

Bi-weekly Wetland and Stream Corridor Restoration Update

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Welcome to the Bi-weekly Wetland and Stream Corridor Restoration Update. This Web site

- Provides current information on wetland and river corridor restoration projects
- Recognizes outstanding restoration projects
- Offers a forum for information sharing

We welcome the submission of articles and announcements related to your restoration project. Just send your write-up to EPA's contractor at restorationupdate@tetrattech-ffx.com or mail it to Rebecca Schmidt, Bi-weekly Restoration Update Coordinator, Tetra Tech, Inc., 10306 Eaton Place, Suite 340, Fairfax, VA 22030. We will carefully consider your submission for inclusion in a future update. If your submission is selected, please note that it might be edited for length or style before being posted. Because this Web site is meant to be a public forum on restoration information, we cannot post any information that is copyrighted or information that advocates or lobbies for any political, business, or commercial purposes or has the appearance of doing so.

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Feature Article

Award-Winning Lakescaping Buffers Reduce Polluted Runoff

A Minnesota town is being recognized for implementing a riparian restoration project that is turning people's heads while reducing nonpoint source pollution. In September 2002 the Minnesota Department of Natural Resources (DNR) awarded the city of Glenwood with the first annual Community Lakescaping Shoreline Stewardship Award. Glenwood is being recognized for planting a native wildflower riparian buffer to reduce the effects of soil erosion and the effects of pesticide and fertilizer runoff from the city's Barsness Park into Lake Minnewaska.

Glenwood's effort promises to become a model for communities throughout Minnesota, according to Carrol Henderson, the DNR's Nongame Wildlife Program supervisor. "An increasing number of citizens and lakeshore homeowners wish to protect lakes like Minnewaska from siltation and from runoff of lawn fertilizers and herbicides used in traditional lawn management," Henderson said. "They understand that important fish and wildlife habitat is destroyed and water quality is degraded when natural shorelines are replaced with sod."

Over the past 2 years, Glenwood and the DNR have been involved in a cooperative project to create a native wildflower buffer zone along the creek that flows through Barsness Park into Lake Minnewaska. Funding for this 10-year project has been provided through a 3 to 1 cost-sharing initiative from the Legislative Commission on Minnesota Resources grant from the state's Environmental Trust Fund.

The concepts used to design and install this native plant buffer zone from the DNR book *Lakescaping for Wildlife and Water Quality* (available for \$19.95 on www.amazon.com). Minnesota's natural shoreland management initiative—known as "lakescaping"—has become nationally recognized for setting a new standard for dealing with life at the water's edge in a way that is ecologically compatible with both recreation and water quality expectations.

The Glenwood DNR Fisheries Office has worked with the city of Glenwood to help install native wildflowers along the creek. These plants, which originally occurred in the Glenwood area, typically have deep root systems that hold the stream bank soil during periods of high rainfall, in contrast to bluegrass, which has shallow root systems and washes out during heavy rains. The buffer zone occupied by the wildflowers also reduces the total amount of lawn area that needs to be treated with fertilizer or

other lawn chemicals. Many of the plants have been specifically selected because of their additional value as nectar sources for butterflies and hummingbirds.

“The Glenwood project is especially progressive because, over the past several decades, many urban park managers have removed virtually all natural habitats from public park lands and replaced them with expansive lawns and a sterilized, turf-dominated environment that contributes greatly to degraded water quality and accelerated soil erosion in area lakes and streams,” Henderson said.

“Glenwood has broken with that approach and has set an example in which the lawns and ballfields are still provided in a high-quality setting but they are enhanced by ecological buffer zones at the edge of the stream in Barsness Park,” Henderson said. “The buffers provide both the park recreation that people enjoy and the water quality protection for Lake Minnewaska that people expect and deserve.” A press release about the award is available at www.dnr.state.mn.us/news/releases/index.html?id=1031688783. For more information about Glenwood’s efforts to clean up Lake Minnewaska, see www.curemnriver.org/news2.htm. For more information about the lakescaping being implemented throughout Minnesota, see www.dnr.state.mn.us/fwt/back_issues/november00/article2.html.

If you’d like your project to appear as our next featured article, e-mail a short description to restorationupdate@tetrattech-ffx.com.

Five-Star Restoration Projects Update

The goal of EPA’s Five-Star Restoration Program is to bring together citizen groups, corporations, youth conservation corps, students, landowners, and government agencies to undertake projects that restore streambanks and wetlands. The program provides challenge grants, technical support, and peer information exchange to enable community-based restoration projects. A few Five-Star Restoration projects are being revisited to see if the modest amount of funding (between \$5,000 and \$20,000) has helped the local restoration partners achieve their goals.

Project Title: White River Riparian Restoration
Five-Star Grant: \$9,960
Grant to: Indiana University, Research and Sponsored Programs
Location: Indianapolis, Indiana
Grant Year: 2000

Original Project Description:

In downtown Indianapolis, Indiana University/Purdue University (IUPU) will restore native plant communities along 8½ acres of the White River and create an outdoor classroom to complete the last key component of a conservation corridor through Marion County. Project partners, including the Indiana Department of Environmental Management, the City of Indianapolis Department of Public Works, and others, will work with local students and community members in the planting, maintenance, and

monitoring of the project. Teacher workshops will be held to promote the integration of conservation education and experiential learning into middle and high school curricula.

Project Update:

Nature has once again taken control of the White River restoration site. Trees have been planted, and wildlife is moving back into the area. Restoration volunteers planted 12 species of trees on the 8½-acre restoration site, which lies along a ½-mile section of the White River in downtown Indianapolis. The restoration team used three different restoration planting strategies—(1) planting containerized trees, (2) planting bare root whips, and (3) planting bare root whips and implementing weed control strategies. The team planted a total of 1,332 trees.

The restoration team encountered multiple challenges throughout the course of the planting project. One main challenge was vine control and removal. A broadleaf herbicide rated for use at aquatic sites was applied to portions of the restoration site before the plantings to reduce the growth of vines and grasses and give small trees an opportunity to establish themselves. Some sections of the restoration area were left untreated, and the results of the treated and untreated areas were compared. After a year of growth, the untreated areas consisted of mostly grasses that did not disrupt sapling growth, while the treated areas were recolonized with a variety of viney species that grew over the small trees and competed with them for light and nutrients.

A second unexpected challenge for the newly planted trees was an unusually dry spring. Several areas of trees wilted and lost their leaves, but later in the summer when the rains returned the trees seemed to recover on their own.

In spring 2001, after a year of monitoring, the containerized trees were growing well. Of the 420 trees planted using this method, only 3 did not survive: one young ash was lost to a large log that snapped it off in a flood event in April 2001, and two cottonwood saplings fell prey to moles. Either deer or rodents found other young trees to feed on over the winter, but it looks as if they will survive. Additional monitoring revealed an 80 percent survival rate for the bare root whip plantings.

The site exhibits an abundance of wildlife. Volunteer monitoring efforts have recorded 15 species of butterflies, 23 species of birds, 3 species of turtles, and 1 bullfrog at the site. Continued monitoring programs are under way for butterflies, birds, dragonflies, reptiles, and amphibians.

Throughout the planting phase of the site and in the current monitoring phase, a variety of community members have been involved in the project. IUPU students, local high school and middle school students, and corporate and community volunteers have conducted the restoration planting and monitoring. In addition, the project Web site (www.cees.iupui.edu/ARBOR) contains a teacher resource section from which area teachers can download restoration-related presentations and workshops. IUPU also produces periodic reports on the progress of the restoration site, maintains the web site, and gives presentations about the status of the restoration project at conferences throughout the United States. **[Updated May 2002.]**

Project Title: Johnson School/Round Grove Park Wetlands Restoration Project
Five-Star Grant: \$10,000
Grant to: The Conservation Foundation
Location: Warrenville, Illinois
Grant Year: 1999

Original Project Description:

The Conservation Foundation will restore a degraded wetland at the Johnson School in Warrenville, Illinois, to create an outdoor wetland education laboratory. Students will help restore the wetland and continue to monitor their work through science classes. Project partners also include the City of Warrenville, DuPage County, state and federal agencies, the Johnson School Parent-Teacher Association, and the Summerlakes Homeowner Association.

Project Update:

The project was officially renamed the Ferry Creek Wetland Restoration Project. The Conservation Foundation, working with the Warrenville Park District, restored 7 acres of wetland that had previously been filled. The wetland is adjacent to Ferry Creek and Johnson Elementary School, which has been active in planting prairie plants in the upland around the restored wetland. The school is incorporating the site into the fourth and fifth grade science curriculum. Local Boy Scouts and the Kiwanis participated in brush removal, building nesting boxes, and building an overlook deck.

Additional funds have been acquired to complete a path around the wetland to facilitate educational and recreational activities.

Overall, the project was successful. It will add a great amenity to the local community and benefit the ecosystem. Project partners included The Conservation Foundation, Warrenville Park District, City of Warrenville, Johnson School PTA, Warrenville Kiwanis, Illinois Department of Natural Resources, U.S. Environmental Protection Agency, and U.S. Fish and Wildlife Service. **[Updated May 2002.]**

For more information on EPA's Five-Star grant program, visit www.epa.gov/owow/wetlands/restore/5star.

Community-Based Restoration Partnerships

The Trout Are Back in Woodiebrook

Local efforts to restore the fishery in an Ohio stream have paid off. Woodiebrook stream, located in Geauga County, was one of the few streams in the state that supported reproducing native brook trout populations prior to the mid-1800s. Beginning in the 1800s landowners made drastic changes to the watershed, including impounding one tributary and channelizing the mainstem. The activities associated with constructing the dam, levees, and lake destabilized the stream, leading to continuous downstream

braiding of the mainstem. These changes also reduced flow volumes and increased water temperatures. All of these factors caused a loss of in-stream habitat and riparian values—leaving Woodiebrook no longer able to support this rare and important fishery.

In 2001 Chagrin River Land Conservancy and Oxbow River & Stream Restoration, Inc., restored Woodiebrook using holistic ecosystem restoration and adaptive management. To begin the process the partners used historical aerial photos, several reference reaches, and empirical data as guides to channel location, dimension, and pattern. They then removed the levees and dam and restored the valley and stream channels to estimated pre-disturbance pattern, profile, and dimensions. They constructed more than 3,200 feet of channels, including riffles and pools. To ensure a healthy fishery, the partners designed and incorporated fishery habitat requirements such as interstitial and groundwater flows, depth and flow heterogeneity, undercut banks, riparian plantings, and overhanging vegetation. This effort provided the necessary habitat to reintroduce and immediately support the trout fishery. The project was completed in spring 2002 at a cost of \$167,000. For more information, and for photos of the restored area, see www.ag.ohio-state.edu/~streams/restore/woodiebrook/woodiebrook.html.

Mangroves Brought Back to a Florida Lagoon

The Indian River Lagoon gets a lot of help from its friends. The Marine Resources Council of East Florida (MRC), along with many other organizations and countless volunteers, continuously work to restore the health of the lagoon. The 156-mile-long Indian River Lagoon is on the east coast of central Florida. The lagoon is an estuary where saltwater from the sea mixes with freshwater from inland water bodies. With 4,315 different plant and animal species, the Indian River Lagoon system contains more species than any other estuary in North America. Preserving and protecting this resource requires continuous efforts to remove invasive plants and restore native vegetation.

Since 1992 the MRC has worked with volunteers, schools, and organizations to remove the Brazilian pepper tree from nearly 6 miles along the Indian River Lagoon's shorelines. The Brazilian pepper was introduced in Florida in the 1840s as a decorative tree. Since that time, the trees have taken over much of the land that was home to many native species. The Brazilian pepper has waged biological warfare on many local trees with the toxins in its leaves. It has also outcompeted and, in many cases, crowded out native vegetation such as mangrove, oaks, wax myrtle, palmettos, and pines that serve as habitat for birds, butterflies, and other wildlife.

Once the MRC removes the peppers, they often replace them with red mangroves (*Rhizophora mangle*), one of Florida's true native trees. Red mangroves can make their homes in the salty waters of lagoons because they can take up the salty water and secrete the unneeded salt through their leaves. The mangrove also stabilizes shoreline by creating a sand trap in its roots, and it provides the food base for almost every species that lives in the lagoon as well as in the ocean.

To fight the encroachment of the pepper tree, the MRC hosts "Pepper Busts and Mangrove Planting" events almost every weekend. To support these frequent events, MRC trains site captains to identify and properly remove Brazilian pepper trees and supervise volunteers. MRC works with schools to collect mangroves seeds, develop mangrove nurseries, and plant mangrove saplings in cleared areas.

MRC often works with other local groups to host big restoration events. In May 2002, for example, 124 volunteers in the Palm Bay, Florida, area participated in the second annual Bay Day. Bay Day was hosted by the Bayfront Redevelopment Agency in Palm Bay, in cooperation with the MRC and other local groups. The volunteers helped to remove invasive species and revegetate the shoreline with native species in the Palm Bay area of the Indian River Lagoon. To learn more about MRC's programs, check the MRC Web site (<http://home.earthlink.net/~jimmrc/>) or call 321-504-4500.

If you are part of an innovative community-based partnership that is working to restore river corridors or wetlands, we'd like to hear from you. Please send a short description of your partnership to restorationupdate@tetrattech-ffx.com.

Achieving Restoration Results

Ecosystem Approach Helps Chesapeake Bay Program Make Restoration Progress

Since 1983 the Chesapeake Bay Program has worked with federal, state, and local governments; industry; farmers; environmentalists; conservation associations; citizen groups; and interested individuals to restore the bay's water quality by reducing pollution.

With the signing of the new bay agreement, Chesapeake 2000, Bay Program partners have gained a powerful new tool to further the restoration effort. Chesapeake 2000 moves beyond traditional restoration strategies that focus on individual species and habitats that require specific attention, such as the blue crab, oyster reefs, and shad. The new agreement works on recognizing the intimate linkages among systems and managing them as interdependent species that compose the bay's food web. Chesapeake 2000 also expands the scope of earlier agreements by recognizing the vital importance of educating young people and adults in the watershed and by increasing opportunities for active community engagement in restoring and protecting the Chesapeake Bay.

This year's *State of the Bay Report*, a yearly report released by the Chesapeake Bay Program that tracks the progress of restoration activities, demonstrates areas where progress has been made.

Accomplishments have been made in the following areas:

- **Underwater Bay Grasses:** The total acreage of bay grasses has increased since the low point of 38,000 acres in 1984 to more than 69,000 acres in 2000. The Bay Program's aim is to achieve 114,000 acres by 2005.
- **Nutrient Progress:** A recent analysis revealed that between 1985 and 2000, phosphorus loads delivered to the bay from all tributaries declined by 8 million pounds per year. Nitrogen loads declined 53 million pounds per year. Despite these efforts, the nitrogen reductions fell short of the 2000 goal by 24 million pounds per year and phosphorus reductions fell short by 2.3 million pounds.

- Fish Passages: In 2000 and 2001 an additional 87 miles of waterways in the bay watershed were reopened to migratory fish.
- Waterfowl: Data released in June 2001 show an increase in several species of waterfowl living in the Chesapeake Bay watershed, with 12 of 21 monitored species or species groups meeting year 2000 population goals.
- Riparian Forest Buffers: In 2001, 628.5 miles of riparian forest buffers were planted in the Chesapeake Bay watershed, including 255 miles in Maryland, 266 miles in Pennsylvania, 102.5 miles in Virginia and 5 miles on federal lands. These buffers total 1,298 miles, or 65 percent of the Bay Program partners' goal of restoring 2,010 miles of streamside buffers in the watershed by 2010.

The Chesapeake Bay Program is encouraged by these achievements but recognizes that much remains to be done. The Chesapeake 2000 program has created a useful road map for current efforts and the next generation of issues. With continued interest and cooperation from both public and private interests, the program will continue to work toward restoration success in the future. For more information about restoration projects benefitting the Chesapeake Bay, visit www.chesapeakebay.net. To download a copy of the *Restoration Report*, visit www.chesapeakebay.net/press.htm.

Habitat Restored in Maryland's Otter Creek

Working with the Chesapeake Bay Foundation, National Ocean Service volunteers recently waded into Maryland's Otter Point Creek to plant wild celery (*Vallisneria americana*), a local bay grass. Organized to help restore habitat in the Chesapeake Bay National Estuarine Reserve and Research Site, the planting had helping hands from the National Oceanic and Atmospheric Administration's (NOAA) Office of Special Projects, Office of Response and Restoration, and Center for Operational Oceanographic Products and Services. Plants were grown in special tanks at the NOAA facility in Silver Spring, Maryland, and nurtured by staff to maturity, a 15-week growth process.

Twenty volunteers carried trays of grass to the site, and then one person held the tray down while two others broke the clump free from beneath the tray. The grass was then tucked into mud and sediment. The process immersed everyone in waist-deep, sometimes neck-deep, water.

Since 1972 the National Estuarine Reserve and Research initiative has established more than 1 million acres in federal coastal reserve. In Maryland the reserve is administered by NOAA and managed by the Maryland Department of Natural Resources in cooperation with local agencies and landowners. For more information see www.accessnoaa.noaa.gov/otter.html.

If you are part of an innovative restoration project that has had positive results, we'd like to hear from you. Please send a short description of your project to restorationupdate@tetrattech-ffx.com.

Funding for Restoration Projects

Massachusetts Watershed Initiative Grants

The request for responses for the new Massachusetts Watershed Initiative (MWI) Grants program is out. Land trusts and watershed associations are specifically mentioned as eligible grant recipients. Grant awards of up to \$25,000 are available with a required minimum 25 percent cash or in-kind match. Eligible activities include projects that tangibly advance river, stream, or watershed protection, restoration, or enhancement—such as riparian land acquisition, water supply watershed and aquifer protection, or enhanced public access along waterways consistent with resource protection. Public monies awarded under this grant cannot be used for legal services, litigation, lobbying, or political advocacy work. Completed applications to the MWI grants program are due Tuesday, November 26. Complete information about the MWI grants program has been posted on-line at www.comm-pass.com/Comm-PASS/Scripts/xdoc_view.idc?doc_id=014171&dept_doce=ENV&cp_xx= and <ftp://ftp.comm-pass.com/Data/0141710001.pdf>.

Watershed Restoration Grants from the Bonneville Environmental Foundation

The Bonneville Environmental Foundation (BEF) is committed to restoring ecological integrity and native fish populations in watersheds across the Pacific Northwest. Through its grant program BEF supports comprehensive, long-term, and science-based watershed restoration initiatives in Oregon, Washington, Idaho, and Montana. Funded project must have the potential to restore watershed health and conserve or recover depressed stocks of native salmon and trout. BEF's Model Watershed Program provides financial and scientific support to structure, develop, and sustain 10-year restoration and monitoring programs in selected priority watersheds. For more information visit BEF's Web site (www.b-e-f.org/grants/logistics.shtm). To begin the application process, contact BEF's Watershed Program Officer at 503-248-1905 or e-mail watersheds@b-e-f.org.

Please send any news you have on funding mechanisms available to local community organizations to restorationupdate@tetrattech-ffx.com.

News and Announcements

Minnesota DNR Unveils Tool to Help Protect Natural Areas in the Twin Cities

On October 10, 2002, the Minnesota Department of Natural Resources unveiled a new tool aimed at helping local and regional government make better land use decisions. The DNR Metro Natural Resource Assessment identifies significant natural resource areas in the seven-county Twin Cities region: large patches of forest, wetlands, and grasslands, or smaller parcels that contain rare species. Such areas could be priorities for protection as the region faces intense development pressures. DNR regional planner Sharon Pfeifer said, "With a half-million new metro households expected in the next 30 years, this natural resource assessment is clearly needed in order to balance growth with conservation."

The assessment uses geographic information system (GIS) technology and a variety of existing data layers to create a map that identifies approximately 230,000 acres of regionally significant terrestrial and wetland areas (about 12 percent of the total acreage in the seven-county Metro area). Only about 37 percent of these areas currently have any level of protection within regional park reserves, Scientific and Natural Areas, and the like. “With the Met Council now revising its blueprint for the region’s growth, this is a particularly apt time for this information to become available,” Pfeifer said. “It offers the Council and local units of government much better guidance on land use and conservation decisions and investments.”

More information on the DNR Metro Natural Resource Assessment, including a preliminary map of regionally significant natural resource areas, can be accessed on the DNR Web site at www.dnr.state.mn.us/greenways/nra/index.html. To view the original press release, see www.dnr.state.mn.us/news/releases/index.html?id=1033591487. For more information, contact Sharon Pfeifer, DNR regional planner, 651-772-7982.

Audubon Arkansas to Restore Fourche Creek Bottomlands

With the support of nearly a dozen partner organizations from around the state, Audubon Arkansas is beginning a multiyear project to restore the habitat of the Fourche Creek bottomlands. The 6,000 acres of bottomlands are at the south end of Little Rock, Arkansas, and provide a drainage basin for 98 percent of the city. Among the many benefits of Audubon’s restoration work will be cleaner air and water for the region, increased recreation opportunities along the watershed, and educational programming.

“This is an unparalleled project in both the state of Arkansas and the city of Little Rock,” said Ken Smith, executive director of Audubon Arkansas. “As the largest urban watershed rehabilitation ever undertaken in the state, the Fourche Creek Restoration and Education Project is an important investment in both the people and the wildlife of Arkansas. The benefits of the project will extend well beyond the city limits and will be experienced for years to come. We are grateful for the generosity of our many partners in making this project possible.”

EPA awarded a \$265,000 federal grant to Audubon Arkansas to launch the project. The Arkansas Soil and Water Conservation Commission will administer the grant, which went into effect July 1, 2002, on the local level. In addition to the EPA grant, Audubon Arkansas has received commitments for donated services totaling \$700,000 of the project costs, including pledges from the Arkansas Department of Environmental Quality, the Arkansas Forestry Commission, the Arkansas Canoe Club, Little Rock Public Works, and Little Rock Parks and Recreation.

“The Fourche Creek project not only will improve the environment but also will provide new conservation education opportunities for all Arkansans,” said Gov. Mike Huckabee. “This is an excellent example of what happens when state, federal, and local government agencies work closely with the private sector. This project will not only benefit those of us who enjoy the Fourche Creek area now; it also will benefit future generations in our state. This is one of the most exciting urban watershed projects in the country. I’m proud we’re doing it here in Little Rock.”

To implement the project, Audubon Arkansas is leasing 2,000 acres of stream and wetland habitat from the city to be used for conservation and education programs. Audubon will comanage the site with Little Rock Parks and Recreation and will partner with federal and state agencies, private companies, educators, nonprofits, and the public to carry out the projects.

The plan for the Fourche Creek Restoration Project focuses on three main conservation components: identification of baseline data, such as water quality and sites in need of work; pollution reduction; and revitalization of wetland function through reforestation and stream bank restoration.

Education will also play a major role in the restoration work. Each of the conservation initiatives will include on-site environmental education programs for youths and young adults. Audubon will work with over 30 schools within the Fourche Creek area to provide real-world experience in the conservation arena. Among the partner schools will be the University of Arkansas at Little Rock, and Philander Smith College, Little Rock's historically African-American university. Audubon has established 11 internships for local university students within the Fourche Creek project. Through the project interns will learn job skills and benefit from training provided by state and federal environmental experts.

Additionally, in order to continue serving the environmental education needs of the community for decades to come, Audubon will begin construction in 2005 on a new nature education center in the community of Granite Mountain, adjacent to the Fourche.

The Fourche Creek watershed spans 108,000 acres, roughly 6,000 of which are located within the city limits of Little Rock. The watershed is home to hundreds of plant and animal species, including many types of birds such as herons, owls, warblers, and ducks. To read the original press release, see www.freelists.org/archives/audubon-news/08-2002/fullthread2.html.

Staten Island Awarded Wildlife-friendly Agriculture Grant

Ducks Unlimited, Inc., received a \$1.5 million demonstration grant to enhance wildlife-friendly agriculture on Staten Island. The 9,200-acre island in the San Joaquin-Sacramento Delta attracts an abundance of sandhill cranes and wintering waterfowl.

The CALFED Bay-Delta grant will be used to construct interior levees and install a high-volume pump. The enhanced water management capabilities will improve water quality throughout the island. The Nature Conservancy acquired Staten Island in 2001 using funds supplied by CALFED and the Department of Water Resources.

The grant was announced at ceremonies held atop the Staten Island levee. "Ducks Unlimited is delighted to have this opportunity to support and improve wildlife-friendly agriculture and at the same time sustain the at-risk greater sandhill crane population and wintering waterfowl," said Valley/Bay CARE Initiative Director Ryan Broddrick.

Broddrick added that the \$1.5 million CALFED Bay-Delta grant will allow Ducks Unlimited to construct low interior cross levees and install a high-volume discharge pump to improve overall water quality

management on Staten Island. These improvements will allow the preserve to increase the quality, quantity, and duration of flooded habitat, benefitting cranes, pintails, and other waterfowl.

“There are few places in the delta where we have an opportunity on a large scale to both enhance wintering waterfowl habitat and demonstrate its compatibility with sustainable agriculture,” Broddrick said. “Also, as this management plan evolves, it is important to note that historic levels of waterfowl hunting also will be accommodated.” Staten Island, he noted, as part of the Cosumnes River Preserve, provides a critical link to the Phil and Marilyn Isenberg Sandhill Crane Reserve and Stone Lakes National Wildlife Refuge.

“This is another great example of our partnership working together and utilizing the best skills of each partner to help accomplish a key management objective for the Cosumnes River Preserve,” said Bureau of Land Management Cosumnes River Preserve manager Rick Cooper.

“The Nature Conservancy is delighted to have CALFED’s support for these partnership activities on Staten Island,” said Mike Eaton, Delta Project Director.

“The work will yield tangible and lasting benefits for Sandhill cranes, waterfowl, and the Staten farming operation,” said CALFED Director Patrick Wright. “The partnership demonstrates the commitment to wildlife-friendly agriculture as a key element of our ecosystem restoration program.”

For more information, visit Ducks Unlimited’s Web site at www.ducks.org. This news article was excerpted from Ducks Unlimited Valley Bay CARE, Summer/Fall 2002.

Upcoming Conferences and Events

New Listings

2003 American Wetlands Campaign

Bogs, Playas, and Pools: Protect America’s Unique Wetlands

May 1–4, 2003

Minneapolis, Minnesota

The biennial American Wetlands Conference is a national training and networking opportunity for wetland stewards. The purpose of the conference is to educate and inspire people to initiate and sustain on-the-ground wetland conservation and education projects. This year the conference will include three tracks: education and outreach, wetland science, and wetland conservation policy. In addition to obtaining information on wetland issues, participants will receive training to further wetland conservation and education activities. The conference will also include sessions related to the 2003 American Wetlands Campaign theme—“Bogs, Playas, Pools: Protect America’s Unique Wetlands.” Each participant will be asked to conduct at least one wetland conservation or education project in the year following the conference. The Isaac Walton League will provide follow-up assistance. The conference is

targeted to volunteer and professional wetland stewards, including volunteers, landowners, members and staff of nonprofit organizations, students and educators, government agency staff, business professionals, and anyone else interested in coordinating or participating in wetlands conservation and education. For more information, visit www.iwla.org/sos/awm/conference.

Previous Listings

Stream, Floodplain, and Wetland Restoration Workshop: Stream Stability and Natural Channel Design Concepts in Watershed and Source Water Management

November 12–14, 2002

Bear Mountain, New York

This workshop is designed to promote and build the capabilities of local governments, states, federal agencies, nonprofits, and others in the Mid-Atlantic and Northeast to use stream stability and natural channel design concepts in the management and restoration of streams, riverine wetlands, floodplains, and watersheds. Specific workshop goals include the following:

- Helping attendees understand river stability and natural channel design concepts and how these concepts can be integrated into stream, wetland, floodplain, source water, and watershed protection and restoration projects.
- Providing guidance on fluvial geomorphological concepts and natural channel design in the context of watershed problem prevention and problem solving.
- Helping attendees understand how to initiate, plan, fund, and implement a stream, floodplain, or riverine wetland restoration project.
- Developing a Mid-Atlantic/Northeastern network of federal, state, and local agency staff, nonprofit groups, academics, consultants, and others interested in stream stability and natural channel design.

Workshop sponsors include EPA, the U.S. Department of Agriculture's Natural Resources Conservation Service, and the U.S. Fish and Wildlife Service. For more information, visit www.aswm.org/calendar/midatlantic02/index.htm.

Wildlife Habitat Council 14th Annual Symposium: Investing in Biodiversity

November 18–19, 2002

Baltimore, Maryland

This conference is designed to help explain the economic, social, and cultural effects of biodiversity conservation. The conference will offer an opportunity to learn from agency and private sector specialists, explore imaginative approaches, and envision new partnerships for integrating habitat

conservation strategies with concrete local actions. Presentations will address global biodiversity, ecological restoration, and environmental education for at-risk youth. In addition to the panel discussions, attendees will have the opportunity to attend one of five educational field trips, take part in a live-animal demonstration, and test their skills at the “Touch Table.” For more information visit www.wildlifehc.org/events/symposium.cfm or contact RCRA@wildlifehc.org; phone: 301-588-8994.

To post your restoration news and announcements, please send information to restorationupdate@tetrattech-ffx.com.

Restoration-Related Web Sites

www.epa.gov/watertrain/cwa

Introduction to the Clean Water Act. EPA’s on-line training program, Watershed Academy Web, has released a new training module that provides an overview of the Clean Water Act. The module focuses on a variety of regulatory and nonregulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. *This Web site provides a good overview of the regulatory background of watershed restoration.*

<http://ceres.ca.gov/foreststeward/html/financial.html>

The California Forest Stewardship Program Funding Database. The California Forest Stewardship Program is designed to encourage good stewardship of private forestland. The program provides technical and financial assistance to influence positive changes to forestland management, assists communities in solving common watershed problems, and helps landowners. The funding page lists state and federal programs, some of which address wetland or stream restoration issues. *This page lists funding programs for which proposals are being solicited.*

www.iwla.org/sos/awm/educatesurvey.asp

Wetland Education Survey. The Isaac Walton League is conducting an on-line survey about wetland stewardship. The League would like to help wetland stewards to be more effective in reaching the public with education and outreach tools. The survey is designed to help determine the types of tools and resources wetland stewards need to accomplish their outreach goals. The League will use information gathered through this survey to develop new wetland stewardship tools. *This Web site is designed to determine the resource needs of wetland stewards.*

www.soilandwater.co.stearns.mn.us/Water%20Resources%20Concerns/Lakescaping.htm

Stearns County Soil and Water Conservation District Lakescaping. This Minnesota Soil and Water Conservation District Web site describes lakescaping, the process of restoring (vegetating) a shoreline to correct an erosion problem or to improve the fisheries and water quality of the lake or river. This site offers before-and-after pictures of three completed lakescaping projects. *This site would be useful for someone seeking examples of restoration projects completed along a lakeshore.*

www.rivernetnetwork.org/library/libriviss_rvsp98ecol.cfm

Ecology of Natural Riparia. This River Network Web site offers an article by Dr. George Constantz, a water resources specialist with the Canaan Valley Institute, describing the components and benefits of riparian areas. This site also provides links to other resources provided by the River Network. *This site would be useful for someone looking for background information about riparian areas.*

www.geocities.com/RainForest/Vines/5262/index.html

Indiana Dunes Field Guide. This site describes the natural treasures available at the Indiana Dunes National Lakeshore and State Park, which include tallgrass prairie, sand prairie, sedge meadows, swamp, marsh, bog and fen, white and black oak savanna, rivers, and streams. Links are provided to one-page tours of Pinhook Bog, Miller Woods, and Inland Marsh. Each page offers background information about how each ecosystem formed and includes photos of typical wetland plants and animals found there. *This site would be useful for someone seeking information about wetland areas along the Indiana portion of Lake Michigan.*

<http://h2osparc.wq.ncsu.edu/info/wetlands/types3.html>

Types of Wetlands and Their Roles in the Watershed. This site is part of North Carolina State University's Water, Soil, Hydro-Environmental Decision Support System (WATERSHEDSS). It explores different types of wetlands and explains how wetlands are both a product of and an influence on watershed hydrology and water quality. The site includes information on precipitation-dominated wetlands (bogs, pocosins, vernal pools, playas, prairie potholes, wet meadows, and wet prairies); ground water-dominated wetlands (fens); and surface water-dominated wetlands (marshes, riparian forested wetlands, tidal freshwater marshes, and tidal salt marshes). *The site provides useful background information for anyone interested in wetlands and wetland restoration.*

www.wiscwetlands.org/restore.html

Wisconsin Wetlands Association—Restoring Wetlands. This site describes the wetland restoration resources available from the Wisconsin Wetlands Association (WWA), including books, workshops, and classroom materials. The site provides links to the WWA's advocacy and education programs, as well as to information on the types of wetlands found in Wisconsin. *This site provides useful wetland information and resources for anyone working with wetlands in the north central United States.*

www.aquatics.org

Aquatic Ecosystem Restoration Foundation (AERF). AERF is a nonprofit, tax-exempt corporation created to conduct and support applied research in the management of aquatic pest species, with a focus on nuisance vegetation. This site provides information on AERF's research on and support for the control of aquatic weed species and exotic plants such as Eurasian watermilfoil, hydrilla, water hyacinth, purple loosestrife, and other aquatic weeds found in lakes, ponds, reservoirs, rivers and streams. The site details AERF's ongoing research projects, provides extensive information about aquatic plant management, and includes links to a series of on-line aquatic plant management publications. *This site would be useful for anyone faced with nuisance aquatic weed problems.*

Let us know about your restoration-related Web site. Please send relevant URLs to restorationupdate@tetrattech-ffx.com.

Information Resources

Digital Field Trip to the Wetlands

by Digital Frog International

This interactive CD-ROM allows students to take a virtual reality trip through a wetland bog. The software and accompanying comprehensive notebook teach the principles of wetlands ecology and encourage an awareness of the importance of wetland conservation through animation, narration, games, text, and full-color photographs. The program is divided into five modules—Field Trip, The Bog Food Web, Wetland Types, Mechanisms of a Wetland, and Our Endangered Wetlands. The home versions are \$45; the education versions (with student/teacher workbook) are \$99. For more information, visit www.digitalfrog.com/products/wetlands.html.

Heroic Tales of Wetland Restoration

by The Wetlands Conservancy

The Wetlands Conservancy recently published *Heroic Tales of Wetland Restoration*, a 75-page collection of wetland restoration success stories. Twelve Oregon landowners relate the trials, tribulations, and successes that each experienced in conserving habitat. The stories offer examples of what worked and what didn't work when dealing with agencies, partners, and restoration and enhancement techniques, and how to keep things in perspective.

The publication also helps readers who are contemplating wetland restoration. It contains a yes-no flow chart to help them choose the best options, the benefits and drawbacks of various land conservation approaches, funding and technical assistance programs, descriptions of wetland restoration techniques, and the six most common hurdles and difficulties described by the landowners.

To order a copy (\$15.00), contact The Wetlands Conservancy, P.O. Box 1195, Tualatin, OR 97062. Phone: 503-691-1394; e-mail: info@wetlandsconservancy.org.

Tracking TMDLs: A Field Guide for Evaluating Proposed Watershed Restoration Plans

by Kari Dolan and Gayle Killam

River Network has developed a straightforward guide designed to give the information needed to review and comment on TMDL watershed cleanup plans. Step by step, readers can learn about the TMDL program and follow TMDL development on the imaginary Sique River. Opportunities for public input and participation come alive through questions readers can ask their state water quality agencies. Readers can learn tips on how to build community support and tap into local resources.

Hard copies of this 36-page publication are available to River Network partners for \$8. For all others the cost is \$10. The document can be downloaded for free at www.rivernetwork.org/marketplace/category.cfm?Category=6.

If you'd like to publicize the availability of relevant information resources, please send information to restorationupdate@tetrattech-ffx.com.