

Welcome to the Biweekly Restoration Information Update Page. This web site

- Provides current information on wetland and river corridor restoration projects
- Recognizes outstanding restoration projects
- Provides 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](mailto:restorationupdate@tetrattech-ffx.com) or mail it to Kathryn Phillips, Biweekly 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 serves or has the appearance to serve as advocating or lobbying for any political, business, or commercial purposes.*

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- [Restoration-Related Web Sites](#) - Check out other groups on the Web that are helping in the effort to restore wetlands and river corridors.
- [Information Resources](#) - Books, journals, fact sheets, videos, and other information resources to aid you in your restoration project are provided here.
- [Ask a Restoration Question](#) - Post your restoration related question. Answers will be provided by the EPA and Bi-Weekly readers.

## Feature Article

### **Louisiana Bayou Restoration Construction Project Now Complete**

NOAA's National Marine Fisheries Service and the Louisiana Department of Natural Resources (DNR) are celebrating the completion of the construction phase of the Black Bayou Hydrologic Restoration Project, a 25,530-acre wetland restoration project located in Cameron and Calcasieu parishes. This project represents the largest area of coastal wetlands constructed under the Coastal Wetlands Planning, Protection, and Restoration Act to date.

The Act, also known as the Breaux Act (named after Louisiana Senator John Breaux who sponsored it), is a 10-year-old campaign to protect and restore coastal natural resources. At the dedication ceremony in mid-December 2001, project directors recognized eight projects that have been completed during the past year. "The goal for the Black Bayou restoration and our other Breaux Act restoration projects is to protect and restore ecologically valuable areas of coastal Louisiana for the benefit of fisheries, marine habitat, and other important resources," said Scott

Gudes, National Oceanic and Atmospheric Administration (NOAA) deputy administrator. "We expect to apply what we're learning here to future projects."

The \$6.4 million Black Bayou project was designed to restore coastal marsh habitat and slow the loss of wetlands that were gradually turning into shallow open water within the project area.

Construction included restoring 22,800 linear feet of the southern bank of the Gulf Intracoastal Waterway, installing three rock weirs to reduce the size of manmade canals in the project area, and installing a state-of-the-art self-regulating tide gate. The self-regulating tide gate, built in California, has never before been used as a restoration technique in Louisiana. NOAA Fisheries believes it will achieve the dual objectives of protecting thousands of wetland acres while maintaining fisheries access to these very wetlands. If proven successful, the self-regulating tide gate could become widely used to preserve coastal Louisiana habitat.

Now that the construction phase is complete, NOAA Fisheries will continue to add wetland plants to the area. Over the next two years, NOAA Fisheries plans to spend a portion of the Black Bayou funds planting 55,000 wetland plants. Over the 20-year life of the project, experts expect an additional 1,800 acres of open water to convert back into marsh across the project area.

#### *Other Breaux Act Projects*

Breaux Act projects are implemented through agreements between federal project sponsors and the Louisiana DNR. Projects are selected and managed by the Coastal Wetlands Planning Protection and Restoration Act Task Force. The Task Force is a partnership among the U.S. Army Corps of Engineers, the U.S. Department of Commerce's NOAA Fisheries, the U.S. Environmental Protection Agency, the U.S. Department of Agriculture-Natural Resources Conservation Service, the U.S. Fish and Wildlife Service, and the Louisiana Governor's Office.

In addition to NOAA Fisheries' Black Bayou project, officials dedicated seven other projects. They are: the Highway 384 Hydrologic Restoration Project, the Perry Ridge Shore Protection Project, the GIWW-Perry Ridge West Bank Stabilization Project, the Plowed Terraces Demonstration Project, the Sweet Lake/Willow Lake Hydrologic Restoration Project completed by the Natural Resources Conservation Service, Replacing Sabine Refuge Water Control Structures at Headquarters Canal Project completed by the U.S. Fish and Wildlife Service, and the Sabine Refuge Marsh Creation Project, Increment 1, completed by the Army Corps of Engineers.

NOAA Fisheries is an agency within the Department of Commerce's National Oceanic and Atmospheric Administration. The agency conducts scientific research and provides services and products to support fisheries management, fisheries development, trade, and industry assistance, enforcement, and protected species and habitat conservation programs. For more information on Breaux Act projects, see <http://www.nmfs.noaa.gov/habitat/restoration/>.

If you would like your project to appear as our next Featured Article, e-mail a short description to [restorationupdate@tetratex-ffx.com](mailto:restorationupdate@tetratex-ffx.com).

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## **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: San Antonio Creek Riparian Restoration**

**Five Star Grant: \$8,000**

**Grant to: County of Santa Barbara, Parks Department**

**Project Location: Goleta, California**

The County of Santa Barbara Parks Department is working with the Santa Barbara Urban Creeks Council, Santa Barbara Audubon Society, University of California, and U.S. Fish and Wildlife Service to restore 1600 feet of the San Antonio Creek and 2½ acres of stream bank in a local suburban neighborhood. Sycamore and oak trees will be planted, invasive nonnative plants will be removed, a drip irrigation system will be installed, and educational signs will be placed in the

area with help from partners and community volunteers. The project will serve as a model for 50 local riparian and wetland restoration projects targeted for the South Coast of Santa Barbara County.

**Update:**

Under the supervision of the County of Santa Barbara Parks Department, project partners have devoted more than 90 on-site work hours toward removing weeds and exotic species. Working together, biology classes taught by Joel Grobert at Laguna Blanca Middle School in Santa Barbara and the Parks Department have cleared weeds from a 50-foot by 30-foot area. Area Boy Scout troops also have played a large role in restoring the project area. Local troops cleared a 20-foot by 20-foot patch of invasive vinca vine and weeded a 30-foot by 40-foot plot. To date project partners have succeeded in eliminating invasive species from 8,400 square feet of the project area and weeding some 2,700 square feet.

The project area will be revegetated according to the planting plan for native species developed for the Five-Star project. Donated live oak saplings and native seeds collected from the project area will assist with the revegetation plan. In addition, Laguna Blanca Middle School students completed a project in which they incubated willow cuttings to establish roots and then planted them throughout the restoration site.

Two nature walks led by a Park Department naturalist have highlighted the restoration project. Boy Scout troops and local residents learned about the importance of riparian ecosystems, the loss of biological functioning caused by creek fragmentation and invasion by exotic plant species, nonpoint source pollution, identification of native plants, and the benefits of habitat restoration to both native wildlife and people.

**Project Title: Central Lake Superior Watershed Partnership Youth Project**

**Five Star Grant: \$10,000**

**Grant to: Michigan Works! The Job Force Board**

**Project Location: Marquette, Michigan**

Michigan Works! The Job Force has partnered with the Central Lake Superior Watershed Partnership, Northern Michigan University, and the Marquette Community Foundation to support 12 family court youth to work on high-priority erosion sites in the Lake Superior Watershed. Erosion is noted as one of the major contributors of sediment, which is damaging fish habitat in the area. In addition to gaining experience in restoration activities, the youth will gain job skills training from student teachers at the University of Michigan. The overall project will provide at-risk youth and future teachers the opportunity to get involved with existing community efforts of the Central Lake Superior Watershed Partnership to improve local watershed conditions and protect Lake Superior.

**Update:**

The Salmon Trout River Sediment Control Project focused on preventing sediment from entering the Salmon Trout River by restoring two-track roads that were eroding. Restoration work was completed at nine sites throughout the watershed. Michigan Works!, in cooperation with the Central Lake Superior Watershed Partnership, organized a work crew of at-risk youth through a summer work program. The work crews, under supervision from Michigan Works!, constructed turnouts along the roadsides to redirect sediment-rich runoff and prevent it from flowing directly into the river. The youth also worked together to install filter fabric and rip-rap near the culverts at each of the nine restoration sites. An estimated 1,500 feet of stream have directly benefitted from the restoration efforts.

Project partners have worked diligently to promote their project. The project was featured locally on TV Channel 6 news and public radio station 90 in Marquette, Michigan, and in the Michigan Works newsletter, the Central Lake Superior Watershed Partnership Newsletter, and the Action Shopper newspaper. Nationally, the project was featured in Trout magazine (published by Trout Unlimited).

**Project Title: Wyndham Forest/Twin Hickory Riparian Forestation and Protection Project**

**Five Star Grant: \$9,000**

**Grant to: County of Henrico, Department of Public Works**

**Project Location: Henrico County, Virginia**

Henrico County will work with H.H. Hunt Corporation (a local developer), citizen groups, and local high school students to reforest a 2-acre riparian area in a new housing subdivision in the

Chickahominy River watershed. In addition to reforestation activities, a 100-foot buffer area along streams in the new development will be identified, protected, and marked as an Environmental Protection Zone by volunteers. H.H. Hunt Corporation will develop and distribute a brochure to educate new homeowners on the importance of maintaining stream banks as a natural buffer to pollutants that might otherwise enter local streams. This project will be used as a model for protection of forested areas along streams in new and existing developments. It also will serve as a model for citizen education on the importance and need for riparian restoration and protection in Henrico County.

**Update:**

Henrico County, H.H. Hunt Corporation, Alliance for the Chesapeake Bay, Williamsburg Environmental Group, Inc., and the Chesapeake Bay Local Assistance Department have worked together to designate the project site as an environmental protection area and plan a community planting day. Project volunteers posted signs to identify the site. H.H. Hunt, Alliance for the Chesapeake Bay, and the Chesapeake Bay Local Assistance Department worked together to recruit volunteers for the community planting day, which took place on March 24, 2001. About 20 volunteers from student groups, various schools, and the community joined to make the planting event a success. Volunteers planted native plants and vegetation to restore the riparian buffer on the project site. An additional planting day, held on May 3, 2001, was attended by eight student volunteers from Richmond Community High School, who worked together to plant trees along the riparian buffer.

As part of a community education effort, Williamsburg Environmental Group, Inc., developed educational material, including a flier that was distributed to area residents and a tri-fold brochure that is now available to the public. The Alliance for the Chesapeake Bay also worked to emphasize the importance of riparian buffers to local school groups.

For more information on EPA's Five-Star grant program, visit

<http://www.epa.gov/owow/wetlands/restore/5star/>.

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## Community-Based Restoration Partnerships

### Fixing a Different Type of Pothole

Delta Waterfowl, a joint U.S. and Canadian nonprofit organization, is working to protect prairie pothole habitat. Prairie potholes are shallow wetland depressions found throughout the farmland of the northern Midwest and into Canada. The Adopt-A-Pothole Program was established in 1991 to link interested waterfowl enthusiasts with prairie grain farmers, the landowners who are ultimately responsible for managing more than 90 percent of all breeding waterfowl habitat. Donors can Adopt-A-Pothole for \$125, or an entire complex of potholes for \$500. Donors receive a certificate of appreciation, a photo mosaic of the potholes typically adopted, the name and address of the landowner who owns the pothole(s), a window decal, and a one-year subscription to the Delta Waterfowl Report. Funds from the U.S. Fish and Wildlife Service (North American Wetlands Conservation Act), North Dakota Game and Fish, and North Dakota Wetlands Trust provide matching support for donations, effectively doubling donor contributions. Several Internet groups, including the Internet Waterfowl Association (<http://www.ducksndogs.com/>), Pothole Gang SPAV (<http://www.spav.com/>), the Refuge Gang (<http://www.duckhunter.net/>), and waterfowler.com, have generously donated to the Adopt-A-Pothole Program.

*How are the donated funds used?*

Landowners involved with Adopt-A-Pothole receive financial compensation and in turn accept a 10-year lease agreement not to clear, cultivate, drain, burn, spray, graze, or hay the uplands and wetlands within the contract area. Areas surrounding wetlands are planted to provide nesting cover for upland nesting ducks, including mallards, teal, pintail, gadwall, scaup, and shovelers. Delta also helps to restore previously drained wetlands that currently serve as only poor to marginal cropland. Delta offers the farmer a small financial incentive to convert these areas back to wetland habitat. "For a ten year lease, we pay \$27-\$30 per acre per year on cultivated land that has been converted to grassland," explained Jim Fisher of Delta Waterfowl. "For native uplands, such as those usually surrounding a wetland, we pay \$7 per acre. We have recently

changed our program to pay the farmers one-time up front payments that work out to be \$243 and \$59 for cultivated and native upland. For the actual wetlands themselves we do not pay anything for these ten year agreements as technically the government owns these lands." Beginning in 1999, Delta took this program one step further and began signing perpetual conservation easement agreements in Manitoba. For \$100 an acre of wetlands and their associated native uplands, Delta Waterfowl ensures lasting wetlands protection. Delta develops Adopt-A-Pothole contracts with landowners in several areas. "We have protected wetlands on about 150 farms in Manitoba and 100 in North Dakota," Fisher explained. "This resulted in the protection of a few thousand wetland acres. We have also done some work in Minnesota and South Dakota in the past ten years." The program suits most farm operations, because fields with potholes usually have some portion of marginally productive land. By putting marginal lands into permanent cover, the land is more suitably used, thereby reducing problems with soil salinity and erosion. For more information about the Adopt-A-Pothole Program, contact Jim Fisher at [jfisher@deltawaterfowl.org](mailto:jfisher@deltawaterfowl.org). For other information, contact Delta's U.S. office at Delta Waterfowl Foundation, P.O. Box 3128, Bismarck, ND 58502. Phone: 888-987-3695; E-mail: [usa@deltawaterfowl.org](mailto:usa@deltawaterfowl.org); Internet: <http://www.deltawaterfowl.org/>.

### **Friends of Five Creeks Work to Restore Urban Creeks**

Friends of Five Creeks is a group of volunteers who work together to protect and restore the aquatic and riparian habitat in five watersheds near San Francisco, California. The Friends focus their efforts on Codornices, Village, Marin, Middle (Blackberry), and Cerrito Creeks and their tributaries, which flow through the towns of North Berkeley, Albany, Kensington, El Cerrito, and Richmond, respectively.

Recently the Friends have focused on restoring Codornices and Cerrito Creeks. These creeks are somewhat unique because, unlike most area creeks, they have not been buried underground in culverts and can therefore support fish and wildlife populations. However, ongoing development in the area has reduced riparian shade along the creeks and increased the amount of polluted runoff the creeks receive, degrading water quality and reducing their available trout and frog habitat. In addition, valuable wetland habitat was lost as early as the mid-1900s as developers filled in much of the natural salt marshes located where the creeks flowed into San Francisco Bay.

Restoration efforts currently being tackled by the Friends along Codornices Creek include working with Magna/Golden Gate Fields Race Track to remove fill and restore salt marsh areas that once lay at the mouth of the creek. They are also planting trees in the creek's riparian zone, replacing culverts with bridged crossings, and removing retaining walls to increase fish and wildlife habitat along the length of the creek.

Similar efforts are taking place along Cerrito Creek. Although this creek is too warm for trout or salmon, it is home to a variety of smaller native fish such as the three-spined stickleback and Pacific chorus frogs. The Friends are working to increase the habitat for these creatures by planting native species along the banks of the creek and converting concrete-lined ponds into wetlands. To find out more about the ongoing work of the Friends of Five Creeks, visit their web site at <http://www.fivecreeks.org/>.

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](mailto:restorationupdate@tetrattech-ffx.com).

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## **Achieving Restoration Results**

### **Delaware Estuary Benefits from Special Permit Conditions**

Public Service Enterprise Group (PSEG), a group of energy-related businesses, is restoring wetlands in the Delaware Estuary through its Estuary Enhancement Program (EEP). The EEP was initiated in 1994 as part of the special conditions of Salem Generating Station's water discharge permit and is believed to be the largest privately funded wetlands restoration and improvement program in the country.

Through the EEP, PSEG is providing expanded habitat and food sources for fish, other aquatic species, and wildlife in the Delaware Estuary. The cornerstone of the EEP is the restoration, enhancement, and preservation of more than 20,000 acres (32 square miles) of degraded coastal wetlands and uplands along the Delaware Estuary in New Jersey and Delaware. These wetlands provide nursery, food, shelter, and habitat for many species of fish as well as other wildlife. At their Dennis Township Wetland Restoration Site, a 578-acre site located along the Delaware Bay in New Jersey's Cape May County, PSEG restored tidal flow to an area of mostly tidal marsh that was previously diked for farming. At their Cohansey River Watershed Wetland Restoration Site, located approximately 10 miles upstream from the Delaware Bay in New Jersey's Cumberland County, PSEG is controlling Phragmites, an invasive plant that has infested 1,055 acres and choked out more beneficial marsh plants. For more information about PSEG's restoration sites, see <http://www.pseg.com/companies/nuclear/estuary/>.

#### **Massachusetts Unites Corporations' Efforts to Restore Wetlands**

The Massachusetts Wetland Restoration Program created the Corporate Partnership to Restore Wetlands in May 1999. This first of its kind partnership encourages voluntary corporate participation in proactive wetland restoration. This partnership developed out of a state goal to achieve no net loss of wetlands in the short term and a net gain in the long term.

The partnership works by allowing corporations to make multiyear contributions to wetland restoration. Corporations can contribute either funds or in-kind services including help with project design, permitting, construction, or monitoring project needs. In return, the corporations receive public recognition for their participation in the program. Corporations further benefit from enhanced reputations as good neighbors within the community and from developing positive working relationships with agency officials and environmental leaders.

As of September 2001, the 24 partners have donated an estimated \$900,700 in funds and services. These funds have gone to support more than 21 projects, including the Charles River Watershed Restoration Planning Project, Neponset Marshes Restoration Project, Gulliver's Creek Restoration Project, and the Purple Loosestrife Biocontrol Project. Corporate sponsorship has also indirectly benefited these projects by making them priority projects for funding by the Coastal America Partners Program for wetland restoration. To learn more about the Massachusetts Corporate Partnership, visit the web site <http://www.state.ma.us/envir/mwrp/index.htm>.

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](mailto:restorationupdate@tetrattech-ffx.com).

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## **Funding for Restoration Projects**

### **New Listings:**

#### **Wisconsin Department of Natural Resources County Conservation Aids**

The Wisconsin Department of Natural Resources administers the County Conservation Aids Grant Program. Wisconsin projects related to providing improved fish or wildlife habitat are eligible to apply for this grant. Grants are awarded to county, local, and tribal governments and range from \$1,500 to \$3,000. A 50 percent cost-share match is required for the grant program. For more information, contact your regional community services specialist who can be found through the web site <http://www.dnr.state.wi.us/org/caer/cfa/BUREAU/programs.html#conaims>.

#### **The Conserving California Landscapes Initiatives (CCLI)**

The David and Lucile Packard Foundation created this 5-year \$175 million project to help conserve open space, farmland, and critical natural areas in the Central Coast, Central Valley, and Sierra Nevada regions of California. The foundation supports various types of conservation efforts including the restoration of lands and aquatic resources. Restoration grants focus on projects that ensure the long-term stewardship of important areas and advance the science of ecosystem restoration. Applications are accepted on an ongoing basis. For more information about the grant program and to download the application form, visit <http://www.projectzero.com/ccli/aboutus.html>.

Please send any news you have on funding mechanisms available to local community organizations to [restorationupdate@tetrattech-ffx.com](mailto:restorationupdate@tetrattech-ffx.com).

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## News and Announcements

### **EPA Sponsors Wetland Photo Contest**

EPA is sponsoring a Wetland Photo Contest focusing on images that show the functions and values of wetlands. EPA is seeking high quality photographs of wetlands in different regions of the United States and at different seasons of the year. The winning photographs will be displayed at the National Wetland Awards ceremony in Washington, D.C. in May 2002 and will be used in an EPA wetland poster and publication.

### **President Bush and Governor Bush Sign Everglades Restoration Pact**

In early January 2002, President Bush signed an agreement with his brother, Florida Governor Jeb Bush, to help ensure an adequate water supply for the restoration of the Florida Everglades. The purpose of the agreement is explained in the President's statement issued by the White House:

"The Water Resources Development Act of 2000 authorized the Comprehensive Everglades Restoration Plan. The Plan has a projected cost of \$7.8 billion over 30 years, the largest ecosystem restoration project ever undertaken. The Plan establishes a unique 50/50 cost-sharing partnership between the State of Florida and the Federal Government.

A critical component of the Plan relates to the supply and management of water for multiple uses in South Florida—restoration, municipal, agricultural, and flood control. The Congress determined that the overarching objective of the Plan is the restoration, preservation, and protection of the South Florida ecosystem, while providing for other water-related needs of the region, including water supply and flood protection.

Because the Federal Government's primary interest is in restoration and protection of the federally owned natural resources in the State, the Congress called for the President and the Governor to agree formally that the State would reserve under State law for each restoration project water sufficient to meet the needs of the South Florida ecosystem, including Everglades National Park, the Big Cypress National Preserve, and other natural areas owned by the State and Federal Government. The reservation of water under State law will be included in the Project Implementation Report for each project and will be consistent with the Plan."

For more information about the signing ceremony and reactions by various stakeholder groups, see [http://enn.com/news/wire-stories/2002/01/01102002/reu\\_46089.asp](http://enn.com/news/wire-stories/2002/01/01102002/reu_46089.asp) or [http://www.myflorida.com/myflorida/government/mediacenter/news/recent\\_news02/ecosystem.html](http://www.myflorida.com/myflorida/government/mediacenter/news/recent_news02/ecosystem.html). For more information about the Comprehensive Everglades Restoration Plan, see <http://www.evergladesplan.org/>.

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## Upcoming Conferences and Events

### ***NEW LISTINGS:***

**Successes and Challenges in Watershed Protection**

**February 21, 2002**

**Washington, D.C.**

The Federal Water Quality Association and the Virginia Water Environmental Association are sponsoring a joint luncheon featuring speaker Michael S. Rolband. Mr. Rolband who is the president of Wetlands Studies and Solutions, Inc., will address the development of the North Fork Wetlands Bank and other watershed restoration projects local to the Washington, D.C. area. The luncheon will take place at the Pier Server Restaurant at the Channel Inn, 650 Water Street, SW, Washington, D.C. The event will begin at 11:30 and lunch will be served at 12:00. The cost is \$22 for walk in registration. For reservations, call Carla Alston 202-564-0677, Nicolle Boulay 703-471-6405 x4605, or Sharon Nye 703-444-1777.

### Third Annual Natural Stream Channel Design Summit

April 25–27, 2002

State College, Pennsylvania

Sponsored by the Canaan Valley Institute, this summit will address topics such as permitting regulations, permitting resources, growing greener accomplishments, regional curve update, monitoring techniques, restoration in urban environments, cost-effectiveness, minimizing impacts during construction, and many others. Invited speakers include Art Parola, Craig Fischeneck, and Rocky Powell. For more information, please contact Lesley Moore at 814-768-9584 or [lesley.moore@canaanvi.org](mailto:lesley.moore@canaanvi.org).

### Water Quality Monitoring in 2002: Building a Framework for the Future. The Third National Water Monitoring Conference

May 20–23, 2002

Madison, Wisconsin

This conference is designed to foster interaction, information sharing, and innovation among colleagues involved in all aspects of water monitoring. The conference is sponsored by the National Water Quality Monitoring Council, in conjunction with many of its member organizations. For more information, visit <http://www.nwqmc.org/> or e-mail [dan@nwqmc.org](mailto:dan@nwqmc.org).

#### **PREVIOUS LISTINGS:**

### Midwest Ephemeral Wetlands "A Vanishing Habitat"

February 20–21, 2002

Chicago, Illinois

Ephemeral wetlands are depressional wetlands that temporarily hold water in the spring and early summer or after heavy rains. This conference will address the natural history, conservation issues, restoration activities, educational projects, and regulatory impacts of ephemeral wetlands. Land resource managers, educators, landowners, and people interested in the ecology of ephemeral wetlands are encouraged to attend. For additional information or to order a copy of the Midwestern Ephemeral Wetlands pamphlet, visit

<http://www.epa.gov/R5water/ephemeralwetlands/index.htm>.

### Watershed 2002

February 23–27, 2002

Fort Lauderdale, Florida

The Water Environment Federation and the Florida Water Environment Association are sponsoring this international specialty conference. The conference will explore the challenges of managing the world's watersheds while highlighting the unique issues of the conference's host region, the southeastern United States. Every 2 years, this conference brings together environmental professionals for a showcase on integrated resource management and environmental protection principles using watershed-based approaches. For more information, visit <http://www.wef.org/conferences/Watershed2002/opening.jhtml>.

### Eleventh International Conference on Aquatic Invasive Species

February 26–March 1, 2002 (rescheduled)

Alexandria, Virginia

This annual four-day conference presents a comprehensive forum for the review of accumulated scientific knowledge and presentation of field research related to aquatic invasive species. New technological developments for prevention, monitoring, control, and mitigation of invasive species will be presented, along with a discussion of policy, legislation, public education, and outreach initiatives. Registration and program information is available at the conference web site at

<http://www.aquatic-invasive-species-conference.org/>.

To post your restoration news and announcements, please send information to [restorationupdate@tetratex-ffx.com](mailto:restorationupdate@tetratex-ffx.com).

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## Restoration-Related Web Sites

<http://water.montana.edu/default.htm>

Montana Water, a site designed and maintained by the Montana Water Center, Montana State University, Bozeman, serves as a comprehensive resource for those working with Montana water resources. The site includes an on-line database of technical watershed resources, a database of grants and other funding resources, information about policy and legislation, educational resources, and links to maps and other resources. This site would be useful for anyone looking for information about water issues in Montana and other northwestern states.

<http://nris.state.mt.us/wis/wetlands/>

Montana's Wetlands Information Clearinghouse provides wetlands information specific to Montana, including maps, wetland resources, indicator species, and other information. The site also provides links to other sources of wetlands-related information throughout the country. This site would be useful for anyone looking for information about wetland issues in Montana and other northwestern states.

<http://www.rwrp.umt.edu/>

The Riparian and Wetland Research Program, developed by the School of Forestry at the University of Montana, offers information on issues relating to the ecology and management of riparian areas and wetlands of the state and the region. The site provides an on-line database detailing wetland and riparian research projects and offers a database of more than 8,000 wetland photos, along with the Bureau of Land Management inventory of health assessment data. This site would be useful for anyone interested in wetland and riparian research.

[http://www.buffer.forestry.iastate.edu/Virtual\\_Risdal\\_Tour/tour.html](http://www.buffer.forestry.iastate.edu/Virtual_Risdal_Tour/tour.html)

Risdal Buffer Virtual Tour. Researchers at Iowa State University have developed a virtual tour of their research buffer that includes pictures and videos. The tour includes pictures of streambank stabilization and buffer planting efforts, constructed wetlands, grass filter strips, and other areas of buffer research. This site would be useful for anyone looking for pictures of ongoing riparian restoration and research projects.

<http://www.buffer.forestry.iastate.edu/HTML/buffer.html>

Riparian Management System Model. This site offers an interactive diagram of a riparian system. Users may click on the model to learn more about multispecies buffers, streambank bioengineering, boulder weirs, rotational grazing, constructed wetlands, and buffer maintenance. This site provides a valuable learning tool for people interested in installing riparian buffers.

<http://sflwww.er.usgs.gov/>

The USGS' South Florida Information Access (SOFIA) web site (formerly the "South Florida Ecosystem Program"). This program was established to enable the U.S. Geological Service to enhance its scientific assistance to resource managers who require an improved scientific information base to resolve or prevent complex resource conflicts or environmental problems in specific ecosystem sites, such as the Everglades and Big Cypress Swamp. The site offers maps and publications for download; allows users to search on-line

databases containing biologic, hydrologic, meteorologic, and geographic datasets; and provides information about ongoing and completed research projects relevant to South Florida. This site would be useful for anyone interested in wetland issues in southern Florida.

<http://www.evergladesplan.org/>

Restoring Florida's Everglades. The U.S. Army Corps of Engineers and the South Florida Water Management District maintain this web site dedicated to the restoration of the Everglades. The site contains information about the Comprehensive Everglades Restoration Plan, resources for educators, information about ongoing projects in the Everglades, maps, policy and legislative information, and a photo gallery. This site provides comprehensive information about restoration of Florida's Everglades.

<http://www.prairiecrossing.com/>

EcoNotes Gutters to Gardens Article. This article provides step-by-step instructions on building a wetland pond on private land. It is especially aimed at backyard areas that naturally remain soggy after rainfall events. The site also provides a list of plants native to Wisconsin and Illinois. This site provides step-by-step information for anyone wishing to create a backyard wetland.

<http://www.npwrc.usgs.gov/resource/othrdata/plntguid/species.htm#group4>

Midwestern Wetland Flora. This list features 300 midwestern wetland plants organized by plant type. Categories include ferns, grasses, sedges, trees, monocots, and dicots. A color picture and descriptive information are available for each plant featured. This list would be useful in selecting native wetland plants for any planting project.

<http://www.cwp.org/>

Center for Watershed Protection (CWP) works with local, state, and federal governmental agencies, environmental consulting firms, watershed organizations, and the public to provide objective and scientifically sound information on effective techniques to restore watersheds. The site has recently been revised and now includes information on publications and technical assistance available through CWP as well as a calendar of watershed protection events. This site provides hands-on technical assistance and information helpful to local governments, watershed groups, or anyone involved in watershed protection efforts.

Let us know about your restoration-related web site. Please send relevant URLs to [restorationupdate@tetrattech-ffx.com](mailto:restorationupdate@tetrattech-ffx.com).

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## Information Resources

### ***Home Study Course on Stream and Riparian Ecology and Management***

By Montana State University and the University of Montana

University researchers have developed a home study course on stream and riparian ecology and management for ranchers and other land managers and owners. The course is designed

specifically for livestock producers to better acquaint them with the streams and riparian areas on their ranch or grazing allotments, help them manage them effectively, and provide a framework for developing a grazing management plan. For more course information, see <http://www.homepage.montana.edu/~stream/>. The course materials consist of a workbook with four lessons, four 16- to 25-minute videos, and a packet of supplemental materials. Copies of the course materials can be purchased for \$70 for Montana residents and \$80 for nonresidents by contacting the Montana State University Extension Publications at <http://www.montana.edu/wwwpb/pubs/pubs.html> or calling 406-994-3273.

**Wetland Education Resources** By The Watercourse at Montana State University  
A series of wetland and water education materials are available from The Watercourse, a nonprofit water science and education program based at Montana State University, Bozeman. Their wetland resources include the following:

*(1) WOW! The Wonders of Wetlands*

Developed with Environmental Concern Inc., 1995, 330 pages. This comprehensive guide is for anyone teaching about wetlands; it features 70 pages of background material in six chapters followed by more than 40 cross-referenced activities. Select a wetlands artifact from a grab bag and learn the many functions of wetlands. Prepare a persimmon pudding and appreciate the incredible food sources of a wetland environment. Use crayons to design a wetlands soil chart. Developed for educators of K-12 students (and beyond!), activities are organized into five sections covering wetlands definitions, wetlands plants and animals, water quality and supply issues, soils, and wetlands and people. Cost \$17.00.

*(2) Discover a Watershed: The Everglades*

Produced through a partnership with the South Florida Water Management District, 1996, 278 pages. Developed for formal and informal educators (classroom teachers, parents, rangers/naturalists, museum staff) of middle and high school students (and beyond!), this comprehensive guide is divided into three parts: a reference section that includes the natural and human history of the watershed; contemporary issues and potential solutions; and learning activities. Build a model of the Kissimmee-Okeechobee-Everglades watershed, plot a hurricane and predict if it will make landfall, or simulate a restoration project by trying to put the pieces back together again. Explore a unique and endangered watershed where unprecedented solutions are being tested. Cost \$15.95.

*(3) Exploring the Waters of Our National Parks: Everglades!*

Produced through a partnership with the Parks as Classrooms Program of the National Park Foundation, 1997, 38 pages. Fun and informative activities that explore the natural communities of Everglades National Park and their relationship with humankind. Through a hands-on building game, become familiar with the inhabitants of an alligator hole and work to maintain a balance. Use your resource management skills to solve a restoration dilemma. Though often subtle, the wonders of the everglades are extraordinary in their ability to fascinate and intrigue us. Cost \$9.95.

These resources can be ordered on-line at [http://www.montana.edu/wwwwater/order\\_form.html](http://www.montana.edu/wwwwater/order_form.html) and over the phone at 406-994-5392. For more information, contact The Watercourse Program, Montana State University, 201 Culbertson Hall, Bozeman, MT 59717-0575. Phone: 406-994-5392; Internet: <http://www.montana.edu/wwwwater/index.html>.

### ***Riparian Courses—Distance Learning***

Oregon State University

As part of its Bachelor of Science distance degree in Natural Resources, Oregon State University offers two courses via video/web: Desert Watershed Management (RNG 355) and Riparian Ecology and Management (RNG 455). These are both three-credit courses open to anyone. RNG 355 is offered in the fall and is a prerequisite to RNG 455, which is offered in the spring. Descriptions of these courses are available on the Distance and Continuing Education web site at <http://statewide.orst.edu/>. Individuals who want to take courses but are not seeking a degree, as well as those who might want to pursue a B.S. in Natural Resources via distance delivery, should contact OSU Distance and Continuing Education at (800) 667-1465. For more complete information on the distance Natural Resources degree program, please contact Jessica Coombs at [jessica.coombs@orst.edu](mailto:jessica.coombs@orst.edu), or 800-235-6559.

### ***A Sampler for Quantifying the Vertical Distribution of Macroinvertebrates in Shallow Wetlands***

by Jeffrey Mackay and Ned H. Euliss, Jr.

Available at <http://www.npwrc.usgs.gov/resource/2001/macroinv/macroinv.htm>, this publication explains a new sampler devised for quantifying the vertical distribution of aquatic macroinvertebrates in wetlands. This device will facilitate quantitative sampling of macroinvertebrates in waterfowl ecology and related studies. Because it simultaneously collects benthic and pelagic invertebrates, the sampler reduces bias associated with sampling macroinvertebrates that occupy the benthic-pelagic interface of wetlands. The sampling device also divides benthic and pelagic macroinvertebrates into separate vertical profiles to facilitate studies of distribution patterns or the influence of chemical and physical gradients on invertebrate vertical distribution.

### ***Heroic Tales of Wetland Restoration***

Published by the Wetlands Conservancy

This 75-page book tells of 12 rural landowners who changed their farming practices to reclaim wetlands, streams, and rivers. More than 75 percent of wetlands in the lower 48 states are privately owned, making landowner stewardship a critical part of a wetland conservation strategy. Sections of the book include heroic tales, land conservation options, grants and technical assistance, and governmental and nongovernmental technical assistance. The book is available through the Wetlands Conservancy. Contact them at 503-691-1394, e-mail at [maryanne@wetlandsconservancy.org](mailto:maryanne@wetlandsconservancy.org), or visit the web site <http://www.wetlandsconservancy.org/resources.html>.

If you would like to publicize the availability of relevant information resources, please send information to [restorationupdate@tetratex-ffx.com](mailto:restorationupdate@tetratex-ffx.com).

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