



Forest Tree Notes

VOLUME 2, ISSUE 2

August 2001

The Importance of Tree Crowns to Silviculture Prescriptions

Dan Gilmore, Assistant Professor, Silviculture University of Minnesota, Department of Forest Resources

Silviculture is the art and science of managing a forest for the benefit of the landowner. Forest management objectives are determined by the landowner and silviculture is the forest manager's toolkit. Regardless of the species being managed, it is important to evaluate the condition of tree crowns when prescribing silvicultural treatments. Tree crowns (trunk and branches that support foliage) are an important measure of tree and stand health because research has shown that they are a good measure of tree health and productive capacity. Silviculture practices are prescribed during progressive stages of stand development; specifically, the regeneration, intermediate, and mature stages.

Tree crowns and forest regeneration

Forests are regenerated through natural or artificial (direct seeding or planting) regeneration. Regardless of how a forest is regenerated the relative competitive status of seedlings can be assessed through an examination of the tree crown. Tree seedlings that have a high probability of survival have large crowns with healthy foliage and no competition from other vegetation either from above or from the side. Such seedlings are usually considered "free to grow".

Tree crowns and intermediate silvicultural treatments

There are numerous stand tending treatments (e.g., thinning, pruning, fertilization). Reasons for prescribing thinning treatments include increasing the

growth of the remaining trees and maintaining individual tree vigor. Thinnings should be prescribed to maintain live crown ratios (LCRs, calculated by dividing crown length by tree height) that are greater than 30%. Once the LCR is less than 30% a growth response from thinning would be delayed. This is because tree crowns do not grow downward, they expand from the top and the sides. One reason for prescribing pruning (the removal of individual tree branches) treatments is to grow knot free wood. Again, it is important to maintain a LCR greater than 30% in order to maintain vigorous individual tree growth. Fertilization treatments are often prescribed based on deficiencies of nutrients detected in the foliage.


Tree crowns and harvesting prescriptions

If the production of wood fiber is one management objective, the majority of trees within a given forest should be harvested before the crown condition deteriorates (e.g., $LCR < 30\%$, sparse foliage, damaged crown). It may be desirable to maintain the presence of some trees in the forest having tree crowns of low vigor or poor health for wildlife habitat (e.g., living snags).

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An assessment of the tree crown is important when a silvicultural system is prescribed that calls for leaving residual trees following a harvest (e.g., any non-clear cutting prescription such as seed tree, shelterwood, selection system). The quality of these trees is important as they will serve as a seed source for the future forest. Crowns should be relatively large (LCR > 30%), healthy, and have minimal damage to assure survival. 



Don't Miss the Boat!

Eli Sagor, Extension Educator, University of Minnesota Extension Service, Cloquet Forestry Center

It's an exciting time for forestry in Minnesota.

First, stumpage prices, particularly for aspen, are going up fast. This is making it more and more feasible to sell timber even from small parcels as long as the wood is of high quality. The high prices have caught the eye of many private landowners and led them to think more seriously about harvesting some timber.

Second, with ecological classification systems (ECS) becoming more and more established, many landowners are realizing that forest management and forest ecology can be one and the same. It's becoming harder these days to separate the foresters from the forest ecologists as consulting foresters begin to apply new ecological information in their management plans for private woodlot owners. This, too, is leading more and more landowners to consider active forest management. (You can read more about ECS in the last issue of

Forest Tree Notes, available online at http://www.cnr.umn.edu/cfc/outreach/ftn/FTN2-1_may01.pdf.)

Third, forest certification is creating opportunities for landowners from 20 to 20,000 acres to take advantage of new markets for their products. Home Depot™, Lowe's™, Andersen Windows™, and other major sellers of wood products have expressed a preference for "green certified" wood recently. Forestry co-operatives can greatly reduce the costs of certification for private woodland owners and, by marketing products together, landowners can achieve critical mass and enter new markets that would have otherwise been unavailable to them. This is happening throughout Minnesota and Wisconsin.

How can you keep abreast of changes like these? The Minnesota Forestry Association and University of Minnesota Extension Service have rolled out a slate of programs for private woodland owners. The Woodland Advisor Program has recently been updated to include some of the recent changes discussed above, and much more. The program offers landowners over 40 hours of educational programs on topics from Non-Timber Forest Products, to working with a logger, to increasing wildlife on your property, to ecological classification systems, and much more. The program will be offered in Itasca County this winter and in the Carlton / Pine County area in the near future as well.

Several other workshops are also coming up: in late September, you can learn about some specific ways to take advantage of some of the opportunities discussed above (while checking out some spectacular North Shore foliage) at the Wolf Ridge Environmental Learning Center at the "Succeeding as a Land Steward" workshop. A couple of weeks later in the Brainerd area, we'll be hosting a session on "Adding Value through Bucking and Sawing." This workshop will focus on ways to maximize value of forest products from small parcels and from low-intensity harvesting operations. And throughout the summer and fall, you'll be able to participate in Walks in the Woods on a variety of topics.

Be sure to check the calendar of events in this newsletter and online at www.cnr.umn.edu/cfc. And if you'd like more information about any of these programs, give me a call at (218) 879-0850 x. 120. Don't miss out!



Book Review

Mike Reichenbach, Extension Educator,
University of Minnesota Extension Service,
Cloquet Forestry Center

Canoe Country Flora

By Mark Stenaas
Illustrated by Jeff Sonstegard
Published by Pfeifer-Hamilton, Duluth
1996

This book is not your typical plant identification book. Mark includes information about the natural history of the plants, about people who discovered or used the plants, about his personal experiences, and about how you might use the plants.

Mark's style is light and fun. He encourages the reader to explore by providing hints at where to find more information and why it would be interesting. Mark includes stories and quotes from botanists, well-known authors and others who were impressed by the plant being described. I found the book valuable for the information about plant uses.

Plants described include trees, shrubs, wildflowers, ferns, clubmosses, horsetails, mosses, lichens and mushrooms. Mark provides a list of plants by the habitat where they are commonly found: forests; sunny openings/old burns; on trees; rock faces and cliffs; shorelines; wet areas; bogs; and lakes. He includes a wildflower bloom calendar.

The book is illustrated with black and white line drawings.



Educational Programs for Small Businesses

Mike Reichenbach, Extension Educator,
University of Minnesota Extension Service,
Cloquet Forestry Center

Mike Demchik, Extension Educator in Agroforestry Management, recently conducted a survey of farm landowners in Northern Minnesota and found that 25 percent of them are involved in a small natural resource based business other than farming.

To meet the needs of small business owners the University of Minnesota Extension Service offers a number of forestry-related workshops and seminars.

Be sure to read the Event Calendar on page 5. A few that are coming include *Adding Value Through Bucking and Sawing* workshop on October 13, 2001. This meeting is designed to allow communication between landowners, loggers, foresters and mill owners.

Finally, a meeting is being planned for business owners and their families. Scheduled for 2002 in Cloquet and Grand Rapids, this meeting will provide practical information on building a successful family business.

The programs being offered are a direct result of your comments and questions. Please let us know what you want. Contact me at the Cloquet Forestry Center, 175 University Road, Cloquet, MN 55720; (218) 879-0850 ext. 123; or mreichen@cnr.umn.edu.



Your Response is Requested

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To subscribe, visit the website at <http://lists.extension.umn.edu/mailman/listinfo/agrofor>. Fill out the section entitled *Subscribing to Agrofor* and submit your information. You will receive a notification of a successful subscription in your email shortly thereafter.

Then let us know you no longer need to receive the paper copy by contacting Susan Seabury at (218) 879-0850 ext. 108 or sseabury@cnr.umn.edu.

The Minnesota Agro-Forestry Cooperative

Amy Shogren, Program Specialist, WesMin RC&D Council and Dean Schmidt, Coordinator, WesMin RC&D Council

The Minnesota Agro-Forestry Cooperative (MAFC) is a producer owned cooperative that was started in the mid 1990's to assist growers with the production and marketing of short rotation woody crops. The MAFC's current focus is on hybrid poplar production due to its economic, environmental, and community benefits. Hybrid poplar can be substituted for aspen fiber at the pulp and paper mills, or for OSB. These trees can also be burned as a renewable energy source. One of the challenges of growing hybrid poplar is the 10 year wait until harvest before any income is received.

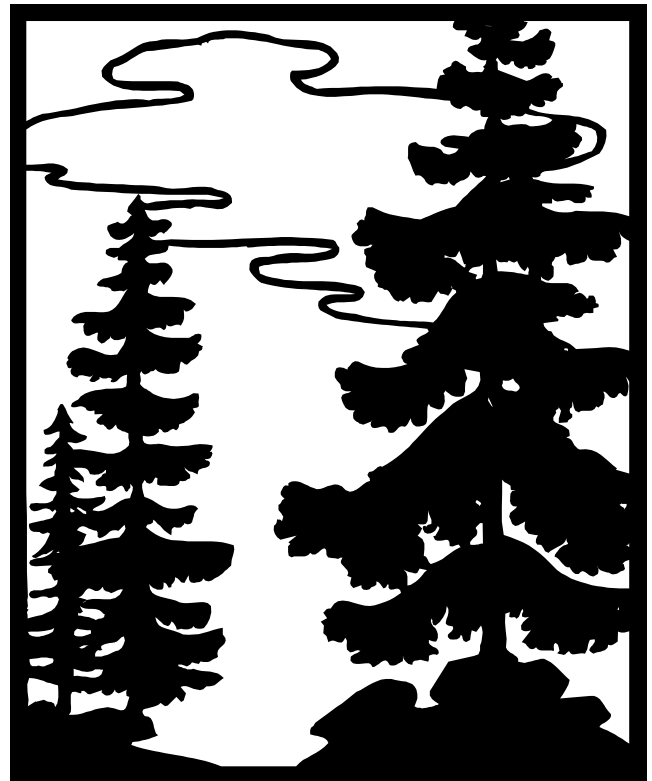
MAFC's volunteer board spent much time in the year 2000 at the Minnesota State Legislature requesting money for a "Producer Capitalization Program (PCP)," or a revolving loan fund. Producers of hybrid poplar could receive an advance payment on their trees each year. The MAFC was successful, in 2000 they received a \$200,000 grant from the House and \$200,000 to start a loan program from the Senate to be used by agroforestry cooperatives in the Minnesota. The MAFC is currently working to put together a loan program with other existing programs that will best benefit landowners and cooperative members. The MAFC has formed a partnership with WesMin RC&D Council and Rural Development to match the state funding for a project developer who will provide technical assistance to the cooperative.

Recently the MAFC, in partnership with EPS/Beck Power, WesMin RC&D Council, Minnesota Department of Natural Resources-Forestry, Natural Resources Conservation Service, Center for Integrated Natural Resource and Agricultural Management, Minnesota Department of Agriculture, and many other partners, submitted the "St. Peter CRP Biomass Pilot Project Proposal" to the Farm Services Agency. This pilot project allows producers near St. Peter to grow hybrid poplar on Conservation Reserve Program (CRP) land, receive CRP payments,

and harvest their crop for biomass energy payments (CRP harvesting restrictions have been lifted for this pilot project due to national emphasis on biomass energy).

In March the MAFC was notified that the project was one of four accepted in the nation. The pilot project has not yet begun due to some rules in the project acceptance letter that will not allow the project to function. The MAFC and other partners are working to insure that necessary changes get made so the project may commence.

If you would like more information on this growing cooperative or hybrid poplar please contact the staff at WesMin RC&D Council at (320) 763-4733.



Event Calendar:



Hazelnut Research

August 27, 2001, 1:00-4:00 p.m.
Badgersett Research Corporation
Lanesboro, Minnesota

Tour the Badgersett Research Corporation, breeders of northern hardy hazelnut hybrids. The tour will highlight new research, newly planted production plots and harvesting.

Directions: From Lanesboro, follow Rt. 21 south to Rt. 12, and turn east. Follow Rt. 12 east to Rt. 23 and turn south. Follow Rt. 23 to the town of Amherst. Turn left at Amherst Auto Sales and follow the signs to Badgersett Research Corp.

For more information, call (218) 894-5196.

Horticulture Day

August 29, 2001, 2:00-6:00 p.m.
North Central Research & Outreach Center
1861 E Highway 169
Grand Rapids, Minnesota

For more information, call (218) 327-4711.
Cost: Free of charge.

Solar Kiln Wood Drying

September 15, 2001
James Ballenthin property
1897 E. Ponto Lake Road NW
Backus, Minnesota

Tour and discuss small-scale wood drying. This forest landowner uses the heat of the sun to dry lumber and create lumber of higher quality than normal air drying provides. Discussion of some basic lumber drying principles is planned.

For more information, call (218) 894-5196.

Succeeding as a Land Steward

September 28-29, 2001
Wolf Ridge Environmental Learning Center
Finland, Minnesota

This workshop is designed for the private forest owner and natural resource professional on getting to know, and working with your forest property. It will answer questions such as 'How do I assess my property?', 'What is happening to neighboring forest land?', 'How can I improve my land to benefit wildlife?', and 'What are my management options?'

For more information, call (800) 523-2733. Cost: \$42 includes program, meals and lodging. Saturday session only \$15.

Adding Value Through Bucking and Sawing

October 13, 2001
Brainerd School Farm
Northwest corner of Butternut Road SE and Highway 25
Brainerd, Minnesota

This field day will be an opportunity for landowners, loggers, foresters and sawmill operators to talk about each of the steps involved in turning a tree into boards and where at each step value can be added. Information on how value can be added through landowner cooperation will also be presented.

For more information, call (218) 879-0850 ext. 108.
Cost: \$15 includes all conference materials and lunch.
Registration deadline is October 5th.

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Forest Management Guidelines Field Session

October 24, 2001

Cloquet Forestry Center

Cloquet, Minnesota

Sponsored by the Sustainable Forest Education
Cooperative

This one-day field workshop, a repeat of the 1999 and 2000 sessions, is a follow-up to the classroom introductory session. This workshop is usually attended by loggers, foresters, wildlife managers and other professionals. It will be of benefit to landowners who will have active timber harvests in the coming year. The field session will visit a demonstration site where examples of implemented guidelines will be reviewed and discussed.

Instructors will address cultural resources, forest soils, riparian areas, visual quality, water quality and wetlands, and wildlife habitat in the context of timber harvesting and forest road building. Participants will explore ways in which landowner objectives may affect guidelines application.

For more information, call (218) 722-5442. Cost: \$75 (SFEC Members \$45).

Forest Products Management Development Institute Workshop, Short Course, and Seminar Schedule Fall 2001/Winter 2002

The Forest Products Management Development Institute (FPMDI) conducts educational programs for the forest products industry. The following schedule of programs is geared toward those persons involved in forest products businesses.

To learn more about registration and course descriptions, please contact FPMDI Workshops and Seminars, Department of Wood & Paper Science, University of Minnesota 2004 Folwell Avenue, St. Paul, MN 55108; or view complete descriptions and get registration information on the web at <http://www.cnr.umn.edu/WPS/exten/exmdi.html>

Understanding Wood I

October 3, 2001

Cloquet, Minnesota

October 5, 2001

St. Paul, Minnesota

This one-day workshop introduces participants to the fundamentals of wood as an industrial material. Topics addressed include the nature of wood and differences between hardwoods and softwoods, heartwood and sapwood, natural durability of wood, earlywood and latewood, specific gravity of wood and its effect on wood properties, wood and water, shrinking and swelling of wood, and juvenile wood/reaction wood. Pre-registration \$89.

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**For additional events please refer
to the following websites:**

**University of Minnesota Center for Continuing
Education:**

<http://www.cnr.umn.edu/CCE>

Cloquet Forestry Center's Extension and Outreach:

<http://www.cnr.umn.edu/cfc/outreach/workshops.html>

University of Minnesota Extension Service:

[http://www.extension.umn.edu/programs/index.asp?
error=0&external=1](http://www.extension.umn.edu/programs/index.asp?error=0&external=1)

Understanding Wood II

November 7, 2001
Cloquet, Minnesota

November 9, 2001
St. Paul, Minnesota

This one-day workshop builds on knowledge gained in the Understanding Wood I workshop and introduces participants to the most common products made of wood. Essential features of the manufacturing processes associated with each product are examined and product properties, proper applications, and problems in use are discussed. A look at new and emerging technologies and products concludes the session. Pre-registration \$89.

Understanding Wood III

November 30, 2001
St. Paul, Minnesota

This one-day workshop introduces participants to log and lumber scaling, cord scaling, weight scaling, and wood by-product and residue measurement. The essentials of metric conversion are also examined. Pre-registration \$89

Environmental Aspects of Forestry, Timber Harvest, and Wood Use

September 21, 2001
Cloquet, Minnesota

The purpose of this program is to increase knowledge of forestry and of environmental concerns related to forest harvesting, to increase awareness of forest certification programs, and to increase the comfort level of participants in discussing forestry related issues with others. Pre-registration \$89.

Marketing of Forest Products I

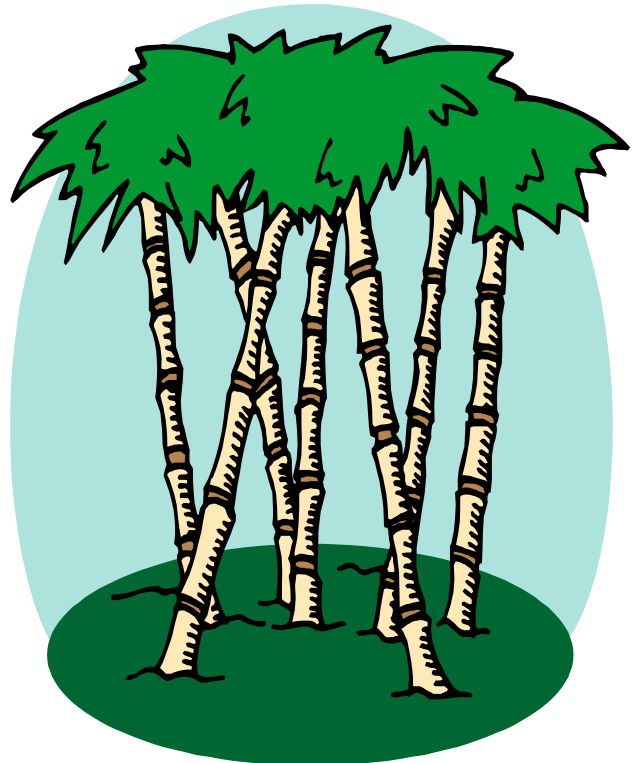
October 19, 2001
St. Paul, Minnesota

This workshop focuses on the highly competitive building materials distribution industry and examines strategies that successful firms employ in business-to-business marketing. The program is designed for those who have recently entered the building materials marketing and distribution field as well as those who may be interested in updating their marketing knowledge. Pre-registration \$89.

Lumber and Building Materials Short Course

February 4-14, 2002
St. Paul, Minnesota

This course emphasizes product knowledge - product properties and characteristics, how various products differ, proper applications and limitations in use, the influence of building design and construction details on product performance and durability, and new and emerging products. The basics of building materials estimating are also an important part of the course. Held over a two week period. Pre-registration \$650.



Cloquet Forestry Center
175 University Road
Cloquet, MN 55720

The Mission of the University of Minnesota Extension Service:
“Connecting Community Needs and University Resources”

Partial funding has been provided by the Northeast Minnesota Sustainable Development Partnership. Please visit their website at
<http://www.regionalpartnerships.umn.edu/Northeast/>

