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JOHN FERRO

OUT THERE



Program helps curb flooding

The warmer temperatures that came at the end of last week were a reminder of two things.

One, spring is on the way.

And two, with all the snow that has fallen, the mid-Hudson Valley's watersheds will be susceptible to flooding.

But one state program has done much in recent years to reduce the impact of spring floods.

The "Trees for Tribs" program, sponsored by the state Department of Environmental Conservation's Hudson River Estuary Program, has provided free native trees and shrubs since 2007 to landowners looking to shore up stream banks.

Tribes, if you're wondering, is short for tributaries.

The program has been responsible for planting more than 35,000 native trees and shrubs along 80,000 feet of stream with the help of thousands of local volunteers.

And right now, it's accepting applications for Spring 2014 planting sites.

In other words, if you own land with streams that would benefit from some shoring up with native trees and shrubs, this program is for you.

Applications received by March 1 will be given preference.

The program is also a wonderful opportunity for volunteerism. (Take it from a columnist with a teenage son who had to complete a bunch of community service hours during his final year of middle school.)

When the weather gets warm, DEC staff turn a part of the Region 3 headquarters in New Paltz into an active nursery. Volunteers can show up and help pot the trees and shrubs.

It's also an opportunity for corporate entities looking to extend good will to form teams of volunteers and get down and dirty.

Why is this important? Strong stream buffers help filter pollution runoff.

They slow the flow rate of water, thereby reducing erosion and controlling flooding.

And they support wildlife and biodiversity.

Last year, the program conducted its biggest single planting ever — more than 1,000 trees — at Vassar

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Hudson River Estuary Program's Stream Buffer Coordinator Beth Roessler, left, and Vassar College's Field Station and Ecological Preserve Manager Keri VanCamp plant an oak tree in 2013 at the Vassar Farm and Ecological Preserve in Poughkeepsie.

COMING UP NEXT WEEK IN MY VALLEY

Visit www.poughkeepsiejournal.com/myvalley for the latest environmental news and these stories:

Tuesday: Earth Wise looks at the rise of geothermal energy.

Thursday: EcoFocus looks at how our weather in 2013 compares to other years.

NETWORK MONITORS HUDSON



As part of the Beacon Institute's River and Estuary Observatory Network that monitors waterway activity, this cylinder contains instrumentation for the Real Time Hydrologic Station located on the Grasse River in Massena, St. Lawrence County.

COURTESY PHOTOS



The Beacon Institute's chief research officer James S. Bonner makes an adjustment to the solar panel that powers the Real Time Hydrologic Station located on the Grasse River in Massena, St. Lawrence County. Data collected from the station is being used to aid in the restoration of the river's lake sturgeon habitat. COURTESY PHOTO

"One of the goals of REON is to make sensor technology ubiquitous, completely universal."

JAMES S. BONNER, Beacon Institute chief research officer

Data collected with the help of the latest sensor technology

By Karen Maserjian Shan
 For the Poughkeepsie Journal

Better river monitoring means a better understanding of waterway dynamics. And that means better protection of the natural resource, nearby habitats and related human activities.

Thanks to the Beacon Institute for Rivers and Estuaries in Beacon, a subsidiary of Clarkson University, real-time monitoring of waterway and atmospheric conditions has been in place since the summer of 2008 by way of the organization's River and Estuary Observatory Network, or REON.

"The bottom line is everybody is clamoring for environmental monitoring and how important it is to have scientific facts from our waterways," said Terry Platz, the institute's director of communications. "This moni-

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Woody Guthrie needs new hull

Almost everyone knows that the Sloop Clearwater was commissioned by Pete Seeger and made her first voyage in 1969. Lesser are the number of people who know that the 106-foot-long Clearwater has a smaller sister ship. Commissioned by Seeger in 1978, the Sloop Woody Guthrie clocks in at 47 feet, less than half the length of the Clearwater. However, her mission is no less important: educating people about the mighty Hudson River and the environmental dangers it faces.

The Woody Guthrie is maintained and operated by the Beacon Sloop Club, a group inspired by the Clearwater's visit to that town in 1969. At that time, the Beacon waterfront, like so many up and down the Hudson River,

JIMMY BUFF

THE GREEN LIFE



was a mess. It was dirty, unsafe and prime for saving. So the Beacon Sloop Club was formed and in the ensuing years they have turned a former garbage dump into a park. They have stopped leaks of raw sewage into the river and launched riverside festivals, including the Strawberry Festival in June, the Corn Festival in August and the Pumpkin Festival in October. The festivals serve as family fun, fundraisers and promoters of efforts to main-

tain and protect the Hudson.

The Woody Guthrie is a beautiful boat, just as beautiful as her sister. Single-masted (Clearwater has two masts), wide of beam and painted bright colors, the Woody Guthrie is an inspiring sight. And like the Clearwater, the Woody Guthrie needs constant maintenance. Volunteers from the Beacon Sloop Club do the work, right down to its captains and crew. Yet, despite the best efforts of those good folks, the Woody Guthrie needs a new hull and that costs money.

The amount needed is \$300,000, according to Joyce Kline, a long-time Beacon Sloop Club volunteer. Hanson

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REON

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toring is going to be our hope of the future for the protection of our water systems.”

REON utilizes an integrated network of sensors located at stations in and along the Hudson River and other New York state waterways, whereby robotics and other technologies provide real-time data on water inputs, flow and particle movement, as well as other ecosystem indicators. Twenty-one stations are in place with the first platform set in place in August 2008 off Dennings Point in Beacon.

Unfortunately, icy conditions during the winter have forced the removal of the REON floating sensor platforms over the past few years, suspending data collection until the weather warmed. Not this year. Now second-generation equipment, Real Time Hydrologic Stations, have been set in fixed positions on certain riverbank locations with sensors set into the river bottom, allowing for year-round data collection.

“This winter is the first that we’ve been able to stream data throughout the winter from the banks of the river instead of the floating platform,” Platz said.

Depending on the station location, the Real Time Hydrologic Stations use specific instruments to collect information relating to wind direction and speed, stream flow and speed, air temperature and barometric pressure, precipitation and height of the water’s surface in relation to the riverbed. Such data, said Platz, allows for baseline measurements that can be used, among other things, to characterize episodic events and the effects they have on the river system and surrounding habits, such as flooding, turbidity, sediment accumulation and such.

“One of the goals of REON is to make sensor technology ubiquitous, completely universal,” said James S. Bonner, Beacon Institute chief research officer and the lead for the REON research team. “Our work to improve the cost-effectiveness of REON sensors is a critical factor to reaching this goal. This shift will be transformational to the field of environmental science.”

The EPA reports there are more than 3.5 million



This solar panel powers the Real Time Hydrologic Station located on the Grasse River in Massena, St. Lawrence County. The station, along with 20 others set in and along the Hudson River and other waterways, is part of the Beacon Institute’s River and Estuary Observatory Network. COURTESY PHOTO

WHY PROTECTING WATERSHEDS MATTERS

Healthy watersheds protect valuable ecosystem services that provide economic benefits to society and prevent expensive replacement and restoration costs. Protecting healthy watersheds:

- » Lowers drinking water treatment costs
- » Avoids expensive restoration activities
- » Sustains revenue-generating recreational and tourism opportunities
- » Minimizes vulnerability and damage from natural disasters
- » Provides critical ecosystem services at a fraction of the cost for engineered services
- » Increases property value premiums
- » Supports millions of jobs nationwide
- » Ensures we leave a foundation for a vibrant economy for future generations

Source: http://water.epa.gov/polwaste/nps/watershed/upload/economic_benefits_factsheet3.pdf

ON THE WEB

For more information on the Beacon Institute for Rivers and Estuaries’ REON work, visit www.bire.org/river-and-estuary-observatory-network or www.bire.org/reon-data

miles of rivers and streams in the U.S., covering a wide range of landscapes. Larger waterways supply drinking water, irrigation for crops, power for hydroelectricity, support for fish and other aquatic species along with recreational and commercial opportunities. Streams and associated wetlands provide habitat, food and shelter for waterfowl, fish and other aquatic species, as well as mitigate damage from floods, provide sources of drinking water, filter pollutants and, like rivers, also support recreational and commercial uses.

But because commercial, human and other influences can adversely affect waterways and wetlands, it’s important to monitor those effects and develop effective plans to maintain and restore waterways and wetlands as needed.

In fact, according to the EPA, healthy water-

sheds where riparian corridors, that is, transition areas lying between waterways and dry land, are protected are more likely to weather anticipated effects of climate change than vulnerable areas.

One real-life REON project has the Beacon Institute collaborating with the St. Regis Mohawk Tribe, whereby data collected at one of REON’s Real Time Hydrologic Stations located at the Grasse River in Massena, St. Lawrence County, is being used to aid in habitat restoration for the waterway’s lake sturgeon, with the hopes of using acquired information for similar restorations elsewhere.

Information from REON sensors also is being used by members of the Hudson River Pilot’s Association.

“The data we use is from a meter maintained by the Beacon Institute in Albany,” said Capt. Scott Ireland of the Hudson

River Pilot’s Association. “The meter provides an accurate, almost real-time reading of both the speed and the direction of the current in the sampled water column.”

Ireland said the association’s pilots routinely dock and undock ships of varying sizes in the Port of Albany, including many spanning as much as 650 feet long and 30 feet deep in draft.

“Maneuvering ships of that size in the relatively tight confines of a narrow channel requires, among other things, a reliable prediction/observation of the speed and direction of the river’s current,” Ireland said. “The Beacon meter is a great tool that we have recently begun to recognize and use as another aid to safely handle these large vessels.”

Ireland believes the data will become more useful over time, especially as awareness of its availability spread throughout the marine community.

“I’m a huge advocate of the work Beacon and other groups are doing,” he said. “I suspect, though, that these groups focus on the academic benefits of their work and, through no fault of their own, simply may not realize the value of their product out in the real world of shipping and marine transportation. That will change as more and more mariners who work on the Hudson become aware of the availability of the data.”

Platz said traditional monitoring of waterways involves having people go out and collect water samples in a tube for laboratory testing, with results days later. But because the data is collected intermittently and takes days to assess, important occurrences in the water could be missed.

“As a globe, we’ve hit the wall with water and the only way around it is through innovation,” said Beacon Institute president and CEO Timothy F. Sugrue. “Our thinking about water requires nothing short of a new paradigm and Beacon Institute’s work to make sensor technology and real-time data the standard for protecting the environment, we believe, is the fast track to change.”

Karen Maserjian Shan is a freelance writer: mkshan@optonline.net

A LOOK AT OUR CHANGING ENVIRONMENT



Alternatives to road salt should be explored

By the looks of it, we’re in for quite a winter this year. Here in the Northeast, we’ve seen several heavy snowfalls, freezing temperatures and icy roads.

Of course, where there’s snow and ice, salt trucks are not far behind, liberally coating roads and bridges to make travel safer. But with billions of pounds of salt dumped on our roads each year, where does it all go?

Researchers have found that, thanks to road salt, many of our nation’s streams and rivers have become salty — and they stay that way for most of the year. This spells trouble for freshwater creatures. In some rivers, sodium chloride levels have risen to as much 15 times the federal level set to protect fish and amphibians.

And the salt that aids our morning commute can easily enter groundwater and contaminate our drinking supply.

“There are occasionally direct, toxic effects if concentrations are high enough — and they have to be quite high — but if they are high enough, the salt levels will cause direct mortality to certain organisms. What’s a little more common and concerning is what is known as the chronic effects. So it’s longer term exposure to lower concentrations. And concentrations that are as low as say 1 percent of seawater, over a sufficiently long time or at certain times of the year, will have negative effects on many organisms,” said Stuart Findlay, Ph.D., a freshwater scientist at the Cary Institute.

Safe roads save lives. But for the long-term health of our freshwater supplies, de-icing alternatives should be carefully explored.

“Earth Wise” is heard on WAMC Northeast Public Radio and is supported by the Cary Institute.

Researchers have found that, thanks to road salt, many of our nation’s streams and rivers have become salty ... This spells trouble for freshwater creatures.

Ferro

Continued from Page 1G

College’s farm and ecological preserve in Poughkeepsie.

The program is open to landowners in Ulster County and much of Dutchess County.

Plantings are composed of 60 percent shrubs and 40 percent trees. Native species are selected based on availability and conditions.

The program gives preference to the following sites:

» Local nonprofit watershed groups, land trusts and other environ-

mental organizations.

» Sites located in high-profile, public or highly visible areas, such as town parks.

» Sites where groups agree to assist with the vegetation monitoring of their buffer planting.

» Sites owned by applicants who are able to recruit adequate numbers of volunteers to assist on the day of a planting. Typically, 10 volunteers are needed for every 100 plants.

The Vassar College planting was performed by volunteers from the college and from the Student Conservation Association, a nonprofit environmental services

TREES FOR TRIBS

For further information about the program, including project applications and fact sheets, visit the DEC website, www.dec.ny.gov/lands/43668.html or contact the Hudson River Estuary Program’s Stream Buffer Coordinator Beth Roessler at 845-256-2253 or baroessl@gw.dec.state.ny.us.

organization with chapters around the country.

Landowners who take part in the program must agree not to cut, remove, mow or otherwise disturb the vegetation. In times of drought, newly planted trees and shrubs must be watered.

So if you like healthy streams, or appreciate volunteering, consider

taking part in the “Trees for Tribs” program.

Your watershed will be grateful you did.

“Out There” appears every other week in My Valley. Reach John Ferro at 845-437-4816; jferro@poughkeepsiejournal.com; Twitter: @PoJoEnviro

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