Midwest Invasive Plant Network Invasive Symposium
Indianapolis, Downtown Hyatt
December 10-11, 2008

Wednesday, December 10

8:30 am: **Welcome by Kate Howe** (MIPN Coordinator)

8:45 am: **Invasives and Climate Change** – Thomas J. Stohlgren, U.S. Geological Survey

9:30 am: **Invasives and Biofuels** - Roger Anderson, Illinois State University

With a national goal of producing 16 billion gallons of cellulosic ethanol by 2022, there has been a concerted effort to find ideal plant species to generate the cellulose biomass needed for ethanol production. Unfortunately, many of the characteristics associated with potential biofuel plants are shared with invasive plants. Moreover, some of the plants proposed for biofuel production are known invasive species. The ecological risks of these plant species must be evaluated, as well as their potential for cellulose.

10:00 **BREAK**

10:15 am: **Reducing seed output and seed viability of cultivars: How much is enough to create a plant that will not be invasive?** Kay Havens, Chicago Botanic Garden

The majority of ornamental landscape plants used in U.S. are not native to North America, and some of these plants have escaped from cultivation; a small fraction of those that escape have become natural area invaders. Once a species is identified as invasive, it is crucial to prevent the sale and spread of that species. However, this may be objectionable to nurseries and to the public if the species is desirable in landscaping and highly profitable economically. Recently, horticulturalists have recognized that cultivars of a single species can differ dramatically in their total seed output and/or in their seed viability. The critical conservation question is: are these less fecund cultivars still an invasion threat or are they safe to use in landscaping? We evaluate how much seed output/seed viability would need to be reduced in order to significantly reduce the population growth rate of an invasive species. We have found 14 invasive plant species in which a demographic model has been constructed to project population growth rate. We simulate how decreasing seed output and seed viability might affect population growth rate. Overall, decreasing seed output has dramatic effects on the population growth rate of short-lived species, but much less of an effect on the population growth rate of long-lived shrubs and trees. Creating cultivars with significantly lower seed output or seed viability may successfully prevent the invasiveness of short-lived herbs. However, for most perennials and woody plants, complete sterility will be necessary to ensure that the species will not become invasive. Lastly, we will discuss a case study for invasive evaluation of cultivars of *Miscanthus sinensis* conducted at the Chicago Botanic Garden.

10:45 am: **Beyond the browsing effects: Deer suppress unpalatable natives and facilitate an invasive plant species success in forests.** Susan Kalisz, University of Pittsburgh

It is clear that when overabundant, white-tailed deer are causing the decline of their preferred food plants in forests. However our data indicate that even less preferred, unbrowsed native understory species are declining in areas where deer browse pressure on their palatable neighbors is high. Further, results from a replicated series of paired deer exclusion and control plots show that deer facilitate the invasion and maintenance of Alliaria petiolata in the forest understory and suggest that invasive species management should be linked to deer management.

11:15 am: **Direct and indirect effects of invasive plants on tree regeneration.** Scott J. Meiners and Laura M. Ladwig, Eastern Illinois University.

We often think of invasive species as posing threats to forest regeneration, but the mechanisms are often unclear. We will present data on the impacts of invasive shrubs and vines on several phases of tree regeneration using both experimental and long-term data. Invasive species may directly or indirectly influence tree regeneration, though the impacts are not always inhibitory. The specific mechanism of impact is crucial to management as it relates directly to the mitigation strategy that must be employed.

11:45 am: Lunch on your own

12:30 pm: MIPN annual meeting

1:30 pm to 5:30 pm: Contributed papers on invasive plants from MIPN and NCWSS members

Thursday, December 11 – Two concurrent sessions all day

Session A:

8:30 am **At the Crossroads: Invasive Species in Indiana – a legislative update** (Ellen Jacquart, The Nature Conservancy) This session will provide an update on the recommendations of the Indiana Invasive Species Task Force and what will go forward into the Indiana legislative session in 2009.

9:00 am: **Canada Thistle Management Workshop*.** (M. Haar and Roger Becker, University of Minnesota, M. Moechnig, South Dakota State University.)

This workshop will provide current information defining best management practices to control Canada thistle in the Upper Midwest. Biology of seed dispersal and invasion will be discussed in a management context. Current understanding of herbicide use and impacts in native systems will be presented. Timing of management practices and effects on nontarget species will be explored. A brief panel discussion will close this session.

10:00 am: **Garlic mustard workshop*** (Mark Renz, University of Wisconsin; Kevin Gibson, Purdue University; Jeannie Katovich, University of Minnesota)

This workshop will cover the biology and ecology of garlic mustard and as well as management options, including an update on the garlic mustard biocontrol project and a panel discussion on management.

11:00 am: **Reed canarygrass management workshop*** (Kelly Kearns, Wisconsin Department of Natural Resources; Rich Dunbar and N. Simons, Indiana Department of Natural Resources; Scott Fetters, J.F. New; T. Simpson, McHenry County Conservation District)

Reed canarygrass is a tremendously successful invader in the Midwest. This workshop will discuss its ecology and just why it is so successful, and share successful treatment recommendations, including the use of grass-specific herbicides. This will be followed with a panel discussion.

12:00 pm: Lunch

1:00 pm: **Japanese stiltgrass management workshop*** (S. Luke Flory, Indiana University; Bonnie Wolf, The Nature Conservancy)

Forests throughout the Midwest are at increasing risk of invasion by Japanese stiltgrass (*Microstegium vimineum*), an aggressive annual grass that can have significant negative effects on native species and ecosystem processes. This workshop will cover the identification, biology, and management options for stiltgrass. We will also identify commonly confused native species, present data on the impacts of stiltgrass invasion, and provide insights into management based on personal experiences.

2:00 pm: **Asian Bush Honeysuckle Control Options and Strategies*** (Ron Rathfon, Extension Forester, Purdue University; Zach Lowe, Purdue University)

Recommendations for Asian bush honeysuckle control abound on the internet and in popular literature. Most recommendations are sound, being based on practical field experience. However, many recommendations are based on anecdotal information. This session provides a comprehensive overview of Asian bush honeysuckle control methods synthesized from the research literature and from recent results of research conducted by the presenters. Specific control measures are presented in the context of developing an overarching strategy and plan that incorporates integrated vegetation management (IVM) principles.

3:00 pm: **Fire and plant invasions in the Midwest** (S. Luke Flory, Indiana University; J. Robb, Big Oaks National Wildlife Refuge, Roger Anderson, Illinois State University; J. Rebbeck, USDA Forest Service; B. Winters, Big Oaks National Wildlife Refuge; Chad Bladow, The Nature Conservancy; Tom Post, Indiana Department of Natural Resources).

Eastern deciduous forests in the Midwest U.S. were historically exposed to fires that maintained oak-hickory dominated forests and regulated herbaceous plant communities. Following decades of fire suppression, prescribed fires are increasingly used to manage plant communities. Given the prevalence of plant invasions, including tree-of-heaven, garlic mustard, and Japanese stiltgrass in many eastern forests, the interaction between fire and invasions has become the focus of much ecological research and a primary management concern. Fires may promote invasions by reducing competition with native species, releasing nutrients, and providing ideal germination sites for invaders, but properly timed fires may also be used to manage invasions. Following brief presentations on the interaction between fire and specific plant invaders, a panel discussion with researchers and land managers will focus on research needs and pre and post-burn management solutions.

4:00 pm: **Invasive Plant Impacts** (Zach Lowe, Purdue University)

A variety of impacts caused by invasive plants in plant communities will be presented.

Session B:

8:30 am: **Using weed-free forage and mulch to prevent the introduction of invasive plants** (Kate Howe, Midwest Invasive Plant Network/Purdue University)

This session will provide a brief introduction to the benefits of using weed-free forage and mulch in natural areas, along roadsides, or for construction projects. We will talk about what "weed-free" means and how and where to get weed-free products in your area.

Weed Free Products (K. Howe, Purdue University/MIPN)

9:00 am: **Invasive Plant Management on Rights-of-Way** (Robert Masters, Dow AgroSciences; R. Smeda, University of Missouri; P.D. Cornett, Kentucky Transportation Cabinet; C. Mason, Indiana Department of Transportation)

Presentations will provide information on managing invasive plants in rights-of-way and using invasive plant ecology to design best management practices. Examples of rights-of-way invasive plant management projects in the Midwest will be presented, followed by a facilitated audience-panel discussion of successful approaches.

10:00 am: **Cooperative Weed Management Areas: What are they and how can you start one?** (Kate Howe, Midwest Invasive Plant Network/Purdue University; Carmen Chapin, National Park Service and Northwoods CWMA)

This session will provide an introduction to Cooperative Weed Management Areas (CWMAs"): what they are; the benefits of starting one; examples of projects they can accomplish; and how to get one started in your area. Carmen Chapin will talk about the Northwoods CWMA in Northern Wisconsin, including the successes they have had and challenges they have faced. This workshop will also provide time for discussion about how to get started with setting up a CWMA in your area.

12:00 pm Lunch

1:00 pm: **Scientific risk assessment and its policy applications for preventing plant invasions** (Reuben Keller, University of Notre Dame, Doug Keller, Indiana Department of Natural Resources, Kelly Kearns, Wisconsin Department of Natural Resources)

Scientific risk assessment can be used to accurately predict the risk of invasion posed by plant species to the Midwest. Increasingly, these assessments are being tied to policy so that future invasions can be prevented. This session will give an overview of available risk assessment techniques and describe how they are being applied in two Midwestern states. This will be followed by a panel discussion.

2:30 pm: **Discussion of invasive plant research and management needs** (Alice Heikens, Franklin College)

This discussion session will provide an opportunity to discuss needs for research and management on invasive plants in the Midwest. What isn't being done and who should take the lead in doing it?

3:00 pm: **Research-Management Collaboration** (Heather L. Reynolds and Sarah Shannon, Indiana University; Chad Kirschbaum, Wayne National Forest - Ironton District; Brian McCarthy, Ohio University; Elizabeth L. Middleton, Indiana University; Chip O'Leary, The Nature Conservancy; Kathleen S. Knight, USDA Forest Service Northern Research Station; Joy Marburger, National Park Service)

How can researchers and land managers work together to advance the science and the management of invasive species in natural areas? This session will profile successful research-management collaborations, offering practical advice on the opportunities and the challenges, from getting connected to finding funding and developing projects that are both publishable and applicable to management needs. Two 15-minute presentations by research-management teams will be followed by a 30-minute panel discussion.

4:00 pm: **Best Management Practices** (Kelly Kearns, Wisconsin Department of Natural Resources; Carmen Chapin, National Park Service)

This session presents and discusses ways to minimize the introduction and spread of invasive plant species through land management activities.

* CCH credits will be available for these workshops