An Important, Imperfect Tool

Photo: Chris Hoving, Michigan DNR
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Fire is necessary but insufficient.
Building our fire culture
- Tallgrass Prairie and Oak Savanna
- Lake States
- Oak Woodlands and Forests
- Great Plains
- Appalachians
- North Atlantic
Improving the awareness, understanding and adoption of fire science
Our Region:
Principal Investigator:
Paul Zedler, UW-Madison

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- Necessary but insufficient
- Fire culture
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• Necessary but insufficient
  – What does it mean to be fire-adapted?
  – Invasives complicate fire management

• Fire culture
“...vast pulsing harmony...”
“…vast pulsing harmony…”

Fire is an incredible organizing force – in evolution and ecology.
Adaptations

Insulation:
• Thick bark
• Underground buds
Adaptations

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- Thick bark
- Underground buds

Seeds:
opening/breaking dormancy in response to heat/smoke
Adaptations

VEGETATION

Resource Availability

• Light
• Nutrients (incl. limitations)
Adaptations

WILDLIFE
Resource Availability
• nectar, pollen, fruits
• forage
• structure – predator-prey
Adaptations

WILDLIFE

Resource distribution - patches
• bare ground (litter removal)
• burned/unburned areas across landscapes
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Fire and non-native plants

- Many species have escaped fire and thrived thanks to fire suppression
Fire and non-native plants

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  – altered fuel characteristics and structure can greatly reduce ability for fire to carry
  – rapid green-up; low lignin fuels
  – canopy - cooling soil and reducing wind speeds
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• Multiple invasives established
Fire Regime Restoration

- Address altered fuels
- Address altered fire behavior
- Suppress reproduction
- Monitor for new colonizations
Treasure Trove

Fire Effects Information System:

http://www.feis-crs.org/feis/
Garlic mustard

FIRE ECOLOGY OR ADAPTATIONS:
Garlic mustard

FIRE ECOLOGY OR ADAPTATIONS: though readily top-killed when exposed to fire, they may ultimately survive by sprouting from the root crown.
Garlic mustard

FIRE ECOLOGY OR ADAPTATIONS:

Adult plants resprouted from adventitious buds on the root crown located just below the soil surface...
Garlic mustard

FIRE ECOLOGY OR ADAPTATIONS:

Adult plants resprouted from adventitious buds on the root crown located just below the soil surface...

In a northern Illinois oak woodland, garlic mustard resprouted following complete top removal by a prescribed fire conducted in late March.
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Goal: Accelerate knowledge exchange to increase applications that work and reduce applications that failed

How can we help you share your observations?
Welcome to the Invasive Plant Control Database

This website contains information on how to control many invasive plants common to the Midwestern United States. Information was collected from both scientific literature and expert opinions and summarized by the Midwest Invasive Plant Network (MIPN), in partnership with the Mark Renz lab from the University of Wisconsin-Madison. Methods that are uncommon, do not provide sufficient control, or lack information for determining effectiveness on target species are omitted. For each species, information was reviewed by four individuals, including two identified as experts on control of that species. Information is searchable by
Manager-manager knowledge exchange workshops at field sites?
Thank you!

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Via NRCS Ecological Site Descriptions – sandstone colluvium and dolomite colluvium bluff prairies. Photos by Peter Hartman.

Figure 9. Photo of Eastern Redcedar/Prairie State (Community Phase Openings) for Sandstone Colluvium Bluff Prairie ecological site; sandy Hartman at Spring Green Preserve, Sauk County, Wisconsin, in June.

Figure 10. Photo of Eastern Redcedar/Prairie State (Community Phase 2.2 Eastern Redcedar Dominant) for Dolomite Colluvium Bluff Prairie ecological site; Brodale soils. Photo by Peter Hartman at a bluff near Houston, Houston County, Minnesota November of 2013.
The fires have already claimed property, cattle, fences, hay, and wildlife.
ANDERSON CREEK FIRE, APRIL 2016

The fires have already claimed property, cattle, fences, hay, and wildlife.