

Photos provided by Dr. Jed Meunier



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## **FIRE ECOLOGY IN THE UPPER MIDWEST: EFFECTS OF FIRE SEASONALITY AND INTENSITY ON CONTROLLING RESPROUTING WOODY PLANTS**

Dr. Jed Meunier, Wisconsin Department of Natural Resources, Division of Forestry

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**Title:** Fire Ecology in the Upper Midwest: Effects of fire seasonality and intensity on controlling resprouting woody plants

**Presentation Abstract:** Both the use and science of fire in the Upper Midwest lag many parts of the US though the need for fire is pronounced. This is especially true in relation to controlling woody plant encroachment which is one of the greatest contemporary threats to fire dependent ecosystems. Reducing woody plant prevalence is often a primary objective of prescribed burns, yet little attention has been given to understanding the efficacy of burning to reduce their abundance. Fire intensity characteristics and plant phenology/physiology may influence how woody plants respond to a fire event. These characteristics have been explored sometimes as competing hypotheses in other regions, but little work has been done in the prairie-forest region of the upper Midwest. This presentation will place prescribed burning traditions (e.g., seasonality and frequency) in a historical context as well as synthesize several controlled field experiments that examined effects of timing (seasonality) and intensity (temperature and duration) of fires on top-kill and resprouting of invasive woody plants. Projected climate changes in the Midwest, namely wetter winters and springs, have the potential to exacerbate issues of shrub encroachment. Despite long-standing recommendations that grasslands be burned in early spring dormant season to reduce negative effects on nesting birds and other wildlife species, the data supporting this practice is not well supported by research. We need to rethink prescribed burning practices in this region.



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Jed Meunier is an ecologist and research scientist within the Division of Forestry, Forest Economics and Ecology program. His research interests range from individual species attributes to landscape ecology with a unifying theme of understanding how forces of climate and disturbance drive ecological change and how we can in turn manage for resilient systems. His dissertation research was on fire ecology in northern Mexico investigating spatial and temporal aspects of fire in relation to climate and land-use over several centuries. Jed received his M.S. in the wildlife ecology department at the University of Wisconsin-Madison, studying the effects of hunting on declining American woodcock populations. Jed considers himself lucky to spend his time asking questions and through applied research to assist in the management of Wisconsin's many treasures.

**[Read the NAJ Article: \*Understanding Uncertainty in Broad-Scale Mapping of Historical Vegetation in the Great Lakes Region\*](#)**

(Available for free to NAA Members)