

## News in Brief

### Vegetation Monitoring

Staff completed baseline reporting for HOSP and PERI and are establishing new monitoring sites for 2008 in the WICR grassland restoration. HTLN and HOME staff met to discuss improved reporting methods for monitoring results.

### Invasive Plant Monitoring

Network staff are preparing a contract to complete invasive plant monitoring at Hopewell Culture NHS in 2008.

### Rare Plant Monitoring

An updated Missouri bladderpod monitoring protocol draft is complete and in review.

### Wetlands

Network staff participated in a WebEx meeting to coordinate protocol development efforts with other I&M networks.

### White-tail Deer Monitoring

Deer surveys wrapped up in February, despite inclement weather. Populations appear to have rebounded slightly from lows last year at ARPO, PERI, and WICR.

### Grassland Bird Monitoring

Resource managers reviewed the field guide for bird-survey volunteers. Staff will incorporate changes into a final draft before the season begins. Surveys begin May 12th at PERI. Six parks will be visited this year.

### Fish Community Monitoring

Staff are analyzing fish community data. We will complete annual reports in the next few months. Revision of the small streams fish monitoring protocol continues with a published document expected this summer.

### Aquatic Invertebrate Monitoring

The springs protocol nears completion. The small streams protocol finished internal review and will enter peer-review. Protocols for contaminant metals and Hellbender remain in peer-review. We completed analysis of invertebrate data for FY05 and FY06 rivers and FY06 springs. Sample processing and data entry continues.

## Sampling consistency: key to long-term monitoring

Successful long-term monitoring relies on establishing critical baseline conditions as a reference for comparing temporal change. Therefore, we must collect data for baseline conditions and subsequent monitoring using consistent methods that produce reliable and comparable data.

During the initial phase of a long-term monitoring program, we often test and adjust methodology to ensure that we are capturing a representative sample of the true population or community with the methods we have selected.

In 2005, HTLN staff began collecting fish community data from nine main stem sites at Ozark National Scenic Riverways (OZAR). Our crews used electrofishing to capture fish and then recorded information on individual fish characteristics, such as length, weight, and conspicuous diseases, parasites, or deformities.

In 2006, we revised the electrofishing techniques used at three of the main stem sites based on stream morphology. To determine the potential effects this change in gear had on the fish samples collected, HTLN staff compared data collected in 2005 and 2006 at sites where gear type had changed and at sites where gear remained consistent.

Biologists use metrics such as species richness or number of species in key indicator fish families or groupings (suckers, native minnows, and darter/madtom/sculpin species) to detect the effects of human disturbance on a community. Change in gear type did not affect the number of species collected or the metric on species groupings. However, we found more variability in fish abundance and community composition at sites where gear changed than at sites where gear remained the same.

This suggests that managers should give careful consideration to gear selection and should test methodologies during the design phase of a long-term monitoring program. Sampling gear and sampling effort must remain consistent to ensure that data collected over time are comparable. Only comparable data are suitable

for detecting trends that reveal the effects of park management practices and of land use changes outside of park boundaries.

— Hope Dodd



Three types of electrofishing depend on size of stream — (top to bottom) backpack, tow barge, power boat.

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of our heritage



## Abe's Woods, a restoration challenge

Lincoln Boyhood National Memorial's designed landscape commemorates the childhood of Abraham Lincoln from ages seven to 21 (1816-1830). The site in southwestern Indiana had no physical traces of the Lincoln farm by the late 1800s. Local residents began creating a memorial landscape and picnic area at that time.

The state of Indiana became involved during the 1920s. Decorative elements, such as ornate gates, sculptures and ornamental plantings took over the scene. The state began to reforest the park with mixed hardwoods in the 1930s.

The national significance of the site resulted in the park's designation as a National Memorial in 1962. The National Park Service (NPS) retained the commemorative design and the forest.

Human activity had caused sweeping changes to the landscape. Hog pasturing by settlers and development of lawns beneath the forest canopy devastated the natural

ground cover. The absence of fire allowed maples to reproduce and push the wave of succession from oak-hickory towards mixed hardwood forest.

The NPS initiated a study on recreating pre-settlement forests in the memorial during 1984. The forests planted in the 1930s differed from natural forest communities because of the absence of oaks, hickories and herbaceous plants on the forest floor. The study investigator discovered two remnant natural woods in the memorial to use as reference sites.

The 1984 study report recommended using natural processes to restore pre-settlement forests to the memorial.

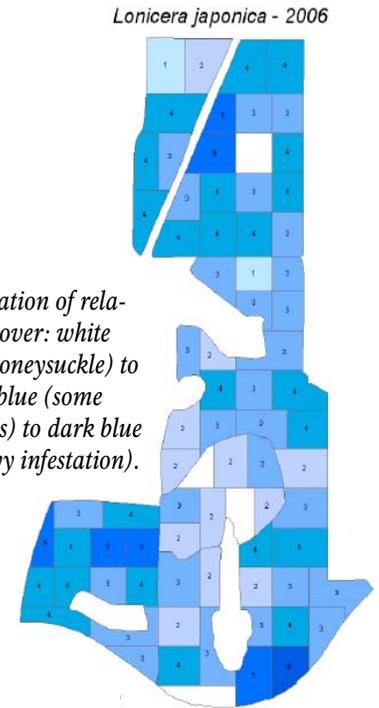
The report suggested using fire where possible to reduce maple saplings and to promote oak-hickory regeneration. It also recommended eliminating honeysuckle and non-native grasses, and planting spring herbs.

Many of the same landscape issues that faced the memorial in 1984 remain today. The memorial has not completed restoration of pre-settlement forests. Japanese honeysuckle

Lincoln Boyhood National Memorial  
Exotic Plant Search Units



Aerial photo also shows the forest cover within the memorial



and several other invasive plants dominate portions of the understory. In total, the Heartland Network identified 31 invasive exotic plant species during monitoring in 2006.

The good news is that the memorial can successfully control many of the problem species. Only two of the 31 invasive species have a great impact on the ecosystem: autumn olive (*Elaeagnus umbellata*) and crownvetch (*Securigera varia*). Managers consider these two species to be relatively manageable. On the other hand, Japanese honeysuckle is widespread and difficult to control.

Returning fire to the land and augmenting it with manual and chemical treatments will help to restore forests similar to what was here when the Lincoln family settled the land. Constant monitoring and adaptive management are critical to the process.

— Sherry Middlemis-Brown

## Mary Edwards Retiring

### Taken from Mary's musings:

"Ever notice the I&M staff walk rapidly past my work station? It's because they have had to put up with my stories of growing up in the National Park Service.

At Carlsbad Caverns (CC) there were always several college-age seasonal guides and never enough dance partners. So of course, I got to dance with good looking "older" rangers. Roller skating in the lunchroom and exploring the Mouse Trap just outside the CC lunchroom. . . . just the right size for kids to crawl under, slide down, just plain fun.

I learned to water-ski in Jenny Lake at Grand Teton. Fed by melting snow, you know it was frigid. We snow skied on our own ski-run, equipped with a rope pulley ski-lift, and we had to ski cross country to our run. Tobogganing was great. I always liked to be at the back so I could bail if they went too fast. I hiked or biked from dawn to dusk in summer. Mom packed me a lunch and I was on my way, the deeper into the woods the better.

When you travel to a National Park to visit, you take lots of pictures. When you live in National Parks, it's home!"

Best wishes, Mary, for your mid-April retirement. We'll miss you!

## More on the Web

Lincoln Boyhood NM: <http://www.nps.gov/libo/>

Monitoring summaries: <http://science.nature.nps.gov/im/units/htln/reports.cfm>

HEHO website has an I&M link: <http://www.nps.gov/heho/naturescience/inventory-and-monitoring.htm>