

## News in Brief

### Aquatic Invertebrate Monitoring

The Small Streams and Contaminant Metals protocol near completion. Staff work on Stream Geomorphology protocol compatibility with other protocols. Field work for small streams began at Effigy Mounds NM (EFMO) and Homestead NM Amer. (HOME), and for springs at Ozark NSR (OZAR).

### Bird Monitoring

Staff completed surveys in four parks, volunteer birders surveyed two parks and University of Nebraska surveyed two parks, totaling 10 parks in 2008.

### Fire Ecology

Staff created the new fire ecology page on HTLN's website and posted a Fire Resource Kit among the HTLN reports. Staff prepared site bulletin templates for prescribed fire and will make them available on the Fire page.

### Fish Community Monitoring

Staff completed fish monitoring at Buffalo NR (BUFF). First year of fish and habitat assessment occurred at Herbert Hoover NHS (HEHO) and EFMO. Sampling of spring fish communities is underway. Staff submitted the Small Stream Fish protocol for peer review.

### Invasive Plant Monitoring

Contractors initiated invasive plant monitoring in intact forests at Hope-well Culture NHP (HOCU).

### Rare Plant Monitoring

Staff rediscovered a glade at Wilson's Creek NB (WICR) supporting over 500 Missouri bladderpod plants.

### Vegetation Monitoring

Staff completed plant community monitoring at Scotts Bluff NM (SCBL) and Agate Fossil Beds NM (AGFO). Staff worked with the Northern Great Plains Network (NGPN) staff so as to

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## Data Management

What are databases and why would you need one? A database manages collections of tables using a very specific kind of software. Each table links to other tables through shared columns. Linking, instead of reproducing large tables, reduces transcription errors and data redundancy. This improves system performance.

HTLN uses geodatabases to store monitoring data. Geodatabases link geographic information systems (GIS) to non-spatial databases. Both databases and geodatabases (1) allow archiving large amounts of data in a consistent format, (2) help to backup data in a secure and efficient manner; and (3) allow delivery of large quantities of data on short notice.

HTLN currently maintains nine databases and five geodatabases to support a total of 14 projects. The combined data volume went over 1/2 million records by June 2008.

The network collects data for a wide range of projects such as aquatic invertebrate, fish, rare plant, wetland and prairie plant and bird monitoring. Objectives and field protocols differ for each project, but the databases have common features. Observation data include date, time and coordinate location.

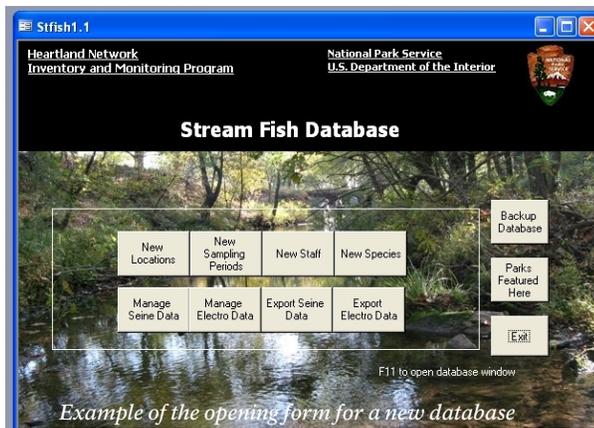
Why do we gather so much data? This becomes easier to understand if you view the database as part of a larger, interconnected system. The system begins with the project protocol. Monitoring protocols address park natural resources and "vital signs" that may serve as indicators of current eco-

logical conditions. Ecologists and field biologists gather the monitoring data according to protocol. The data are transferred into moni-

toring databases. Analysts query and export data for analysis from the resulting datasets. The analyses form part of the information-base that parks use for natural resource assessment and strategic planning.

Use of databases and geodatabases allows the HTLN to combine data for many different analyses, designed to answer new questions as they arise in dynamic systems. In a "long-term" monitoring program, reevaluation of past data can address unpredicted information needs, as management issues change.

— Gareth Rowell



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aid the development of NGPN monitoring protocol. Data entry and verification for 2008 continues.

### Wetlands

The wetlands biologist attended training to identify sedges (genus *Carex*), an important wetland plant component at Cuyahoga Valley NP (CUVA).

### White-tail Deer Monitoring

Annual reports went out to the parks recently.

## Have Trunk, Will Travel

Climate change is on everyone's mind. The HTLN monitoring program will detect ecosystem change that may be related to climate change.

The HTLN Communication Working Group, a team of interpreters, resource managers and HTLN staff, have embarked on developing a traveling trunk for upper elementary school students and teachers.

We invite each Heartland Park to create a park specific climate change lesson to add to the trunk. These activities could be based on park themes or a park visit. For more information, contact Sherry\_Middlemis-Brown@nps.gov. Also see the NPS Climate Friendly Parks website.

### Welcome Michelle!

The network welcomes Michelle Lee to our staff as a budget technician. Michelle has a degree in horticulture from the College of the Ozarks and a strong background in business administration. She came to us from four years as the district manager for the Christian County Soil and Water Conservation Service in Missouri.

Michelle is in the office Wednesday through Friday. She accepted the part time position with HTLN to keep her hand in conservation work while devoting more time to her 5-year-old son Sammy, husband Danny, and their small farm.

Please help us welcome Michelle to the Heartland Network.

## Wilson's Creek NB – Invasive Plant Management Strategy

Heartland Parks implement invasive plant management without help or guidance from an Exotic Plant Management Team (EPMT). Seventeen EPMTs deployed across the nation to evaluate and mitigate invasive plants within parks; none cover the Heartland.

In the absence of a team, HTLN stepped in to increase the capacity of parks to manage invasive plant species. Parks and the Regional Directorate have supported development of invasive plant management strategies for the Heartland. Craig Young of HTLN and Gary Sullivan of Wilson's Creek National Battlefield authored the first such plan.

Wilson's Creek NB commemorates the second battle of the Civil War, the first major battle west of the Mississippi River, and the mortal wounding of Union General Nathaniel Lyons. In order to fulfill its purpose, it wishes to restore or maintain the landscape so that visitors have a sense of place and a perspective for the battle.

The park has restored native grasslands, fallow and agricultural fields, and glades and savannas. These areas support historic chinquapin oaks, federally threatened Missouri bladderpod, and three state-listed rare plants. The park also has upland and riparian forests.

Wilson's Creek NB plant management goals are to retain openness of the grasslands, maintain open canopy in glades and savannas, and preserve and protect rare species, including the chinquapin oaks. The park will maintain the agricultural fields and allow forests to mature.

Plant management is complicated by the plethora of invasive species that take advantage of ecological disturbance to gain a foothold. Young and Sullivan proposed the key elements for Wilson's Creek



*Lespedeza cuneata* at Wilson's Creek NB

NB: best management practices, early detection and rapid response, prioritization based on impact and feasibility of effective treatment, and adaptive management.

The plan focuses on species that may impact native grassland communities, glades, and savannas. It also responds to potential for invasive plants to reduce habitat for rare plants. Managers have three levels of response: 1) eradication, 2) measured response, and 3) limited response. Young and Sullivan provide specific control recommendations for all species identified in the 2006 invasive plant survey and specific control strategies for high priority species.

All Heartland parks will soon have this tool for combating invasive plants, tailored to match the individual park needs. Should the Heartland have an EPMT in the future, it can hit the road running with a completed inventory in a geodatabase and plans for how to best handle the invasive plants.

— Sherry Middlemis-Brown

### More on the Web

Climate Friendly Parks <http://www.nps.gov/climatefriendlyparks/index.html>

HTLN Data Management Plan pdf <http://science.nature.nps.gov/im/units/htln/> select in Quick Links

HTLN Fire Ecology Page <http://science.nature.nps.gov/im/units/htln/fire.cfm>

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