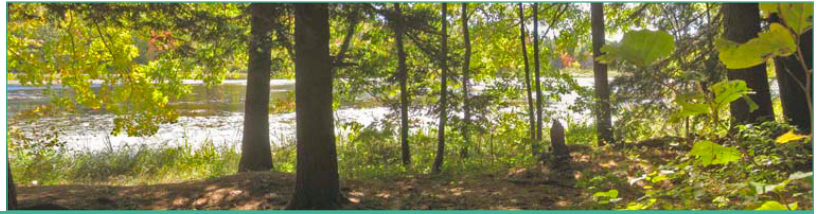


BROAD BROOK COALITION



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.

President's Message: Vanishing Birds

Astonishingly, the abundance of breeding birds in the United States and Canada has declined by nearly 30% over the past 50 years, from 10 billion in 1970 to 7.1 billion in 2018 (1), a development that David Yarnold, president of the National Audubon Society, has called a "full-blown crisis." This estimate was compiled by seven environmental research organizations, using data on more than 500 avian species obtained from systematic long-term surveys such as the USGS North American Breeding Bird Survey, Audubon's Christmas Bird Count, and, more recently, eBird, the popular bird-tracking site managed by Cornell University. The downward trend was confirmed by radar images of birds during spring migration which showed a 14% decline in bird abundance between 2007 and 2018. With a few exceptions, the loss extends to all major bird families across the continent, encompasses all habitats from grassland to boreal forests, and includes rare as well as common species. The decline in some of our familiar birds is shocking: eastern meadowlark (70%), wood thrush (60%), Baltimore oriole (40%), warblers (37%), red-winged blackbird (35%), blue jay (20%), and even starlings (50%). Loss of birds on this scale has profound consequences for the health of the environment, as they provide critical ecological services such as seed dispersal, control of insect pests, and plant pollination.

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VULNERABLE

Eastern Meadowlark



VULNERABLE

Baltimore Oriole

With a few exceptions, the loss extends to all major bird families across the continent, encompasses all habitats from grassland to boreal forests, and includes rare as well as common species.

There is still much we can do to help birds in our own backyards, however. One of the best gifts we can offer birds is a backyard full of native plants and shrubs which offer shelter and nest sites in the summer and a crop of edible fruit, seeds, and berries in the fall.

There are numerous reasons for the decline in bird abundance, all of which are attributable to the intervention of humans in natural systems. Most important is the loss of habitat through expansion of suburbs, industrial-scale development of farmland, and draining of wetlands. In addition, collisions with buildings, transmission towers, and power lines account for an estimated 600 million bird deaths annually in the U.S. and Canada, while predation by feral and free-ranging domestic cats accounts for a staggering 2 billion bird mortalities each year. Pesticides also contribute to the loss, either by killing the insects that birds need for food or by direct effects on bird metabolism. Climate change is taking its toll as well, by rendering traditional habitats inhospitable and altering the timing of migration which in turn can disconnect the arrival of birds on their breeding grounds with the availability of plant and insect food.

Large-scale projects have in the past proved to be effective in restoring the numbers of a few targeted species. In response to precipitous declines in waterfowl 100 years ago, for instance, thousands of acres of wetlands have been acquired, restored, and protected both by government agencies and by private groups such as Ducks Unlimited, and new laws were passed to safeguard migrating ducks and geese. As a result, waterfowl populations have increased by over 50% since 1970. And, in the 1960s and 1970s, the realization that DDT was impairing the reproduction of raptors such as bald eagles, ospreys, and peregrine falcons led to a massive effort to ban the use of the pesticide, which promoted the dramatic recovery of these species in many parts of North America.

Successful as they have been in limited cases, large, landscape-scale restoration projects are not practical for addressing the rapid disappearance of hundreds of other bird species nor can they be carried out by individuals. There is still much we can do to help birds in our own backyards, however. One of the best gifts we can offer birds is a backyard full of native plants and shrubs which offer shelter and nest sites in the summer and a crop of edible fruit, seeds, and berries in the fall. An excellent, locale-specific guide to such

plants has been developed by the National Audubon Society (2). In addition, the killing of millions of birds each year by feral and free-roaming domestic cats can be greatly reduced by keeping pet cats indoors and not releasing unwanted cats into the wild (3). Another challenge to birds is the enormous amount of pesticides used in the U.S. each year. Insecticides containing neonicotinoids, for instance, not only deprive birds of insect prey but can lead to weight loss and reduced fitness for migration. Reducing or eliminating the use of pesticides is of undoubted benefit to birds and other wildlife. Finally, the loss of birds to collisions with windows, especially large picture windows, whether they are deceived by reflections during the day or drawn to lights at night, is another threat to bird populations. This hazard can be mitigated by patterned window shades that warn birds away but do not significantly obstruct the view (4). Even decals fixed directly to the glass can help prevent collisions.

Despite the steep decline in bird populations over the past 50 years, it's important to remember that billions of birds are still with us. Their numbers are sufficient to reverse the present downward trend if we mount a vigorous campaign, both small- and large-scale, to help them recover. Consider how you can improve your backyard, support conservation organizations, and advocate for birds! Without concerted action, the loss of birds will continue unabated, with many heading for the endangered species list and extinction looming for others.



Wood Thrush



Bald Eagle

— Bob Zimmermann

(1) Rosenberg, K.V. et al (2019), *Decline of the North American Avifauna*, *Science* 366, 120-124. (2) <https://www.audubon.org/native-plants>. (3) <https://www.allaboutbirds.org/news/faq-outdoor-cats-and-their-effects-on-birds/>. (4) <https://abcbirds.org/get-involved/bird-smart-glass/>.

Dogs and Bears

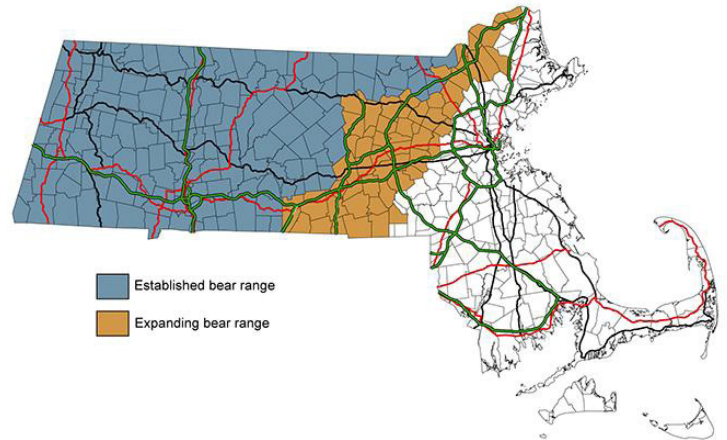
Bears are a charismatic and inspiring presence in our woods, but we must treat these powerful wild animals with respect. As bears in our region consume human-provided food from bird feeders, agricultural fields, and garbage, they are becoming accustomed to proximity to people. They can be attracted to bee hives, chickens and other caged animals – and to dogs in the woods.

A few years ago, my dog was attacked by a bear in the woods. Luckily, she had only surface wounds, and was able to be stitched up, but it was a dramatic incident that has made me acutely aware of the power and unpredictability of these animals. I was walking along a ridge with my three dogs, two of them leashed, and turned onto a path that I had not used in several weeks. The dogs were acting strangely, so I put my senior dog back on leash. They stopped, and I looked up to see a large bear, arching her back. She clapped her jaws, making a loud sound, and I thought *Now she is going to bluff charge*. She charged, but it was no bluff. She grabbed my golden retriever mix by the back of her neck and started pulling on her. I reacted by firmly, with a loud, low voice, shouting “NO, STOP” as I had been taught in a self-defense class. It had no effect. Meanwhile my corgi cross was going wild, barking and twisting back and forth, and my other golden retriever had turned his back trying to leave. At one point the bear had my dog on her side and was trying to drag her off, but I pulled back. Finally, the bear sat back. I told her “Ok, we are leaving,” and she let us back away. Thankfully my dogs were able to walk the mile home so we could get help.

I had a second bear incident a few weeks later in a different area of the woods. My little dog started alerting, so I knew there was a bear nearby. I looked up and saw a lean bear 100 yards away looking at us. Before we could do anything, it ran at us, stopping just five feet away. This time, I kept my little one from barking, and as we backed up, the bear rubbed his cheek on the tree and popped his jaw. He seemed confused, and finally let us back away.

After these incidents, I reached out to bear biologists to understand what had happened and what I might be able to do. The biologists noted the bears likely were more aggressive deep in the woods than they would have been in my yard or on the street, as bears do seem to distinguish areas that are people-dominated versus their own spaces. The consensus was that the first encounter was likely with a mama bear (I didn’t look for cubs as all my attention was on her.) The second encounter was likely her son, who had watched her but lacked her confidence. The biologists

Black Bear Range in Massachusetts



felt the bears were attracted to the dogs, perhaps after a traumatic incident. My neighbors noted that one mama bear that had been seen with three cubs later only had two, and was acting very nervous.

This is the concern with dogs that are allowed to run freely in open woods: they may be harassing wildlife without the owner being aware. Dr. Stephen Herrero of Calgary has written many books and articles about bears, and his advice is to keep dogs leashed. Mass Wildlife also recommends that dogs be leashed and notes that bears may become aggressive in the presence of a dog.

The bear population in Massachusetts was only about 100 individuals in 1970; it is now 4,500 and expanding. Those 100 bears were likely shy and reclusive, but as the population grows we will have a diversity of behavioral characteristics. Some will be less shy, and in some cases more aggressive, leading to more encounters. Also, because they are attracted to garbage or bird feeders, they will become more comfortable around people.

I have changed a few things since my bear encounters. Rather than putting up bird feeders, I landscape my yard with bird-friendly shrubs. The National Audubon Society is one of many sources for native plants that attract songbirds, as well as hummingbirds and butterflies. I also put my garbage out the morning of pickup, keep my dogs close, and hike with bear spray, which can be purchased at local sporting goods stores. You can find more information about black bears in Massachusetts at <https://www.mass.gov/service-details/learn-about-black-bears>; the Daily Hampshire Gazette often carries stories about local bear sightings, such as this one from 2016, <https://www.gazettenet.com/Bears-in-the-Valley-3426741>.

— Tina White

2020 Walks and Talks

Due to the coronavirus situation, the BBC board has postponed all walks and workdays in April and May until further notice. Later programs may have to be postponed as well. Please check the Broad Brook website (broadbrookcoalition.org) for updates on any of these events, or call Dave Pritchard (413-268-3668) or Dick Wynne (413-584-7930).

Spring Understory Walk

Connie Parks

Postponed until further notice

Join botanist Connie Parks for a ramble to Fitzgerald Lake on Mother's Day morning. May is the high season for spring ephemerals, wildflowers that are visible for short times before overstory trees leaf out. Dwarf ginseng, for example, is present above ground for only about 60 days per year. We'll use a plant list from May 11, 2013, to see if and how things have changed on the north shore. Proper footwear is advised, and thunder cancels.

Connie is a freelance editor and educator residing in Florence who remembers mudbiking the trails before there was a Broad Brook Coalition or FLCA.

Mid-Spring Bird Walk

Laura Beltran

Postponed until further notice

Laura Beltran, long-time birder and an educator at Arcadia Wildlife Sanctuary, will lead this bird walk along the woodland and lakeside trails at Fitzgerald Lake. By late May most boreal migrants have already passed through our area, and residents and breeding migrants have established territories and are beginning to nest. We will look and listen for warblers, thrushes, vireos, swallows, herons, and more. Bring binoculars.

Learn Your Ferns

Randy Stone

Saturday June 13, 10:00 – noon
North Farms entrance

Ever wonder if you might be susceptible to fernophilia? Join Randy Stone of the Pioneer Valley Fern Society for a walk through the Fitzgerald Lake Conservation Area, finding common ferns and club mosses of our area. Learn the key features for easy identification of our "top 10" native ferns and maybe some uncommon ones too. Start creating a list of ferns of Fitzgerald Lake! Bring a hand lens if you have one. Wear clothing appropriate for possible encounters with poison ivy, insects including ticks, or muddy ground.

Red-backed Salamanders and Citizen Science

Brad Timm

Date and Time TBD (sometime early fall)
North Farms entrance

Learn about the fascinating life history of the red-backed salamander while we look for some of these interesting creatures on this morning hike. Join Brad Timm, who has conducted amphibian research in New England for more than 20 years, as we take a leisurely walk and flip over some logs, rocks, and anything else we might find on the forest

floor that these salamanders may be living under. In addition to searching for and learning about these extraordinary salamanders, we will also discuss an extensive citizen science project that has been going on for years throughout the range of this species to better understand it. And we will also discuss how anyone (you, your family, friends, kids...anyone!) who is interested can become involved in this project and contribute to the conservation of this cool species. As we walk we will also keep our eyes (and ears) out for any other wildlife species we may come across. This will be a very kid- and adult-friendly walk, so all ages are welcome and encouraged!

Two Poems by Cheryl Anne Latuner

Cheryl Anne Latuner lives in Northampton, and has taught English, Literature, and French at the Hartsbrook High School. She was a fellow at Iowa State University, where she received her Master's degree in Literature and Creative Writing. The following poems are taken from the series of poems that comprise her book *Soon They Will Fly: A Meditation at Fitzgerald Lake*. This and her other books are available through her website, cheryllannelatuner.com.

iv

In deep woods,
any damp thing, wood or stone,
invites a moss,
mounds of emerald softness,
forests from far above,
as if every rock were an island.

First one
rippled mushroom fanning the bark
of a fallen oak,
flirting curve of white, tight flesh;
then thousands,
lights going on in every crease
of the woods. Like
toenails, or fingernails,
barnacles, or a clam's bisque rings,
a moth's wings standing up, unfurled,
as if they were never meant
to be just themselves.

Workdays at FLCA: Spring and Summer 2020

Shrubland Habitat and Native Plants

Postponed until further notice

Several years ago, we established three "islands" of native shrubs in Cooke's Pasture to provide food and habitat for shrubland birds and small mammals. We return every year to prune the shrubs, cut back competing undergrowth, and replace plants that have not survived the winter. Tools will be provided, though additional clippers are always welcome. Wear long pants and bring along your favorite insect repellent. Meet at the former Moose Lodge parking lot at the end of Cooke Avenue at 8:30 a.m. or at the Fitzgerald Lake dam at 9:00 a.m. Contact Dick Wynne at 584-7930.

ix

Today I find the path along the shoreline,
less trodden, but remarkable.

Many enough have passed here that the path is alive.
Few enough have passed that there is still life in it.

Green switches cross over,
keeping it narrow,
keep me lifting my ankles,
softening the sound
of my feet making contact
with damp earth,
over and over.

The shoreline cuts back and forth, a fickle
edge, a series of interruptions, each bevel
hinging on some cue, some permission, some
insistence from the water. I look down; small fish
tread, imperceptibly, round eyes looking up;
I pass frogs' eggs, fish eggs, larvae
finding pockets in matted, jutting grasses.

How swiftly I pass from light to dark,
stepping from one room to another,

curtains of foliage parting, closing;
I tell you, I'm beginning to know
the ghost of my body, filling each space
momentarily, leaving the path behind
as I found it – and changed – my body

arriving where a moment before
I saw it coming.

Annual Cleanup at the North Farms Road Entrance

Postponed until further notice

Each year we devote one day in the spring to cleaning up the North Farms Road entrance to the FLCA, including clearing winter debris from the path to the bridge and boardwalk, picking up trash in the parking lot, and removing by hand invasive plants such as garlic mustard, Japanese knotweed, and multiflora rose in the adjoining woods. Please help us spruce up this heavily used route to the conservation area. Contact Brad Timm at 401-595-9934.

Removal of Invasives on Boggy Meadow Road

Sunday, June 28, 10:00 a.m. – 1:00 p.m.

The margins of roads provide excellent habitat for the growth of invasive plants. We have surveyed and located many patches of invasives along Boggy Meadow Road, which connects the former Moose Lodge parking lot at the end of Cooke Avenue with the Fitzgerald Lake dam. We will work our way along the road, removing invasive plants such as multiflora rose, Asiatic bittersweet, autumn olive, and nonnative honeysuckle by hand: pulling, cutting, and digging. Tools will be provided, but if you care to bring clippers, pruning saws, and lopping shears, it would be appreciated. And don't forget gloves, sunscreen, and insect repellent. Meet at the former Moose Lodge parking lot. Contact Bill Williams at 585-9696.

Removal of Water Chestnut from Fitzgerald Lake

Saturdays, June 20, July 11, August 1,
August 22, September 19
9:00 a.m. – noon

Three years ago we implemented a new approach to controlling water chestnut in Fitzgerald Lake called "pull early, pull often." In 2017, we removed roughly 1,100 lbs. from the lake but in 2018 the yield was down to 300 lbs. and in 2019, to 140 lbs. Though we are pleased with the results so far, viable water chestnut seed can persist for up to ten years on the lake bottom so we plan to continue our more aggressive approach once again this year. We'll organize crews in late May, begin pulling in mid-June, and continue at 3-week intervals throughout the summer. We will need volunteers with canoes or kayaks though we can always use the help of those who don't have their own boats. If interested, contact Bob Zimmermann by email (raz@umass.edu) or phone (585-0405) for further information or to volunteer.



The silvery underside of swamp white oak leaves

Beaver Activity

Signs of beaver are a familiar sight at FLCA, from freshly gnawed stumps of saplings to the trampled pathways through the cattails to the larger trees felled alongshore. Children delight in getting slapped at by a cruising beaver at dusk, and everyone marvels at their incredible structures. Here are a few photos showing recent beaver activity at the lake as well as at the dead-tree beaver pond off Boggy Meadow Road. (Photos by Dave Pritchard)



This extensive humped lodge, familiarly known as the “beaver condo,” has been continuously occupied for many years. Unlike in beaver ponds, lodges in lakes with deeper water are often connected to the shore.



Beavers in northern climates pack their lodges with mud in the fall, which freezes solid in winter, providing both insulation and protection from predators.



A group of red maples near the beaver lodge, photographed in May 2018.



The same red maples in February of this year, on their way to being felled. Red maples are said to be one of the beaver’s least favorite foods, but that was apparently not enough to spare these trees



A sure sign that a beaver lodge is active is the cache of saplings and branches stored nearby in the fall. The branches are anchored in the mud with just their upper twigs showing.



Beavers can swim underwater to the cache and feed on the bark during the winter when no other food is available.



What were they thinking?



A beaver slaps the water at Fitzgerald Lake.



Canada geese often nest on offshore lodges for protection from predators. This photo was taken at the lodge below in May 2019.



This impressive concave dam, photographed in May 2015, was built some years previously to dam up the brook west of Boggy Meadow Rd. There are also two smaller dams just downstream.



A sizable breach in the dam, photographed in January 2020, suggests that this area has been at least temporarily abandoned by beavers. The sound of running water generally triggers beavers to repair the damage.



This lodge was constructed around a dead tree near the dam. Although the lodge was active several years ago, no food cache was visible this winter – another sign that beavers have probably abandoned this site for the time being.

New BBC Board Members: Bob Adams and Tina White

Bob Adams



Walking, birding, kayaking, cross-country skiing, and snowshoeing – Bob has enjoyed Fitzgerald Lake for almost 30 years since he moved to Northampton. With his children grown and retired from his career in computer programming, he looks forward to paying forward

all that it has given him. Bob hopes to use his experience with computers to manage the BBC website. He has been a longtime volunteer at various local conservation areas with a passion for combating invasive species and being a steward of the land. He hopes to continue that on the board and to work toward preserving more land.

Tina White



Tina is a small animal veterinarian at Riverbend Animal Hospital in Hadley, and is certified in Medical Acupuncture for animals. After earning a Biology degree from University of Michigan and her Veterinary degree from UC Davis, she lived in various cities around the country before happily returning to her native New England. With her sons now heading off to college, she got a puppy and joined the BBC board. Her interests in wildlife conservation started at a young age, when staring into a pond, what she thought was a pine cone blinked, and

she caught her first crayfish. She has completed the Envirovet course in Duluth, MN, and took Wildlife Conservation at UMass. She enjoys camping, kayaking, snorkeling, and trying to wear the puppy out hiking. On the BBC board, she hopes to use her experience volunteering for the Leeds and JFK PTOs to organize more educational programs. She will also become the new BBC treasurer. One project she wants to focus on will be addressing dog waste and dog interactions at Fitzgerald Lake Conservation area.

Bird Surveys at Fitzgerald Lake

During June of last year, a series of standardized bird surveys were conducted at Fitzgerald Lake Conservation Area in an effort to assess the current distribution and abundance of bird species and to serve as a baseline for long-term monitoring of bird populations at the conservation area. These surveys (also known as “avian point count surveys”) were conducted by Jessica Ruebesam, a graduate student in the Department of Environmental Conservation at UMass Amherst, who has extensive experience conducting these types of surveys throughout New England on a variety of different research projects. A total of 25 locations (also known as “points” or “stations”) were each surveyed twice during June, once in early June and again several weeks later. The survey points were relatively equally distributed among five different habitat types common at FLCA, including deciduous woodland, coniferous woodland, mixed deciduous-coniferous woodland, early-successional, and wetland. During each survey event at each survey point, Jessica would stand quietly and, for a 10-minute period, record all bird species she heard or saw, including the number of individuals of each species she observed, as well as record environmental data such as wind and cloud conditions and the time that the survey started.

Across these 50 total survey events (two surveys each at 25 survey points), a total of 72 different bird species were recorded. Many individual species were recorded in more than one of the five different habitat types surveyed, though 22 of

the 72 species (~30%) were only recorded in a single habitat type. Across the five habitat types, wetlands had the greatest number of bird species recorded (58 species), followed by early-successional habitat (46 species), mixed deciduous-coniferous woodland (40 species), coniferous woodland (32 species), and deciduous woodland (29 species). While no federally endangered species were recorded, a number of species identified as being of greatest conservation need by the most recent Massachusetts Wildlife Action Plan were recorded, including black-billed cuckoo, bank swallow, chimney swift, wood thrush, scarlet tanager, black-and-white warbler, chestnut-sided warbler, and blue-winged warbler.

The results from these surveys give us an improved understanding of the relative abundance and distribution of bird species currently present at FLCA, and the plan is to continue monitoring them by repeating the surveys every five years. Importantly, these surveys all followed a standardized, scientific protocol that is used throughout the world by many different monitoring and research entities (state and federal agencies, nonprofit or nongovernmental organizations, academic research institutions, etc.), so in addition to providing information about bird populations at FLCA, we hope that these data may also contribute to broader efforts focused on assessing bird populations at more regional, national, or global scales. The BBC board of directors would like to extend a big thanks to Jessica for her great work on this!

—Brad Timm

Conservation News In Brief

The Land Preservation and Stewardship Fund

As you may have noticed, BBC's Land Preservation Fund was re-named the Land Preservation and Stewardship Fund a couple of years ago. Besides contributing over \$135,000 toward the purchase of land for expansion of the FLCA, we have recently provided funds for the ongoing stewardship of newly acquired parcels. Other stewardship activities have been funded, too, such as the periodic mowing of Cooke's Pasture to maintain it as a wildlife-friendly shrubland along with improving access to the pasture. The evolution of the fund thus reflects the increased costs of keeping up the conservation area as a resource for passive recreation by humans as well as for sustaining the plants and animals that thrive in the FLCA.

Collaboration Works!

A Go-Fund-Me campaign supported by the Leeds Civic Association, Mill River Greenway Initiative, Friends of Northampton Trails, and Broad Brook Coalition was initiated earlier this year to raise money for the purchase of a 45-acre parcel north of Beaver Brook between Haydenville Road and the Leeds bike path. This acquisition will expand the current Beaver Brook Conservation Area and connect the Mill River Greenway to the Beaver Brook Greenway, providing an important corridor for both hikers and wildlife. Of the \$80,000 purchase price, the CPA will underwrite \$65,000 while the remainder will be funded by donations to the Go-Fund-Me campaign. At this writing, \$10,000 of the remaining \$15,000 have been received, including a \$1,000 contribution from the BBC, and closing is expected soon.

Exploring Northampton Series: Beaver Brook Greenway

Note: Due to the coronavirus situation, this program has been canceled. We hope to reschedule it at a later date.

Join BBC president Bob Zimmermann and Historic Northampton's co-director Laurie Sanders for an exploration of the human and natural history of the Beaver Brook Greenway. Learn about the

family that lived here during the early 1900s, who planted daffodils, ran a sawmill, and operated a large farm. Fast-forward to today and learn about how this became a conservation area, how the new timber-frame wildlife blind was built, and interesting facts about the natural history of the adjacent beaver marsh and surrounding uplands. *Co-sponsored by Broad Brook Coalition & Historic Northampton, in partnership with the Leeds Civic Association.*

A Winter Woods Walk

Naturalist Molly Hale led the first BBC walk of the 2020 season at the end of February, exploring the ecotone between flooded wetland and the adjacent forest in an area off Boggy Meadow Road. Though there was little snow left, Molly pointed out a number of animal signs, including stumps gnawed by beavers, some five-toed tracks in a small patch of icy snow (probably from an otter), and a hollow den tree spilling out porcupine scat and small quills from its entrance. Among many other items she discussed were princess pines and Christmas ferns, which remain green all winter; snow fleas, a small springtail that can leap surprisingly far by flicking a tiny abdominal appendage; wintergreen and black birch, which produce the same familiar aromatic compound although they aren't closely related; and the relatively uncommon swamp white oak, which grows in the moist conditions surrounding wetlands such as the beaver pond. To everyone's surprise, one of the participants noticed the point of a skunk cabbage spathe just beginning to push up through the leaf litter – an indication of just how warm this winter had been.



A good turnout for a winter walk



Examining scat and quills at a porcupine den tree

Wildlife Spa at FLCA

The BBC trail camera has been moved around to several locations since it was first set up in the fall of 2018. Its most recent spot has been overlooking a small pool just right for a refreshing bath. It may be a myth that raccoons “wash” their food (as opposed to probing for prey in shallow water), but they are clearly not averse to a quick dip. And while it’s common to see birds bathing in a birdbath or roadside puddle, it’s a treat to watch this barred owl wade into the pool and vigorously splash about, even dunking its head, before flying off. These video clips can be viewed by visiting the BBC website at broadbrookcoalition.org and clicking on FLCA Trailcam under the Fitzgerald Lake tab. Thanks to Michael Kesten and other Trail Committee members for maintaining this informative and entertaining resource.



Mudminnows Found at Fitzgerald Lake



Central mudminnow found at FLCA beaver pond

On April 14th of last year, while doing some informal surveys for four-toed salamanders at Fitzgerald Lake Conservation Area, I and two of my stepsons came across thousands of small fish migrating up a beaver outflow that drains into the large beaver-impounded wetland along Boggy Meadow Road. After bringing in a few live specimens to two fish ecologists at UMass-Amherst, these were identified as being a nonnative species of fish named the central mudminnow (*Umbra limi*). Given that, to the best of my and the rest of the BBC board’s knowledge, this species has not previously been documented at FLCA, I decided to do some information gathering about it.

The central mudminnow is native to aquatic systems in the upper midwestern U.S. and south-central Canada, including the broader Great Lakes region all the way eastward to northeastern New York

and northwestern Vermont. This species has also been found in a number of streams and rivers in the Connecticut River Valley (with the first documented record occurring in 1957), including in the Connecticut River itself. Its presence is believed to be due to the release of lab specimens in Massachusetts.

The potential effects of the central mudminnow on native fish communities and aquatic ecosystems is largely unknown as apparently no studies have been conducted on any impacts where it has been introduced outside of its native range. Here are some interesting life-history attributes of this species:

- Central mudminnows range in length from approximately 2–4 inches.
- Individuals live for 7–9 years and a single female typically lays 425–450 eggs each year.
- Special adaptations enable them to live in low-oxygen conditions where other fish species may not be able to survive. They can endure low oxygen conditions by air breathing and by ingesting air bubbles present on the underside of ice.
- Due to their ability to survive in low-oxygen conditions, they are commonly used as bait by fishermen as they can live for extended times in bait buckets.
- They are primarily carnivorous and eat a wide variety of invertebrates and smaller fish.
- When threatened, they flee into soft sediment.

Given their nonnative status, the limited information available about their potential impacts outside of their native range, and the apparent large population in at least this one wetland system at FLCA, the BBC board is considering potential collaborative efforts with local experts to better understand their population size, distribution, and ecological impacts in the conservation area.

— Brad Timm

Species Spotlight

(This is the third in a series of articles featuring species of animals and plants that are found in the Fitzgerald Lake Conservation Area. A fuller version of this article will be placed on the BBC website, broadbrookcoalition.org.)

Common Name: Osprey

Scientific Name: *Pandion haliaetus* ("Pandion" comes from a Greek mythological king and "haliaetus" is Greek for "fishing eagle").

Physical Description: A moderate to large raptor, larger than a red-tailed hawk but smaller than a bald eagle. Ospreys are just under 2 feet in length, have wingspans between 5–6 feet, and weigh up to 4.5 pounds. They are brown above, white below, have a brown stripe through their eye, and have a blueish and black beak.

Longevity: Typically live between 7–10 years but have been known to live up to 20–25 years.

Distribution: The osprey is the second most widely distributed raptor species globally (the peregrine falcon is #1), being found in all continents except Antarctica and Australia. Their range extends throughout all of North America except extreme northern Canada and extreme northern and western Alaska.

Habitat: Found in close proximity to fresh or salt water where fish are readily accessible.

Reproduction: Ospreys build large nests typically in treetops, on cliffs, or on artificial platforms. They lay 1–4 eggs in a given year. The female stays at the nest while the chicks develop, especially early on in their development, while the male catches the fish that are fed to the young by the female. The young typically first fly 50–55 days after hatching.

Prey: Their diet is almost entirely live fish. When fish are scarce, small mammals, birds, or reptiles can be incorporated as well.

Conservation and Management: Ospreys are one of the greatest conservation success stories in recent times. Between the 1950s and 1970s their populations plummeted due to pesticides which thinned their eggshells. Since the 1972 ban on DDT osprey populations have rebounded considerably, growing at a rate of ~2.5% per year. However, they are still endangered by entanglement in discarded fishing line, which they often incorporate into their nests. Please pick up any fishing line you find and place it in the trash.

Interesting Facts:

- Ospreys are the only North American hawk whose diet is almost entirely live fish.
- The osprey has been around for more than 11 million years and has a number of fishing-related evolutionary adaptations including nostrils that can be closed during dives and an outer toe that can be angled backwards to better grab fish.
- The osprey is also known as "sea hawk," "river hawk," and "fish hawk."

— Brad Timm



Thanks!

As in past years, we are greatly indebted to those who have volunteered their time and energy to make the Fitzgerald Lake Conservation Area and Beaver Brook Greenway inviting places for a short walk, a long hike, or simply the chance to immerse oneself in nature. In recognition of their efforts, we extend our thanks to:

Bob Adams, David Arbeitman, Bob Bissell, Peter Flinker, Yvonne Freccero, Brigid Glacken, Hanuman Goleman, Paul Griffin, Steve Harding, Bruce Hart, Virginia Irvine, Colleen Isabelle, Deb Jacobs, Jason Johnson, Jeannie Jones, Richard Jones, Michael Kesten, George Kohout, Dale LaBonte, Steve McDonough, Ryan Murdock, Mike Murphy, Rachel Naismith, Karyn Nelson, Justin O'Connor, Ivan Oransky, Beth Powell, Ellen Putnam, Jim Reis, Bob Riddle, Norma Roche, Bill Rosen, Margaret Russell, Laurie Sanders, Chris Schmidt, Pete Schoenberger, John Sheirer, Jon Steinberg, Mary Jo Stanley, Heidi Stevens, and Matt Verson.

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The 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:

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Stewardship Committee (includes invasive species removal) Land Preservation/Acquisition Committee

Occasional Work Days Education Outreach Newsletter writer Other (please specify) _____