

The *Eightmile River Watershed* News

Fall 2013

Eightmile Milestones



ERWSCC Members with Joe Courtney at 2012 RiverFest held at Devil's Hopyard State Park



Sally Harold from The Nature Conservancy thanking volunteers at Celebrating Volunteers Event sponsored by the Eightmile and Salmon River Watersheds



ERWSCC Chairman Anthony Irving introducing American Rivers proposed Ed Bill's Pond Dam removal project at a Public Meeting in Lyme



ERWSCC members Anthony Irving and Eric Belt presenting the Eightmile River Wild & Scenic Act to Salem Board of Selectmen in celebration of the five year anniversary

Chairman's Column

The Eightmile River Marks 5th Anniversary as A National Wild & Scenic River System

In May of 2008 President George W. Bush signed legislation recognizing the Eightmile as one of the nation's great river systems. What makes the Eightmile so impressive compared to the many other beautiful rivers in our region? In a nutshell it's about 'wholeness'. The Eightmile River watershed contains all the components that make for a healthy, natural river system. From its smallest feeder streams to the river itself there is no other near-coastal river system between Boston and New York that is functioning much as it did prior to colonization.

The main reason the watershed retains these unique qualities is due to low population. When you think about it, the watershed towns are relatively divorced from Connecticut's major urban areas, leaving them as a lightly populated enclave in the midst of our developing state. In fact, it wasn't until the late 1960's and early 70's with the completion of Routes 9 and 11 that major transportation corridors began to link our towns to the rest of Connecticut. And with this easier access, the dynamics of population expansion have come with it. So the threat to this river system is potentially us, not only in terms of development pressures, but in how we lead our lives here.

One of the great things about living in the watershed and surrounding towns is the people who call this home. So many of us do so because of the natural beauty, access to nature and overall rural character. But with population creep and more building it becomes increasingly

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- New Linear Trail
- Video-taping Fish
- Using Water Bugs to Assess Water Quality
- Student Awards

Flowers, Fauna and the Dance at Lake Hayward

By Kathy Connolly, SpeakingofLandscapes.com

Question: Should we care about native plants along the Eightmile? And what is a native plant anyway?

Answer to both of the above: It's complicated.

When I was asked to help plan an all-native garden for an area on Lake Shore Drive on the west side of Lake Hayward in East Haddam, I was more than glad to get involved. As a practitioner of ecological landscape design, this is exactly the puzzle I love to solve—figuring out the right plant for a place. At the same time, since it was planned as a lakeside buffer garden at the uppermost elevations of the Eightmile River watershed—a public place in a sensitive environment—the importance of the project was self-evident.

But in a recent article in *New England Wild*, the journal of the New England Wildflower Society, expert Arthur Haynes offers no fewer than seven criteria by which native plant researchers determine whether a plant was truly on a particular landscape prior to European arrival. With that many criteria, it should come as no surprise that people sometimes fail to find 100% agreement.

This matter gets positively obscure when you add the little known topic of provenance, the genealogy of a plant population in a particular place, not unlike the genealogy of a human family. Some would say that a plant is only truly native if it comes from parents that evolved at a particular site—perhaps over thousands of years. Yet it's here we find the power of native plants. They are pieces in the eco-puzzle of a particular location, interacting with and supporting the pollinators, birds, and in the larger sense, all of life—including our own.

Native plants are like ballroom dancers who've been practicing with their partners for centuries. They've got their moves down.

Perhaps needless to say, those of us who design gardens and select plants from the nursery trade often have a very difficult time satisfying the more exacting definitions of a native. To help practitioners get close, however, the New England Wildflower Society now offers *Go Botany*, a free online database that shows which wild plants are native or introduced to every county in New England. The database now includes more than 3000 species and it was invaluable in the research that led to plant selections for the Lake Hayward buffer garden.

During the winter, spring and summer of 2013, the Eightmile River team worked with Connecticut River Coastal Conservation District and the Lake Hayward Property Owners Association to plan and implement the 3000 square foot buffer that now helps sequester storm water runoff as well as goose droppings. Through at least two dozen conversations and emails, we jointly chose plants that were native to this part of Connecticut, deer resistant and tolerant of the full sun conditions at the lake.

After the planting was done by 20 or more volunteers one glorious Saturday in May, 19 native species were putting down roots. The butterflies and moths sampled the goods even before they were out of the pots.

In the coming year, there are borders and pathways planned for the garden. Maintenance plans are evolving. There will be an information session for homeowners in the area. In other words, this is a work in progress.

In the meantime, the dancers are on the floor and the band is warming up.

Editor's Note: Supported by a grant from The Rockfall Foundation, Middletown, CT



- To learn more about the Lake Hayward project and see a plant list, visit: <http://bit.ly/1f6XYCX>
- To learn more about *Go Botany*, visit: <http://gobotany.newenglandwild.org>
- For a great book on how we can all benefit from the use of native plants in our home and community landscapes, see *Bringing Nature Home* by Douglas Tallamy, Timber Press, 2009.

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Proposed NEW LINEAR TRAIL Connecting Four Towns

By Rob Smith

In 2009, shortly after the town of East Haddam purchased two properties in North Plain, a unique trail concept was conceived. While reviewing maps of conserved open space in **Eightmile Wild and Scenic Watershed** and protected open space to the east and south, it became obvious that the potential existed for a several mile linear trail from RT. 82 in East Haddam, all the way into East Lyme. What made this trail concept so exciting and unusual was the fact that the entire trail could be laid out on land already protected – essentially, stringing together beautiful parcels of open space like a string of pearls.

The trail as imagined would at first head east, starting at the junction of RT.82 and Hopyard Road, passing through East Haddam's Chapal Farm Parcels (Boot Rock, Patrell and Pizzini). The trail would then wind its way through the Department of Energy and Environmental Protection's (DEEP) Eightmile Wildlife Management Area into Salem. In Salem, the trail would traverse the Salem Land Trust's (SLT) Darling Road Preserve utilizing existing trails. From here, the trail would cross Gungy Road at the Salem/Lyme town line and cross into the town of Lyme's Hartman Park. Again utilizing existing trails, the trail would then proceed in a southeasterly direction passing into Nehantic State Forest and then south utilizing forest roads all the way into East Lyme.

Obviously, cooperation and approval by several organizations would be necessary for the trail to become a reality. The **Eightmile Wild and Scenic Coordinating Committee** (ERWSSC) coordinated getting approval from

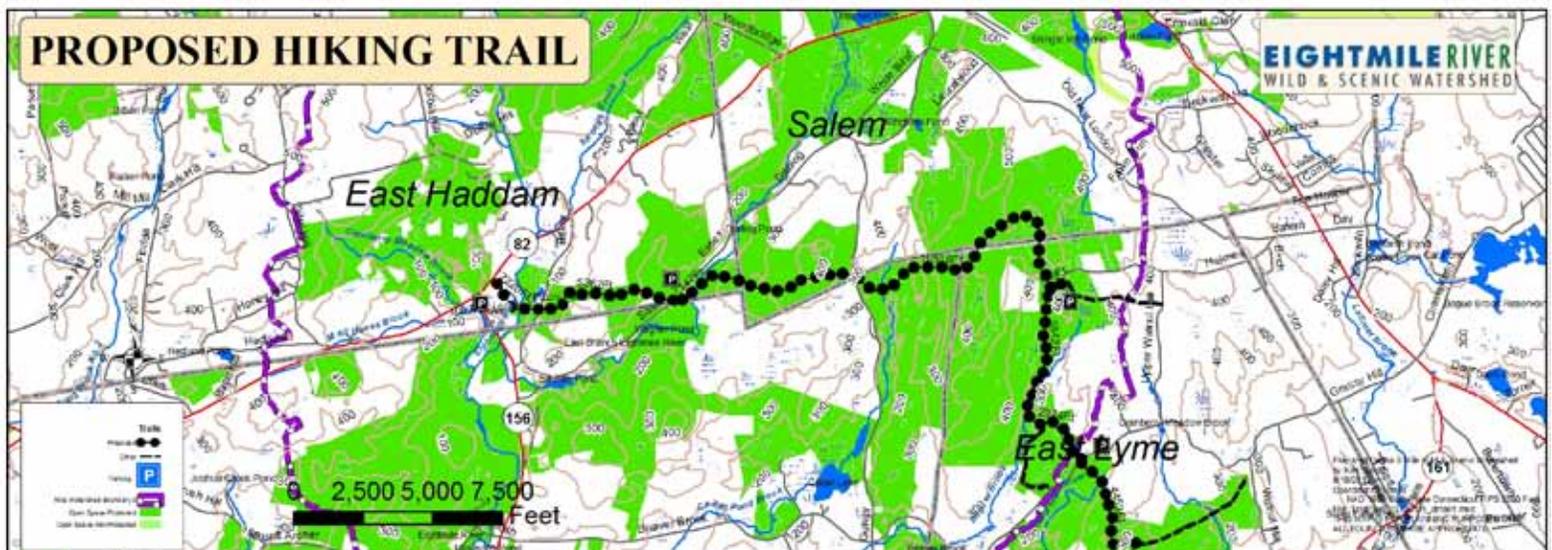
the various organizations involved in bringing this concept to fruition. East Haddam's Conservation Commission was quickly on-board and the East Haddam Land Trust enthusiastically agreed to help. The construction of a foot bridge across the Eightmile River would be needed to connect to parcels west of the Eightmile and is planned to be constructed in the future.

Volunteers and staff have worked with DEEP personnel to route an interesting path through the Eightmile Wildlife Management Area. SLT agreed to the utilization of its trails for the through trail. Lyme Land Conservation Trust and Town of Lyme agreed to the connection through Hartman Park into Nehantic State Forest (NSF). DEEP Park Manager Nasiatka and state foresters agreed to the route in NSF, again using existing trails and forest roads.

In a bit of serendipity and initially unbeknownst to ERWSSC, individuals in East Lyme had also envisioned a linear trail starting at East Lyme's newly acquired Darrow Pond open space property and heading north into Nehantic State Forest, utilizing forest roads bordering Yale Engineering School property. Negotiations with Yale are currently underway. This connection provides the ideal termination point in the south, a parking area at Darrow Pond.

Working with ERWSSC, East Lyme applied for a trails grant from DEEP to fund parking improvements, maps, trail markers and information boards to educate and assist folks utilizing the proposed linear trail.

Until the bridge is constructed across the Eightmile River, the northern terminus will be on the East Haddam Patrell Preserve on Baker Lane. It is anticipated that the east-west section of the trail will be marked and opened late this fall. Upon completion of all improvements the full trail length will be over 10.5 miles.



A portion of the proposed trail connecting protected lands in East Haddam, Salem, Lyme and East Lyme

*Chairman's Column continued
from page 1*

important to keep our individual footprints as small as possible. Collectively our actions begin to add up with a subsequent toll on the natural functioning and health of the watershed. So as homeowners, here are things we can do to minimize our footprint and keep the watershed as a natural place.

Maintain natural vegetated buffers along watershed watercourses - keep lawns at least 50 feet from all waterways. This buffer reduces pollutants entering the water system and creates wildlife habitat for streamside users.

Minimize applications of lawn chemicals and fertilizers - don't forget there are a lot of critters who suffer from the unintended consequences of lawn care applications.

Keep lawns small - by themselves lawns don't offer much in terms of habitat resources whereas meadows, fields and other plantings provide a diversity of habitat types to a great range of wildlife.

Remove invasives and plant native shrubs - non-native invasives such as barberry, burningbush, knotweed, multiflora rose, and bittersweet, among others, outcompete natives. Where possible, get rid of them so as to allow natives to go wild in the Eightmile.

There are other tips that we as homeowners can employ to minimize our footprint. By going to the Eightmile-River.org website you can "take the pledge" and become a RiverSmart Household. Households that take the pledge receive an information packet that includes these and other household tips to keep the Eightmile River watershed clean and green. So let's celebrate this Wild and Scenic birthday by giving our river the present of good stewardship

-Anthony Irving

Using Video Technology to Document Fish Passage at Moulson Pond Fishway

By Thomas Roth-Fishway Volunteer with LLCT

The fishway at Moulson Pond Dam truly is an unsung hero in the ecosystem of the Eightmile River. Operating for the first time in 1998, the fish ladder has passed fish of all kinds. Alewives, shad, herring, and even the occasional salmon has been spotted. For centuries these fish have made the swim up the Eightmile River from Long Island Sound and the Connecticut River to spawn. The relatively recent construction of a mill about 200 years ago saw this migratory path blocked by a dam. The fish ladder was built to give these fish a path around the dam, so they can continue their centuries old travels to spawning grounds.

The Moulson Pond Fishway is considered one of the more significant fishways in Connecticut and has been estimated to have passed many thousands of fish since beginning operation. These counts are made by volunteers who take the time to go to the fishway to count and record all the fish they see as well as conditions such as water temperature and level. This system is only a very rough estimate and time consuming relative to the system that most other Connecticut fishways use. Many of the other fishways use a fish counting system that involves a video camera. When a fish swims up the ladder, the camera is triggered and the fish's image is captured on video. The video can then be reviewed more quickly, easily, and accurately than traveling to the ladder and counting the fish. This ensures that every fish that passes through the fish ladder is identified and counted.

With financial help from Trout Unlimited and guidance from the Department of Energy and Environmental Protection Diadromous Fish Program this type of video system will be installed in the fishway at Moulson Pond. The Eightmile River Wild and Scenic Coordinating Committee (ERWSSC) and Lyme Land Conservation Trust were able to organize a grant proposal that was generously funded by Trout Unlimited, a national organization with more than 140,000 volunteers dedicated "to conserving, protecting, and restoring North America's coldwater fisheries and their watersheds." This "one of a kind prototype" was designed by ERWSSC member Eric Belt with direction by state fisheries biologist Tim Wildman and fabricated by Seconn Manufacturing Construction. The new locker box was built by ERWSSC member Erik Block of Block Construction. After a successful first "fitting" the box is being tailored to hold the camera unit. A trial run is anticipated this fall. The system is planned to be fully operational for the spring of 2014.



The new box which will hold the underwater camera



Fitting the camera box in place at top of the fishway

Mapping Fish Barriers - It's a Team Effort!

By Patricia Young and Kevin Reidemeister (UCONN Student)

From the Watershed Coordinator's Point of View.....

To many folks, dams seem to be the main culprit preventing fish passage. We go to long lengths and large expense to provide fish passage at targeted dams by installing fishways or removing dams. These projects typically address critical areas and open up large stream segments upstream. But every time a road or driveway crosses a stream, it represents another possible fish barrier. Why? If culverts were used, they sometimes present conditions which impede fish movement. These could include:

- The water flowing through the pipe is too shallow or moves too quickly for fish to navigate.
- The pipe is simply too long and dark, as fish require daylight for orientation.
- The outlet on the downstream side is perched above the natural stream channel, making it impossible for fish to enter the pipe.

Why is it important for fish to be able to move? Well first the obvious, spawning habitat and food resources. But think about the less obvious.....escaping unlivable conditions. As stream segments dry up in summer or become too warm, fish will move to other more suitable conditions, up or downstream, unless their passage has been blocked.

These culverts can often be retrofitted or corrected to restore fish passage. With that in mind, DEEP Inland Fisheries has been steadfastly mapping state and local culverts for potential barriers working with local volunteer groups and student interns.

In the case of the Eightmile River Watershed, the town of Salem had been previously mapped, leaving the towns of Lyme and East Haddam undone. To complete the field mapping and documentation of fish passage barriers in the Eightmile River Watershed, two student teams were assembled.

From the Student's Point of View.....

The general goal was to locate culverts or bridges in these towns and to determine whether or not they may present possible fish passage barriers. Field work included taking pictures and documenting location coordinates and characteristics of each culvert including size, shape, material and orientation. Although work in the field is necessary it is only the first step towards correcting fish passage barriers. Once data was gathered, the groups were then asked to enter the data in a Geographic Information System (GIS) program. In short, GIS allows us to interpret and visualize data in a mapped format. The data will be further analyzed by fisheries and wildlife biologists to assess passage barriers and determine priority ratings for retrofits. A long-term goal will be to develop a clickable

map so that data may be easily accessed by local and state officials.

Being a student from the University of Connecticut, majoring in fisheries, I gained a great deal of experience from this project and I was able to utilize my recent GIS coursework in a practical application. This project has given me a better understanding of what is needed for habitat management.



Neal Hagstrom (DEEP Fisheries) reviews culvert data collection with student teams from Goodwin College and UCONN

ERWSCC Rewards Scholars

By Sue Merrow

There's a lot to stewardship of a wild and scenic watershed. There's monitoring water quality, promoting healthy human behaviors in riparian corridors, keeping an eye on land use developments...the list is long, but not to be overlooked is the obligation of today's stewards to bring along the next generation of stewards. Over the five years of our existence, the Eightmile River Wild and Scenic Watershed Coordinating Committee has tried its hand at education by going into classrooms and talking directly with students, by teaming up with local museums to present programs, and by engaging kids at our biennial RiverFest.

This year for the first time, we have experimented with a new approach: recognizing and rewarding high school students from the towns of Salem, East Haddam and Lyme, who will go on to higher education in the fields of natural science or environmental protection. Working with East Haddam's Nathan Hale Ray High School, East Lyme High School (where Salem students attend), and Old Lyme High School (where Lyme students attend), three graduating high school seniors were selected who had distinguished themselves in the area of natural sciences, and we rewarded them with \$500 each toward the furtherance of their education. Selected to receive the recognition were.....

- Jessica Griffin from Salem
- Dakota Urban from East Haddam
- Nora Syed from Lyme

Members of our Steering Committee attended the awards ceremonies and were able to congratulate the students at each high school in early June.

We send these three students off into their lives with our best wishes and our hope that, wherever those lives take them, they remember that they grew up in a special place...in the heart of an intact and untrammled watershed ecosystem that needs people just like them if it is to stay both wild and scenic.

Eightmile River Watershed Monitoring Efforts

Using Bugs to Assess Water Quality

By Patricia Young

For many years, Three Rivers Community College Professor Diba Khan-Bureau has led her students into the wilderness and to the streams of the Eightmile River Watershed in search of benthic macroinvertebrates (aka water bugs) as part of her curriculum focused on water quality issues. Her program utilizes the DEEP protocol referred to as River Bioassessments for Volunteers (RBV). Certain macroinvertebrates, especially those in the stonefly, mayfly and caddisfly families are intolerant of pollution, so when a number of these species are found living in the riffle habitat of a stream, it tells us that water quality is probably good. In general, the more numbers of species found that are pollution intolerant, the better the water quality.



Searching through the catch of the day

DEEP uses the data that Diba and her students collect each

spring and fall as part of their annual assessment of stream health. These results are also factored into the state's biennial report to EPA, documenting a stream segment's ability to support aquatic life. Netting, sorting and then identifying these macroinvertebrates usually takes several hours per site, but many hands and eyes make the job go that much quicker. Her classes typically collect data from four different field sites all in one day. Annual repetitive sampling of these sites also gives the local communities and the Eightmile River Wild and Scenic Coordinating Committee a baseline to work off of in the event that changes are noted over time, allowing them to be proactive instead of reactive in managing the watershed.



Diba Khan-Bureau instructing a student team

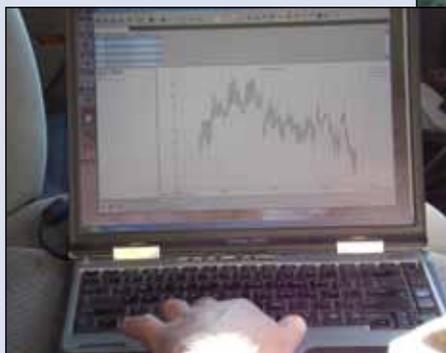
Some Don't Like it Hot

By Henry Witt (Goodwin College Student)

This summer ERWSSC partnered with DEEP Inland Fisheries to initiate a continuous series of monitoring for water temperature, at eight locations along the Eightmile River and its tributaries. Eight data-loggers were placed throughout the watershed in mid-June and retrieved at the end of September. The purpose of this monitoring is to determine if the water temperatures are optimal for coldwater fish growth and survival.

The 13.4 mile long segment main-stem of the Eightmile River contains several species of fish including, brook trout, rainbow trout, brown trout, largemouth bass, smallmouth bass, chain pickerel, eel, and carp. These fish, especially brook trout, are very sensitive to changes in water quality, including temperature. They need pristine waters with temperatures under 24.9°C just to survive and are therefore considered good biological indicators of water quality. They are especially vulnerable in summer months with elevated temperature and reduced stream flow.

The data-loggers record a temperature reading once every hour which allows biologists to take into account daily and seasonal fluctuations. Downloaded data will be analyzed and used to provide a map of stream segment temperatures and assess their vulnerability. The data that is collected is invaluable and will serve as a building block and reference point for future monitoring and management efforts.



Goodwin College Student Henry Witt and DEEP Fisheries Biologist Neal Hagstrom setting the loggers and downloading data

Fire at the Hopyard: A Recovering Landscape

By Patricia Young

In the spring of 2012, due to a build-up of woody debris and possible human activity, a fire broke out in the vicinity of the Youth Group Area at Devil's Hopyard State Park in East Haddam. The fire was classified as a moderate intensity burn and orchestrated back-burning along with other methods were employed to provide fire control. The result was approximately 133 acres of burn site in the 892 acre park. The most severe burn area encompassed about 19 acres.

Fires have historically been a natural occurrence, a result of fuel build-up from woody debris and lightning. Increasing concern due to possible threats to nearby development has resulted in the need to control fires, regardless of their cause.

With fires, especially those covering many acres, come changes to the ecological communities. Fires can open canopies in forests allowing for the colonization of pioneer species. Depending on the severity, they can alter the age class and composition of forest trees and perhaps weakening some and leaving them vulnerable to attack. We have become increasingly aware of the introduction of non-native invasive species, both flora and fauna. Introduced species take advantage of any opportunity to become established and flourish with little control. Non-native invasive species can destroy ecosystems, outcompete native species and even pose serious health threats. With this in mind, ERWSCC decided that the 133 acre burn area at the Hopyard was an area worth monitoring.



In the fall of 2012, Candice Peck, a recent UCONN forestry major graduate was contracted to lay out a series of monitoring plots, both in and outside of the burn area. With oversight from ERWSCC chairman, Anthony Irving, a forest ecologist and Tom Worthley, UCONN Extension Forester, a protocol was established for 20 sample sites to monitor tree and shrub species, number, health and size. Groundcover, rock, coarse woody material, leafy litter and fine duff (a layer of well decomposed leaves, needles, fine twigs, and other organic material) were also recorded.

The resulting comparison between the sample plots in and out of the burn area yielded some results which would be expected. Leaf litter in the burn area was significantly decreased, while the duff layer measured a substantial increase in percent forest floor cover. Due to the high nutrient value in duff, the absence of a deep leaf litter and increased sunlight from the more open canopy, grasses and herbs quickly colonized the area, with little invasive species evident.

Another anticipated result was a change in tree class structure as smaller saplings under 3" DBH (diameter at four and a half feet) were completely destroyed in the hottest burn areas, leaving only larger trees. Larger trees in the 4-32" DBH category showed significant charring in roughly half the specimens in the burn area sampled. With birch being a dominant forest species in all sample sites as well as producing many seeds with a high germination success rate, it was not surprising that birch seedlings were noted as the dominant species of regeneration within the burn area sample plots.

Further monitoring over the next few years will indicate how species composition in the burn area plots compare to those in the nearby non-burn areas. And time will tell whether larger charred trees survive or whether change has been set in motion which could lead to further transformation in the forest as a result of larger tree die-off.

Special thanks to Emory Gluck (DEEP Forestry) and William Mattioli and George Haage (DEEP Parks) for their assistance and cooperation.

The full report can be viewed on our website at www.eightmileriver.org

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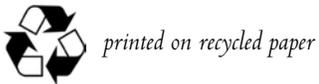
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