

Climate-Informed Forest Management: Forum and Field Day

Recap of May 7, 2014 Forum, Timberlake Lodge, Grand Rapids, Minnesota

Dave Zumeta, Executive Director, Minnesota Forest Resources Council

Today's forum began with a primer by Chris Swanston (USDA Forest Service-Northern Institute of Applied Climate Science) on climate science, and an overview of how changes in climate may affect Minnesota's forests. In recent decades, Minnesota winters have been warmer, summer and fall precipitation has been greater, and extreme rainfall events have been more frequent. Chris described uncertainty associated with climate modeling, and urged us to consider a *range* of future climate projections. He outlined several potential benefits to Minnesota's forests of likely future changes in climate, as well as a longer list of potential stresses. Chris also discussed both challenges and opportunities that climate change presents for forest management in Minnesota.

Linda Nagel (University of Minnesota-Department of Forest Resources) provided an overview of adaptive management for climate change in Minnesota forests. She described how climate change is increasing the need for forest managers to manage for future uncertainty. Linda noted that diversity and complexity will be the keys to maintaining ecosystem functions. She defined several key adaptive management terms, including resistance, resilience, and transition. Linda then described a specific example of adaptive forest management from the Cutfoot Sioux Experimental Forest, Chippewa National Forest, including how different silvicultural prescriptions could be used to promote resistance, resilience, and transition. Learning from the past will become increasingly important, as will long-term research. We will need to manage for complexity if we want to increase resilience.

Keith Wendt (Minnesota DNR-Operations Services Division) provided an overview of recent DNR climate change policies in relation to forest management and planning. He emphasized adaptive forest management as a "no regrets" strategy, with six major co-benefits in addition to climate change adaptation. Paul Dubuque (Minnesota DNR-Division of Forestry) described DNR regional forest adaptation strategies workshops, how DNR uses ecological classification system information to set forest landscape composition goals, and which forest systems are vulnerable to climate change. He described why Ecological Classification System and forest inventory data should be considered together when doing adaptive forest management. Paul also urged field foresters to consider using John Almendinger's tree suitability tables. He closed by describing a specific adaptive forest management project undertaken by the Manitou Collaborative on the North Shore of Lake Superior in Finland, MN.

After much shameless flattery of Stephen Handler (USDA Forest Service-Northern Institute of Applied Climate Science) by the previous speakers, Stephen described his Institute's (NIAC's) main programs. He then described three key questions that land managers can ask, and the basics of NIAC's Forest Adaptation Resources document, which focuses on a menu of adaptation strategies. The three key questions include:

1. What are your core forest management goals?
2. How could climate change affect my ability to meet these goals?

3. What steps can you take to adapt your forest management to meet your goals?

Stephen concluded with a specific adaptation project example from the Superior National Forest, and mentioned two other examples from a mixed forest ownership and an industrial forest ownership in Minnesota and two Wisconsin examples from tribal and county ownerships.

Linda Nagel closed the forum with a few words about the May 8 field tour on the Cutfoot Sioux Experimental Forest, Chippewa National Forest.