

A Superior Research Reader

Volume 17, September 2016



Photo Credit: MPR News and minnesotaseasons.com

Greetings and welcome to *A Superior Research Reader*, a monthly reader on what we believe is current and relevant research to science and resource management on the Superior.

This Month's Edition: Harvest

Welcome, Fall!

With the Autumnal Equinox just behind us, the fruition of spring and summer's growth is obvious on the Superior. As you wrap up your field season or spend that last weekend camping before the snow flies, take advantage of all the resources the Superior has to offer. This edition of the Reader is dedicated to highlighting some of the research that will inform your harvest. Below we have links to field guides that will help you identify which fruits and which mushrooms are edible and ripe for picking at this time of year.

We also have included articles on wild rice and birch bark harvest. Many of you harvest or enjoy both of these resources and while the season has passed to gather them from the Forest this year, there are still ways to connect with these species. Use this season to inform yourself about the [MPCA's draft sulfate standard](#) to protect wild rice. Or take a class offered at one of the traditional craft schools in Ely, Grand Marais or Duluth, and learn how to use birch bark in a variety of ways.

Happy harvesting, happy reading, and happy fall!

Pooja and Katie

Editors of *A Superior Research Reader*

poojaskanwar@fs.fed.us and kfrerker@fs.fed.us

1. UW Madison researchers study the spatial dynamics of [wild rice](#) based on its ecology and the social patterns associated with its harvest.
2. A study highlights cooperative efforts between the Great Lakes Indian Fish and Wildlife Commission and FIA crews to use traditional ecological knowledge to inform the inventory of [paper birch](#) trees desirable for bark harvest, and to document the decline of the species.
3. [Wild Fruits of Minnesota](#) is a relatively new publication from the University of Minnesota that is designed to help you identify which of those fruits you see are edible and which are not. It's organized by season—flip to the Fall section and hit the trail!
4. [Field Guide to Common Macrofungi in Eastern Forests and Their Ecosystem Functions](#) is a Forest Service publication that gives you information on how to positively identify mushrooms in our neck of the woods. Species are organized by the ecosystem they grow in.



[Uncovering the spatial dynamics of wild rice lakes, harvesters and management across Great Lakes landscapes for shared regional conservation](#)

Drewes and Silbernagel 2012. Ecological Modelling.

ABSTRACT: Sustainable conservation and management of valued resources and ecosystem services relies on understanding the dynamics of the socio-ecological system. In the case of wild rice, a cherished food resource of Northern Great Lakes landscapes, the dynamics involve (a) a changing distribution of wild rice lakes, (b) changing harvester population and demographics, and (c) different management overlays. Together these factors influence harvester choices and opportunities and create unexpected spatial dynamics between people and the lakes they harvest. In this paper we examine first, the regional distribution and characteristics of wild rice lakes through compilation of multi-agency data, geospatial analysis, license sales and harvest surveys. Second, we identify patterns of harvest in the region through six case study lakes and examine the decision-making models used to open lakes for harvest. Gathered together these various forms of knowledge and collected data sets inform our understanding of the social-ecological systems involving wild rice (*Zizania palustris*). Watersheds with wild rice have declined by 32% since the early 1900s, and are now primarily limited to northern Minnesota and Wisconsin. Across case studies wild rice harvesters tend to gather wild rice close to where they live or learned to harvest and 50% have more than 20 years experience. Some wild rice lakes draw harvesters from greater distances and in higher numbers. Models for managing the harvest of wild rice range from 'gather when ripe' by state entities to a more hands-on posting by reservation committees specifying hours and days of harvest on a lake by lake basis. The social-ecological system around wild rice is a complex mosaic of multiple management jurisdictions, culturally diverse people, and an ecological system that is not well understood and potentially declining in extent. Defining the context of harvest within the spatially connected landscape and across multiple management systems is a first step in developing a shared framework of governance for the sustainability of wild rice landscapes.

[Using Traditional Ecological Knowledge as a Basis for Targeted Forest Inventories: Paper Birch \(*Betula papyrifera*\) in the US Great Lakes Region](#)

Emery et al. 2014. Journal of Forestry.

ABSTRACT: Traditional ecological knowledge (TEK) has been proposed as a basis for enhanced understanding of ecological systems and their management. TEK also can contribute to targeted inventories of resources not included in standard mensuration. We discuss the results of a cooperative effort between the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and USDA Forest Service's Forest Inventory and Analysis Program (FIA). At the urging of member tribes, GLIFWC staff worked with tribal gatherers to document TEK regarding desired characteristics of birch bark for traditional uses and translated this into an inventory field guide. The guide was provided to FIA, which incorporated the methods into its field manual and trained inventory crews in implementation of the protocol. Birch bark data were collected during three field seasons from 2004 to 2006. Results show birch bark supply has declined. Lessons learned from this multiyear, multistage project provide a model for future targeted inventory efforts.

[Wild Fruits of Minnesota: A Field Guide](#)

Fisk and Hoover 2015. Regents of the University of Minnesota

ABSTRACT: 'Wild Fruits of Minnesota: A Field Guide' is designed to be used by those who are interested in botany, native plants and edible wild fruit. It can easily be treated as an educational tool for beginners as well as a handy guide for the more experienced. A limited amount of botanical terminology is used, but is helpful to learn when identifying plants to species level. While it can be used as a sole identification text for educated naturalists, cross referencing by using a dichotomous key is advised; especially important when identifying unfamiliar fruit which may be consumed.

[Field Guide to Common Macrofungi in Eastern Forests and Their Ecosystem Functions](#)

Ostry et al. 2011. Forest Service GTR NRS-79

ABSTRACT: This guide is intended to serve as a quick reference to selected, common macrofungi frequently encountered in four broad forest ecosystems in the Midwest and Northeast: aspen-birch, northern hardwoods, lowland conifers, and upland conifers. Although these fungi are most common in the ecosystems we list them in, many can be found associated with tree species in multiple ecosystems. We provide brief identifying characteristics of the selected mushrooms to allow you to identify some down to the species level and others to the genus or group to which they belong. Former scientific names are provided in parentheses. Also included in each mushroom description are details about its ecosystem function, season of fruiting, edibility, and other characteristics.