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## EXOTIC PLANT SPECIES RANKING SYSTEM

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Exotic plant species represent 23 percent of Indiana Dunes National Lakeshore's flora. Certain species like flower-of-an-hour (*Hibiscus trionum*) and velvet-leaf (*Abutilon theophrasti*) that occur in seral habitats will quickly disappear and represent no lasting threat to native communities. However, purple loosestrife (*Lythrum salicaria*) and black locust (*Robinia pseudo-acacia*) invade and replace native communities and therefore represent serious threats to natural communities.

To understand objectively an exotic plant species threat (or potential threat) to natural areas, a numerical ranking system for exotic plants was developed and presented by the senior author at the Fourteenth Annual Natural Areas Conference, October 1987. The numerical system is based on (1) significance of impact, (2) innate ability to be a pest, and (3) feasibility of control of the exotic species. High numerical values (up to 6) are placed on species found in high quality natural areas and on large populations that invade and replace native communities. For interpretive reasons, visual impact of the exotics also is considered.

Equally high values are given to pernicious species that are highly fecund, both sexually and asexually; have specialized dispersal abilities; and germinate in a wide range of conditions. Feasibility of control considers distribution of exotic species, seed bank viability, and levels of mechanical and chemical effort required to eliminate exotic species. Effects of delay in control action and the possibilities of biological control are considered as well.

Summing the totals of significance of impact, innate ability to be a pest, and feasibility of control, each exotic species is ranked in one of four categories:

- (1) serious threat — immediate research and control measures needed;
- (2) significant threat — research and control warranted in the near future;
- (3) apparent potential threat to natural areas — insufficient information available, research encouraged;
- (4) no significant threat to resources — limited to highly or frequently disturbed sites, has limited distribution, and/or is unable to reproduce.

The system was applied to the exotic plants of the Indiana Dunes. Of the 307 known exotic species, thirty were placed in categories 1 and 2. Abstracts are being prepared for these species. The results are

being applied toward the development of an exotic species management program. Detailed results will be reported in a future issue of the *Natural Areas Journal*.

With the aid of the ranking system, site stewards and administrators can objectively plan eradication priorities and develop long-range management goals.

Copies of the Exotic Plant Species Ranking System are available upon request.