



# SUSTAINABILITY

## FORT BENNING, GEORGIA

### FORT BENNING RESEARCH SUPPORTS SUSTAINABLE LAND USE



On a typically hot Georgia day, infantry trainees at Fort Benning shoot on a small arms range, mechanized units thunder down tank trails in Bradley Fighting Vehicles and C-130s roar overhead carrying Airborne squads to a jump site.

Meanwhile, a student from the University of Louisiana slogs through Ochillee Creek and uses a special instrument to sample material from the muck scientists hope will offer clues into how healthy the fort's streams are.

For almost a decade, Fort Benning has served as a test bed for ecosystems research under the Defense Department's Strategic Environmental Research and Development Program (SERDP).

An effort called the SERDP Ecosystem Management Project (SEMP) had more than 20 researchers from 12 universities and four government laboratories taking the post's environmental pulse on some 800 study sites between 1999 and 2005.

SEMP is designed to give Fort Benning and other installations "the ability to look within and outside our boundaries using an ecosystems approach," said John Brent, chief of Fort Benning's Environmental Management Division. "In the past, we've managed individual species and habitats in a focused, but not integrated, way. SEMP will give some order to the way we do things, and will reach beyond just natural resources to include social and political aspects of ecosystem management."

With five of six of its original major projects completed in 2006, SEMP is transitioning from a focus on determining the basic principles of installation management to developing and evaluating strategies for land managers to use, according to Don Imm, SEMP technology infusion coordinator.

"We're seeking research questions that will be useful in choosing one management strategy over another," Imm said. An example: Would it be better for root systems if tracked vehicles follow one path only, limiting damage to one area, or spread out, causing similar but lighter root damage over a larger area?

For Fort Benning, the goal is to ensure its ability to sustain its training mission over the long term through a better understanding of ecosystem dynamics, and applying it to land management practices.

But SEMP's overseers at the U.S. Army Engineer Research and

### For more information

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Development Center's Construction Engineering Research Laboratory (CERL) add two more goals, according to Harold Balbach, SEMP associate director. One is to add to the body of scientific knowledge about ecosystems by publishing peer-reviewed documents. The second is to give land managers tools for making sound environmental decisions.

"The long-term goal is to provide installation environmental managers with models, indicators and simple tests that can help tell them if the decisions they're making are trending in the right direction, and how long it will take to reach the desired state," Balbach said.

Project managers at Fort Benning and CERL are preparing the results of the first 10 years of the project into a set of indicators for installations to use on a practical basis, according to Balbach. The indicators will be put into an Engineer Research and Development Center Special Report. A draft will be posted on the SEMP Web site.

Fort Benning was chosen as the SEMP demonstration site in part because of the large amount of environmental data already available there and also because of its rich diversity in plant and animal life. Findings from the research at the post will later extend to areas outside the fence line, including the entire "fall line" region that includes forts Benning and Bragg, Brent said.

SEMP involves intensive fieldwork to monitor test sites located all over the training areas.

"We have to manage access to the different training compartments for safety and to avoid interfering with the units going in to train," said Hugh Westbury, SEMP's host site coordinator.

Westbury serves as a single point of contact for all research activities requesting range access. "Despite a busy training schedule, researchers are actually on the ranges more frequently than most troop units," he said.

One species of concern on Fort Benning is the gopher tortoise, whose eastern populations (Georgia and Florida) are not federally listed as threatened or endangered, but are being monitored by the State of Georgia. This tortoise likes sandy soils relatively clear of vegetation, like the entire upland range complex that now supports tracked vehicle training.

"SEMP will engage the community as we look at those factors affecting the gopher tortoise," said Brent. "If we're doing something with an impact or people outside the boundary are eating up habitat, we need to develop strategies to prevent it from being listed and creating training restrictions."

"The eastern population was proposed for listing in 2006, and if becomes listed as threatened or endangered," said Balbach, "the 3rd Brigade will have to sit in their barracks and watch videos."

The SEMP initiative addresses complex issues in ecosystem management, and the task will not become any easier over the remaining years of the project. In addition to finding the right relationships that define disturbance and risk, the installation's activities and environment are dynamic.

The challenge for the "New SEMP" of the coming decade will be providing land managers with guidance on actions to take, given an indicator that shows impending ecosystem change or a mission to effect some improvement. "What do people actually do to bring about changes they want to happen in the environment?" asked Balbach. "Let's say a reach of a creek is found to have unsatisfactory conditions. How do you change it?"

Current SEMP initiatives focus more on characterization and management of the stream network and the effects of range development on water quality.

One difference will be in relying on installations – primarily Fort Benning – to propose research, rather than on outside scientists' proposals to study basic principles. SEMP will provide logistics support and assist with technology transfer rather than jointly managing the projects.

Ultimately, SEMP will provide long-term monitoring data to help answer such questions and provide managers with practical, easy-to-use tools for managing Fort Benning at the ecosystem level.



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