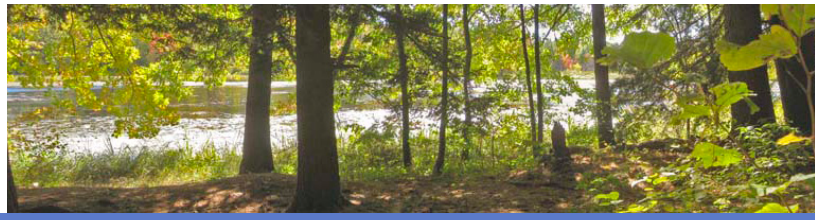
Broad Brook Coalition



www.broadbrookcoalition.org Volume 36, Issue #1, Spring 2024

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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 936-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: Watching Out for Birds

Spring is here at last and our thoughts naturally turn to, well.....birds! The winter residents have come to life and are busily calling to would-be mates and staking out claims for choice nesting sites. Those that have spent the winter months in warmer climes are returning and it seems that every day we hear the songs of new arrivals from the south. Some will stay while others will head even farther north to breed and raise their young. But not all will make it through the summer. As is well documented, the population of North American birds has declined by almost three billion individuals – roughly one-third of the entire bird population – over the past 50 years [1], a figure corroborated by weather radar which measures the biomass of migrating birds.

As individuals, we have little control over many of the hazards faced by birds in today's world, such as collisions with wind turbines and power lines, habitat fragmentation due to muddled land development, excessive nighttime illumination of cities and towns, and, of course, climate change – the greatest nemesis of them all – whose effects on bird behavior, food supplies, and migration are only beginning to emerge. It's clear that warmer temperatures are pushing birds farther north and that drier summers, more violent storms, and soaring temperatures are together impacting bird survival. Nonetheless, we as individuals can address other serious hazards and take steps to mitigate them. Among them are window strikes, insecticides, and predation by cats, which collectively account for 3-4 billion bird deaths per year. Let's see how we can help.

Window strikes

The recent death of Flaco, the Eurasian Eagle-Owl, after crashing into a building in New York City has attracted

wide notice in the press and focused attention on the hazards of building collisions and, in particular, window strikes.. An astonishing number of birds are killed by window strikes every year, with estimates ranging from 600 million to a billion. Window collisions are caused by a bird's inability to recognize reflections from vegetation, the sky, or themselves during the day and the lure of lighted windows at night [2]. One of the best ways to prevent bird strikes in residential settings is the presence of window screens that break up reflections and cushion strikes. There are also a variety of other "bird-friendly" options that reduce window strikes while minimizing interference with the view through the window, such as closely spaced vertical "parachute cords" or certain kinds of decals, including those that reflect ultraviolet light and are visible to birds but not to humans.

Continued on p. 2

Cats

Though it may be hard to imagine, domestic cats kill roughly two and a half billion birds each year, which in some cases actually threatens the existence of endangered species. Cats are instinctive predators, programmed to hunt for birds and other small wildlife. The best solution for preventing this behavior is to keep cats indoors where they can be provided with toys and structures to climb on [3]. A further advantage is that the life expectancy of indoor cats is roughly 15 years as opposed to the 2-5 years estimated for outdoor cats. This is because outdoor cats are not well adapted to life in the wild and are more likely to be run over by a car, succumb to a variety of infectious diseases (especially when infested with ticks, mites, and fleas), or themselves fall victim to fatal encounters with other cats, dogs, or coyotes. When it's not possible to confine a cat indoors, there are still measures that can be taken to reduce bird predation. While a bird on an open lawn is an invitation to strike, the provision of a cover of dense shrubs and trees can provide a refuge to which a stalked bird can easily flee. Alternatively, a small garden or other outdoor area can be enclosed by a tall fence that will keep a cat from roaming or, if it does, fitting it with a BirdBeSafe collar, a colorful sleeve that is fitted over a regular breakaway collar, is claimed to reduce bird kills by 85-90%.

Insecticides

Neonicotinoids (e.g., imidacloprid and clothiandin) are a class of neurotoxic insecticides that are widely used to coat seeds of agriculturally important plants such as corn, soybeans, and sunflowers throughout North America. As the treated seedlings grow, these chemicals are transported throughout the plant, including to pollen and nectar, where they kill the insects that pollinate them and feed on them. Birds that eat as little as one coated seed can die as a result, or at least suffer impairment in fat accumulation, reproduction, and the spatial orientation required for migration. Neonics are thus doubly harmful as they kill off the insect food that birds require for survival while having direct, debilitating consequences for birds that consume treated seeds [4]. The irony here is that the use of neonics has been found to offer only marginal benefits to agricultural productivity while causing substantial harm to bird populations. Although the U.S. Fish and Wildlife Service has banned the use of neonics in federal wildlife refuges, pesticides containing these substances are still widely used elsewhere and are readily available on the retail market. Though labeling remains inconsistent, it is important that we do our best to buy seeds and plants that are certified not to have been treated with neonicotinoid insecticides.

We can do our part to boost bird survival in other ways as well. Nesting and raising young can be encouraged and made safer by providing bird houses where species as diverse as bluebirds, house wrens, tree swallows, and kestrels can nest. Feeding birds in winter is another way to enhance survival when natural foods are in short supply. Chickadees, titmice, nuthatches, woodpeckers, and a variety of sparrows and finches will readily find our food offerings, whether suet, sunflower seeds, millet, or nyjer seeds. These activities are not only beneficial but fun as well since they draw our attention to the many birds that spend the winter with us.

—Bob Zimmermann

(1) *Rosenberg et al. (2019), Decline of the North American Avifauna, Science 366, 120–124.*

(2) *Klem, D. and Cubie, J. (2022), Consumer Guide to Bird Window Strike and Collision Prevention at: https://ornithologycenter.com/consumerguide/*

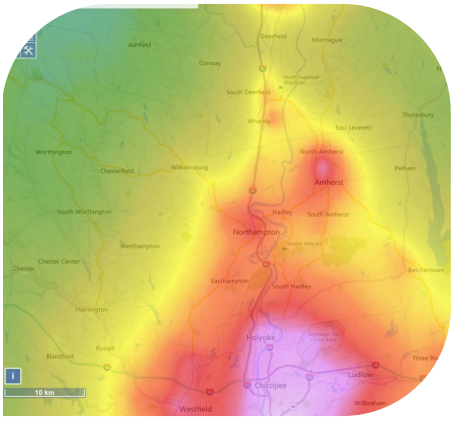
(3) *Carey, J. (2017), The Cat Conundrum, https://www.nwf.org/Magazines/National-Wildlife/2017/Oct-Nov/Animals/The-Cat-Conundrum*

(4) *Mineau, P. and Whiteside, M. (2013), Pesticide Acute Toxicity Is a Better Correlate of U.S. Grassland Bird Declines than Agricultural Intensification, PLOS ONE 8(2): e57457.*

Dark Skies Over Fitzgerald Lake

Is light pollution an issue for Fitzgerald Lake Conservation Area? There are no light fixtures at the conservation area to modify; however, light pollution, or artificial light at night (ALAN) has effects beyond where the light is intended to go. And many lights in Northampton are not thoughtfully designed and placed to minimize effects outside of the intended target. It is easy for people to not recognize ALAN, as we go inside at night. Even when we do, there can be health effects on people, with increased rates of cancer, diabetes, and other diseases, likely through suppression of the immune system. The United Nations commissioned a report released in 2002 on Dark and Quiet Skies which showed ALAN has significant effects on organisms and reduces resilience of birds, insects, mammals, as well as aquatic organisms and plants. It can also affect migration, reproduction, and biodiversity. For example, fireflies are facing extinction if they can't find each other.

The board of Broad Brook Coalition recently viewed a presentation by James D. Lowenthal, Smith College Professor in the Astronomy Department, and head of the Massachusetts Dark Sky Chapter, to discuss ALAN. He explained that sky glow, an artificial brightness caused by scattering of human-created light, affects Fitzgerald Lake and all the organisms that live there. We are not able to appreciate the true grandeur of the stars and Milky Way even in a conservation area because of ALAN miles away. The website lightpollutionmap.info shows the sky glow anywhere in the world; you can use it to zoom in on the Northampton area and see how much artificial light is over Fitzgerald Lake.



Map of light pollution in the Holyoke-Northampton-Amherst area, from lightpollutionmap.info. Visit the website for more detail.

There are better ways to use light to increase safety and make the world more beautiful. Dark Sky International has developed five principles for responsible outdoor lighting – the most important being only having lights on when needed. But light color is also important. The "temperature" is shown on all bulb labels: the lower the number, the less blue and more orange the light contains and the less biological effect it has. Light fixtures should point down; light pointing up doesn't help people see better. In terms of safety, brighter lights reduce night vision and glare can create shadows, so softer, more orange lights actually help people see better in the dark. The very bright, very blue new headlights that are painful to look at while driving are a clear example of brighter not being better.

Northampton has taken a step forward as the city recently adopted changes to the lighting ordinance which applies to new construction, including the new design for Main Street. This will help slow the increase in light pollution, which is growing at 10% a year. The ecosystem has so many challenges right now, let us start with the easy things: when we shut off the light the pollution goes away.

A great time to start is now, as bird migration starts. Birds migrate at night and are confused by bright lights. Could you turn your outside lights off after 10 p.m.? Could you use bulbs that are 2700 K or less, and also less bright? Could you change or modify your fixtures so light doesn't go up into the sky? Could you talk to your neighbors about their lights? The night sky has inspired humanity for eons. We celebrate it with poetry, art, and awe. We all can make a difference.

—Tina White

Otter slide in Cooke's Pasture, January 2024

Green in Winter

One of the pleasures of a walk in the winter woods is all the green you can find once you start looking for it. In addition to the conifers—the hemlocks and pines—the forest floor has patches in all shades of green, from the dark glossy leaves of wintergreen and mountain laurel to the brilliant emerald of mosses on a rotting log or algae in a melting brook. The question naturally arises: How do these plants stay green when most others have shed their leaves and gone dormant?

Northern evergreen plants have a variety of adaptations to enable them to keep their leaves and continue photosynthesizing throughout the winter. Dryness is actually a bigger problem for most plants than cold temperatures. Needles—the leaves of conifers—are long and narrow, reducing their surface area in order to conserve water. They also have a waxy coating to further increase water retention. Plants of the forest floor, such as wintergreen and dewberry, generally have thick leaves and a waxy cuticle for the same reason. While most New England ferns shed their leaves in winter, several, including Christmas fern and marginal woodfern, produce natural antifreeze or expel water from their cells to avoid damage from ice crystals. Mosses, too, produce substances that act as antifreeze, and they are able to enter dormancy in extreme conditions without losing their green color. However they manage it, these northern evergreens add a welcome spot of vibrant color when the rest of the forest has mostly turned dull.

—Dave Pritchard










Please Don't Dump Your Bait Worms!

Are common earthworms good guys or bad guys? Gardeners are glad to see them in the spring, and come summer they are widely sold as night crawlers and used as bait for fishing. It's true that earthworms can aerate lawn and garden soil and enrich it with their castings, and they do make great bait. But that's not the whole picture.

To many people's surprise, the common earthworm, *Lumbricus terrestris*, is neither native to North America nor generally beneficial to the environment. These common worms were brought over starting in the 1600s as European colonists brought plants for crops and used soil as ballast in their ships. They are now considered invasive to North America, and are spreading into northern woods. The native earthworms stay much deeper underground, and do not tend to be in forests.

Night crawlers increase turnover of leaf litter, change soil composition, and increase soil erosion in forests. Research has shown that sugar maples and other trees are then weakened and become more susceptible to drought, fire, and other stresses. This results in forests becoming less resilient to climate warming. Increased numbers of night crawlers are also associated with decreased diversity of plants and increased numbers of invasive plants like garlic mustard, barberry, and buckthorn. We then have an ecosystem that is less healthy for wildlife.

The common use of night crawlers for bait is one way they are being spread, so we ask, please don't dump the dirt they come in on the ground in Fitzgerald Lake Conservation Area, please don't leave the extra worms on land or water, and as always, please take all your trash with you.

More information on the history and ecology of non-native earthworms can be found at https://ecosystemsontheedge.org/earthworm-invaders/

—Tina White; photo of boy by Matt White

New BBC Board Member: Peter Russell

I emigrated from old England seventeen years ago and for the last three years have lived next to Fitzgerald Lake in the Laurel Park Community. My first degree specialized in Ecological Resource Management & Pollution Studies and for my Doctorate I studied the interaction of plant species in salt marsh communities. I have been employed to do an ancient woodland survey in Wales and to do a survey of grassland fungi on the grounds of National Trust properties in southern England; however the majority of my working life has been in finance for a Wall Street bank.

I spent many years as a volunteer recording plant species across my home county for the Botanical Society of the British Isles and recording fungi for the West Weald Fungus Recording Group. I was also the fungi recorder for the local Wildlife Trust.

I am the vice president of the Pioneer Valley Mycological Society and currently the property chair for Laurel Park. I am currently recording the fungi in Laurel Park (I have published a book on that subject) and recording the diversity of Wax Cap fungi via DNA barcoding (in my lab at home). My main passions have always been wild orchids and fungi!

2024 Walks and Talks

BBC's walk programs are free and open to the public. We ask that you register beforehand, which will allow us to answer any questions you might have and notify you of any changes or cancellations. To sign up for any of the following walks, please send an email to Dave Pritchard at Registrar@BroadBrookCoalition.org. Please check the Broad Brook website (broadbrookcoalition.org) for more information on any of these programs, or call Dave Pritchard (413-695-8442) or Dick Wynne (413-584-7930).

Those Amazing Lichens!

Molly Hale
Saturday, April 13, 9:00 – 11:00 a.m. (North Farms Rd. entrance)
Saturday, May 4, 9:00 – 11:00 a.m. (Cooke Ave. entrance)

Come learn about lichens, those fascinating symbiotic organisms that consist of combinations of fungus and algae enmeshed into distinct individual species. You will learn how to tell lichens from mosses, and notice different forms of lichens such as leaf, bush, dust, scale, and crust. We'll use hand lenses to get a close-up look at the anatomy of lichens growing on trees and rocks, and learn about their amazing assortment of reproductive strategies and structures. Open to adults and older inquisitive kids. Please note: There will be two separate walks covering the same information but on different dates and starting at different entrances, as shown above. Join us for either or both! (Contact Molly at hellomolly@comcast.net with any questions.)

Spring Nature Walk

Rich Baker
Saturday, April 27, 10:00 a.m. – noon
North Farms Rd. entrance

Rich Baker, a conservation biologist and curious naturalist, will lead a walk focused on the plants and animals we see along our way. We'll discuss the ecological relationships around us, share what we know, and wonder about things we don't know. There will be spring wildflowers to identify, trees to marvel at, birds to find and songs to learn, as well as the surprises and adventures that nature always provides. Bring binoculars, if you have some.

Spring Bird Walk

Lesley Farlow and Steve Winn
Saturday, May 18, 7:00 – 9:00 a.m.
(Rain date: May 19)
Cooke Ave. entrance

Lesley Farlow and Steve Winn, experienced birders and members of the Hampshire Bird Club, will lead a bird walk along the Pines Edge swamp and Boggy Meadow Road to the Bird Blind. We will look for breeding migrants and resident birds as we pass through a number of different habitats. We should be able to see and hear some migrating warblers, thrushes, vireos, swallows, herons, kingfishers and more. Bring binoculars if you have them. We will have a few extra pairs.

Wild Edibles and Medicinal Plants

Hannah Jacobson-Hardy
Saturday, June 15, 10:00 a.m. – noon
North Farms Rd. entrance

Ever wonder what wild edibles and medicinal plants are growing along the trails of the Fitzgerald Lake Conservation Area? Join Hannah Jacobson-Hardy, community herbalist and founder of Sweet Birch Herbals for a guided walk on Father's Day weekend. Hannah chose this weekend because she grew up in Florence and her father regularly took her for walks in these woods when she was a child, so she has quite a fondness for the land here. Learn to ID plants, ethical harvesting practices, how to utilize them at home, and the history of their uses. Wear sturdy waterproof shoes, bring a notebook, camera, and your questions.

Bark: Get to Know Your Trees

Michael Wojtech
Saturday, September 7, 10:00 a.m. – noon
Cooke Ave. entrance

The traits typically used to describe trees—leaves, twigs, and buds—are often hard to see or seasonally absent. Join Michael for an exploration of bark, which is always visible in any season. As you hone your perceptive abilities you will learn about a system for identifying tree species by their bark, and discover why such a variety of bark characteristics exist. How does bark form? Why do some species have smooth bark, while on others it is thick and broken? Why does bark peel? We will explore these and other questions as we examine the various trees along Boggy Meadow Rd.

The Role of Fungi in the Forest Ecosystem

Peter Russell
Sunday, Sept. 8, 10:00 a.m. – noon
North Farms Rd. entrance

Join mycologist Peter Russell on a foray to look at the fungi fruiting around Fitzgerald Lake. We will use the fungi we find to consider the roles they play in the ecosystem, especially their succession in space and time both on decomposing wood and as mycorrhizal partners with trees. The main purpose of the foray will not be to consider their edibility or medicinal qualities. Peter is a local resident, a member of the Pioneer Valley Mycological Society, and has been leading mushroom forays for many years.

2024 Workdays at the FLCA: Spring and Summer

Shrubland Habitat and Native Plants

Sunday, May 5, 10:00 a.m.-noon

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 Brad Timm at bradtimm@gmail.com.

Annual Cleanup at the North Farms Road Entrance

Saturday, May 25, 10:00 a.m.-noon

This is the day for cleaning up the North Farms Road entrance to the FLCA. We'll clear winter debris from the path to the bridge and boardwalk, pick up trash in the parking lot, and remove 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. Tools will be provided. Contact Dick Wynne at 413-584-7930.

Removal of Invasives on Boggy Meadow Road

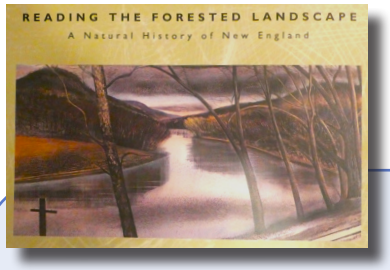
Sunday, June 23, 10:00 a.m.-1:00 p.m.

The margins of roads provide excellent habitat for the growth of invasive plants. There are many patches of invasives along Boggy Meadow Road, which connects the old Moose Lodge parking lot at the end of Cooke Avenue with the Fitzgerald Lake dam. We will work our way along the road pulling, cutting, and digging invasive plants such as multiflora rose, Asiatic bittersweet, Japanese barberry, autumn olive, and non-native honeysuckle. 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 Bob Zimmermann at 413-585-0405.

Removal of Water Chestnut from Fitzgerald Lake

Saturdays, 9:00 a.m.-noon:
June 15, July 6, July 27. August 17, & September 14

Several 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 while in 2023 the yield was down to 100 lbs. Though we are pleased with the results so far, water chestnut seeds can remain viable for up to ten years on the lake bottom so we plan to continue our work again this year. We'll organize crews in late May, begin pulling in mid-June, and continue at 3-week intervals throughout the summer. Volunteers should bring their own canoes or kayaks. If interested, contact Bob Zimmermann by email (raz@umass.edu) or phone (413-585-0405) for further information or to volunteer.



Book Review — *Reading the Forested Landscape* - Tom Wessels

I have a packed shelf of field guides and other nature books, but the book I probably think of most often when out walking in the woods is *Reading the Forested Landscape*, by Tom Wessels. Wessels is an ecologist and director of the Environmental Biology Program at Antioch New England University in Keene, NH. His book is less a field guide than an entertaining whodunnit, with each chapter posing questions about a particular forest scene illustrated by a full-page etching at the chapter's beginning. Wessels asks you to look closely at the etching and ask yourself what forces, historical and ecological, might have played a part in creating that scene. As he makes clear in his Introduction, forest history is a tale of serial disturbances, each of which can leave a trace on the landscape even many years after the initial event. Chapter by chapter Wessels examines the effects that fire, logging, agriculture, beaver activity, and severe weather leave behind in a forest—effects that we usually walk past without giving them a second thought. Is that stump rotting from the outside in or the inside out? Is that stone wall made with large stones or small? Does this patch of forest have large trees and small trees but few if any middle-size ones? These are just a few of the signs you can learn to "read" from this book. Admittedly, the signs I try to interpret as I walk in the woods don't usually stand out quite as clearly as in the etchings, but it's fun to have them in mind as I look around me. And even if you never get to an advanced reading level, there is a wealth of information in this book about the history and ecology of the New England forest, from glacial times through indigenous influences, colonial deforestation, the later abandonment of family farms, and, in recent times, the increasing presence of invasive species and pathogens.

—Dave Pritchard

Species Spotlight

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

Common Name: Wood Frog

Scientific Name: *Lithobates sylvaticus*

Physical Description: The Wood Frog is a mid-sized frog at ~1.5"-2.5" long, with a light-brown to dark-brown body (females often have a somewhat reddish-brown hue during the breeding season) with a distinctive dark-brown "mask" extending from their cheeks and across their eyes toward their nose. Males also can be distinguished from females during the breeding season in that males have bulkier forearms and a thickened "thumb" on each of their forelimbs compared to females.

Longevity: They can live up to 6-7 years, though most rarely live beyond 3-4 years in the wild.

Distribution: Wood Frogs are found throughout the northeastern and upper-midwestern United States and extend southward along, and to the west of, the Appalachians; they extend northward throughout almost all of Canada (with the exception of the extreme north) and throughout all of Alaska.

Habitat: Wood Frogs spend the majority of their life in the leaf litter in wooded uplands, and breed almost exclusively in temporary freshwater wetlands, most frequently in vernal pools.

Reproduction: They breed in temporary freshwater wetlands and often are among the first amphibian species in any given year breeding in these wetlands (which can occur any time from late winter to early spring). Males typically arrive first to the breeding wetland and call while floating on the surface of the water, sounding like ducks quacking. Females lay an egg mass typically containing 750-1,500 eggs (though it can contain as many as 3,000 eggs). Adults return to the surrounding uplands after breeding. Once the eggs hatch, tadpoles grow and emerge as little froglets typically in late June in western Massachusetts.

Diet: Adults and juveniles will eat essentially any invertebrate they can fit into their mouth, while tadpoles are predominantly herbivorous, feeding largely on algae and decaying vegetation within their natal wetland.

Conservation and Management: Wood Frogs are quite common and widespread throughout their expansive range, though populations are adversely impacted where roads are nearby breeding wetlands, leading to considerable road mortality during migrations to and from breeding wetlands. Additionally, runoff of road-deicing salts into breeding/natal sites can significantly impact larval development and survival.

Interesting Facts:

- They create their own "anti-freeze" which allows them to survive freezing.
- They are the only frog found north of the Arctic Circle in North America.
- Their Latin name means "one that walks amidst the trees."

—Brad Timm

Please visit our updated website at www.broadbrookcoalition.org.

There, you can view upcoming events *(such as our Walks/Talks and Work Days),* learn about the animals and plants found at Fitzgerald Lake Conservation Area, and access current and previous newsletters, among many other features.

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

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__ Sign me up for a paperless newsletter (email address required).
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__ 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 Donate)

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:

___ Board Member ___ Trails Committee (maintenance and repair) ___ Clerical
___ Stewardship Committee (includes invasive species removal) ___ Land Preservation/Acquisition Committee
___ Occasional Work Days ___ Education Outreach ___ Newsletter writer ___ Other (please specify) _____