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Researchers study otters at a Corps lake

By Marilyn Uhrich
Galveston District

Otters oughta prove interesting. At least that is the supposition of the Houston Zoo's study on river otters occurring now at the Wallisville Lake Project in east Texas, between Houston and Beaumont.

The U.S. Army Corps of Engineers entered into an agreement with the Houston Zoo to learn more about wildlife at Wallisville Lake, said Richard Long, park manager at the Wallisville Lake Project. Their first project is the study of river otters, he said.

Rangers Ruth Millsaps and Russell Malahy at Wallisville Lake guided the zoo employees through remote areas of the project until they found a spot to install cameras. The camera trap already has captured photos of the carnivorous animals, including one mother with two babies.

A river otter can be as long as 4 feet and can weigh between 15 and 20 pounds. It is dark brown in color, and known to be very shy and elusive. Of the 13 species of otters, the river otter is the only one found within the United States. Probably the best known of the otter species are those found along the Pacific coastline.

"The river otters being studied are a keystone species, important to the environment," said Carolyn Maddox, zoo keeper who leads the study.

Many other animals interact with the otters and from



Fish are the main diet of the North American river otter. (Photo courtesy of Yellowstone National Park)

them you can get an idea of the environmental health of the wetland habitat. Reptiles, amphibians, snails, crayfish and other creatures found within the riparian habitat are also signposts for the environmental well-being.

The study will provide the researchers with data regarding habitat usage by the river otters. The researchers look first for latrine sites used by the otters. Genetic studies

then can be done on the otters' feces to determine the number of otters, family relationships, general health and other statistics. Thus far, only one such latrine site has been located.

The study is funded through the Houston Zoo's Conservation Fund and a grant from the American Association of Zoo Keepers. The study is approved for one year with its extension to be applied for at the end of the year.

Peter Riger, conservation program manager for the Houston Zoo, reports that the zoo has 20 or more projects and studies in 11 different countries. These include, in part, looking at the ocelot in south Texas, the endangered Attwater Prairie chicken breeding facility and the last remaining Houston toads in Bastrop County.

Inside this issue:

Rule issued on restoration advisory boards 3

More stories available online 3

Corps restores historic property 4

Coastal America recognizes New England District 5

Corps team assesses environmental conditions in Iraq 6

Ecosystem restoration conference slated for April in Kansas City 6-7

Honolulu District celebrates World Water Monitoring Day 7

Prairies cited as most endangered ecosystem 8-9

Tires head to recyclers 10

Corps getting greener 11

Memphis District controls erosion on Wolf River 12

Solar panels cut energy costs at Fort Sam Houston 13

Noise screening tool gives range managers an edge 14

Family photo helps Corps find chemical warfare materiel 15

Fort Campbell shares tools for material diversion 16

Top 10 things you can do to reduce global warming 16

Free online training offers a variety of important environmental courses

By the Interstate Technology and Regulatory Council

The Interstate Technology and Regulatory Council (ITRC) offers free Internet-based courses that help people tackle the technical and regulatory challenges involved in implementing environmental solutions.

Through the cooperation of the U.S. Environmental Protection Agency's (EPA) Technology Innovation Program, ITRC provides its Internet-based courses, each of which lasts about two hours, at no cost.

The U.S. Army Corps of Engineers actively supports ITRC in advancing innovative environmental decision making. Corps representatives serve on ITRC technical teams, whose purpose is to research environmental issues and develop documents to guide users through the technical and regulatory pitfalls of implementing new technologies. ITRC technical teams then develop and deliver online courses that reflect the issues covered in the guidance documents and highlight relevant and practical factors for implementing environmental technologies and approaches. Corps participation on technical teams ensures that ITRC documents and training reflect the Corps' perspective and expertise.

ITRC is led by representatives from state environmental agencies and includes participants from federal agencies, industry, academia and stakeholder organizations. ITRC Internet-based courses create a unique forum for the exchange of technical and regulatory information. Because the courses are based on ITRC guidance documents, they reflect the consensus opinion of a broad-based environmental community drawn from states, federal agencies, the private sector and citizen stakeholders. While ITRC has traditionally focused on remediation technologies and approaches, the organization is beginning to branch into other environmental topics.

ITRC also plans to further develop its classroom-style training program over the coming year and may offer in-person training at a location near you in the coming years. To learn more about ITRC's online courses and to register, visit the "Internet-Based Training" page at www.itrcweb.org. Registration opens four to six weeks in advance of a course offering. For more information, call 402-201-2419 or send an e-mail to training@itrcweb.org. Or to register directly with EPA, go to <http://clu-in.org/studio/seminar.cfm>. Look for the ITRC logo and follow the registration process. Course dates and times are subject to change. Archived training sessions are also available from the EPA's site at <http://clu-in.org/live/archive.cfm#itrc>.

Coming soon to computers near you...

In January, the Interstate Technology and Regulatory Council will offer the following classes:

- Jan. 9 — Perchlorate: Overview of Issues, Status and Remedial Options
- Jan. 25 — Remediation Process Optimization Advanced Training
- Jan. 30 — Site Investigation and Remediation for Munitions Response Projects

Sample of other topics planned for 2007

- An Overview of Direct Push Well Technology for Long-Term Groundwater Monitoring
- Characterization, Design, Construction and Monitoring of Bioreactor Landfills
- Evaluate, Optimize or End Post-Closure Care at Municipal Solid Waste Landfills
- Perchlorate Overview of Issues, Status and Remedial Options





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The Corps Environment welcomes submissions. Please send your articles, photos, events, letters or questions via e-mail to: andrea.m.takash2@usace.army.mil.

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Aug. 15 (October issue)

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The Corps Environment is available on the World Wide Web at:

<http://>

hq.environmental.usace.army.mil/Corps_Environment/current.htm.

Rule issued on restoration advisory boards

By Beverly VanCleaf

Hazardous, Toxic and Radioactive Waste Center of Expertise

The Department of Defense (DoD) is committed to supporting public involvement for environmental restoration activities.

One way of facilitating public involvement is through restoration advisory boards (RABs). Guidelines for RABs were issued jointly by DoD and the Environmental Protection Agency in 1994.

On May 12, DoD formally finalized a RAB rule. This was published in the Federal Register.

For complete details, see the final rule at: <http://a257.gakamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/pdf/06-4246.pdf> or www.asaie.army.mil/pitoolbox.

The rule applies to Defense Environmental Restoration Program (DERP) activities, including Military Munitions Response Program activities at active installations, closing DoD installations and formerly used defense sites.

Under this rule, a RAB should be established where there is community interest and any of the following apply: installation closure involves transfer of DoD property to the community; at least 50 local citizens petition for creation of a RAB; federal, state, tribal or local government representatives request formation of a RAB; and the installation determines a need for a RAB.

RAB membership should include representatives from DoD and the community. Community members are nominated by a selection panel comprised of other community members. A DoD representative and a community representative should co-chair the RAB. These co-chairs direct and manage RAB operations.

RAB meetings are open to the public. The agenda should include time for people to speak to the RAB committee. The RAB co-chairs will certify the meeting minutes and place them in the information repository. If the RAB minutes reflect decision making, copies also are placed in the administrative record.

The community co-chair and community RAB members serve voluntarily and are not paid by DoD. Installations can provide administrative support to establish and operate a RAB.

The RAB may be adjourned by the installation commander when: a record of decision has been signed for all DERP sites on the installation, response complete has been achieved for all sites and no further restoration decisions are required, all remedies are in place, the RAB achieved the desired goal as defined by the RAB operating procedures, there is no longer community interest, or the installation has been transferred out of DoD control.

The rule also contains provisions for dissolution and reestablishment of the RAB when necessary.

More stories available online

The *Corps Environment* team unveils a new feature with this issue. Due to space constraints, all of the stories that are submitted cannot be published in the print version. Starting with this issue, additional stories not seen in the print version will be posted online at http://hq.environmental.usace.army.mil/Corps_Environment/current.htm.

The Internet exclusive stories for the January issue are: *Over 750,000 Iraqis benefit*

from landfill in Kirkuk; Corps aces beach restoration; Corps and The Nature Conservancy develop joint training; Removal by relocation eliminates unneeded structures at no cost to installation; Joint team addresses invasive plant problems at Fort Bragg; Huntsville Center's Facilities Reduction Program raised the bar for waste diversion in 2006; Funding available for environmental research and development; Environmental Monitoring and Data Quality Workshop scheduled for March.

Keep those great stories coming!

Corps restores historic property

By JoAnne Castagna, Ed.D.
New York District

A volunteer from the Somerset County Historical Society warmly welcomed Army Corps of Engineers visitors at the historic Van Veghten House in Somerset County, N.J. He explained that the very room they were standing in was where Gen. George Washington danced the night away at a dinner party during the Revolutionary War.

The team is performing the FINDERNE Wetlands Mitigation Project on the house's property. It was evident to the team that the state is proud of its history. This was taken into account when the Corps' New York District decided to collaborate with the state in 2000 on this mitigation project that is enhancing and restoring the land around the house to create wildlife habitats and a public park.

The Corps' FINDERNE Wetlands Mitigation Project is part of the Green Brook Project designed to reduce flood damage in New Jersey's Raritan River Basin in north-central New Jersey in Middlesex, Somerset and Union counties.

This project encompasses 130 acres of land along the Raritan River in Bridgewater Township, Somerset County.

The wetland mitigation work is satisfying the mitigation requirements that the Corps has with its flood damage reduction projects, said Megan Grubb, biologist and coordinator with the New York District.

"The project is enhancing existing wetlands, forested land and grassland habitats on the site and creating 20 plus acres of man-made wetlands to sustain wildlife and create an educational public park," Grubb said.

The land was used for farming crops and livestock from the late 1600s to just a few years ago when Somerset County purchased it for open space preservation and park development. Years of farming had caused erosion problems on the land.

One of these farms is the historic Van Veghten House. By 1699, the Van Veghten family farmed a huge tract of land that included all of the property now under construction at the mitigation site. The 18th century Dutch farmhouse still stands on the bluff above the floodplain with a view to the Raritan River.

The house, that's presently occupied by the Somerset County Historical Society, has a rich history that includes sheltering Gen. George Washington's

Quartermaster General, Gen. Nathaniel Greene, during the Revolutionary War, while his Soldiers camped nearby.

The Corps has been working cooperatively since 2000 with the county's Parks Commission to plan, design and construct the site, Grubb said.

Construction began by moving earth on the mitigation project in January 2006.

The land was graded for approximately two months to prepare it for spring seeding. Grading sets the stage of the mitigation work by achieving a soil elevation that supports the water needs required for wetland plant growth. The soil in the wetland creation areas was then tilled using a 30-inch plow-bedding harrow to create mounds and depressions, mimicking the uneven surface of a natural wetland. The soil was then fertilized and limed. In the spring of 2006, nearly 100,000 trees and shrubs were planted. The team also seeded habitat mitigation areas with a mixture of native grasses and wild flowers.

Several wetland habitats, forested land and grassland habitats were enhanced or created to provide habitats for a variety of birds, amphibians, reptiles, aquatic invertebrates, butterflies and mammals.

The public will be able to view these habitats by walking along a 2-mile nature trail created by the Corps. Also on the site are two playing fields with parking lots and access roads, making the site a part of the Raritan River Greenway.

"Most of the mitigation work was completed in the summer of 2006. Twelve acres of recreational area, such as the trail and playing fields, will be opened to the public in the spring of 2007 after the grasses and plants have had a chance to grow," Grubb said.

Grubb pointed out the importance of collaborating with property stakeholders. For example, the Corps reached an agreement with the State Historic Preservation Office to plant grassland rather than trees near the Van Veghten House in order to maintain the historic view from the house to the Raritan River.

Grubb also said that the success of this mitigation project has encouraged her to seek out other sites in the area to perform similar work. "We are already observing wildlife on the site, including red tail hawks, great blue herons, painted turtles, northern water snakes, freshwater clams and a resident red fox."

Background photo: An 800-foot stream on the project site flows into the Raritan River. (Photo by Mike Breslin, a contractor with the Green Brook Project)

Coastal America recognizes New England District

By Ann Marie R. Harvie
New England District

Top government and local officials, as well as individual businesses and private groups, gathered together Sept. 11, 2006, to honor another environmental success story by the Coastal America Partnership.

John Paul Woodley Jr., Assistant Secretary of the Army for Civil Works, presented the Coastal America Award to the partners, including the U.S. Army Corps of Engineers New England District, responsible for completion of the Lonsdale Drive-In Restoration Project. The project was only one of six to be awarded the honor.

“Our partnership on this environmental restoration project has been impressive,” Woodley said. “The teams from the federal, state and local governments and private agencies, which have worked on this project, deserve the credit. I’m proud that the Army Corps of Engineers has been a part of this worthwhile environmental restoration effort, and I’m gratified that Coastal America is able to recognize such excellent work.”

Representatives of the partnership attended the ceremony to receive the award, including Col. Curtis Thalken, New England District commander.



An aquatic habitat is the result of the work performed by the Coastal America Partnership. (Photo by Mark McInerney)

The project site is at the former Lonsdale Drive-in in Lincoln, R.I., along the Blackstone River. It is a broad floodplain terrace that was developed as an outdoor drive-in movie theater in the early 1950s. The drive-in closed in the 1980s and remained unused until Rhode Island purchased the property in 1998 with the intentions of restoring the wetlands and the riparian habitat.

The Rhode Island Department of Environmental Management’s Office of Planning and Development assisted the Corps in project planning and design. Charter Environmental Inc., of Chelsea, Mass., a small business 8(a)-set-aside contractor, received the contract and performed the work.

Work on the \$2.6 million project began Jan. 30, 2003, and included removing 23 acres of asphalt; demolishing two movie screens, speaker stands and

other equipment; and excavating 60,000 cubic yards of material. Once the contractor cleared the site, they constructed a 7-acre wetland area and restored about 13 acres of upland riparian habitat. Constructed wetlands included 3.6 acres of emergent and open water habitat and 3.4 acres of scrub/shrub and forested wetlands. The plan also included the establishment of a continuous wooded riparian buffer along the Blackstone River.

The Rhode Island Department of Transportation also built a bicycle trail within and adjacent to the site, taking up approximately 3 acres of paved space. This work was performed separately from the restoration project but benefits the site’s aesthetics and public usability.

The work on the Lonsdale Drive-In Aquatic Habitat Restoration Project was completed at the end of June 2003.

The Coastal America Partnership was established in 1992 to protect, preserve and restore U.S. coastal watersheds.

Editor’s note: An earlier article on the project appeared in the October 2002 issue of *The Crops Environment*, which can be found at http://hq.environment.usace.army.mil/Corps_Environment/current.htm.



A dilapidated movie screen at the Lonsdale Restoration site was an eyesore before the contractor removed it. (Photo by C.J. Allen)

Corps team assesses environmental conditions in Iraq

By Mary Johansen
Hazardous, Toxic and Radioactive Waste Center of Expertise

The U.S. Army Corps of Engineers, Field Force Engineering (FFE) Environmental Support Team (EnvST) completed its first team deployment this past summer.

The EnvST spent seven weeks, five of those weeks in Iraq, performing an environmental mission for the MultiNational Corps Iraq (MNCI)-C7. The mission of conducting base-wide environmental site closure/sustainability surveys required the team to visit seven contingency operating bases (COB) and forward operating bases (FOB), including COB Speicher, FOB Warrior, Camp Fallujah, Camp Taqaddum, Camp Ramadi, COB Anaconda and COB Victory.

Security and logistics prevented the team from physically visiting FOB Kalsu. But through interviews, the team

provided a summary of some of the environmental issues at the facility. The EnvST recommendations noted areas to be addressed for sustainment operations or prior to facility closure.

The team members included David Carté, project manager forward, Kansas City District; Susan Tianen, technical team leader, Los Angeles District; Bill Graney, Seattle District; Teresa Reinig, Omaha District; and Patrick Guertin, U.S. Army Engineer Research and Development Center — Construction Engineering Research Laboratory.

The FFE EnvST was developed after the United States' involvement in Bosnia and Kosovo in response to environmental needs of combatant commanders. The EnvST mission is to provide environmental support to the combatant command and its components during war, contingency operations and disaster relief operations.

The EnvST has trained teams at eight Corps divisions ready to support environmental missions. The teams are comprised of environmental engineers and environmental specialists. They undergo training in conjunction with the contingency real estate support teams and the logistics support personnel. The next training session for these teams will be in Mobile, Ala., Feb. 12-16.

The EnvST missions focus on performing environmental baseline surveys, working with base development teams, reconnaissance of base camps, collaborative efforts with preventive medicine on environmental issues, establishing pollution prevention programs and implementing hazardous substances management programs. The environmental community has had a presence at the MNCI-C7 for the past three years through rotational deployments of individuals.

For more information regarding the FFE EnvST, contact Mary Johansen, Environmental Support Team program manager, at mary.m.johansen@usace.army.mil or 402-697-2561; or contact Ed Bave at edwin.b.bave@usace.army.mil or 402-697-2634.



Patrick Guertin, U.S. Army Engineer Research and Development Center — Construction Engineering Research Laboratory, performs an environmental assessment in Iraq. (Courtesy photo)

Ecosystem restoration conference slated for April in Kansas City

Courtesy of the conference Web site

The second national conference on ecosystem restoration will take place April 22-27 in Kansas City, Mo. This year's sponsors, the U.S. Army Corps of Engineers, U.S. Geological Survey and the University of Florida's Institute of Food and Agricultural Sciences, invite participants to interact in an interdisciplinary setting to experience state-of-the-art science and engineering planning and policy in a partnership environ-

ment and to formulate goals and approaches to ecosystem restoration. Preventing and restoring degraded ecosystems continue to be a high priority.

The conference will provide a forum for physical, biological, and social scientists, engineers, resource managers, planners and policy-makers to share their knowledge and research results concerning ecosystem restoration throughout the United States.

For more information, visit the Web site at <http://conference.ifas.ufl.edu/NCER2007/index.html>.

Honolulu District celebrates World Water Monitoring Day with local middle school

By Honolulu District Public Affairs

In celebration of World Water Monitoring Day, 60 Honolulu-area middle school students created a snapshot of the water quality in Makiki Stream as they participated in a fun sampling and assessment of the Makiki watershed Oct. 20.

The U.S. Army Corps of Engineers, State of Hawaii Department of Health — Clean Water Branch, City and County of Honolulu Department of Environmental Services and the Hawaii Nature Center teamed up to host the event, along with science teacher Debbie Jensen from Washington Middle School.

The Washington Middle School students learned more about the Ahupua'a concept, ecosystem restoration, aquatic species and water quality monitoring.

The Ahupua'a is an ancient Hawaiian land division system in which strips of land extended from the mountain to the sea. The Ahupua'a supported a self-contained community working with a spirit of cooperation, revering the land to meet the needs of all.

The day began at the Hawaii Nature Center and included water sampling at Makiki Stream and observation of the Ala Wai Canal phytoremediation project.

Phytoremediation is a technology that uses the natural properties of plants in engineered systems to remediate pollution.

At Makiki Stream, students conducted a hands-on field investigation by collecting and measuring water samples using



Students collect water samples to determine the quality of water at the Ala Wai Canal. (Photos by Garland Ireland)

both field instruments and educational monitoring kits to determine how the parameters of pH, dissolved oxygen, temperature, turbidity, nitrate, phosphate and conductivity relate to each other. Data collected by the students was uploaded into a global database at <http://www.worldwatermonitoringday.org/> and will become part of the analysis of the world's water supply.

The event increases the public's awareness of the environment, said Michael Wong, hydraulic engineer with the U.S. Army Corps of Engineers.

"The message we are trying to give them is to be good stewards of their environment," Wong said.

World Water Monitoring Day was initiated by America's Clean Water Foundation (ACWF) in 2002 as a significant part of the events held in observance of the 30th anniversary of the U.S. Clean Water Act.

It serves as a global educational platform for watershed leaders, educators and trained volunteers to help those with little or no experience better understand how the actions of individuals in a watershed can impact many others.

In July 2006 the Water Environment Federation assumed operation of World Water Monitoring Day activities from ACWF.



Washington Middle School students conduct a hands-on field investigation.

Prairies cited as most en

By Eric Cramer
Kansas City District

More than 40 U.S. Army Corps of Engineers natural resource specialists gathered in Manhattan, Kan., to compare notes and study the best methods for managing America's rare prairie ecosystems at the first-ever USACE Prairie Workshop, sponsored by the Corps' Environmental Laboratory, Engineer Research and Development Center and Kansas City District.

The workshop, a product of the Corps' Ecosystem Restoration and Management Research program, included 14 presentations by experts inside and outside the Corps and site visits to several prairie environments within the Kansas City District.

Chester Martin, a research wildlife biologist with the Environmental Laboratory, said the Corps-wide conference served as a forum for those responsible for managing hundreds of

thousands of acres of prairies on Corps projects.

"We see this as an informal event, because we want to encourage interaction so that natural resource managers can learn from each other," Martin said.

He said prairies are among the most endangered ecosystems in the United States.

Martin said a "prairie data call" of the Corps showed about 800,000 acres of prairie falling under the Corps' jurisdiction.

The largest portion of that is in the Northwestern Division, which contains about 600,000 acres.

"Prairie is a significant resource that is not protected by law," said Paul Peloquin, a senior wildlife biologist with the Northwestern Division. "The prairies, like an endangered species, could become an endangered resource. The prairie is dwindling in both quantity and quality. A major problem affecting the quality of Corps-administered prairies is invasive plant species. These



Buffalo were among the native species, both plant and animal, at the Prairie Workshop. (Photo by Mike Watkins)

terrestrial invasive species are as big a problem as the aquatic invasive species known as the zebra mussel, a shellfish known for damaging environments where it has been introduced.

"It's important for the natural resource manager to realize that they can have input into making Corps prairie policy," he said. "We're working to address critical areas of national importance to the Environmental Stewardship Business Line through the development of regulations and budget instructions in the Engineer Circular, stewardship advisory team membership, task forces and the execution of the program at all levels from the



About 40 Corps prairie managers tour a prairie site near Tuttle Creek Lake in Manhattan, Kan. (Photo by Eric Cramer)

Endangered ecosystem



and animal, of the Konza Prairie viewed by Corps prairie managers during the Prairie

project through the district to Headquarters, U.S. Army Corps of Engineers.”

Of the six performance measures used by natural resource managers, prairies are best represented by the Healthy and Sustainable Lands and Waters measure.

“Each and every one of you is important and each must contribute where he or she can if we’re to be successful in the management of Corps prairies,” Peloquin said.

In addition to presentations by Martin and Peloquin, the first day of the conference contained presentations from Corps prairie experts and visits to

prairie areas at Tuttle Creek and Milford Lake projects and at Fort Riley, Kan. The second day consisted of additional presentations, a visit to the internationally acclaimed Konza Prairie and prairie management areas on Fort Riley and a group discussion.

Jim Brown, wildlife resource specialist for Harlan County Lake, described the methods he used for converting areas covered in non-native brome grass to native species of prairie grass, in part to improve habitat for upland bird species, including pheasants.

Brown said Harlan County Lake’s lands include 7,900 acres of grasslands.

He said that initially the Corps

required farmers using Corps property as part of agricultural lease programs to leave 100-foot strips of grass between their crop fields, some of the grass being smooth brome. “By the mid 1990s, we’d shifted priorities to grasslands management,” he said.

Brown also said he worked closely with the Nebraska Game and Parks Commission and other organizations to create a statewide grasslands improvement program known as “Focus on Pheasants,” an economic and wildlife program that initially received a \$100,000 earmark from Nebraska’s state government and other funding from outside sources.

This funding led to the establishment of three public demonstration areas throughout the state — one at Harlan County Lake. Some results of the program include wider grass strips, “blocks” of grass, preferably at least 40 acres which Brown said is best for pheasants, the conversion of crop to grassland and other measures.

“We created a new haying paradigm where the hay is harvested once every five years or when needed,” Brown said. “This provides the ability to provide quality habitat, allows local farmers to acquire quality hay and gives the Corps the ability to utilize innovative techniques to control invasive species.”

He said the project’s program continues to evolve and will work toward the elimination of non-native species, including smooth brome and Kentucky bluegrass.

Carey Weber, with the Fort Worth District, said the Prairie Workshop is a valuable endeavor as it gives managers a chance to learn what is going on in other areas of the Corps.

“We have the chance to find some commonalities, what goes right and what doesn’t go right,” he said.

94-mile stretch of tires heads to recyclers

By Dave Harris
Louisiana Recovery Field Office

In the aftermath of Hurricanes Katrina and Rita, a quarter-million discarded tires — enough to stretch from New Orleans to Hattiesburg, Miss.— popping up by ones and twos are hitching a ride to state-certified recyclers, compliments of the U.S. Army Corps of Engineers.

“They’re like rabbits — they keep multiplying,” said Jon Tudor, a supply and services contract team member with the Corps’ Louisiana Recovery Field Office.

While tires do not take on the reproductive traits of rabbits, they do become health hazards by providing inviting habitat to creature pests, and they pose a fire danger.

Tudor discussed the waste tire collection challenges experienced by the 8(a) contractor who works under a Small Business Administration program that assists eligible small and disadvantaged businesses compete in the American economy through business development.

The contractor is Healtheon, Inc., which Tudor described as performing well in spite of the tedious task of scouring parishes street by street and discovering one or two abandoned tires at a time — and sometimes none — followed by subsequent stray tire hunts, and repeated counts, validations, verifications and documentation by the contractor, state-approved recycler and quality assurance field people.

The collections are based on the documented and confirmed number of tires picked up and recycled throughout seven parishes.

“If we agree with the number, that’s what we’re willing to pay,” Tudor said.

Tudor pointed out that tires cannot be intermingled with other debris collections and must be separated out



These waste tires will soon meet their fate as part of the U.S. Army Corps of Engineers’ mission to move discarded tires to recyclers who will shred them for other uses including materials for playgrounds, roads and erosion control. (Photo by Dave Harris)

and segregated from other recycling processes.

Fifty years ago disposal consisted of collecting huge piles of tires and igniting the fast-burning rubber, sending billows of acrid, black smoke into the air and choking any rubber-neckers who dared to get close.

Not today. Whether strewn by ones and twos or piled sky-high at staging areas, new technology has found better uses for old tires, and the Corps makes sure the tire collection program funnels tires to a specified list of recyclers approved by the Louisiana Department of Environmental Quality, and scientists think of ways to use them.

A special report, “Scrap and Shredded Tire Fires,” released by the Federal Emergency Management Agency and the U.S. Fire Administration warns of the dangers and problems caused by stockpiling scrap tires and suggests uses to diminish the hazards.

“Whole scrap tires are used for

breakwaters to reduce shoreline erosion by waves,” the report says. “Highway crash barriers can be constructed from whole tires.”

It goes on to describe uses of shredded rubber: “Crumb rubber is made by finely shredding tires with the steel cords removed,” it says. “Tires shredded into crumb rubber can be used in asphalt paving for road surfaces. Rubber crumb can also be formed into gymnasium floor mats, used to cover playgrounds and athletic fields, mixed with dirt as a playing surface, or used for running tracks...”

Kip D. Vincent of Colt, Inc., a certified recycler in Lafayette Parish, said local tires turned in to his facility are used for civil engineering and as an alternate fuel component.

While the Corps doesn’t determine end uses of the tires, Tudor said, directing the tires to certified recyclers helps assure environmentally friendly re-use of what once were eyesore castoffs.

Corps getting greener

By Mike Tharp
Los Angeles District

The Corps unveiled its new “greens” at the Hispanic Engineer National Achievement Awards Corporation (HENAAC) annual conference in the Anaheim Convention Center in Anaheim, Calif.

These “greens” are those found in the Corps’ plans to implement sustainable design and development, which the agency hopes leads to environmentally sound projects and buildings.

The “Green Engineering Lunch” was spearheaded by Harry Goradia, a mechanical engineer based at the Corps’ Washington, D.C., headquarters, and William Goran, technical director of the Engineer Research and Development Center.

They presented the latest examples of Corps projects aimed at maintaining economic growth, while producing a minimum amount of pollution, a process now occurring from concept to planning to programming, design, construction and ownership.

“The amount of work on sustainability being done by the Corps was a revelation to us all,” said Keith Miller, publisher of *Green Technology*, which co-hosted the event. “We are thrilled to get an insight into the Corps’ level of commitment when it comes to environmental and sustainability issues.”

Goran pinpointed Fort Bragg, N.C., for “helping raise the consciousness to have regional goals of working with the

neighbors.” Watchwords at the sprawling installation, he said, are mission, community and environment. Fort Bragg plans to reduce the amount of water it withdraws from local rivers by 70 percent over the next 14 years, Goran said, and by 2025, the base hopes to reduce waste to zero.

Other environmentally friendly projects include a Hawaii Department of Defense facility that now gets 30 percent of its energy from solar sources; new fuel policies at Fort Lewis, Wash., and West Point, N.Y., that emphasize purchasing decisions. On one DoD building close to the Pentagon, there’s even a “green” roof atop it, and the Mississippi River Visitors Center boasts a “green” parking lot.

Such construction by the Corps is catching the crest of an innovative wave. *Building Design & Construction* magazine estimates that in the year 2000 there were about \$792 million of green buildings under construction in the United States. Today, that figure has soared to \$7.73 billion.

Goran said the Corps is “taking the concept to the warfighter — in base camps in theater.” Goals are to accelerate hazardous waste disposal, re-use materials and reduce the number of vehicles going and coming from base camps, he said.

That resonated with Miller who called “most striking the attention the Army is giving to remediation of environmental damage in theaters of war.”

Goradia said the Army, Air Force and other federal agencies have a \$20.08 billion budget for military program activities in the current fiscal year, with \$17.9 billion budgeted for design and construction of military programs.

“We tell our PDTs (project delivery teams) to start using the sustainable process early in the planning game,” he said. “We (the Corps) are ahead of the rest of the federal sector in promoting sustainable programs.”

He emphasized the priority of using LEED, Leadership in Energy and Environmental Design, which has a Green Building Rating System, a nationally accepted standard for enviro-buildings developed by its members.

“Each quarter we present to our bosses the level of LEEDs” being attained by our buildings, Goradia said. “There’s high-level interest in LEED and getting LEED accreditation.”

Recently, the General Services Administration, the landlord for the federal government, called the LEED system the most credible system for rating “green” buildings. LEED also has launched LEED-H, a pilot program that awards points for homes that are environmentally friendly.

Today, “green” is the scene, and the U.S. Army Corps of Engineers is now greener than ever.



The Edwards Air Force Base Consolidated Support Facility’s design and drought-resistant landscape earned a LEED Green Building silver rating. (Photo by Jay Field)

Memphis District controls erosion on Wolf River

By Jim Pogue
Memphis District

Officials from the Memphis District met with local government leaders in Collierville, Tenn., Sept. 26 to discuss and inspect the Wolf River Environmental Restoration Project.

“We meet with the local sponsors like this about once a year to update them on the progress of the project and to address any questions or concerns they have,” said Carol Jones, project manager at Memphis District.

The \$12.5 million project is designed to reverse serious erosion and head cutting — erosion of river banks caused by swiftly flowing river currents — that have plagued the Wolf River for many years. The job is not easy.

“The head cutting is progressing faster than we anticipated,” Jones said. “We’re chasing a moving target. It’s difficult to get stone on the ground fast enough at times.”

Jones said that one of two berms initially planned for the project had been eliminated because the cutoff it

was intended to prevent had already occurred.

The Wolf River, like many other Mississippi River tributaries, has many bends and meanders as it makes its way toward its final confluence. Swift and powerful currents, seen during periods of high flows, sometimes work to carve through a smaller neck of land at one of these river bends, thus taking a shortcut. In river engineering jargon, these are called cutoffs. Berms are used to prevent these cutoffs from occurring.

Still, Jones said the project is already paying significant dividends in controlling and reducing erosion.

“The weirs (small stone dams built just below the surface of the water to slow the current and reduce erosion) now in place are already working to restore the channel to near its original condition,” she told the group that included Col. Charles Smithers, Memphis District commander, Linda Kerley, Collierville mayor and C. Melvin Booth Jr. from the Shelby County Public Works Department.

Jones added that the Corps is working to ensure the erosion taking

place is reduced as much as possible while the project is under construction.

One area of special concern is the supports for the Collierville-Arlington Road Bridge.

“We usually begin work downstream and work our way upstream,” she said. “But we need to protect the bridge so we jumped ahead a little.”

Plans call for construction of one berm, four main channel weirs, five tributary weirs and bridge protection.

Several environmental and recreational items also figure prominently in the project design. These include a 2,000-acre wildlife corridor, hiking trails and three boat ramps.

These additional features are of particular interest to the local sponsors: The Chickasaw Basin Authority, Shelby County and through sub-agreements, the City of Collierville and the Wolf River Conservancy. Both Shelby County mayor A.C. Wharton Jr. and Collierville mayor Linda Kerley strongly support the project.

“Collierville has a long history with the Wolf River,” Kerley said. “It’s our duty to preserve what we have for the future. It’s such a jewel. We’ve already lost some of the beauty. Maybe we’ve learned our lesson and can preserve what we have here for future generations.”

Following an initial briefing, the group inspected work done at the Collierville-Arlington Road Bridge site and further downstream where one of the main channel weirs is under construction.

As the group prepared to leave the second site, Smithers expressed his satisfaction with the project.

“A potential local sponsor for another project asked me the other day about the best way to have a successful project,” he said. “I told them to talk to the local sponsors of the Wolf River Project. They know how to make the process work.”



A dump truck transports riprap stone over a main channel weir to the other side of the Wolf River so it can be used to dress the bank and help prevent erosion. (Photo by Jim Pogue)

Solar panels cut energy costs at Fort Sam Houston

By Debra Valine
U.S. Army Engineering and Support Center, Huntsville

San Antonio, Texas, gets plenty of sunshine so why not convert that natural power to usable energy? Solar power creates green energy. It's good for the environment and saves money.

Bldg. 1350 at Fort Sam Houston in San Antonio now uses a 180 kilowatt-hour photovoltaic (PV) solar panel system to augment electricity from the power company. It's saving the installation nearly \$6,000 a month in energy costs.

The solar panels produce direct current (DC) electricity and route it through an inverter where it is turned into alternating current (AC) energy that is accessible to anyone on the power grid in San Antonio. Once on the grid, the solar energy is used just like electricity that comes from the power company; this just comes from the sun. It is seamless to the end user.

The \$1.5 million project is part of the Energy Conservation Investment Program (ECIP). Funding comes from Congress through the Military Construction Program. ECIP judges the different projects that installations submit. Other types of projects include increased insulation, high efficiency boilers and motors — basically anything you can replace with a high efficiency device, lighting and direct digital controls.

"ECIP likes funding PV because it is green energy," said Will White, the lead program engineer of the Utility Monitoring and Control System (UMCS) team at the U.S. Army Corps of Engineers, Engineering and Support Center in Huntsville, Ala.

"The workmanship and the engineering on this job impressed me," White said. "We finished the job on time and within budget. We actually had some contingency funds that we did not use that we will return to the program. It was in all respects one of the most satisfying and successful jobs I've been associated with. No safety violations, no re-submittals, no unhappy customer... the guys just worked hard and did all they promised."

"Initially our primary objective for going with PV was to try and not exceed the demand charge from City Public Service, our local utility company," said Gene Rodriguez, the installation energy manager at Fort Sam Houston. "The solar constant is something like 1,500 British thermal units/square feet per day. That is a lot of energy going to waste. Our chillers are drawing the most current flow from 3 to 5 p.m., almost matching the peak output of the PV system that it is interfaced with. Due to the reduction in maintenance dollars, a system almost has to be designed for neglect.

"It hasn't rained much lately in San Antonio, but for the most part an occasional rain is all that's required to keep the



A worker installs photovoltaic solar panels on Bldg. 1350 at Fort Sam Houston, Texas. (Courtesy photo)

collectors clean," Rodriguez said. "But now we're finally starting to pay attention to global warming and national security. Due to soaring oil prices, using a renewable alternate energy source, in this case solar energy that we have in abundance, to achieve energy independence in America not only makes sense but soon may become mandatory. More importantly, this will help procure the long term national security that comes with preserving the environment for our children and grandchildren, and cut our international foreign deficit by keeping our dollars here in America instead of sending them to some Middle Eastern country that doesn't like us and promotes terrorism."

Partners in the project included the installation, Corps of Engineers Fort Worth District, Huntsville Center, Williams Electric Company of Fort Walton Beach, Fla., and Meridian Energy Systems of Austin, Texas.

The system is fully integrated through controls to produce power onto the energy grid. It is metered and monitored separately from the power provided by the local electric company. The power that is generated from the sun is metered separately and the cumulative kilowatts and dollar savings are displayed on the monitor in the master control room of the Energy Monitoring and Control System. It is helping to reduce the demand cost and base utility cost, while helping to meet Army energy goals.

"What is great about the use at Fort Sam Houston is that it provides additional energy for cooling during the peak demand periods," White said. "You get more kilowatts of energy from the solar panels when the sun is the brightest. The solar energy powers the chillers in classrooms, barracks, etc.

"It was a team effort that turned out well."

Noise screening tool gives range managers an edge

By Amanda Ehmann
U.S. Army Engineer Research
and Development Center —
Construction Engineering Research
Laboratory

By the time an installation's Range Control Office runs a full analysis of the noise at a given range, local residents may have already lodged a complaint. The result? A possible compromise to realistic training for America's Soldiers.

A quick check to gauge the noise potential from training can head off this situation, and that's what the noise tool is designed to do. As part of the fielded range manager's toolkit (RMTK), this new feature lets range managers "see" what others in the community hear.

Military training produces noise that can greatly impact surrounding communities. When local residents respond to training noise with complaints, political pressure and legal action, training realism faces a major threat. As encroachment increases around military installations, the frequency of negative community responses to noise may also

grow. The RMTK noise tool is designed to be a predictive tool for noise.

"We're going to create noise; it's the nature of our business. The tool will help us to manage that noise," said Billy Karnes, U.S. Army Training Support Center.

To effectively manage training noise, military managers must be aware of noise levels in the surrounding community. To manage daily range operations, installations need the ability to rapidly predict the expected noise level over an area of several thousand square kilometers. These noise levels depend on several factors, including weather conditions and the source, weapon noise directivity, and firing and target locations.

The noise tool is a "noise prediction and impact assessment software tool." It is designed to be a "day-to-day" planning tool for range control personnel, making it the "first easy-to-use noise assessment tool," said developer Dr. Michelle Swearingen, U.S. Army Engineer Research and Development Center — Construction Engineering Research Laboratory (CERL). The

output from the noise tool gives potential noise impacts for both on- and off-post communities.

"It's designed for a first look at things, specifically for range control and to give on-the-spot assessment," Swearingen said. The noise tool takes explicit weather conditions into account, such as time of day, season, cloud cover, wind speed and wind direction. The noise tool is designed to help the Army plan training exercises, predict noise impact on any given day for a variety of weather conditions and perform preliminary range siting. Output from the noise tool can help range managers improve scheduling time and location of training or testing.

The RMTK noise tool and the U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM) both use the same method to calculate weapons and demolitions. "The RMTK noise tool is not meant to replace noise assessment done by CHPPM," Karnes said. The noise tool is an on-the-spot assessment, which could serve as a preliminary flag for an in-depth analysis by CHPPM. "The tool answers questions such as — 'do I have a noise problem and how big is it?' It also defines the level of effort needed to address this problem," he said.

The RMTK noise tool is currently available for use in assessment of large weapons and demolitions — blast noise. Updates include improved handling of desert environments, incorporation of terrain and land-water effects, to name a few.

The RMTK noise tool is available for download as part of the range managers' toolkit on the Army Sustainable Range Program Web site at <https://srp.army.mil>. The output from the noise tool is not approved for official documents or for public release.

For more information about CERL's noise research, visit the Web site at <http://www.cecer.army.mil>.



The noise tool helps range managers schedule training with all types of weapons for minimal impact on the surrounding community. (File photo)

Family photo helps Corps find chemical warfare materiel

By Andrea Takash
U.S. Army Engineering and Support Center, Huntsville

The U.S. Army Engineering and Support Center, Huntsville and Seattle District joined together to remove chemical warfare materiel at the former Tulalip Backup Ammunition Storage Depot in Snohomish County, Wash., thanks to a letter and a picture from a concerned resident.

The Army used the former depot to store conventional munitions and chemical warfare materiel (CWM) during World War II and the Korean War.

“If it wasn’t for Lila Brown’s 1940s era photo of her nephew, who was a Soldier, pointing to a sign that said ‘poison gas area, don’t dig for one year’ we would have never known about this area of the site,” said Betina Johnson, Chemical Warfare Materiel Scoping and Security Study project manager at the Huntsville Engineering and Support Center.

Brown sent the photo and a letter to the governor of Washington in 1991.

The Corps team is performing a time critical removal action at the former depot, which is now owned by the Tulalip Tribe, to remove cylinders and glassware that may contain chlorine, phosgene and in some rare cases mustard agent.

“During a site inspection conducted at two areas within the former depot property in June, three small disposal pits were encountered. One of the disposal pits contained rusted storage drums and soil contaminated with chemical agent,” Johnson said. “We determined the need for a time critical removal action because there was a threat of a chemical agent release, and the tribe has scheduled economic development of this area.”

On Aug. 15, the team found two empty damaged cylinders and broken glassware. Work stopped after three contract workers reported an unusual odor and were taken to the hospital.

“We sent the contractors to the hospital just as a precautionary,” Johnson said. “Based on medical screening, it was determined that the contractors had not been exposed to any chemical.”

The team



This photo from the 1940s helped the team during the investigation. (Courtesy photo)



A contractor with Parsons takes a composite soil sample from a backhoe at the site. (Courtesy photo)

decided to put the intrusive work on hold until December to amend the level of protection and update the work plan.

“We amended the work plan for safety reasons based on the discovery of the debris containers,” said Rodney Taie, Seattle District project manager. “So in the new work plan, we added engineering controls — a vapor containment tent with an air filter system. This tent can be moved to any location where the team is digging.”

The suspect items are considered non-explosive by definition, but the vapor containment tent will be used as a precautionary measure for the public, workers and environment, Johnson said.

“Intrusive work usually takes eight weeks,” Johnson said. “The contractors will dig the whole pit until there is no more chemical agent contamination left. After the removal is done, the team will decontaminate the soil with household Clorox, if necessary, prior to being transported to a permitted incinerator for final disposal.”

After the team completes the time critical removal action, they will publish the final results and recommend any further actions. They will also hold a public meeting.

Huntsville Center’s Recovered Chemical Warfare Design Center is the executing agency for the time critical removal action. Seattle District is the geographic project manager and is responsible for coordinating with the Tulalip Tribe and regulators, and providing notifications to the public.

Both Johnson and Taie agreed that the close working relationship between Seattle District, Huntsville Center and Tulalip Tribe has benefited the project.

Fort Campbell shares tools for material diversion

By Tina Hartman
Fort Campbell Directorate of Public Works, Pollution Prevention Branch

Fort Campbell, Ky., now offers a construction and demolition (C&D) waste management course, provided by Wilmot, Inc. through the U.S. Army Corps of Engineers Nashville District.

Through this training, contractors performing construction, renovation or demolition activities are trained through a hands-on course and written guide.

The Contractor Development Course is designed to educate contractors and subcontractors on methods for complying with debris reduction requirements and the Assistant Chief of Staff for Installation Management policy. The course includes sessions on bidding requirements/responsibilities,

C&D debris management overview, how to start your waste management plan and waste characterization and separation, just to name a few.

The Debris Management Guide features an installation design guide, data analysis, C&D reduction recommendations and contractor bidder specifications.

Fort Campbell will soon offer an online contractor training course incorporating both video and audio elements to provide a multimedia learning experience similar to a bricks and mortar classroom.

“This is about implementing the Army’s Strategy for the Environment — *Sustain the Mission, Secure the Future* — for which sustainability is the keystone,” said Tiffany Wilmot with Wilmot, Inc. “Fort Campbell is proactive in the

progression of future waste management operations, with plans to achieve a silver rating in the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) system by 2007. Fort Campbell’s *Weapons for Material Diversion Course* will assist in LEED certification in the materials and resources rating category because designers, engineers and contractors will fully integrate sustainable practices of construction and demolition waste management into the planning, design, development and execution of projects.”

All components of this training are available to any installation upon request. Please contact the Fort Campbell Environmental Solid Waste and Recycling program at 270-798-9769 or loan.harris@us.army.mil.

Top 10 things you can do to reduce global warming

- 1) Reduce, re-use, recycle
- 2) Use less heat and air conditioning
- 3) Replace regular light bulbs with compact florescent light bulbs
- 4) Drive less and drive smart
- 5) Buy energy-efficient products
- 6) Use less hot water
- 7) Use the “off” switch
- 8) Plant a tree
- 9) Get a report card from your utility company
- 10) Encourage others to conserve



This information was reported by Larry West, *Your Guide to Environmental Issues*, at <http://environment.about.com/od/globalwarming/tp/globalwarmtips.htm/index.html>.

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