Adapting Forest Management in Northern Minnesota to a Changing Climate
November 28, 2007
Session I – about 35 participants Session II – 18 participants
Moderator: Jeanne Edevold Larson Notetaker: George-Ann Maxson

CHALLENGES:

Bureaucratic or Societal

1. Agencies work under plans, which restrict flexibility. USFS plans are strategic in nature, but can be modified by amendments.
2. Legal challenges may result when attempting to expand the genetic sources of seed stock. Changes needed in thinking about seed sources.
3. Political and economic conflict with ecosystem functioning, sometimes promoting an agenda counter to a healthy future.
4. Society will have to decide whether to follow the path toward higher or lower CO_2 levels. Agencies should plan for the worst case, i.e., the higher end of projections.
5. Agencies are being asked to do more despite limited and declining resources.
6. Retain prescribed burns since fire has a role in forest management, but recognize challenge of catastrophic fires, the urban interface, and question of carbon emissions.
7. How do we incorporate the private landowners?
8. Proposed changes will need to happen quickly.
9. Recognize cost of desired outcomes.

Biological

10. How do we maintain genetic diversity?
11. We must recognize that some species will be lost from MN as a result of climate change, so we will have to triage our resources.
12. We should rethink current management of the deer herd and use more effective techniques to reduce deer numbers. Sport hunting is not working.
13. Forest insect pests and diseases will become a major issue. They tend to affect mature trees while deer impact seedlings and regeneration.
14. Aim to increase the health and productivity of MN forests, which have a much lower productivity than other states.
15. Question of how to manage long-lived species when habitat conditions change during lifetime.

Forestry Surveys, Techniques and Field Manuals

16. Foresters need a field guide of strategies and prescriptions that are specific but adaptable.
17. Need to expand monitoring efforts and to maintain established projects. Document what techniques are working and to revise field guides accordingly. Perhaps expand the FIA data to include other indicators like bird or plant communities, or levels of deer browse and insect infestations. Possibly coordinate with wildlife surveys.
18. Determine economic viability of using slash and unmerchantable wood for biomass conversion.

19. Work with loggers to clean equipment and reduce transport of weed seeds and insect pests.
20. The shortened winter season affects soil and water conditions and winter harvesting. How do we avoid or mitigate the negative effects?
21. Question of best treatment of slash: lop and scatter, pile and decay, pile and burn? All treatments eventually release greenhouse gases. Lee Frelich states that no MN studies exist that compare effects of slash treatments.

OPPORTUNITIES:
1. Climate change justifies stretching adaptive silvicultural parameters. We can do what was recommended 30 to 40 years ago. Review intermediate treatments and ecological forestry.
2. Because the climate models vary, greater flexibility in management techniques will be needed.
3. Climate change can increase growth rates and forest productivity.
4. Management activities can produce biomass products such as cellulosic material for energy source.
5. Incentive for renewed collaboration between industry, loggers, and agencies.
6. Engage in outreach to private landowners.
7. We can encourage urban, suburban, and rural communities to better appreciate the values of forests. The interest can expand into understanding of the values of green space, and have social benefits like involving kids in outdoor activities and nature appreciation. Increase public awareness of impending forest changes.
8. No longer constrained to single species management, we can experiment with greater species diversity in stands and range extensions of more southerly species. The increased forest diversity can be justified by the needs of the cellulose market.

STRATEGIES:

Encourage forest managers to plan for the highest CO_2 levels

Change policies and legislation regarding prescribed burns and CO_2 emissions as part of better vegetation management

Track emissions of greenhouse gases

Forestry Techniques
Develop monitoring strategies for adaptive management and track changing conditions. Increase monitoring efforts by more frequent data gathering and more teams

Expand long term monitoring to include dedicated old growth stands

Manage more tree species

Use knowledge of native plant communities to decide which species to promote. Need more careful documentation and monitoring of herbaceous forest species.

Encourage database sharing across agencies in order to expand data collection and better analyze trends, similar to homeland security's effort to enhance communication among emergency officials. Standardize plant community descriptions, like the DNR Native Plant Community field guides.

Develop field guide for stand prescriptions, not just vague recommendations

Promote additional thinning

Expand tree improvement work, develop new stock, experiment geographically

Take advantage of changes in harvest technology

Modify inventory control of raw material

Invest in a seed saver system to preserve the greatest diversity of genetic material

Plant diverse stands to maintain healthy, resilient forests

Apply techniques from the agricultural industry to research tree genetics and better methods of enhancing productivity

Redefine sales to the benefit of all parties. Incorporate biomass utilizations and have loggers assist with silviculture

Educate and require loggers to be more diligent in keeping equipment clean, possibly include in contracts

Funnel waste material into biomass uses

Invest in infrastructure for biomass incentives, assume leadership on issue. Decentralize the energy industry to reduce transportation costs

Outreach Strategies

Sponsor more of these climate change forums for natural resource professionals

Publicize demonstrations of changed systems. It’s hard to monitor current system even though we know it isn’t working

Educate and build awareness among private landowners and the urban core that recreates

Engage urban and suburban populations in forestry issues without being preachy

Develop video games on forest changes as a way of reaching younger people

Develop good relations with public interest groups and private citizens to help monitor forest change

Create new partnerships with a common goal

Develop field guide for landowners to help them respond to climate change. Work with developers on wise use

Expand forest owner tax incentives; the current 80 acre limit is too high

Manage forests to discourage deer populations, encourage more deer hunting by expanding the donation program. Ban deer feeding.

Expand systems of early detection of insect pests so infestations can be detected early and response plans developed

Review techniques successful in other countries such as green roofs in Europe (local example of the Concordia Language Village BioHaus)