## Agenda

-Welcome
-Brief (!) Business Meeting

- Adoption of Minutes
- Adoption of Treasurer's Report
- Election of Directors \& Officers
-The Main Event:
'For Peat's Sake: Bogs, Fens and Peatland Habitats of Foster's Pond'
-Updates on the Dam and the Pond
-Looking Ahead to 2019
- New Business


Welcome to the Annual Meeting of the Foster's Pond Corporation.
I'm Steve Cotton, President of the Corporation.
Whether you are a long-time member or a newcomer to the Foster's Pond Community, I am delighted to welcome you this evening.

I hope you got a chance to view the introductory slideshow that was looping through the projector before we started. I just want to stress that we depend on our volunteers, and on your financial support, to protect Foster's Pond and maintain our historic dam. If you have not filled out or taken a donation form, please do so, or go on-line to make your tax-deductible contribution at our web site, www.fosterspond.org. And if you're not on our e-mail list, please give us your email address so that I can send you periodic updates on what's happening around the Pond. Your e-mail address will not be used for any other purpose.

We have a few organizational obligations to fulfill, but this will be a very short business meeting so that we can get right to our program tonight.

After Richard's presentation, I'll bring you up to date on the dam and the Pond. And we'll also have our usual open forum for new businees, particularly recent wildlife sightings around the Pond.


## Approval of Minutes

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- May 30, 2018 (Annual Meeting) <br> - August 19, 2018 (Summer Meeting)
}


We posted minutes of our last annual meeting and our summer picnic meeting online so that they would not have to be read. May I have motion to approve these minutes?
[The Minutes were approved.]

## Treasurer's Report



This report was also posted on-line, and, as promised, our Treasurer is not going to read it. But I will ask David whether you have an update on this year's contributions.

I am going to ask for a motion to accept the treasurer'sreport for 2018.
[The Treasurer's Report was approved.]

## Election of Directors

- Nominated for re-election for two-year terms ending December 31, 2020:
- David Adilman
- Steve Ellis
- Dorothy Tyler

Under the by-laws, there are five directors in addition to the four officers. The directors are elected for staggered terms of two years.

I want to thank all of our directors. These include two people whose terms are not expiring:

Amy Janovsky
Martha Russell
Nominated for re-election for two-year terms ending December 31, 2020 are
David Adilman
Steve Ellis
Dorothy Tyler
Are there any other nominations? May I have a motion to re-elect these directors?
[The directors were re-elected.]

## Election of Officers

- Nominated for re-election for 2019:
- President: Steve Cotton
- Vice-President: Marty Rabinowitz
- Treasurer: Dave Brown
- Secretary: Janet Kenney


## 里

Under the by-laws, officers are elected for a term of one year.
The following officers have been nominated for re-election :
President: Steve Cotton
Vice-President: Marty Rabinowitz
Treasurer: Dave Brown
Secretary: Janet Kenney
Again, I want to thank my fellow officers for the work they do, without which the FPC could not function.

Are there any other nominations? If not, may I have a motion to re-elect these officers?
[The officers were re-elected.]

## The Main Event:

## 'For Peat's Sake: Bogs, Fens and Peatland Habitats of Foster's Pond'



Our featured speaker this evening is local landscape designer and botanist Richard Barry. Richard will guide us through some of the unique peatland ecosystems of Foster's Pond and some ways to help the pond through gardening practices, such as rain gardens and the use of native plants.


Before I turn this over to Richard, I want to underscore the importance of what Richard will say about protecting the Pond with rain gardens and native planting.


Like a lot of other ponds in Massachusetts, we've had a problem with blue-green algae in recent years. This a bloom I photographed from my dock in the Main Pond.

Blue-green algae is nasty stuff - it's particularly bad for kids and pets - and we've had to treat the Pond with copper sulfate in four of the last 5 years. We'll probably have to treat it again this year.

Copper sulfate works and it's relatively cheap. It kills the algae it comes in contact with. But it doesn't prevent algae, and each treatment only lasts for a short time. Copper sulfate sinks to the bottom, where it has no more effect on the algae and just accumulates. The less often we have to use it, the better.

## Algae and Phosphorous



Algae need phosphorous to grow. Of the 255 pounds of phosphorous entering the Pond each year, 208 pounds come from stormwater run-off.


The alternative to chemical control is prevention. The key to preventing algae is to starve them of at least one vital nutrient, and the limiting nutrient that is usually the most praticable to control is phosphorous. Which is why you're always hearing about the need to use detergents and other products with low or zero phosphates, or zero-phosphate fertilizers if you have a lawn.

Here are some figures for Foster's Pond, from the Watershed-Based Plan we commissioned in 2017. As you can see, most of the phosphorous that flows into the Pond comes from stormwater runofff.

Now a major portion of the phosphorous in stormwater run-off can't be controlled. It comes from the decomposition of organic matter in woodlands surrounding the Pond, and we're not going to pave them.

But a significant amount of the phosphorous in stormwater run-off can be reduced.

## Algae and Phosphorous

Stormwater run-off anywhere in the Pond's 1.5 sq. mi. watershed eventually can flow into the Pond.

Residential land use contributes an estimated 72 pounds of P. We could markedly reduce algae if we cut $P$ loading by just 25 pounds.


This is the Pond's 1.5 square mile watershed, outlined in red. It extends as far north as Orchard Street (north of Faith Lutheran Church), as far east as Rt 125, down southwest to Fiorenza Drive and Ashwood Avenue off Andover Street in Wilmingtron.

Within the red lines, all streams, gulleys, catchbasins, and run-off from storms lead to Foster's Pond.

If we could reduce the overall annual phosphorous loading into Foster's Pond by just $10 \%$ - 25 pounds out of the 255 pound total - our algae problems could be very close to eliminated.

## Algae and Phosphorous

Stormwater run-off anywhere in the Pond's 1.5 sq. mi. watershed eventually can flow into the Pond.

Residential land use contributes an estimated 72 pounds of P. We could markedly reduce algae if we cut $P$ loading by just 25 pounds.


That is not an easy task. But here are some of the things each of us can do. This one-page list is on our web site. It's taken from our Watershed-Based Plan. And the two top suggestions tie directly to Richard's work, and his talk this evening.

For all of his life, Richard has been fascinated with nature and especially plants. He has a degree in Forest Ecosystem Science from the University of Maine. He interned in the Fern Valley Native Plant Collection at the U.S. National Arboretum in Washington D.C. He has worked for landscaping and nursery businesses, and spent 16 years with the federal government as an agriculture inspector in the port of Boston. For the last 2 years he has been designing and planting native landscapes throughout Northeastern Massachusetts, including his own house on Clark Road. He and his family will be relocating to southern California later this month. He plans to do similar work designing native plant landscapes in California.

So here is Richard Barry.



I included these pictures to remind everyone why maintaining the dam is so important, and just how much stress it can come under. The last significant flooding event was in 2010. Torrential rains raised the water level a couple of feet in just 24 hours. Those are a pair of 42 -inch culverts under Rattlesnake Hill Road, and they were barely able to handle the outflow .

This picture is also a reminder that occasionally dams fail.


And that is why the State has tightened regulations that require dam-owners to have an Emergency Action Plan, just in case the worst occurs.

In past years, the State accepted plans that bascially said we would call 911. Yhat no longer suffices.
[CLICK]But we were not expecting this in December. We and other dam-owners were ordered in December to come up with a much more robust EAP by the end of this year.

The details were even more unexpected. [CLICK] The template provided by the State is 34 pages long with none of the blanks filled in, and the heart of it consists of an inundation analysis, by a professional engineer, showing what roads and what structures might be affected by a total collapse of the dam.

So "robust" also means "expensive." Our civil engineer is working on a draft of our plan, but this is one more reaons why your financial support is crucial. We need to meet the requirements if we are going to maintain our dam, and without a dam the Pond reverts to its original 50 acres.



Spiny (or European) Naiad is a hardy weed with narrow 1-inch long lime-green leaves that are brittle and curved. It can grow densely in shallow areas and and outcompete native species. It spreads by dropping millions of seeds. Here's some if growing in the Main Pond last year before we treated it.

We first detected spiny naiad in Foster's Pond in 2009. We've treated small infestations now and then, including 5 acres last year. All of the areas on this map were treated with diquat, a contact herbicide, and in our post-treatment survey, none was found in the treated areas.

## 2018

## Fanwort Treatment



About 15 acres were treated for fanwort last year

The map shows the areas where we treated fanwort last year.

## 2018:

## Treatment of 15 Acres to Control Fanwort



> Before we began our lake management program in 2005, fanwort was the dominant plant in the Pond.


Before we started managing the Pond, fanwort covered more than half the open water. It's a terrible invasive that can get so dense it overcomes native plant species. It provides poor habitat for fish and animals. It can grow to the point that it becomes so dense that it can suffocate fish.

## Prior 'Sonar' Treatments

- Foster's Pond has responded well to Sonar treatment
- We've treated whole Pond in 2005, 2011, and 2015, just 18 acres in 2007 and 15 in 2018
- We've had no adverse effects to fish or wildlife, and native plant diversity has increased
- Sonar is authorized for use in public water supplies, right up to the intake
- Fanwort has remained well-controlled


We've had very favorable results with Sonar, which is good since there really is no alternative. Sonar is the brand name of a slow-acting herbicide approved by the State for use in drinking water reservoirs and other water bodies.

The results have been confirmed by our vegetation surveys.
We have been fortunate in keeping the fanwort at bay even though we treat less frequently than other ponds that have this infestation. And we have had good results using lower concentrations than regulations allow.


Last year we conducted another systematic vegetation survey of the Pond. That was our 11th survey.

To conduct a survey, our biologist rakes up samples at 61 different locations around the Pond, recording species and densities. Data points were established in our first survey in 2004, and are logged in a GPS system, so we have a lot of comparative data over the last decade and a half.

The surveys let us track the health of the Pond, see the effects of our treatments, and get a jump on any new problem we see developing.

Managing invasives is on on-going challenge. The 2018 survey detected some additional fanwort in a few scattered area of the Pond this year.

The treatment technique has changed over the years and allows us to target small areas without having to treat the entire Pond. So rather than sit back and allow these infestations to spread, we're trying to beat them back with minimal, focussed applications. The first Sonar treatment is scheduled for May 20, followed by 2 follow-up treatments about a month apart.

## 2019:

# Possible "Spot Treatment" of Scattered Infestations of Spiny Naiad 



- The only Spiny Naiad seen in last year's survey was in an area targeted for fanwort treatment this year; unless infestations are found elsewhere, no additional treatment will be needed.
- If additional infestations are detected this Spring, they will be treated with the same contact herbicide we used in 2018; all the spiny naiad we treated in 2018 was killed, but some seeds sprouted in an untreated location.


The survey last year also found one small infestation of spiny naiad, but it is in an area we have targeted for a Sonar application, and Sonar works on spiny naiad. We have authorization to treat for spinay naiad if our biologist observes colonies elsewhere, but unless she comes across any apart from the one observed in last year's survey, we won't need a separate spiny naiad treatment this year.

## 2019:

## Possible Copper Sulfate Treatment of Blue-Green Algae

- Same treatment regimen we've used successfully since 2013
- We'll only treat if blue-green algae are detected and water clarity drops


We are prepared to treat this year if there are high algae counts, and we hope to have volunteers back out to monitor the Pond supplementing the work of our consultant. As to whether we'll need to treat, that's anyone's guess. It all depends on heat and precipitation.

## Water Use Restrictions: Weed and Algae Treatments

- For all treatments, Pond will be closed for fishing, swimming \& boating just for the day of treatment
- Fluridone (Sonar) treatment for fanwort
- Shoreline owners are advised not to use Pond water for irrigation for 30 days following each treatment; since there are likely to be three treatments, a month apart, that means no irrigation for the Summer
- Diquat (Reward) treatment for spiny naiad
- Water within 200 feet of treated areas should not be used for irrigation or consumed by pets for 5 days.
- Copper sulfate treatment for algae
- No additional restrictions


All of the treatments we undertake are performed by our lake management consultant, under a permit approved by the State and in accordance with an Order of Conditions approved by the Andover Conservation Commission.

None of the herbicides that we've used carry any restrictions on recreational use of the Pond - swimming, boating or fishing, but the FPC and our consultant have agreed to close the Pond on the day of treatment to minimize the possibility that anyone gets too close to the craft that's applying the chemical, or that anyone gets run over if our consultant is using an airboat.

All of these herbicides are approved for use in public drinking water supplies, and even though no one is drinking directly out of the Pond, that's reassuring to keep in mind.

The only longer-lasting restrictions apply to using Pond water for irrigation. These are, after all, herbicides. If you irrigate your plants with treated Pond water before the don't-use-before date, you may not like the results.


Finally, I just wanted to mention hydro-raking, which is another component of managing the Pond.

We hydro-rake in the spring when the water is up, letting the rake navigate to most shorelines. Also, it's still too cold to swim, so raking doesn't interfere with recreational uses.

The rake removes organic matter which contains nutrients, and nutrient reduction contributes to the health of the Pond. But the primary benefit goes to the shoreline owner, so the Corporation does not pay for the work.

This year's hydro-raking was conducted between April 22 and 29. Ten shorelines were raked a total of 35.5 hours.

## 2019:

## Two new non-chemical controls



We will be experimenting this year with two weed-control methods that don't require the use of chemicals.

Last year, we purchased a few $5 \times 5$ foot portable light-proof cloth barriers, that can be placed on the bottom to deprive weeds of sunlight. We tried deploying them last August, when they arrived, but that didn't go well. It's almost impossible to place them from a boat, so you either need diving equipment or just use them in shallow water. This year, the plan is to use them in shallow water if we come across very small stands of fanwort. There are a couple of places we saw opportunites last year - one in the Main Pond, and one in Dug Pond. And those of you who know what fanwort looks like, let me know if you see some growing in shallow water. I will get you a barrier to put down, or try to get a volunteer to deploy one.

A little more sophisticated, and a lot more expensive, is a technique called diverassisted suction harvesting. Think of a vacuum cleaner mounted on a boat. The pictures pretty much tell the story. The aim is to target one of those five fanwort colonies I showed you earlier on the 2019 treatment map, and use DASH instead of a treatment. The most likely target is that narrow channel at the mouth of the Mill Reservoir. We're looking at a two-day operation there.


We have plenty of opportunities for volunteers to lend a hand.


You've already seen this. Please go to the web site, print out a copy, and keep it handy.

## Please Volunteer

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- Water quality observations <br> -Deployment of "benthic barriers" <br> - Take on a WBP project <br> - Help with the 15th Annual Summer Picnic <br> - Host the event <br> - Assist with set-up
}

If you are in a position to volunteer with water quality observations, please make sure we have your name and e-mail address. A successful algae treatment depends on timing - seeing if the Pond is getting murkier and dispatching water samples to the lab for examination before a bloom gets out of hand. We rely on a combination of our consultant and local volunteers to canoe or kayak to specific locations, every week or so, as the weather warms. So let me know if you can help.

We need volunteers to locate fanwort, drop barriers, and monitor them. You don't need any tools. The frames are not heavy. But it's an awkward business, and you need to plan on getting wet. Still, it's pretty much once and done, until they need to be hauled up. And you can just do one or two.

I've talked a bit about the Watershed-Based Plan. I hope you'll take the time to read through the summary I've put up on the web site. At the end, there's a list and explanation of a variety of projects that cry out for volunteer leadership. If there's something that appeals to you and you'd like to participate, please call or e-mail me, or Amy Janovsky or David Adilman to discuss your idea. The FPC is only as active and effective as the volunteers who step up.

Finally, we have a pond-wide picnic each year, to which the public is invited. We try to hold them at a different location around the pond, and it's a great chance to experience the Pond from a new perspective. I'm always in the market for locations, so if you'd like to offer your property, please let me know. You'll get to pick a date that works for you. And if you are not hosting, please let me know if you can volunteer to help.



The Point is a small piece of land, owned by the Corporation, accessible only by a footpath at the end of Pomeroy Road.

In decades past, the Point served as a neighborhood beach, particularly for residents of the area who don't have their own shorefront access. There's no parking. You can get to it on foot, or walking a bicycle in. It's very small, a little like the area at Dug Pond, only smaller.

It has fallen into disuse in recent years, with shrubbery criss-crossing the path, bushes encroaching on the beach area, and the sand has washed away.


The path starts at the very end of Pomeroy Road, as a short paved apron to the left on Louise Small's property. It continues over the length of Dot Tyler's driveway leading to the garage under her house, then reduces to a narrow footpath that circles around the back of Dot's house and leads to the water.

Last year I invited anyone with an interest in rescuscitating the Point as a community resources to let me know. Joe Guilmartin, who is here tonight and lives on Pomeroy Road, has stepped up to take a look at this project, and I want to thank him and yield the floor to him in a moment.


Here's what the Point looks like now. And the community raft also needs work. It's listing badly, some of the underpinnings are rotting out, and ropes to the cinderblock anchors have deteriorated. Some of the anchors are gone, and the raft no longer stays put in a stiff wind.

I am constrained to point out that restoration of the Point would today involve more than just physical labor - pruning bushes, cutting back growth in the beach area, bringing in beach sand. It would also include paperwork and regulatory presentations. That includes drawing up plans for approval by the Conservation Commission. It also includes nailing down with the Health Department the requirements associated with re-opening a beach. Since the Point last served as a beach, new regulations have been published and expanded, and they require taking water quality samples every week, and having them tested by a certified lab. So there may be significant costs to consider, as well.

In the past, the volunteers who stepped up to maintain the Point and the raft have been the parents of school-age kids who tend to be the most steadfast users. So this is a torch that, if it is to be carried, must be borne by a new generation.

That said, I'll ask Joe to come up.

## New Business

The Floor Is Open

The floor is open.


