EIGHTMILE RIVER WILD & SCENIC WATERSHED News
2026

Red Trail Lookout, Burnham Brook Preserve, East Haddam

Chairman's Column: Looking back

by Anthony Irving

In 2008, President George W. Bush signed the bill creating the 62-square-mile Eightmile River Wild & Scenic Watershed. As a condition for inclusion in the Partnership Wild and Scenic program, the Eightmile River Wild & Scenic Coordinating Committee (ERWSCC) created the "Watershed Management Plan" with input and consultation from local land use commissions and other river stakeholders. This comprehensive document has served to guide and assist the watershed towns of Lyme, Salem, and East Haddam in the protection and promotion of the outstanding resource values identified by Congress as critical to the health of the river system.

In this issue of the Watershed News, we highlight some of our initiatives and progress over the last eighteen years of implementing the management plan. Our purpose is to provide expertise and technical support to towns in their watershed protection efforts, to award small grants, and to offer outreach and education opportunities that enhance community understanding and awareness.

So, what makes the Eightmile River watershed so distinctive that Congress awarded this federal designation? As a near-coastal, forested ecosystem located amidst the crowded coast, the Eightmile is a mostly untouched landscape, little changed since the late 1800's, as lands reverted to forest after widespread agricultural abandonment. With reforestation, our woodlands today are a complex of habitat types ranging from riverbank to ridgetop.

Distinctive features include:

- The watershed is a 62-square-mile forested system with over 150 miles of healthy waterways.
- The watershed is home to 160 "rare, threatened and endangered" state-listed plant and animal species with five being globally rare.

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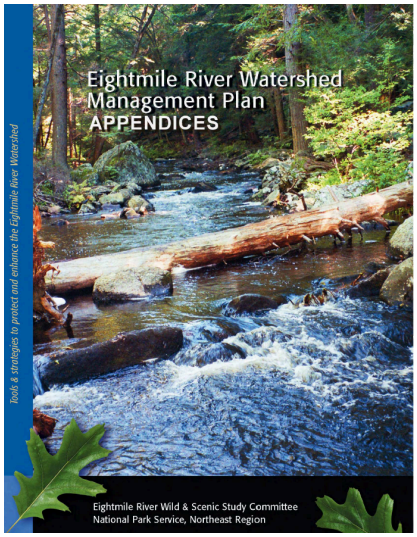
Looking Back *continued from page 1*



Watershed Management Plan Cover

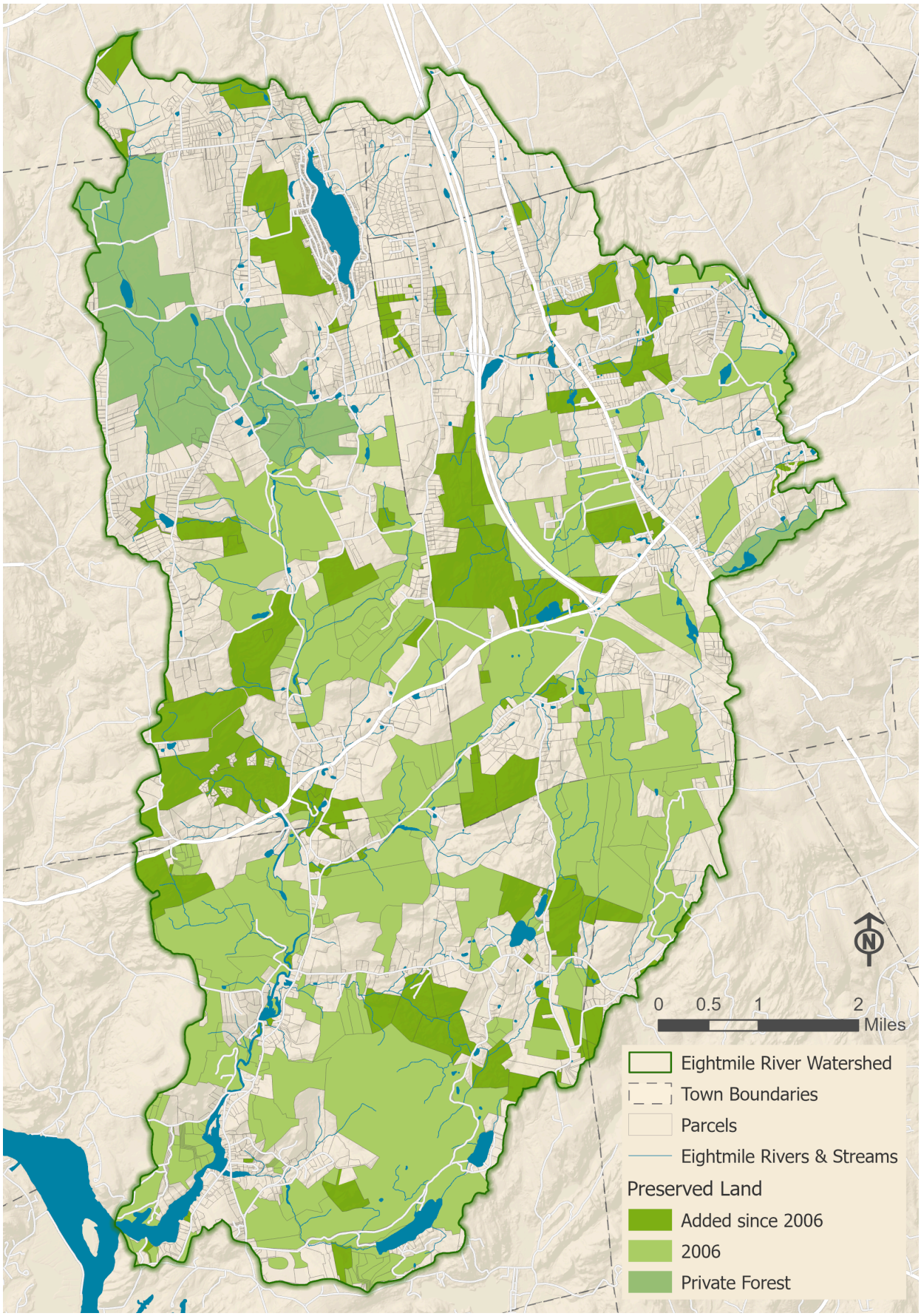
- Underlying bedrock reflects the collision of ancient continents with the result that the Eightmile watershed has a bedrock assemblage that is found today in both North America and northern Africa.
- Population density in the watershed is very low at fewer than 90 people per square mile compared to the statewide average of over 700 people per square mile.
- The watershed is 80% forested and only 6% developed - 26% is composed of intact forest blocks greater than 500 acres, 15% are greater than 1,000 acres and 5% are greater than 2,500 acres.
- The watershed includes a number of historic sites and is connected by a pattern of roads that exist today much as they did during the Colonial era in the 1700's.
- Approximately 40% of the watershed, over 16,000 acres, is permanently protected as open space, much of which is open to the public.

These attributes are at the core of what makes the Eightmile River watershed exceptional. How do they translate into protective actions and goals? Our guiding priorities have been and will continue to revolve around:

- Protecting stream corridors with setback zones along the river and feeder streams. *All three towns have adopted protective setback regulations*;
- Minimizing and managing impervious surfaces to reduce runoff that can warm waters and introduce pollutants. *ERWSCC conducts regular water quality testing throughout the watershed to identify potential pollutants and their sources*;
- Improving stormwater management to minimize flooding and runoff to waterways containing road sands, salts, and auto pollutants. *ERWSCC (1) inventoried and assessed all the stream crossings across the watershed as to their functionality and effectiveness to preserve natural run-of-stream conditions and (2) completed an assessment of storm water infrastructure in the three towns establishing priorities for retrofitting due to land use inputs*;
- Reducing habitat fragmentation by reducing haphazard development. *ERWSCC works with the watershed land trusts to identify and link vital habitats across town boundaries that are susceptible to fragmentation due to development pressure*;
- Promoting open space conservation to ensure suitable and adequate wildlife habitat. *Currently, over 16,000 acres of the 40,000-acre watershed are in permanent open space - an increase of 3,900 acres since 2006.*

As you read through the newsletter, our wish is that you come away with a better understanding and appreciation for this nationally significant river system. ERWSCC is dedicated to and will continue to advocate for the Eightmile River watershed. It's part of our heritage and culture, including all the wild things.

Members of the original Wild & Scenic Committee with local officials after designation in 2008.



Watershed-wide preserved land mapping showing parcels added since 2006.

What's Next for the Eightmile River Watershed Management Plan?

by Pat Young

How do we define successful watershed management? Is it the product of how much land is protected in the watershed? Is it that water quality standards are being met or even exceeded? Or that native species are thriving in healthy habitats and that the watershed is resilient in times of changing weather patterns or natural disaster? Could it even be defined by the balancing of community economic viability with natural resource protection? Successful watershed management is, in fact, the sum of all of these.

Effective watershed management relies on natural resource data to establish realistic goals. Further, it requires collaboration with the local communities who manage these resources. Communication and the ability to work in changing political and economic climates are essential.

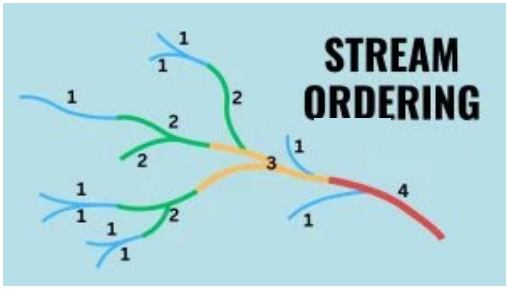
For watershed groups, such as the Eightmile Wild & Scenic Coordinating Committee (ERWSCC), the Watershed Management Plan is its guiding document, setting goals and laying out the action items to accomplish those goals. After several years of community input, the Eightmile River Watershed Management Plan was published in 2008 and subsequently adopted by the towns of Salem, East Haddam, and Lyme. At its heart are the tools, referred to as Tier 1 and Tier 2 Tools, which are designed to protect the Outstanding Resource Values (ORVs) that make the Eightmile River eligible for Wild & Scenic designation.

These ORVs include:

- Watershed hydrology that functions in near-natural conditions
- Unique Habitats and Communities that support diverse species
- Cultural Resources that reflect historical patterns of development
- Unique Geology
- Excellent Water Quality
- An Intact Watershed

The Watershed Management Plan addresses both the actions and party best suited to accomplish them. These parties include ERWSCC, the three core towns of Salem, East Haddam, and Lyme along with the State of Connecticut and the National Park Service.

One example of a Tier 1 Tool that addresses protection of Watershed Hydrology and Water Quality is the adoption of a Riparian Protection Overlay Zone. The Management Plan recommended preservation of a vegetated zone fifty feet from first-order streams and one hundred from second-order or above streams. This has been accomplished through the adoption of a set of zoning regulations in each of the core towns that extend from the bank of perennial watercourses in the Eightmile River Watershed, outward for a distance of 100 or 50 feet. The key objective of the overlay zone is to preserve vegetation, with native plants preferred, to promote filtering of overland stormwater flow, offer canopy



Source: Earthhow.com

shading to keep streams cool, preserve woody vegetation, which protects against streambank erosion, and provide contiguous corridors for wildlife. While the regulations each differ slightly, all the core towns have adopted an overlay zone.

Land protection is key in helping meet a number of the Management Plan's goals. With nearly forty percent of lands within the watershed permanently preserved, ERWSCC has initiated several novel projects aiming to connect people to these open spaces. Examples include the Goodwin Trail, the Outdoor Recreation Map and the Wander Our Watershed interactive map.

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Amphibian and Reptile Heat Maps *by Dennis Quinn*

In the Fall of 2025, The Eightmile River Wild & Scenic Coordinating Committee (ERWSCC) engaged Quinn Ecological, LLC to produce watershed and town-wide mapping to identify "heat spots" for state listed amphibian and reptile species. Heat maps are a data visualization tool, used in this context to show the likelihood of amphibain and reptile presence.

This mapping is based on new conservation methods outlined in the book: Conservation of Amphibians and Reptiles in Connecticut (2021). These are habitat-based models to protect species, not specific point locations where species are known to occur. Mapping has focused on intact habitat mosaics including core forest, wetland, early successional, riverine floodplain, and transitional habitats. More specificity in mapping was applied to areas based on the quality and function of the habitat.

The function of intact habitat mosaics, or land areas with varying connected habitat types, cannot be overstated. Many amphibian and reptile species require multiple types of habitats to complete their life cycle. Of the twenty-seven species of amphibians and reptiles that are uncommon or at their range edge in Connecticut, seventeen (63%) require habitat mosaics. In addition, of the nineteen species of amphibians and reptiles with widespread

A Wood frog crossing the road during early spring migration to reproduce in a vernal pool.

Spotted Salamander in leaf litter in forest surrounding vernal pool.

distribution in Connecticut, eight (42%) require habitat mosaics. Therefore, conserving habitat mosaics is the largest conservation issue facing Connecticut, directly impacting the survivorship of no fewer than twenty-five species or slightly less than half of Connecticut's amphibians and reptiles.

Within these habitat mosaics, early successional habitats, characterized by low, dense vegetation, and the lack of mature trees, are essential to the life cycles of many amphibian and reptile species for thermoregulation, egg deposition, and foraging. Five of Connecticut's amphibians and nine reptiles are primarily dependent upon early successional habitats. Not surprisingly, 86% of these species are uncommon in the State. With Connecticut's early successional habitats becoming increasingly fragmented and patchy, this rich diversity of species will be threatened without appropriate Best Management Practices (BMPs) to manage these habitats in their early successional states.

To successfully create heat maps for species conservation, an understanding of the biological and habitat requirements for species is critical. We often use the example of vernal pool breeding species to illustrate the importance of unfragmented landscapes in their conservation. These species, such as the spotted salamander and wood frog, migrate great distances between their breeding wetlands (vernal pools) and surrounding upland forests. Fragmentation, especially from roadways, between these habitats causes significant population declines due to roadway mortality during breeding migrations. Protecting the forests surrounding

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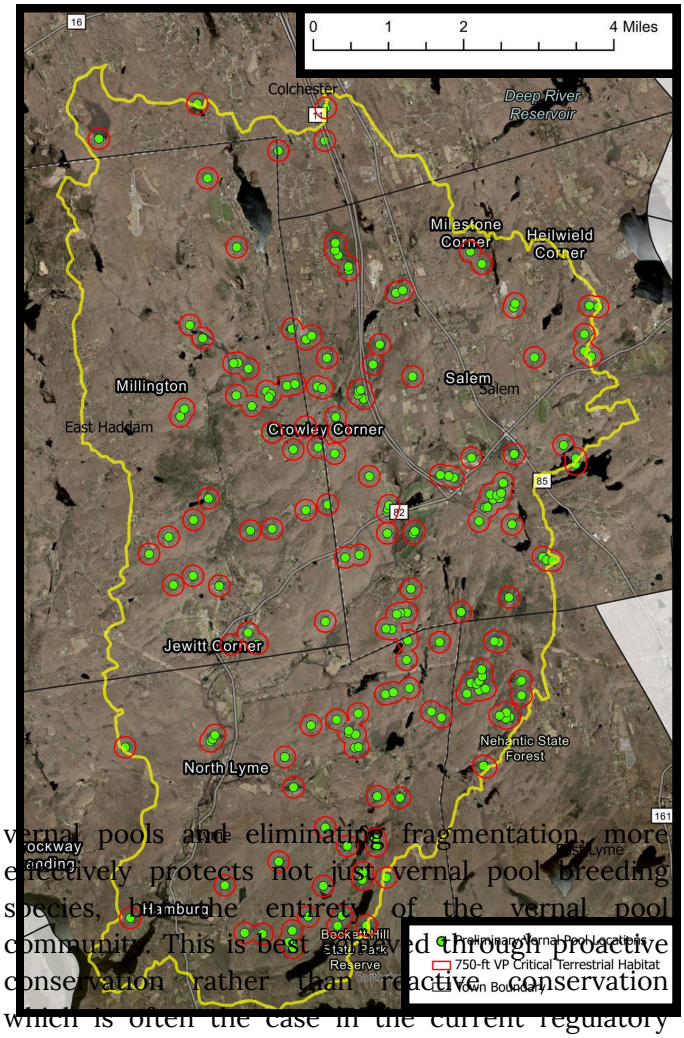
Heat Maps *continued from page 5*

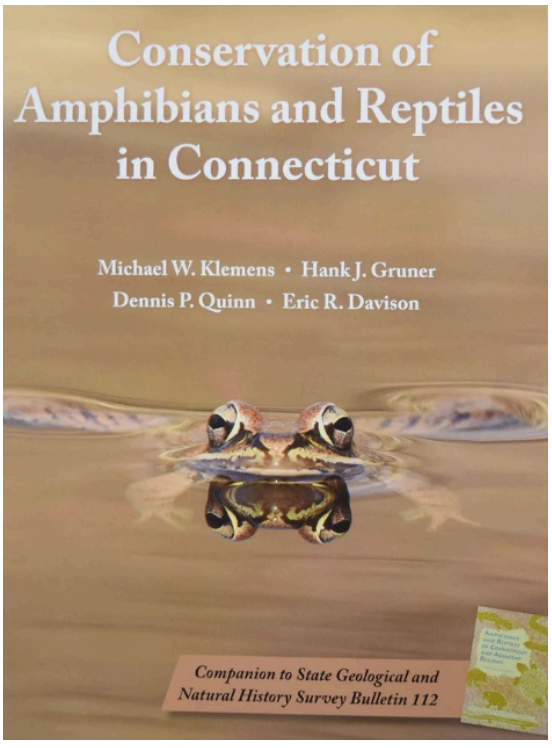


vernal pools and eliminating fragmentation, more effectively protects not just vernal pool breeding species, but the entirety of the vernal pool community. This is best achieved through proactive conservation rather than reactive conservation which is often the case in the current regulatory framework. By creating heat maps depicting the location of vernal pools and their surrounding forest resources we can begin to proactively incorporate this data into the regulatory framework for town Wetland, Conservation and Zoning Commissions to facilitate science-based conservation decisions when permitting development.

If we take a closer look at the needs of the wood turtle, a species of special concern and candidate species for federal listing status, understanding intersexual differences in seasonal movement and habitat use is critical in guiding conservation efforts where they can have the greatest impact on sustaining populations. Although capable of moving significant distances, adult male wood turtles typically make parallel movements and remain within 150 feet of the stream throughout the active season. Adult females, however, often move significant distances (500 feet or more) perpendicular to the stream into surrounding areas seeking suitable nest sites. Post-nesting, the females tend not to return to the floodplain, rather they continue to remain within terrestrial habitat throughout the summer (see Bellamy et al. 2023).

Based on research on the seasonal movement and habitat use of wood turtles, there are two primary conservation zones that must be considered when mapping and assessing critical habitat surrounding occupied rivers and streams. These zones encompass habitat located within 300- feet and 1,000- feet of the brook, extending out from both banks (Northeast Wood Turtle Working Group).

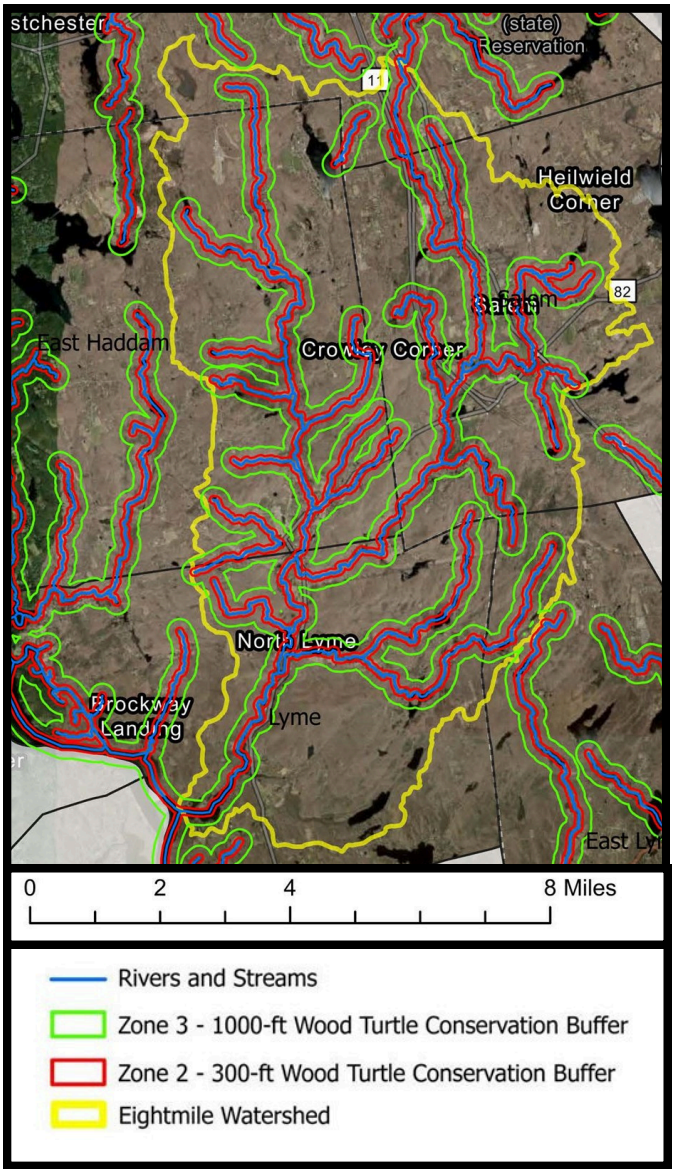
Important surrounding habitat features typically utilized by wood turtles include floodplain forests, upland forests and early successional habitat. Floodplain forests and wetlands immediately adjacent to the stream provide shelter and important foraging habitat throughout the active season.



Upland forests and early successional habitats including, reverting agricultural fields ("old fields"), and hay fields provide important habitat for foraging, and for balancing thermoregulation requirements during the active season. Active and reverting sand/gravel pits, the edges of agricultural fields, and utility right-of-ways (ROWs) often provide important nesting habitat when located in proximity to streams.

When creating heat mapping for the Eightmile, these conservation zones were mapped to help identify critical habitat mosaics for wood turtle conservation and management. Mapping in this article is displayed at a broad scale due to the sensitive nature of this species, more fine scale mapping will be provided to the Eightmile River Watershed to help guide conservation initiatives within the watershed.

Wood turtle basking on a stream bank.



Management Plan *continued from page 4*

ERWSCC is currently in the process of reviewing progress made to date on tier one and two tools, identifying recommendations that remain to be completed, and determining whether additional tools should be added. Concerns such as increased aquatic invasive species like Connecticut River Hydrilla and Water Chestnut, tracking salt intrusion into freshwater streams, and warming river temperature trends have been identified as emerging focus areas for inclusion in the Watershed Management Plan. Later this spring, ERWSCC will host a series of workshops with various town officials and other organizations to explore new concerns and priorities that should be addressed in the Watershed Management Plan.

ERWSCC is funded through the Department of the Interior, National Park Service-Wild & Scenic Rivers Partnership Program. Federal funding under this program requires an annual work plan that is based on the Watershed Management Plan. Inclusion of new goals and tools will allow available funding to be directed towards those recommendations.

Have a concern or suggestion for the Watershed Management Plan update? Please email us at info@eightmileriver.org

New Water Quality Monitoring Program on Hamburg Cove

by Abigail Bernstein and Rich Sanders, Ph.D.

Science based decision making is core to the Eightmile River Watershed's mission. A key part of that is data collection. It helps us understand watershed health, monitor long-term changes, and inform future management. The Eightmile River Watershed began monitoring water quality shortly after designation, with monitoring programs expanding and adapting over the years. Most recently, data collection was initiated on Hamburg Cove.

The Eightmile River Watershed is a majority freshwater, non-tidal system, with Hamburg Cove and the connected Falls Brook Cove, being the only sections with tidal influence. Historically, monitoring efforts have focused on the non-tidal rivers and streams, with sites spread throughout the watershed to better understand overall watershed health.

Connecticut River Hydrilla

Hydrilla was first identified in the Connecticut River near Glastonbury in 2016 and has since spread to coves along the Connecticut River from Essex to Agawam Massachusetts. The Connecticut River hydrilla is genetically distinct from other known hydrilla strains.

Hydrilla can grow in a wide variety of water conditions and can double its biomass every two weeks. Dense infestations of hydrilla can shade or crowd out all other native aquatic plants, alter water chemistry, cause dramatic swings in dissolved oxygen levels, increase water temperatures, and affect the diversity and abundance of fish populations.

Hydrilla also has negative impacts on recreation, including making it more difficult or even potentially dangerous for both boating and swimming due to the denseness of its growth. Hydrilla grows in long easily fragmented strands, which readily spread and develop into new plants.

Excerpted from the Army Corps of Engineers.

For more information see www.nae.usace.army.mil/Missions/Projects-Topics/Connecticut-River-Hydrilla/

Hamburg Cove, experiencing tides of three-to-four feet, is unique physically and ecologically from other parts of the watershed. Situated at the interface of the Connecticut River, it is the widest and deepest section of the Eightmile River and provides critical habitat that supports a suite of threatened, endangered and rare, plant and animal species. It also provides unique recreational opportunities, with two marinas, a yacht club, a summer camp and a public paddle launch.

Like many other waterbodies, Hamburg Cove has been subject to changes in long-term weather patterns and to the spread of invasive species. In 2019, the highly invasive non-native aquatic plant, Connecticut River Hydrilla (*Hydrilla verticillata subsp.lithuanica*), was documented and has since increased in abundance. Other aquatic invasive species, including Eurasian watermilfoil (*Myriophyllum spicatum*) and water chestnut (*Trapa natans*), are also a concern.

Ecosystems, like Hamburg Cove, are complex with many biological, chemical, and physical processes, which together work simultaneously to maintain balance. Invasive species, like hydrilla, and changes in long-term weather patterns can alter these processes and upset the balance of the system. Monitoring on Hamburg Cove seeks to characterize the impact of hydrilla on water quality, provide data to assess long-term changes, and understand the impact of tidal influence from the Connecticut River.

Data collection protocol was designed with safety, quality, and relevance in mind. The expertise of Captains Mark and Mindy Yuknat, owners of Connecticut River Expeditions, was enlisted to finalize and navigate to sample sites.

After consulting with the U.S. Army Corps of Engineers, who are leading a demonstration project to determine best management practices to reduce and control the unique strain of Connecticut River hydrilla, staff chose to collect temperature, dissolved oxygen, conductivity, total dissolved solids, salinity, pH, chloride, nitrate, and turbidity data as well as qualitative data.

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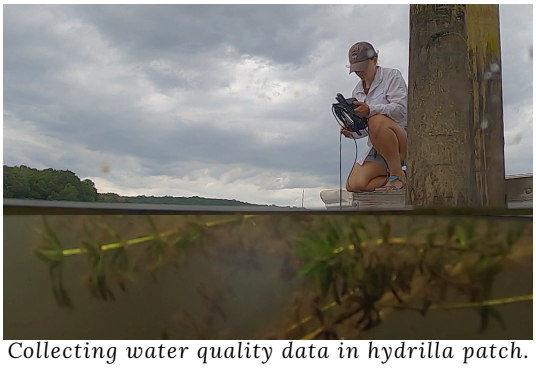
Water Quality - What We Measure and Why

Parameter	What is it?	What does it mean?
Dissolved Oxygen	How much oxygen is available in the water.	Concentrations below 4.0 mg/L can be detrimental to fish and other wildlife. Water movement, plant activity (photosynthesis), and plant decomposition influence Dissolved Oxygen.
Salinity	A measure of the dissolved salt content of a body of water.	Salinity influences the types of plants and animals that live in different parts of an estuary. Changes in salinity may lead to harmful effects on plants, animals and other organisms.
Total Dissolved Solids	A measure of dissolved salts and organic matter.	High concentrations may be indicators of upstream activities, such as erosion and storm runoff, that can influence growth rates of algae, aquatic plants, and other species.
pH	The concentration of hydrogen ions (H+) in a sample.	A measure of acidity. pH values outside of the neutral range (6-8) negatively impact most aquatic ecosystems' health by affecting biochemical processes.
Conductivity	A measure of a water sample's ability to conduct an electrical current.	Conductivity directly indicates the concentration of dissolved ions, salts, and minerals. It serves as a rapid, indirect indicator of total dissolved solids, with higher values signaling more dissolved components or contaminants.
Nitrate	A measure of nutrient availability to plants.	Nitrates and other nitrogen compounds are critical nutrients required for all life. High concentrations can stimulate excess growth of algae and plants, which leads to low dissolved oxygen levels and potential for harmful algal toxins.
Turbidity (Water Clarity)	A measure of how far down light can penetrate through the water column.	Sediments and nutrients that reduce clarity can promote growth of plants and microorganisms, and in excess can be harmful to aquatic ecosystems by smothering nearshore habitats, burying bottom communities and changing algal growth patterns.
Temperature	A measure of the warmth or coldness of the water.	Water temperature influences the majority of physical, biological, chemical, and ecosystem processes in aquatic environments. Growth rates of algae, aquatic plants and animals are influenced by temperature as are other parameters such as dissolved oxygen.

Hamburg Cove Monitoring Crew



Collecting water quality data in hydrilla patch.

Hamburg Cove

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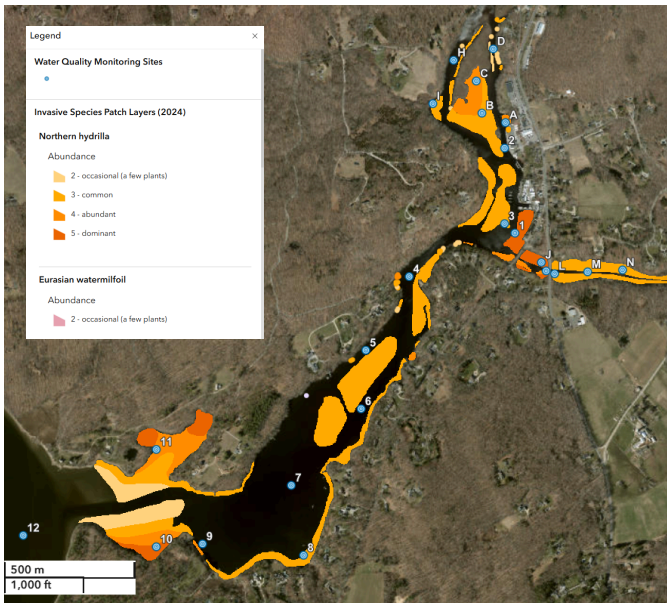
Of note, from the data collected in 2025, higher salinity readings were observed in the deepest sections of lower Hamburg Cove, with salinity reaching 14.95 parts per thousand (ppt) at 4 meters. Surface level salinity readings at this same site, ranged from 0.08 to 2.27 ppt. We postulate this difference is due to saltwater entering the cove and settling in deep pockets, unable to recede with the tide. Also of note, changes in salinity were observed during different tide stages, supporting the hypothesis that the cove experiences an influx of higher salinity water during high tide. Monitoring will continue in 2026 contributing to future comparisons.

Interested in looking at the data? The Eightmile River's interactive water quality monitoring map has been upgraded to include data from Hamburg Cove. Users will be able to view the water quality conditions at each site and compare data across different sampling days. To provide context of invasive species presence and its impact on water quality, an invasive species layer, built off of mapping completed by the Connecticut Agricultural Experiment Station Office of Aquatic Invasive Species is also available. The map can be found on our website. eightmileriver.org/water-quality-monitoring/



Hamburg Cove Water Quality Map, showing monitoring sites and Hydrilla Presence/Abundance.

TNC All-Terrain Track Chair

by Dave Gumbart

Starting in 2025, an all-terrain wheelchair has been made available for free, by The Nature Conservancy, to anyone interested in an opportunity to experience nature and the wonderful trails at the Burnham Brook Preserve, in East Haddam. With support from the Community Foundation of Middlesex County, the Conservancy acquired its Action Trackchair in late 2024, with several test users putting the Trackchair through its paces that fall.

Trackchair user and guest overlooking the vernal pool.

The Trackchair is a fully-powered electric vehicle. Its "wheels" are, essentially, tank treads, affording great stability and the ability to turn in-place. First-time users will have 1.5 miles of trail to use, featuring open fields, mixed hardwood forest, and a trail along an old woods road leading to a seasonal vernal pool. Returning users, comfortable with the ins and outs of the Trackchair and looking for something more adventurous, can explore the Vista Trail. (Front page)

Open to the public for the first time as of last May, the Trackchair will again be available for use in 2026, starting in the spring, when reservations will open. Information on the Trackchair and access to reserving a spot will be featured on the Conservancy's web page, *nature.org/Connecticut*.

Experiencing nature firsthand is a needed and welcome activity. Trackchair users can enjoy birding, wildflower identification, and all the sights and sounds of the outdoors. Please join us at Burnham Brook in 2026. Come get inspired!

Interested in helping out? The Trackchair program is dependent on volunteers to facilitate user visits and is seeking interested individuals. Email Martha at mrice@tnc.org for more information.

The Eightmile Wild & Scenic River Coordinating Committee & Staff

Anthony Irving, Chair
Lyme Land Trust
Ed Natoli, Vice Chair
Town of Salem
Dave Gumbart, Secretary
The Nature Conservancy
Alyssa McGurer
Salem Land Trust
Richard Chyinski
Salem Land Trust
Anthony Griggs
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Pete Govert
East Haddam Land Trust
Ralph Chappel
East Haddam Land Trust
Lauren Bonatakis
National Park Service
Melissa Czarnowski
CT DEEP

Staff:
Patricia Young
Program Director
Abigail Bernstein
Environmental Program Manager

2026 Events & Announcements

Upcoming Events

Summer Family Programs: *Saturdays July 18th, July 25th and August 1st*
Check our website and Facebook page for family program details and announcements.

NEW Community Event Calendar

New to the Eightmile River Website, the Community Events Calendar makes it easy to view local environmental events, activities and hikes.

It can be found at eightmileriver.org/events

2024-2025 Approved Education and Community Grant Projects

Salem Inland Wetland Commission: $5,600 to develop an outreach brochure on wetland types, values and permitting.

Salem Land Trust: $1,000 for stewardship on Woodland Warbler and Zemko Preserves.

Lyme Pollinator Pathway: $300 for a presentation on climate resilient landscapes.

East Haddam Land Trust: $3,000 for their 2026 Calendar.

East Haddam Conservation Commission: $5,260 for development of an interactive, digital education program on aquatic macroinvertebrates at the East Haddam Middle School.

Salem Free Public Library: $1,060 for Nature Series Programming.

Learn more about our Community Grant Program at
www.eightmileriver.org/community-grant-program/

2024-2025 Expenditures

Staff	$107,519
Benefits	$9,383
Travel	$2,510
Supplies	$5,081
Contractual	$45,585
Office	$13,146
Community Grants	$12,260
Resource Studies	$9,850
Subtotal	**$206,334**
Approved Community Grants (not yet invoiced)	$11,860
Approved Resource Studies/Projects (not yet invoiced)	$18,500
***Grand Total**	**$236,244**

*Includes funds from multiple contract years.

Thank you to the Lyme Land Trust for their continued support as ERWSCC's fiscal agent.

EIGHTMILE RIVER
WILD & SCENIC WATERSHED

Eightmile River Watershed
2 Dolbia Hill Road-East
East Haddam, CT 06423

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