

# Newsletter

Fall 2010

Volume 1, Issue 2

## Association Leaders

Brian Harrington  
President  
Dave Clark, Vice  
President  
Fred Kurker, Secretary  
John Foye, Treasurer  
Ken Cannon, Webmaster  
Paula Kuketz, Water  
Safety Committee  
John Foye, Membership  
Committee  
Sara Grady, Invasive  
Species Committee  
Geri Williams,  
Newsletter Editor  
Dave Clark, Government  
Liaison  
Marleen von Goeler,  
Education Committee  
Eb von Goeler and Ken  
Cannon, Water Quality  
Committee

## Upcoming Meeting

November 15, 6:45pm  
Bourne Veterans  
Community Center

Winter Watershed Birds  
& Waterfowl

## Website

[TheHerringPondsWater  
shed.org](http://TheHerringPondsWatershed.org)



*John Foye, Dave Clark, Brian Harrington, Fred Kurker*

## New Leadership

By Geri Williams

On September 27<sup>th</sup> at the Annual Meeting of the Herring Ponds Watershed Association new officers were elected to lead the Association. Brian Harrington will serve as President and Fred Kurker as Secretary for the next two years. John Foye was elected Treasurer and Dave Clark will continue as Vice President for the next year. The Association bylaws were written to stagger the terms of the officers to insure continuity of leadership and knowledge. It provides that each year at the Annual Meeting two officers are to be elected. However since our original treasurer, Terri Lavoie resigned for personal reasons, a new treasurer was also elected for a one year term. The HPWA thanks Terri for all her efforts maintaining the Association accounts since it's inception.

Marleen and Eberhard von Goeler stepped down as Co-Presidents of the association. All along they have been instrumental in organizing the HPWA and getting it off the ground. They have worked tirelessly on most committees and recruited many members. They've worked with town officials to secure grants and funding to help cover the costs of water quality testing. To show our appreciation for all their hard work and leadership the Executive Board presented Marleen and Eb a framed aerial view of the Ponds.

Several members brought old photos and maps of Great Herring Pond to share some of the history of our area. Many also brought desserts to share and a lovely social hour ended the meeting with opportunity for members to get to know each other better.



*Board members present at meeting: Dave Clark, Paula Kuketz, Marleen & Eb von Goeler, Fred Kurker, Lee Pulis, foreground Brian Harrington, John Foye*



*Eb and Marleen von Goeler*

## Safety Concern – Cold Shock

From Paula Kuketz, Water Safety Committee

Cold water removes heat from the body 25 times faster than cold air. Survival time can be reduced to minutes. Strong swimmers have died before swimming 100 yards in cold water.

Without a life jacket, a victim may inhale while under water (involuntary gasping reflex) and drown without coming back to the surface. This can only be prevented by wearing a life jacket at all times on the water in the off-season. There is no second chance.

MA State regulations require life jackets be worn between October 15<sup>th</sup> and May 1<sup>st</sup>.

Exposure of the head and chest to cold water causes sudden increases in heart rate and blood pressure that may result in cardiac arrest.

## Water Quality Report

By Eb von Goeler

The water in our ponds is directly connected to the groundwater of our watershed, through springs, seeping into the ground, etc. We pump up the groundwater from our wells for daily use, and we want that water clean. The quality of the water in the ponds is a good indicator of contaminants that are carried into the groundwater. That is one important reason why we do pond water sampling. The other is that we want to continue to enjoy our ponds for recreation, and pass them on to future generations as unspoiled as possible. An influx of harmful contaminants might prevent that.

We are in the middle of a three year program started in 2009 in which we sample the waters of Great Herring Pond, Little Herring Pond, and Carter's River at 11 locations, five times a year. Aside from these regular tests, we also take runoff samples during major rain storms twice a year, because they reveal additional sources of possible water contamination. This program is done in conjunction with the Town of Plymouth, and receives major funding from the Massachusetts Environmental Trust. Our samples are analyzed by Envirotech in Sandwich, a State certified Laboratory.

We need to sample several times a year, and over several years, because of seasonal and annual variations – for example, last year was a cool, rainy year, whereas this summer was hot and dry, and this makes it impossible to discern trends and problems in a short time.

Despite the long-term nature of our programs, we can already report on two important results:

1. Very positive is that our regular water samples at all locations have consistently shown negligible or low e-coli counts, far below hazardous levels, indicating no problems from direct septic system seepage, or animal/bird fouling. However, there may be brief periods of high e-coli counts immediately after major storms.
2. On a less happy note, our ponds show high phosphorus levels. Phosphorus is a plant nutrient that, when present in excess, is the main stimulant for the rapid growth of aquatic plants and especially of algae. Quite generally, there are three possible sources for this chemical – it can be

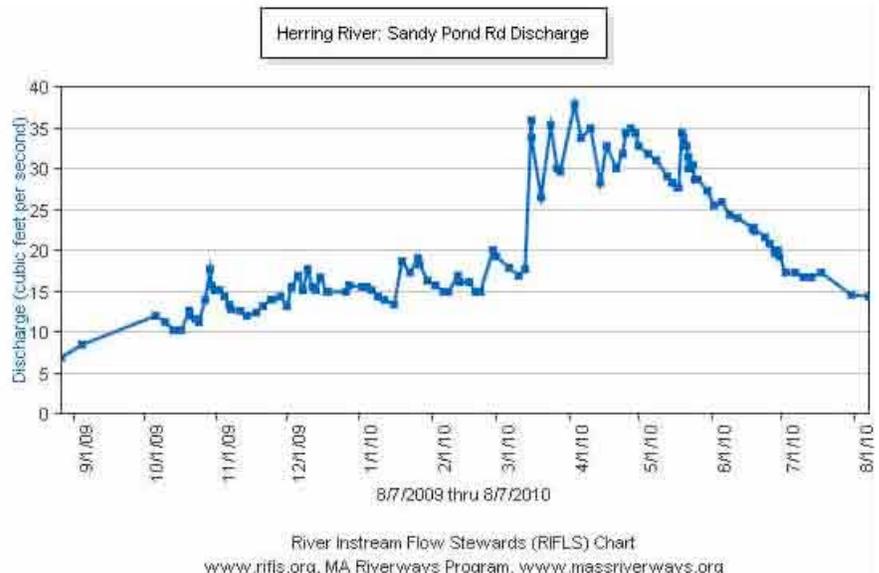
naturally in the ground, it can be introduced by human activities, or it can be caused by animal waste/plant decay. For our ponds, the first source can probably be excluded, or at least is minor, because data from 1979/80 show far lower phosphorus levels in Great Herring Pond. Human activities are a likely contributory source, the population density in the vicinity of the ponds has increased enormously in the past thirty years. On the other hand, agricultural activities adjacent to the ponds have decreased significantly, and to balance and evaluate these effects is highly speculative. Animal waste may or may not be a contributing factor. One thing is clear: we, each one of us individually, can do a lot to protect the ponds and the groundwater from harmful chemicals by being very careful about the contents of household chemicals and cleaners we use and then release into the ground with our waste water, by not using garbage disposals for food remnants, by not dumping expired medications into the toilet, by using low phosphate or no phosphate fertilizer on our lawns and gardens, by picking up after our pets, and by washing cars, trailers, and boats in car washes rather than our drive ways. My report would be incomplete if it didn't mention the dedication of the volunteers who are spending hours doing all this labor intensive work. Please consider volunteering, even if you can free yourself only occasionally, and for a short period. Call or email me if you can, have questions or comments, or want to join this committee.

## Water Level Monitoring

By Brian Harrington

One of our Association activities is to monitor how much water is flowing into and out of our watershed. To do this we monitor water levels at three points in the watershed. Our volunteers work closely with, and have some technical support from, the Massachusetts Riverways Program in doing this. The monitoring is done at the outlet of Little Herring Pond, at the inlet to Great Herring Pond, and one at the outlet of Great Herring Pond. The gauges are read at least twice a week, and sometimes more often. The accompanying chart summarizes the readings from one of these gauges, the outlet from Great Herring Pond.

Why do we care? Any year-round resident probably knows the general pattern the chart below describes, i.e. low waters in summer and fall, and high levels in the spring. But if we are to understand the source of pollutants entering our watershed we will need to understand the details of where, when and how much water is entering and passing through the watershed. This will be only one piece of important information needed to ferret out sources of pollutants. Other efforts, including the Water Monitoring Project, the bathymetry project, and the bottom-mud chemical analysis project, are upcoming projects keeping all of us busy. Do you want to lend a hand? Contact us for more information and/or attend our public meetings. Or support us through your membership and donations.



## Watershed Research Effort

By Ken Cannon

A sight familiar to many on the Herring Ponds over the last several years was my blue, double, sailing, Klepper Kayak with the Sheltie Dog (Heidi) up front, nose perched over the coming and barking at every passing jet ski. Heidi passed away last year and never quite came to grips with the concept that the jet skiers had similar rights to fun and enjoyment on the ponds to the ones that she enjoyed.

Along with Heidi's passing came new uses for the kayak, besides being her personal pleasure craft, which included research possibilities to satisfy a new passion I had for Hydrology and Water Quality on the ponds. I decided to Co-Chair the Water Quality Monitoring Committee with Eb von Goeler and embark on a quest of my own to identify ground water sources of Great Herring and Little Herring ponds for more accurate volumetric computations of how much water we actually have in the ponds and what the ponds refresh rates are for all that water. The Klepper Kayak was a perfect research platform allowing unfettered access to the shallow and deep sections of the ponds and it could be loaded up with needed equipment.

Under the able tutelage of Dr. Richard Enright, an eminent Hydrologist who has lectured worldwide on the subject, I began to assemble the necessary equipment to detect temperature anomalies in the water at depth in the ponds; which would indicate potential sources of groundwater, or springs, as they are commonly known, to the ponds. Once located and identified, we could test the groundwater for quality, rate of flow, etc., and know a lot more about our precious ponds and at least one source of the water contained within. With the scope of the project firmly in mind, it became apparent to me that so much more information could be gathered at the same time and the project grew exponentially in both expense and scope for the same amount of work that the original project had called for.

It became necessary to redesign the original hull of the kayak to suit the research mission. Dr. Enright also made connections available at the Woods Hole

Oceanographic Institute (WHOI) to obtain a super precise GPS unit that I am able to borrow (\$60,000 unit); which enables me to precisely co-locate all data measurements to the exact point on the Earth's surface that the group of measurements was taken. All of this progress was affected without incurring one penny of expense to the Watershed Association, as I had decided early-on to self-fund the project in its entirety. The new hull has been designed, built, and will be delivered shortly in a bright red color clearly marked as a research craft. I would ask that all recipients of this letter recognize the boat as such and pass the word to all, that the craft is not to be disturbed while collecting data and a no-wake rule should be observed where possible. The research conducted on the boat will be available on our website: [theherringpondswatershed.org](http://theherringpondswatershed.org).

The data is expected to include:

- a. Position in Lat/Longs,
- b. Surface temperature.
- c. Temperature at bottom depth
- d. Radar image of bottom including depth, shape, debris, sediment thickness, depth to bedrock.
- e. Digital color photo of bottom at location.
- f. Dissolved Oxygen reading at depth w/ temp.

All data will be precisely co-located with GPS positioning in EXCEL format, and processed in a GIS (Geographic Information System) program that will result in a precision 3-D Map of the bottom of the lake; which will be highly accurate, current, bathymetric information for the ponds and also available publicly on our website.

At the conclusion of the first phase of research, we should have available to us a body of data and information about our ponds that will be equivalent to the best efforts of water authorities, institutions, and municipalities on any lake, or pond on the planet. When my work is complete, I hope you will agree. Please feel free to drop me a line with questions, or suggestions under the subject heading "HWPA Data Project", and I will respond as time permits. Thanks.

Ken Cannon  
<[ken@theherringpondswatershed.org](mailto:ken@theherringpondswatershed.org)>

## Membership Committee

By John Foye, Chairman

There are a number of reasons to join your neighbors and friends in belonging to our association:

1. Help us keep our pond water, ground water and our watershed clean and healthy for future generations
2. Your meaningful involvement in an organization that is working for the good of your watershed and community.
3. Membership contributes to the strength of our association.

We are now 90 members strong, with over 120 families participating in the use of our web site. We look forward to our continued growth in the protection of our valuable resource. Protection through education is our goal and we need you, your neighbors and friends to participate.

We are asking you to invite those that live in the surrounding area of our ponds and watershed area to join The Herring Ponds Watershed Association and support our endeavors to preserve our ponds and watershed. Please use the application to help us improve our membership. Your membership dues will be used to provide extra water quality tests and much needed testing equipment for the collection of data for study and analysis.

Name \_\_\_\_\_

Address \_\_\_\_\_

City/Town \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

\_\_\_ \$15 Member, vote & communications

\_\_\_ \$25 Family, 2 voting members & communications

\_\_\_ \$55 Contributing Member, vote & communications

\_\_\_ \$100 Sustaining Member, receive all of above

Make checks payable to **The Herring Ponds Watershed Association**

Mail to: Herring Ponds Watershed Ass.  
P. O. Box 522  
Sagamore Beach, MA 02562

## Shoreline Restoration

By Marleen von Goeler

At our July General Meeting Ken Cannon presented an EPA slide program on the Bio-Engineering of Shorelines. This is a vital topic for us to consider as we think about the health of our ponds.

The EPA has stated that the two greatest stressors to our lakes are nutrients (such as phosphates) and disturbed/developed shorelines. In the past 30 years lakes in New England (including ours) have undergone tremendous development. Ken illustrated with slides how different man-made shorelines structures and vegetation changes affect the health of ponds.

For instance, stonewalls bounce back turbulence, stir up sediment and prevent the natural filtered runoff of water from yards into the pond. Short-rooted, bluegrass lawns that extend right to the pond aren't able to filter nutrients from fertilizer or pollutants from the streets before the rain runoff enters the pond. The lovely, sandy beaches that we create by bringing in sand add sediment and nutrients to the pond and destroy that important transition zone (the Littoral Zone) between land and water.

The slides illustrated ways to create a beautiful, natural shoreline with the use of native plants to restore the shoreline to its optimum state, so that runoff will again be filtered and the Littoral Zone at the edge of the pond will once more be a nursery for a variety of small animals and aquatic plants that benefit our ponds.

Lee Pulis provided this link to a PDF file of "The Massachusetts Buffer Manual, Using Vegetated Buffers to Protect our Lakes and Rivers" (2003)

<http://www.nae.usace.army.mil/reg/MA/BufferManualMADEP.pdf>

It's a wonderful resource and discussion of vegetative buffers and how we can improve our own shore, with an extensive appendix of native trees, shrubs and plants with their cultural needs and benefits.

Cindy DelPapa provided the EPA's Web Clearinghouse of Information for Lake Shoreland Protection Resources

<http://water.epa.gov/type/lakes/shoreland.cfm>, which provides links to fact sheets, webcasts, videos, and other resources for lakeshore protection

## Harbor Master Visits

By Dave Clark, Government Liaison

The Plymouth Harbormaster has made two trips to Great Herring Pond this season. The first was more of an educational visit where they went all around the lake checking registrations and safety equipment. While the equipment checks went quite well the registrations were a different story. They found between 12 and 15 boats with either expired, or no, registrations. These have since been taken care of. The Harbormaster also found an under age operator of a Personal Watercraft during his visit.

The second trip was to observe from shore and all was pretty calm. The Harbormaster has since been directed by the Selectmen to concentrate pond efforts to Morton Park, which has precluded any further patrols of the other ponds. A photo of the illegally moored boat at the access ramp was forwarded to the Harbormaster for action. He sent the registration to the Environmental Police for follow-up. I am told that it is registered to an owner in Bourne. I will continue to pursue this situation with both the Harbormaster and the Environmental Police until a satisfactory resolution is obtained.

## Comparing the Herring Ponds' Water Quality to Other Ponds

By Sara Grady

The HPWA collects quite a bit of water quality data, and while we know that there are certain limits and guidelines for each parameter, it is sometimes difficult to perceive how these values compare to similar measurements made in other local ponds. To illustrate some of our water quality data in better context, I have created box plots\* of pH, total phosphorus, and turbidity data from 10 other local ponds (8 for turbidity). The other ponds are Long Pond, Gallows Pond, Halfway Pond, Round Pond, Bloody Pond, and Little Long Pond in Plymouth; Oldham Pond and Furnace Pond in Pembroke; Jacobs Pond in Norwell; and Old Oaken Bucket Pond in Scituate. The recommended values for each of these parameters are 6.5-8.5 for pH and 1.0-10.0 NTU for turbidity. The ideal value for total phosphorus for lakes in our eco region is <0.025 mg/L, with values above 0.05 mg/L considered mildly eutrophic (i.e. overfertilized, which can lead to algal blooms and low oxygen) and values above 0.10 mg/L considered eutrophic.

\*Note for interpreting box plots – the box of the box plot represents the middle 50% of the data, with the dot in the middle representing the middle value if you were to list the data in order. The lines above and below extend from the minimum to the maximum value.

