Heartland Network

National Park Service
U.S. Department of the Interior

Heartland Network, Inventory and Monitoring

Invasive Plant Species at Herbert Hoover National Historic Site

Importance: Invasive plants alter native ecosystems

Native plant species live in a specific place and evolve with other plants in the same ecosystem. In contrast, exotic species did not evolve with native species in the same ecosystem. The invasive designation suggests that a species poses environmental harm to native populations or communities. Human disturbance has introduced many invasive species into our natural landscapes. These species fragment native ecosystems, displace native plants and animals, and alter ecosystem function. Invasive species are second only to habitat loss as threats to biodiversity.

Invasive reed canarygrass

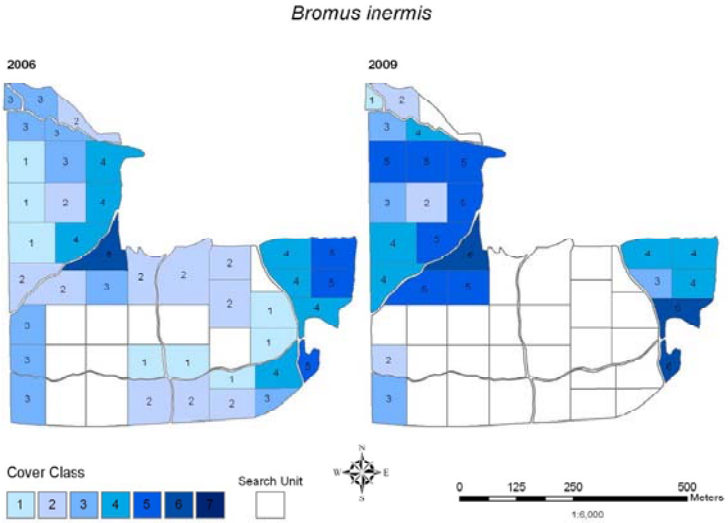
Long Term Monitoring: Early detection and prevention [1]

The Heartland Inventory and Monitoring Network monitors invasive exotic plants to assist parks in early detection and in prevention of invasive infestations in park natural areas. The network and Herbert Hoover National Historic Site established watch lists for species known to exist in the park's reconstructed prairie, and those that could establish in the foreseeable future. The network created transects to survey invasive plants in the prairie. Surveys completed in 2006 and 2009 let scientists calculate invasive plant cover and frequency from data collected in the transects. Scientists also assigned invasiveness ranks that represented ecological impact and general management difficulty for each invasive species encountered. The invasiveness ranks and total estimated cover assists managers in prioritizing invasive species treatment.

Status and Trends: Management actions seem to be effective

Scientists documented 23 invasive exotic plant taxa in the prairie in 2009 as compared to 27 species in 2006. Sweetclover (*Melilotus alba*), reed canarygrass (*Phalaris arundinaceae*) and smooth brome (*Bromus inermis*) exhibited the highest abundance. While seven species documented in 2006 increased abundance in 2009, 20 species decreased abundance. Several of the species that increased abundance have low ecological impact and do not warrant extraordinary control efforts at this time. Scientists also found that

1. Smooth brome abundance decreased in areas where prescribed fire occurred between the two survey years;
2. Mowing reduced overall abundance of sweetclover, but treatment should continue;
3. Nine of 19 species that decreased abundance had received some sort of mechanical or chemical treatment.



Smooth brome abundance decreased in the areas that had prescribed fire between 2006 and 2009. Intensity of shading represents abundance of cover.

Heartland Network Inventory and Monitoring Program of the National Park Service. Visit www.nps.gov/im/units/htln/index.htm

. . . protecting the habitat of our heritage

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Natural Resource Monitoring

[1] Young, C. C., M. F. Short, L. W. Morrison, C. S. Gross, and J. L. Haack. 2010. Invasive exotic plant monitoring at Herbert Hoover National Historic Site: Year 2 (2010). Natural Resource Technical Report NPS/HTLN/NRTR—2010/289. National Park Service, Fort Collins, Colorado.