



ECCD OUTLOOK

A publication of the Eastern Connecticut Conservation District

Summer 2015 Edition

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Coastal Conservation Continues!!!

The Eastern Connecticut Conservation District continues to partner with coastal Connecticut communities to improve water quality and protect Long Island Sound. In spring 2015, ECCD partnered with the Town of East Lyme to install stormwater tree filters in downtown Niantic. Funded in part by CT DEEP through a Clean Water Act §319 Nonpoint Source program grant and a State of Connecticut Small Town Economic Assistance Program (STEAP) grant, four tree filters were installed along Pennsylvania Avenue to treat stormwater that would otherwise be discharged untreated directly into the Niantic River, a popular and economically important estuary located between the towns of East Lyme and Waterford. As part of the same Clean Water Act grant, ECCD is partnering with the Town of Waterford to install additional tree filters at Mago Point on the east side of the Niantic River. The Mago Point project is being developed as part of a STEAP grant obtained by the Town of Waterford. A 2016 installation is anticipated, so stayed tuned!



Tree filter along Pennsylvania Avenue in Niantic.

The focus was on kids in May 2015 as ECCD was invited by East Lyme Town staff to participate in a Stormwater Classroom event. ECCD, along with other environmental professionals from federal, state and local agencies and organizations, educated East Lyme third graders about stormwater runoff and nonpoint source pollution at the incredible Hole in the Wall Outdoor Stormwater Classroom on Baptist Road in Niantic. This outdoor classroom, designed and installed by the Town of East Lyme, demonstrates state of the art stormwater management practices as it treats stormwater from 22 acres in downtown Niantic prior to its discharge into Niantic Bay.

ECCD continues to partner with the Niantic River Watershed Committee, Inc. (NRWC), providing watershed coordinator services for NRWC. NRWC achieved a major organizational milestone this winter when it obtained 501(c)(3) non-profit status. ECCD, NRWC and the Town of East Lyme are partnering to install an 1800 square foot rain garden at East Lyme High School. This rain garden will treat approximately 400,000 gallons of stormwater per year from athletic fields and portions of a parking lot that would otherwise be discharged untreated directly into Latimer Brook, the primary tributary to the Niantic River. Additional rain gardens are planned throughout the Niantic watershed in the coming year. This project is funded through a Dominion Foundation Environmental Stewardship program grant.

Across the Thames River in Groton, ECCD and the City of Groton are partnering to install stormwater tree filters at the City Municipal Complex and Washington Park. This stormwater management project, recommended in the *2011 Baker Cove Abbreviated Watershed-Based Plan*, will treat stormwater from the parking lot at the 10 acre complex. Stormwater from the municipal complex, and Washington Park which is located adjacent to the City Hall, discharges to Birch Plain Creek, a major tributary to Baker Cove. Baker Cove has been closed for many years to commercial and recreational shellfishing due to high levels of fecal coliform bacteria derived in part from stormwater runoff. The tree filter installation will be conducted mid- to late August and is funded in part through CT DEEP through a Clean Water Act §319 Nonpoint Source program grant.

ECCD Continues to Remove Fish Barriers in Eastern Connecticut



Building on the completion of the Hallville Fishway in 2013, ECCD continues its commitment to migratory fish habitat restoration. The Hallville Fishway, located on Route 2A in Preston, CT, allows alewife, sea-run trout and American eel to navigate around the fifteen foot dam and spawn in Hallville Pond for the first time since 1880. The installation of the fishway has opened up 10 acres of new habitat for anadromous and catadromous fish. Anadromous fish, such as alewife and sea-run trout, navigate from the Atlantic Ocean through Long Island Sound, swim up the Thames River and through Poquetanuck Cove in order to reach Hallville Pond to spawn. Catadromous fish, such as American eel, are born in saltwater, then migrate into freshwater as juveniles where they grow into adults before migrating back into the ocean to spawn.

However, barriers to fish migration remain. Working in partnership with the CT Department of Energy and Environmental Protection (DEEP) and the US Fish & Wildlife Service (USFWS), ECCD identified Straight Pond Dam, a small (28 inch high by 29 foot long) concrete and stone spillway on Indiantown Brook at the east (upstream) end of Hallville Pond, as a fish barrier. ECCD has obtained funding from USFWS to remove a section of the Straight Pond Dam. Modification of the dam will result in flows that are closer to “free flowing” habitat, favored by many species of fish, and will allow migratory fish access to an additional five miles of habitat, part of which flows through the Rose Hill Wildlife Management Area and leads to additional prime spawning areas at Avery Pond and Amos Lake.

The Straight Pond Dam modification will be conducted in late summer or early fall of 2015, making the stream available to migratory fish in 2016.

Land Between the Rivers, continued from page 2

This spring, ECCD, collaborating with the Town of Windham, Eastern Connecticut State University, the Windham Chamber of Commerce and Pride’s Corner, installed a vegetated riparian buffer in Lauter Park. Riparian buffers function to slow down stormwater run-off, facilitating increased infiltration into the ground, which serves to filter contaminants from the run-off. Riparian buffers also protect the river bank from erosion from both stormwater run-off and high flows. In addition to these recommended implementation actions, ECCD has received funding from CT DEEP through the federal Clean Water Act §319 to install tree filters and rain gardens at the Colonial Townhouse Apartments in Willimantic and Mansfield. The tree filters and rain garden swill intercept stormwater and filter it prior to its discharging into the Natchaug.



Additionally, ECCD is partnering with The Last Green Valley, Connecticut Resource Conservation & Development Area and the Thames River Basin Partnership to assist USDA's Natural Resources Conservation Service in addressing non-point source pollution originating from agricultural fields in the Thames River Basin, including those in Mansfield which have been identified as potential sources of bacterial contamination of the Natchaug River. It is our hope and aspiration to work collaboratively with agricultural producers, local citizens and municipalities, as well as industry and commerce, to improve the water quality of the lower Natchaug River, looking forward to the day when the “land between the rivers” is no longer contributing to the periodic closing of Lauter Park’s swimming area. We all contribute to the problem and we must all contribute to the solution.

¹https://en.wikipedia.org/wiki/Natchaug_Trail#Origin_and_nam

ECCD would like to thank the following people and organizations for your generous assistance and outreach to conservation in eastern Connecticut.

- USDA Natural Resources Conservation Service
- CT Dept. of Energy & Environmental Protection
- The CT Audubon Society
- Windham County Agricultural Society, Brooklyn
- Ocean State Job Lot
- Andrew Tate Memorial Fund
- The Town of Lisbon
- Retired Senior Volunteers
- The Last Green Valley, Inc.
- 2014-15 Water Quality Monitoring Volunteers
- 2015 Plant Sale Volunteers
- UConn Extension Master Gardener Program

ECCD would like to thank the following towns for their financial support:

Ashford, Canterbury, Columbia, East Lyme, Eastford, Franklin, Hampton, Killingly, Ledyard, Lisbon, Preston, Sprague, Sterling, Thompson, Voluntown and Waterford.

2015 CT Envirothon

ECCD Board members and staff provided support at Connecticut Envirothon's high school environmental competition on May 22 at the beautiful grounds of Connecticut College Arboretum in New London.

This year's Current Issue was *Urban Forestry*. The overall competition winning teams were:

1st Place: Coginchaug Regional High School

2nd Place: Housatonic Valley High School - Agriscience

3rd Place: Housatonic Valley High School

Congratulations to all the teams throughout Connecticut that participated in this year's event!

To learn how to sign-up your school's team, please visit: www.ctenvirothon.org



ECCD's volunteers to CT Envirothon (l to r) include Judy Rondeau, Dan Mullins, Devon Avery, Matt Snurkowski, Jean Pillo, Anne Roberts-Pierson, Kate Johnson and Charlie Hobbs.

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*For more information, call us at
860-887-4163, ext. 400.*

Site plan reviews are funded in part through the CT DEEP by US EPA Clean Water Act §319 Nonpoint Source Program grant funds.

Roseland Lake Nutrient Loads Modeling Project

Roseland Lake is a 96 acre natural lake located in Woodstock, CT. After the last ice age, a large sand and gravel deposit formed under what is referred to as glacial "Lake Quinebaug". What was left behind is where the Quinebaug River now flows. An arm of Lake Quinebaug followed what is now the Little River into Woodstock. During ice melt, deeper pockets formed here and there. Roseland Lake is where one of those deeper pockets formed. The maximum depth of the lake is 18 feet, and the average depth is about 9 feet.

Roseland Lake was a summer retreat destination for many people during the 1800s. Henry Bowen, of the Woodstock "pink house" fame, financed the improvement of the western shore of the lake and created what is now known as Roseland Park. Much of the land in the park was too swampy, so he hired local laborers to haul wagon loads of soil to add fill where needed. While this would be a violation of modern inland wetland regulations, the park is an accepted feature of the modern landscape. Many living local residents recount taking swimming lessons in Roseland Lake and reminisce about diving off the dock into the water.

Downstream of Roseland Lake, the Town of Putnam withdraws water from Little River to use as a source of drinking water. Water upstream of a surface water supply is protected by various regulations. For example, it is not allowed to

discharge industrial or treated sewage into a river upstream of a drinking water intake in Connecticut. It is also not permissible to allow a public bathing beach less than 2 miles upstream of the intake. The latter rule led to the closing of the Roseland Park public swimming beach. However, despite these regulations, the water quality in Roseland Lake has been degrading for decades. Excess nutrients and sediment runoff from diffuse sources have caused the lake to be categorized as hypereutrophic. The excess nutrients in the lake cause severe seasonal algal blooms and decreased dissolved oxygen concentrations below the lake surface. Of particular concern are potential harmful algae blooms of blue green algae, some of which may produce a toxic by-product. The excess algae makes it more expensive to filter and treat the drinking water drawn from Little River, and may give the water a bad taste and smell. The lack of oxygen below the lake surface degrades the habitat for fish and other aquatic organisms.

The Eastern Connecticut Conservation District (ECCD) has collaborated with CT DEEP, USDA Natural Resources Conservation Service (NRCS) and others to decrease nutrient and sediment laden runoff into Roseland Lake. In 2009, ECCD completed a review of the watershed above Roseland Lake and prepared the Muddy Brook and Little River Water Quality Improvement Plan. This Plan contains recommendations for changes that will lead to improved water quality in rivers, streams and lakes within the watershed. One of the recommendations in the Plan is to investigate if the nutrients stored in the sediments at the bottom of the lake are contributing to the lake's water quality issues. Lake chemistry is complex, but during summer months, it is possible that nutrients, specifically phosphorus, get released from the bottom sediments when there is no oxygen in the water. If that phosphorus gets mixed in with the water at the surface where there is light to support photosynthesis, it helps to support the growth of algae. There are lake management strategies to reduce algae blooms that may be different from how the lake is managed now, but critical water quality information is unknown. It is also important to know how much polluted land runoff is still reaching the lake before the best lake management strategy can be determined.

In 2015 ECCD, with funding from an EPA Clean Water Act § 319 grant through the CT DEEP, began collecting water samples from Roseland Lake and the tributaries above it to get data on which to make lake management decisions. The data will also help decide which areas upstream of Roseland Lake are higher priorities to reduce polluted runoff. The last comprehensive study of the Roseland Lake tributaries, including Muddy Brook and Mill Brook, was completed in 1991 by the USGS using data collected in the early 1980s. There have been snapshot studies of water quality in the

Continued on page 6



Sampling in Roseland Lake

lake itself, but as part of this project, ECCD will be completing a more comprehensive study of the lake from spring to fall. ECCD will have many partners on this project, including the Connecticut Department of Public Health Drinking Water Division and representatives from the Putnam Water Pollution Control Authority and the Town of Woodstock. ECCD will contract with the USGS Water Science Center to collect and analyze sediment samples for phosphorus concentrations. Volunteers trained as part of The Last Green Valley Water Quality Monitoring Program will assist with water sampling. Dr. Richard Canavan of CME Associates, Inc., is a lake specialist by training. He has been hired to assist with data interpretation.

The end products of this project will include a mathematical model of how nutrients cycle in Roseland Lake, recommendations for lake management strategies, measurements of nutrient loads coming into the lake from upstream sources and the development of priority areas for funding assistance to reduce those loads. ECCD hopes to improve the water quality in this lake for people and wildlife. Project updates will be posted to our ECCD Facebook page, and on a Roseland Lake website www.roselandlake.org which is managed by a local volunteer. There are volunteer opportunities available to assist us with this project. Contact Jean Pillo at 860-928-4948 ext. 605 for more information.

Homeowners and farmers interested in participating in **USDA Conservation Programs** can learn more by visiting USDA's Natural Resources Conservation Service website at: www.ct.nrcs.usda.gov/

Thames River Basin Partnership Floating Workshop

The Thames River Basin Partnership Floating Workshop XV was held in June 2015 at Old Sturbridge Village. A total of 34 people participated in this year's event.

The focus of this year's Floating Workshop was the Quinebaug River. Neil Fennessey of HYSR Hydrological Services and UMASS was the keynote presenter. He overviewed a study of the Quinebaug River, and how mill history was a critical factor to understanding long time river flow data. Two flow restoration projects funded by Millennium Power were also reviewed.

An optional complementary morning paddle was sponsored by TLGV. The morning paddle from Holland Pond to the Brimfield Dam along the first designated segment of the Quinebaug River National Recreational Trail preceded the Floating Workshop. A slide show summary of the TRBP Floating Workshop XV can be viewed at www.TRBP.org.



A tour of the mill pond at Old Sturbridge Village focused on dam impounded ponds in the Quinebaug River watershed.

***~ 2014-15 donations made on behalf of others in support of conservation ~
In fond appreciation, ECCD respectfully honors the names listed below.***

Ruth Stedman in honor of accomplishments by
Cayden LeBlanc

Sylvia Correia in memory of Jim Chew

Irene Hutchinson in memory of Charles Hutchinson

Faith Johnson in memory of Robert Johnson

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Rosewin Wildlife Preserve

The Eastern Connecticut Conservation District wishes to extend our sincere appreciation to the following for supporting us in our mission to provide premier environmental services throughout eastern Connecticut in the field of natural resource management during our 2014-15 fiscal year.

~ THANK YOU ~

Janice Abrahamson	Patricia Coleman	Ellen Lehtimaki	Susan Surova
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**2015 ECCD TROUT
FINGERLING SALE**

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payment, must be
received by Monday,
October 5th.*

**See order information
on Page 2.**

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