



KNIFE RIVER INDIAN VILLAGES NATIONAL HISTORIC SITE 2013 RESOURCE BRIEF

LANDBIRD MONITORING

Overview: The Northern Great Plains Inventory and Monitoring Network (NGPN) jointly developed a long-term landbird monitoring protocol with Rocky Mountain Bird Observatory (RMBO) and three other Inventory and Monitoring (I&M) Networks (Sonoran Desert, Chihuahuan Desert, and Southern Plains). The 2013 breeding season was the first year of surveys for 11 of the NGPN Parks.

The basic sampling unit is a 1 km² grid that contains 16 evenly-spaced sample points, separated by 250 m. RMBO technicians stand at pre-determined fixed points and record birds observed/heard over a 6-minute period. After completing the survey, the technicians navigate to the next point using GPS units. Last summer, a total of 2,232 birds spanning

91 species were recorded at Knife River Indian Villages NHS. Landbird monitoring will resume at the park in June of 2014.

Highlights: Knife River Indian Villages NHS had the largest number of birds and species recorded of all 11 parks surveyed in 2013. The most common species at Knife River Indian Villages NHS was the Bobolink, representing 10% of all birds detected. Eight new species were found at Knife River Indian Villages NHS in 2013: the Green-winged Teal, Le Conte's Sparrow, Magnolia Warbler, Mourning Warbler, Red-bellied Woodpecker, Western Wood-Pewee, Yellow-headed Blackbird, and Yellow-throated Vireo. In addition, one other species, the Tennessee Warbler, previously listed as unconfirmed in the park's certified NPSpecies list, was confirmed as present in the park.



Above: The Bobolink (*Dolichonyx oryzivorus*) was found in high numbers at Knife River Indian Villages NHS indicating the park may provide important breeding habitat for the species. Photo Credit: Bill Thompson, USFWS

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Condition Indicator	Current Status/Trend	Rationale for Resource Condition
Landbirds		
Selected Breeding Bird Species of Concern	TBD	Data collected in 2013 has not yet been fully analyzed.
Water Quality		
Water Chemistry/Discharge	TBD	Data collected in 2013 has not yet been fully analyzed.
Plant Community		
Upland Plant Community Structure and Composition	●	Overall herbaceous cover was high, but a long history of human use has caused the native diversity to be well below what is expected in a healthy northern mixed-grass prairie.
Exotic Plant Early Detection and Management	●	The park's management goal is to decrease exotic species cover. While our limited data can't yet define a trend, exotic cover averaged over 75% at plots surveyed.

Note: Table based on State of the Parks Reports - see annual report for more details. Green indicates "good condition", yellow indicates "caution", and red indicates "significant concern". Line thickness indicates confidence with dashed lines indicating "low confidence" and thick solid lines indicating "high confidence."



WATER QUALITY MONITORING

Overview: In 2013, NGPN initiated water quality monitoring, contracting with the USGS North Dakota Water Science Center to deploy equipment to collect and provide the NGPN continuous data for 4 core parameters (water temperature, specific conductance, pH, and dissolved oxygen) during the ice-free season. Data was made available in real-time on the USGS National Water Information System Website. On April 4th, the USGS deployed the equipment at Knife River Indian River Villages NHS on the Highway 37 bridge where it crosses the Knife River.

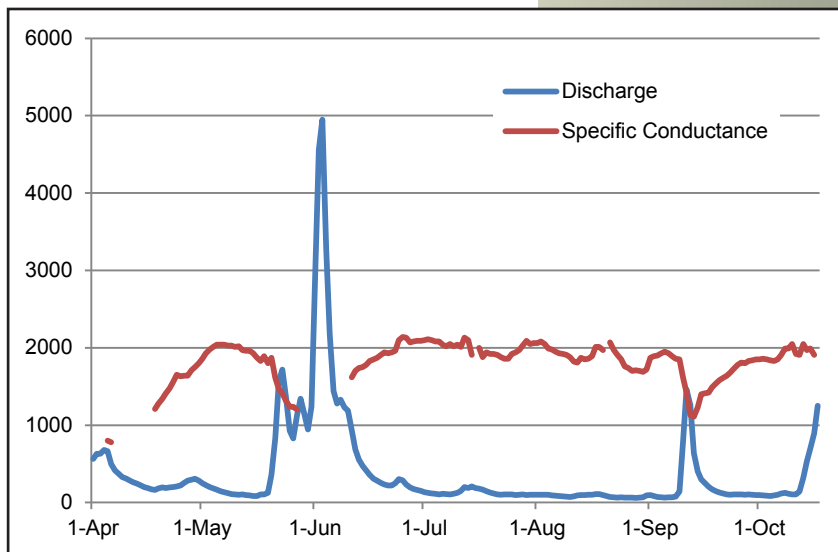
Highlights: We found approximately 21% of the specific conductance data points exceeded the State regulatory threshold. However, these values (closely related to total dissolved solids) may be typical for this part of North Dakota due to the soil composition and higher levels of sulfates occurring throughout the western part of the state.

A comparison of discharge and specific conductance shows that when there is a high water event (blue line), the specific conductance (red line) generally decreases due to subsequent dilution of the salts, dissolved solids, and minerals in the water column.

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Below: Discharge (blue line) and specific conductance (red line) at Knife River Indian Villages NHS during the 2013 ice-free season.



PLANT COMMUNITY MONITORING



Overview: NGPN staff completed the third year of plant community monitoring at Knife River Indian Villages NHS in 2013. A total of 8 plots were visited, and 105 species were documented in the park.

Highlights: Plot 9, lying in an abandoned river oxbow, proved challenging for I&M staff. Though it offered welcoming shade on late July afternoons, it also contained large numbers of stinging nettles (*Urtica dioica*) and mosquitoes. Additionally, this plot presented botanical challenges, containing many species not commonly found in other NGPN parks. In 2014, a more comprehensive forest survey will take place.

Left: Plot 9 challenged the plant crew with a dense assemblage of many eastern forest species unusual in northern Great Plains grasslands.

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