The Weather Vane

The Newsletter of the Heartland Network Inventory and Monitoring Program

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News in Brief

Data Management

Staff implemented a new fileserver to manage data for the Aquatic Studies program. The new fileserver will allow standardized management of water resource databases.

Invasive Plants

Staff has developed a plan to implement the first round of exotic plant monitoring on 13 network parks by 2008.

T&E Plants

Network staff is reviewing recent data to evaluate alternative Missouri bladderpod monitoring methods.

White-tailed Deer Monitoring

Staff completed the second year of deer monitoring at ARPO, PERI and WICR in January. Work continues on preparation of draft reports for each of those parks.

Grassland Birds

Staff has scheduled breeding bird sampling in 2006 at AGFO, HEHO, HOCU and TAPR, and will add ARPO, GWCA, HOSP and PERI to the schedule in 2007. Staff completed reports from 2005 surveys at HEHO and HOCU, and continue work on reports for AGFO and TAPR.

Fish Community Monitoring

Jim Peterson and Billy Justice of USGS and HTLN staff will complete a final draft of fish monitoring protocol for BUFF and OZAR by early summer. Habitat assessment and fish sampling will begin at BUFF in the mainstem and tributaries in late May. HTLN plans to add fish sampling at WICR and GWCA.

Aquatic Invertebrates

Staff continues to sort and identify aquatic invertebrates collected during pilot sampling at BUFF and OZAR during fall 2005 and winter 2006. Work also continues on refining and developing invertebrate protocols for prairie and Ozark river parks, respectively.

Monitoring captures a disease related population decline

White-tail deer populations continue to expand their range with numbers spiraling upward. Increased deer populations, while appreciated by hunters and wildlife watchers, might seriously impact other NPS resources. Although people understand that overpopulation results in disease and die-offs, few people understand that hungry deer can destroy the trees and shrubs that feed them.

Plant species sensitive to deer foraging can disappear when deer density is greater than 20 individuals per square mile. Tree regeneration, recruitment and composition suffer from large herds. Deer density exceeds 50 individuals per square mile in many places. In some instances, deer density can exceed 100 individuals per square mile.

Most NPS parks do not allow hunting, thus becoming refuges for deer. Because of size or location, many HTLN parks do not support large predators that could control deer numbers. Therefore deer density increases unchecked until disease, malnutrition or management actions reduce it.

Implementation of deer monitoring in three HTLN parks in 2005 documented the effects of a disease outbreak. Biologists observed significant declines in deer density at ARPO (45% decline) and WICR (>53% decline), while some decline occurred also at PERI between the 2005 and 2006 surveys.

Investigators found hemorrhagic disease in the deer herd at WICR in the fall of 2005. This viral disease is acute, infectious, and often fatal. Park staff found 11 dead deer in September and expects that many others died undetected. Poor hunting success across south Arkansas might indicate that deer faced a similar mortality there. Monitoring will help to establish the extent and duration of this natural population control.

White-tail deer

Ulcerated deer tongue caused by hemorrhagic disease.

For more information on Hemorrhagic Disease or other wildlife diseases see:

http://www.uga.edu/scwds/index2.htm Southeastern Cooperative Wildlife Disease Study, University of Georgia, Athens

http://wdfw.wa.gov/factshts/ehd.htm Washington Department of Fish and Wildlife

http://www.michigan.gov/dnr/0,1607,7-153-10370_12150_12220-26647--,00.html Michigan Department of Natural Resources

- David Peitz

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The Osotouy – where science, scholarship, and ethnography meet

Henri de Tonti established a trading post known as "Poste de Arkansea" at the Quapaw village of Osotouy in 1686. This French settlement in the lower Mississippi River Valley instigated a long struggle between France, Spain, and England over control of North America's Heartland. For the next century, as the Arkansas River wandered across the delta landscape, the Post moved to accommodate its flow.

Arkansas Post National Memorial (ARPO) acquired 360 acres of what is believed to be the original Osotouy site in 1997. This noncontiguous Osotouy Unit is located 5 miles from ARPO's main Memorial Unit, but requires 25 miles of driving around waterways to reach.

The Osotouy includes a National Historic Landmark, the Menard-Hodges mound site. This mound complex dates from the late Prehistoric era to the 1680s, with Baytown and Mississippian components and evidence of contact between Quapaw and Europeans. Its location on the far southern end of the Grand Prairie, at the first high ground above the mouth of the Arkansas River known as Little Prairie, led to its importance to both Quapaw and European.

The Arkansas Archeological Survey field school focused on the Osotouy during 1997 and 1998. The NPS uses information from this and continuing archaeological work, including non-destructive geophysical remote sensing, to help define appropriate site use and development. ARPO expects the discovery of human remains, funerary and sacred objects, and objects of cultural patrimony. The Quapaw requested that land be designated for reburial of repatriated human remains, ensuring that the Osotouy will retain its ethnographic character and special management consideration.

Land cover consists of mixed hardwoods and abandoned fields surrounded by farmland and waterways. The abandoned fields have volunteer native little bluestem. Exotic and invasive plants have a foothold in portions of the woods and fields. The mounds are surrounded by mixed hardwoods with trees

Mounds A and B

One of the Osotouy mounds

encroaching on the fragile archeological sites, potentially threatening their integrity. Until archeologists and ethnographers complete their inventories and mitigation to protect fragile resources from disturbance, vegetation inventory, monitoring, and management must wait.

In the interim, HTLN biologist David Peitz will conduct bird surveys in a manner that will not impact fragile resources. David will use Global Positioning Systems navigation to relocate observation points. He will walk into the unit from the road access and avoid areas with observable or known artifacts. The diverse landscape with water, fields, and hardwood forest suggests potential for good bird diversity.

Eventually, HTLN and cultural resource specialists could work together to protect resources from disturbance. The HTLN will include ARPO in vegetation monitoring in the next few years. For now, HTLN will accomplish what it can in identifying the natural resources in the Osotouy Unit, while respecting and preserving the cultural resources of this unique location. More on the Osotouy at http://uark.edu/campus-resources/archinfo/atufrencol.html

Joining Our Staff

Tyler Cribbs has accepted the biologist position with the network. Many of you already know Tyler. Over the past five years he has performed various duties for the network as a seasonal biotechnician and student hire. Tyler will perform field work for terrestrial monitoring projects (e.g. birds, vegetation, exotic plants, etc), and process and report on associated data. Tyler joins us full time in May, following completion of his Master's thesis.

Almost Done!

Our partners at Colorado State University endeavor to put the finishing touches on the communications plan and matrix of interpretive projects and products. You can see some of their handiwork in the newly designed HTLN Education and Outreach page at http://www1.nature.nps.gov/im/units/htln/education/education.htm

We will send examples of several products and the matrix of project ideas to park superintendents and chief interpreters in May.

Annual Network Meeting
Aug 1-2
Springfield, MO

Make your hotel reservations for the University Plaza! For more information, contact your park representative to the technical committee or HTLN staff.