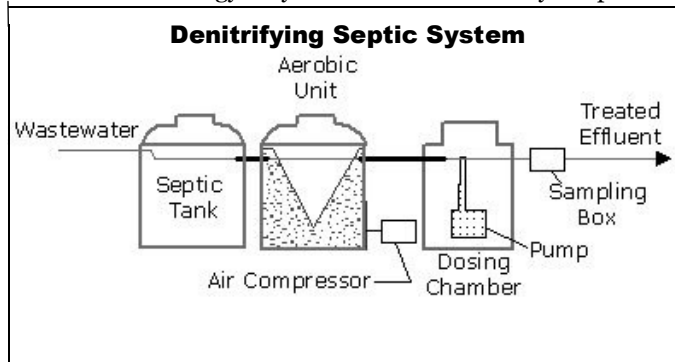
filled with wood chips to convert nitrates into nitrogen gas) will be tried at some of the other estuaries but are less likely to be the solution for Oyster Pond. Boulders would make excavation difficult and residents and the conservation commission are expected to object to the flora and habitat destruction near the edge of the pond. An active group is promoting eco-toilets (composting, urine diverting etc.) as an economical solution for some areas. If anyone is interested in participating in a demonstration project of this technology they will be enthusiastically

either be denitrified on site in individual denitrifying septic systems or in cluster systems serving groups of houses or it could be carried off to the central sewage plant on Blacksmith Shop Rd, presumably with some connection to the existing force main that runs under the bike path. A variety of sewage systems will be evaluated, including traditional, vacuum, low pressure, STEP, STEG, grinder pump etc. A key question that must be answered is, "Will the town be allowed to send more sewage to the central plant at all?" The plant has enough internal capacity but

there is limited ability to disperse the treated effluent without simply moving the problem from the south coast to West Falmouth Harbor and various fresh water ponds in the vicinity of the plant. The town is pursuing an ocean outfall permit that would handle the increased volume but it will be several years until we know if that is approved.

This planning and decision process will take years and will involve much public discussion and democratic debate. The WQMC is dedicated to public

outreach to keep all the residents informed and to utilize citizen opinion. We welcome your ideas and questions.




A generic schematic illustrating how denitrifying septic systems add an extra step to remove nitrogen, or denitrify, the septic system effluent before it is released to the environment. Waste is moved through an anoxic environment where microbes convert nitrate into harmless nitrogen gas. Technologies vary greatly in the how they introduce this denitrifying step.

Maryland Department of the Environment

welcomed by the eco-toilet sub-committee of the WQMC. In fact there is a \$5000 subsidy available to the first several dozen homeowners who sign up. This study is distinct from the Oyster Pond CWMP development but if enough homeowners were interested it could be a part of the solution for Oyster Pond. A very unscientific poll of Oyster Pond board members found little interest because of the perceived difficulty of retrofitting these units to existing houses or fears of real estate devaluation.

Having nearly ruled out the technologies above, what remains that might be used? The sewage from the houses in the Oyster Pond watershed could in principle



Want to know about the latest news and events at OPET? What is going on around Oyster Pond and Falmouth? Sign up to receive our new, brief, occasional Email newsletters. Send us an email at info@opet.org or add your email address to our donation envelope.

Robert Livingstone (1921-2012)

OPET Founder by Mindy Hall

We are sorry to report that Bob passed away on May 24, 2012 at Falmouth Hospital. He lived on Oyster Pond for 38 years and his concern over Oyster Pond and other Falmouth estuaries spurred him to be a part of the Oyster Pond Trust (later to become OPET) and a founder of FACES - Falmouth Associations Concerned with Estuaries and Salt Ponds. This article is reprinted from the Summer 2003 Watershed.

Made 117 drags and caught 127,000 pounds of haddock, (does not include whiting, hake, skates, flounders, etc.) and measured 63,000+ haddock and 72,000+ whiting.....

So reads an entry from Bob Livingstone's journal dated August 3, 1956 written aboard the Albatross III shortly after Bob's arrival in Woods Hole from Newark, Delaware, at an invitation to join the Groundfish Group and John R. Clark's Haddock Investigation. Bob may not have known it at the time, but he had found what was to be his home for the next 47 years, as he pursued a career at the National Marine Fisheries.

In 1957, Bob and his first wife Francis bought a home at 1 Fells Rd. on Oyster Pond where they raised 3 sons and a daughter. By 1995, after moving first to Treetops and then to Nobska Road, Bob was already deeply involved in the concerns and science of Oyster Pond. Some brown-bag lunch sessions in WHOI's Redfield Building, back in the mid-eighties, gathered folks with varying fields of expertise to discuss the changing water quality of Falmouth's Ponds. Out of these discussions grew the Pond Watchers Project, and, eventually, OPET. Today Bob prefers to be an "honorary" rather than regular board member because, at the age of 82, he doesn't want to feel too guilty if he misses an occasional board meeting. But Bob's dedication to the pond is unwavering: last winter, in the middle of one of our many severe snowstorms, I came across Bob taking pictures down by the weir!

Bob has had a colorful career, his undergraduate schooling at Oregon State University interrupted by World War II and three years of service in the U.S. Army, including 9 months in the 4th Infantry Division in "The Battle of the Budge". After finishing his B.S. at Oregon State (where he was a member of the Phi Gamma Delta Fraternity), he pursued graduate studies for two years at the University of Washington School of Fisheries. Bob has had a long standing interest in conservation is-

ues, and has been an avid birder since his days in Oregon. Besides being an invaluable knowledge resource in OPET matters – he is our resident fish expert.

Bob is active in the community in other ways as well, mainly through outreach programs of the Church of the Messiah, where he has been an active member since 1957. These programs include the annual Cape Walk for the Homeless now in its 18th year and a monthly food collection for the Falmouth Service Center.



Bob doing one of the things we loved best, checking on the water quality of Oyster Pond, even in a driving snow storm!

Somehow, Bob also still finds time to play a little tennis (this is how he met his current wife Laura), practice digital photography, and enjoy music, especially jazz. Between the two of them, Bob has 8 grandchildren and Laura has two. With all of Bob's other interests, we are grateful that he continues to make time for Oyster Pond projects!

Gifts to OPET in Memory of...

- ♥ **Roger Milkman** from Marianne Milkman
- ♥ **Captain F.J. Hancox** from Patricia Hancox
- ♥ **Don & Marge Zinn** from Bruce Zimmerli
- ♥ **Robert Livingstone** from Lee & Louis Turner

Run for OPET!

If you missed getting an OPET race number for the New Balance Falmouth Road Race you can still help out by sponsoring an OPET runner or if you were lucky enough to get a number, raise monies for OPET. Lucky participants get a stylish OPET T-shirt! Road Race Fund Raising forms can be found at www.opet.org. You can also sponsor an OPET Runner via our secure web site.



Delicious Light Refreshments

7pm

137 Gifford Street, Falmouth



Falmouth Artists Guild

Thursday, August 16th

OPET Annual Meeting

Biodiversity Works at the

Luanne Johnson of

by wildlife biologist
is the featured talk

"Your Otters"

"You 'otta Know About



**The Oyster Pond
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Trust**

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