



NEWTON  
CONSERVATORS

FALL ISSUE

# NEWSLETTER

*Newton's land trust working to preserve open space since 1961*

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## Newton's Lost Wetlands and Buried Brooks

*By Richard B. Primack, a long-time Newton resident and a biology professor at Boston University*

**Editor's Note:** This article is an expansion of an article originally written in the *Newton TAB*, August 8, 2017.

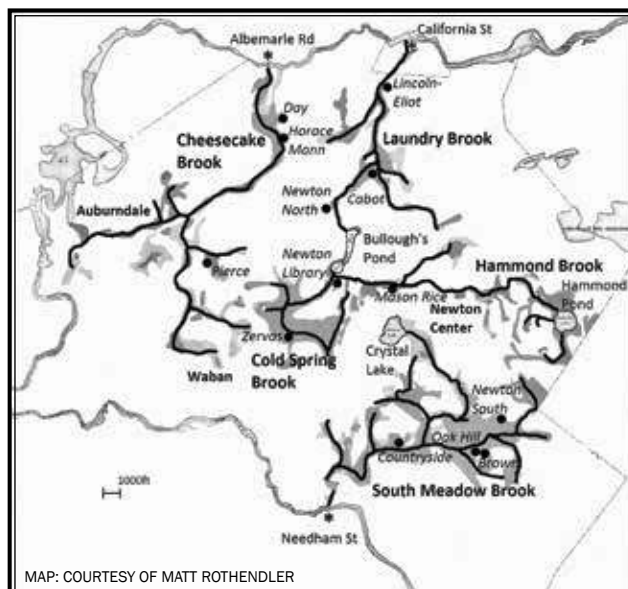
Until about 120 years ago, Newton was known for its many wet meadows, marshes, and swamps, connected by miles of brooks that emptied into the Charles River. Where did they go?

And maybe more importantly, should we bring them back?

Over the past two centuries, as Newton changed from farming to industry, and then to a Boston suburb, developers and town workers filled in most of our wetlands and buried our brooks in underground culverts or put them into aboveground channels. Water was re-directed to power mills, and wetlands became the sites of playgrounds, schools, other public buildings, and homes.

A drainage map from 1892, available on the city website (<http://www.newtonma.gov/civicax/filebank/documents/39235>), shows Newton situated beside a large bend in the Charles River. At that time, Newton's

extensive wetlands were drained by three brook systems (Cheesecake, South Meadow, and Hammond/Cold Spring/Laundry) that meandered into the Charles.



*Modified 1892 drainage map showing the main brooks and associated wetlands, with the current position of some schools and village centers and the Newton Library.*

Cheesecake Brook drains northern Newton, starting in Waban and Auburndale, flowing eastward across the Brae Burn Country Club, along Washington Street, past the Horace Mann School, Day Middle School, and Albemarle Field. In the south, South Meadow Brook begins at Lost Pond, and then flows past

Newton South High School and the two middle schools; a second branch begins at Crystal Lake and heads south past Weeks. After the branches meet near Parker Street, the brook heads west toward the Countryside School and then along Needham Street, and enters the Charles at Newton Upper Falls.

Hammond Brook, Cold Spring Brook, and Laundry Brook together form the most

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PHOTO: RICHARD PRIMACK  
*Along Fuller Road, Cheesecake Brook has a natural look with abundant skunk cabbages and appears well integrated with the adjacent forest.*

Spring Park and wanders through Newton Cemetery. These two brooks join at City Hall and Bullough's Pond, forming Laundry Brook, which then flows northward under Newton North High, Cabot, and Lincoln-Eliot Schools, entering the Charles River at California Street.

Newton's brooks are now mostly tamed. Just north of Bullough's Pond, Laundry Brook still meanders over flat rocks, giving us a glimpse of its wild past. Along Fuller Street near Brae Burn Country Club, Cheesecake Brook flows free, with a border of skunk cabbages. In the Webster Woods, Vale Stream, which flows into Hammond Brook, appears quite natural. In other places, the brooks have been cut off from their surroundings, and wetlands filled in. For example, Cold Spring Brook flows in a dug channel. At Newton Center Playground and along Albemarle Road, Hammond Brook and Cheesecake Brook run through stone channels with vertical sides.

Most of Newton's main brooks are now invisible, enclosed in underground culverts below streets, residential neighborhoods, and playgrounds. For example, Laundry Brook flows directly under the Newton North tennis courts. In other places, there is poor access to the brooks and wetlands that remain due to fences, impenetrable thickets, and lack of trails.

Most of Newton's playing fields — such as those at Newton South, Cabot, Newton Highlands, and Weeks — are often wet and soggy due to their origins as wetlands and brooks. They are now carefully graded so that water flows to catch basins above the culverts that enclose the brooks.

The city cannot ignore its wet history: we must maintain the drainage infrastructure to keep the water contained and flowing. When the infrastructure fails, the consequences

extensive wetland system, draining the city's center. Hammond Brook begins at Hammond Pond and heads west to Newton Center Playground. Cold Spring Brook starts in Cold

are costly. For example, in March 2010, after days of heavy rains, Hammond Brook overflowed its channel due to a blocked drain. It washed out the Green Line tracks east of Glen Avenue, halting train service. Many homes that sit on former wetlands were also flooded. This event was, unfortunately, not unique. Rainwater frequently overwhelms drains, especially when they become blocked with sediment or debris. Heavy rains are becoming more common due to climate change, worsening the problem.

Channeling water not only concentrates storm flows, exacerbating flooding, but it also reduces stream flow during dry periods, concentrates pollutants, reduces natural flood storage capacity, and eliminates natural habitats.

Many New England towns are revisiting past decisions to



PHOTO: RICHARD PRIMACK  
*Along Albemarle Road, Cheesecake Brook is restricted to a stone channel and separated from natural vegetation.*

bury and channelize streams. Some towns are uncovering buried streams and removing the vertical walls of channels, allowing streams to re-integrate with

wetlands. The wetlands act as sponges, holding onto rainwater for days and weeks, reducing flooding, and cleaning the water. The result can benefit towns, businesses, and homeowners economically and environmentally.

According to Jennifer Steel, Newton's Senior Environmental Planner, the city is considering following the examples of other towns and recreating some flood storage along various brooks and wetlands. At the same time, Ted Jerdee, Newton's Director of Utilities, points out that Newton's citizens can help maintain the current infrastructure and reduce flooding by removing sediment, branches, and litter from channels and culverts, and by not throwing garden waste or other materials into brooks.

What else might we consider doing to improve the health of our brooks and wetlands, enhance their recreational value, and increase public support for them? Here are some suggestions based on conversations that I have had with Jennifer Steel and various Newton residents.

## For channelized brooks in Newton:

- Investigate removing some of the stone lining to re-establish hydrological connections to adjacent wetlands and fields.
- Restore native vegetation along stream banks, which would reduce erosion and create more natural settings for people to enjoy. Initial targets could include Hammond Brook in Newton Center, Cheesecake Brook along Albemarle Road, and South Meadow Brook along Needham Street.

## South Meadow Brook:

- Establish a trail system in the Hahn Brook Conservation Area, which runs between Dudley Road and Florence Street. The conservation area currently has no trails. New trails could connect to adjacent Kennard Park and Dudley Road.
- Create a trail along the brook from the tennis courts at Newton South High School to Dudley Road. The trail could connect with Kennard Park trails.
- Complete and publicize the trail along the brook where it crosses Needham Street, near Jaconnet Street, to allow better access to the rail trail. As the development in the Needham Street area progresses, include features to enhance storm water drainage, brook restoration, and access to wetlands.
- Restore the banks of the brook by the Countryside School. Replant the thicket near the school with native

vegetation, and establish a nature laboratory and trail for the school.

## Cheesecake Brook:

- Restore natural vegetation along the banks of the brook at McGrath Field along Washington Street. Install sand filters and catch basins to prevent pollutants and debris from entering the brook from nearby roads.

## Laundry Brook:

- Investigate creating a small park and trail along the brook where it goes from Dexter Street at Bullough's Pond to Walnut Street.

## Charles River and adjacent wetlands:

- Shift the existing path near Quinobequin Road deeper into the woods to create a more natural river experience.
- Create paths and footbridges along the river in the Lower Falls area, especially in the area along Concord Street and the Leo J. Martin Golf Course.

These ideas are just suggestions. The main point is that we should explore opportunities to restore brooks, build trails, and improve access to wetlands in Newton. If planned and implemented well, the economic, environmental, and recreational benefits could pay off in the long run, offsetting the short-term costs. After a long history of channelizing and burying brooks for development, filling in wetlands, and focusing on economic development, Newton's future could benefit from undoing some of its past. ■

### MISSION

#### Newton Conservators, Inc.

The Newton Conservators promotes the protection and preservation of natural areas, including parks, playgrounds, forests and streams, which are open or may be converted to open space for the enjoyment and benefit of the people of Newton. It further aims to disseminate information about these and other environmental matters.

A primary goal is to foster the acquisition of land, buildings and other facilities to be used for the encouragement of scientific, educational, recreational, literary and other public pursuits that will promote good citizenship and the general welfare of the people of our community.

*The Newton Conservators was formed as a not-for-profit organization 56 years ago in June 1961.*

**The Newton Conservators Newsletter®** is published four times each year by the Newton Conservators, Inc., in June, September, December, and March. Deadlines for these issues are the first Friday of each month in which an issue is scheduled to be published.

We welcome material related to our mission from any source. Send proposed articles or letters by email in MS Word or rich text format to [bethwilkinson@mac.com](mailto:bethwilkinson@mac.com). Digitized photographs, maps and diagrams are also welcome.

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## 🌿 President's Message 🌿

Dear Conservators,

It's been a busy and good summer for the Conservators!

We had two terrific summer interns: Iris Liao, who started at Columbia University this fall, and Bennett Walkes, who is a senior at Newton South this year. They pulled more bags of invasive plants than we could count and talked with people at our new display tables at both the Cold Spring Park and Elm Street farmers' markets. They did research on invasive plants, tick diseases, and the tree canopy. They also planted and tended a beautiful pollinator garden at the edge of Woodcock Meadow in Nahanton Park. You'll read more about their work in a later issue of the newsletter.



Summer interns Iris Liao and Bennett Walkes viewing the eclipse at Woodcock Meadow, Nahanton Park.

Thanks to the *pro bono* work of longtime member Bill Shaevel, we filed the legal work to relocate the path at the Wilsons' property at 15 Bracebridge Road. Thanks to the hard work of path-builder John Menard and the gardening crew of Barbara Trainer, the new path was stabilized and flattened. Richard and Andrée's son André, who lives in Michigan, has spent many, many hours removing invasive plants in the woods around the path. Please check it out and enjoy a stroll along the path from Bracebridge Road to the Wilson Conservation Area and the aqueducts, and then on to Greenlawn Avenue.

Members of the board continued to work for the future of Webster Woods. At our July board meeting, we had a long discussion of how to continue our efforts to preserve the former Temple Mishkan Tefila property. Our first step was to formally endorse the pledge that the Friends of Webster Woods sent to mayoral candidates, a pledge that members of the executive board already had signed.

We then voted to send a letter to all mayoral candidates explaining our strong beliefs that not only must the currently wooded area be preserved but also that the rear parking lot should be returned to open space (because of its proximity to the vernal pool, Bare Pond) and that the woods between that lot and the temple building should be conserved. We also asked them to consider removing the small front parking lot and relocating the entrance to the property to the road into the Shops at Chestnut Hill and the Chestnut Hill Towers.

You can see the responses from the candidates, our letter, a PowerPoint presentation by Dan Brody on "The Future of Webster Woods" (also sent to the candidates), and more background information on our website: <http://www.newtonconservators.org>

Don't miss our great line-up of fall walks at the end of this issue. We hope to see you at one of them!

Beth Wilkinson

# Dolan Pond Conservation Area — Hidden Gem of West Newton



PHOTO: KEN MALLORY

*Dolan Pond in summer*

**“Drain the swamp!”** was the cry back before the value of such habitats drew greater attention in the 1970s. But under the leadership of Helen Heyn, Newton’s first environmental planner, the city acquired much of the land for Dolan Pond Conservation Area in 1979 by eminent domain. The move was strongly supported by a neighborhood group that was against its use for dumping and house lots — even today the lot lines can be found on the city’s maps. The area is named for Dolan Pond, which was originally part of the farm owned by Charles Dolan.

A 1995 naturalist’s resource survey described the Dolan Pond Conservation Area as a hidden gem and concluded that it “provided unique habitat for both wildlife and a variety of plant species that are rare within the City of Newton. Although only 8 acres in extent, the area provides a mosaic of environmental conditions that encourages biological diversity. Although the majority of the area is dominated by red maple swamp, the interspersions of open water, scrub/shrub thickets and wet meadow/vegetated swales provides for a rich wildlife habitat.”

Over 130 species of birds have been observed at Dolan Pond, and during spring migration, daily counts of 20 to 35 species are common in a short walk filled with the song of warblers, vireos, wrens, and thrushes. The ponds are home to painted turtle, snapping turtle, green frog, and bullfrog, and are one of the few breeding areas in Newton for the American Toad, whose springtime trilling chorus is often heard.

Other visitors to Dolan Pond include coyote, fox, muskrat, opossum, deer, and even fisher! Some years ago, one enterprising nature lover even set up an infrared camera in the woods to see what nature activity took place in Dolan after dark — search YouTube for “Coyote Cam Dolan Park.”



Like most open spaces in Newton, the Dolan Pond area is under attack by invasive species. It was actually a pioneer site for both garlic mustard and Japanese knotweed removal, efforts that have been ongoing with NewtonSERVES, EnviSci campers, scouts, and school groups.

Driving by its small opening on busy Auburn Avenue, you might not notice Dolan Pond Conservation Area, even though it is only a short walk from the restaurants, shops, and the movie theater of downtown West Newton. Its main entrance can be found on the street called Webster Park, off Webster Street (a major connector between West Newton and Auburn Avenue), just a few short blocks west of Cherry Street. Parking

is easiest on the Webster Park oval, a historic district with a number of fine examples of 19th century architecture. Handicapped parking is available just down the hill at the end of Webster Park, next to the information kiosk.

Despite its relatively small size of almost nine acres, Dolan seems much larger while walking its three main trails, all converging in the center and each leading to one of the entrances. It would be difficult to get lost there — it’s just the right size when you need a quick dose of nature!

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PHOTO: TED KUKLINSKI

*Dolan Pond NewtonSERVES Team pulling invasive garlic mustard.*

The conservation area actually contains four named ponds, the two larger ones being Dolan Pond (the area's namesake) and Quinn Pond. Dolan Pond has a wide overlook platform popular with parents and children for duck (and duckling), goose, heron, turtle, frog, and tadpole watching.

Quinn Pond is similar in size to Dolan and is viewable along the accessible Auburndale Path boardwalk. In winter, cold air settles in the pond areas and, with the minimal depth (typically one to three feet maximum), the ponds freeze quickly, and one can find hockey goals set up on the ice.



PHOTO: TED KUKLINSKI

*A Great Blue Heron explores Dolan Pond*

and reached by some short trails off Webster Path, which was named for local neighbor Irene Forte on her 100th birthday.

The ponds are actually what are called vernal pools, temporary ponds filled only by rain water. This is the lowest terrain in the area, and it acts as sponge to absorb local runoff. Tadpoles and many other creatures thrive in such bodies of water devoid of fish. Vernal pools are also by definition somewhat temporary and on occasion dry up completely.

In the summer of 2016, the largest ponds totally dried up and became undulating grassy areas until the abundant spring rains of 2017 overflowed the ponds and even flooded Cumberland Path. As the ponds recede in dry spells, they become a great attraction for herons that like the easy picking. Sandpipers and other shorebirds (once even a long-billed dowitcher) like to work the mudflats thus created. Occasionally, misguided folks will dump unwanted goldfish into the ponds, fish that can turn into sizeable carp, but great blue herons and belted kingfishers soon take notice and enjoy a tasty dinner!

A CDBG (Community Development Block Grant) improvement project was undertaken in 2003, which provided major feature and accessibility improvements to the area. The initial design was done as a landscape architecture degree project and implemented later by the city.



PHOTO: MARGARET MALLORY

*Painted Turtle in Dolan Pond*

Two of the paths were upgraded with stabilized soil, a kind of natural clay that hardens and is wheelchair accessible. In addition, new steps built from wood and stabilized soil provided easier pedestrian access from neighboring Stratford Road and Cumberland Road. The steps and sitting rocks at Stratford Road provide a convenient meeting place for nature study at Dolan Pond with classes from Franklin and Burr elementary schools. Information kiosks provide a place for maps, events, history, and nature sightings.

The most challenging aspect of the project was the boardwalk along the Auburndale Path through the wetlands area. In some places, the support pilings for the boardwalk had to go down as deep as 13 feet to reach solid footing. Prior to this, the old path and bog bridges were often flooded and impassable in certain times of the year. A great benefit was the new ability for wheelchair users to travel safely all the way between the Webster Park and Auburndale Avenue entrances and to have a true "close to nature" experience along the way.

Irene Forte, a violin teacher and one-time musical director at the All Newton Music School, spent most of her adult life living in the Arts and Crafts style house her father built



PHOTO: KEN MALLORY

*Female Mallard on Dolan Pond*

around 1925 at the 1.1 acre 76 Webster Park property abutting the conservation area. As she passed the century mark, she was often approached by developers who were eager to buy her property, but she wondered if the city might be interested instead. Before she passed away at age 104, she had instructed her nephew to follow through on her interest in preserving her homestead and land in its natural state.

Luckily, the Community Preservation Act (CPA) had been recently passed in Newton, by which 1% of the real estate tax and matching funds from the state could be used for the acquisition of open space, community housing, historical

preservation, or recreation. The Newton Conservators and the Newton Housing Authority (NHA) partnered on a CPA application to acquire the property from the estate with the condition that as many trees in her backyard be preserved as possible.

Two thirds of the property was preserved as open space and added 10% to the existing Dolan Pond Conservation area, with the Newton Conservators holding and monitoring the conservation restriction on the newest portion. The remaining third was devoted to creating three units of affordable housing — the original house administered by the NHA and a duplex constructed behind as Newton's first Habitat for Humanity project, which was built in the same exterior style with thousands of hours of volunteer assistance. It was a win-win-win for open space, housing, and historical interests.

There will be short, guided walks this fall to Dolan Pond from the Elm Street Farmer's Market in West Newton on some Saturdays with information available at the Newton Conservators' booth there. You can find something new and surprising on every visit! ■

— Ted Kuklinski

## 👉 Identify This Place Photo Contest: High Points Along The Charles

**This will be a two-part contest.**

➤ **Part 1:** Take a photo showing the Charles River that you took from a high vantage point above the river in Newton or a neighboring city or town (your chance of winning will be improved if your vantage point is at least 100 feet above sea level). By October 31st, email the photo to [contest@newtonconservators.org](mailto:contest@newtonconservators.org). Tell us where you were when you took the photo. GPS coordinates or a link to a spot on an online map would be appreciated.

➤ **Part 2:** In the winter newsletter, we'll publish the photo we like best, and ask readers to identify the location. We reserve the right to publish other photos in the newsletter or on our website, with a credit line identifying the photographer.



PHOTO: DAN BRODY

*Photo Example*

**The winner of each part of the contest will receive a one-year new, gift, or renewal membership in the Conservators.**

# Along the Greenway — and Beyond!

By Deb Crossley, City Councilor

**Editor's Note:** The following is a follow-up to Jim Lerner's "Newton Upper Falls Greenway" article in the Conservators' Summer 2017 newsletter.

Newton Conservators' Environmentalists of the Year George Kirby, Jim Lerner, and Jerry Reilly provided an invaluable service to the city in their successful efforts to conceive and 'pave the way' to achieve the linear park we call the Upper Falls Greenway.

Our Greenway is a much beloved community asset, improving the quality of life in Upper Falls today — and leveraging great potential for the future. It is a pleasantly calm, healthy, and refreshing way to get around to Needham Street shops and restaurants, Upper Falls village, and the Charles River—from Elliot Street and beyond.

There is also an ongoing and long list of efforts and projects to continue to restore and improve the landscape — as well as to extend the trail to key destinations. Many abutting property owners have taken a special interest in improving and maintaining portions of the Greenway that border their properties and offering points of access. Here's what is happening now — and some of what may be on the horizon.

## Getting to Needham Street

Perhaps the most exciting work to date that will expand access to the Greenway is that related to the Newton



Map graphic courtesy of Margaret Alexander.  
To view online: <http://www.upperfallsgreenway.org>



Deb Crossley speaks about the Upper Falls Greenway

Nexus project, which will open this fall. CrossPoint developers have been unusually responsive, reliable collaborators, and terrific neighbors. The City Council conditioned their special permit to include removing invasive species all along Meadow Brook, where the old spur (which they own) was and along their 800' border to the Greenway as well.

You'll already see an assortment of new native trees (26) and bushes (28) along the Greenway path! In addition, they will be creating a strong link to Needham Street by constructing a new 10'-foot wide stone dust path along the brook, then restoring the brook to include new native plantings. All work along Meadow Brook must be approved by the Conservation Commission.

As Jim Lerner said in a previous article, the trail currently ends at Easy Street, just before National Lumber. The owners of the building complex to the east of Easy Street, KSPartners, petitioned in 2014 to expand uses in these buildings. The Council conditioned the special permit to require special attention to the border of the Greenway, a public easement down Easy Street, protected egress point from the Greenway, and clear signage. The parking lot by NewTV (a tenant), which is 20 feet onto the MBTA right of way, is leased from the MBTA. Two years have passed



PHOTO: KEN MALLORY

*City workers apply a new surface of crushed stone along the so-called "spur" that leads to Needham Street.*

Nexus and NewTV is Avalon Bay Residences, which share about 1,000 feet of the border. The old MBTA fence remains on most of this, and is set into the 80-foot right of way about 20 feet. Avalon residents love the Greenway, and



PHOTO: KEN MALLORY

*The entrance to Avalon Bay Residences lies along Needham Street in Newton.*

a gateway was installed on the eastern end of the property last year. Also last year, Carol Stapleton and I walked the path with Avalon president Bill McLaughlin, who is also a Newton resident. Avalon is already working with

CrossPoint to create pathways between the residences and the new Nexus shopping area. But the Greenway inspires a new way of connecting to the outdoors.

Prior to Newton Serves day, Avalon landscapers cut down most of the large bittersweet vines threatening the mature stand of (mostly oak) trees, and removed barbed wire from the fence. About 30 Avalon resident volunteers stuffed and

since the special permit was granted and acted upon, so the City Council voted in August to take the easement by eminent domain. Now the Parks Department will build an accessible ramp up to the egress point at the top of Easy Street, finally allowing accessible travel.

### Sharing Access!

Between CrossPoint's

carted 150 bags of debris on Newton Serves day! There are plans to complete this work, remove the remaining fence, and install a second gate to align with the Avalon Promenade.

Perhaps one of the biggest eyesores along the trail was the city's own DPW yard, which at one point had a small mountain of excavate and trash from road constructions spilling over into the right of way. Over the last year, DPW



PHOTO: JIM LERNER

*The NewTV headquarters in Newton lies adjacent to the Greenway path seen here in the foreground.*

has worked industriously to clean up and reorganize the yard. The excavate has been removed from the right of way and reduced to a working pile 1/10 the size on site, behind an abutment more clearly marking the boundary. A new fence is planned.

Volunteers have made a dent cutting back the invasive vines.

Working with Carol and Julie Irish of the Upper Falls Area Council, we've also achieved some success reducing private encroachments onto the right of way, and assuring compliance with pre-existing leases and special permits.

Longer term, there's still much to be done, with exciting possibilities ahead. Newton planners, Councilors, and economic development experts and developers seeking new projects are discussing what it will take to create an accessible way up to Elliot Street, and how to extend the Greenway past National Lumber to Curtis Street - to provide continuous pathways to the Elliot and Highlands T stops. There is as well the possibility of crossing into Needham by restoring an existing bridge over the river off Christina Street, which Needham is interested in pursuing as well. Although it is a long way off, the Northland developers have big plans, are eager to find and help create alternative transportation routes, and are making the entire area more pedestrian and bike friendly (see October 29th walk on page 15). ■

# The Risky Lives of Birds

Birds are the only dinosaurs that survived the mass extinction 66 million years ago, so take note of that when you look at the first bird you see after reading this article.

The diminutive dinosaur you will see is in one of four categories. First, it may be a permanent resident in Newton. Woodpeckers, Chickadees, Titmice, Blue Jays, Crows, Mallards, Great Horned Owls, and Red-tailed Hawks are examples.



*Male Baltimore Oriole*

Secondly, it may be one of our summer residents that include Baltimore Orioles, Barn Swallows, Pine Warblers, Phoebes, Woodcocks, and Towhees, birds that are going south soon.

Third, it may have arrived from the north recently and may be about to fly south where there are insects to eat during the winter. Examples are most warblers, Spotted and Solitary Sandpipers along the banks of the Charles River, Sharp-shinned Hawks, Rusty Blackbirds, Green-winged Teal, and Northern Pintail ducks.



*Rusty Blackbird*

Finally, the bird may have come to us from the north and will stay with us through the winter. Birds of this sort are the Dark-eyed Juncos, White-throated Sparrows, Hooded Mergansers,

American Robins from Canada, Ruddy Ducks on Crystal Lake, and Common Goldeneyes on the Charles River. In the latter three cases, these birds have survived a trip fraught with danger.

The research on bird migration has been long in developing. This is because bird navigational ability is something humans don't share. As examples of their feats, Bar-tailed Godwits fly across the Pacific Ocean every fall non-stop from Alaska to New Zealand. This is a 6,500 mile flight that takes them nearly eight days to complete. A slight deviation from the true path, without corrections over the trackless Pacific Ocean, and they would miss these islands.

A percentage of our local Ruby-throated Hummingbirds fly across the Gulf of Mexico after they leave us in the fall. The Bar-tailed Godwit seems more impressive, but that's debatable when you look at the sizes of the two species. In terms of grams of body weight per mile flown, our Hummers are the champs. We know these feats of flight because we now have diminutive electronic tracking devices that we strap on their bodies.

How can they accomplish these feats of navigation? The direction they choose to go in migration is genetically inherited. But past experience from making the trip also plays a role. In the middle of the 20th century, a Dutch ornithologist, Ab Perdeck, took groups of European Starlings at migration time and let them loose some 600 miles southeast of where he caught them. The younger birds ended up about 600 miles southeast of their normal



*Fall plumage Blackpoll Warbler*

wintering ground. The older birds, which had made the correct trip in previous years, adjusted their flights to go to the correct place.

Since we have some of this directional ability, the above description is easier to imagine. But the flight of Blackpoll Warblers that you may see around Newton in the fall is less so. They take off over the Atlantic Ocean between Nova Scotia and Virginia, including some from Cape Cod. Depending on the take-off point, they fly for two or three days over the open ocean and arrive on the northern coast of South America. The average distance is about 1,900 miles. Our sensory equipment would not allow us to do anything like that.

There are several navigational aids birds use to migrate. The most common are landmarks and visual cues learned from

the first migration. Birds also use the sun as a compass of sorts. Experiments that created a “fake sun” caused birds to orient in the wrong direction.



*Eurasian Teal*

It has also been shown that birds have a sense of time because the motion of the sun throughout the day is accounted for in their flying. In addition, birds use the stars to navigate.

They learn to recognize the North Star and the stars around it. They use this information to stay on course overnight. They learn the position of this star complex and stop at the latitude appropriate to their winter home when the North Star is at the correct, lower angle. They also shift their altitude when migrating, finding the best winds to carry them along.

Most astonishing to us humans is the scientifically established involvement of vision in connection with the earth’s magnetic field. It has been shown that birds use this as a navigational tool. We still don’t know what senses accomplish this. There is evidence that young birds need both eyes and some landscape to use this sense, and as they get older, this gets fixed in the right eye.

There is a second sense that allows birds to use the earth’s magnetic field for orientation, and it is located in the upper mandible of their beaks. We thus see that there is a whole ensemble of back-up sensory means by which birds can

navigate as they migrate. They, like humans in traffic, use whichever is most suitable for the moment.

Offsetting these ominous factors is the knowledge, from various experiments, that the ability to vary their migratory pattern in different ways is present in birds’ genetic inheritance. They are not locked into one pattern. Our hummingbirds fly across the Gulf of Mexico, but also migrate down the coast of Mexico. We also see so-called vagrant species of birds in Massachusetts every year. We had a Eurasian Teal one year in Cold Spring Park. We had a Prothonotary Warbler in Nahanton Park last year. These accidental appearances may be the salvation of some species as the Earth warms. The outliers may keep the species afloat. We should look at migratory instincts as a labile talent, able to adapt to change.

And if the obvious dangers of these migrations were not enough, the birds will now be coping with climate change. Their arrivals in the north are timed to coincide with explosions of food supplies, such as insects and horseshoe crab eggs. If they are in the tropics and our northern climate has an earlier spring, the food for their chicks may be absent.

Good places to look further into these matters are the “Birds of North America online “ at <http://birdsna.org> and the book *Ten Thousand Birds, Ornithology since Darwin*, by Tim Birkhead, Jo Wimpenny, and Bob Montgomerie. You can access some information about species of birds at the Explore BNA website mentioned above without joining. The book can also be downloaded as an e-book for convenient referral and storage.

But please do yourself a favor and spend a minute with that little dinosaur you will find outside in your yard. Be thankful it is there. ■

✍ Pete Gilmore

## 2018 MEMBERSHIP RENEWAL

*If you haven’t renewed your membership already, now is the time.  
And consider a gift for a conservation-minded friend.*

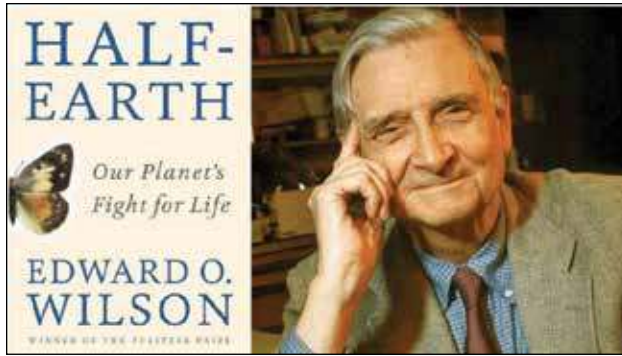
Visit our website at [www.newtonconservators.org](http://www.newtonconservators.org) if you wish to renew your membership online.



PHOTOS, LEFT TO RIGHT: PETE GILMORE, SUZETTE BARBIER

# B O O K R E V I E W

## *Half-Earth - E. O. Wilson*



E. O. Wilson believes that we, collectively, need to prevent the mass extinction of many species by preserving half of the planet, and soon.

He makes the case for this dramatic proposal in his book *Half-Earth: Our Planet's Fight For Life*. Wilson has studied the natural world for more than 80 years, and he is thoughtful, articulate, and earnest in his writing. He is also very direct when he lays out his idea:

*"In Half-Earth I propose that only by committing half of the planet's surface to nature can we hope to save the immensity of life-forms that compose it."*

The book is divided into three parts. Part I, "The Problem," is a richly described and blunt statement of the decimation of many species of wildlife, from songbirds and frogs, to rhinos. The recurring theme in the examples he provides is the activities of humans that led to the reduction or outright extinction of so many species.

Wilson then leads up to the current thinking that the Earth is headed toward the "Sixth Extinction" unless humans world-wide commit to preserving the biodiversity that we still have, because that is the only way to "achieve the stabilization required for our survival."

Wilson spends considerable time describing why extinction is accelerating, including the impacts of climate change. He is especially critical of a new movement based on what is called the "Anthropocene" worldview, in which humans completely dominate Earth and surviving wild species and ecosystems are judged and conserved for their usefulness to our species. Some conservationists are apparently aligning themselves with this approach.

He also discusses the "menace of invasive species" and the wrong-headed view that in time "novel ecosystems" of alien plants and animals will replace native ecosystems.

A lot of the discussion centers on the complexity of life forms and their interactions, much of which is still unknown to scientists. Many species are deeply interdependent, and removing part of the food web, or key parts of the environment can cause serious damage, even collapse, of large parts of the ecosystem. The role wolves play in promotion of tree growth in Yellowstone National Park as they cull elk that can decimate aspen growth there is just one example.

The complete effects from current trends of human development, environmental damage, and political policy are not fully understood. He quotes pioneering ecologist Barry Commoner regarding the unintended consequences of simplistic policy — *"You cannot do just one thing."*

Part II, "The Real Living World," includes revealing discursions on the "unknown webs of life" — plants and animals in forests, "meiofauna" (tiny "lesser animals" almost too small to see) in the surf zone, and elsewhere, even the complex microbiome inside the human body. Wilson emphasizes the potential new forms of life that are as yet undiscovered.

Wilson then writes that he asked eighteen of the world's foremost naturalists to describe the "Best Places" for biodiversity globally that could be preserved as part of his "Half-Earth" idea. He describes many of these areas in rich detail, and makes a compelling case for how much biodiversity could be saved. In this "Best Places" list Wilson includes Atlantic Forests of South America, the Redwood Forests of California, The Longleaf Pine Savanna of the American South, Cuba and Hispaniola in the West Indies, and the Pantanal, in Brazil and Bolivia, just to name a few.

Part III, "The Solution," presents biodiversity conservation as the only solution to the impending "Sixth Extinction." It is a sweeping and long-term plan that Wilson argues could be created, and one that has to be supported to overcome the human brain's tendencies to "favor short-term decisions over long-range planning."

Wilson cites a conversation he had in 2005 with a hydrologist at Texas Tech University regarding the dependence of crop irrigation on water from the rapidly shrinking Ogallala aquifer. Wilson asked the hydrologist how long the aquifer would last with the current rate of depletion. When the hydrologist said "Oh, about 20 years, if we're careful," Wilson then asked "What will you do then?" The hydrologist said, "Oh, we'll think of something."

Wilson's point is simple: "By destroying most of the biosphere with archaic short-term methods, we are setting ourselves up for a self-inflicted disaster." Wilson's message to conservationists is "We need to do more."

Wilson does provide some stories of activists who saw large-scale problems and then committed themselves to finding solutions, for example MC Davis in the Florida panhandle. His wide-ranging purchase of land and restoration of the long leaf pine tree was essential to restoring the health and sustainability of much of the Southern United States. He also describes the work by Gregory Carr in Mozambique to restore wildlands and assist local natives in the area of Gorongosa National Park.

Wilson says he sees reasons for optimism because of changes that will come from technologies such as biology research, nanotech, and robots. His discussion covers a wide range of topics from stabilizing population growth, reducing per-capita consumption of resources, and even brain science and explanations of consciousness. He makes a case that long-term trends could reduce the human ecological footprint in part because of altruism based on favoring group selection (rather than just family or tribe).

Wilson concludes that "Like it or not, and prepared or not, we are the mind and stewards of the living world. Our own ultimate future depends on that understanding."

The book ends with a detailed section of "Sources and Further Reading."

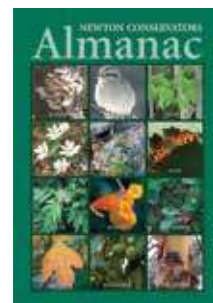
*Half-Earth* is a sobering, yet cautiously optimistic view of the very near future that Wilson urges us to create. ■

— David Backer

## It's Fall. Enjoy the Outdoors!

Shop online at [www.newtonconservators.org/books.htm](http://www.newtonconservators.org/books.htm) to purchase Newton Conservators publications. *Almanac* is \$19.95 + shipping, and the *Trail Guide* is \$8.95 + shipping.

- Members receive a discount from these prices when purchasing online.



# WALKS SCHEDULE FALL 2017

[www.newtonconservators.org](http://www.newtonconservators.org)

Please note: Walks meet at different times. Some trips are weather dependent. Please call trip leader if in doubt.

## Saturday, Sept. 30 at 1:00 pm

### CANOE AND KAYAK TRIP AT NAHANTON

This canoe/kayak trip will start in Nahanton Park. We'll paddle upstream on the Charles against the current to the far reaches of Needham, Dedham, and Wellesley. Bring your own canoe or kayak, or rent one at the canoe/kayak rental stand in Nahanton Park. The area up-stream is a region of significant beauty and almost pristine conditions. Fall is a good time to view the many turtles and other wildlife along this stretch of water. We should see numerous fish, including pickerel, bass, and carp. We also will see many birds that make their spring/summer/fall homes in this habitat. We'll pass by Powell's Island, Millennium Park, and the large Dedham Ditch, then stop for lunch on Cow Island. On the return trip, the current will help carry us back. It's an interesting trip for adults and children and usually is completed within three hours.

**Trip Leaders:** Bill & Dottie Hagar (617-964-2644)

## Sunday, Oct. 1 at 8:00 am

### NAHANTON BIRD WALK WITH HAYNES MILLER

Nahanton Park offers a mix of woodlands, wetlands, edge habitat, and meadows along the Charles River, making it one of the best birding spots in Newton for fall migrants as well as resident species. Bring binoculars if you have them. Beginners as well as experienced birders are welcome. Walking shoes are recommended. Co-sponsored by Friends of Nahanton Park & Newton Conservators. Meet at the Nahanton Street entrance between the JCC and the Charles. Parking is available inside the park. Cancelled if steady rain. If concerned about the weather, please call.

**Trip Leader:** Haynes Miller (617-413-2419)

## Saturday, Oct. 7 from 9:00 am - 2:00 pm

### MEASURE NOISE POLLUTION IN WEBSTER/HAMMOND WOODS WITH RICHARD PRIMACK & LUCY ZIPF (BU)

The Webster/Hammond Woods is Newton's largest woods, covering a diversity of habitats on both sides of Hammond Pond Parkway. Please join Prof. Richard Primack and Lucy Zopf from Boston University for a citizen science event mapping the distribution of noise pollution using the app SPLnFFT available on iPhones. The mapping will locate the quietest places in the woods, and determine how far noise from the Parkway and other human activities extends into the woods.



PHOTO: RICHARD PRIMACK  
*Noise Pollution Team*

Please plan to arrive between 9 am and 1 pm. Meet at the end of Elgin Street where Lucy and Richard will assign you to particular places in the woods and show you how to calibrate and use the app and how to transmit data via email.

It would be best for volunteers to download the SPLnFFT app in advance. Please make sure that your iPhone is set up to send emails, since the app uses email to export data. Unfortunately, for this project, we are able to work with only iPhone users. If you do not have an iPhone but would like to observe the process, we will pair you with someone with an iPhone if you notify us in advance.

We hope that each volunteer can help for two hours, but one hour would also be OK, and three to four hours would be even better. Volunteers who participate in this project will learn a valuable new skill on how to monitor noise pollution.

If possible, please let us know via email ([lzipf@bu.edu](mailto:lzipf@bu.edu)) if you can help with this event and when you can arrive so that we can plan out areas for monitoring. You can arrive anytime between 9 am and 1 pm for calibration of your iPhone.

Parking is available along Elgin Street. The event is cancelled if it is raining. If concerned about the weather, please call or email.

**Trip Leaders:** Richard Primack ([primack@bu.edu](mailto:primack@bu.edu)) (857-636-8378) and Lucy Zopf ([lzipf@bu.edu](mailto:lzipf@bu.edu))

## Sunday, Oct. 8 at 9:00 am

### BEDROCK GEOLOGY OF NEWTON AND ENVIRONS

The geology of the Newton area tells a fascinating story of a time about 585 million years ago when Newton was part of the great southern continent of Gondwana and not far from the south pole. The rocks record a history of great volcanic eruptions and sedimentary basin deposits (the famous puddingstone!) in areas between the volcanoes. Join us and learn a bit about how the rocks tell us their story. This trip will not be one of the usual "walks" since we will need to carpool to travel to four different sites in and around Newton to see the different rock types. Meet in the parking lot at the entrance to the Hammond Pond DCR Reservation area across from the Showcase SuperLux movie theater and at the west end of Hammond Pond (see page 39 of the *Newton Conservators Walking Trail Guide*). We will visit rocks in the woods near here, then carpool to the other exposures. Cancelled if steady rain. Trip will last 2-3 hours.

**Trip Leader:** Chris Hepburn (617-964-1137)

## Saturday, Oct. 14 at 8:00 am (Rain Date: October 15)

### FALL BIRD WALK AT COLD SPRING PARK

Fall is an excellent time to look for birds. We'll explore the various habitats at Cold Spring that are available inside the park. Park at the Beacon Street parking lot and meet at the circle. Bring binoculars if you have them. Beginners as well as experienced birders are welcome. Boots are recommended. If in doubt about the weather, please call.

**Trip Leader:** Pete Gilmore (617-610-2477)

**Saturday, Oct. 21 at 11:00 am**

**THE WOLVES OF THE FOREST FLOOR AT EDMANDS PARK (CABOT WOODS)**

Eastern red-backed salamanders (*Plethodon cinereus*) are the most abundant vertebrates in forests in the northeast United States, accounting for twice the biomass of all breeding birds. As top-level predators of soil invertebrates, red-backs are believed to reduce soil decomposition rates resulting in a decrease in the amount of carbon dioxide released into the atmosphere and an increase the amount stored in the soil. Red-backs are increasingly utilized as indicators of forest health for these reasons among others. In this walk ecologist Brooks Mathewson will discuss the research he has conducted on this species at Edmands Park with the help of the Newton North High School. In addition, we will monitor the cover boards Brooks has set out to study this population as well as search for salamanders under natural cover objects.

Meet at the central parking area for Edmands Park on Blake Street. The walk will be approximately 90 minutes.

**Trip Leaders:** Brooks Mathewson, Ecologist (Cell Phone on day of outing 617-851-3513); email: [bmathewson@post.harvard.edu](mailto:bmathewson@post.harvard.edu)

**Sunday, Oct. 29 at 1:00 pm**

**EXPLORING FUTURE TRAIL POSSIBILITIES IN NEWTON UPPER FALLS**

The recent opening of the Upper Falls Greenway provides the opportunity to create a network of trails that extend from



Newton Highlands along the Greenway to the Blue Heron Trail on the Charles, and then all the way south to Millennium Park in Boston. Heading north, the network could connect to Hemlock Gorge and on to Newton Lower Falls. Join us for

a two-mile hike (with an optional two-mile extension) that will explore this route, including an abandoned railroad bridge across the Charles and two little-known paths along the river. The route is rough in places. Meet at The Depot at the corner of Oak and Chestnut Streets. There is ample on-street parking on Chestnut just east of Oak.

**Trip Leaders:** Dan Brody (Newton Conservators) and Jim Lerner (Friends of the Upper Falls Greenway). Email [UpperFallsHike@Newtonconservators.org](mailto:UpperFallsHike@Newtonconservators.org) for more information.

**Sunday, Nov. 5 at 2:00 pm**

**NEWTON AQUEDUCTS HIKE**

Join a five-mile hike through woods, meadows, and fields along the Newton sections of the Sudbury and Cochituate aqueducts. This is a steady but not fast hike. Participants should be in sufficiently good shape to keep up with the group (There are cutoffs for those who wish to shorten the hike). Meet in front of the Starbucks coffee shop near the Waban MBTA station.

**Trip Leader:** Henry Finch (617-964-4488)



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# Mayoral Candidates Forum on the Environment

Jenn Adams, Moderator

**Thursday, September 28, 2017 at 7:00 p.m.**



Join program co-sponsors Green Newton and the Newton Conservators for a forum with the two finalists in Newton's Mayoral race. The candidates will share their visions for addressing local environmental challenges, if elected. Jenn Adams, NewTV News Director, will ask a series of questions submitted by the co-sponsors. An audience Q and A will follow.

The Newton Free Library is an accessible facility. If you need a reasonable accommodation contact Newton's ADA/Sec. 504 Coordinator, Jini Fairley, at least two business days in advance of the meeting at: [jfairley@newtonma.gov](mailto:jfairley@newtonma.gov) or (617) 796-1253.



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# NEWSLETTER

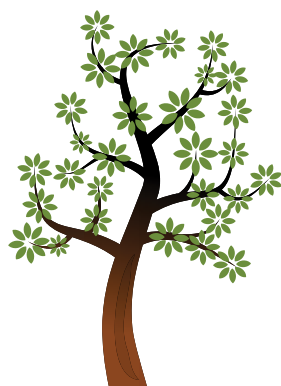
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*Newton's land trust working to preserve open space since 1961*

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**Yellow Swallowtail**  
*photo by Haynes Miller*

**Go Green!** ...and all the other colors of the rainbow. You can view this newsletter at <http://bit.ly/2rXvnit>. To elect not to receive a paper copy of the newsletter, update your membership profile at [www.newtonconservators.org](http://www.newtonconservators.org)