

# Corps and The Nature Conservancy develop joint training

By John Hickey  
Hydrologic Engineering Center, and  
Andy Warner  
The Nature Conservancy

**T**he Nature Conservancy and the U.S. Army Corps of Engineers Hydrologic Engineering Center (HEC) are working together to develop training courses that emphasize connections between hydrology and ecology and to outline how those connections can be taken into account in water resource management.

Currently, two courses are offered as joint training opportunities, with each course being held once a year through the Corps' Learning Center.

"The Nature Conservancy's involvement in Corps training courses began with a single lecture in our 2002 Hydrology Analysis for Ecosystem Restoration course. Since then, the effort has grown and now includes two jointly taught training courses. Average attendance is around 28 students per offering, making these two of the best attended courses at HEC," said Chris Dunn, HEC director.

That initial presentation, delivered by a representative of the Conservancy's Freshwater Initiative, focused on connections between river flows and ecosystem health. The presentation also highlighted some of the early successes in the Corps-Conservancy partnership, including the recently signed national Memorandum of Understanding and initial plans for reoperation of Green River Dam and Reservoir in Kentucky.

In 2003, Hydrologic Analysis for Ecosystem Restoration was adapted as the first training course taught jointly by the Corps and the Conservancy. The goal of the course remained to provide an understanding of the issues and



Dave Feliz, California Fish and Game, finds a mascot (a western yellow racer snake) for the Hydrology for Restoration course during a fieldtrip to the Yolo Basin Wetlands. The Yolo Wetlands Project was one of the first Corps' 1135 projects. (Courtesy Photo)

policies in ecosystem restoration and to detail a variety of hydrologic methods used in restoration planning and design.

At the time, the course was primarily a mixture of lectures and restoration case studies. Since then, the course has evolved to be much more technically oriented. In 2006, the course agenda was revamped as a series of increasingly difficult topics and workshops, beginning with principles of hydrology, ecology, and statistics and advancing to time series analysis, hydrologic alteration, ecosystem flow definition, ecosystem functions modeling, river hydraulics and sedimentation.

More than a third of the week was dedicated to software demonstrations and workshops where course partici-

pants gained experience using six different software tools, including the new HEC regime prescription tool (RPT). A product of the first software collaboration between the Corps and the Conservancy, HEC-RPT is designed to help groups of scientists, engineers and water managers access hydrologic data and draft flow recommendations while they formulate different ways to manage rivers.

As part of the revamping, Hydrology for Restoration was modified to include a segment dedicated to an emerging aspect of the Corps-Conservancy partnership. This year the segment focused on coastal restoration. Through the course, restoration experts from the Corps' Engineer Research and

Development Center (ERDC) and the Conservancy's Global Marine Initiative were able to meet, co-present course materials and work to align ways that the agencies could partner. In fact, there are now plans to spin off the coastal material presented in Hydrology for Restoration for use in a coastal restoration planning course coordinated by the ERDC.

In 2004, Water and the Watershed became the second jointly taught course. Much in contrast to the technical focus of Hydrology for Restoration, Water and the Watershed is oriented toward science and the watershed policies of the Corps and other organizations. Its primary goal is to provide an understanding of the physical nature of water in the watershed and the conceptual, technical and institutional tools available for planning and management. A secondary goal is to promote use of a watershed perspective — a recognition that actions have impacts beyond any single project area and that, by involving others, the quality and vision of a project can be enhanced through the knowledge, creativity and perspectives that they bring to the table.



Beth Turner, a Corps regulator in Jacksonville District and member of the Water and the Watershed course, presents results of a workshop where students were asked to define ecosystem flows for the Green River in Utah. (Courtesy Photo)

The broad subject matter and large goals of this course have consistently attracted a mix of Corps professionals from planning, regulatory, engineering and water management. In terms of course evolution, this breadth is a bit of a double-edged sword. On one hand, it is difficult to cater course topics to such a diverse audience. On the other, the interaction and debate of different professional perspectives is very much part of actual watershed planning and the opportunity to learn about the challenges facing other disciplines within the Corps is one of the intangible benefits of this course.

The Conservancy's emphasis on ecologically sustainable water management and eco-regional planning were a natural fit in Water and the Watershed. These and other topics are presented by staff from the Freshwater Initiative, which has since been renamed the Sustainable Waters Program. Sustainable waters, along with global marine, global climate change, global fire and invasive species are the five conservation initiatives of The Nature Conservancy. More information on the initiatives can be found at [www.nature.org/initiatives/](http://www.nature.org/initiatives/). Each

initiative is basically a plan to address a fundamental challenge to the conservation of biodiversity. The joint training with the Corps has been one of the successes of the Sustainable Waters Program.

"Training courses are an opportunity to learn from our partners and to share the Conservancy's mission and methods," said Brian Richter, director of the Sustainable Waters Program. "The Conservancy is also participating in training programs of other federal agencies, but none have shown the progress already experienced with the Corps. In this sense, the partnership between the Corps and the Conservancy is helping to demonstrate a path for future collaborations"

To date, 219 students have completed one of the joint training courses. These students represent seven different agencies, including the Corps and the Conservancy. Corps attendees have represented all eight divisions and 38 of the 41 districts, excluding Gulf Region offices.

Hydrology for Restoration and Water and the Watershed continue to evolve fueled by new ideas and suggestions from attendees as well as lessons learned from the more than 40 Corps-Conservancy projects nationwide. Future plans include exploring other emerging partnership aspects such as removal of small dams and river-floodplain reconnections, creating a Sustainable Rivers Project (SRP) course for Corps and Conservancy staff at new SRP sites, creating a technical course targeting and marketed for multiple agencies, and developing a web-based course and other virtual learning options.

SRP is an ongoing nationwide partnership between the Corps and the Conservancy to improve the health and life of rivers by changing the operations of Corps dams, while maintaining or enhancing project benefits. More information about the SRP is available online at [www.nature.org/initiatives/freshwater/partnerships](http://www.nature.org/initiatives/freshwater/partnerships).

*Editor's note: This is the fourth in a series of articles about the Sustainable Rivers partnership between the U.S. Army Corps of Engineers and The Nature Conservancy.*