



Network Update

Winter 2013

Network Review ... and Next Steps

The last time we all got together was May last year for the Southern Plains Inventory & Monitoring Network (SOPN) three-year review at Chickasaw National Recreation Area. We had a beautiful setting and the meeting was productive. The objective of the review was to ask, "Is the network set up to succeed?" Updates were provided on all aspects of the program, and fruitful discussion helped identify the things at which the network is excelling, and some areas where improvement can be made. Based on the recommendations from the meeting, some of the things that stand out about the network are:

- The integration of natural and cultural resource information to be more meaningful to parks.
- The level of collaboration among SOPN, CHDN, and SODN resulting in shared protocols and leveraged resources for maximum efficiency.
- Communication through the Learning Center of the American Southwest, and the "Science Minute" videos that communicate monitoring results about park natural and cultural resources.

Some areas where we are continuing to improve are:

- Clarification of roles for the Board of Directors and Technical Committee and formalizing them through the charter.
- Data management and archiving reports, spatial data, and other products.
- Communication products that best meet the needs of parks and making them widely accessible.

For more information about the review, go to: http://www1.nrintra.nps.gov/im/monitor/networks/SOPN/SOPN_review.cfm

Rob Bennetts also participated in the Chihuahuan Desert Network (CHDN) review in January 2013. Again, the collaboration among SOPN, CHDN, and SODN (the Sonoran Desert Network) was a highlight of discussion. At that meeting, there was interest expressed in using the regional collaboration to look at monitoring results across the larger region, and to synthesize vital signs, showing relationships among them and within a regional context. Look for more discussion on that topic in the coming months.

As 2013 gets underway, and amid national discussions about sequestration and budget cuts, our main concern is having sufficient budget to cover field work travel costs, agreements with partners, field staff, and basic operations to fulfill our commitment to vital signs monitoring. We've been busy with contingency planning and will keep you informed as we get more clarity on budgets and plans for field work.





MONITORING and PROJECT UPDATES

The following are updates on monitoring from last season, and preparations for this year. Check out new monitoring reports and resource briefs on SOPN's website at <http://science.nature.nps.gov/im/units/sopn/reportpubs.cfm>.

Exotic Plants

We are fortunate to have Jonathin Horsley returning to lead the monitoring effort again this year—his 5th season with us. He and the crew are shared with the Chihuahuan Desert Network. With Johnny leading returning members, we have a wealth of experience and expertise, which will increase our capacity for early detection of new exotics in parks.

In 2012, 824 vector blocks were sampled, along high invasion probability vectors (primarily roads, trails, and boundaries). Overall, 62 species of exotic plants were observed in SOPN parks. For more information by park unit, refer to the 2012 exotics report posted on IRMA at <https://irma.nps.gov/App/Reference/Profile/2192064>.

Grassland Report

The 2012 report on Grassland and Fire Effects Monitoring in the Southern Plains is about to be released. The report is the result of a collaboration among the I&M and Fire Programs (see the back page for more information). In addition to surveying standard Fire Program shrub transects and forest measurements when appropriate, the crew fielded by the Southern Plains Fire Group sampled species composition and abundance using methods employed by the SOPN. From the perspectives of both fire management and ecological health, it is important to understand the effects of fire as a process that shapes our grassland communities.

A total of 114 permanent transects were monitored across the Southern Plains during the summer of 2012. The results presented in this three-year report represent very different growing conditions. 2010 was a year of average to above-normal rainfall and green vegetation, but the winter was dry and the following two years have brought persistent, extreme drought for many parks across the Southern Plains. This has generally resulted in a decrease of relative cover for all native perennial grasses and forbs, while exotic annuals have increased. The combination of limited annual data and

very different growing conditions means that no inferences can yet be made to trends or drought effects.

Landbirds

In 2012 we had a total of 1,675 point visits (the number of unique points multiplied by the number of visits) on 34 transects or grids; and we recorded a total of 15,435 individual birds (of 162 species) during our point visits.

SOPN continues to monitor landbirds in cooperation with the Sonoran and Chihuahuan Desert Networks through a cooperative agreement with Rocky Mountain Bird Observatory (RMBO). We are in the process of renewing our agreement with RMBO, barring any budget complications or restrictions.

Western Meadowlark was the most commonly detected species within the SOPN (n=1,931), followed by Mourning Dove, Northern Cardinal, and Red-winged Blackbird. Two species, Brown-headed Cowbird and Mourning Dove, were detected at every park in the network, and nearly 50 species were detected at only one of the ten parks during surveys. For more information, refer to the report at: <https://irma.nps.gov/App/Reference/Profile/2182098>.

Natural Resource Condition Assessments

Natural Resource Condition Assessments (NRCAs) report on trends in resource condition (when possible), identify critical data gaps, and characterize a general level of confidence for study findings. The NRCAs provide detailed information that can be used in State of the Parks reports. Included in the NRCAs is a summary chapter that is consistent in format to the State of the Parks reports and provides an overview of all the resources and their condition. Drafts are nearly complete for Sand Creek Massacre NHS, Washita Battlefield NHS, and Little Bighorn Battlefield NM; and once they are done, we will initiate NRCAs for Bent's Old Fort NHS, Fort Larned NHS, and Fort Davis NHS.



A panoramic image of Washita Battlefield National Historic Site. These panoramas help analyze the viewshed as part of the NRCA.



DROUGHT and EXOTICS: A Cautionary Tale

In the Spring of 2012, during a persistent drought, Washita Battlefield NHS experienced the exotic plant equivalent of the “perfect storm.” As in so many parks, persistent low-level populations of a suite of exotic forbs and grasses existed, and were being managed by the park. Little to no rain in 2011 caused native grasses and forbs to go dormant or die, drastically reducing plant cover, which allowed more sun to hit the ground. Winter was still very dry, but there was just enough moisture from snow to cause early spring annual seeds to germinate, in particular, Japanese brome (*Bromus japonicus*) and cheatgrass (*Bromus tectorum*). Ka-boom! The bromes immediately dominated the landscape throughout the park, growing to some impressive heights and producing a prestigious amount of biomass. They capitalized on the available resources of sunlight and moisture, leaving little of either resource for later-germinating plants. Once the bromes completed their life cycle, producing a terrifying amount of seed, they died, leaving behind a thick mat of litter blanketing the park. This litter continued to deny sunlight to any plants below and elevated the fuel load. By the end of another dry summer, the litter had worked itself to ground level, providing a beneficial layer favored by its progeny waiting for just enough moisture to germinate.

We cautiously wait to see what the Spring of 2013 brings. There appears to be two camps of thought as to what to expect. Grassland experts have predicted that while bromes will persist, they have a cyclical nature, so there should not be another “super” brome year for another couple of years.



NPS, DICK ZAHM

Cheatgrass along the border fence at Washita Battlefield NHS. The site experienced a “perfect storm” of conditions that allowed the exotic plant to thrive.

Others believe that as long as conditions remain conducive to brome germination, we will see increased levels of bromes in the landscape. Either way, the seedbank produced in 2012 insures that bromes will be a part of the landscape for years to come. Several management strategies have been investigated, including pulse grazing, but compliance and approval are not always consistent with a “rapid response” course of action. Prescribed fire to remove biomass is not an option as long as the drought persists. Mowing is problematic in many areas because the mow-height best suited for brome is much too low for native bunchgrasses.

It should be noted that, while we have concentrated this story on brome, many other exotic species benefitted from these conditions, including: Johnsongrass (*Sorghum halepense*), the mustards (Brassicaceae species), and Scotch thistle (*Onopordum acanthium*). So the next time you find small populations of a seemingly innocuous exotic lurking in your park, BEWARE! You never know when conditions beyond your control will line up just right to allow for a major problem.



Tomye in the field at Washita Battlefield NHS.



SOPN PARK CODES

ALFL

Alibates Flint Quarries
National Monument

BEOL

Bent's Old Fort National
Historic Site

CAVO

Capulin Volcano National
Monument

CHIC

Chickasaw National
Recreation Area

FOLS

Fort Larned National
Historic Site

FOUN

Fort Union National
Monument

LAMR

Lake Meredith National
Recreation Area

LYJO

Lyndon B. Johnson National
Historical Park

PECO

Pecos National Historical
Park

SAND

Sand Creek Massacre
National Historic Site

WABA

Washita Battlefield
National Historic Site

COLLABORATION and COMMUNICATION

Southern Plains Fire Group

We're pleased to continue the efforts of the Southern Plains Fire Group. This is a great example of collaboration and how to get the most meaning and effectiveness from our ecological monitoring.

The collaboration between the I&M and Fire Programs is intended to gain efficiency from each program's strengths, programmatic goals, and legacy. The I&M Program approaches grassland monitoring with an emphasis on long-term ecosystem health. In contrast, the Fire Program approaches monitoring with an emphasis on understanding the effects of wildland fire, prescribed fire, or mechanical treatment as a management or "natural" treatment on the ecosystem. Not surprisingly, the parameters that would be monitored from each of these perspectives overlap considerably. Furthermore, most of the park units in the Southern Plains are subject to fire or other treatments at some point in time. Consequently, there is no inherent difference between land managed with fire or other treatments and land for which ecosystem health is being assessed. It also follows that there is considerable efficiency to be gained from a combined effort, whereas complementary types of sampling can add value to the sampling designs that might otherwise occur independently.

Communication

Based on the collaboration among the Chihuahuan Desert, Sonoran Desert, and Southern Plains Networks and their implementation of shared monitoring protocols, there is an opportunity to present park-specific monitoring results within the context of southwest regional trends. SOPN is beginning to explore the kinds of analyses that best lend themselves to this landscape approach. In addition, communication that synthesizes meaning from multiple indicators in combination—such as grasslands, fire, and exotics, for example—is also being explored. The SOPN will start to streamline routine, annual reporting so that additional time and expertise may be dedicated to this additional analysis and what it means for park management decision making.

Southern Plains Network



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