Riparian Zones: Vital River Protection

by David Deen and Andrea Donlon

Have you ever noticed that some streams and rivers run brown and some streams continue to run clear after the same rain event? The difference is that the clear-running streams have a buffer of undisturbed natural vegetation along their banks, while the muddy ones lack that strip of trees and brush, which protects the soil along the banks and impedes erosion. That ribbon of land between the upland and river is called the riparian zone, and destroying the vegetation in this zone robs nature of her first line of defense in protecting human health and the water quality of all the water bodies in the watershed.

The riparian zone serves ecological functions disproportionately large relative to its small land area. A healthy riparian zone slows the flow of overland runoff allowing it to be absorbed into the soil, simultaneously treating nitrate and phosphorus pollution, reducing pathogens, and providing food and shade for life in the water. These strips of land are especially important in reducing riverbank erosion during floods.

Why are riparian zones important to human health and our waters? When any activity destroys or diminishes the natural vegetative cover and compacts or covers the soil in this zone, nutrients and pathogens running over parking lots and farm fields during rain events flow directly into a water body. If the overland flow is not slowed and absorbed, there is no treatment of the pathogens and no removal of excess nutrients. No treatment of the pollutants threatens human health. The threat to humans comes either by direct water contact or through consumption of fish.

As land development reduces the width of the riparian zone, the time between rain
Riparian continued from front page

event and water level fluctuation is altered significantly, so that rivers rise and fall more rapidly than normal. A healthy riparian zone allows for increased absorption of water into the soil, which slows the rush of water into the stream and moderates the stream’s flow. Groundwater storage is enhanced by the absorption, which also moderates stream flows during dry times. Collectively, these factors have a major effect on water quality.

Loss of the riparian zone, furthermore, leads to the loss of habitat for aquatic invertebrates and fish because trees, branches, and leaves, which provide food and cover, no longer fall in the water. Shade is lost, and that raises water temperature levels, making for lower dissolved oxygen levels for all aquatic life. Migratory birds, reptiles, amphibians and small mammals are denied the food and shelter they seek in an undisturbed riparian area.

 Destruction of riparian areas robs our ecosystems of a diverse array of natural communities that depend on natural flooding. The characteristics of floodplain environments provide valuable wildlife habitat for breeding birds, spring migratory birds, insect populations, and amphibians that utilize vernal pools as part of their life cycle. Some of these species are completely dependent on the diversity of forested floodplains for food, breeding, and nesting habitat, and so, as riparian zones become more fragmented, these species are becoming scarce.

What are states doing? Since riparian zones are so important to our ecosystems and health, what are our 4 states doing to protect riparian zones?

New Hampshire has a law on the books called the Shoreland Protection Act, first passed in 1991 and amended several times to extend its protections to more rivers in more ways. Around most bodies of water, the law sets a statewide minimum width of shoreland riparian zone that must be protected from damage that occurs with land development or logging.

In Vermont, there is no statewide shoreland protection law. Agricultural, logging, power line activities and Act 250 permits do address the issue of protecting riparian zones, but most development happens beyond the purview of these review processes.

Massachusetts passed the Rivers Protection Act in 1996, which amends the Wetlands Protection Act by regulating certain activities within a Riverfront Protection Area (RPA). Development is either prohibited or minimized within the RPA, which is either 200 feet or 25 feet in heavily developed areas or large cities.

In 1972, Connecticut enacted the Inland Wetlands and Watercourses Act to regulate development activities that affect water bodies. The Act left municipalities in charge of implementing regulations, and today, all of CT’s 169 towns and cities have inland wetlands agencies. Results to this point, however, have been problematic. Various attempts to strengthen the law have been made over the years, but none have succeeded. The latest two bills (SB 569 and HB 5934) died in this last session of the Legislature. However CRWC, along with the Connecticut Fund for the Environment and Rivers Alliance continue to monitor this situation, and are looking for a consensus that will overcome this stalemate.

How can you get involved? Be a good steward of your own land if it has a shoreline. Protect your riparian zone from removal of vegetation and compaction or paving. And report any illegal destruction of riparian land to your state’s environmental protection agency or to us. We’ll let you know how to proceed. Please be aware, however, that farmers have a great deal more leeway in clearing their riparian areas than do other landowners.
A critical land-acquisition challenge has presented itself at the confluence of two of Connecticut’s premier waterways, the Connecticut and Salmon rivers where the former Connecticut Yankee Atomic Power Plant stood. The plant was closed for economic reasons in 1996, and decommissioning started in 1998. Decommissioning, which required complete deconstruction of the plant and disposal of radioactive materials, was completed in 2007. Only a facility for temporary storage of radioactive spent fuel assemblies remains on this 582-acre Haddam Neck property.

Because the plant itself occupied very few acres, this property has remained in a largely natural state. Located on a peninsula between the Connecticut and Salmon Rivers it borders on Salmon Cove, a globally recognized tidal marsh with several species of rare plants and animals.

In March 2008, Connecticut Yankee widely sought “Expressions of Interest” (EOI) in the property. The Connecticut Yankee Conservation Project (CYCP) was then formed to facilitate purchase by a conservation entity. For administrative purposes, CYCP has partnered with the Middlesex County Community Foundation, a 503(c) organization. They then hired Melissa Spear, former State Director of the Trust for Public Land in Connecticut, to prepare a viable arrangement for purchase and protection of the property by working closely with organizations that include the CT River Gateway Commission, the Nature Conservancy, the US Fish and Wildlife Service, and local land trusts and conservation groups.

CRWC strongly supports this effort to preserve quality uplands, forested acres, and vernal pool habitats, as well as over 3 miles of riparian habitat and river frontage on the Salmon and the Connecticut. Purchase opportunities like this are rare in the Northeast, notably on such an isolated peninsula with no through roads that bisect it.

Archeological evidence suggests that native Americans used the site extensively, dating back as much as 5,000 years. Of more recent significance is its having included the homestead of Venture Smith, a freed African slave who built up a farm and successful businesses on the site.

Donations to the Connecticut Yankee Land Conservation Project are tax deductible through the Middlesex County Community Foundation. For further information, contact Jim McHutchison at jmchutchison@sbcglobal.net. Ask to be put on the mailing list. • Raul de Brigard is a Vice-Chair representing CT on CRWC’s Board of Trustees.
Connecticut

Connecticut’s New Science Center

After eight years of fundraising, the new Connecticut Science Center opened last June in its beautiful Cesar Pelli-designed building right in downtown Hartford. Education stands at the heart of the Science Center’s mission, and they’ve got some riveting exhibits and a huge 3D digital theater. We urge all our members, whenever they’re in the Hartford region, to visit the Center, especially the Connecticut River exhibit on the top floor with its interactive exploration of the whole river. (JS)

Massachusetts

The Sustainable Water Resources Act

Until now, Massachusetts has done a poor job of ensuring adequate water flows in our rivers and streams to maintain water quality and ecosystem requirements. As a result, some of our rivers are suffering. But a new Sustainable Water Resources Act will alleviate that problem. Here are some of its main features:

Adequate water in our rivers and streams: The bill requires the adoption of streamflow standards to ensure adequate water flow and water levels for community water suppliers and aquatic life.

Water Conservation: The bill authorizes water suppliers to implement “waterbanking,” under which they could charge a small fee for any new water withdrawal or sewer capacity to offset and remedy ecological impacts. Remedies could include land acquisition for wellhead protection, local recharge of storm/waste water, reuse of water, retrofitting existing development with low impact development methods or water saving devices.

Dam Removal and River Restoration: Dam removal is offered as one of the options to dam owners. The Department of Conservation & Recreation’s existing authority currently only extends to repairing failing dams.

In July, the Joint Committee on Environment, Natural Resources, and Agriculture heard testimony on HB834. Contact your legislators and tell them you support this bill. Information about HB 834 is available at www.massriversalliance.org. (AD)

A New Boathouse for Holyoke

Holyoke’s only public access point on the Connecticut River got a major upgrade this year when in June, the City celebrated the opening of the Jones Ferry River Access Center. The new boathouse, which sits on the site of a former dilapidated restaurant, has three bays for kayaks and sculling boats, and there is also a large public meeting room and handicapped-accessible bathrooms and lockers. Holyoke Rows, a nonprofit organization (see www.holyokerows.org), is under contract to maintain and run the facility.

The building has several “green” components. Hot water in the building is heated by solar panels on the roof. Grass planted on another part of the roof helps keep the 7,500 square foot building cool.

The final part of this project will be completed this fall, when the boat ramp will be repaved, a retaining wall will be replaced, and a concrete mat will be put in the water to improve the boat ramp. The access center and boat ramp were funded by a state grant, a federal community development block grant, and money from the City of Holyoke. Next time you are in Holyoke, check it out. (AD)
Upper Valley

Ammonoosuc Now a Protected River

In May, the upper reach of the Ammonoosuc River was accepted into the NH Rivers Management and Protection Program (NH RMPP) by the NH legislature. This action protects the entire Ammonoosuc River from the western slopes of Mt. Washington where it originates at Lakes of the Clouds at an elevation of 5,018 feet. From there the Ammonoosuc runs 55 miles to its confluence with the Connecticut River at Woodsville. The lower reach had already been enrolled in the RMPP in 2007.

Protection for the upper reach is an important step since the river is free flowing and largely undeveloped with an array of exemplary natural communities. Protection comes at a most opportune moment since the area is slated for increasing development, as it is close to Interstate 93 and RT 302, which parallels the river.

CRWC congratulates the Local River Advisory Committee whose volunteers did the inventory of river values and water-quality testing in writing the application that assured local support for the nomination. The Ammonoosuc now joins the Cold River and the Ashuelot River as protected rivers under the NH RMPP program in our watershed. For further information check the NH website: http://des.nh.gov/organization/divisions/water/wmb/rivers/index.htm (DD)

CRWC News

Farewell to Megan and Christine

Megan Hearne, CRWC’s River Steward in Connecticut for the past four years, has moved on to be closer to family and friends in North Carolina. We’ll all miss Megan, not only the staff and Board at CRWC, but the hundreds of folks she dealt with in our river communities.

Megan played a key role in many of CRWC’s fish passage and habitat restoration projects and was instrumental in helping shepherd through critical combined sewer referendums in 2006, helping educate Greater Hartford voters in the region’s town and city governments. In Middletown, CT, she was a leader in seeking alternatives to a proposed US Army office complex that threatened to take a chunk out of some of the area’s last contiguous forest cover. She was also quietly successful in halting sediment discharge into the river by a mining firm after receiving a tip from an involved citizen.

Christine Luis-Schultz has been with CRWC since 2004, first as office manager, then as membership director and currently community outreach director. For the past 5 years Christine has been an integral part of our work, taking on a series of challenging tasks, as well as entertaining so many of us with her beautiful voice and outstanding performances. Our volunteers will remember her well, as will all of us at the Watershed Council.

We wish Christine and her husband Bob, and Megan, her husband Damon, and her daughter Julianna all the best in their new endeavors. (KM & JS)

CRWC is on Facebook

Want to keep current and help spread the word about the work we do at the Watershed Council? Sign up for our Facebook page and keep abreast of all the river news.

As a CRWC Facebook fan, you’ll get short messages updating you on CRWC happenings, view pictures, plus you’ll learn about river tours and outings. You’ll be helping spread the word about protecting our great river, while conveniently keeping current with CRWC news. You may be surprised at the other Facebook fans and connections that you can make on the site. There are images and small notes from all of the “friends” who are already signed up. You’ll have a link to old friends, new friends, and acquaintances across the globe!

Just go to our web page: www.ctriver.org, and scroll down to the “Visit CRWC on Facebook” icon at bottom. Or, go straight to our Facebook page www.facebook.com/connecticutriver. Click on the “Become a Fan” button at the top of the page to follow us. (KM)
Chicopee’s New Combined Sewer Overflow Treatment Plant

by Andrea Donlon

Across the river from Holyoke’s new river access center (see Out & About) is the new $14.8 million Jones Ferry Combined Sewer Overflow Treatment Facility in Chicopee. I attended the ribbon cutting ceremony for this “satellite” treatment facility on September 28, along with city, state, and federal officials, as well as local residents and members of the Chicopee River Watershed Council. The facility became operational this summer and tackles Chicopee’s largest combined sewer overflow (CSO) pipe, which the City’s public works department calls “7.1.” Chicopee has 29 permitted CSOs, located along 5 miles of the Connecticut River and 2.5 miles along the Chicopee River.

Prior to construction of the CSO facility, the Jones Ferry CSO contributed approximately 40% of Chicopee’s CSO discharge, releasing an estimated 158 million gallons of untreated stormwater and sewage into the Connecticut River each year. The plant will screen and disinfect 143 million gallons of storm water and sewage annually.

During rain storms, sewage and stormwater will enter the building and first go through a screening process that will help remove any trash or debris greater than ¾” wide. Trash such as cigarette butts and anything else that falls down a stormdrain will get conveyed to a container and brought to the Chicopee landfill. The screened wastewater is then pumped to the chlorine contact chamber. The chemical sodium hypochlorite is diffused into the effluent chamber, and the water goes through a zig-zag pattern to allow a 12.5 minute contact time with the wastewater and the sodium hypochlorite to kill any bacteria, viruses, and other pathogens. Finally, sodium bisulfite is injected into the wastewater, which neutralizes the chlorine. Depending on the volume of the wastewater going through the plant, or the size of the rainstorm, this water will either be pumped to the Chicopee wastewater treatment plant (small storm) or pumped out to the Connecticut River (large storm). Therefore, during larger storms, other pollutants such as fuel components or heavy metals will still be discharged into the river untreated.

Chicopee residents will be pleased that the plant will reduce the number of sewer backups in their basements. CRWC applauds the City of Chicopee for continuing to eliminate their CSOs and helping to make the Chicopee and Connecticut Rivers cleaner and more enjoyable for those in Chicopee all the way down to Long Island Sound.

What is a CSO, you ask?

We’re regularly asked what a combined sewer overflow, or CSO, is. Combined sewers collect rainwater, domestic sewage, and industrial wastewater in the same pipe. When it rains, the volume in a combined sewer system can exceed the system’s capacity so they are designed to overflow excess wastewater directly into nearby streams, rivers, and other waterways.

According to the Environmental Protection Agency, these overflows contain untreated human and industrial waste, toxic materials, and debris making CSOs a major water pollution concern for the approximately 772 cities in the U.S. that have combined sewer systems.
Where in the Watershed?

by David Deen

Just 15 miles north-east of St. Johnsbury, VT and 10 miles due east of Lyndonville, this 4,970-acre wetland is a world-class wildlife refuge – a mix of spruce-fir and northern hardwood forest, alder swamp, sedge meadow, and tamarack bog fed by the Moose River.

The area hosts a variety of habitat types, all within close proximity to each other. A 20-acre broad-leaved, evergreen scrub-shrub community classified as a "boreal bog" anchors the variety of forest types and is surrounded by small stands of black spruce at the lowest elevations. Stands of red spruce and balsam fir provide critical wintering habitat for white-tailed deer at higher elevations.

The mix of beaver ponds and upland forests creates habitat for muskrat, mink, otter, raccoon, snowshoe hare, red fox, weasel, bobcat, Fisher, coyote, black bear and moose. The ponds provide feeding grounds for great blue heron, bitterns and nesting habitat for wood, black and mallard ducks, hooded and common mergansers and the elusive woodcock. Over 130 bird species have been sighted including the gray jay, olive-sided flycatcher, Cape May warbler, black-backed woodpecker, rusty blackbird and white-winged crossbill. An extraordinary array of reptiles and amphibians find homes here -- northern spring, red-backed, and spotted salamanders and eastern newts along with ring-necked and red-bellied snakes, snapping and painted turtles, and frog species including green, pickerel, wood, leopard, gray tree, bull frogs, spring peeper and the American toad.

The basin was logged until 1948, and, in 1969 the State of Vermont bought the Bog from the New England Power Company thus ending a decades-long struggle to prevent a U.S. Army Corps of Engineers' plan to construct a dam on the Moose River that would have destroyed the Bog.

Visitors are welcome to walk the hiking trails that meander throughout this great wetland.

(A new feature in Currents & Eddies)
by John Sinton and David Deen

Our deep thanks go to all the men and women who served on the emergency crews throughout our watershed for their great work in 2009. Although we cannot mention all of the river rescues, here are a few notes of thanks:

• To the TransCanada operator of the McIn-does hydro project who closed the spill gates in record time to allow the rescue of two youngsters hanging on to safety buoys at the bridge above the hydro station.

• To the Vermont state troopers at Newbury who rescued a couple and their baby in a strong current in the Connecticut River after the couple had gone to sleep in their rowboat.

• To the Chicopee Fire Department who rescued two men after their boat capsized near S. Hadley, MA.

• To the firefighters on the Farmington River, who rescued a woman whose canoe overturned.

• To the civilians and firefighters who rescued 22 people after their dragon boat struck a pylon in the Connecticut River at Hartford, CT.

• To the West Springfield, MA firefighters, who rescued two stranded swimmers in the Westfield River.

• We also want to acknowledge the state troopers, civilians and local firefighters in Charlemon, MA, and the emergency crews from Cromwell, Portland, and Middletown, CT, who were dedicated and professional in two tragic situations.

• And to all those who continue to help keep the river safe, we thank you.

If you are planning a river trip, you can find flow information and boating safety tips at our website www.ctriver.org (select "Recreation" under our "Programs" tab, and click on "River Information"). • John Sinton is a Vice-Chair representing MA on CRWC’s Board of Trustees and editor of C&E.