The Weather Vane

The Newsletter of the Heartland Network Inventory and Monitoring Program

News in Brief

Aquatic Monitoring
Staff conducted spring-sampling at OZAR in late July. Sample processing, data entry and report writing continues. Stream geomorphology protocol revision continues. Staff began analysis of contaminant metals monitoring data for OZAR.

Black-tailed Prairie Dog
Staff monitored population sizes and extent of two prairie dog colonies at Scott's Bluff NM during July 6 - July 11.

Bird Monitoring
Staff completed bird surveys at EFMO, HEHO, HOME and PIPE. Volunteers and park staff completed surveys at GWCA, HOCU, PERI, TAPR and WICR. Staff began entering data into a database. A draft summary report for TAPR nears completion and will be sent to the park by late summer.

Data Management
Data management staff will upgrade the HTLN server to improve file-sharing. Staff continue developing a vegetation monitoring database with (1) user control of field data sheet printouts, (2) sampling design changes and (3) data processing features for species frequency analysis.

Fire Ecology
Staff completed fire reports and data entry for spring 2009 fires. You can find fire reports on the fire ecology page of the HTLN website. Proposals for continued funding of the fire ecology program are in review.

Fish Community Monitoring
Staff completed fish monitoring at PERI, BUFF and HOSP in May and June. Staff continue processing 2009 fish samples and writing status reports.

Invasive Plant Monitoring
Staff produced an article, recently published in the Transactions of the Kansas Academy of Science, on invasive plant distribution at TAPR. The TAPR prairies, which are subject to annual burning and cattle grazing, support few highly invasive species.

New Spatial Map for Natural Resource Reporting

In the future, you may see a different style of map, displaying data collected by the HTLN. This new map, called a geo-pdf, is a geographically enabled Adobe® Portable Document Format (PDF). In some ways, a "geo-pdf" resembles the ArcMap® display window, but this export function in ArcGIS 9.3® retains the power to toggle layers on and off (Figure 1 on page 2).

The geo-pdf presents Vital Signs monitoring data in a concise and clear manner. For example, it can display specific fish community metrics, such as species richness and diversity. It allows you to look at data spatially across a park and among years.

A geo-pdf stands alone with all data embedded into the file (not a relational database). Therefore, you do not need additional external files. However, this increases file size, making them larger than a standard PDF.

A geo-pdf will open in either Adobe Reader® or Acrobat®. You must install the latest version of Adobe Reader® to use the full capabilities of embedded data. Although the map displays various point, line, polygon and label layers, it can only display one background image per map.

You can activate several features, such as data layers or display certain attribute fields, coordinates, distance measurements and notes. You turn on the *Analysis* toolbar and the *Layers* and *Model Tree* navigation panels and take advantage of this simple and easily accessible process .

The geo-pdf allows anyone to access complex geospatial data in a commonly used and transferable PDF format. Parks do not have to purchase or learn to use complicated software. The HTLN staff will spend less time creating separate maps and interpreting them to parks. The parks can use the maps with significant GIS functionality without need of technical support.

-Jennifer Haack and Hope Dodd

New and Improved Sharepoint Calendar

We have updated the Intranet Sharepoint Calendar to better serve parks. Resource managers can check the calendar for field and leave schedules of staff, the interpretive display sign up, and other features. The Sharepoint is parsed into Home, Invasive Exotic Plants, Education and Interpretation, and Wetlands by tabs. See all of the updates to the Sharepoint at http://inpmwro_share:11122/default.aspx

News in Brief Continued

Plant Community Monitoring
Staff completed field sampling for the season. Data entry started, using the updated database. Revision of the vegetation monitoring protocol continues. We thank Ashley Dunkle and Maria Gaetani for their field assistance at EFMO, HEHO, HOME and PIPE.

Rare Plant Monitoring
Following a 5-year review by U.S. Fish and Wildlife Service, the western prairie fringed orchid remains listed as "threatened".

Wetland Monitoring
Well installations and vegetation surveys are scheduled for two important wetland complexes in CUVA.

White-tailed Deer Monitoring
Staff sent interactive pdfs to ARPO, PERI, WICR and others illustrating deer monitoring results for years 2005 through 2009.

Collaboration Supports Seamless Data

The General Management Plan for Pea Ridge NMP (PERI) establishes three management zones within the 4300 acre park. The park manages and focuses monitoring on natural resources in two zones, the cultural (2007 acres) and the natural (2025 acres). The cultural zone encompasses land associated with the battlefield, and it offers a glimpse of the historic landscape. The park manages the natural zone with emphasis on maintaining Ozark Plateau woodlands and prairie.

Kevin Eads, Chief of Resource Management, and HTLN staff surveyed 237 vegetation monitoring sites in 2007. According to Eads, these data allowed Dr. Robert Weih Jr., University of Arkansas, Mon-

ticello, to conclude that vegetation structure represents that of the 1862 setting, but stand composition differs.

The HTLN coordinates vegetation monitoring with exotic species and breeding bird habitat surveys, and ensures that vegetation data remain compatible with fire effects monitoring. This coordinated data forms a foundation for the Natural Resource Condition Assessment (NRCA) currently underway.

The NRCA provides broad-based ecological condition information usable in resource stewardship planning. It builds on data, information and knowledge already assembled. Thus, the HTLN and park surveys contribute much of that NRCA information base

from research and monitoring.

The NRCA can compare current conditions against historic natural conditions at PERI, using multi-program datasets. The overlap of the three HTLN surveys (vegetation, bird and invasive species) completed within the same year minimizes temporal differences among programs, when making community or parkwide inference.

Coordinated monitoring provides a comprehensive knowledgebase for the PERI NRCA. In turn, the NRCA contributes to overview of current conditions and comparison to desired (historical or ecological) conditions that are vital to park program planning.
— *Sherry Middlemis-Brown*

Figure 1:

Several layers are toggled on, showing ranges of values by color and types of metrics by shape. In this example, the "Layers" is on. Subsets of "Layers" include "Other" and "Labels". Nested within "Labels", "2007 Diversity", "River", "Boundary", and "Image" are active as indicated by the eye shape in the check box. The "2007 Diversity" layer includes species richness (triangle shape marker), species diversity (circle shape) and Index of Biological Integrity or IBI (square shape).
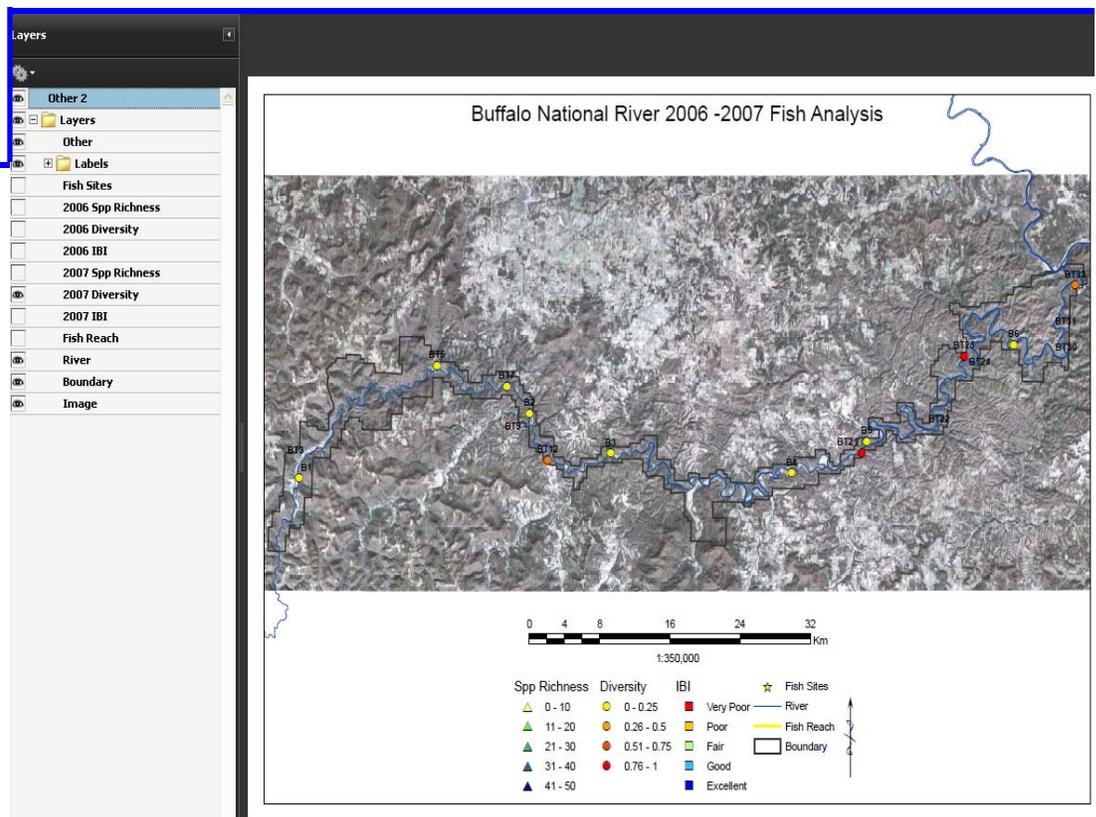
Park Acronyms
ARPO = *Arkansas Post National Memorial*
BUFF = *Buffalo National River*
CUVA = *Cuyahoga Valley National Park*
EFMO = *Effigy Mounds National Monument*
GWCA = *Geo. Washington Carver Nat. Mon.*
HEHO = *Herbert Hoover Nat. Historic Site*
HOME = *Homestead Nat. Mon. of America*
HOCU = *Hopewell Culture Nat. Historical Park*
HOSP = *Hot Springs National Park*
LIBO = *Lincoln Boyhood National Memorial*
OZAR = *Ozark National Scenic Riverways*
PERI = *Pea Ridge National Military Park*
PIPE = *Pipestone National Monument*
TAPR = *Tallgrass Prairie National Preserve*
WICR = *Wilson's Creek National Battlefield*

Aquatic Intern

Hope Dodd, HTLN fisheries biologist, submitted a request to the American Fisheries Society for an intern to mentor. Hope was teamed with a high school student from Springfield. This is a great learning experience for the student and a feather for Hope's cap (in addition to extra field help).

More on the Web

Fire Ecology page, HTLN: http://science.nature.nps.gov/im/units/htln/fire.cfm

NRCA, originally called Watershed Condition Assessments : http://www.nature.nps.gov/water/watershedconds.cfm

Connect-the-Dots, how NRCA relates to park planning: http://www1.nrintra.nps.gov/im/monitor/ConnectTheDots.cfm