

Problem Exotic Plants in Midwest Regional Parks

By Karen Pestana

The invasion and persistence of exotic plants is a major management problem in most national parks of the Midwest Region. All but a few parks are attempting some method of exotic plant management, but little is known on the effectiveness of these methods. In an effort to understand this problem, exotic plants from 19 of the 30 Midwest Region parks were identified from the parks' flora checklists, and management techniques were sought for control of the most pervasive and troublesome species.

I surveyed the most current checklists for each park and identified all exotic species, using published floras. Data on each exotic species were recorded in a computerized base that included scientific name, common name, place of origin, the park(s) in which it occurred, and synonyms.

A final list of the most troublesome species was developed by considering the most pervasive exotics (those occurring in 10 or more parks), a list of those causing major problems in natural areas (from the participants in the Tenth Midwest Natural Areas Workshop held October 1983 in Kentucky), and responses to a telephone survey of each park in May 1985.

At least 630 exotic species occur in 19 Midwest Region parks. The percentage of exotics for each park ranges from 36 at Mound City Group National Monument in Ohio to 7 at Voyageurs NP in Minnesota. However, these figures are only estimates of the exotic to native proportion in each park, as some checklists are more complete than others.

The most troublesome exotics are divided into two categories (Table 1). The first group includes those exotics that occur in 10 or more parks and were identified at the 1985 Kentucky Workshop as exotics causing major problems in natural areas. Bull thistle was also included, since management personnel from four parks feel it is threatening native plant communities.

The second group includes exotic plants not as pervasive in the Midwest Region parks, but indicated by park management as troublesome exotics in parks where they occur. All but one of these, field bindweed, were also listed as major pests at the Kentucky Workshop. The parks listed after each species have reported that the exotic plant is highly invasive, destroys the natural scene, or is in some other way a major management concern.

I asked park managers to identify which of their exotic plants currently are being managed and if so, by what method. The most common method is use of herbicides, followed by cutting or mowing and prescribed burning. The least practiced methods are manual removal and biological control. Manual removal is used primarily when the plants are limited to a small area; biological methods are not currently practiced in Midwest Region parks. Scotts Bluff National Monument in Nebraska plans to initiate a program in 1986 or 1987 for the control of Canada and musk thistles by introducing herbivorous insects, and Indiana Dunes National Lakeshore is experimenting with cattail competition to control purple loosestrife.

After an extensive literature search and conversations with personnel from the Illinois Department of

Table 1. The most pervasive and troublesome exotic plant species in Midwest Region park units.

SPECIES	COMMON NAME	# PARKS	AREA OF CONCERN
1) EXOTIC SPECIES OCCURRING IN 10 OR MORE PARKS:			
<i>Bromus inermis</i>	smooth brome	10*	HOME
<i>Cirsium arvense</i>	Canada thistle	10*	CUVA; PIPE; SCBL
<i>Cirsium vulgare</i>	bull thistle	11	CUVA; GWCA; PIRO; WICR
<i>Melilotus alba</i>	white sweet clover	16*	PIPE
<i>Melilotus officinalis</i>	yellow sweet clover	15*	PIPE
<i>Poa compressa</i>	Canada bluegrass	10*	GWCA
<i>Verbascum thapsus</i>	common mullein	15*	HOME
2) OTHER PROBLEM EXOTICS			
<i>Carduus nutans</i>	musk thistle	4*	HOME; SCBL; WICR
<i>Convolvulus arvensis</i>	field bindweed	9	GWCA; SCBL
<i>Daucus carota</i>	Queen Anne's lace	9*	GWCA
<i>Euphorbia esula</i>	leafy spurge	2*	PIPE
<i>Lonicera japonica</i>	Japanese honeysuckle	4*	MOCI
<i>Lythrum salicaria</i>	purple loosestrife	2*	INDU
<i>Rosa multiflora</i>	multiflora rose	6*	GWCA INDU
<i>Vinca minor</i>	common periwinkle	6*	PIRO

Park Code Definitions:

CUVA - Cuyahoga Valley National Recreation Area, Ohio
 GWCA - George Washington Carver National Monument, Missouri
 HOME - Homestead National Monument of America, Nebraska
 INDU - Indiana Dunes National Lakeshore, Indiana
 MOCI - Mound City Group National Monument, Ohio
 PIPE - Pipestone National Monument, Minnesota
 PIRO - Pictured Rocks National Lakeshore, Michigan
 SCBL - Scotts Bluff National Monument, Nebraska
 WICR - Wilson's Creek National Battlefield, Missouri

*Major pest species identified by the participants in the Tenth Midwest Natural Areas Workshop held in October 1983.

Conservation, The Kentucky Preserve Commission, and the Midwest Regional Office of the Nature Conservancy, a bibliography of references on exotic plant management and control was compiled. The bibliography includes articles from scientific journals, university publications, and state and national nature preserve organizations.

The literature search identified good, up-to-date control and management methods for thistles, Japanese honeysuckle, multiflora rose, leafy spurge, and field bindweed. Limited information is available for the management of other species in natural areas, although a wealth of information may exist for their control in agricultural settings (usually inappropriate for nature preserves).

Studies on control and management of exotic plants are continually updated and information on the latest advances are frequently published in the *Natural Areas Journal*, *Restoration and Management Notes*, and the *National Park Service Integrated Pest Management Information Manual*. The Midwest Regional Office of the Nature Conservancy has updated computer printouts on control and management of some exotic plants.

Other sources of information include the proceedings of special workshops and conferences on exotic plant control. They contain the most current information from leading biologists and may provide the only source of information on some exotics that are in early stages of study.

The bibliography of references and list of exotic plants in the Midwest Region parks has been published as Research/Resources Management report MWR-6, "Problem Exotic Plants in Selected Parks of the Midwest Region and a Bibliography on their Management." The report was presented at a 1985 Midwest Region resource management workshop at Indiana Dunes National Lakeshore. The workshop provided an overview of the exotic and pest plant situation in the Midwest Region parks and included specific information on control methods and monitoring techniques.

Copies of the report are available from the Chief Scientist, Midwest Region.

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