

BROAD BROOK COALITION



www.broadbrookcoalition.org

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About Us

Broad Brook Coalition (BBC) is a nonprofit, all-volunteer organization incorporated in 1988 with the mission of preserving open space and promoting affordable housing. Under a memorandum of understanding with the Northampton Conservation Commission, BBC is responsible for the day-to-day management of the 850-acre Fitzgerald Lake Conservation Area. BBC's goals are to maintain and enhance the diversity and integrity of wildlife species and habitat at FLCA, promote outreach and education and provide public access for passive recreation that is compatible with habitat protection.

Our work in trail maintenance, stewardship, education and land preservation to expand FLCA is funded by the generous support of our members and occasional grants.

Broad Brook Coalition Annual Meeting

Sunday, November 5, 2017 • Florence Civic Center, 5 to 7 PM

Elizabeth Farnsworth, Senior Research Ecologist with the New England Wild Flower Society, will be the featured speaker at the Broad Brook Coalition's annual meeting on November 5. A prominent botanist, Ms. Farnsworth will talk about "Climate Change, The Future of Plant Life in New England, and What You Can Do."



Elizabeth Farnsworth

Ms. Farnsworth is editor of the Go Botany website, which is an interactive online guide to the entire New England flora, and she developed and offered the Wild Flower Society's first set of online courses for teaching botany. She has taught at several colleges in the Pioneer Valley and served as scientific consultant to numerous agencies, including the National Park Service and The Trustees

of Reservations. She is currently accessioning and curating seeds of rare plant species for the region's largest native plant seed bank. In her spare time, Ms. Farnsworth sings semi-professionally and paddles her hand-built kayak.

The annual meeting will open with conversation and refreshments at 5 PM, followed by a brief business meeting and the guest speaker.

President's Message

How Resilient is FLCA to Climate Change?

From hotter summers, more severe storms, and the earlier appearance of flowers and tree leaves in the spring, there can be little doubt that climate change is upon us and that its consequences will be felt in New England. At the same time, there's considerable uncertainty as to when our familiar landscapes will begin to change significantly and how critical landscapes like the Fitzgerald Lake Conservation Area will respond to the new climatic world. Numerous efforts-- both qualitative and quantitative-- have been made to assess the resiliency of our wild habitats and of the adaptive capacity of the plants and animals that live in them.

The resiliency of the forested landscape depends on many factors and while climate change will play an increasing role, other stresses on forest health include fragmentation and the loss of connectedness between large

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President's Message, continued

undeveloped areas as well as the intrusion of invasive plants and insects.

“One of the best protections against stress is forest complexity: diversity of tree species, sizes and ages, and even the amount of deadwood.”

According to a recent, largely qualitative, report by scientists from the University of Massachusetts, the University of Vermont and the U.S. Forest Service (1), one of the best protections against present and future stress is high forest complexity, namely the diversity of tree species, a variety of tree sizes and ages, and even the amount of deadwood, which provides nutrients for tree regeneration and habitat for many kinds of birds, animals and useful insects. In addition, access to an ample water supply, whether in streams, ponds or marshes, confers significant benefits for forest health and complexity.

The forested areas of the FLCA appear to possess many characteristics that will help them to withstand changing climatic conditions. We are fortunate to have a naturally high diversity of tree species owing to varied features of the physical landscape and, consequently, of micro-habitats, different soils and ample water. As summers become warmer and drier, the composition of the tree inventory will likely shift. A study by the U.S. Forest Service predicts that in southern New England habitat suitable for white pine and other conifers will diminish over the next century, while sugar maples are expected to hold their own (2). At the same time, the competitiveness of several species of oak and hickory may actually increase. Given the diversity of the FLCA forest, it should cope relatively well with changing conditions.

What can we do to improve the prospects for the health and diversity of the FLCA landscape in the coming years? We have devoted considerable time and effort to the control of invasive plants, which will help to relieve a major stress on the environment. The local connectivity of the habitat, important for the movement of plants and animals through the landscape, has also been enhanced by the acquisition of contiguous, undeveloped land over the years. However, our ability to alter the size, age, species and arrangement of trees in the well-established forested areas is clearly limited. One small step we have considered for augmenting biodiversity in the FLCA is to create a number of “canopy gaps” or small cleared areas of an acre or so throughout the forest to provide a chance for shrubs and trees to regenerate, to provide more habitat for various kinds of wildlife and, of course, more deadwood. Connectivity with more distant undeveloped land is difficult to achieve. Nevertheless,

although there are significant barriers to the east (Interstate 91 and, ultimately, the Connecticut River) and the south (the City), the FLCA is to some extent connected with conservation land to the north and west despite intervening roads that hinder the free circulation of wildlife.

Over the past several years, researchers at the University of Massachusetts have developed a highly quantitative approach called the Conservation Assessment and Prioritization System (CAPS) for evaluating the various ecological communities in Massachusetts for their ecological integrity, that is, their ability to support and sustain biodiversity for what are likely to be stressful years ahead (3). CAPS is also envisioned as a tool for prioritizing the land and waterways for conservation that stand the best opportunities for preserving biodiversity in the future. This approach takes into account a vast array of data, from anthropogenic influences on land use to the physical and geophysical characteristics that underlie the ecosystem type, viability and likely persistence, at high resolution. According to this analysis, the ecological integrity of most sections of the FLCA is high, about 75% of the maximum, with reasonable connectedness to land to the north and west.

Another quantitative analysis, published by the Nature Conservancy in 2012, is aimed at prioritizing land for conservation to preserve the maximum level of biodiversity in the face of climate change (4). This approach, based on the observation that species diversity is generally correlated with geophysical diversity, predicts landscapes that are most likely to buffer against climate change because of the complexity of micro-environments generated by diverse topography, elevation and wetland density that they encompass. If an existing site becomes unsuitable for a given species, then the presence of different habitats in close proximity offers an opportunity for organisms to shift to new areas where they are better adapted. Also important in this analysis is the long-range connectedness of undeveloped land. According to the Nature Conservancy study, the resiliency of the Connecticut River Valley itself is little better than average, although the hills to the east and west encompass areas of much higher resiliency with good linkage among them.

Bob Zimmermann

1. Catanzaro, P., D'Amato A. and Huff, E.S., 2016. *Increasing Forest Resiliency for an Uncertain Future*. University of Massachusetts, University of Vermont, USDA Forest Service, Northeast Climate Science Center and Northern Institute of Applied Climate Science.

2. <https://www.fs.fed.us/nrs/atlas/>. *Climate Change Atlas*. Northern Research Station, USDA Forest Service.

3. <http://www.umasscaps.org/index.html>. *Conservation Assessment and Prioritization System*. Center for Agriculture, Food and the Environment, University of Massachusetts.

4. Anderson, G., Clark, M. and Olivero Sheldon, A., 2012. *Resilient Sites for Terrestrial Conservation in the Northeast and Mid-Atlantic Region*. The Nature Conservancy, Eastern Conservation Science.

Sharing the Woods with Ticks:

Preparedness, Pragmatism Are Key

This has been banner year for ticks in the woods. The reasons are complicated and not always quantifiable. Along with high humidity and wet conditions, a less intuitive factor was a bumper crop of acorns in 2015, which produced a booming population of the deer tick host, the white-footed mouse. Ironically, the mice do not become infected themselves with tick-borne diseases.

The mice do provide the habitat where deer tick larvae develop into nymph forms and, later in the season, into adults. The nymph forms, which are the size of a pencil point, tend to bite and infect deer and humans with Lyme disease in the peak months of May, June and July. By fall, the adults – now apple-seed-sized organisms – continue to feed on the blood of humans and deer until the first hard frost. Throughout this May to October period, the deer ticks can transmit Lyme disease and other tick-borne illnesses.

The ticks can be found in sparse forests and in gardens, where they live under leaves and other debris. Ticks cannot jump or fly, instead crawling onto the feet or ankles of their victims. Barriers to their spread from surrounding brush include wood chips and gravel, which are difficult for them to crawl across.

Lyme disease, known since the 1970s, is familiar to many in New England as a disease that causes mild fever, headache and, sometimes, a red rash up to a week after the bite of a deer tick infected by the Lyme parasite. Without treatment, infection can eventually lead to arthritis and neurological problems. The tick has to be attached to the human for 36 to 48 hours; infection when the tick is in place for less than 24 hours is unlikely. Diagnosis is made by finding antibodies in the blood of the infected person, although the antibodies may not appear until two to four weeks after infection.

Other diseases carried by deer ticks include Anaplasmosis, Babesiosis, and Powassan virus infection. Anaplasmosis and Babesiosis became known in the early 2000s, and Powassan virus about 2013. While it may be alarming to think that new diseases carried by deer ticks are being identified, these diseases are fundamentally different from Lyme. They are easier to diagnose because they cause severe symptoms, so that the presence of disease is indisputable. They also do not cause long-term chronic illness, and they are very uncommon. Unlike Lyme disease, Anaplasmosis and Babesiosis can be diagnosed immediately by a peripheral blood smear that shows the organism inside the cell. Nationwide, in 2016, there were about 30,000 reported cases of Lyme disease,



The larger wood tick doesn't carry Lyme disease, while the tiny deer tick can transmit Lyme and several other diseases to humans and dogs.

1,800 cases of Babesiosis, 800 cases of Anaplasmosis, and seven cases of Powassan virus.

The effects of these other tick-borne diseases on the kidneys, blood clotting, liver and neurological function provide a secondary means of diagnosis by using other ancillary blood tests. Anaplasmosis, similar to Rocky Mountain spotted fever, and Babesiosis, a malaria-like illness, are very treatable with good outcomes. Powassan virus causes an encephalitis that shares the poor neurological prognosis of the Eastern Equine virus transmitted by mosquitoes.

Awareness and prevention are the keys to enjoying our time outdoors mindfully, but not fearfully. Applying the repellent DEET is helpful, with special attention to the shoes and ankles, with socks pulled up over your trousers. The tick you find on your shoulders or scalp has usually crawled up there from your feet. An alternative repellent, permethrin, which is toxic to the tick, can be applied to clothing, and permethrin-impregnated trousers and sleep sacks are available. Vinegar and natural oils like geranium, lavender, eucalyptus, and garlic may be helpful. It's important to do a full body skin check when you come in from the meadows (where deer love the tall grass,) the woods OR the garden. Take a shower and put your dry clothes in the dryer for ten minutes.

A helpful video on the deer tick bite appearance, the rash, and instructions on removing ticks is available at the New York Department of Health website health.ny.gov/diseases/communicable/lyme.

Since 2010, the Medical Zoology lab at UMASS Amherst has offered a test to the public of ticks for Lyme disease, Babesiosis, and Anaplasmosis for \$50. (Call 413-545-1057 or go to tickreport.com.) Last year the lab tested 10,000 ticks.

Sharing The Woods, continued

Sixty percent of the deer ticks tested did not carry Lyme disease. It's important to note that a positive test does not definitively demonstrate that the disease has been transmitted to the person who was bitten.

In New England, it is important to remember that the 100% larger wood or so-called dog ticks do not carry Lyme disease. Also, Lyme disease continues to be a problem in areas where deer have been eradicated, as mice are the primary vectors. Pet owners have not been shown to have more tick-borne illnesses than others.

You can stay informed by following the literature and up-to-date epidemiological data from the Centers for Disease Control at cdc.gov/Lyme. In addition, citizen scientists can contribute to ongoing research that works to expand the limited knowledge on changing tick populations by visiting the University of Rhode Island Tick Encounter Resource Center and reporting their tick encounters.

With some pragmatic precautions, we can continue to enjoy the many benefits that we and our families derive from our time off the beaten path and in the woods.

Brigid Glackin

New Guide to Spring Wildflowers at FLCA

In case you haven't noticed, a new guide to spring wildflowers at the FLCA was posted to the BBC website last spring and can be downloaded at http://www.broadbrookcoalition.org/wp_site/wp-content/uploads/FLCA_Wildflower_Guide_Spring.pdf.

Compiled by BBC President Bob Zimmermann, the guide includes photos, descriptions and folklore relating to 16 native wildflowers encountered along paths through the woods, pastures and marshes of the conservation area.

We hope the guide will enhance your enjoyment and understanding of the rich and colorful display of flowers that appear between April and June each year. Look for similar guides to summer and fall wildflowers early in 2018.

A LAYMAN'S GUIDE TO SPRING WILDFLOWERS

AT THE
FITZGERALD LAKE CONSERVATION AREA

compiled by
Bob Zimmermann
Broad Brook Coalition

New Bog Bridges on Boggy Meadow Road

Recent visitors to Boggy Meadow Road may have noticed new bog bridges by the beaver pond about ¼ mile in from the Cooke Avenue parking lot. Why are the bog bridges there if the road is dry, and why have they been placed on the side of the road?

The Trails Committee built the bridges because Boggy Meadow Road floods when the snow begins to melt in late March or early April. The flooding, which is caused by the dams built by beavers to create the pond, can last well into June, as happened this past spring. The bog bridges, some 48 feet long, were built along the side of the road so they would not interfere with motor vehicles or tractors that periodically use Boggy Meadow Road to reach the dam. Motor vehicles need road access to the earthen dam so that it can be mowed annually and by others who maintain FLCA for various purposes such as invasive plant control, monitoring beaver control devices, and other tasks.

This particular section of Boggy Meadow Road has been flooding in the spring since beavers built a dam on Pine Brook several years ago. Previously, Pine Brook was a gentle little stream which flowed under Boggy Meadow Road in a foot-wide culvert, wound its way through the adjoining meadow, through the woods, past the Lathrop Community, then flowed under Hatfield Street on its way to the Connecticut River. However, the stream was sufficient to create a beaver pond estimated to be over 18 acres which, in turn, flooded Boggy Meadow Road.

Ultimately, it was necessary for a beaver deceiver device to be installed through the dam by Beaver Solutions, an outside contractor to the Broad Brook Coalition, which alleviated the flooding. Undeterred, the beavers built a second dam downstream, which again flooded the road in the spring of 2016. A second beaver deceiver was installed last summer. Nonetheless, seasonal flooding occurred yet again in the spring, blocking use of Boggy Meadow Road. With the new bog bridges in place, visitors to FLCA should be able to pass by the flooded sections comfortably.

Dave Herships

To receive occasional email alerts regarding BBC Walks and Talks, Volunteer Work Days and other news, go to the website and look for "email list" under the events tab at the top of the page.

Balancing Canine Recreation with Water, Wildlife Protection

A large urban conservation area that's popular with humans, supports all kinds of wildlife and is a key link in a watershed presents an ongoing challenge: how to welcome people, and their pets, while at the same time strive for minimal impact on wildlife habitat and Fitzgerald Lake?

We ask that pet owners keep in mind the reasons why dogs are required to be kept on leash in all city conservation areas and why owners need to clean up after their dogs. FLCA is no exception, even though it isn't possible to "police" the area for unleashed dogs.

Dogs off leash can be a real threat to wildlife, particularly to ground- and shrub-nesting birds and other animals. In addition, the growing number of dogs brought to FLCA means a big increase in dog waste. Did you know that the Environmental Protection Agency labels dog waste a non-point source of pollution? That two or three days' worth of dog droppings from about 100 dogs would contribute enough fecal coliform bacteria to temporarily close a bay and surrounding watershed to swimming? To translate that to our conservation area, a few weeks of droppings from, say, 25 dogs does impact the groundwater, the Broad Brook, and Fitzgerald Lake.

Margaret Russell

Board Member Margaret Russell Steps Aside

Margaret Russell, Secretary of the BBC Board of Directors and member since 2011, notified the board last spring that she would be stepping aside from board obligations in order to engage more fully in other personal and community interests. We board members were sorry to hear this news but quite relieved to learn that she wished to remain involved "behind the scenes" in some of her key roles, including editor of the BBC's semi-annual newsletter and as chief membership correspondent.

During her seven-year tenure on the board, Margaret made a significant contribution to BBC with her wisdom, insight and experience in matters of fundraising, land preservation and stewardship. She had been engaged in such activities in the Town of Falmouth before she and her husband, Jay, moved to Northampton in early 2011.

Although we will miss Margaret's thoughtful contributions to our board meetings, and her meticulous recording of board actions, we are most pleased that she will be nearby if we need to reach her. We offer our heartfelt thanks for her dedicated service.

Alan Marvelli

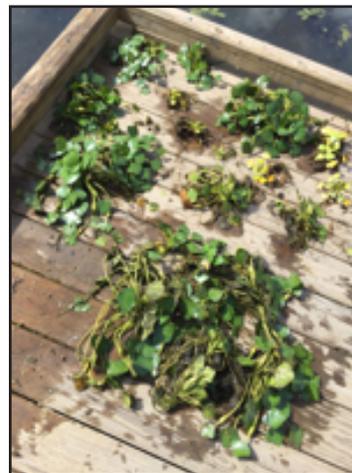


Volunteers on the Lake (Mary Jo Stanley)

Summer Water Chestnut Pull a Potential Success

As described in the Spring BBC Newsletter, we implemented a new approach to the removal of invasive water chestnut from Fitzgerald Lake this past summer. For many years we had gone out to pull this invasive plant twice each summer and, although we managed to keep it at bay, we didn't seem to be making much progress in eliminating it.

This year, we adopted the "pull early, pull often" approach, scheduling five workdays on the lake from mid-June to mid-



Pulled Water Chestnut Drying

September. Successive pulls yielded roughly 415, 350, 230, 70 and 10 pounds of water chestnut. Coverage of the lake was excellent as we had 10 or more volunteers out for each pull in a variety of kayaks, canoes and rowboats (Fig. 1). Over the course of the summer, over 25 people participated in at least one, and often several, sorties on the lake. We

are deeply grateful for the remarkable response of our volunteers. While we believe that we removed a large percentage of the water chestnut and thereby prevented new seeds from dropping to the lake bottom (Fig. 2), we will only be able to judge our success next year when seeds from plants we may have missed this summer (along with those remaining from previous years) begin to germinate next June.

Bob Zimmermann

Fitzgerald Lake: Attractive and Convenient for Anglers

If you search the mass.gov Fisheries and Wildlife website for the best places to fish in western Mass, you won't find Fitzgerald Lake on the list.

It's possible to get a bit of fishing in before or after work, on a lunch break, or whenever the urge arises.

But local anglers don't need the government to tell them that this small body of water is an attractive and convenient spot to take a break from their daily routine and try their luck. Whether fishing alongshore or from a kayak or canoe, it's just a short walk in from the North Farms Road parking lot to the lake, making it possible to get a bit of fishing in before or after work, on a lunch break, or whenever the urge arises. And with the newly extended dock, boaters can now launch into open water instead of fighting the muck off the end of the older, shorter boardwalk.

Like other small dammed lakes and ponds in the area, Fitzgerald Lake is fairly shallow and weedy, with a mud or silt bottom and stands of cattails or reeds at the margins. While the water is relatively open at the beginning of spring, the shallower portions eventually fill with a dense mat of pondweed, water lilies, and watershield, providing shade and cover for the largemouth bass and bluegill that are the target species for most people who fish the lake. As the vegetation starts to take over the lake surface, it takes a certain skill to cast a lure or bait into the open water along the edge of the floating leaves or pads, where a strike is most likely; a little too far, and all you're likely to haul in is a handful of tangled stems. (So-called weedless hooks are useful in these conditions, though they typically only reduce rather than eliminate the snags.)

Though neither largemouth bass nor bluegills are native to New England, it would be hard to find a lake or pond in Massachusetts without them. Both species can be caught throughout the year, even under the ice, and both will take almost any kind of lure or live bait (if they're in the mood). But it's the bass that anglers are mostly after: they're bigger, they strike harder, and they can put up a good fight, especially if you're fishing with light tackle. Typical size for a largemouth bass is in the 10–15-inch range, weighing from a pound or two up to 5 pounds; larger fish, up to 20 inches and beyond, are possible, though fish that size aren't often caught in lakes like Fitzgerald.



Pete Schoenberger shows off a bass he caught in Fitzgerald Lake.

Bluegills, a kind of sunfish, are smaller than the bass, but they're generally easier to catch and are especially fun for fishing with children. They are very similar to the pumpkinseed, which is native to New England but not as numerous as the introduced bluegill.

Aquatic plants in the lake provide shade and cover for largemouth bass and bluegill.

The two species are often found together in small schools, especially at the edge of weed beds or around sunken logs. Other panfish that are likely to be present in Fitzgerald Lake—based on its similarity to Lake Warner, which was sampled by Mass Fish and Wildlife in 1981—are the black crappie, white crappie, and yellow perch, all of which are considered to be excellent eating.

You can fish for freshwater species all year long in Massachusetts with few restrictions.

A license is required for anyone over the age of 15, though it's free for ages 15–17 and over 70. There is a creel limit of 5 bass per day and a minimum size limit of 12 inches, though of course you can catch and release as many fish of any size as you want. More information about freshwater fishing can be found at mass.gov/freshwater-fishing-in-massachusetts. Good luck to all!

Dave Pritchard

Rare Bird Appears at Fitzgerald Lake

Water chestnut pullers got a special treat at the end of July when a small, all-white heron glided in and settled on a stump only 30 yards from the new dock. Oblivious to the activity of the pullers, the heron remained in view all morning long, flying leisurely back and forth from stump to wood duck box to a perch in a tree on the opposite shore. In fact, it remained at the western end of the lake for the next 10 days, causing a stir among local birders as word spread that an immature Little Blue Heron was hanging out at Fitzgerald Lake.

Adult Little Blue Herons are a dark slate-blue, but the immature birds are pure white, with a prominent eye and a two-toned, slightly drooping bill. They are primarily a southern bird, though they can breed as far north as the New England coast.

Immature Little Blues are known for their wide dispersal after the breeding season, but their numbers are small and they are rarely seen in western Massachusetts.

Only five other Little Blue Herons have been reported in Hampshire County in the 20-plus years since Cornell University initiated its eBird website. This much-photographed bird is the first sighting ever from Fitzgerald Lake.

Dave Pritchard



This Little Blue Heron caused a stir among birders when it spent about 10 days at Fitzgerald Lake in July. Dave Pritchard



Members of the Trails Committee enjoy the fruits of their labor after building a bench on the dam overlooking Fitzgerald Lake. The volunteers constructed three additional benches: another at the dam, one at the junction of the Marian Street Trail and Boggy Meadow Road, and one on Boggy Meadow Road near the entrance of the Loop Trail that leads to the Lathrop Community. Lathrop residents asked if BBC would build some benches to provide spots for rest and a view. The bench builders were Dave Hershops, Jim Reis, Steven Harding, Alex Neubert and Michael Kesten. (Michael Kesten)

Broad Brook Coalition
P.O. Box 60566
Florence, MA 01062

www.broadbrookcoalition.org

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Broad Brook Coalition, P.O. Box 60566, Florence, MA 01062

\$25 for Individual membership \$35 for Family membership. *All contributions are tax deductible.*

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Please sign me up for a paperless newsletter (email address required).

I prefer to receive a printed newsletter by mail.

I've included an additional tax-deductible contribution to the Land Preservation/Stewardship Fund.

Donate Online! Renew your membership or join BBC on our website (click on Join/Support) Broad Brook Coalition needs your help, too!

We are very grateful for membership dues, but want you to know that you can contribute in other ways.

Members and friends are needed to help carry out our goals.

Please consider one or more of the following volunteer opportunities:

Trail Committee (maintenance and repair) Stewardship Committee (includes invasive species removal)

Land Preservation/Acquisition Committee Occasional Work Days Education Outreach

Newsletter writer Other (please specify) _____