



Forest Tree Notes

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Sustainable Forests Education Cooperative

Louise Yount, University of Minnesota,
Cloquet Forestry Center

The next time you're talking with your local forester or wildlife biologist, ask them if they're aware of the Sustainable Forests Education Cooperative (SFEC). If they answer "Yes," ask them what they have learned about.

The SFEC was formed in 1998 and is providing natural resource professionals with access to the latest research finding and information about innovative forest management practices. The Cooperative, a public-private partnership, fills an important role designing and delivering educational programs for natural resource managers in response to emerging issues of the moment. Such rapid response educational programming is necessary because new research findings often languish for years in scientific journals.

For the next few years SFEC programs will focus on productivity and management topics as well as innovations in technologies used in forest management activities. To give you a sense of what we offer, here are a few examples of workshops coming up in the next six months:

- **June 12.** Practical Silviculture in an Ecological World: Management Planning Strategies for Forest Stewardship Plan Preparers
- **June 20.** Using Handheld Personal Computers in Field Forestry
- **July (TBA).** Identifying Plants to Classify Forest Habitats
- **October 2-3.** Recreational Trail Design Workshop

Twice yearly the Cooperative mails a calendar of upcoming continuing education events. This calendar can be accessed at <http://www.cnr.umn.edu/CCE/calendar.html>. If you have questions about the Cooperative, or would like to be on the mailing list for a paper copy of the calendar of events, please contact Louise Yount, project leader, at (218) 879-0858 or lyount@forestry.umn.edu.


Sustainable Forest Education Cooperative Member Organizations 2000-2001

Association of County Land Commissioners
Boise Cascade Corporation
Community Forestry Resource Center
County Land Departments
Beltrami, Carlton, Cass, Clearwater,
Crow Wing, Hubbard, Lake, St. Louis

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Minnesota Chippewa Tribes
 Bois Forte, Fond du Lac, Grand Portage,
 Leech Lake, Mille Lacs, White Earth
 DNR Division of Ecological Services
 DNR Division of Forestry
 DNR Division of Wildlife
 Hedstrom Lumber Company
 MN Forest Stewardship Program
 Potlatch Corporation
 Red Lake Tribal DNR
 SWCD - Crow Wing County
 The Nature Conservancy, Minnesota Chapter
 UPM Kymmene Blandin
 USFS National Forests
 Superior, Chippewa
 University of Minnesota
 College of Natural Resources
 Natural Resources Research Institute
 Minnesota Extension Service
 Wolf Ridge Environmental Learning Center 



Book Review

Jim Warren, Research Fellow, Cloquet Forestry Center, Cloquet, Minnesota

Legal Aspects of Owning and Managing Woodlands


By Thom J. McEvoy. 1998. Island Press. Washington, D.C. ISBN 1-55963-638-6



In his book, *Legal Aspects of Owning and Managing Woodlands*, Thom J. McEvoy leads those who own forested properties through several important topics. With a title implying something less than riveting subject material, the book is refreshingly interesting and easy to read.

McEvoy begins the book with a review of the state of forestry in the United States, and discusses the history, and basic “bundle of rights” associated with private ownership. He then moves on to various aspects of acquiring and owning forest properties. The real crux of the book, however, details topics that anyone who owns property should be acutely aware of including; the importance of, and reasons for, knowing your property boundaries, the how and whys of developing a management plan for your property, and specific advice about how to work with forest contractors. There is also a chapter on Forest Taxation that provides concise examples of value to anyone who owns land.

Near the end of the book McEvoy discusses aspects of woodlands in estate planning, and gives pertinent advice about choosing and working with an attorney.

Overall, this book covers the major aspects of property ownership, and McEvoy does an excellent job of presenting the information in a clear, concise manner. Professional managers and private woodland owners alike should look at this book. 

Planting Trees: A Step of Faith

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




During a recent trip to a family owned farm in Southern Illinois I learned that for some landowners, particularly those who have farmed the land, growing trees takes a step of faith. On most farmland a farmer can tell you the number of bales of hay or bushels of corn produced, the price obtained per bale or bushel and the cost to produce that bushel. This information is discussed with the neighbors, farm advisors and others. Judgments are made as to the productivity of the land based on past crop history and these discussions. The type, number, size and rate of growth of the trees are used to compare the relative productivity of forests. However, few people have this information and it is not discussed unless someone has just had a timber harvest. Timber harvests do not occur often and thus are not often a topic of conversation. In addition, forests may be viewed as unproductive because they are not a source of annual income. It takes a step of faith to change from producing one crop that you know well to producing another especially if you are not as familiar with that crop or if it is viewed as being nonproductive.

The family owned farm that I visited has been in the family for more than 80 years. Hay, corn and beans are the primary crops produced on nearly 200 acres of this property. Thirty acres are in hickory and oak forest. Ten acres are in homestead and farm yard. Ten acres of old pasture have been planted to trees. Drainage areas, creek bed and brush account for the remaining 50 acres. Farming has been a priority for my family, it produces an annual income. As family members have left the farm for the city and finding farm managers is difficult our vision for the farm has changed. While the production of an annual income is important, maintaining the economic productivity of the land has grown in importance. We have seen how abandoned fields fill with brush or with trees that have no commercial value. To invest in the future economic potential of this property is important. This requires a change of thinking from production during one's lifetime to production cycles longer than one's lifetime. It requires a trust in future generations.



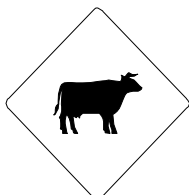
Planting a new forest in an old field or even a marginally productive hay field carries both costs and risks. The biggest cost is not the trees or planting (roughly \$400 per acre) but rather the loss of an annual income. The largest risk is the loss of the trees. The plus side is a reduction in annual costs required to maintain the new crop and the production of a crop that will appreciate in value as it grows.

During my three day stay at this property, my uncle, cousin, and I planted 3000 oak trees on 10 acres of old pasture. The vision for the future includes a property that has both productive forest and farm lands. The work won't end with the tree planting, we will continue to farm and tend the trees that have been planted. We will have annual income from farming and some income will not occur until the trees we planted mature. Was it the right decision for us to plant trees? I believe it was.

If you want information about planting trees contact your local Minnesota Department of Natural Resources Forester, a local consulting forester or contact the University of Minnesota Extension Service. 

Cattle, Trees and Silvopasturing

Mike Demchik, University of Minnesota Extension Service, Staples.



I had a teacher in Vo-Ag in high school named Mitchell Fincham. I remember one thing about his section on forestry: that you should keep the cows out of the woods. I went to high school in Jefferson County, West Virginia. In Jefferson

County a lot of the grazing land is rocky with some pasture trees and adjacent woodlots. Sounds sort of like central Minnesota (but warmer and with hills). While it was good to have some classes on forestry in the Vo-Ag class, it did not take a rocket scientist to look at the rubbed, half-rotten trees, torn-up ground, exposed roots and total lack of regeneration to see that these woodlots were in bad shape.

In the US, about a quarter of all woodlands are grazed. In Minnesota, sixteen percent of the private forest owners graze part of their woodlands. For years the forestry bias has been that you need to keep the cattle out of the woods if you want to raise trees and protect the shrubs and herbaceous plants that are part of the forest ecosystem. However, in this new era of rotational grazing (as well as high timber and land prices), using pastures to grow timber or woodlots to produce forage may be feasible during part of the life of a tree stand.

I am not going to go against years of work by forestry folks here in Minnesota and say let the cows have the run of the place (if they don't already). Cattle can tear up a perfectly good woodlot in short order, especially with thin barked trees. With reported aspen pulp stumpage at \$25-\$30 per cord (or higher), not taking care of your trees is just bad business sense. Instead, I will present a few systems of mixing trees with pasture (called silvopasturing) used in other states with potential (untested) for Minnesota. It is worth noting that I am not aware of any research on silvopasturing in Minnesota (although it may exist), so most of this information is based on the systems used in the Pacific Northwest (Oregon and Washington) and the southeast (North and South Carolina, Georgia, Florida, etc.) These grazing systems are generally associated with stands of pine, e.g., loblolly pine in the South and ponderosa pine in the West.

System 1: Open Pasture Planted to Conifers and Forage Mix

Since you are planting the trees, you will be able to create a more ideal system than if you were altering an established forest, especially where Norway pines will be grown. Typical forest plantings space trees more or less evenly across the whole area (for example 8'X8', 8'X10', 10'X12') with lots of extra trees to account for those that die. This does not work as well for forage production. After 5 or 10 years, forage production in a tree plantation with closely spaced trees drops greatly. From this point on, shade from the trees will pretty much kill the pasture. In a silvopasture system, the trees are usually planted in widely spaced rows or patches with a wide enough spacing between these plantings to allow for good sun penetration and forage production. As the trees grow, pruning lower branches will improve future log quality and allow more light to reach the forage on the ground. This system functions best under rotational grazing. Since this starts with seedlings, care must be taken in grazing to avoid periods when the trees are sensitive to damage. For conifers, this is mid-spring when the trees are putting on new "candles" (fresh growth on conifers). Cattle or sheep will happily eat the candles off the top of your brand new seedlings. This probably will not kill them, but they will be the most ugly seedlings that you have ever seen (and the trees will have poor adult form). As the trees grow, the trees are periodically thinned to harvest wood products and improve growth of forage and the remaining logs.

System 2: Thinning Existing Conifer Stand for Forage Production

Many farms have established pine plantations that are in need of thinning. Careful decisions on thinning (and pruning of the remaining trees) can allow for forage production below these stands. Applications of seed mixes and fertilizer aid the production of forage. For these systems, rotational grazing is essential to maintain both the trees and the forage. In particular, cattle will rub the trees mercilessly, especially during fly season. Some rubbing is fine; continual rubbing is what damages trees. If only patches of trees are left, the animals will hang around in the trees for shelter when it is hot or cold and compact the soil.

This system is used largely in the southeastern US where cattle graze loblolly pine plantations during much of the

stands life. Both the cattle AND the forage can benefit from partial shade from the hot southern summers.

System 3: A Heavily Grazed Hardwood Stand


Use of silvopasture techniques is less common in hardwoods than in conifers. However, a lot of the woodlands that are grazed are hardwoods. A potential way of using a silvopasture system is to remove the rubbed, poor formed trees for firewood or by commercial sale if possible. A professional forester can help you with this decision. The remaining trees will be the most well-formed trees present on the site. Periodic thinning (and possibly pruning) of the remaining trees will encourage more forage production and faster tree growth. Apply seed mixes and fertilizer as in the other systems. With thin barked hardwoods, rotational grazing is very important if timber production is a goal. Prior to the final logging of the mature trees, grazing should probably be limited for a few years to allow time for the stand to regenerate (seedlings to grow).

Points to Consider

If you are interested in having trees on a field, but do not want to wait 50 years to get income from the land, silvopasturing may be for you. However, silvopasturing involves quite a lot more thought than figuring five acres to a cow (or whatever local conditions warrant). The following points are some key issues to consider:

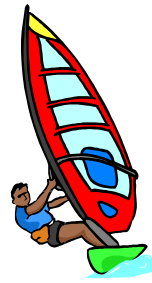
- * Trees are damaged by continual rubbing of bark, soil compaction and bark and bud browsing (in younger trees). Rotational grazing reduces the impact of these damages.
- * Regenerating the site into trees requires special care until the trees are out of the reach of the grazers.
- * Some forages will do well in partial shade, others will not. Selecting a good seed mix can boost yields.
- * Silvopasturing is a fairly new technique; grazing the woods is not. Care is needed to avoid the problems that are usually apparent when the woods are grazed too hard.
- * Trees reduce the windchill felt by cattle during cold weather. During colder periods, cattle consume much more feed just to stay warm. Reducing the wind chill that the cattle feel increases feed conversion efficiency. This can amount to up to 50% of the feed during cold periods.

Final Thoughts

If all this management seems to be more trouble than it is worth, silvopasturing may not be for you. But if using your land to grow quality trees and livestock intrigues you, several publications on silvopasturing are available from the National Agroforestry Center (402-437-5178). You will have to experiment,  but the result may be well worth the trouble.

Forests, Ecosystems, and.... Sailing?

Eli Sagar, University of Minnesota Extension Service, Cloquet Forestry Center.



One of the best things happening in modern forestry is that good forest management is becoming more and more complicated every day. Wait a minute, that's a GOOD thing? Absolutely. It's happening because every day new research gives us a clearer picture of how forests work and of how we can work with the forest to keep it healthy and productive and to keep ourselves happy. The complexity comes with understanding and using all of this new information. One of the best examples of this new research is the work that John Almendinger, Dan Hanson, and others from the Minnesota Department of Natural Resources are doing on Ecological Classification Systems, or ECS.

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What is ECS? In a nutshell it is a detailed system used to understand, describe and classify forest ecosystems. Information from Ecological Classification Systems can go beyond what species are on the site now to tell foresters what types of forest are best suited to the site. Knowing what species are best suited to the site will allow us to make decisions that are better aligned to the direction that Mother Nature wants to take the forest stand.

To clarify this idea, I like to pass along an analogy that a seasoned forestry professor named David Perry shared with me a couple of years ago: think of forestry as similar to sailing. When you're sailing, you're constantly aware of which direction the wind is blowing. You can take your boat in many different directions, but you will have to work a lot harder to go some directions than others. You will have the most fun and success with your sailing if you know how to work with, rather than against, the wind. The same principle is true for forests: the forces of nature are always at work in the forest, and we are more likely to be successful in our forest management activities if we are able to work with, rather than against, these forces.

This is information that you or your consulting forester can readily use. Armed with good plant identification skills and the right key to identify different forest ecosystems, anybody will soon be able to go out into

the woods and understand which direction the wind is blowing in their local forests. If they choose to actively manage their forests (for wildlife, timber, recreation, or any other purpose), those management decisions will be more likely to succeed with less cost and energy input if they are based on Ecological Classification System information.

Forestry has always been, and will always be, applied ecology. But as researchers like Almendinger, Hanson, and their colleagues continue to provide foresters with ways to quickly read and understand the natural forces at play in the woods, forestry will become more and more ecologically based. The complexity of considering all of this new information will pay off with better returns of timber, native wildlife, water quality, and all of the other things that our forests provide.

Currently, ecosystem keys are only available for North Central Minnesota, but keys for other parts of the state are expected to be available by the end of the summer. To obtain a copy of the North Central information or with questions, contact John Almendinger at (218) 327-4449 ext. 245 or john.almendinger@dnr.state.mn.us, or me at (218) 879-0850 ext. 120 or esagor@cnr.umn.edu. Information on ECS is also available online at <http://www.dnr.state.mn.us/ebm/ecs/>. 

Your Response is Needed

Please let us know your email address so the newsletter can be sent to you via email.
Send a response to Susan Seabury at sseabury@cnr.umn.edu.

Event Calendar:



Basic Lumber Drying Workshop

May 24, 2001

University Center Rochester Campus,
Heintz Center
Rochester, Minnesota

May 30, 2001

Cloquet Forestry Center
Cloquet, Minnesota

May 31, 2001

Rapids River Logging Camp
Park Rapids, Minnesota

This one-day workshop for small sawmill owners (portable and fixed) and secondary wood processors (wood-workers) will demonstrate the basics of wood drying to create a quality end product.

For more information, contact Miriam Peterson at (612) 624-1293. Cost: \$ 35 includes program expenses, lunch, refreshments and handout materials. Seating is limited. Register by May 21 for Rochester and May 25 for Cloquet and Park Rapids.

Computer Mapping, GPS and GIS for Private Forestland Owners

June 21, 2001

Cloquet Forestry Center
Cloquet, Minnesota

High tech gadgets? Or tools that you can use? Learn about the uses and limitations of computer mapping programs, global positioning and geographic information systems. What is this technology, how does it work and how can it be used to improve the management of your forest resources?

For more information and a registration form, call Mike Reichenbach at (218) 879-0850 ext. 108. Cost: \$5 includes mailings and refreshments. Registration is limited. Deadline for registration is June 14, 2001.

Third North American Forest Ecology Workshop

June 24-28, 2001

Duluth Entertainment and Convention Center,
Duluth, Minnesota

This workshop will address the issue of scale in forest ecology and forest management. From trees to stands to landscapes, new technologies have revolutionized the ability of scientists and forest managers to understand and manage forest ecosystems. But there are still challenges in applying the results of studies at one scale to another scale (e.g. from a small group of trees to a watershed). This workshop will bring together researchers and managers to highlight and expand upon the state-of-the-art in understanding scale issues in forest ecology and management. Many foresters and researchers from the area will be attending.

If you think your consulting forester or local resource manager would be interested in this workshop, tell them about it. They can access more information and a registration form at www.cnr.umn.edu/cfc/outreach/NAFEW/nafew.html. Or contact Louise Yount at (218) 879-0858 or lyount@forestry.umn.edu.

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 is \$15.

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>

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