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Impacts of Extended Rotation Forestry

Howard Hoganson, Forester - NCES/Dept. of Forest Resources

Northern Minnesota is known for its beautiful older forests. A study was recently completed for the Minnesota Department of Natural Resources (DNR) to examine the extent to which Minnesota DNR commercial forestlands might be managed on longer rotations to help sustain the area of "older forest" over time. The study extended the modelling methods used for the recent Minnesota Generic Environmental Impact Statement on Timber Harvesting. It linked the DNR forest inventory with the statewide forest industry to project tree growth on DNR lands. Four scenarios which differed in emphasis on extended rotation forestry were modelled. Results were presented and discussed in the DNR's roundtable planning process involving stakeholders from both forest industry and environmental groups. As one might expect, the different interest groups did not reach consensus on appropriate extended rotation forestry goals. Study results highlight some important trade-offs that may help in the DNR's decision making.

In general, extended rotation forestry will lower sustainable harvest levels in the short term as it requires carrying larger timber inventories. In effect it reduces options for getting through temporary periods of short supply caused by imbalances in the age distribution of stands in the forest. Study

results suggest that sustainable harvest levels on DNR lands in northeastern Minnesota would be reduced by about 10 percent with a goal of maintaining 25 percent of each forest cover type of the commercial timberland as "older forest" at all times. The sustainable level drops by almost 50 percent with a goal of maintaining 50 percent of commercial timberland as "older forest" at all times. Extended rotation forestry would add substantial cost, especially in the form of lost state revenues from timber sales. This added cost would vary dramatically by forest cover type and change over time. For example, the cost of assigning additional acres of the aspen forest type to extended rotations were generally near zero for most scenarios for the next 30 years while annual costs for maintaining additional acres of "older forest" in the red pine or white pine forest types were as high as \$400 per acre. These annual costs are high because timber in the older stands of these forest types is valuable and growing at a slow rate. From a simple investors point of view, its much like putting a large sum of money under your mattress rather than in a savings instrument where a substantial return on investment is expected. For forest types where extended rotation forestry is expensive, costs of extended rotation forestry could likely be reduced

substantially if relatively intensive thinning options could be utilized throughout much of the rotation. These options would also help increase sustainable harvest levels. Future research needs to consider the extent to which extended rotation forestry can involve thinning, and in general, the extent to which Minnesota forestry can involve uneven-aged management.

**Portuguese Scientist
To Visit**

Dr. Jose Borges, Professor of Forest Management, Instituto Superior de Agronomia, Lisbon, will spend most of two months this summer at the NCES working with Dr. Hoganson on spatial modelling methods. The Instituto Superior de Agronomia has the largest forestry school in Portugal. Dr. Borges is involved in both teaching and research. Dr. Borges will present a seminar at the station on Portuguese forestry. Forestry in Portugal is especially interesting as it involves both eucalyptus and cork. Eucalyptus is one of the fastest growing and most planted species in the world. Please let us know if you are interested in meeting with Dr. Borges.

This archival publication may not reflect current scientific knowledge or recommendations.
Current information available from University of Minnesota Extension: <http://www.extension.umn.edu>.

NCES Forestry Model Receives International Attention

Howard Hoganson visited Finland last summer to serve as an instructor in an international summer school on forest modelling. He trained modelers in the use of our DTRAN forestry model. The following is an excerpt from *The European Forest Institute News*.

The international Seminar and Summer School "Large-Scale Forest Scenario Models: Experiences and Requirements" from 15-22 June 1995 in Joensuu, Finland was organized by the EFI and the Finnish Forest Research Institute. The workshop brought together more than 60 scientists from 19 countries.

The seminar gave a broad overview of the recent and current activities in large-scale forestry modelling and analysis worldwide.

The summer school introduced a few advanced models (DTRAN and SPECTRUM from the USA and MELA from Finland) and underlying paradigms in more detail. The participants also discussed the needs and possibilities for further modelling activities and international cooperation.

Forestry models have proved to be valuable instruments for analyzing such current problems as production potentials and trends of forests, forest management practices and conflict resolution in forest management. Some large-scale models are becoming practical tools for national and international analysis, planning and decision-making in forest policy, forest production and forest management. They are expected to have an

increasingly important practical role, combined with reliable forest resource information, when managing forests for multiple purposes in changing conditions and under conditions of uncertainty.

Coming together for the first time to share experiences of modelling paradigms and analysis traditions from different forestry conditions proved to be especially valuable for a worldwide but a thin and scattered research branch and community of scientists like today's forestry modellers and analysts.

The Joensuu seminar and summer school may serve as a starting point for joint research projects of collaborative national teams and internationally compatible national forestry models and analyses.

Development of a Research Agenda for Tourism in Minnesota

Dan Erkkila, Tourism & Travel Specialist

The Minnesota Extension Service's Tourism Center, in collaboration with the Minnesota Office of Tourism (MOT), has begun a process to develop a comprehensive research agenda that includes both existing and future gaps in the level of understanding of the tourism and travel industry of Minnesota. The agenda will identify research issues and needs; establish industry-wide priorities; consider the diversity of the industry; be developed from industry input; and, identify potential funding sources. Tourism Center and MOT staff have been assisting associations as they work with their members to identify critical needs. Dan Erkkila, Tourism Center faculty member and NCES scientist, is leading the initiative.

Research means different things to different people. "Someone in the

business of research may not take long before talking about methods, data collection, hypothesis testing, and the like. The small town retailer, on the other hand, is more likely to talk about a recent conversation with a new customer about their likes and dislikes." In either case research still involves collecting facts and compiling information upon which better decisions are made or existing problems are solved. But before the facts are collected, one must know what the need or issue is and, assuming it will cost something to investigate, whether one need is more important than another.

Steve Markuson, MOT's director, announced the initiative at the MOT annual conference in Brainerd last January. Markuson notes that in Minnesota, the tourism and travel

industry has not collectively identified its information needs or issues that hopefully, once found or resolved, could strategically place the industry where it wants to be in the next 5-10 years.

Industry association representatives are well into the process of assessing the issues or information needs their industry members feel are critical to the success and growth of the industry. Following this effort, designated association representatives will meet in a special session to bring their individual lists of research issues or information needs together for review and prioritization. This phase will also address the appropriate strategy needed to garner the legislative attention and support that will be needed to begin addressing the priorities identified in the completed agenda.



NCSA Alumni News

Tom Carpenter

At the time I am writing this article I still have about 22 inches of snow in my yard! Hope spring is just around the corner.

I received a note from Paul Warble on February 17 with a list of alumni that got together in Apache Junction, AZ on February 14: Lavon Sumption, Don & Irene Dailey, Harold & Helmi Becker, Louis & Mary Krieger, Lee Oyster, Cleo Himman, Roman & Elaine Radniecki, Eugene & Joyce Derhamel, and Paul & Mary Warble.

Another time for the snowbirds to

get together this summer will be at the NCES 100th Anniversary on July 20. Full information will be coming out around July 1 in *The Quarterly*.

Just a reminder -- our All-Class Reunion is just a little over a year away, July 19, 1997. I'm starting to make arrangements for the event already (a tour, musical entertainment, horse and wagon rides, banquet and dancing) so mark that date down!

We were saddened to hear of two alumni that passed away:

Don Oyster-Class of "40"- Passed

away February 1 at Apache Jct., AZ. A memorial service was held February 6 at Apache Jct. Another memorial service will be held around Memorial Day at Wadena, MN.

Walter Johnson-Class of "44"- Passed away March 8 at Apache Jct., AZ. Funeral services were held March 9 at the Sierra del Saguardo Clubhouse in Apache Jct. and a memorial service was held in Grand Rapids on March 13. Walt worked at NCES as general mechanic from July, 1951 to December, 1976.

Centennial Garden Planting

David K. Wildung, Horticulturist

Big plans are developing for the 1996 Centennial Celebration of North Central Experiment Station. One of the projects we in horticulture are planning is a centennial garden in which we will be comparing old "heritage" vegetable cultivars with new "modern" cultivars. Development of this garden plot has been interesting as we have searched the history of gardening in the late 1800s.

It is surprising to see how trends in vegetable gardening have evolved over the last 100 years. Certain vegetables were not grown then while in a few instances others have fallen out of favor. For example, broccoli and cauliflower were unknown in 1896. Today we find them easy to grow and well suited to northern Minnesota gardens. In contrast, celery was a very popular garden crop in Minnesota gardens back in 1896. This vegetable is very difficult to grow and little production occurs anywhere in Minnesota today.

A lot of the changes we see today are due to the fact that we enjoy an inexpensive abundant easily available

supply of food from around the world that early settlers to this area could not experience. In 1896, the citizens of northern Minnesota were much more dependent on what they grew in their gardens and what they could preserve, can or store from there gardens. Root cellars were common, freezers as we think of them today did not exist. This factor also is shown in many types of vegetables that were grown. For example, the root crops were much larger in size than we think of today. Large carrots, beets, and even radishes were canned and stored. Potatoes were stored in volume. Other vegetables such as turnips, rutabagas and kohlrabi were popular. These types, while fairly easy to grow, are not real common in today gardens.

One of the recent trends in vegetable crop production today is the cut and peel carrots we enjoy. Our great grandparents would not recognize these carrots today since most grown at the turn of the century were chantenay types - large roots - 3-4 inches across and 6-8 inches long.

On the other hand, we might not recognize some of the corn grown in the late 1890s. Shoepeg types had no distinct row pattern and one cultivar, Black Mexican, supposedly was very unattractive but with excellent quality. I'm looking forward to sampling that one! Do you suppose it matches the quality of today supersweet cultivars?

If you are interested in heritage vegetable cultivars please accept this invitation to visit this plot anytime you want to during the summer. Cultivars will be labeled and described for you. All of these old cultivars are heritage or heirloom varieties and available through various sources across the United States. You may want to try them in your own garden. It is our plan to try to have the various crops mature close to our centennial celebration/visitors day dates. Early maturing crops will hopefully be ready for the events of July 19-20. The late crops should be ready for our horticulture open house on August 28.

We have had fun researching and putting this heritage garden together.

News from North Central

David L. Rabas, Head

Spring is here! As I look out my window this morning and see two or three feet of snow and some huge snow piles I might question whether spring field work is less than a month away. Hopefully by the time you receive this issue of *The Quarterly* flowers will be in bloom and robins won't need long underwear!

We are anxious to get in the field this spring. In addition to our normal research plot work and spring seeding of forages, small grains and corn we have ninety plus acres of research pastures to prepare and seed on our beef/ forage research farm. Rocks and sticks remaining from land clearing must be removed and 100 tons of Blandin Paper Company ash must be spread before our beef research pasture seeding can occur. Cooperation from the weather as well as an extra effort by the farm and livestock crew will be needed.



Dave Rabas, Station Head (R), congratulates Henry Schumer for 20 years of service.



John Hall, Animal Scientist (L), congratulates Dan Brown for 10 years of service.

This is a very special year at NCES. We are celebrating our 100th birthday and preparing for the next 100 years. April 16 is the official anniversary date. We will celebrate our centennial year with a number of activities on July 19 and 20. We hope all our North Central friends will join us on these dates. Final plans for the centennial celebration will appear in the July issue of *The Quarterly*.

Joe Rust is writing a 100 year history of our station. If you have information about the station you would like to share, please write to Joe at our station address.

As part of our planning for "the next 100 years" the North Central Experiment Station Research Fund Committee is conducting a Centennial Campaign with a goal of raising \$100,000 to support our station's

research and education programs. The campaign will run throughout the centennial year. We hope many of our North Central friends will help make our campaign a success.

Congratulations to Henry Schumer and Dan Brown who were recognized for their years of service to our station. Henry came to the station in April 1976 as a Research Plot Supervisor and currently serves as a Research Plot Coordinator for wild rice research. Dan started work at our station in December 1985 as an Assistant Farm Animal Attendant and currently serves as Assistant Scientist in animal science research and as coordinator of farm operations.

"The First 100 Years"
1896 - 1996

North Central
Experiment Station

CENTENNIAL
CELEBRATION

July 19 and 20, 1996

Plan to be with us!

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