

News in Brief

Vegetation

Staff entered into the database, verified and archived all of the 2006 field data. In addition, plant community staff recently completed taxonomic validation of data from GWCA, HOME, PIPE and TAPR. Staff continues researching the historic range of variability in tallgrass prairies and updating the vegetation monitoring database.

Invasive Plants

As of December, the network completed a draft of the invasive plant monitoring protocol. It is now under review and we expect a final protocol by September 2007.

Rare Plants

Crews counted 101 flowering western prairie fringed orchids at PIPE in 2006. Staff estimated numbers of Missouri bladderpod for Bloody Hill Glade at WICR to be between 11,075 and 47,472 plants.

White-tail Deer Monitoring

We have sent our monitoring protocol for peer review. Deer monitoring is scheduled at ARPO Jan 16-19, at PERI Jan 22-24 and at WICR Feb 20-22, 2007.

Grassland Birds

Staff presented monitoring results at the Midwest Fish and Wildlife Conference in early December. We continue to work on long-term trend analysis of data and writing summary reports.

Fish Community Monitoring

Staff continue work on a draft protocol for fish monitoring at BUFF and OZAR. Additional parks (HOSP, EFMO, HEHO) will be added to the prairie fish monitoring program. Staff are revising this protocol. Data entry and fish sample processing continue.

Aquatic Invertebrates

Staff completed sampling invertebrates at OZAR (12 sites), and have finished one-half of the sites at BUFF. Processing will begin shortly. The draft river invertebrate protocol is now in peer review.

How Can Exotic Plant Monitoring Guide Resource Management Planning?

During the Vital Sign selection process, thirteen parks identified invasive, exotic plant distribution as a high priority indicator of ecosystem health. This encouraged Heartland Network to establish wide-ranging goals for an invasive plant monitoring protocol that would satisfy the needs of all these parks.

A new protocol, currently in review, documents changes in exotic plant location and abundance. Perhaps most importantly, it focuses on early detection of new plant invasions. Early detection serves two purposes, it: (1) identifies plants not previously seen in the park, and (2) identifies expansion of invasive plants into new areas.

Managers can most easily control plants during the early stages of invasion. One study gives a sobering report that control is largely impractical for invasions greater than 100 hectares and mostly successful for invasions less than 1 hectare in area.

During 2006, a contractor and network staff pilot tested the monitoring protocol in ten parks. Results will be presented in forthcoming reports. The network will repeat these methods every five years to provide an early detection warning system.

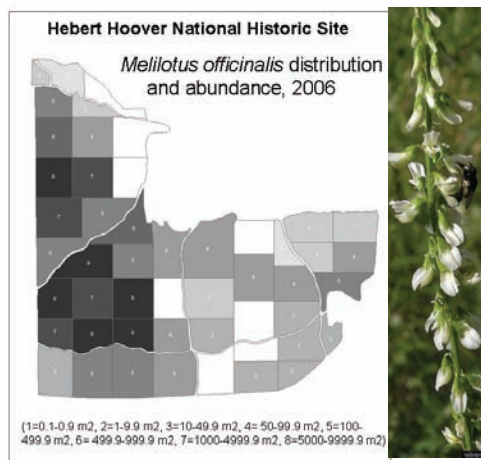
unit. Reports to parks will include this type of graphical presentation for each invasive plant encountered during monitoring.

So what do we do with these data? Managers undoubtedly have park-specific uses for the data, but the data also provide a strong basis for strategic exotic plant management planning. Managers might use the data to select from four management strategies: 1) eradication, 2) containment, 3) mitigation, or 4) wait and see.

For example, Rodney Rovang recently detected an early stage sericea lespedeza (*Lespedeza cuneata*) invasion in a restored prairie at Effigy Mounds National Monument. Immediate chemical treatment may *eradicate* the plant from the prairie. Although otherwise widespread, the park's south unit supports relatively few garlic mustard plants (*Alliaria petiolata*). Here, early detection and immediate treatment *contains* the current invasion. The park also continues herbicide treatment of established garlic mustard to *mitigate* its impacts in selected locations. In contrast, Rovang uses *wait and see* for reed canary grass, which is very difficult to manage and widespread.

Exotic plant monitoring can provide an important first step in assessment and planning. Even a thumbnail exotic plant management plan may allow parks to convey the extent of their problem, focus realistically on manageable invasions, and estimate financial resources needed to strategically control invasive plants. While a dedicated source of funds to manage exotic plants is needed, treatment strategies may assist parks in identifying opportunities for sharing resources and working with partners.

— Craig Young



The figure shows exotic plant search units at Hebert Hoover National Historic Site. The shading in each search unit indicates the distribution and abundance of sweetclover (*Melilotus officinalis*) in each

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Sioux Quartzite Prairie — cultural and natural significance

Pipestone National Monument has one of the few intact examples of a rare type of prairie community. A distinct geologic feature – the Sioux quartzite formation – characterizes this community and produces a unique set of living conditions.

The Sioux quartzite rock formation is derived from metamorphosed sandstone that is estimated to be about 560 million years old. It became exposed in some places as glaciers receded. Outcrops can range from 10 to 100 feet wide and several hundred feet long.

Sandwiched between the quartzite lay strata of soft, red mudstone called Catlinite or pipestone. It is Catlinite that American Indians use to make pipes, giving the formation name its reference to the Sioux and the monument its name of Pipestone.

Prior to European settlement, elk and bison grazed the area and periodic fires prevented the growth of woody vegetation on the prairie. Areas of native vegetation have steadily declined since settlement and fire suppression allowed an increase in the number of nonnative and woody species.

On the surface of and between the quartzite rock formations, small pools and ponds form during the spring season, creat-



ing a habitat for aquatic and semi-aquatic plant species. Drought resistant prairie plants are the dominant vegetation on the rock outcrops.

Today, management of the Sioux quartzite prairies includes prescribed fire and shrub removal to increase native vegetation. Monitoring of the prairie vegetation during

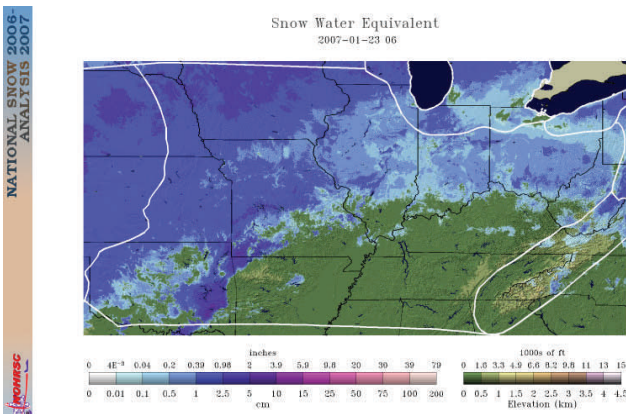
the spring and summer aids in determining if the plant communities are thriving or declining. Park managers adapt their management practices based on monitoring results.

While the Sioux quartzite prairie consists of over 53% rock cover, it still supports a high diversity of plant species. Staff at Pipestone NM and HTLN identified 154 species of plants on the rock outcrop formations.

Not only does this formation provide the basis for a rare plant community, but the story of this stone and the pipes made from it spans four centuries of Plains Indian life. Pipes figured prominently in traditions of daily life, honoring the spirits, and dealings between tribes. Pipe-carving is not a lost art. People of American Indian ancestry continue to quarry pipestone and create pipes for ceremonial uses and as artwork.

Plains Indian culture and the Sioux quartzite prairie have undergone radical change since the era of the free-ranging buffalo herds. The National Park Service works to preserve the natural and cultural aspects of the Sioux quartzite formation, while keeping its many associated resources available to people of American Indian ancestry and for the enjoyment all park visitors.

— Sherry Middlemis-Brown



The visitor's center at Wilson's Creek National Battlefield was closed for a week. The battlefield, including the HTLN offices, lost power. Cold temperatures caused the water pipes to break, flooding the HTLN modular buildings. As of January 23, the battlefield tour road remained closed because of storm debris and the I&M office remained powerless. Park staff have worked diligently to provide temporary HTLN office space and have worked creatively to restore Internet connectivity.

The storm undoubtedly changed the structure of forests across the Ozarks, including Wilson's Creek National Battlefield. [See article on *Wishing for Twisters?* The Weather Vane, December 2006.] Other parks within the network were also catastrophically impacted by this storm and are only starting to return to business as usual.

More natural catastrophic disturbance at Wilson's Creek National Battlefield!

On January 12, a historic ice storm struck the Ozarks Region of Missouri. Ice accumulations of 1 to 1.5 inches in Greene County, where HTLN is headquartered, resulted in numerous downed trees and power lines. The storm left over 200,000 southwest Missourians without power and one source likened the damage to a landscape resembling a war zone. The storm struck while the region recuperated from the November 30, 2006 ice storm.

Fourteen other counties along the I-44 corridor also reported at least an inch of ice. Communities across southeast Kansas into western Missouri also received 1 to 5 inches of snow and sleet mixture with structures collapsing from the weight of ice and snow.

More on the Web

Other sources of invasive species information:

<http://www.invasivespeciesinfo.gov/>

http://www.weedcenter.org/weed_mgmt_areas/wma_overview.html

Pipestone NM:

[http://inside.nps.gov/index.cfm?](http://inside.nps.gov/index.cfm?handler=parkdetails&alphacode=pipe)

[handler=parkdetails&alphacode=pipe](http://inside.nps.gov/index.cfm?handler=parkdetails&alphacode=pipe)

More on the ice storm:

<http://www.crh.noaa.gov/sgf/?n=icestormjan07photos>

<http://www.crh.noaa.gov/sgf/?n=icestormjan07summary>