



ANNUAL NEWSLETTER SALMON RIVER WATERSHED 2024



Town Leaders Meet to Talk About 5-Year Strategic Plan

By Pat Young

The Salmon River Watershed, comprised of land from the towns of Hebron, Colchester, Marlborough, East Hampton, East Haddam, Haddam, Columbia, Bolton, Glastonbury and Lebanon, is one of the healthiest watersheds in the State of Connecticut. And according to The Nature Conservancy's Freshwater Restoration Specialist, Emily Hadzopoulos, one that is also favorably poised for resiliency in the face of climate change. The health and resiliency of a watershed is not accidental, it requires good management policies along with communication and cooperation between the local municipalities and other agencies such as the Department of Energy and Environmental Protection (DEEP).

Continued on page 5

“A river is water in its loveliest form, rivers have life and sound and movement and infinity of variation, rivers are veins of the earth through which the lifeblood returns to the heart.”

— Roderick Haig-Brown

Hebron – Protecting the Watershed!

By Frank Zitkus



Pond on O'Connor Trust Property

The Town of Hebron, upon recommendation of its Open Space Land Acquisition Committee, has acquired the 115.5-acre O'Connor Trust property for open space land preservation! This acquisition furthers the efforts to protect the Salmon River and its watershed and was supported by a State open space grant award for 65% of the purchase price, Hebron's eighth such grant award.

The picturesque O'Connor property features a series of scenic, interconnected shallow ponds separated by a unique glacial esker, a narrow strip of land. Majestic stands of white pines guard the banks of these beautiful ponds providing a refuge from summer heat and winter winds. Outflowing streams from these glacial ponds converge to form an unnamed tributary of the Blackledge River, a class A watercourse and major tributary of the Salmon River and a watercourse of high state-wide value.

A significant portion of the property's undulating terrain is comprised of a highly diversified deciduous forest; oaks, maples, hickories, birch, beech, ironwood and cottonwood

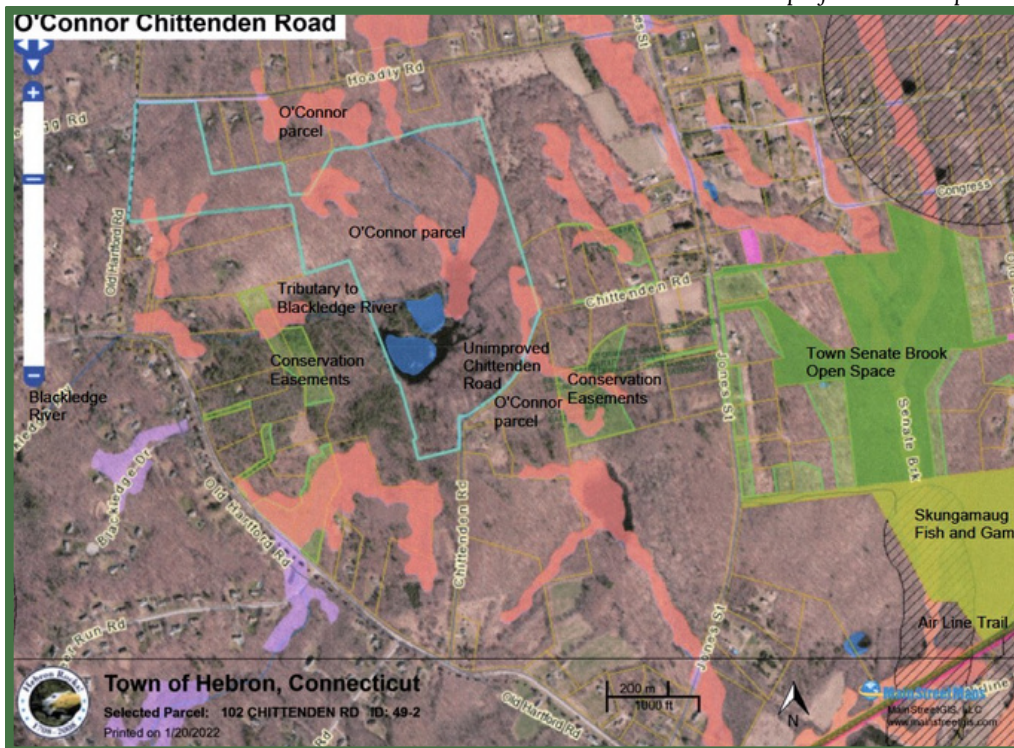
trees interspersed with highbush blueberry and spicebush shrubs. These are all vital pollinator hosts that provide nourishment and habitat for our wildlife neighbors. A large upland vernal pool is a seasonal home to less common forest inhabitants and is in close proximity to an extensive ledge outcropping. Due to this property's extensive natural ecosystem attributes, the existence of endangered or species of special concern is likely.

The property lies within an extensive Town planned Greenway Corridor that includes a vast area of unfragmented or lightly fragmented forest, critical for a diversity of native wildlife, some threatened. Formerly known as Burrows Farm in the 1850s, past agricultural use is evidenced by the presence of historic stonewalls, an impressive stone dam, stone foundations, a farm well and old growth maple trees.

The approved acquisition will protect the area's vital watershed quality, preserve noted historic features, provide for passive recreational use and aid in attaining the State's climate mitigation goals that an intact, highly diverse forest and wetland ecosystem offers.

The Committee extends its sincere appreciation to the O'Connor Family and their desire to preserve their property in its natural condition for the benefit of the public good.

Aerial map of O'Connor parcel



East Haddam Votes to Protect Open Space

By Bernie Gillis

On January 30, 2024, the citizens of East Haddam voted to purchase the 95-acre Kronberg Property on North Moodus Road (across from Grandview Camping and Cottages) for \$514,000. They also reauthorized a \$5 million bond, which acts as a line of credit for the future purchase of additional Open Space with no cost to the Town until it is used. The Kronberg Property purchase passed 691 to 251 and the bond vote passed 658 to 283. This positive outcome demonstrates the Town's enthusiasm for acquiring and preserving Open Space.

The Kronberg property is of significant value to the Town. Twenty-one acres will be set aside for future municipal use (e.g., emergency operations, educational facilities, senior housing, etc.). Twenty-two acres is productive farmland that will continue to be leased and farmed, continuing the century long tradition of farming that land. The remaining 50+ acres is mixed hardwood forest. The property drains

into the Moodus River, which is the lower part of the Salmon River Watershed. The State has already allotted the Town an Open Space grant of \$243,000 for the purchase, leaving the remainder to be financed by East Haddam.

Since 1995, the East Haddam Open Space Program, with collaboration from partners from the State of CT, the East Haddam Land Trust, The Nature Conservancy and others, have turned the first \$5 million bond issue into \$18 million of acquisitions and preserved over 5,000 acres. Open Space enhances the Town by controlling development, which usually leads to higher infrastructure costs, such as emergency/fire services, road maintenance, and an increase in education enrollment. It also acts as a stimulus for tourism, which supports local businesses. Valuable natural resources are protected. Hiking and biking trails, as well as other activities for outdoor recreation (such as the Town's disc golf course) are created for the enjoyment of our citizens and visitors.

Kronberg Property





Great White Egrets in Salmon Cove by Pierre Faber

Salmon River Cove- a National Wildlife Refuge

By Patricia Young



Salmon River Cove, bordered by the towns of Haddam (Haddam Neck) and East Haddam is part of the Silvio O. Conte National Fish and Wildlife Refuge. The Refuge stretches from the Canadian border to Long Island Sound encompassing the Connecticut River Watershed. It's one of only three National Refuges with "fish" in its title and is the only Refuge of its kind that encompasses an entire watershed.

According to the Refuge description, *"The refuge was designed to include the entire Connecticut River watershed because legislators realized that, in order to protect migratory fish and other aquatic species, there was a need to protect the whole river system and its watershed; the health of any aquatic ecosystem is linked to the health of the whole watershed upstream."*

Within the Refuge, there are a number of "Focus Areas", areas of high preservation value where the U.S. Fish and Wildlife is actively working with partners to purchase parcels of land from willing sellers for permanent protection. These Focus Areas are referred to as Divisions within the system.

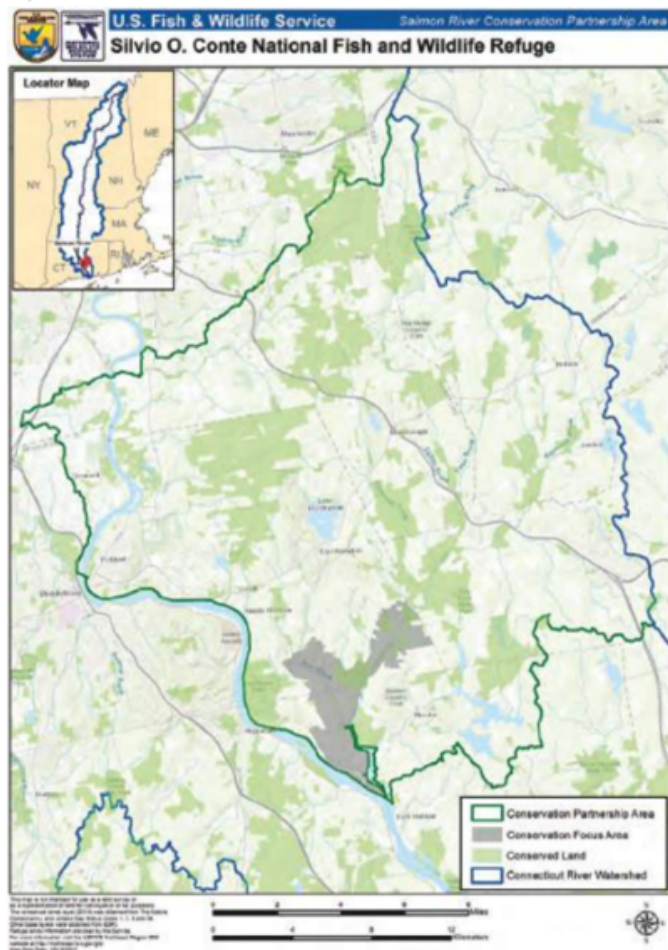
The Salmon River Division of the Refuge, comprised of 714 acres, is recognized by U.S Fish and Wildlife Serv-

-ice for its myriad of habitat types, including tidally influenced rivers, freshwater tidal marshes and flats, riparian meadows, cold-water streams, floodplain forests, mixed hardwood forest, hemlock stands, and vernal pools. A variety of migratory fishes use this river system, including American shad and river herring and adult Atlantic salmon have entered its tributaries to spawn. The Salmon River Division located in the lower Connecticut River system, supports one of the largest concentrations of migratory waterfowl in southern New England. The site also serves as bald eagle winter roost and perch sites.

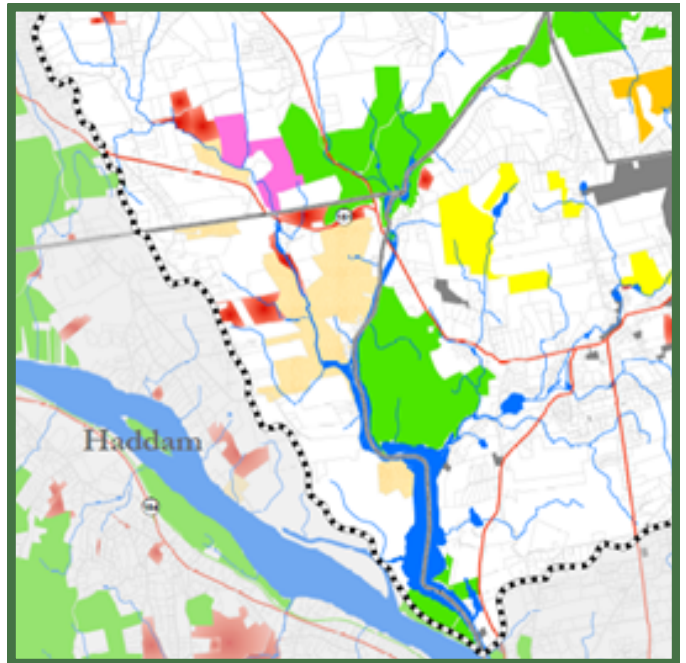
The Friends of Silvio O. Conte Refuge Salmon River Division, also referred to as "Haddam Neckers" are an enthusiastic group working alongside federal, state and local partners to assist with land conservation and preserve stewardship activities, including maintenance, invasive species control and educating residents and visitors.

To find out more about the Friends Groups and how to get involved, follow this link
<https://www.fws.gov/refuge/silvio-o-conte>

Map A.14. Salmon River CPA.



Appendix A: Resources Overview and Management Direction for Conservation Focus Areas and Refuge Units



Above: Section of SRWP preserve map, yellow color depicts federal owned land.

Left: This map depicts the designated areas of the Silvio O. Conte Refuge-Salmon River Divisions.

The dark green outline depicts the Conservation Partnership Area, grey shaded area depicts the Conservation Focus Area and the light green area highlights the conserved land at the time the Plan was implemented.

Town Leader Talk *continued from page 1*

Eric Thomas, an Environmental Analyst with DEEP's Bureau of Water Protection and Land Reuse/Water Planning and Management Division, maintains that this local collaboration among communities in the Salmon River Watershed also translates into a stronger working relationship with DEEP. As part of this continuing communication effort, board

members of the Salmon River Watershed Partnership (SRWP) recently hosted a meeting with Town Leaders in Marlborough. It was a great opportunity for everyone to discuss both the challenges and successes of working to protect a natural resource that is shared by 10 towns and to learn about the newly completed five-year visioning plan for the future of SRWP.



New Air Line State Park Trail Website and More!

By Ann Zitkus



Air Line Trail by Stan Malcom

The new Air Line State Park Trail (ALSPT) website is online! **ALSPTregion.org** presents Highlights of the Air Line Trail and also Off-Trail Public Recreational opportunities; Historic Highlights; Agricultural Offerings; Food, Drink & Lodging; and more of the twelve towns that the Air Line State Park Trail connects (west to east) : Portland, East Hampton, Colchester, Hebron, Lebanon, Columbia, Windham, Chaplin, Hampton, Pomfret, Putnam, and Thompson (some of these are in the Salmon River Watershed). The natural open spaces preserved along the Air Line Trail make this multi-use, non-motorized National Recreational Trail very attractive to users.

ALSPTregion.org promotes the region of the twelve towns as a destination for tourism and tourism-based business because of these natural open space preserves, rural landscapes, agricultural offerings, “historical nooks and crannies of small village centers”* and more unique characteristics that distinguish this region, all connected by this Trail. These offerings are now featured online and all on one website!

To explore each town’s highlights on the website, click on “Explore the Region” and select the town. Don’t miss the “EZ Maps” available for most of the towns. The EZ Maps are downloadable, foldable pocket maps to help users easily discover the highlights of each town. Printed versions are available

for distribution by municipal offices, interested businesses, and non-profits. On Hebron’s EZ Map, the various highlights have QR-codes that link to detailed info on the main website. The reverse side of the printed EZ Maps shows the entire Air Line State Park Trail.

The new website and EZ Maps are a product of the ALSPT Master Plan, a collaboration of the region’s twelve towns, with guidance from Connecticut Resources Conservation and Development (CT RC&D) and funded by the Connecticut Department of Energy and Environmental Protection (DEEP). Last summer, the ALSPT Region was awarded a grant of \$75,000 to organize into a formal nonprofit. This new organization will coordinate with CT DEEP and lead the towns as well as organizational stakeholders toward cost effective and timely maintenance and improvements of the trail. Another goal of the new ALSPT Region is to highlight for the visitor all the “stay and play” options and amenities near the trail, coordinating with the State Office of Tourism. Lastly, the region will work to support trail-oriented business growth in the region with support from local economic development commissions, local business associations, local colleges and universities and business enterprise districts.” (* quoted from the website)

Visitors and residents alike will enjoy discovering the many valuable natural and cultural highlights of the region through this helpful, informative website and the EZ Maps!

*from Air Line State Park Trail Master Plan Introduction

Hebron's Natural Attractions

From early days to now, Hebron's gently rolling hills and extensive, clean waterways have fostered farming. Agricultural Offerings today include dairy; horse riding; berry picking; sugar houses (for maple syrup); organic produce; and tree farms. Two exceptional Golf Courses & Specialized Campgrounds are in Hebron.

Rich in Passive Recreation Opportunities, Hebron's portion of the Air Line Trail, to the south, is surrounded by Town Preserves and State Forest. The 1500-acre Gay City State Park is in the north, and the State's Holbrook Pond, within 240-acres of Salmon River State Forest, is nearer Hebron's center. Discover passive recreational opportunities in between!

Zagray Farm.
Photo:
Frank Zitkus.

Scan this QR-code to learn more!



1.



2.



3.



4.

Out and About in the Watershed

1. Paddleboarding on Salmon River Cove
2. Hauling out a discarded battery, found in Lyman Brook, Marlborough
3. Stream assessment, Pine Brook in Haddam
4. Tour of Leesville Dam with CT DEEP Fisheries in East Haddam
5. "Special Trout Area" signage at Dickinson Creek
6. Blackledge River in Marlborough
7. Native green frog
8. Black-eyed Susan-native wildflowers
9. Native painted turtle on Airline Trail by S. Malcom
10. Tour of Sears Park-water quality initiatives in East Hampton
11. Stream Logger equipment
12. Salmon River in Colchester by D. Hinline
13. Board members touring ADA fishing area on Salmon River in Colchester
14. Raymond Brook Waterfall in Hebron



6.



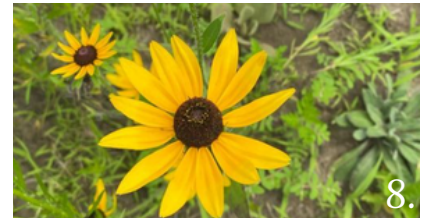
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12.



13.



14.

Floodplains—A Critical Part of Our River Systems

By Pat Young



High flows at Blackledge River on River Rd in Colchester

We don't think much about floodplains until it rains and then rains some more. All of a sudden, the river is overflowing and that water needs a place to go. Not all river systems have floodplains along their banks. Some floodplains have been filled and some rivers have steep banks. Where the floodplains are present and functioning naturally, the water rises and then fills in the lower lying areas, allowing the water to slow down a bit and give the materials carried in the water an opportunity to settle out.

Floodplains are a critical part of a well- functioning river system. They ease the impact of flood waters. They are distinct and unique habitat and can be productive soils for agriculture. They are also fragile systems and are often in a constant stage of change. Material may be deposited in some areas while other areas are scouring out. They may host a rich soil for plant growth but are also subject to uprooting trees due to how the floodplain soil has been formed and depth to groundwater.

The map to the right shows all the permanently preserved lands in the Salmon River Watershed and the 100-year flood zones as established by FEMA (Federal Emergency Management Agency). A 100-flood zone, also referred to as a base flood, has the probability of flooding, to the extent shown on the map, once a year or 1 percent. Due to the scale of the map, the floodplains appear rather narrow-but in reality they can extend hundreds of feet beyond a stream bank. Can it flood to the full extent of the flood zone two years in a row? Yes, it can. Could it be 110 years in between 100-year floods? Yes, it's possible. Could we have an event that extends flooding beyond the 100-flood zone? Again, yes. It's a

probability thing. While the 100-year flood maps aim to provide the best mapping of potentially affected areas of flooding—they are only as good as the mapping is accurate and their ability to predict what is likely to happen. Alterations in the landscape, rerouting of tributaries, changes to infrastructure such as bridge and road culverts, and the weather itself, all contribute to how much water is present and where that water will flow and flood.

Strategies for Floodplain Management

1. Being aware of where the rivers flood over their banks-both from the mapping as well as on the ground observations. Check out some of the pictures below under "Signs of Active Floodplains" for further observation tips.
2. Making sure these flood areas are identified on maps and plans for development.
3. Minimizing any activities in the flood zone areas, such as filling or clearing that may exacerbate flooding or flows.
4. Actively working to preserve areas subject to flooding to reduce future conflicts.

Signs of Active Floodplains...

Exposed tree roots as a result of flood waters washing away surrounding soil. Roots anchor the tree into the soil and can minimize bank erosion.






Branches and leaves that have formed piles up against trees and shrubs. These are often oriented in the direction of flow.

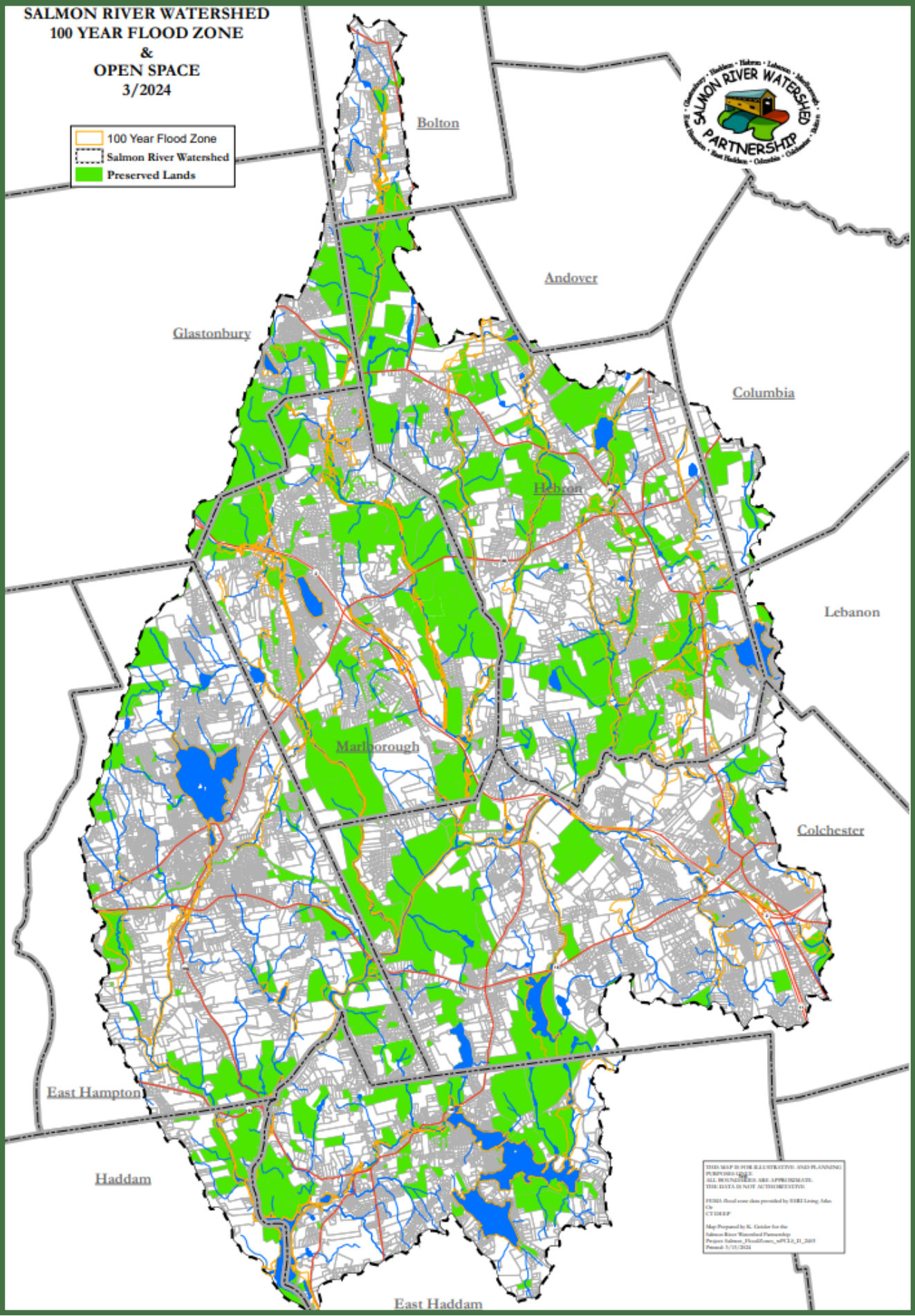


Vegetation that has been laid down all facing in the same direction. As rivers rise, flow patterns develop in the floodplains as flood waters flow from higher elevations to lower elevations.



**SALMON RIVER WATERSHED
100 YEAR FLOOD ZONE
&
OPEN SPACE
3/2024**

-  100 Year Flood Zone
-  Salmon River Watershed
-  Preserved Lands



THIS MAP IS FOR EDUCATIONAL AND PLANNING PURPOSES ONLY. ALL INFORMATION IS APPROXIMATE. THE DATA IS NOT A GUARANTEE.

FLOOD data was provided by DEEP, Easton, CT.

Map Prepared by K. Gaudin for the Salmon River Watershed Partnership
Project: Salmon_FloodZone_v0123_01_2024
Printed: 3/11/2024

Harmony in Diversity: The Unified World of Aquatic Ecosystems

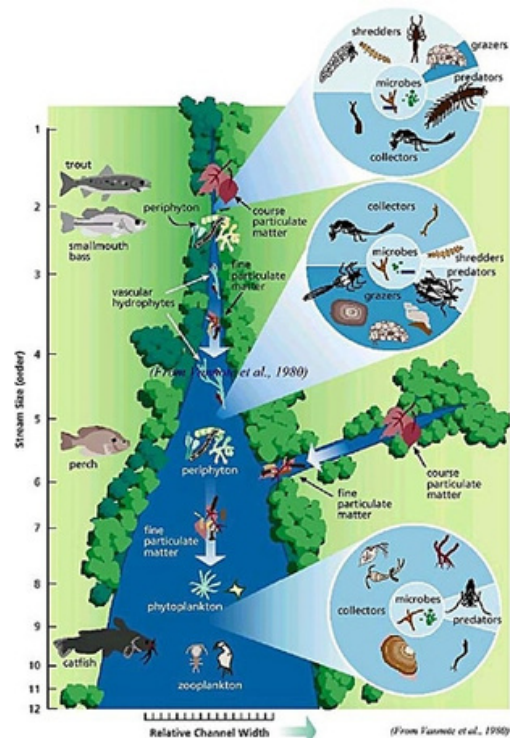
By Caroline Stanton

Benthic macroinvertebrates are aquatic animals and aquatic larval stages of insects that live in streams, lakes, rivers, and ponds. This includes dragonfly and stonefly larvae, snails, beetles, crayfish and much more. These macroinvertebrates can be classified by their functional feeding group, into shredders, collectors, scrapers, or predators. Shredders process large organic matter such as woody debris, leaves, and other vegetation. Collectors filter and collect smaller particles of organic matter found in the water as a result of shredders. Scrapers, found on rocks and debris, feed on detritus, algae, and submerged plants. And finally, predators prey on animal tissue and eat other macroinvertebrates. These tiny creatures maintain their location in the stream by swimming, clinging, skating, or burrowing. As some macroinvertebrates/aquatic insects have well-known ranges for their tolerances to pollution, they make excellent water quality indicators. Macroinvertebrates make up an intricate framework for predicting ecosystem function and structure as streams progress to larger rivers.



Left: Brush-legged mayfly—a collector **Right:** Mayfly fish fly used by fishermen (Source: *The Feather Bender*)

The upper stream regions, or headwaters, consist of little sunlight, narrow channels, shallow waters, and high vegetative cover that provide leaves and other woody debris to the stream segments below. Consequently, shredders and collectors predominantly dwell here, and break down, eat, and build homes with the plentiful detritus. The streams in the middle reaches have slightly less vegetative cover, more sunlight, and are somewhat wider and deeper. Here, collectors thrive as the organic matter leftovers from the upper reaches floats downstream and grazers are satisfied with the bountiful algae from the natural nutrient availability. Lastly, the lower reaches that contain the largest rivers have deeper water, almost no vegetation cover, and lots of sunlight. This is still ideal for collectors, as remnants



River Continuum Concept (Source: Vannote et al, 1980, graphic Stream Corridor, FISRWG)

are continuously floating downstream, and for predators who find food in the planktonic organisms around them.

This system is called the River Continuum Concept, as it illustrates the idea of a connected, flowing water network that changes in organisms, nutrients, sunlight, and channel characteristics as it flows downstream. Macroinvertebrates, being the primary processors and decomposers of organic matter that make its way into the stream, provide vital services in cycling and transferring the subsequent nutrients among the food chain. They are an excellent part of a fish's diet. So much so, that anglers have tried to imitate them for centuries in order to lure fish in. Macroinvertebrates also provide necessary food sources to amphibians, reptiles, aquatic birds, and mammals. Although hidden and unknown to most, the macroinvertebrates are a critical part of our aquatic ecosystems and are a necessary component in a unified healthy environment.

As part of its annual assessment for river health, the Salmon River Watershed Partnership conducts Riffle Bioassessments every fall by netting, identifying, and documenting the macroinvertebrate insects it finds. According to our initial findings from 2023, we found 9 species of collectors, 7 species of grazers, 7 species of predators, and 5 species of shredders for the year.

The Watershed: A Living Classroom

Every year the Salmon River Watershed partners with schools, other conservation groups and community volunteers to provide field learning opportunities about watershed resources.



East Haddam students ready to explore Buell Brook



RHAM high school students doing a stream assessment



RHAM middle school students at Gay City State Park



Community Volunteers sorting macroinvertebrates



RHAM middle school student exploring Gay City Pond

East Haddam Middle School- Ms. Thody's Environmental Club offer their reflections about stream learning...

It's a better way of learning.

Logan 7th grade

I liked going in the water and finding the bugs.

Brooke 6th grade

**If there are a certain amount of species, it means
the stream habitat is healthy and well developed.**

Griffin 6th grade

If you use salt, it won't be good for the water.

Giovanna 6th grade

**There are a lot of weird critters in the streams. I
was excited to find them.**

Silas 6th grade

**Sometimes when you are adventuring there are
miniscule creatures you may never see.**

Tristun 6th grade

I enjoyed looking for them.

Arissa 6th grade

The creatures are like, "cool".

Cale 8th grade

The salt from the roads can affect the streams.

LJ 7th grade

It was better than schoolwork.

Connor 7th grade

**There are so many invertebrates that you never see
in the streams.**

Emmett 7th grade

Steering Committee

Watershed Towns

Bolton: Matt Rivers

Colchester: Daniel Hickey

Columbia: Ron Wikolm

East Haddam: Bernie Gillis, Jim Ventres

East Hampton:

Glastonbury: Suzanne Simone

Haddam: Gail Reynolds, Phil Gaudreau

Hebron: Brian O'Connell, Chris Frey

Lebanon: Tess Lundgren

Marlborough: Peter Hughes

Organizations

The Nature Conservancy: Shelley Green

Connecticut DEEP: Eric Thomas (ret.), Joe Cassone

Land Trusts

Colchester Land Trust: John Barnowski

Recreational Groups

Trout Unlimited: Gary Lussier

Member at Large

Silvio O. Conte Refuge-Haddam Neck: Jim McHutchison

Watershed Coordinator:

Patricia Young

Watershed Intern:

Caroline Stanton

Intern Spotlight

Hello! My name is Caroline Stanton. I am the Environmental Intern that has been working with the Salmon River Watershed Partnership since the fall of 2023. Previously, I was an intern at the Eightmile Wild & Scenic River Watershed. I grew up in Colchester on a 3-acre, old farm property, where I spent most of my time outdoors exploring nature which greatly contributed to my love of nature now. I am now studying Natural Resources at UConn and will graduate with a bachelor of science degree in the spring of this year.



My focus is on climate and water resources, but I am also very interested in wildlife and conservation. Starting this summer after graduation, I have accepted an exciting opportunity to work on my master's degree in the Ecohydrology Lab at UConn, researching forest resiliency and climate change. My internship with the Salmon River Watershed Partnership has taught me tremendously; from interpersonal skills to watersheds and how one can manage them. I thoroughly enjoyed getting to know the watershed through outdoor field work, researching and contributing to different projects, and assisting with educational programs. The connections and memories I've made through this like-minded community that is passionate about protecting our local environment have been irreplaceable.

Get connected with SRWP!



www.salmonriverct.org



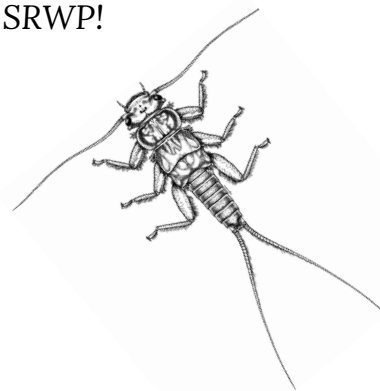
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[Salmon River Watershed Partnership](https://www.facebook.com/SalmonRiverWatershedPartnership)



Our thanks to...

The efforts of the Salmon River Watershed Partnership would not be possible without the support of many volunteers, the watershed towns and local businesses and organizations. Special thanks to...

GZA GeoEnvironmental Inc., Ken Geisler (GIS Mapping), CT River Coastal Conservation District, Department of Energy and Environmental Protection, The Nature Conservancy, Stan Malcolm-Performance Vison Photography, Steven Gephard, University of Connecticut and Moodus Sportsmen's Club