SALMON RIVER WATERSHED PARTNERSHIP

ANNUAL NEWSLETTER
SALMON RIVER WATERSHED
2017

www.salmonriverct.org

Three "R"s of River Management
Removing, Reconnecting & Restoring

By Sally Harold, Director River Restoration and Fish Passage, The Nature Conservancy

It can be hard to embrace change. We grow accustomed to the familiar. Yet, behind Connecticut's 4,000 + dams are miles and miles of streams that once flowed unobstructed to salt water. However, our industrious ancestors constructed dams across our streams to harness their power to operate local forges, mills, and tanneries. Some dams were constructed at the mouths of rivers and operated on the tidal currents. Each of these dams affected stream flow and the movement of species up and downstream. Many of them, though abandoned long ago, remain.

Fish such as alewife and blueback herring that someone once described as the potato chips of the sea, because many, many species, both aquatic and terrestrial, eat them, depend on freshwater habitat for spawning and juvenile development. Much of the highest quality freshwater

.....*continued on page 2*

The Jeremy River at former Norton Mill and Dam site. ***-The Nature Conservancy***

Removal of the Norton Mill Dam on the Jeremy River in Colchester opens up fish passage to .....

Pine Brook **Meadow Brook**
Judd Brook **Raymond Brook**
Mint Brook **Jeremy Brook**
Hope Valley Brook

The Three "R"s

continued from page 1

habitat that would benefit these fish lies upstream of dams. There's plenty of it, we just need to get the fish there. And it's not just migratory species that benefit; resident species such as native brook trout thrive in the cool water found in the headwaters above these dams.

Nan Wasniewski, former owner of the Norton Paper Mill and dam in Colchester made a difficult choice with her family to remove her dam. Thanks to Nan, migratory fish returning to the Salmon River Watershed this spring will have access to 17 miles of historic habitat. High quality habitat that hasn't been available since Andrew Carrier and Nathaniel Skinner built the first dam in the Jeremy River just upstream from the Norton dam in 1726.

FOR MORE INFO

Visit our website
www.salmonriverct.org
or
Our Facebook Page at
Salmon River Watershed Partnership

All Hands on Deck for Lake Pocotopaug

The Town of East Hampton has been working to improve the water quality of Lake Pocotopaug. A major tourist destination and a crowned jewel of the Town, the Lake has suffered from closures due to Blue-Green Algae blooms for the last few years and is considered an impaired waterway by the Connecticut Department of Energy and Environmental Protection. An EPA Nine Element Watershed Based Plan, which addresses both causes and solutions to water quality issues, has been developed by the Lake Consultant, Northeast Aquatic Research. With the recent approval of the plan by CT DEEP, applications for grant funds to address implementation and outreach projects can be made.

The Plan breaks the watershed into 14 sub-basins in order to understand what each basin contributes to the lake. This breakdown helped the consultant identify which sub-basins provide the most water to the lake, and which areas contribute the highest nutrient load. These sub-basins are then discussed individually and broken down into recommended improvements.

Many recommended improvements include infiltrating stormwater runoff and reductions to impervious surfaces. Most improvements needed are on private property, which will likely challenge the efforts of the Town. However, the town has begun to develop funding sources and designs for improvements on Town owned properties.

The Land Use Department has begun developing improvements to regulations to encourage and require homeowners to reduce stormwater runoff and increase infiltration. The Inland Wetlands Commission is in the process of adopting an attachment to their regulations in an effort to educate residents about the negative impacts of seawalls and encourage more natural shorelines. The Planning and Zoning Commission is in the process of reviewing the Zoning Regulations in order to better protect the Lake.

Improving the water quality of Lake Pocotopaug will be a time consuming, and long duration project. It will require an "all-hands-on-deck" approach but will, in the long run, protect our ecosystem, property values, and help the lake provide enjoyment for future generations.

By Jeremy DeCarli

In an ***"All Hands in the Water"*** approach, East Hampton High School students under the guidance of their teacher, Roger Abraham, launched two floating islands (left pic) in the Lake in 2016. The islands were planted with species that do well in wetter conditions and will utilize (and thus remove) available nutrients from lake water. At the end of the growing season the floating islands are taken out and the plants harvested and replanted in raised beds at the school (right pic) to over-winter.

Silvio O. Conte Refuge: Salmon River Division-Haddam Neck Updates

The efforts of the Salmon River Division of the Silvio O. Conte National Fish and Wildlife Refuge crew are devoted mainly to assisting land acquisition efforts and stewardship in the Haddam Neck, Salmon River, Pine Brook area, much of which lies within the acquisition area of the Conte refuge.

In the past year, the Conte refuge has gained several waterfront lots along the Salmon River and has larger acquisitions in the works. Due to other demands on the time of key people, there is not much progress to report regarding the remaining 544 acres of the Connecticut Yankee property. Members of the Connecticut Yankee Conservation Project (CYCP) stay in touch weekly by phone and are working on ways to stir the pot. Stewardship work this spring will focus on maintaining grassland bird habitat on two pieces of property totaling approximately 50 acres and supporting USFWS in any stewardship work they undertake.

Led by Brooks Nablo, a crew from Haddam Neck including a half dozen urchins, again this past fall, supported the Connecticut River Watershed Council's "Source to the Sea" cleanup. They collected several boatloads of tires, junk, bottles, cans and trash which accumulates along the shores thanks to careless trash disposal.

The fifty acre Brainerd Quarry Preserve, acquired recently in a joint effort by the Connecticut River Gateway Commission and the Middlesex Land Trust, got some noticeably good coverage in the *Hartford Courant* recently.

http://www.courant.com/news/connecticut/--hc-marteka-brainerd-quarry-preserve-0108-20170106-story.html

http://www.courant.com/opinion/letters/hc-preserve-connecticut-yankee-property-20170112-story.html

This preserve lies adjacent to the northern boundary of the Connecticut Yankee property. Steward Don Boule reports that traffic has increased noticeably since it appeared.

We are looking forward to an interesting and busy year. In addition to other activities we would like to see some sort of agreement reached whereby the Connecticut Yankee property is committed to be sold to USFWS in a manner subordinate to the safe and secure storage of the spent fuel until the government honors its promise to remove it, at which point the Connecticut Yankee Atomic Power Company would be free to go out of business.

Great Blue Heron *Photo courtesy of Pierre Faber*

By J. McHutchison

Steering Committee

Watershed Towns

Bolton: Rod Parlee (temp)

Colchester: Jay Gigliotti,
Randy Benson (alternate)

Columbia: Bryan Tarbell

East Haddam: Emmett Lyman,
Jim Ventres (alternate)

East Hampton: Jason Josefiak,
Josh Wilson (alternate)

Glastonbury: Tom Mocko,
Dennis Mcinerney (alternate)

Haddam: Gail Reynolds,
Jim McHutchison (alternate)

Hebron: Brian O'Connell,
John Mullaney (alternate)

Marlborough: Peter Hughes

Organizations

The Nature Conservancy:
Shelley Green

Connecticut DEEP: Eric Thomas

Land Trusts

Colchester Land Trust: Lisa Hageman
Cathy Shea (alternate)

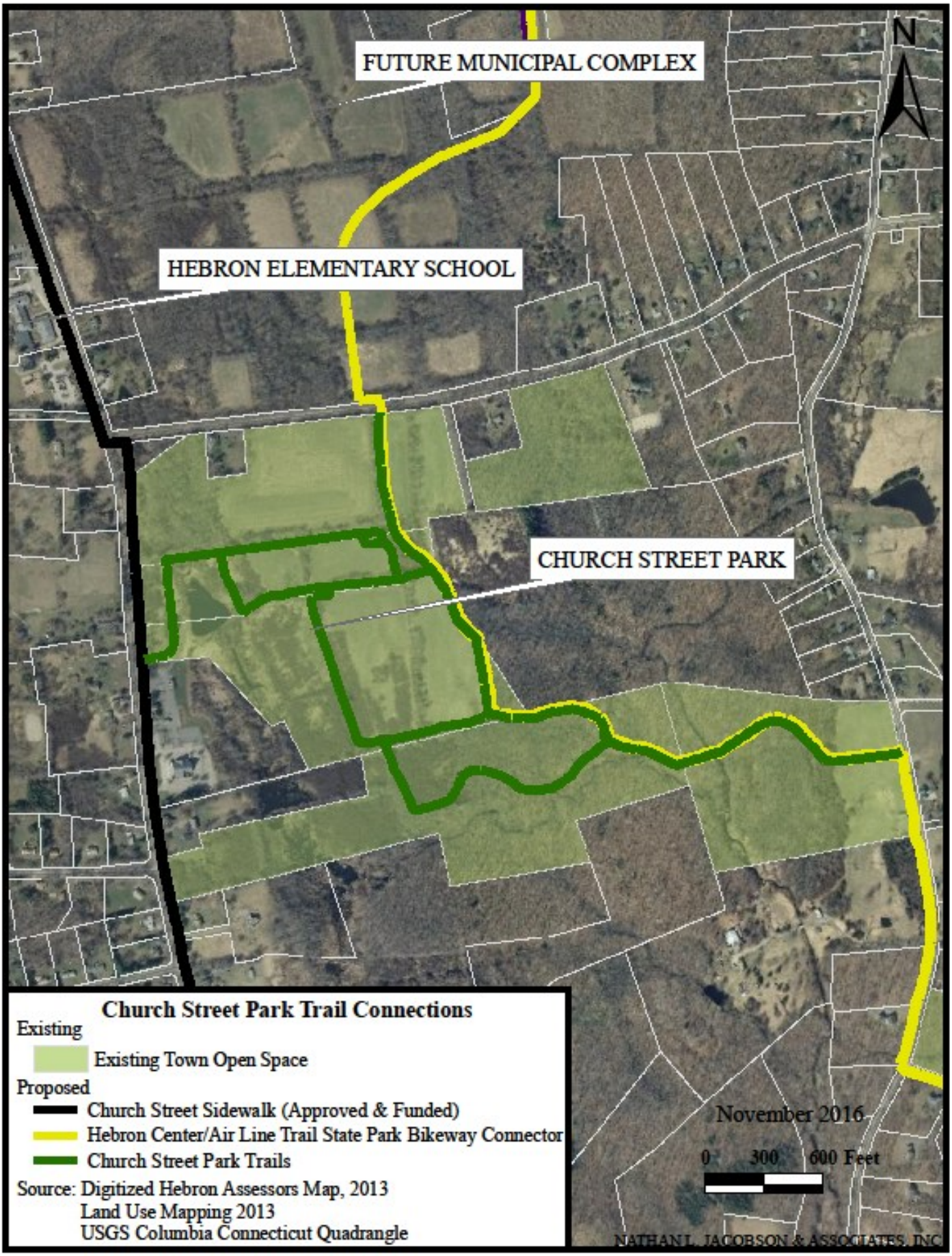
Recreational Groups

Trout Unlimited: Duke Preston

Member at Large

Silvio O. Conte Refuge-Haddam Neck:
Jim McHutchison

Watershed Coordinator: Patricia Young


FUTURE MUNICIPAL COMPLEX
HEBRON ELEMENTARY SCHOOL
CHURCH STREET PARK
N
Church Street Park Trail Connections
Existing
Existing Town Open Space
Proposed
Church Street Sidewalk (Approved & Funded)
Hebron Center/Air Line Trail State Park Bikeway Connector
Church Street Park Trails
Source: Digitized Hebron Assessors Map, 2013
Land Use Mapping 2013
USGS Columbia Connecticut Quadrangle
November 2016
0 300 600 Feet
NATHAN L. JACOBSON & ASSOCIATES, INC.

New Trails Coming Soon at Hebron's Church Street Park!

In March 2016, the State awarded a Connecticut Recreational Trails grant to Hebron to construct trails at the recently expanded, town-owned 116-acre "Church Street Park." Located just north of the Air Line Trail State Park and just south of Hebron's Town Center, Church Street Park (soon to be renamed) is situated within the town's Raymond Brook Greenway and is comprised of several open meadows, ancient farm roads lined by stone walls and canopied trees, a skating pond, diversified woodland forest, specimen sugar maples, a portion of Raymond Brook and a tributary to Raymond Brook. Planned trails traversing the Park will lead to many of these natural features, providing enhanced passive recreational opportunities for visitors.

In an effort to connect the Park to the Air Line Trail, Hebron has recently applied for a second trails grant to extend the trail system to Millstream Road, which is a short distance from the Air Line Trail, and to construct a pedestrian bridge over Raymond Brook. With these two phases of connections in place, access to the Air Line Trail via Millstream Road would be feasible. Providing a pedestrian / bikeway connection between the Air Line Trail and the Park may enhance economic opportunities in the area as the Park is adjacent to the town's business districts.

Depicted in the aerial map at the left, is a conceptual plan showing the connection of the Park's planned trails (green line) to the "Hebron Center / Air Line Trail Walk & Bike Connector" (yellow line). Sidewalks (black line) which have been approved and funded will connect the Hebron Elementary School, Senior Center and the Neighborhood Convenience District to the Park from the west. These interconnected trails and sidewalks would provide an alternate means of transportation for the entire area and an opportunity to integrate community recreational, residential, municipal and business activities.

By Frank Zitkus and Michael O'Leary

Protecting Headwaters

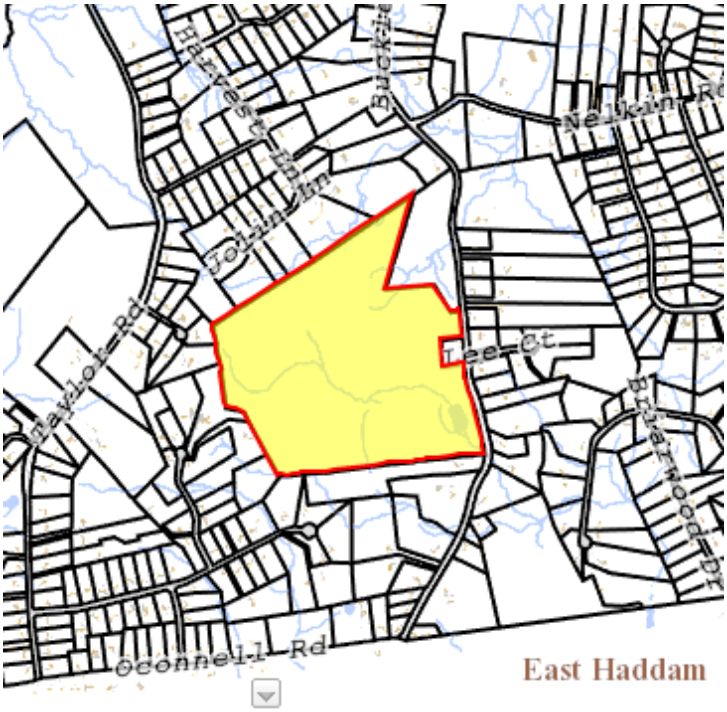
The Colchester Land Trust acquired the Bulkeley Hill Preserve in August 2016. This new Preserve is a 115-acre parcel with frontage on scenic and rural Bulkeley Hill Rd. It is bounded on three sides by residential development and on one side by 15 acres already preserved by the Colchester Land Trust. The land was offered to the Land Trust for a bargain sale. While this parcel primarily consists of upland hardwood forest, it also features a 23-acre wetland system, a pond, vernal pools and intermittent streams that provide habitat for a diverse population of wildlife.

The Bulkeley Hill Preserve is located in the headwaters for BOTH the Salmon River and Eightmile River watersheds, offering further protection to downstream habitat. As the preserve sits just north of Lake Hayward it is key to helping protect the lake as well. The long term management plan is for it to become a community forest, open to the public with access to hiking trails and outdoor education.

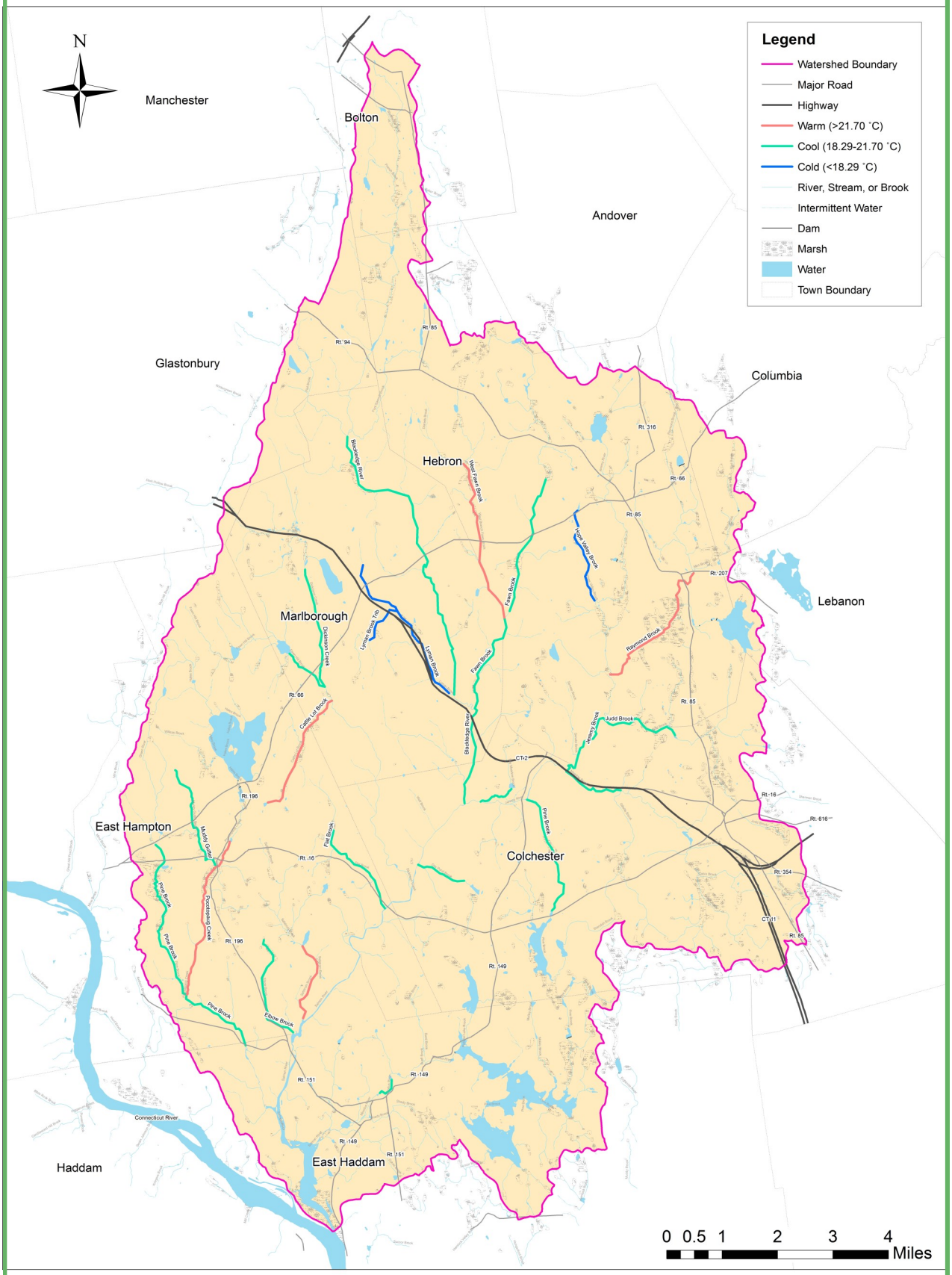
The Colchester Land Trust currently has a capital campaign going to raise $850,000 to protect 200 acres in Colchester and to repay a loan for the Bulkeley Preserve. They are about halfway to their goal. For more information or to contribute, please visit the website.

www.colchesterlandtrust.org

By Andy George



Salmon River Watershed
Classification of Stream Fish Communities Based on Water Temperatures



This map was produced by Daniel Klune (ECSU) for the Salmon River Watershed Partnership using ESRI 2017 ArcMap Desktop 10.3.1. with data sourced from CT DEEP for Hydrography, Town Boundaries, Watershed Basins, and Transportation. Stream Temperature data was obtained from Patricia Young, SRWP, via Neal Hagstrom, CT DEEP. Classifications for fish community temperatures were obtained from the North American Journal of Fisheries Management, "Summer Thermal Thresholds of Fish Community Transitions in Connecticut" Page 124, Table 3.

References:
Beauchene, Mike et al. (2013). "Summer Thermal Thresholds of Fish Community Transitions in Connecticut Streams".North American Journal of Fisheries Management (2014) 34: p124
CT DEEP. (2017). DEEP: GIS DATA. Retrieved March 02, 2017, from http://www.ct.gov/deep/cwp/view.asp?a=2698&q=322898&deepNav_GID=1707
Hagstrom, Neal. (2014) Stream Logger Segment Data, CT DEEP, Retrieved February 10, 2017

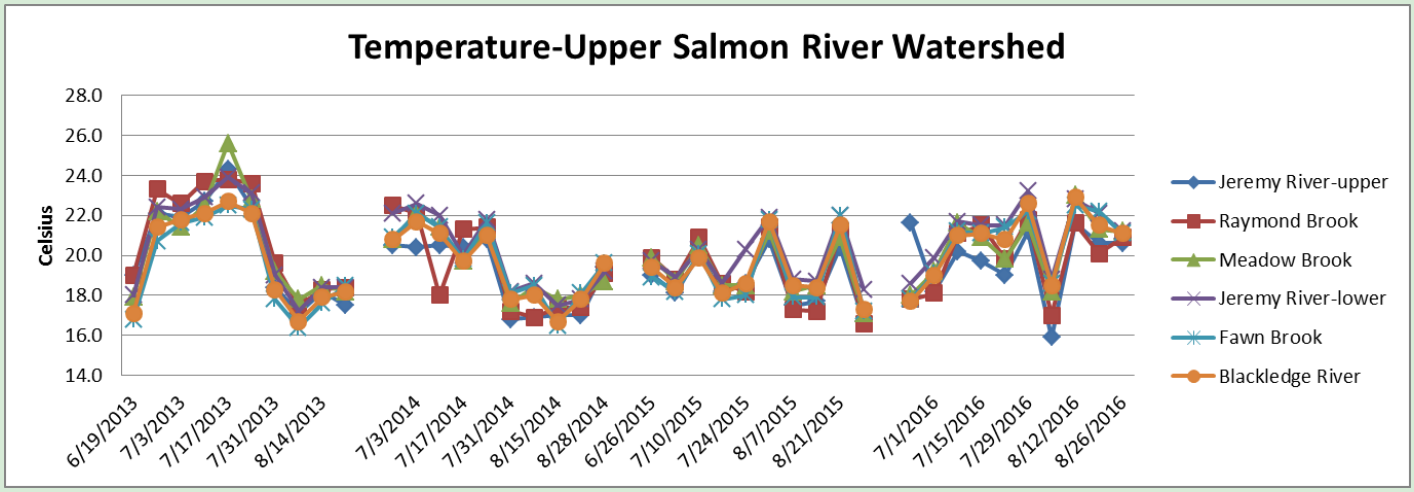
Stream Temperature: A Critical Component of Fish Habitat

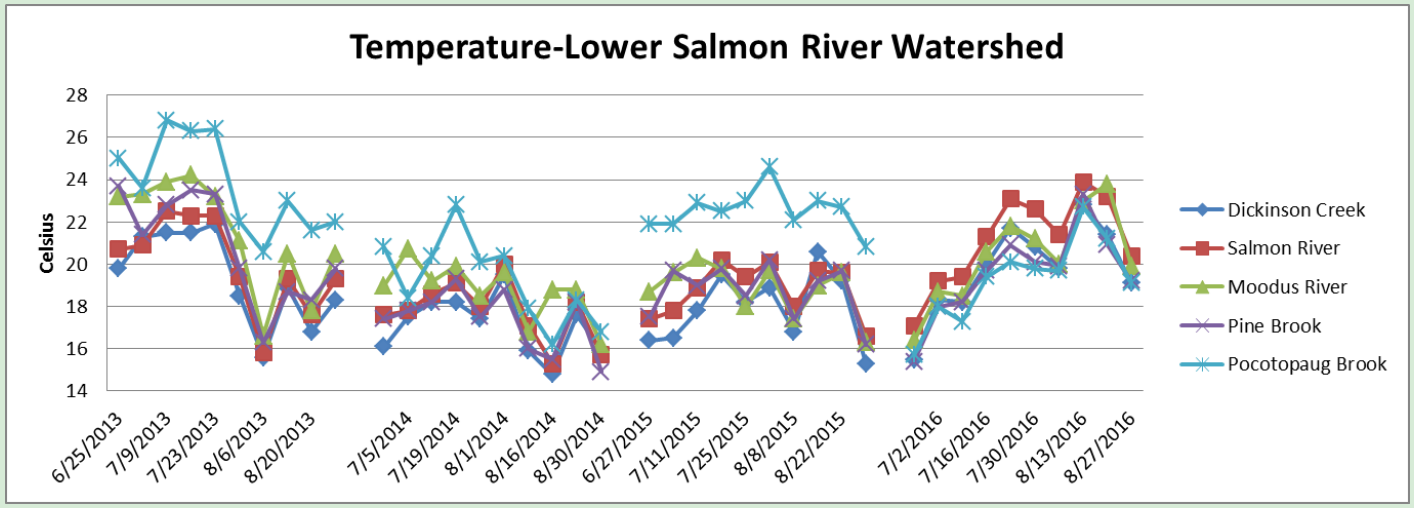
If you are a fisherman, you understand the importance of stream temperature for fish. There are fish that thrive in warmer water, such as smallmouth bass, and there are fish that need cold water, such as brook trout, to survive. Water temperature affects the oxygen content. As water temperature increases oxygen levels decrease. Temperature also affects the rate of photosynthesis of aquatic plants and the metabolic rate of aquatic organisms.

Stream temperature increases in response to warmer weather, removal of streambank vegetation, discharge of storm runoff, especially on hot summer days, and the release of cooling waters associated with industrial processes, among other things.

The Salmon River Watershed Partnership (SRWP) working with some very dedicated volunteers has been monitoring stream temperatures in 11 sites throughout the watershed during summer months (see graphs below). This monitoring helps build a baseline dataset for comparing changes over time.

Working with DEEP Fisheries' stream temperature logger data, Dan Klune, an Eastern CT State University student and Colchester resident has begun a project (see map to the left) for SRWP that maps local streams as "cold", "cool" and "warm", based on summer temperature ranges of fish communities. The map demonstrates where further data is still needed and will be combined with other mapping layers to target locations where more focused effort may be needed, especially to preserve or restore cold water conditions.





For the *Summer Water Quality Monitoring Report* please visit www.**salmonriverct.org**

Bugs in Our Water….That's a Good Thing?

Pat Young, Watershed Coordinator, Salmon River Watershed

Well to be a bit more precise, finding certain types of benthic macroinvertebrates in our local streams is a good thing, a very good thing. Every fall local volunteers and students working with the Salmon River Watershed Partnership head out to our streams, brooks and creeks to conduct riffle assessments. Developed by Connecticut Department of Energy and Environmental Protection and approved by the Environmental Protection Agency, this type of assessment uses riffle benthic macroinvertebrates (aka water bugs) to verify stream health.

A Roach-like Stonefly-A Riffle Dwelling Macroinvertebrate with a "0" Pollution Tolerance Rating

Certain species of insects, especially those in the stonefly, caddisfly and mayfly families, are not tolerant of pollution. So when a number of different species from these families are found in the collection sample it tells us the water quality is good or even excellent. The water bugs are collected in well-oxygenated riffle habitats by using an aquatic sampling net and turning over and gently scrubbing the rocks immediately in front of the net. Six sites in the same or adjacent riffles are sampled as part of the collection protocol. The contents of the net are then emptied into a container and the bugs are then sorted by type into white ice cube trays using tweezers. Each type is then identified and several representatives are preserved in a voucher and sent to the State DEEP lab for verification.

This type of assessment is done in the fall throughout the state and the results are used as part of a biennial assessment to determine if a stream segment is meeting its aquatic life support goals. As with many watersheds, a primary threat to water quality is stormwater run-off, also referred to as non-point source pollution. Non-point source pollution can include nutrients, pesticides, oils, salt, sand, sediment and other waste products that are discharged via stormwater or failing septic systems. Annual assessments allow us to monitor water quality to ensure our local streams are healthy.

This year 12 stream segments were assessed in the Salmon River Watershed. Final results should be available in spring of 2017, but even with drought conditions we can report that we found a variety of stoneflies, caddisflies and mayflies.

East Hampton HS Environmental Club

Tributaries Assessed in 2016

- Blackledge River
- Day Pond Brook
- Dickinson Creek
- Fawn Brook (East Branch)
- Flat Brook
- Judd Brook
- Lyman Brook
- Mint Brook
- Raymond Brook
- Safstrom Brook
- Willy's Brook (AKA Christopher Brook)

Colchester Girl Scouts

RHAM High School Aquatics Class