



US Army Corps  
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# Environment

## The Corps

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## Natural Resource Agencies form partnership to restore Moores Creek

Four natural resource agencies formed a partnership to restore degraded habitat on Moores Creek in Itawamba County, Miss. The lower reaches of the creek, a tributary to the East Fork of the Tombigbee River, had completely filled with sediment over a period of several decades. The loss of a defined channel combined with beaver activity resulted in the conversion of former bottomland hardwood forest in the adjacent floodplain to a marsh/open water system of approximately 60 acres. The degraded channel also caused stress to timber stands along the stream bank.

The U.S. Army Corps of Engineers, Mobile District; the Tombigbee River Valley Water Management District, Ducks Unlimited; and the Mississippi Department of Wildlife, Fisheries and Parks formed a partnership to restore the lower reaches of the creek and to enhance waterfowl habitat in the area.

"This is a good example of what can be accomplished by the formation of effective partnerships of natural resource managers," said Harvey Huffstatler of Ducks Unlimited. Ducks Unlimited provided funds for the project through its Matching Aid to Restore State's Habitat program, which has enhanced or restored over 20,000 acres of wetland habitat in Mississippi.

The channel work involved excavating a 4-foot deep by 6-foot bottom width channel through the accumulated sediments for a distance of roughly 1,725 feet. The channel restored the natural meander conditions of the stream.

A major feature of the project involved enhanced waterfowl habitat. Excavated sediments were placed on the left bank to create a low elevation continuous dike to more reliably impound water within the naturally formed 60-acre marsh/open water wetland adjacent to the stream. Two water control structures were installed in the dike to improve management of

water levels. Wood duck boxes and tree plantings were also installed to improve the area for waterfowl. "This project has multiple purposes," said Jimmie

Mills, Acting Executive Director, Tombigbee River Valley Water Management District. "It not only provides excellent wildlife habitat, but also will help reduce the loss of bottomland hardwoods adjacent to Moores Creek."

"All the work was completed on lands purchased by the Corps for the Tennessee-Tombigbee Waterway Wildlife Mitigation Project," said Pat Robbins, Chief of Public Affairs, Mobile District. "These lands are managed by the

Mississippi Department of Wildlife, Fisheries, and Parks as a part of the Canal Section Wildlife Management Area."

"The Mississippi Department of Wildlife, Fisheries and Parks is proud to have the Moores Creek waterfowl impoundment as part of the Canal Section Wildlife Management Area," said Jerry Hazlewood, Wildlife Biologist for the Mississippi Department of Fisheries and Parks. "The added opportunity for waterfowl hunting is much needed in northeast Mississippi. We are grateful to have the cooperation and support from the Corps of Engineers, Ducks Unlimited and the Tombigbee River Water Management District in the development of this project. Hopefully we can build more waterfowl areas together in the future."

The project, located near the mouth of Moores Creek, was completed in October. Moores Creek empties into the East Fork of the Tombigbee River south of Peppertown, Miss. On Nov. 14, the four agencies hosted a dedication for the project.

*This article was written by the Mobile District Public Affairs Office. For details on Moores Creek, contact Janet Shelby at 251-690-3320/janet.s.shelby@sam.usace.army.mil.*



U.S. Army Photo, Mobile District

**StopLog is placed for a water control structure at Moores Creek.**

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**Environment**  
*The Corps*

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**Joliet's bioremediation facility receives award**

By **KIMBERLEE TURNER**  
*Louisville District*

The world's largest bioremediation facility located at the former Joliet Army Ammunition Plant in Will County, Ill., recently received an Honor Award given by the Consulting Engineers Council of Illinois. As a recipient of this Honor Award, the project also became eligible for a National Recognition Award by the American Council of Engineering Companies. The award was presented at the 2002 Annual Engineer Excellence Award Competition on March 12 in Washington, D.C. Representatives from the U.S. Army Corps

Alternatives are being explored for reuse of the treated soil. These include test plots for possible landfill cover at the facility and testing prairie seed mixture for potential use by the U.S. Forest Service Midewin Tall Grass Prairie.

Through the team's effort, the bioremediation facility has optimized production and reduced the cost-to-complete by \$25 million. In addition to cost-savings, the transfer of more than 2,000 acres to CenterPoint Properties is expected to bring economic development to the area with the creation of two industrial parks. Preliminary economic analysis predicts that the industrial

parks will generate more than 21,000 construction jobs, 8,000 permanent jobs, and more than \$27 million in annual property taxes upon completion.

To date, 15,080 acres have been transferred to the U.S. Forest Service for the establishment of the Midewin National Tallgrass Prairie, 2,243 acres to the State of Illinois for subsequent transfer to CenterPoint Properties, 982

acres for the Abraham Lincoln National Cemetery and 455 acres to Will County to establish a landfill.

"This award recognizes the accomplishments that would not have been possible without the contributions of the entire team; USACE, Louisville District, Montgomery Watson Harza, U.S. Army Operations Support Command, USEPA and Illinois EPA. It's been the team's efficient management of the project that has allowed this bioremediation facility to realize significant cost-savings," stated Melody Thompson, Project Manager, Louisville District.

*For more information, contact Kimberlee Turner, Public Affairs, Program and Project Management, Louisville District, 502-315-6835.*



U.S. Army Photo, Louisville District

**Corps employees, along with the contractor and EPA representatives examine the compost turner at the Joliet bioremediation facility.**

of Engineers Louisville District, Montgomery Watson Harza, and U.S. Army Operations Support Command attended the ceremony.

The 21-acre bioremediation facility is designed to clean up approximately 260,000 tons of explosives-contaminated soil during a seven-year period. Since operation began in May 2000, more than 59,000 tons of explosives-contaminated soil have been successfully treated. The facility comprises three treatment buildings, each housing two windrows. The windrows contain contaminated soil, which is mixed with amendments to facilitate microbial growth. These amendments include wood chips, stable bedding and corn processing waste, all of which are obtained locally, with the exception of the corn processing waste. The process takes an average of 18 days to effectively treat the soil.

# Chief unveils environmental operating principles

By CANDICE WALTERS

Corps Headquarters

Lt. Gen. Robert B. Flowers, 50<sup>th</sup> Chief of the U.S. Army Corps of Engineers, unveiled the Corps Environmental Operating Principles March 26 during a dedication ceremony for the Davis Pond Freshwater Diversion Project in St. Charles Parish, La.

The Environmental Operating Principles symbolize the Corps' deep commitment to environmental sustainability.

The \$110 million Davis Pond project exemplifies the principles in that the diversion is expected to save 33,000 acres of wetlands and improve 777,000 acres of marshes and bays as habitat for fish and wildlife during the next 50 years.

Earlier in the month the Chief began a chain-teaching program to ensure that all Corps employees understand the principles and their supporting doctrine. They must then begin incorporating the application of the principles into all their decision-making and programs that impact the environment. All training is to be completed by Earth Day, April 22.

The principles foster unity of purpose on environmental issues, reflect a new tone and direction for dialogue on environmental matters, and ensure that employees consider conservation, environmental preservation and restoration in all activities.

"We're on a common journey shared by many people and organizations in our country, and around the world," Lt. Gen. Flowers said. "It is a journey in which we are transitioning toward Sustainable Development."

"Environmental sustainability can only be achieved by the combined efforts of federal agencies, state and local governments, and the private sector, each doing their part, backed by the citizens throughout the world," the Chief said. These principles help the Corps define its role in that endeavor.

The seven Environmental Operating Principles are:

1) Strive to achieve environmental sustainability. An environment

maintained in a healthy, diverse and sustainable condition is necessary to support life.

2) Recognize the interdependence of life and the physical environment. Proactively consider environmental consequences of Corps programs and act accordingly in all appropriate circumstances.

3) Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.

4) Continue to accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.

5) Seeks ways and means to assess and mitigate cumulative impacts to the environment; bring systems approaches to the full life cycle of our processes and work.

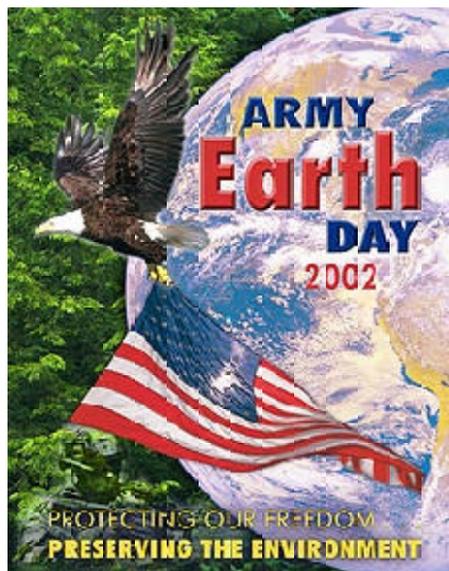
6) Build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environment and impacts of our work.

7) Respect the views of individuals and groups interested in Corps activities, listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.

The principles are rooted in the various environmental laws, statutes and regulations as well as the Army's four pillars of compliance, restoration, prevention and conservation, all of which govern Corps activities when it comes to the environment. "We're using them as a base and building up from them," Lt. Gen. Flowers said.

*The Corps of Engineers Environmental Operating Principles are available online at [www.usace.army.mil](http://www.usace.army.mil).*

## Corps joins Army in celebrating Earth Day 2002



Earth Day, April 22, is an international event demonstrating concern and mobilizing support for the environment. The theme of Army Earth Day is "Protecting our freedom, preserving the environment." Gen. Eric. K. Shinseki, Army Chief of Staff, summarized the theme in his 2002 Earth Day Message: "Caring for our environment is a daily endeavor in The Army. But we use the national celebration of Earth Day to call particular attention to the importance of the environment. Each of us must find ways to make our environmental programs more effective. I encourage you to plan and participate in Earth Day activities at your installation and carry our stewardship theme to our Soldiers, civilians, veterans,

their families, and to your local community."

The Army Earth Day guide states that although Earth Day is April 22, and many celebrations are scheduled on or near that date, it is important to remember that environmental responsibility is more than a one-day event. Army Earth Day exemplifies a daily commitment to the stewardship of the public resources entrusted to military care. Earth Day is the annual call for the public to turn its attention to environmental issues.

To find out more information on Army Earth Day, or to order the Earth Day poster, visit the U.S. Army Environmental Center (AEC) website at <http://aec.army.mil>.

# Fixing ecosystems starts with fixing sewers

By MARY BETH THOMPSON  
Baltimore District

Baltimore District will complete a draft report this month that proposes to go where the U.S. Army Corps of Engineers doesn't often go in its ecosystem restoration mission - into a big city's sewers.

The Corps has worked on a handful of small sewer system projects in the past. It has also accomplished extensive ecosystem restoration work, traditionally with a habitat or storm water management focus. But sewers and ecosystem restoration have seldom been linked and never to this extent.

The Baltimore Metropolitan Water Resources, Gwynns Falls Feasibility Study draft report recommends that the Corps undertakes aquatic ecosystem restoration in two Baltimore sub-watersheds by fixing the sewer infrastructure that runs through them. The draft report will go to North Atlantic Division for review, and there will be a public comment period.

The Dead Run and Maidens Choice Run sub-watersheds, located in southwestern Baltimore City and adjacent Baltimore County, rank among the most severely polluted of the 10 sub-watersheds within the Gwynns Falls watershed. According to Chris Spaur, a Baltimore District Planning Division ecologist who is on the study team, "Two of the streams that are among the most severely degraded in the state of Maryland flow right through highly populated residential areas, and they're open to people."

Within Baltimore City, Dead Run flows through a city park, and Maidens Choice Run flows through low income and minority neighborhoods. It passes several schools, and the city has posted it as a health hazard. "Kids can read, but, being kids, they ignore the signs, and they're out there playing in the water," Spaur said.

In 1992, Congress asked the Corps to investigate water resource problems in Baltimore. The District completed a reconnaissance study in 1994 that identified Gwynns Falls watershed as a focus.

The District launched the feasibility phase in 1996. Attention centered on the Maidens Choice and Dead Runs sub-watersheds, and the team looked at

alternatives for improving the two very damaged aquatic ecosystems. Later, Baltimore County withdrew from the study, and the study focused on Baltimore City.

"When we started out, the basic mindset was that we could go in there and do some habitat restoration work and do some good. Habitat restoration work would be wetlands creation, or working on stream habitat conditions and some other things," Spaur explained. "But what we learned as time has gone by in this study is that undertaking projects like that would be unlikely to do any good because there are other problems so much more severe."

"We asked why these streams are so highly degraded and found that a big part was caused by the sewer system," said Daria Van Liew, project manager. The mostly clay sewer pipes in both sub-watersheds date from the 1920's and 1930's. The sewer systems use gravity to move the contents down the pipes, so the pipes were built in or right next to streams. Erosion has caused the pipes to settle, shift and crack. Joints have loosened. Some pipes have become exposed. Far-reaching consequences result. Sewage leaks from the pipes into the streams. The streams leak into the sewer pipes, and the pipes also take in groundwater that would otherwise make it to the streams. The sewage leaks put bacteria into the water. The leaks substantially reduce the quantity of water in the streams. This destroys the prospects for healthy aquatic life and exposes humans to potential health risks.

"You want to start with that which will have the biggest impact," Van Liew said. "If you want to do environmental restoration in this watershed, you have to fix the sewer system."

Baltimore City faces huge obstacles in rehabilitating its decrepit sewerage system. The increased water volume that these degraded watersheds force into the sewage treatment system worsens the city's predicament. "The problems facing the city of Baltimore are immense," Spaur

said. "This is a problem common to older urban areas throughout the country."

The District is not proposing to build new infrastructure for the city, Van Liew said. The proposal is to take on a cost-shared project to prevent sewage from getting in and out of the sewer pipes, and the loss of water flow in the streams that results. Repairs will involve sliplining the existing pipes and raising the manholes. The cost estimate is in the \$12 million range.



U.S. Army Photo, Baltimore District

**Exposed sewer pipes like this one along Maidens Choice Run contribute to serious environmental problems in the Gwynns Falls watershed in Baltimore.**

Because the suggested work is somewhat outside what has been done in this mission area before, the Baltimore team consulted policy makers at North Atlantic Division and Headquarters before proceeding. The team has also worked closely with the city, state and federal resource agencies and the public throughout the study. They plan to complete the feasibility report by July, incorporating input from the public comment period.

"I think everyone who's looked at it thinks it makes sense," Spaur said. "The public is very aware of it. The agencies are very aware of it. If this works out, I can't think of anything more in the public interest and in the interest of environmental restoration than this work."

*For more information contact Mary Beth Thompson, Public Affairs Specialist, Baltimore District, 410-962-4088.*

# Corps adapts Innovative Technology Advocate Program

By **JEFF BRECKENRIDGE**  
*HTRW Center of Expertise*

The Corps of Engineers Innovative Technology Advocate (ITA) Program focuses on three areas; Explosives Residuals, Dense Non-Aqueous Phase Liquids (DNAPLs), and the Triad Approach. Traditionally, the U.S. Army Corps of Engineers headquarters provided funding to partially support District ITA activities at qualifying Corps Districts. However, in FY02, there is a transition to a performance/product based funding criteria allowing any district with an HTRW program to receive funding provided they contribute to Corps ITA efforts in the three focus area teams. Currently, 11 districts, Huntsville Center, and the HTRW Center of Expertise are contributing to those team efforts.

The Triad approach is a streamlined process using systematic planning, on-site analytical methods and dynamic work plans for quality site remediation decision-making. The Environmental Protection Agency Technology Innovation Office (EPA-TIO) has initiated a campaign to institutionalize the approach throughout EPA, other Federal agencies, States, and industry. The EPA-TIO has requested that the Corps of Engineers HTRW-CX and ITA Program be active participants in this campaign due to their expertise and experiences with the components of the Triad. A team of interested chemists and ITAs has been assembled to support the Triad campaign. The team has been contributing to a number of activities including review of the EPA Projects Manager's Triad Handbook, Superfund Guidance for the Use of Dynamic Work Plans, modules for the EPA/USACE Field Analytical Tools Encyclopedia (FATE), and the EPA Procurement Guide for Innovative Sampling and Analytical Services.

Exportable training modules are also being developed so that experienced ITAs and chemists can train others within their modules. The modules can be easily

tailored for other audiences, such as Project Managers and Regulators. Two other products of the ITA Triad team will be a Field Analytical Methods (FAMs) Expertise Database, and a FAMs Project Database. The FAMs Expertise Database will serve as a way for Corps ITAs and EPA to track the expertise available in various district offices that could be used to assist with Triad projects in the future. The FAMs Project Database will serve as a basis for producing Technology Quick Reference Sheets (TQRSs) or documenting detailed case studies. In general, the goal of those efforts is to increase awareness through training and tools (FATE, Project Managers Handbook, Superfund Guidance, & Procurement Guide), engage more triad advocates, support Triad use on sites, and document Triad case studies.



The Explosives Residuals Focus Area Team is concentrating their efforts on innovative technologies for the characterization and treatment of residual chemical contamination (various explosive compounds) in soil and groundwater resulting from many ordnance and explosives manufacturing, washout, storage, handling, disposal, and training activities. Team members will be conducting surveys within their own districts to identify Corps projects where explosive residual contamination is present. The outcome of the effort will be a database of projects containing basic project information that can be matched

with potential technology development. Matching will be made by the Environmental Research and Development Center (ERDC), or technology demonstrations will be matched through the Department of Defense Environmental Security Technology Certification Program (ESTCP), Strategic Environmental Research Program (SERDP), or other technology development programs. The Team will develop summaries of state of the art sampling and analytical techniques and remedial technologies applicable to explosive residuals. The team will also produce a summary document that identifies chemical/physical properties, biotransformation products, and/or other properties that affect fate and transport of explosives compounds in the environment. The summaries are meant to provide basic descriptions and links to more detailed comprehensive technical information to assist Corps project teams with identifying potential technologies for their sites.

The DNAPL focus team contributes to numerous interagency, state, and private groups addressing the challenging DNAPL contamination problem across the United States. Team members are conducting surveys within their own districts to identify Corps projects where DNAPL and residual contamination is present. The outcome of that effort will be a database of projects containing basic project information matched with technology development at the ERDC, or technology demonstrations through the Federal DNAPL Technology Initiatives Program (FeDTIP), ESTCP/SERDP, or other technology development programs. At least two Corps sites are receiving serious consideration for DNAPL technology demonstrations.

*If you know of sites where team efforts may be applicable, or would like to contribute to ITA efforts, contact Jeff Breckenridge at 402-697-2577 or [jeff.l.breckenridge@usace.army.mil](mailto:jeff.l.breckenridge@usace.army.mil).*

# Despite challenges, reuse plans for Hamilton Air Force Base march on

By DAVID KILLAM  
Sacramento District

Hamilton Air Force Base in Novato, California, is the key element of an ambitious plan to reuse a proud military installation and resurrect a moribund wetland that comprised parts of the base. The journey from an inactivated Air Force base to new community and restored wetlands has been, and continues to be, a process beset with a variety of challenges, not the least of which is the wide diversity of potential uses for the base.

In 1932, Marin County, California, donated the land comprising Hamilton Air Force Base to the federal government. The community felt that establishing an Air Force Base would create more work for residents of Marin County during the nation's depression. Also, construction of runways and ancillary support systems would fill in the "swamp" at Hamilton. In 1934, the 7<sup>th</sup> Bombardment Group arrived at Hamilton Field, beginning a history of usage by the Air Force (then the Army Air Force) lasting until 1974, when the Air Force inactivated the obsolete base.

Following the Air Force departure, the Army Reserve, the Coast Guard, the U.S. Navy and other agencies used the base. The battle for the disposition of Hamilton really began during this period of time. Hamilton was the centerpiece for the adoption of various schemes involving the base's future use: some people wanted a nature preserve, some wanted a solar village and others wanted low-income housing.

The final plan hammered out between the U.S. Navy and the City of Novato, the Corps of Engineers, the Army Base Realignment and Closure (BRAC) brought disparate parties together.

It included:

- Constructing a subdivision of 550 homes;
- Developing a retail complex that includes a Marriott Hotel, a supermarket and McDonald's restaurant;
- Removing crumbling, depression-era buildings on the former installation;
- Having the Corps install an impervious cap on Landfill 26, a dump located at the northern edge of Hamilton, to prevent rainwater from entering the landfill and carrying

contaminates to other parts of the base;

- Cleaning up the methyl tertiary butyl ether (a gasoline additive, commonly known as MTBE) plume emanating from the old gas station;
- Removing old, underground, fuel-storage tanks; and,
- Having the Army restore wetlands that once existed on the southern and eastern flanks of Hamilton Force Base, from what was essentially the entire network of runways

Cleaning up and restoring Hamilton is the responsibility of the San Francisco and Sacramento Corps of Engineers Districts, the Army BRAC Commission, and the Navy. Clean-up efforts began in 1985 with some unexpected challenges:

— In July of 2001, high levels of methane began to show up around the landfill and in the border between the landfill and a nearby housing development. Tests showed that the methane was coming from the landfill. To stop the migration of methane, the Corps of Engineers installed a trench to harmlessly vent into the air any methane generated by the landfill.

— To deal with the fears community members had about possible MTBE (a gasoline additive) leaking into the ground from the old gas station near a children's school, the Navy installed monitoring wells near the school. The Navy is developing a Corrective Action Plan and Final Risk Assessment for the area. Once it has been cleaned up, the gas station area will be sold to the City of Novato for

commercial development.

— Public concerns about an "illegal" dump of toxic waste on Hamilton are still being investigated.

Despite the complexities involved with Hamilton, clean up and disposition are proceeding. "While the timetable for accomplishing what needs to be done is still approximate, there is a sense that we're approaching an eventual conclusion," said Jim McAlister, Corps of Engineers

project manager for the Formerly Used Defense Sites program.

For more information, contact David Killam, Public Affairs Office, Sacramento District, at 916-557-5104.



U.S. Army Photo, Sacramento District

Inactivated Hamilton Air Force Base continues to be restored.

# Hamilton Pipeline installation

## Wetlands restoration moves one step closer to reality

By DONNA SHEPARD  
San Francisco District

Looking across the salt marsh that separates the former Hamilton Army Airfield from San Pablo Bay provides a glimpse of what the future may have in store when more than 1,000 acres of deserted runways and taxiways are transformed into wetlands habitat, teeming with wildlife.

The U.S. Army Corps of Engineers and the California State Coastal Conservancy are working in concert with a number of other federal, state and local agencies, as well as environmental interests to design a wetlands restoration project that makes efficient use of the millions of cubic yards of material that must be removed from Bay Area shipping channels each year in order to keep them safe for navigation.

The Hamilton Wetlands Restoration Project has been called the most significant effort to date to restore tidal and seasonal wetland habitat for native endangered species in the San Francisco Bay estuary. It is also one of the largest restoration efforts of its kind in the nation.

In January, the project took one giant step closer to reality with the installation of the first 1,700 feet of pipeline that will eventually stretch some 34,000 feet and carry more than 10 million cubic yards of dredge material to various locations at the wetlands restoration site.

About 2.5 million cubic yards of material needed to form the wetlands will come from the Oakland Harbor deepening project. The remaining eight million cubic yards of material will come, primarily, from other local federal operation and maintenance projects.

"This is a win-win scenario for the Bay Area economy and for environmental interests," said Scott Nicholson, the Corps' program manager for the Hamilton Wetlands Restoration Project. "It provides for the restoration of wetlands and supports our regional long term management strategy that calls for beneficial reuse of dredged material rather than in-bay or ocean disposal."

The \$1.2 million pipeline contract was awarded to a local contractor, Cerrudo Services of Novato, Calif., on Dec. 10 with a required completion date of Jan. 31. According to Nicholson it was an ambitious schedule, but they did it. The Cerrudo crew braved the Dec. storms, cold Jan. temperatures and high tides, oftentimes working 12-hour shifts finish by the Jan. 31 deadline. "We had to get it done before the environmental window closed on Feb. 1," said Karen Cerrudo, president and owner of Cerrudo Services. "And the pipeline passed the required pressure test with flying colors."

Although pumping of the material to the site from a yet-to-be-constructed offshore pumping station may be a year away, the Hamilton project management and design team wanted this part of the marshland work done before the start of the California Clapper Rail's

breeding and nesting season, which began Feb. 1 and runs through Aug. 31. The California Clapper Rail is one of two endangered species that inhabit the marsh. The marsh is also home to the endangered Salt Marsh Harvest Mouse, the Salt Marsh Common Yellow Throat, a species of concern, as well as a variety of other waterfowl and wildlife. "This is a critical piece of the project that runs through its most environmentally sensitive area," said Nicholson. "We had to time it right and do it right."

The marsh-crossing pipeline will remain in place approximately 10 years, which coincides with the anticipated timeline to construct the wetlands with dredged material. During this time, the pipeline will be operated intermittently, as material becomes available for wetlands placement.

The location of the pipeline, as well as its design and construction were the result of careful planning and best engineering practices. The location selected is an existing roadway formerly used by the airfield activity, but according to Nicholson, proved to be the least disruptive to the environment and the best possible access to the pipeline for

construction, operation and maintenance. "The pipeline extends 300 feet beyond the Clapper Rail habitat on both sides of the marsh, to limit the need for access to this environmentally sensitive area during the Clapper Rails' breeding and nesting season," Nicholson said.

Several alternatives for the marsh-crossing pipeline configuration and composition were considered. After careful analysis, a welded steel construction was selected. Each welded section of the 5/8-inch thick pipe is 40 feet long and 30 inches in diameter. Many engineering factors pointed to this configuration as optimal; including the service life of the pipeline, corrosion rates in the marine environment, and dredge material pumping requirements.

The desire to minimize disruption to wildlife pointed to the need for an elevated pipeline. In its final configuration, the pipeline sits at least 12 inches above the ground on concrete supports and is designed to withstand extreme high tides and storms.

The next phase of the wetlands project will include removal of derelict buildings, and preparation of the site to receive dredged material. The marsh-crossing pipeline will then be extended approximately 26,000 feet into San Pablo Bay where a hydraulic off-loader will be constructed. The off-loader will be used to pump dredged material that will arrive on barges from bay dredging projects to the restoration site. A pre-bidding meeting was hosted by the Corps in February to provide prospective contractors with an overview of the project and plans are under development for this particular phase of the project.

*For details, contact Donna Shepard at 415-977-8658.*



**Some 1,700 feet of pipe for the marsh-crossing pipeline is off-loaded from barges at the Hamilton site.**

Photo by ABOVE & BELOW THE H2O

# Corps to improve wildlife habitat at Hart-Miller Island

By DOUG GARMAN  
*Baltimore District*

In a project cooperation agreement signed in late January between the Baltimore District and Maryland Port Administration, the two agencies agreed to re-create hundreds of acres of bird habitat on the south cell of Hart-Miller Island.



U.S. Army Photo, Baltimore District

Hart-Miller Island

Located in open waters of the Chesapeake Bay in Baltimore County, Hart-Miller Island is a 1,110-acre, man-made island divided into two cells formed by dikes. Since the mid-1980's, the cells have served as placement sites for dredged material from the Port of Baltimore. The island's north cell is still in use and has become known for extensive bird populations. However, the 300-acre south cell, closed by the state in 1991, experienced a significant decrease in the quantity and quality of bird habitat due to the placement of dredged material.

Over time, as more material was added to the south cell, it lost its mudflats and shallow wetlands, which provided habitat for over 267

species of birds, according to some estimates. "We have learned that wet dredged material provides excellent bird habitat," said Steven Kopecky, Corps project manager. "This project will, in essence, allow us to re-create many of these wetlands and mudflats. By re-watering the site, we will be able to provide seasonal flooding and habitat during the key spring and fall migratory seasons."

The habitat project involves creation of seven acres of trees, a three-acre pond, a bird nesting island, 184 acres of wetlands and mudflats for shorebird habitat and 110 acres of upland grasses designed as habitat for songbirds. A pumping system will also be added to manage water levels in the project area.

Kopecky said that because the habitat is on an island, access by people or by natural predators is limited. For this reason the site is particularly suited for nesting terns, migratory shorebirds and waterfowl. As a result, the area has become a key stopover site during the annual migrations.

The Hart-Miller Island wildlife habitat project is expected to cost \$5.4 million. The cost will be shared by the Corps and the state. Construction is scheduled to begin this summer and take about a year to complete. Once built, the Maryland Department of Natural Resources will operate and maintain the project.

Endorsing the project, in addition to support from other resource agencies, are the Hart-Miller Citizens Oversight Committee, the Chesapeake Bay Critical Area Commission and the Maryland Ornithological Society.

*For more information, contact Doug Garman, Public Affairs, Baltimore District, at 410-962-2626.*

## Cold Regions Lab set to host rangeland grasses workshop

The U.S. Army Engineer Research and Development Center's Cold Regions Research and Development Laboratory (CRREL) in Hanover, N.H., will host a workshop on *New Grass Germplasms and Invasive Weed Control* at Fort Carson and the U.S. Air Force Academy, Colorado Springs, Colo., from April 30 to May 1.

The intent of the two-day, rangeland grasses workshop is to introduce new native-grass germplasms and present methods for fighting invasive weeds. The workshop will give land managers help in choosing native herbaceous plants and rehabilitating sites to reduce soil erosion.

The workshop format includes classroom presentations and field trips to demonstrate the new germplasms,

successful seeding techniques for native plants establishment, and biological control methods for invasive weeds. The rehabilitation program is supported by the Strategic Environmental Research and Development Program and is a cooperative effort between CRREL and the U.S. Department of Agriculture's Agriculture Research Service.

This workshop is an opportunity for interested individuals with land-management responsibilities from the Army, Navy, Air Force, National Guard, and other federal agencies to learn more about rangeland grasses.

*For more information visit [www.crrel.usace.army.mil/confs/plantworkshop/](http://www.crrel.usace.army.mil/confs/plantworkshop/).*

# Endangered species saved as rehabilitation completed

By **BARBARA HARRISON**  
*Jacksonville District*

Contractor Wilkinson and Jenkins truly went the extra mile during rehabilitation operations for the Jacksonville, Florida Mayport Little Jetties Training Wall Project. In addition to completing the project two months early, within budget with no accidents, the contractor was instrumental in the rescue of an endangered species. Charlie Kellar, contracting superintendent, spent the week of July 4 securing the work site. The site was closed to the public during the construction period. Kellar's daughter, Stephanie, found a one-month old manatee stranded on the island point near the intersection of the Atlantic Intracoastal Waterways and the St. John's River while walking the beach area.

Stephanie signaled nearby boaters who alerted the Marine Patrol about the baby manatee. A marine biologist was called to the site. The manatee's mother could not be found in the inlet so the biologist and Marine Patrol arranged to have the baby manatee taken to Orlando's Seaworld.



**Marine Patrol rescues a baby manatee after being alerted by the contractor of the Florida, Mayport Little Jetties Training Wall Project.**

*U.S. Army Photo, Jacksonville District*

The \$2.8 million project rehabilitated approximately 4500 linear feet of the existing Mayport Little Jetties Training Wall, a federal waterway stone feature used to control river flow. The project also provided many environmental enhancements benefiting the St. John's River. An additional

two acres of wetlands were created along the shoreline. The shoreline will be protected from erosion by the training wall; therefore the need for maintenance dredging of Jacksonville Harbor should be reduced.

Technical engineer and designer for the project was Barbara J. Harrison, Jacksonville District. Construction supervision for the project was handled by the Jacksonville District's North Florida area office. Tommy Hengst, a Senior Project Manager from the Corps' Vicksburg District, served as Project Engineer. The Mayport

Little Jetties Park re-opened to the public on Aug. 10.

*For further information, contact Barbara Harrison, Jacksonville District, at 904-232-3388.*

# Mississippi River environmental project wins award

By **SHANNON BAUER**  
*St. Paul District*

A project benefiting fish, waterfowl and aquatic plants in Pool 8 of the Mississippi River located near Stoddard, Wisc., was honored by the Minnesota state chapter of the Society of Professional Engineers (MSPE). The society presented its Seven Wonders of Engineering Award to the St. Paul District of the U.S. Army Corps of Engineers on Feb. 22.

This MSPE competition is conducted annually to recognize outstanding achievements in the field of engineering. Of 15 projects submitted for the 2002 competition, seven were selected, including the Pool 8 Island Habitat Project by the St. Paul District.

The Pool 8 habitat project is part of the district's environmental management program and was planned and designed in cooperation with the U.S. Fish and Wildlife Service and the Wisconsin and Minnesota Departments of Natural Resources. The project took around 10 years and \$4.1 million to

complete. It consisted of rebuilding more than four miles of islands in Pool 8 that eroded between 1939-1989, following lock and dam construction on the Mississippi River. Wave action, floods, river currents and ice action had caused erosion resulting in a decline of floodplain habitat. "By creating the islands, or sand flat habitat, we were trying to do what would happen naturally without the locks and dams," said Jon Hendrickson, a St. Paul District hydraulics engineer. "River currents and sediment deposits were returned to a more natural conditions wind-driven wave action was reduced and flood-plain habitat was restored."

Since the construction of the islands, aquatic vegetation, fish and waterfowl increases have been documented. From 1997-1998, canvasback duck visitation to the area rose from 1,100 to 112,000, representing about 10 percent of the 1998 continental population.

*For more information, see [www.mvp.usace.army.mil](http://www.mvp.usace.army.mil).*

## Evicting Exotics

# Aquatic plant control program's century of service

By **CHRISTINA SWANSON PLUNKETT**  
*Jacksonville District*

"We've won many battles in the past century, but not the war," said Dr. Bill Zattau, chief of the Aquatic Plant Control (APC) Section in Jacksonville District. Zattau refers to the U.S. Army Corps of Engineers' Aquatic Plant Control Operations Support Center's fight to control exotic pest plants throughout Florida and the nation.

This year the APC team members celebrate a century of battles with weapons ranging from herbicide, to mechanical, to biological controls.

Jacksonville District was the Corps' pioneer in establishing an aquatic plant control program 101 years ago, and continues to be the support center for planning and operations nation-wide.

As the story goes, a Mrs. Fuller bought a "floating aquatic plant with a pretty purple flower," a water hyacinth, from the New Orleans World Fair in the late 1890's. The South American plant took over her goldfish pond, so she pulled it all up and threw it in the St. Johns River. By 1897, the plant threatened navigation along the St. Johns River to the point that Congress enacted the Rivers and Harbors Act of 1899 to maintain open channels in federal waterways.

Thus began the Corps' Aquatic Plant Control Program, which in the early 1900's kept water hyacinth-clogged channels open along the St. Johns River with pusher boats, log booms, and barriers to contain the exotics in small creeks and tributaries.

In the 1940's Jacksonville District in-house crews began using mechanical and chemical control. Mechanical methods, such as boats with circular saw blades and cranes, brought immediate relief, but did not provide long-term control. The herbicide Dichlorophenoxy acetic acid, at two-to-four pounds per acre, proved to be the most effective for controlling water hyacinths.

It wasn't long before another exotic, alligatorweed, became one of the top waterway blockers. The first biological control agent ever used by the Corps was the alligatorweed flea beetle. First released in 1964, it has virtually eliminated alligatorweed as a navigation problem in Florida.

Water hyacinth and alligatorweed are only two of many nuisance exotic water plants that the APC team battles. Today's main aquatic nuisance species in Florida are water hyacinth, water lettuce, hydrilla, and melaleuca. All are fought with chemical, mechanical, and biological controls in APC programs.

APC work revolves around three Corps authorities that provide for the Removal of Aquatic Growth (RAG) Project, the APC Program, and Operations and Maintenance Activities.

RAG is 100 percent federally funded and targets vegetation impeding navigation in 600 miles of Florida's federal waterways, covering about 650,000 acres. Waterways included are the St. Johns, Oklawaha, Crystal, Withlacoochee, and Kissimmee rivers, and the Lake Okeechobee and Okeechobee Waterway.

Jacksonville District works with the Waterways Experiment Station, which researches new control technologies for the APC Program. The APC program is for public waters outside of federal navigation projects and is cost-shared 50/50 with Florida.

Operations and Maintenance activities remove vegetation that interferes with Corps-managed water resource projects including flood damage reduction, navigation, irrigation, water supply, and fish and wildlife conservation.

"Although the purpose of these programs are similar, each one has its own focus," said Ashton. Along with Ashton and Zattau, biologist Jon Lane makes up the district APC team. In the field, APCOSC

personnel include field biologists, administrative staff, airboat operators, and herbicide applicators.

There are two APC field offices in Florida - the North Florida Aquatic Plant Control Field Unit in Palatka, and a satellite office co-located with the Florida Department of Environmental Protection in Orlando.

Providing a biological control agent collection service is just one of many on-going APC activities. They are also the focal point and public/customer interface on matters related to assigned programs, and the national contact and distribution point for information exchange and technology transfer with federal, state, and local agencies. APC staff also assists headquarters in training and certifying Corps pesticide application personnel.

Information exchange is crucial to the never-ending battle of controlling nuisance exotics. Zattau, Lane, and biologist Catharine Johnson are all a part of the Noxious Exotic Weed Task Team, an interagency team that is helping create invasive plant management plans.

With up to 80 problem plant species in Florida, Jacksonville District's APC team will continue to be challenged in the war against nuisance exotic water plants. "Controlling exotics falls under the same principle as treating your yard for fire ants," said Ashton. "You may get a lot of them, but some will also move to your neighbor's yard. It's the same thing with exotics. You may remove them in one area, but their seeds could have been blown to another area."

For more information, contact Christina Plunkett, Jacksonville District, at 904-232-3055.



**Paul Pratt, USDA (left) and other USDA biologists join Angie Charles, Corps Biologist (far right) in containerizing oxyops.**

U.S. Army Photo, Jacksonville District

# Environmental team puts focus on customers

By GRANT SATTLER  
*Europe District*

U.S. Army Corps of Engineers, Europe District's Environmental Team is taking the Chief of Engineers' vision to heart --working with its customers to seek win-win solutions through understanding their needs.

Using customer-focused teams with three or more project management members for each of seven Area Support Groups (ASG), the Balkans, and Headquarters U.S. Army, Europe, to support programmatic issues is enabling Europe District to better execute work after a difficult period of personnel turnover.

The new arrangement brings several advantages to the environmental program, including better continuity for customers, a broader range of project management skills, improved knowledge of customers' programs, and better acquisition planning.

Differing from most Stateside environmental programs that involve big-ticket remediation or Base Realignment And Closure projects, in FY01 Europe District's \$30 million environmental program involved more than 300 projects ranging from studies to design, to small construction projects.

"Most of our projects are extremely small, but they can be very important to our customers," Loran Baxter, chief of the Environmental Team explained.

"Managing the small projects can take just as much effort as the large ones."

With fewer than two-thirds of the authorized positions filled, it was proving too much to monitor closely.

When Baxter arrived in Wiesbaden, Germany in mid-2001, he found hard working people working inefficiently because of outmoded organization, long-term personnel shortfalls, and the often random assignment of work. Baxter lent his ear to people at the district, listened to customers and their frustrations, and started picking up trends.

"We lost people without replacements; there had been a big gap in hiring; and, as a result, there developed a lot of frustration with the Corps on the part of our customers," Baxter said. "You're at an ASG and there's this project manager that shows up, but that's the only time you've ever seen them. They're only doing one project with you—what do they really know about your needs? They may know a lot about one of the other ASG's, but the only reason they got your project was because somebody had a perception that they had more capacity to handle another project." Baxter set his focus on recruitment and reorganization to be more effective and more responsive. He asked, "How do we provide continuity to our customers?" The answer was customer-focused teams.

In these teams, project managers drawn from a diversified group

of engineers, chemists, geologists, biologists, and other environmental professionals, are assigned either primary, secondary or tertiary responsibility on a particular team. Teams include a mix of both Department of Army civilians and local national employees. Team composition is based on the program needs of the ASG; however, the goal is to have at least one local national on each team to improve continuity and to provide insight into working effectively overseas.

"Our goal is a team working together, communicating, and focused on the needs of a particular customer," Baxter said. "They'll know what the issues are and what we need to do together as a team in order to support the customer. And when we lose people, the team will pick up those projects with continuity that we've never had before."

On team composition, Baxter says: "In some cases, individuals have previous experience in a certain area, so we've assigned them in a secondary or tertiary role to a team so we can pull them in. For example, for the Balkans Team we have people who have spent time downrange, and while that may not be their primary focus anymore, we still want them to be attached to that team. That residual knowledge can be very beneficial."

Baxter has also embraced the concept of forward deploying some project managers to be co-located with customers. This is particularly valuable when distance hampers communication and understanding.

Europe District's recruitment effort is bringing in a very diverse group of people with installation experience from all the military services and people with contract administration experience in design or construction.

"Already we're seeing some of the good ideas from people who have come from other places," Baxter said.

Acquisition planning is another benefit to customer-focused teams as Europe District and ASG's plan together for future projects and identify who will be the project managers for them. "We need to be smart enough to say as a team to the ASG or Base Support Battalion, 'Oh, this might be a good one for you guys to execute in house'," Baxter said. "We're not out there to grab all the work in the world, we're out there to support them where we can best support them. And I think through real teamwork and communication we can do that."

"When you understand how another organization functions, what their needs and concerns are, a lot of times it doesn't take that much of a shift in how you're doing something to be responsive to their needs," Baxter said. "I've received good feedback [from customers saying] that for the first time in a long time the Corps was listening."

*For more information, contact Grant Sattler, Public Affairs, at DSN: 336-2720, Conus 011 (49)611-816-2720.*

**Europe District's Environmental Team is initiating partnering efforts with its Area Support Groups and Base Support Battalion customers to increase understanding, facilitate better teamwork, leverage capabilities, and improve execution.**

# Corps updates guidance for environmental cleanup sites

By STAN HANSON  
*HTRW Center of Expertise*

The U.S. Army Corps of Engineers (USACE) has updated its guidance for remedial action reporting per Engineer Pamphlet, EP 1110-1-19, dated June 2001. The Guide for Preparing and Reviewing Remedial Action (RA) Reports of Cost and Performance reports are prepared following completion of the RA phase of a project. The goals of the RA Report include: confirming that the remedy outlined in the Record of Decision has been fully implemented; confirming that cleanup goals have been achieved; documenting key observations and lessons learned; and summarizing cost and performance data. The cost portion of the report provides historic costs in HTRW Work Breakdown Structure format for Historical Cost Analysis System entry.

The pamphlet defines the procedures for formally documenting and reporting cost and performance information from USACE environmental restoration projects and provides guidance to the project team for scoping the types of data to collect and how they are presented. Customers must have complete, accurate, and timely information for proper operation and maintenance as a baseline for system modifications and optimization for use in

conjunction with a long-term response action or recurring review. This information will also address planning and tailoring the site completion and individual operable units (OU's) for site closeout.

The pamphlet provides a current reference for preparing and reviewing RA reports at the completion of RA at a waste site operable unit. The goals of this guide include improving the consistency and completeness of RA reports while ensuring that key observations and lessons learned during remedy implementation, including cost and performance data, are adequately documented. Specifically, this guide is intended to ensure that sufficiently detailed RA cost data is furnished for input into the Historical Cost Analysis System which requires the use of the Hazardous, Toxic, and Radioactive Waste (HTRW) RA work breakdown structure.

The intent of the Guide is to assist in the preparation, review, or use of RA reports for environmental restoration projects by cost engineers, environmental engineers, resident construction managers, project managers, remedial project managers, program managers, and other related technical disciplines.

The pamphlet applies to all USACE commands having investigation, design, and remedial action responsibility for

environmental restoration projects within the military, civil works, or support for others programs.

A companion document entitled *A Guide for Preparing and Reviewing Remedial Action Reports* was developed jointly by the USACE and U.S. Environmental Protection Agency (EPA). The primary difference between these two documents is the cost reporting format. Both documents incorporate selected guidance from the *Guide to Documenting and Managing Cost and Performance Information for Remediation Projects* (EPA 542-B-98-007, October 1998). These guides do not address construction completion, site completion, or site deletion from the National Priorities List (NPL). For information on these issues refer to *Close Out Procedures for National Priorities List Sites* (EPA 540-R-98-016, January 2000).

Although much of this guide is written from the perspective of a Superfund site listed on the NPL, the presented concepts could also be applied to non-NPL sites or other cleanup programs.

*The pamphlet can be downloaded from: <http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep1110-1-19/toc.htm>. The USACE point of contact is Stan Hanson, HTRW CX, at 402-697-2609.*

## Newsletter reaches out to people living near FUSRAP sites

By CANDICE WALTERS  
*Corps Headquarters*

People who live near or want information on Formerly Utilized Sites Remedial Action Program projects can now tap into a new source – *The Formerly Utilized Sites Remedial Action Program Update*.

The first edition of the newsletter was printed and distributed in March by Headquarters, U.S. Army Corps of Engineers. It will be published every six months.

The FUSRAP mission is to identify, investigate and take appropriate cleanup action at properties with low-activity radioactive contamination that resulted from the nation's early atomic weapons and energy programs from the 1940's through the 1960's. The program focuses on being

protective of human health, public safety and the environment throughout the process.

The public is a vital partner in the Corps' FUSRAP effort. The newsletter is one more way that the Corps can share information about the program and the ongoing projects with its regulators and the public.

"We believe that for our program to succeed, public participation is vital. While we have an active public participation program, we continually search for additional tools we can use to share information. This newsletter is one of those tools," said Tomiann McDaniel, USACE Military Programs FUSRAP team leader.

Seven Corps districts are responsible for FUSRAP work in eight states at 20 projects. The districts are: Philadelphia, Baltimore, Pittsburgh, New England, New York, Buffalo and St. Louis. Also providing assistance are the Kansas City District and the Hazardous, Toxic and Radioactive Waste Center of Expertise in Omaha, Neb., as well as various Corps employees from other districts.

*For additional information on FUSRAP or to read The Formerly Utilized Sites Remedial Action Program Update online, check out the Corps' FUSRAP web site at <http://www.hq.usace.army.mil/cecw/fusrap/index.htm>. For more information, contact Candice Walters at 202-761-1806.*

## Saving the sea turtles

# New measures protect endangered species

By ERIC LINCOLN  
New Orleans District

The Corps has implemented a plan to relocate sea turtles following an unexpectedly high number of loggerhead sea turtle losses from dredging in the Mississippi River Gulf Outlet (MRGO) bar channel last summer. The Sea Turtle Relocation Trawling Program involves using shrimp trawlers with special nets that ride ahead of the hopper dredge, scooping sea turtles out of the way and dropping them off three miles west of the channel. (Shrimp trawling, ironically, is one of the biggest contributors to an estimated 5,000-50,000 loggerhead sea turtle deaths each year.)



Photo by Lane Lefort

**Ed Creef, New Orleans District biologist.**

The National Marine Fisheries Service (NMFS) allows the Corps to destroy, or “take,” only 15 of the endangered loggerhead species of sea turtles every fiscal year during dredging operations. Normally, they don’t reach this 15 turtle limit, reports biologist Edward Creef, New Orleans District Operations Division, but between April and July of 2001, sea turtle observers working on hoppers in the MRGO documented an alarming 11 kills. That left the rest of the year’s dredging operations in danger of cancellation as soon as four more loggerheads were taken.

“There are a number of safety precautions we have to put in place in order to do hopper dredging in the bar channel now,” said Creef. Those measures include the sea turtle observers, draghead deflectors, and in-flow and out-flow screens. These protection measures for dredging must be in place between April 1 and Nov. 30, when loggerheads and other sea turtles are most likely to be found along the Louisiana coastline.

From Aug. 17-24, while the Sea Turtle Relocation Trawling Program was underway, two female loggerheads were caught and relocated, and about nine other sea turtles were seen. “As a result,” said Creef, “when the Manhattan Island trawler was out there, they did not take any sea turtles ... so apparently [the relocation program] did work.”

“This is the first time that the Corps New Orleans District (NOD) has had to do this,” Creef adds, “but other districts on the Atlantic coast and around Florida do it on a more regular

basis ... the contracted hopper knew more about it than we did, and they were well aware of the requirements.”

Studies on the effect of dredging on sea turtles began as early in 1980 at the Cape Canaveral Entrance Channel in Florida, where 71 turtles were reported killed that year. In the years afterward, the Corps experimented with reducing vessel speed, changing the dredge and draghead type, and different “cow-catcher” deflector designs. In 1990, after 10 years of testing on the dredge McFarland, the flexible chain deflector was picked as the most efficient safeguard for sea turtles. In 1995, NMFS asked NOD to start using the newly developed version of the rigid draghead deflector that is in use today.

Normally, the draghead deflectors are sufficient protection against sea turtle kills. Maneuvering the ship, however, can cause the dragheads to lift off the sea floor, rendering the deflectors useless. Unless the dragheads are turned off (a time-consuming process), they continue to suck up everything in the vicinity. The operator occasionally lifts the dragheads manually to clear out debris by sucking in water. Any of these procedures could have caused an increase in loggerhead takes. “We’ll never know the real cause, but that probably had something to do with it,” said Creef. “Maybe there were just more sea turtles out there this year. Now that we’ve experienced this, we’re paying a lot more strict attention to how the hopper personnel operate the dragheads and the pumps ... anything we can do to get them to minimize sea turtle losses, the better off the district will be, and the better off the sea turtles will be also.”

There are five species of endangered sea turtles in the Gulf of Mexico, but only three of them are of primary concern in the bar channel: the Loggerhead, the Kemp’s Ridley, and the Green sea turtles. According to the NMFS, the loggerhead is the most abundant species found in U.S. coastal waters and has been on the endangered species list since 1978.

*For more information contact Eric Lincoln at 504-862-1914.*



U.S. Army Photo, New Orleans District

**Trawling Program relocates loggerhead turtles such as the one above.**

# Louisville District and The Nature Conservancy join hands on \$1.02 million Handy Tract project

By CAROL BATERNIK  
Louisville District

*... As a mother proudly boasts of her children she would want us to know that she is home to the greatest fish and mussel diversity of any river system in Kentucky. From Green River Dam to Mammoth Cave alone, she is home to 109 types of fishes and nearly 60 different kinds of mussels many of them exceedingly rare. Indeed, if she were considered a house and her room habitats, she would be one of the freshwater mansions of North America and the Biltmore estate of freshwater diversity! ... As impressive as this sounds, however, she might also complain a little. She has earned the right after all. She might relay to us how she has become "stressed out" in recent times as our populations have grown along with our demands on the lands that border her. ... Or how we have polluted her waters in a myriad of ways and altered her flow and temperatures. ... I guess we could say she is a freshwater mansion in need of some repair. ...*

*- from "River Speak" by Richie Kessler*

Near Lock and Dam 6 of Kentucky's Green River, the impoundment of Green River Lake created changes to the river flow and shifts in the pools. At the junction of the Green River and Russell Creek, the dominant stream had even shifted, putting Russell Creek in charge of the watershed. Sediment runoff from the banks became severe at this land-water transition zone.

To correct the situation, the Louisville District has begun an ecosystem restoration project in concert with the advice and cooperation of The Nature Conservancy. The project marks a precedent for a Project Cooperation Agreement (PCA) with a local sponsor, notably a non-governmental one.

The restoration is the first of its kind nationwide with The Nature Conservancy, which owns the land parcel. Since 1951, the Nature

Conservancy has been working worldwide with communities, businesses and individuals to protect more than 90 million acres. The non-profit organization has approximately one million members.

The Nature Conservancy has traditionally viewed the Corps as an adversary. However, the Memorandum of Understanding signed in December of 2000 with the Corps highlights the two organizations' common objectives.

"We're talking about the future," said Jim Aldridge, director and vice president, Kentucky Nature Conservancy. "This is a huge stepping stone around the Conservancy. I'd like to see more projects ... on the Green River or elsewhere."

Richie Kessler, Nature Conservancy's Green River Bioreserve director, said, "We want to establish a long-term relationship to have a positive influence on the Green River." With the Nature Conservancy as the landowner, maintenance of the property and protection against urban sprawl are ensured.

Kessler says 109 of the Green River's 151 fish species are found around the project, and 12 are rare throughout the world. The only documented Great Blue Heron rookery in the Green River biosphere exists on the property. Kentucky's only endemic mussel species is found around the project site. These features make the Green River habitat among North America's most significant freshwater aquatic ecosystems, said Kessler, which is why the national Nature Conservancy was eager to partner with the Corps on the 140 acres called the Handy Tract.

Mike Turner, chief, environmental analysis section, Louisville District, explained that several timely factors led to collaboration on the Handy Tract. More than three years ago, the Nature Conservancy came to the Corps regarding re-regulation of the Corp's Green River Lake. Simultaneously, the Department of Fish and Wildlife had identified sites on the Green River most

stressed, the Handy area among them. "We explained we had environmental restoration programs," said Turner. "Congress had passed language allowing partnerships with non-governmental agencies."

The Handy Tract restoration is a Section 1135 project where the non-federal sponsor pays 25 percent of total project costs and the Corps funds 75 percent. The cost is estimated at \$1.02 million.

The riparian habitat along the eroding riverbank will be restored, and the banks reshaped by bioengineering, a rock toe and weirs. Two 50-foot bendway weirs of shot rock will be placed at the upstream end of the reshaped area to deflect the Green River's main current from the eroded area toward the river's center. "It gives a more natural appearance," said Turner. In time, shrubs and plantings will camouflage the rocks. Native grasses that will cover the area include big blue stem, Indian grass and gamma grass."

While the rock is the most obvious element, the project's scope includes many land and aquatic features. Bottomland hardwoods of walnut and oak have yet to be planted. According to Turner, the reforestation of hardwoods benefits the ecosystem through reductions in existing and potential silt loads and the capture of nutrients in overland flows.

Excess soil from digging will be used to create small swales and dikes to hold surface runoff, and amphibians and their predators will prosper.

Kessler noted that changes made to the land have a great effect on the river. "What we do here is the first line of defense against factors that may threaten the Green River."

The project began three years ago and will be finished by this summer. Kessler's complete "River Speak" is available at: <http://nature.org/wherewework/northamerica/states/kentucky/misc/art2115.html>.

*For more information, contact Carol Baternick, Louisville District Public Affairs Office, at 502-315-6769.*

# **SEDD: A new electronic data deliverable format facilitates environmental analytical data reporting**

By **JOSEPH SOLSKY**  
*HTRW Center of Expertise*

The U.S. Environmental Protection Agency's Analytical Operations/Data Quality Center (EPA AOC) and the U.S. Army Corps of Engineers (USACE) Hazardous, Toxic and Radioactive Center of Expertise (HTRW-CX) Chemical Data Quality Management Branch are currently developing the overall framework of a system to deliver analytical data from a data generator (e.g., a laboratory) to the data requester (e.g., a contractor or district office). The Superfund Electronic Data Deliverable (SEDD) specification will provide the framework for developing specific electronic data deliverable (EDD) formats by providing general specifications for the overall data structure of the EDD, while remaining flexible enough to be tailored for individual, programmatic or agency present and future needs.

## **What is the SEDD specification?**

The SEDD is a specification for developing standardized electronic data deliverable formats for environmental analytical data. Each data requester would develop a guide based on the SEDD specification. This guide is called the Document Type Definition (DTD) and would give the complete set of rules for developing their specific EDD format. Actual data delivered as a unit is called an Electronic Data Deliverable (EDD).

At the present time, three different levels, or stages, for SEDD have been developed based on the complexity of the data requirements needed. Stage one will contain the minimum number of analytical data elements to convey results only data to the end user (and would be equivalent to the data on the current EPA's CLP Contract Laboratory Program (CLP) form 1. Stage 2 will build on stage 1, and, for stage 2a, add method quality control data (e.g., method blanks, matrix spikes, duplicates, etc.) and, for stage 2b, add instrument quality control data (e.g., initial calibration,

continuing calibrations, tunes, etc.). Stage 3, which will build on stage 1 and stage 2, will add additional measurement data to allow for independent recalculation of reported results. Stage 3 will be similar in detail to the current CLP electronic data deliverable, but can be applied to data collected from any analytical method (e.g., SW-846).

The SEDD specification uses an open transmission standard, which takes advantage of the benefits of Extensible Markup Language (XML). Sponsored by the World Wide Web Consortium (W3C), XML is the license-free, platform independent, final recommended standard which encapsulates structured data in text files. It is well supported by off-the-shelf software.

## **What are the advantages of using the SEDD specification?**

*Use of a Common Structure which can be implemented in Stages* - EDDs produced from DTDs using the SEDD Specification will utilize a common hierarchical structure and data element dictionary which can be implemented in stages. Thus, a system set up to deliver a simple "Results Only" EDD based on the SEDD specification for one data requester can be changed by addition of more nodes and data elements to deliver a more complex EDD for another data requester. Changes in the data requester requirements (DTDs based on the SEDD specification) will not require a complete scrapping or overhaul of the EDD producing system in order to deliver simpler or more complex EDDs as data requester needs change.

*Developing Common Tools for Data Checking* - A significant advantage of the SEDD specification is that, since it is based on XML and all EDDs would use the same structure and data dictionary, specific tools developed by one agency or data requester to check their EDDs could be used by others. This saves significant costs and time, since data validation software can be very complex

and very expensive to create and maintain.

*Full Traceability of Data* - EDDs produced under the SEDD specification will allow data requesters to link analytical data to underlying laboratory activities and processes to provide full traceability for data since the SEDD specification uses a common syntax to describe diverse laboratory activities and report analytical data.

*Specifications for Present and Future Requirements* - The SEDD specification provides a means for reporting complex analytical relationships. The data dictionary used by the SEDD specification is very robust and can be augmented, as necessary, to accommodate changing method and program needs.

## **Other agency interests**

The EPA is working on pilots at the present time. The Department of Energy and the U.S. Navy have also expressed an interest in piloting SEDD in FY02.

## **Looking for a few Corps districts to pilot SEDD**

The USACE HTRW CX is looking for U.S. Army districts who are interested in piloting the SEDD specification for a project. The HTRW CX will assist the districts in reviewing the project data quality criteria, creating the DTDs, as well as checking the final EDDs to ensure that they meet the project criteria using automated data review tools. *Contact Joseph Solsky at the HTRW CX for more information regarding SEDD pilots, at (402) 697-2573/Joseph.F.Solsky@usace.army.mil.*

## **Additional Information on SEDD**

To see the complete SEDD specification along with several real examples visit: <http://www.environmental.usace.army.mil/info/technical/chem/chemtopics/chemistry/chemedd.htm> or <http://www.epa.gov/superfund/programs/clp/sedd.htm>.

# THE CHALLENGE TO EXCEL

**Professional Development Opportunities**

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This is a list of third quarter FY 02 PROSPECT environmental courses. Please contact your local training coordinator about enrollment, or John Buckley, Professional Development Support Center (PDSC), at 256-895-7431.

#004 A-E Contracting	April 22-26	St. Louis
#342 CE Contract Law	April 22-26	San Francisco
#011 Coastal Planning	April 22-26	Duck, N.C.
#118 Dredge Estimating	April 22-26	Huntsville, Ala.
#398 Env Reg Prac Appl	April 22-26	Omaha, Neb.
#163 Hist Structures II	April 22-26	Fredrick, Md.
#260 Proj Mgt Bus Proces-HTRW	April 22-26	Nashville
#299 Cultural Resources	May 6-10	Santa Fe, N.M.
#223 HW Manifest/DOTCERT	May 6-10	Dallas
#281 Riparian Ecol/Mgt	May 6-10	Phoenix
#350 Environ Restoration Oview	May 7-9	Omaha, Neb.
#441 Rad Waste Transport	May 7-10	Dallas
#429 HW Manifest/DOT Recert	May 8-9	Dallas
#430 RW Manifest/DOT Recert	May 8-9	Dallas
#164 Water & Watershed	May 13-17	Davis, Calif.
#355 Project Management	May 14-16	Cincinnati, Ohio
#004 A-E Contracting	May 20-24	Albuquerque, NM
#280 Ecosystem Restoration	May 20-24	Vicksburg, Miss.
#178 Basic HEC-HMS	June 3-7	Davis, Calif.
#272 Fund Wetlands	June 3-7	Annapolis, Md
#140 Regulatory IV	June 10-14	Amherst, Mass.
#356 CERCLA/RCRA Process	June 11-14	Minneapolis, Minn.
#225 Env Sampling	June 11-14	Denver
#395 Env Remed Tech	June 17-21	Denver
#371 Env Remed Tech-Insitu	June 17-19	Denver
#100 Regulatory I	June 17-21	San Francisco
#281 Riparian Ecol/Mgt	June 17-21	Louisville, Ky.
#337 Env Remed Tech-Contain	June 19-21	Denver
#253 1391 Preparation	June 24-28	Arlington, Texas
#263 Coastal Ecology	June 24-28	Monterey, Calif.
#239 Wet Mit Bank Dev/Mgt	June 24-28	Orlando, Fla.

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