



2013

Natural Resource Monitoring at Curecanti National Recreation Area



National Park Service

Curecanti National Recreation Area.

The Northern Colorado Plateau Network

The Northern Colorado Plateau Network (NCPN) covers a geologically and biologically diverse region comprising 16 national parks in four western states. These parks contain desert grasslands, shrublands, forests, caves, large rivers, perennial streams, seeps, springs, and striking geology. Invasive species, trampling and grazing by livestock, and adjacent land-use activities are some of the most significant threats to NCPN parks. The NCPN is designing and implementing a long-term monitoring program to measure key indicators of ecological integrity, or “vital signs.” Multiple monitoring efforts will help inform managers of the health of park resources and provide early detection of potential problems. This brief describes recent NCPN activities at Curecanti National Recreation Area.

Landbirds



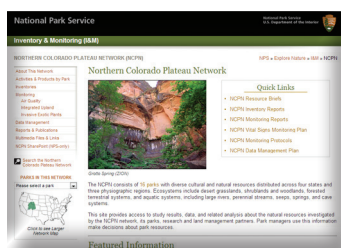
Sage sparrow.

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The NCPN is partnering with the Rocky Mountain Bird Observatory to assess breeding bird species trends in three habitats: lower riparian, pinyon-juniper (PJ), and sage shrubland. In 2012, the eighth year of monitoring was completed, including five sage shrubland transects at Curecanti NRA. The third year of trend analyses was completed this year, with significant trends detected for 10 species. Seven species exhibited declines in population density, one species showed an

increase, and two species showed a quadratic trend (e.g., increased in population density in early years, then decreased in later years). Canyon wren declined in two different habitats. Only gray vireo, in pinyon-juniper habitat, showed a steady increase. As additional years of data accumulate, long-term trends underlying annual fluctuations will be revealed. Long-term monitoring will continue to be necessary for interpreting population status and trends for avian species of the NCPN.

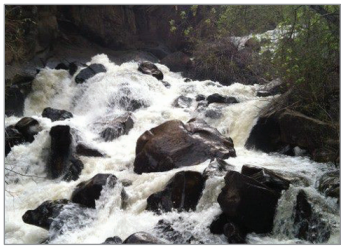
Website Re-design



It's now easier to find everything you need from us at the [NCPN website](#). The network staff has completed the website re-design process planned for all 32 I&M networks. The result is a streamlined site that is easier to navigate. Each network park also has its own page where users can go to find out what the network is do-

ing at that park and access all NCPN products and publications relative to that park. The site continues to offer interactive features, such as the ability to retrieve a current park species list, and is more tightly integrated with the IRMA Data Store, which allows new publications to be posted to the site more quickly.

Nutrient Enrichment



Curecanti Creek.

Nutrient impairment by nitrogen (TN) and phosphorus (TP) deposition is a primary cause of water-quality degradation nationwide. In response to recent state efforts to develop numeric nutrient water-quality criteria, the U.S. Geological Survey and NCPN published a report on nutrient concentrations in streams and rivers near and in NCPN parks during 1972–2007. Most sites showed either no trends or downward trends in TN or TP concentrations, which may be linked to improved management of water resources. Although negative changes may indicate cause for concern, some cases of elevated nutrient concentrations were likely the result of

natural processes, such as geologic weathering. At Curecanti NRA, three study sites persistently exceeded TN criteria. Two sites had no trend in TN, while one site trended upward. Although 20 sites persistently exceeded TP criteria, the elevated phosphorus levels in these water bodies are most likely naturally occurring. For this reason, when state standards for TP are established in Colorado, they are expected to allow for higher levels than the criteria used in the USGS report. Only one site showed an upward trend for TP. Five sites showed no trend in TP, while two trended downward. The full report is available at <http://pubs.usgs.gov/sir/2012/5043/>.

NRCA Update



Elk.

Natural Resource Condition Assessments (NRCAs) evaluate the current ecological conditions of priority park natural resources and processes. NRCAs are used for park planning and management, and to provide broad, science-based support for natural resource determinations in documents, such as State of the Parks reports and Resource Stewardship Strategies. At CURE, priority natural resources include upland vertebrates, endangered and threatened species, habitat fragmentation and land use, and natural sounds and dark skies.

Because management of native species and communities that depend on reservoir resources is also a high priority, the NCPN established a cooperative agreement with the University of Arizona to assess the condition of multiple biota—including fishes, amphibians, aquatic birds, and aquatic and nearshore vegetation—relative to variable reservoir water levels and non-native fish populations. A final draft of that report has been provided to NPS, and a draft of the full NRCA should be completed by the end of 2013.

NCPN on Facebook



Since its inception in July 2012, the [NCPN Facebook page](#) has quickly become the most popular I&M page on the site. What started out as an effort to keep park staff better informed about our activities has turned into an opportunity to talk to several hundred people each day about science in the national parks and our contribution to it. Photos and posts from the field (our most popular content) help people to know who we are and what we do, and put

a human face on our program. As of October 2013, the NCPN page had 975 followers. Most lived in the Colorado Plateau area, but 16% hailed from 44 foreign countries. We usually reach about 1,000–1,500 people each week, but that number has risen into the several thousands on occasion. The goals of the page, and the barometers by which we gauge success, are evolving, but to this point we feel that the rewards have been worth the effort.

Budget Sequester Impacts



U.S. Capitol.

The federal budget sequestration begun in March 2013 forced the suspension of some NCPN monitoring activities this year. Decisions about which vital signs would not be monitored were made in discussions between network staff and staff at each NCPN park. Staff at BLCA and Curecanti NRA, which spread their sequestration cuts across both parks, chose to suspend big-rivers monitoring

at Curecanti NRA. If the sequestration budget cuts are continued into Fiscal Year 2014, then network staff, park staff, the Technical Committee, and Board of Directors will have to have a detailed discussion that re-examines all vital signs and develops a strategic, longer-term approach to monitoring activities under the reduced funding levels.

Additional Efforts

In addition to the projects described in this brief, the NCPN also monitors air quality, landscape dynamics, land surface phenology,

climate, water quality, invasives, big rivers, and uplands at Curecanti National Recreation Area.

For more information

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