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## News in Brief

### Data Management

We continue work with Missouri Resource Assessment Partnership (MoRAP) integrating GIS watershed data layers into studies at BUFF and OZAR. The coverages will be used by our aquatics program for data analysis.

### Vegetation

Staff completed warm-season/grassland community monitoring at HOME, PIPE and TAPR and woodland fire impacts sampling at WICR this fall. We completed data entry and validation for the season and started analysis.

### Invasive Plants

Dan Tenaglia, a network contractor, completed exotic plant monitoring in seven network parks: ARPO, GWCA, HOME, LIBO, PERI, TAPR, and WICR.

### Rare Plants

Staff completed a rewrite of the western prairie fringed orchid monitoring protocol to meet WASO standards.

### White-tail Deer Monitoring

We reviewed deer-monitoring protocol and will make necessary revisions. Peer-review of the protocol will begin in December. Monitoring at ARPO, PERI and WICR will begin in mid-January.

### Grassland Birds

David Peitz, wildlife ecologist, and Gareth Rowell, data manager, will present a paper at the Midwest Fish and Wildlife Conference in December. We continue with data analysis and summary report writing for AGFO and HEHO.

### Fish Community Monitoring

Staff completed fish and habitat monitoring at TAPR and OZAR this fall. During winter months, we will continue fish identification and data entry for 2006 samples. We expect the final fish monitoring protocol for BUFF and OZAR this winter.

### Aquatic Invertebrates

Staff revised the Ozark Rivers Invertebrate Protocol following internal review and made it ready for external peer-review. We will begin final preparation of the spring-community protocol and revision of the prairie-invertebrate protocol later this fall.

## Wishing for Twisters?

A tornado that tore through portions of Manley Woods, Wilson's Creek National Battlefield, in 2003 offered a rare opportunity to use natural catastrophic disturbance to restore a historic savanna-like landscape. The tornado directly affected 60 hectares of the park, including two of four permanent monitoring sites located in Manley Woods. This provided a unique opportunity to assess the effects of tornado damage and subsequent management actions on a plant community that has resulted from five decades of fire suppression.

The tornado uprooted and topped trees along its path and woody debris added to hazard fuels. Salvage logging in 2006 lowered fuel loads and opened the ground to native plant cover. Managers then used prescribed fire to reduce tree density beyond the impacts of the tornado. The overgrown woodlands had never carried fire well, but the tornado and salvage logging created conditions that allowed remaining fuels to burn intensely. Fire and tornado damage formed a patchy distribution of disturbed areas within an established plant community, producing spatial heterogeneity within the landscape.

Comparison of data from three monitoring periods (1997, after the tornado in 2003, and after salvage logging and prescribed fire in 2006) indicated that large trees in the overstory were most affected by the tornado. Mechanical thinning and disturbance by fire further contributed to a decline in their numbers. Between 1997 and 2006, the number of trees per hectare decreased from 710 to 170. The

overstory composition remained largely oak and hickory species, but the size structure decreased. The woodland canopy opened as density of large trees decreased. Tree regeneration declined with red elm dominating regeneration.

It is still too early to make generalized statements about the long-term effects of disturbance or management actions on the



Photos: HTLN staff

understory community structure in Manly Woods, but the HTLN has made some observations. The number of woody species in the understory nearly doubled following the tornado, but then decreased in the wake of fire. Forb (wildflower) cover increased three-fold after prescribed fire, but grasses remained a small

part of the community.

When land management decouples a plant community from its natural disturbance regime, the community changes in response to a lack of disturbance. Reintroduction of natural disturbance can have a community altering impact on species composition and size class structure. Tornadoes are a natural disturbance with a random return interval and intensity, and unlike prescribed fire, managers cannot anticipate their impact or frequency. However tornadoes, as a natural disturbance event, can provide a unique opportunity for managers to begin restoration of a historic community that depends on natural perturbation to maintain its composition and structure.

*The Weather Vane* is published by the Heartland Network Inventory and Monitoring Program of the National Park Service. Visit [www.nps.gov](http://www.nps.gov).

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## Condition Assessments — EFMO and OZAR putting it all together

Many new and useful natural resource programs have resulted from the [Natural Resource Challenge](#). The NPS Water Resources Division, Watershed Condition Assessment (WCA) program initiated a new series of projects that will affect parks within the HTLN. This series of assessments, called Overview Assessments began in FY 2006 with projects at [Ozark National Scenic Riverways](#) (OZAR) and [Effigy Mounds National Monument](#) (EFMO). Overview Assessments will continue, targeting other Vital Signs parks, through FY 2014.

According to Jeff Albright, WCA Program Coordinator, “We intend to update assessments about once every eight years.”

These broad-scope ecological assessments will synthesize and translate existing information into a single written report and GIS coverages. The assessments will guide park planning and move management towards “condition based” resource management. They will allow accurate reporting to the department’s “land health goals” and to the Office of Management and Budget’s “natural resource condition scorecard.”



Effigy Mounds National Monument



Ozark National Scenic Riverways

The OZAR and EFMO projects come on the heels of initiating General Management Planning (GMP) at both parks. The results of the Overview Assessment may contribute to the GMP process, and will most certainly inform the subsequent Resource Stewardship Strategies. The WCA and regional science

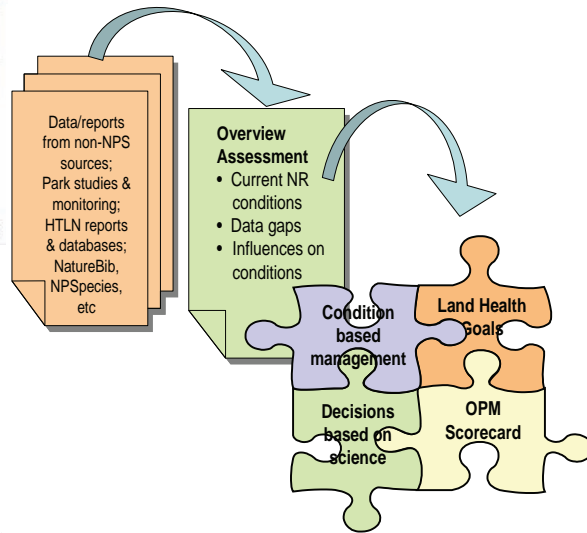
committee will collaborate in selecting Vital Signs parks for assessments as funding becomes available. Additional park projects may be initiated in FY 2007.

The Missouri Resource Assessment Partnership (MoRAP), a Cooperative Environmental Studies Unit (CESU) partner at University of Missouri, will complete the projects for OZAR and EFMO. MoRAP will synthesize existing data from outside and from within NPS to create the assessments.

Although the objectives of Vital Signs monitoring and Overview Assessments differ, the two programs are complementary. Many components of the HTLN Monitoring Plan and databases will feed directly into the Overview Assessments.

For park managers, the challenge is not only the need for more science and data to support decision making, it is also a need to

understand and apply the diverse reports and data that already exist. Overview Assessments strive to interpret and distill existing data and information from various sources and



disciplines into an overall “big picture” of park natural resource conditions, data gaps, and influences (threats, stressors). Communicating findings through a set of geospatial products and a written report should maximize usefulness of Overview Assessments to resource managers.

## An Exotic Proposal

The HTLN parks will submit a proposal to the Operations Formulation System for establishment of an exotic plant management program. The proposal, modeled on NPS Exotic Plant Management Teams (EPMTs), requests funding for a program to control exotic plants in the 15 HTLN parks, beginning in FY2009.

During the vital signs selection process in 2003, network parks recognized the need for exotic plant monitoring. Twelve parks

identified exotic plants as a top priority management issue. All network parks acknowledged exotic plant monitoring as the most important *shared* need. Although EPMTs are associated with other networks (see hyperlinks in More on the Web), the HTLN does not have one.

The proposal recommends a cooperative, multi-park program for addressing exotic plant management issues. Individual parks have proposed exotic plant projects, but have not received funding. An EPMT would achieve an economy of scale to provide exotic plant treatment, effective monitoring and data management for all HTLN parks. Through the EPMT, parks would share personnel and equipment. The program would allocate resources to priority target species and locations based on feasibility of success and level of threat to critical resources.

As with other OFS requests, the proposal

will be reviewed and will compete for funding. Although the need is great, funding is uncertain.

### More on the Web

For more information on condition assessments:

<http://www1.nrintra.nps.gov/wrd/Watershed/index.cfm>

[http://www.cerc.usgs.gov/morap/projects.asp?project\\_id=52](http://www.cerc.usgs.gov/morap/projects.asp?project_id=52)

More on EPMTs:

<http://www1.nature.nps.gov/biology/invasivespecies/>

Existing EPMTs:

[Alaska](#)

[California](#)

[Chihuahuan Desert/Southern Shortgrass Prairie](#)

[Colorado Plateau](#)

[Florida/Caribbean Partnership](#)

[Great Lakes](#)

[Gulf Coast](#)

[Lake Mead](#)

[Mid Atlantic Cooperative](#)

[National Capital Region](#)

[North Coast Cascades Network](#)

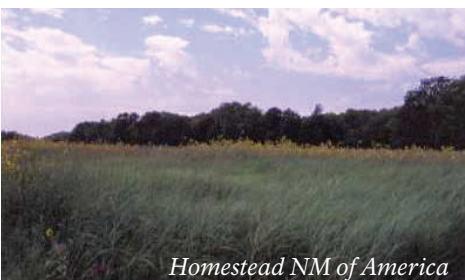
[Northeast](#)

[Northern Great Plains](#)

[Northern Rockies](#)

[Pacific Islands](#)

[Southeast](#)



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