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Work has begun on the Bourne Bridge. (Photo by Scott Barr)

Repairs, lane restrictions begin on the Bourne Bridge

by Timothy Dugan
Public Affairs Office

Lane restrictions on the Bourne Bridge spanning the Cape Cod Canal in Bourne, Mass., began Oct. 12, as the New England District conducts deck repairs and paving of the bridge.

As of Oct. 12, travel restrictions were put in place 24-hours a day, 7-days a week. Travel over the Bourne Bridge has been reduced from two lanes in each direction to one lane in each direction.

Motorists who are planning to use the Bourne Bridge during this timeframe should be aware that travel delays are likely to occur during the morning and afternoon peak travel periods each day.

To avoid delays, motorists might want to consider using alternate routes or adjusting travel times. The lane restrictions will continue until the project is completed in early December 2010.

Bourne Bridge work will consist of removal of the existing waterproofing and pavement to the bridge deck, and the reinstallation of pavement/waterproofing. Similar to the previous bridge repairs, the work will have three phases, restricting the road width to one lane of traffic in each direction. These pavement and waterproofing repairs are essential to protecting the underlying steel/concrete grid deck in order to maintain the structural integrity and safety of the bridge. During repairs, no wide loads will be permitted to cross the span, and state/local police will be on duty at all times work is being performed to assist the motoring public.

Message boards, located at both approaches to the Bourne Bridge, will keep motorists advised of work efforts. Also, fixed signage will be installed at all approach roads to the Bourne Bridge, alerting motorists to the bridge work and associated travel restrictions.

In addition, accessing the Cape Cod Canal website (use the link: CapeCodCanal.US, then Bridge Work Alerts) will inform motorists on the status of the work, and advise them of lane shifts and other adjustments to the work schedule.

The Cape Cod Canal website is (http://www.nae.usace.army.mil/recreati/ccc/news/bridgealerts.htm).

At that site the public can sign up to be notified by email for bridge alert updates. For more information contact the U.S. Army Corps of Engineers, New England District, Public Affairs Office at 978-318-8238.

Yankee Voices

Maj. Gen. William Grisoli, Col. Philip Feir, and Maj. Dan Hayden

East Brimfield celebrates 50 years on Nov. 6

The New England District and the towns of Holland, Brimfield and Sturbridge, Mass., and several other groups will join together to observe the 50th anniversary of the completion of East Brimfield Dam.

A formal ceremony will be held on Saturday, Nov. 6, at 1 p.m. at the dam located at 24 Riverview Ave., in Fiskdale, Mass. Local historian Larry Lowenthal will speak during the ceremony and a plaque commemorating the 50th anniversary will be unveiled.

The ceremony will be followed by dam tours and refreshments. Historical displays will interpret the East Brimfield Dam construction and the former East Brimfield Village. The public is invited to attend this free event. For more information call the East Brimfield Dam office at 508-347-3705.

Congratulations

…to **Tim Titus**, who has been selected as the WE Committee's September 2010 Employee of the Month for his outstanding work at Thomaston Dam.

…to **Andrew Jordan,** Engineering/Planning, and his wife, on the birth of their daughter, **Juliannah**, Sept. 16.

…to **Patrick Blumeris,** Engineering /Planning Division, who has been selected as the WE Committee's October 2010 Employee of the Month for his outstanding work in support of the Millennium Challenge Corporation (MCC) in Mozambique, Africa.

…to the **Navigation Team of PPM Division and the crew of the dredge, CURRITUCK,** that have been selected as the WE Committee's October-December 2010 Team of the Quarter. The Navigation team of **Bill Kavanaugh**, **Duban Montoya, Mike Walsh and Jack Karalius** were each assigned several projects in need of expedited dredging. Also included in the team was the crew of the Corps dredge CURRITUCK. The crew is headed by Dredge Master, **Ed Evans,** and has spent portions of the last 23 years working here in New England.

Sympathy

… to **Jim Lewis**, Project Manager, Otter Brook/Surry Mountain Lakes on the passing of his father, **Franklin Lewis**, Sept. 1. The late Mr. Lewis enlisted in the New York National Guard, New York State Guard and then the U.S. Army where he served in World War II in the European Theater of Operations and landed at Omaha Beach.

… to the family and friends of **Richard Drew**, Resource Management, who passed away Sept. 27. He started his career as a Temporary Accounting Technician in January 1982. Drew became a permanent employee in December 1983 and served as an Accountant, Budget Analyst, Systems Accountant and finally the Budget and Manpower Officer for NAE. He was a person of integrity and well respected throughout the Corps for his knowledge and understanding of complex fiscal and budgetary issues. Drew was a kind and caring person who will be greatly missed by those who knew and worked with him over the years.

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Photo by Ann Marie R. Harvie

Bruce Sabol (left) and Mike Walsh on research vessel in Buttermilk Bay.

New England District, ERDC partner on eelgrass experiment in Cape Cod waters

The New England District is collaborating with the Corps' Engineering Research Development Center (ERDC) on a study to map eelgrass beds from the air and to distinguish this protected plant species from the many types of common seaweed. Work to map the presence of eelgrass in Buttermilk Bay and Plymouth Harbor, Mass., began on Sept. 7 and continued through Sept. 16.

Eelgrass (Zostera marina) is an underwater plant that grows in estuaries and shallow coastal areas. It is a valuable aquatic resource that provides a safe habitat and food source for small fish and shellfish. The plant is a protected species under the Clean Water Act, which means that any dredging in U.S. waters must avoid destroying eelgrass beds.

Currently, detecting eelgrass is a very slow and cumbersome job that involves divers going out and mapping large areas, but scientists hope that will all change with the development of this new technique.

The Corps of Engineers and the U.S. Navy have established the Joint Airborne Lidar Bathymetry Technical Center of Expertise (JALBTCX) in Kiln, Mississippi, to support use of a technologically advanced airplane-based sensor system that uses LIDAR (an acronym for Light Detection and Ranging), using lasers to map topography and ba-

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Earl a good test for New England District's readiness

When Hurricane Earl started setting its sights toward the East Coast, it looked as though the one-time Category 5 monster would be the first major storm New England has seen in a long time.

However, as often happens, Earl hit the cooler New England waters in early September and quickly weakened. It's course also changed just enough to make Hurricane Earl the storm that really never was.

But if it had taken a different course, the New England District was ready to respond.

The District's Emergency Operations Center (EOC), operated by Dave Schafer and Rachel Fisher, began watching Earl when the storm first started developing in the Atlantic. When it looked like Earl might impact New England, the EOC assigned two individuals to operate the Regional Response Coordination Center (RRCC) 12 hours a day. The EOC remained open during normal business hours, but were on standby during off hours just in case.

The EOC deployed Scott Michalak and George Claflin to the Massachusetts Emergency Management Agency's (MEMA) bunker in Framingham, Mass., for 24-hour coordination coverage during the event. Janet Patev, one of New England District's subject matter experts was also sent to the Framingham Bun-

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Volunteers improve District projects during National Public Lands Day

The New England District's recreational facilities hosted several clean-up and improvement events during National Public Lands Day (NPLD) weekend, Sept. 25-26. Hundreds of volunteers came out to participate.

At East Brimfield Lake in Massachusettts, 24 volunteers collected 18 bags of trash and over 100 pounds of debris too large to fit into bags. Volunteers also completed 300 feet of a new 10 foot-wide firm gravel surface, which included spreading gravel, removing roots, rocks and various debris. District personnel and volunteers also cleared 500 feet of trail and overhead branches of up to 12 feet-high to allow for horses.

Across the way at Westville Lake, 22 volunteers spread loam and seeded 3,000 feet of the Grand Trunk Trail. Volunteers also repaired 50 feet of trail edge to prevent erosion. "It was hot and dusty, but everybody had a good time," said Park Ranger Tom Chamberland.

Volunteers install tube protectors at Mill Brook. (Photo provided by Mill Brook Team)

In addition to the work at East Brimfield and Westville, New England District personnel and their partners, to inlcude the Grand Trunk Trailblazers and the town of Sturbridge, held a ribbon-cutting ceremony in the afternoon.

The ceremony celebrated the completion of a 1.2-mile section of the Grand Trunk Trail, which is a part of the Titanic Rail Trail. The event also included a guided tour of the recently completed trail.

West Hill Dam in Uxbridge, Mass., held its 10th NPLD celebration. Approximately 266 volunteers came out to complete 16 tasks that included trail blazing, clearing and debris removal; restoring the World War II memorial bench; applying sealant on bridge railings, planter boxes, and benches; raking; mulching; and planting.

"National Public Lands Day provides a lot of good will between the public and West Hill Dam," said Park Ranger Viola Bramel. "The volunteers are the caretakers and the environmental stewards of this project, now and in the future."

Blackwater Dam in New Hampshire had 20 volunteers participate in NPLD events. (See story on page 8.)

Thirty-eight volunteers arrived at Barre Falls Dam with their sleeves rolled up ready to work. Tasks of the day included raking, scraping

Girl Scouts plant a butterfly garden at Black Rock Lake. (Photo by Marissa Wright)

and painting picnic tables, cleaning grills, weeding flower beds and trimming bushes. "Volunteers also performed prep work on the volleyball court, which included removing rocks and leveling the court," said Park Ranger Delia Vogel.

At Black Rock Lake in Thomaston, Conn., Girl Scout Troop 64058 created a native butterfly garden and walking path. Work included turning soil, digging holes for the plantings, watering and mulching the area after plant installation. "The field habitat in the area was enhanced with 25 native plantings such as joe-pyeweed, beebalm, milkweeds, ironweed, and pepperbrush, which will provide a native food source for butterflies, birds and other wildlife," said Park Ranger Marissa Wright. "A mile long walking path was created and will now serve as a way to access the beautiful garden."

The Cape Cod Canal also held an event. "For National Public Lands Day, the Cape Cod Canal Park Ranger staff worked with 25 volunteers from the Cape Cad Salties Fishing Club on a Canal-wide cleanup project," said Park Ranger Bill Norman. "The event was held on Sept. 24th and the volunteers removed one dump truck full of various debris."

At the end of the events, most participants received certificates of appreciation for their hard work. Local businesses at some facilities offered lunch to volunteers after their work. National Public Lands Day is a program of the National Environmental Education Foundation. The Foundation partners with federal, state, and local public lands agencies and not-for-profit organizations. The event is the nation's largest volunteer effort to improve America's public lands.

Randy Redetzke, Chair Sturbridge Trail Committee, Howard Fife, Trustee Opacum Land Trust, State Senator Steven Brewer, State Representative Todd Smola, Tom Creamer, Chair Sturbridge Board of Selectmen and Park Manager Keith Beecher, Westville Lake/East Brimfield Lake, during the ribbon cutting ceremony. (Photo by Brian Murphy)

Girl Scouts pick up debris at East Brimfield Lake. (Photo by Brian Murphy)

Volunteers rake the picnic area at Barre Falls Dam. (Photo by Delia Vogel)

New England District, ERDC partner on eelgrass experiment in Cape Cod waters

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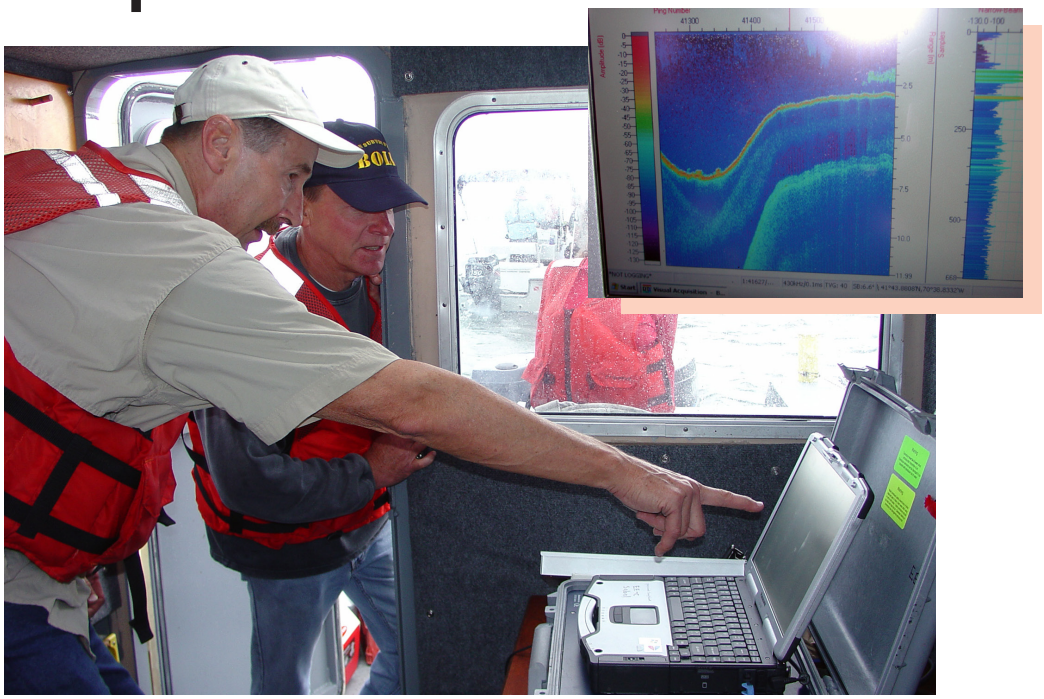

Inset: The echosounder scans the bottom of Buttermilk Bay for vegetation. (left) Bruce Sabol shows Jay Mackay where the vegetation is on the ocean floor. (Photo by Ann Marie R. Harvie)

thymetry, and hyperspectral scanner, to measure reflectance in very narrow bands of the spectrum. The system, known as Compact Hydrographic Airborne Rapid Total Survey (CHARTS), is used by the Corps primarily to map the coastal areas of the United States with funding from the Corps' National Coastal Mapping Program. Data generated by CHARTS are freely available to the Corps Districts and other interested agencies, and have been used mostly for coastal engineering purposes, such as coastal mapping, sediment management and navigation studies. The eelgrass study represents one of the first large-scale environmental studies performed with CHARTS. "For dredging projects in New England it's necessary to distinguish eelgrass, which is considered ecologically valuable, from marine macro algae which is not," said Bruce Sabol, an engineer from ERDC leading this experiment. "The literature suggests that by combining hyperspectral data with good bathymetric data from the LIDAR you can better distinguish one from the other, which is important to the Corps project planning process."

Duban Montoya, a New England District Project Manager who deals heavily with dredging projects, emphasized the importance of locating the eelgrass. "Eelgrass is a resource with many beneficial attributes," he said. "Eelgrass also serves to improve water quality and even slow down erosive processes. For this reason, it is important for us to know the location of eelgrass beds relative to federal navigation projects where we perform maintenance dredging. This eelgrass mapping effort is another step in our attempts to maintain good environmental stewardship in balance with our mission to maintain our waterways open and available to the navigation public."

The twin-engine JALBTCX plane completes an entire survey of the U.S. coast every three to five years and was scheduled to be in the New England area during the summer of 2010. "In a planning meeting between New England District, ERDC, and JALBTCX, early in 2010, Environmental Resources Branch Chief Bill Hubbard suggested that some District harbors would be good sites for testing this new eelgrass recognition technique, since it is an important issue within the District," said Sabol. "Plymouth Harbor and Buttermilk Bay were selected for the study and planning for the missions was started."

Part of conducting such a study involves getting many types of information on conditions in the study area before and during the actual flight. "The plane will be flying over Buttermilk Bay and Plymouth Harbor," said Sabol. "We're doing a series of tests to see where the plants are and then based on this select sampling points for more detailed optical and physical measurements."

The first part was to find areas of vegetation using an acoustic mapping system developed at ERDC that uses an echosounder – something like a scientifically souped up fish finder that can be found on many recreational boats. But instead of fish, the echosounder looks for vegetation.

A New England District survey boat, piloted by Ben Lloyd, slowly navigated along selected lines, or transects, to find the vegetation using the echosounder. "This location information is used to pick points for spectral measurements of different bottom types," said Sabol.

Once the work with the echosounder was complete, divers, contracted by the District, went to selected locations with a device (DiveSpec) to measure the bottom reflectance without disturbing it. "It's essentially a scanning radiometer which measures the reflectance in very narrow spectral bands so we'll get a very detailed spectral signature of what the bottom is like for the different locations," said Sabol.

At the same time, ERDC geographer Molly Reif, made similar measurements on land surfaces and bottom areas accessible at low tide. These data will be used to assist the software that will classify the imagery obtained with the CHARTS sensor.

Next, a 5-man dive team from the U.S. Environmental Protection Agency (EPA), headed by Phil Colarusso, performed a series of dives to collect plant samples in selected areas to determine plant species, density and height. Additionally, underwater video images were collected by Ben Loyd and the District crew at additional sites to increase the sample size of this "ground truth" data set. These data will be used in the very last step to determine the accuracy of the bottom classifications generated by the processing of the CHARTS imagery.

"It is the ability to collect this spatial data from aircraft that makes it efficient and potentially a comparative ecological marker of estuarine health over future flights nationally," said Bill Hubbard.

The JALBTCX plane prepares for take off. (Photo courtesy of ERDC)

While the plane flew over Buttermilk Bay Channel and Plymouth Harbor, Dr. Heidi Dierson, a University of Connecticut oceanographer, performed water column optical measurements. "What you see from an aircraft comes through the atmosphere and the water after being reflected off the bottom. So bottom reflectantance is heavily modified by the water and the atmosphere," said Sabol. "Dr. Dierson got spectral information about the water column at the exact time of the flight, which is important because the water characteristics are continually changing due to the tides."

All ground-based data collected, as well as preliminary aerial imagery, will be organized and placed on the Coastal America website, managed by Bill Hubbard, to provide access to these data by interested parties. Analysis and classification of the imagery will begin after preliminary processing to correct atmospheric and water column effects has taken place. The final report on this effort will be complete by June 2011. "Assuming that this works the way we think it will, we'll have a methodology that will be in place that can be used in different places at other times without all of this effort," said Sabol.

Jay Mackay, Engineering/Planning, believes that the information will be invaluable to the District and the Corps. "We can essentially use these maps and cross reference them with all of our federal channels to determine if we've got eelgrass issues."

Funding for this research was provided by the Dredging Operations and Environmental Research Program, the National Coastal Mapping Program, and JALBTCX. The ERDC-managed DOER Program seeks solutions to operational and environmental problems associated with the Corps' dredging mission. Collaboration and field support was provided by the EPA and the New England District. Contracted support was provided by Optech International, University of Connecticut, and Coastal Diving Services. *(Bruce Sabol contributed significantly to this article.)*

Park Ranger Matt Cummings (left) with volunteers plant dogwood during National Public Lands Day.

Students, Park Rangers plant hundreds of trees at Blackwater Dam

Story and photos by Martin Curran
Merrimack River Basin

On the morning of Saturday, Sept. 25, 12 students and two faculty advisors from New England College and two students from Merrimack Valley High School joined project staff at Blackwater Dam as volunteers for National Public Lands Day.

The students and faculty from New England College were members of the college's Environmental Action Committee, a group of students with a committed interest in providing assistance and improving local environmental conditions as well as keeping informed on environmental issues.

The task these volunteers had to look forward to was planting 350 trees and shrubs in the 3.2 acre riparian corridor that had been set aside to further stabilize a rehabilitated section of Mill Brook. The planting was the last phase of the Mill Brook rehabilitation project, an American Recovery and Reinvestment Act project which funded the purchase of the plants but not the labor for the planting.

The planting process included placing special fertilizer packs in the holes alongside the roots. These packs release the fertilizer slowly over a three year period and can increase plant growth by up to 25 percent without harming the roots of the seedlings.

Tubes were installed around the seedlings to protect them from damage by deer, rodents and beavers. The tubes are translucent in color and allow light to pass through without absorbing dangerous amounts of heat which could damage the seedlings.

Weed mats were also installed to prevent the growth of weeds in the vicinity of the seedlings which can rob the plants of needed nutrients and water.

Prior to starting, the volunteers were given a tour of the stream rehabilitation work that had already been completed so they would better understand the restoration process and also appreciate the importance of their contributions. After being given instructions in the full planting process, they went to work and did a great job!

All volunteers received certificates of appreciation and on the evening of Oct. 7. Jennifer Rockett, Project Manager of Franklin Falls and Blackwater Dams, and Martin Curran, Environmental Compliance Coordinator for the Merrimack River Basin, presented Certificates of Appreciation to the New England College volunteers at a New England College Environmental Action Committee meeting.

The students and faculty welcomed our Corps representatives and expressed an interest in volunteering again at future projects. Their contributions are welcome and most appreciated.

District meets with public on Westville Lake Master Plan

Representatives of Westville Lake and the New England District's Concord, Mass., Office hosted an information meeting on the proposed Westville Lake Master Plan, Oct., 7 at Southbridge Town Hall in Southbridge, Mass.

Approximately 17 people attended the meeting. Larry Rosenberg, Chief, Public Affairs for the New England District served as moderator for the meeting. Keith Beecher, Westville Lake Project Manager, presented a briefing to meeting attendees. "The Master Plan prescribes an overall land and water management plan, resource objectives, and associated design and management concepts which provide the best possible combination of responses to regional needs, resource capabilities and suitablities," said Beecher. "It also invited public interests and desires consistent with the project's authorized flood damage reduction purposes."

Westville Park Manager Keith Beecher (left) discusses the Master Plan during the meeting. (Photo by Andrew Stamer)

Beecher's presentation included a detailed presentation on the Master Plan. He gave a history of Westville Lake and talked about the existing recreational facilities available at the project.

Some of the possible Master Plan proposals for the recreational area include a possible third picnic shelter and the removal or stabilization of the former Litchfield Shuttle Factor Foundation site to eliminate potential safety hazards.

The Project Manager also briefed the audience on the existing facilities at the Old Mashapaug Road site. Master Plan proposals for this site include a possible location for a picnic shelter and accessible fishing platforms and picnic tables.

Westville Lake's trail system, which includes the Grand Trunk Trail and the Westville Loop Trail, would also be included in the Westville Master Plan. Plan proposals for the trail system include the possible completion of the Heritage Trail from Dam to West Street School in cooperation with the town of Southbridge.

Beecher also said that Master Plan proposals for the project's Natural Resources Management include the possible removal of the former "Box Shop" low head dam to improve and/or restore natural river flow.

The Park Manager concluded his briefing by saying that the Master Plan proposes that the public outreach and interpretation continue by maintaining partnerships with local and regional groups, continue to have Park Rangers present in the parks and to continue to host interpretive events.

Beecher took several questions from the audience that included the possible dewatering of Westville Dam and Box Factory Dam; trails, walkways, beavers and invasive species at the dam.

"The Master Plan covers 490 acres of federally-owned land at Westville Lake, administered and operated by the New England District," said Beecher. "All specific proposals for recreational or other development at the project must comply with this Master Plan, Thames River Flood Damage Reduction requirements, the National Environmental Policy Act and other federal requirements."

Westville Lake is located on the Quinebaug River between the towns of Sturbridge and Southbridge, Mass. The New England District finished construction of the project in 1962 at a cost of $5.7 million. To date, the project has prevented damages totaling over $48.4 million.

The project offers fine recreational opportunities, including picnicking, fishing, hunting, canoeing, boating and nature study. Westville Lake attracts more than 55,000 visitors annually.

The draft Master Plan is available for review at: Joshua Hyde Public Library, 306 Main Street, Sturbridge; and Jacob Edwards Library, 236 Main Street, Southbridge.

The draft Master Plan also can be accessed online at the Westville Lake link at http://www.nae.usace.army.mil/recreati/wvl/wvlhome.htm and select Master Plan or go directly to the Master Plan link at: http://www.nae.usace.army.mil/recreati/wvl/WV_Master_Plan.pdf

Public comments on the draft Master Plan are being accepted through Nov. 9.

Mill Brook Rehabilitation Project at Blackwater Dam

By Martin Curran
Merrimack River Basin

Mill Brook is a cold water native brook trout stream that is a tributary to the Blackwater River. Mill Brook is well connected to its historic flood plain. The vast majority of the stream has a wide functioning riparian corridor. Many of the bank areas are undercut with leaning trees that provide shade, cover and insects for the brook trout.

The purpose of the rehabilitation project was to repair the only known degraded portions of the stream within Corps property. The degraded sections of stream include four areas measuring approximately 2,000 feet in length. The project also included removing 3.2 acres from an existing agricultural lease, fencing the area to prevent access by grazing animals, and planting those acres to create a multi-species wooded riparian community to further stabilize the stream. The conversion from grazing to riparian corridor will be completed in stages with the first planting taking place on Sept. 25, (National Public Lands Day) with volunteer students and faculty from New England College. A follow up planting will take place in the fall of 2011. The newly established riparian area will provide a buffer between the stream and the remaining pasture and reduce the risk of agricultural contamination from entering the stream.

Several factors contributed to the stream degradation. On Mill Road at the Mill Brook crossing, the town of Salisbury had a series of culverts that were undersized and not functioning well. The stream was also not well aligned with the culverts and this caused a major shift in the stream's meandering pattern that caused significant bank erosion. Large deposits of silt were found both upstream and downstream of the culverts and road. Portions of the road also washed out with every flood event in which the Blackwater Dam stored water. The existing agricultural lease which extended to the stream edge also contributed to stream bank erosion.

In coordination with our rehabilitation project, the town of Salisbury has added an additional culvert to increase the flow under the road. The town and its agents cooperated and coordinated their activities with the District so that we were all informed of each other's activities. This was crucial because of the separate permit requirements and construction schedules.

The Mill Brook rehabilitation was an approved

(Photos by Blackwater Dam staff)

Adam Pearson skids trees to a landing with a team of oxen.

American Recovery and Reinvestment Act (ARRA) project. The project was deemed worthy of consideration because Mill Brook provides critical aquatic habitat and the project would rehabilitate the stream so that it would provide its essential functions again. The rehabilitation design was funded through a Water Operations Technical Support (WOTS) request from District Operations for the expert services of David Derrick and Charles D. Little, Jr., both hydraulic engineers from ERDC's Coastal & Hydraulics Laboratory, River Engineering Branch in Vicksburg, Miss. Derrick is a stream rehabilitation expert and Little is a sediment expert.

The N.H. DES minimum impact wetland application was prepared by Mike Penko of NAE's Environmental Branch. Penko also produced the scaled GIS maps for each area of stream required in the permit application. Scopes of Work and coordination of the project were carried out by Ross Huntington, Civil Engineer, and Marty Curran, Environmental Compliance Coordinator, of the Merrimack River Basin.

Park Ranger Matt Cummings loads trees onto a trailer for delivery to Mill Brook.

The rehabilitation was overseen by Derrick. The funding for overseeing the project was through a Wetland Regulatory Assistance Program (WRAP) request submitted by NAE Chief of Regulatory, Jennifer McCarthy. The project started on July 6 but from July 12-15 the project was treated as a hands on rehabilitation workshop. The workshop began with a two hour training session at the Blackwater Dam office and the remainder of the workshop was hands on at the restoration site. Forty six people attended the workshop and provided the labor necessary to complete the work. The attendees included faculty from the University of New Hampshire, and New England College, professional wetland scientists and restoration ecologists, professionals from New Hampshire state and federal agencies, town officials, District personnel, and local farmers and citizens. In addition, Gary Pelton, ECC for the Upper Connecticut River Basin, brought a contingent of Student Conservation Association interns and high school volunteers who were much appreciated.

Derrick's use of a soft approach to restoration, using a minimum of hard protection and a maximum use of vegetation, was noticed by all participants. Within the stream channel and near bank areas, the techniques used to improve aquatic habitat and near stream riparian habitat included removal of invasive plants, dense plantings of appropriate native vegetation (living dikes, live siltation, pole planting, rooted stock planting and engineered floodplain benches) and transplanting vegetation including "half-drowned" bushes. For in-stream aquatic restoration Derrick used techniques such as boil-up pools, locked logs, single stone bendway weirs, traffic control stones, bed diversity stones, and longitudinal point stone toe protection.

Thirty logs needed for the project were cut on Corps land by a contractor, local farmer Bob Pearson, and skidded to a landing with a team of oxen. Franklin Falls Ranger Matt Cummings loaded trees onto a trailer and ECC Marty Curran cut the log tops. The entire Franklin Falls/Blackwater staff worked on the project and Project Manager Jennifer Rockett was involved every step of the way. Otter Brook / Surry Mountain Project Manager James Lewis loaned his project excavator and operator John Asseng to assist. Asseng and the excavator were on site for both weeks and made significant contributions to the success of the project. Chief of Operations Frank Fedele was present on the first day of the workshop and worked alongside teams planting native stock.

The project succeeded because everyone focused on rehabilitating a precious resource and worked together as a team to achieve that end – thanks to all!

District awards two contracts to perform vegetation maintenance for the Woonsocket Flood Reduction Project

By Timothy Dugan
Public Affairs Office

The New England District recently awarded two construction contracts to perform vegetation maintenance at the federally-owned Woonsocket Flood Damage Reduction Project in Woonsocket, Rhode Island. The first contract for the Lower Woonsocket section of the project was awarded in the amount of $882,000 and the second contract for the Upper Woonsocket section of the project was awarded in the amount of $571,200.

Vegetation maintenance work for both contracts will be accomplished by Jennifer M. Cook, Inc., of Upton, Mass., and will take about six or seven months to complete. Work is expected to begin by mid-October 2010.

The vegetation maintenance contracts will be used to remove and dispose of heavy wooded vegetation along the side slopes and crests of earthen levees/dikes, along channel improvement slopes and adjacent to floodwalls along the Blackstone, Mill and Peters Rivers. All vegetation within 15 feet of the toe of the land and water sides of the levees/dikes, and the floodwalls will be cut and removed. Root balls of trees greater than 4 inches in diameter will be removed along the levees/dikes and the levees/dikes repaired accordingly. All vegetation along the channel improvement areas will be cut and removed to the top of the floodway. Herbicide spray will be employed to control vegetation.

The devastation caused by Hurricanes Katrina and Rita has brought the issue of levee safety to the forefront of public debate in recent years. The findings of subsequent Corps investigations into the performance of the flood damage reduction systems such as those at Woonsocket clearly point to a need for a periodic, comprehensive and risk-informed approach to levee safety. The Corps has been working together with the Federal Emergency Management Agency (FEMA) to provide them findings of Corps of Engineers levee inspections and assessments for their use in making decisions in the National Flood Insurance Program.

The Corps and FEMA are working together to ensure that flood hazard maps clearly reflect the flood protection capabilities of the levees, and that the maps accurately represent the flood risks posed to those protected areas. The Woonsocket project was decertified under the National Flood Insurance Program (NFIP) administered by the Federal Emergency Management Agency in May 2007 because the agency determined the project no longer provides protection from the base flood level. As a result, property owners behind the project are now paying flood insurance.

The Corps of Engineers has begun the process of rehabilitating this project in the hope that it can once again comply with the requirements of the FEMA NFIP certification program so that flood insurance would no longer be required. One step is to perform this one-time major vegetation maintenance followed up by an annual maintenance program to prevent the regrowth of vegetation. Another step is to perform repairs to the Woonsocket Falls Dam. Contract work has already begun to repair the dam. Other lesser steps have been identified that will

Woonsocket Dam in Rhode Island. (Photo by Joe Zanca)

also be addressed in future years to complete the rehabilitation process.

The Lower Woonsocket section consists of two independent units: (a) the Social District Unit along the Mill River, Peters River and Blackstone River consisting of six levees/dikes totaling about 5,000 linear feet, three concrete floodwalls totaling about 2,000 linear feet, two pressure conduits totaling about 2,200 linear feet, and the Social District pumping station; (b) the Hamlet District Unit along the Blackstone River consisting of three levees/dikes totaling about 2,800 linear feet, a 115-foot long concrete floodwall, and the Hamlet District pumping station. The Upper Woonsocket section consists of the following features: (a) 8,300 feet of channel improvement; (b) four levees/dikes totaling about 1,200 linear feet; (c) a 308-foot-long concrete floodwall; and (d) the Singleton Street Pump Station.

The Woonsocket Flood Damage Reduction Project protects industrial and commercial establishments and densely populated residential areas from flood flows on the Blackstone, Peters and Mill Rivers. It was constructed in response to flood damage that occurred due to heavy rains in August 1955 that caused $22 million in damage.

The project was constructed in two phases: construction of the Upper Woonsocket section along the Blackstone River was completed in 1960 at a cost of $5.4 million, and construction of the Lower Woonsocket section along the Blackstone River and two of its tributaries, the Mill River and Peters River, was completed in 1967 at a cost of $8.3 million.

Hurricane Earl a test for New England District

Continued from page 3

ker to provide technical assistance if needed. Andrew Jordan covered the Connecticut State EOC during the long overnight shift during the peak of the storm while everyone was watching and waiting to see what the outcome would be.

If Earl struck the Cape with sustained winds of 75 miles an hour or more, the Cape Cod Canal team was ready to coordinate with the Massachusetts State Police to close the Sagamore and Bourne Bridges for safety reasons.

New England's three hurricane barriers – Fox Point in Rhode Island, Stamford in Connecticut and New Bedford in Massachusetts, as well as the Woonsocket Local Protection Project in Rhode Island, were ready to operate should the need arise. The New England District's Reservoir Control Team, Paul Marinelli, Steve Simmer, Greg Hanlon, Jack Keenan, and William Mullen were closely monitoring water and tide levels at the District's flood damage reduction projects and hurricane barriers in case any gate closures became necessary.

The New England District's National Water team was also at the ready and were getting constant briefings from the EOC. The team deployed an action officer to the NRCC at Federal Emergency Management Agency's (FEMA) Headquarters in Washington D.C., so that they would be in position should emergency drinking water be needed for the potential disaster response mission.

New England's sister team in Kansas City was also available to support if Earl struck with enough force to make New England a victim District.

Other Corps Districts assisted in preparation for Earl. The Louisville District coordinated with New England's EOC and mobilized the 249th Prime Power team to Westover Air Reserve Base in Chicopee, Mass., which was designated as FEMA's staging area for commodities and supplies for this event. Pete Navesky, Headquarters' Disaster Program Manager, traveled from Southwest Division to serve as the Emergency Support Function #3 (ESF #3) team leader. Will Rogers traveled from North Atlantic Division to serve as the assistant team leader.

In the end, Earl only brushed by Cape Cod and the Islands as a tropical storm and which only produced sustained winds of approximately 25-35 miles per hour. Rainfall at the Cape ranged between 3 to 4 inches and the storm surge was only about 2 feet.

The New Bedford Hurricane Barrier did close in the early morning of Sept. 4 as a precaution due to some residual surge, but the tide ultimately did not reach damaging levels.

In spite of the fact that Earl did not deliver the potentially devastating blow to the region that it could have, it did serve as a good reminder to the District and local residents that New England is vulnerable to this type of large storm.

The preparations and actions taken at all levels of state and federal government, as well as by individual citizens served as a valuable exercise and helped to boost everyone's confidence that if and when the next big storm does hit, we will be ready to respond.

Mike Keegan, the Honorable Jo-Ellen Darcy, and Col. Philip Feir visit Muddy River. (Photos by Brian Murphy)

Maj. Gen. William Grisoli and Col. Philip Feir talk while on the tour of Boston Harbor.

VIPs visit New England, tour District projects

The Honorable Jo-Ellen Darcy, Assistant Secretary of the Army for Civil Works, Lt. Gen. Robert Van Antwerp, Chief of Engineers, Maj. Gen. William Grisoli, Deputy Commanding General for Civil Works and Emergency Operations; and Brig. Gen. Peter DeLuca, North Atlantic Division Commander all visited New England Sept. 20-22. The VIPs visited various Corps projects and attended several meetings and conferences while they were in the area.

Ms. Darcy met with Col. Philip Feir, New England District Commander, Bill Scully, Deputy District Engineer for Programs/Project Management, and project manager Mike Keegan, to get briefings of the District's Civil Works Program and the Boston Harbor Navigation Project. After the briefings, Ms. Darcy traveled to the Muddy River Flood Risk Management and Environmental Restoration Project. After an overview of the project by Keegan, the group toured the project.

Lt. Gen. Van Antwerp arrived on Sept. 22. Col. Feir, Scully, and Bobby Byrne, Chief, Programs, presented Lt. Gen. Van Antwerp with a command brief of the New England District mission and update him on some projects.

Maj. Gen. Grisoli visited New England on Sept. 20. On Sept. 21, he joined Brig. Gen. DeLuca at Concord Park headquarters in Concord, Mass., for a briefing on New England projects and issues. Col. Feir, Scully, Lt. Col. Steven Howell, New England District Deputy Commander, John Kennelly, Byrne and Keegan gave briefings on the District Program, the Boston Harbor, ARRA, Muddy River, and Stewart's Creek projects, and the District's Base Realignment and Closure Program. Following a quick lunch break, Maj. Gen. Grisoli, Col. Feir and Keegan traveled to the Charles River Dam for a boat tour of the Boston Harbor navigation project.

Brig. Gen. DeLuca arrived in the six-state region on Sept. 20, with his first stop being Portsmouth Harbor in New Hampshire. Project Manager Ed O'Donnell briefed the general during a boat tour of the project. After the tour, Brig. Gen. DeLuca, Col. Feir, O'Donnell, Mark Habel and Bill Hubbard met with the head of the New Hampshire Coastal Zone Management, Ted Diers.

On Sept. 21, Brig. Gen. DeLuca served as the keynote speaker at the Society of American Military Engineers at the Newton Marriott. After the luncheon, he met with members of the Boston Globe editorial board staff to discuss newsworthy projects and issues going on in the North Atlantic Division and the New England District.

In addition to tours and meetings that they attended earlier in their trips, Ms. Darcy and Maj. Gen. Grisoli attended the PIANC Conference in Boston, Sept. 22, where they both made presentations. Col. Feir also spoke at the conference. Ms. Darcy and Maj. Gen. Grisoli also attended the National Waterways Conference with Lt. Gen. Van Antwerp. The Chief of Engineers and Ms. Darcy both provided remarks during the morning session, Sept. 23.

Brig. Gen. Peter DeLuca gets a briefing on the tour of Portsmouth Harbor.

District, partners break ground on Ten Mile River Project

Tim Dugan, Public Affairs
Gail Mastradi, RI DEM

The New England District and the Rhode Island Department of Environmental Management (RIDEM) joined Senator Jack Reed, Senator Sheldon Whitehouse, East Providence Mayor Joseph Larisa, Jr., federal, state and local officials at a groundbreaking ceremony for the Ten Mile River Aquatic Ecosystem Restoration Project, Oct. 5. The project will restore anadromous fish populations to the lower portion of the Ten Mile River watershed.

The event took place at the Hunt's Mill Dam historic site in East Providence, one of the three dams where fish ladders will be constructed to allow the passage of herring and shad along the Ten Mile River. The 56 square-mile Ten Mile River watershed includes a five square-mile area located in Rhode Island and 51 square miles situated in southeastern Massachusetts.

Col. Philip Feir and Sen. Jack Reed (center) join their partners in breaking ground on the Ten Mile River Project. (Photo by Brian Murphy)

For over 200 years, dams have blocked anadromous river herring and American shad from their historic spawning grounds in the Ten Mile River watershed. These anadromous fish live as adults in saltwater, but must return to freshwater to spawn. The restoration project will include construction of denil fish passage facilities at the first three dams on the river: Omega Pond Dam, Hunts Mill Dam and Turner Reservoir Dam. These fish ladders will provide for upstream migration of adult Blueback Herring, Alewife, and American shad to historic spawning areas on the Ten Mile River and in Turner Reservoir.

The four-foot wide fish ladders will be concrete waterways with wooden baffles that would allow fish to swim to their natural spawning habitat. Migrant slots will also be cut into the existing spillways at Omega Pond and Turner Reservoir to facilitate downstream migration of juveniles, and a fish trap will be installed at Hunt's Mill Dam to relocate excess fish to other watersheds.

"This environmental restoration project would not be possible without the talents and dedication of every individual, agency and group who supported this effort," said District Engineer Col. Philip T. Feir, New England District Commander. "We look forward to working with all of you towards completion of what we expect will prove to be an important environmental success story here in East Providence and the state of Rhode Island."

"There has been a real joint effort at the local, state, and federal levels to restore the health of the Ten Mile River watershed and ensure that fish can once again freely swim up and down the river. Other fish ladders throughout the state have been successful, and I am pleased to have secured $1.51 million in federal funding to help restore the fish run to the lower Ten Mile River. This project isn't just critical to the survival of the fish, but also to the economic survival of our state's fishing industry and to the surrounding communities," said Senator Jack Reed, a member of the Appropriations Committee.

The project is being constructed in two phases. Construction of fish passages at Turner Reservoir and Hunt's Mill Dams has begun, and plans and specifications for the fish ladder at Omega Pond Dam are being finalized and are expected to begin next spring. When completed the restoration project will provide anadromous alewives access to about 340 acres of spawning habitat, and approximately three miles of riverine spawning habitat for Blueback Herring and American shad. Based on the Department of Environmental Management's projections, these habitat areas will support a fish run of more than 200,000 herring. The number of American shad that will return is unknown, but the fishways are capable of passing about 25,000 shad. Funding for the $4.8 million project includes approximately $4 million in federal funds and $800,000 in state funds.

Dredging up the past . . .

Park Ranger Brad Walley drives a tractor during West Hill Dam's Work Day in this Sept. 20, 2003 photo.

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