



2013

Natural Resource Monitoring at Black Canyon of the Gunnison National Park



View from Gunnison Point.

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 Black Canyon of the Gunnison National Park (BLCA).

Nutrient Enrichment

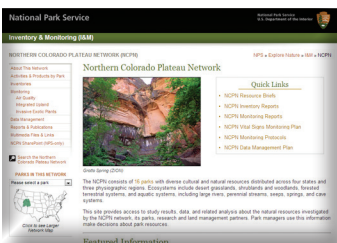


Gunnison River.

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 Black Canyon of the Gunnison NP, one study site persistently exceeded the TN criteria and no sites persistently exceeded the criteria for TP. Data were insufficient for trend assessments. The full report is available at <http://pubs.usgs.gov/sir/2012/5043/>.

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.

Invasive Exotic Plants



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Musk thistle.

Invasive exotic plants (IEPs) represent one of the most significant threats to natural resources in national parks. If these invaders are discovered in their early stages, control efforts are likely to cost less and achieve higher success rates than after a species has become more widespread. From 2010 to 2012, over 275 km were monitored at BLCA and Curecanti National Recreation Area. Thirty-two IEP species were detected on monitoring routes and transects. Of these, 24 were priority species, accounting for 2,936 separate infestations. Canada thistle (*Breia arvensis*), common mullein (*Verbascum*

thapsus), musk thistle (*Carduus nutans*), reed canarygrass (*Phalaris arundinacea*), Russian thistle (*Salsola australis*), and kochia (*Bassia sieversiana*) were the most commonly detected priority IEPs. Compared to surveys conducted in 2003–2004, the number of infestations declined at the Gunnison River and Red Rock Canyon, stayed about the same along trails and the south and north rim roads, and increased along the East Portal Road. A [full report](#) is available at the NCPN web site. Network staff will return to BLCA and CURE in 2014 to begin the second rotation of invasive monitoring routes.

NRCA Update



NPS/C. Campbell

Long-eared myotis.

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 BLCA, priority natural resources include endangered and threatened species, bats, vegetation community integrity, paleontology, and landscape dynamics. Because riparian

communities and hydrologic processes are also high-priority, NCPN established an interagency agreement with the U.S. Geological Survey, to (1) model alternative streamflow regimes of the Gunnison River and (2) evaluate existing conditions of riparian ecosystems in the canyon using hydrologic and vegetation monitoring data. Preliminary findings, as well as draft assessments of other resources in the NRCA, have been incorporated into the draft State of the Parks report for the park. A full draft 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



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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, big rivers, uplands, and landbirds at Black Canyon of the Gunnison National Park.

For more information

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