The Weather Vane

The Newsletter of the Heartland Inventory and Monitoring Network

Volume 7 / Number 5, November—December, 2011

News in Brief

Park acronyms are given on page 2

Aquatic Monitoring

Invertebrate processing and analysis continue. Springs Community report is in final review prior to publication. Progress continues on the five-year report for BUFF and OZAR invertebrate and fish monitoring with a draft report expected this fall.

Breeding Bird Monitoring

We sent summary reports on 2011 surveys at EFMO, GWCA, HEHO, HOME, TAPR, PIPE, and WICR to parks and volunteers. Reports for ARPO, HOCU, and LIBO are in review, and they will be posted soon.

Data Management/GIS

Data management staff are exploring using "treemaps", a data visualization tool to summarize large quantities of data in 2D graphs. Staff are determining the steps to extract data in our large databases for this software.

Fire Ecology

We completed fire effects monitoring at GWCA, WICR, and HOME. Sherry contributed to a Joint Fire Science grant submission to build a fire consortium in the Great Plains.

Fish Community Monitoring

Fish sampling was completed at PIPE and HOME in August and September. Data entry, analysis and report writing continue.

Invasive Plant Monitoring

Contractors with Lawhon and Associates and Copperhead Consulting completed invasive plant monitoring in ARPO, LIBO. and HOCU. The 2010 monitoring report for TAPR is available at our website.

Land Cover Monitoring

Staff re-designed the land cover database.

Rare Plant Monitoring

The 2010/2011 combined annual report is available.

Vegetation Community Monitoring

We completed preparation for monitoring next season at GWCA. Planning is underway

(Continued on page 2)

Blitz Aquatic Invertebrates!

Accurate inventories form the essential first step to effective conservation of a resource you intend to manage. They lead to critical understanding of those resources, which results in informed decision-making.

Staff can provide genus and family level taxa lists of invertebrates to park managers from HTLN aquatic monitoring data. While those lists can help in assessing stream water quality, they are not useful as inventories without species level information.

We have no exhaustive species-level lists of aquatic invertebrates in any of our network parks. We need these lists so that we can accurately detect the changes in invertebrate communities that alert us to declines in water quality.

The initial inventories in network parks focused on terrestrial plants, mammals, birds, reptiles and amphibians. The National Park Service (NPS) made no effort to inventory invertebrates. Projects to identify species richness, abundance and distribution would improve our overall understanding of aquatic ecosystems.

In 2010, the National Academy of Public Administration recommended that the NPS enhance and broaden the inventories in the Inventory & Monitoring program. Invertebrate inventories must become a high priority for future research in the network parks.

Managers and scientists must collaborate to ensure that useful information results from inventories. Inventories should include (1) estimates of inventory completeness or statistically rigorous estimates of relative species richness, and (2) information on spatial distribution of species richness within a protected area.

Aquatic invertebrates excite scientists of all ages. HOME file photo

Inventory design should target threatened and rare species, or identify potential indicator species. Such surveys are key to finding unique and rare taxa that occur in our parks.

One potential approach to assess baseline invertebrate diversity in parks is through BioBlitzes. A BioBlitz is an intense period of biological surveying that attempts to record all species within a designated area. BioBlitzes can also focus on a particular taxonomic group, such as invertebrates.

Investigators examining samples at the first NPS Bioblitz. NPS file photo

Scientists, naturalists and volunteers conduct an intensive field study over a short, usually 24 hour, period. There is also a public component to many BioBlitzes that increases public interest in biodiversity and provides important outreach opportunities. Interestingly the term "BioBlitz" was first coined by NPS naturalist Susan Rudy while assisting with the first BioBlitz held in 1996.

(Continued on page 2)

The Weather Vane is published by the Heartland Inventory and Monitoring Network of the National Park Service. Visit http://science.nature.nps.gov/im/units/htln/index.cfm.

. . . protecting the habitat of our heritage

A Giant Microbial Sidekick

That's what attracted visitors to a trailside interpretive exhibit about water quality monitoring in Cuyahoga Valley National Park.

Working this past summer as a student intern shared between Resource Management and Interpretation, Beth Wallace discovered that you must have a gimmick to get people's attention. Part lab rat, part science communicator, her job consisted of collecting water samples and processing them in the morning, followed by engaging park visitors to discuss water quality in the afternoons. Most visitors, especially

Communicating the science of water quality monitoring with the help of a giant microbe of E.coli

children, wanted to know about the giant *E.coli* microbe perched on the table. That lead to discussions on *E.coli* bacteria levels, fish advisories and the Nowcast website (www.ohionowcast.info), where visitors could check real time recreational water quality conditions for the Cuyahoga River.

Hiring a student with a biology background worked well with communicating science to visitors. Interpretation staff helped her build interpretive skills while on the job.

During summer weekends, 400 visitor contacts were recorded for this science communication effort.

submitted by Meg Plona, CUVA

Where there's smoke, there's science

The NPS began fire protection with the establishment of Yellowstone National Park in 1886 and fire protection has evolved through time. The NPS has a framework that applies high standards for fire management planning, environmental impact assessment, fire reporting, fire effects monitoring and firefighter training.

Tallgrass Prairie National Preserve served as the host for a two-week-long fire training exchange for local staff, partners and out-of-town guests. A Fire Management Officer worked with NPS staff and local partners to plan a series of cooperative burns on NPS and non-NPS land. The goal focused on planning safe and effective prescribed fires, while allowing people to complete practical training.

Fire management must account for all factors that contribute to fire behavior, hazard analysis, smoke production and distribution, and a host of changing parameters. It requires good science and well trained individuals to properly plan and implement fire and smoke management. The NPS continues to use science and training to partner with others in managing fire effectively and efficiently, while minimizing impacts on neighbors. For more information on the NPS fire management program, see More on the Web.

Patch bun grazing fires at TAPR

— Sherry Leis, Fire Ecologist and Sherry Middlemis-Brown, HTLN

(Continued from page 1)

for accuracy assessments in ongoing vegetation inventory mapping at GWCA, PERI and WICR. We posted the report for LIBO to the HTLN website and NPS IRMA. Staff continue to prepare visual identification guides for network parks.

Whitetail Deer Monitoring

Deer surveys are scheduled to begin January 3 and should wrap-up sometime around mid-February.

(Continued from page 1)

BioBlitzes have become increasingly popular, simple and effective for conducting invertebrate inventories. Examples of successful BioBlites include those in Great Smoky Mountains NP, the Biscayne BioBlitz, Indiana Dunes National Lakeshore BioBlitz, and the Buffalo National River Aquatic Beetle Bioblitz. Saguaro National Park had a BioBlitz in October 2011 as well.

Who among you would like to have a BioBlitz for invertebrates in your park?

By David Bowles, HTLN

Acronyms

NPS = *National Park Service*
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*

RUMOR HAS IT — At least two new members joined our HTLN family recently.

CONGRATULATIONS to Kristen Hase and to Jesse Bolli on the births of their babies.

More on the Web

Base Cartography Inventory — https://irma.nps.gov/App/Reference/Profile/2164781; Midwest Region Map Services — http://science.nature.nps.gov/im/units/mwr/mapservices.asp.

NPScape Landscape Dynamics Monitoring Program — https://irma.nps.gov/App/Reference/Profile/2164898

Interagency Fire Management Program — http://www.nifc.gov/programs/programs_main.html; NPS Fire Program — http://www.nps.gov/fire/

Kansas Wildflowers and Grasses — http://www.kswildflower.org/grass_index.php

HTLN website: http://science.nature.nps.gov/im/units/htln/index.cfm