

Endangered Species Survey Covers Midwest Region Parks

By Gary D. Willson

In August 1983, the National Park Service (NPS) and the U.S. Fish and Wildlife Service (USFWS), Wyoming Cooperative Fish and Wildlife Research Unit, entered into an agreement to provide comprehensive information on the status and distribution of plant and animal species listed as rare by federal and/or state agencies in parks within the Midwest Region.

The need for rare species investigations was clear. The highly populated Midwest Region contains some of the most impacted ecosystems on the North American continent. Consequently, the number of rare species potentially occurring in parks is very large (table 1).

Table 1. Approximate number of rare plant and animal species on federal and state natural resource agency lists for the Midwest Region, National Park Service.^a

State	No. of Species	State	No. of Species
IL	350	MO	650
IN	620	NE	15
IA	250	OH	910
KA	25	WI	150
MI	540	Federal	255 ^b
MN	300		

^aNumbers determined from state lists current through October 1985 and Federal lists current through February 1986.

^bIncludes listed and candidate species.

The NPS is mandated by the federal Endangered Species Act to protect and conserve endangered and threatened species on its lands. Also, NPS policy requires parks to comply with state legislation designed to protect rare species.

The project's objectives were to determine which rare species can be expected to occur in parks and provide recommendations to enable the NPS to conserve the terrestrial and aquatic habitat necessary for maintaining and/or enhancing their populations. Achieving these objectives involved (1) consulting rare/nongame species specialists and pertinent literature to determine which rare species are *known* to occur in parks and identify those with *potential* to occur in parks; (2) conducting field surveys for rare species within selected parks; and (3) compiling and summarizing literature to identify management and research requirements for individual species. The project encompassed 19 parks within the Midwest Region.

Field surveys were conducted in 16 parks for a variety of rare species. These included rare plant surveys at Isle Royale NP, Pictured Rocks National Lakeshore (NL), Saint Croix and Ozark National Scenic Riverways (NSR), Effigy Mounds National Monument (NM), and Cuyahoga Valley National Recreation Area (NRA); herpetological surveys at Indiana Dunes NL and Pipestone NM; a rare turtle survey at Saint Croix NSR; rare raptor surveys at Agate Fossil Beds and Scotts Bluff NMs; Ozark and Saint Croix NSRs, and Apostle Islands NL; a rare snail survey at Effigy Mounds NM; and a survey of museum records of rare lichens for parks in Minnesota. These surveys provided park

records for over 100 species of rare flora and approximately 20 species of rare fauna.

In addition, computerized data files of state conservation agencies, state heritage programs, nongame species specialists, and literature records were consulted to determine if other rare species were known to occur or have potential to occur in parks. Forty-six federal species and more than 380 state-listed rare species were found to occur in parks, and another 1,012 species were believed to have potential to occur in parks (table 2).

The project's final report contains species abstracts for rare state and federal species known to occur within parks. Each abstract presents information on taxonomic characteristics, habitat affinities, and listing status for state-listed species plus cause of decline, current population status, current, historic, and park distributions, and literature lists for federal species.

The final report emphasizes several important considerations for rare species management. Of foremost

Table 2. Number of rare species occurring or potentially occurring on NPS lands, Midwest Region.

Category	Number of Species
Federal plants on parks	19
Federal plants potentially on parks	53
Federal animals on parks	27
Federal animals potentially on parks	73
State plants on parks	263
State plants potentially on parks	683
State animals on parks	118
State animals potentially on parks	203

concern is loss of habitat. NPS lands are particularly valuable as refugia for rare species. However, the NPS in the past has often emphasized policies that favor climax vegetation, resulting in a decrease in young successional stages and the diversity of plant communities. The ecosystems of the Midwest clearly evolved with fire, however, this perturbation is now largely absent. The report recommends that NPS investigate appropriate opportunities to reinstate fire as a successional force.

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Table 3. Priority list of rare plant research and resource management needs.

Plant	Federal Listing Status	Park	Management Recommendations
<i>Lesquerella filiformis</i>	E	WICR	Establish population size; map individuals; record phenology and plant vigor; determine effects of insects, visitors, and plant succession; determine fire effects.
<i>Cirsium pitcheri</i>	T	INDU PIRO SLBE	Monitor to assess stability of populations; counts of both juvenile and adult plants; determine effects of dune trampling; consider pollinators.
<i>Platantha praeclara</i>	T	PIPE	Survey PIPE to locate population.
<i>Mimulus glabratus</i> var. <i>michiganensis</i>	PE	SLBE	Determine variety of <i>Mimulus</i> collected; survey population.
<i>Arabis missouriensis</i> var. <i>deamii</i>	C2.	SACN	Possible use of prescribed burning and overstory clearing; search areas adjacent to SACN site; resurvey INDU and OZAR.
<i>Aster furcatus</i>	C2	OZAR	Life cycle information/propagation techniques; periodic survey at OZAR; effects of plant succession.
<i>Besseyia bullii</i>	C2	SACN	Life history information; removal of woody plants(?); fire effects; additional survey at SACN; monitor at SACN; threats mitigation at SACN; recovery actions for prairie/savannah habitats at SACN.
<i>Calamagrostis inasperata</i>	C2	OZAR	Survey upper Jack's Fork.
<i>Plantago cordata</i>	C2	OZAR	Maintain stream water quality.
<i>Phus trilobata</i> var. <i>arenaria</i>	C2	INDU	Protect dune habitat; further taxonomic research; assess flowering time; transplant experiment.
<i>Silene regia</i>	C2	GWCA OZAR WICR	Habitat protection; need for burning/woody plant removal; expose soil for seed germination; monitor populations at GWCA, OZAR, and WICR.
<i>Sullivantia renifolia</i>	C2	EFMO	Research general life history and ecological requirements; search OZAR.
<i>Talinum rugospermum</i>	C2	INDU SACN	Determine ecological requirements; further surveys at OZAR.
<i>Viola novae-angliae</i>	C2	GRPO VOYA	Determine phenology; monitor populations at GRPO and VOYA.
<i>Woodsia oregana</i> var. <i>cathartiana</i>	C2	PIPE VOYA	Monitor population at PIPE; survey VOYA.

The report also recommends establishing a rare species management program for the Midwest Region. In response to these recommendations, the Region produced priority lists of rare plant and animal research and resource management projects. The list for rare plants is shown in table 3. Considering the large number of known and potential species, the initial priority lists included only federally listed and candidate species.

Research projects involving high priority rare plants include a life history study of *Lesquerella filiformis* at Wilson's Creek and distribution surveys and community ecology of *Cirsium pitcheri* at Indiana Dunes, Sleeping Bear Dunes, and Pictured Rocks. Priority animal research includes a study to determine possible causes of decline in the grey wolf at Isle Royale; an evaluation of piping plover habitat at Indiana Dunes, Sleeping Bear Dunes, Pictured Rocks, and Apostle Islands; a study of feeding and breeding behavior of the bald eagle at Apostle Islands; and a survey for rare mussels at Saint Croix. As a resource management project, the endangered peregrine falcon was reintroduced to Isle Royale and Pictured Rocks.

Park resource managers now have in hand essential baseline information to minimize habitat disturbance and direct impacts to rare species. The report was instrumental in the development of a Regional rare species research program and in the establishment of long-term species management goals, and it enabled the Region to develop conservation effort priorities.

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