

MICHIGAN

FORESTS

SUMMER 2015

PUBLISHED QUARTERLY BY THE MICHIGAN FOREST ASSOCIATION VOL. XXXVII, NO. 3





Local Workshops Help Michigan Foresters Prepare for Climate Change

By Stephen Handler

The Issue:

What will climate change mean for your property or the properties that you manage? What steps could you take right now to start preparing for changing conditions in the future? Thinking about a large and complex issue at the local scale can be a difficult task, especially when much of the information about climate change is written at big scales like multi-state regions. Two workshops in June helped Michigan foresters and land managers grapple with these questions, and helped them design custom management actions to help adapt for climate change. Looking ahead, these workshops will create real-world examples that will help Michigan foresters learn about different ways to prepare for changing conditions.

The Northern Institute of Applied Climate Science (NIACS) partnered with Michigan DNR, the Otsego Conservation District, and MSU Extension to host two workshops called “Forest Adaptation Planning and Practices” in Gaylord and Houghton. These sessions were specifically designed to help people think about climate change in a way that is practical and relevant to their jobs. Participants included foresters and wildlife managers from several private consulting firms, conservation districts, Michigan DNR, Native American tribes, Michigan Technological University, and the Bureau of Indian Affairs.

Real-world Outcomes:

Each workshop participant brought a real-world project to use as an example for the workshop. These projects ranged from 40-acre Stewardship Plans for private landowners to 65,000-acre State Management Areas. They also covered a wide diversity of cover types and ownerships, spreading from the Keweenaw Peninsula down to “The Thumb”. A couple of these projects included:

Brandon Bal is a consulting forester with **American Forest Management** in Atlantic Mine, Michigan. Their company works with non-industrial and large in-

dustrial landowners across Michigan and Wisconsin. For this workshop, Brandon considered climate change risks and adaptation opportunities on a large industrial ownership in the western Upper Peninsula. He was thinking about issues facing northern hardwoods forests that are familiar to many landowners in the region: sugar maple dieback in the western UP and lack of maple regeneration in the southern UP. Climate change has the potential to cause more stress for sugar maple in the future, particularly if droughts become more common and more variable winters lead to more freeze-thaw events that can damage roots. After considering these risks and a range of possible adaptation actions, Brandon found that several things he was already recommending to address sugar maple dieback also have likely benefits for climate adaptation. For example, they are considering different silvicultural practices to add structural diversity and encourage more shade-intolerant species, and carefully monitoring the outcomes of these practices.

Erin Johnston and Pam Nankervis work for the **Keweenaw Bay Indian Community** Natural Resources Department in L’Anse, Michigan. For this workshop, Erin and Pam considered climate change risks and adaptation opportunities on lowland conifer forests across the tribally-owned lands. In addition to ongoing deer herbivory on key species like northern white-cedar, climate change risks for lowland

conifers include warmer temperatures that could be beyond the tolerable limits for northern species, and increased damage from forest pests. On the other hand, climate change might ease herbivory in some stands if winters become milder and deer aren’t confined to deer yards. To start preparing for the range of future conditions, Erin and Pam are looking at key refuge areas to protect lowland conifers, and also trying new methods to control deer herbivory like protecting seedlings behind jackstraw fencing.

Nick Sanchez works for the **Montcalm Conservation District** in Stanton, Michigan. Nick works with private landowners across Montcalm County, and for this workshop he teamed up with another Conservation District forester (Raymond Gurley, Oceana County) to think about a Tree Farm landowner’s property near Howard City. Nick and Raymond considered climate change risks and adaptation opportunities for several forest types, focusing on the landowner’s goals for a healthy forest and improved hunting opportunities. They were concerned that climate change could result in additional stress for northern tree species like aspen and red pine. Climate change could improve growing conditions for a variety of oak species if mesic hardwoods become less competitive, so Nick and

(See “Climate Change”, p. 16)

Brandon Bal (American Forest Management) and Gary Willis (Michigan DNR) worked together to think about ways to respond to sugar maple dieback and also prepare for a changing climate.



CLIMATE CHANGE

Continued from page 11.



Erin Johnston (Keweenaw Bay Indian Community) and other workshop participants did a ranking activity to help sharpen their thinking about which climate change impacts are most important for their projects and properties.

Raymond will likely talk to the landowner about encouraging oak species on sites that are currently more mesic. Another adaptation action they considered is to encourage hemlock regeneration in the near-term, by providing nurse logs and protecting hemlock seedlings from deer.

Workshop Design:

A workshop environment has been a successful way to get forestry professionals to consider climate change and design their own custom adaptation plans. NIACS staff (me, in this case!) led the participants through the “Adaptation Workbook,” a step-by-step process to help make climate change planning more structured and deliberate (Published version: www.nrs.fs.fed.us/pubs/40543, online version: www.adaptationworkbook.org).

Both workshops ran for 1.5 days and the time was dominated by planning and small-group worktime, with lots of opportunities for discussion and sharing among the participants. Multiple participants from the Michigan DNR and MSU Extension served as “forestry free agents” to help participants with their individual projects. NIACS also hosted a webinar before the meetings to cover background information on observed and projected climate change in Michigan, drawing on information from two recently published forest vulnerability assessments (Download here: <http://forestadaptation.org/northwoods/vulnerability-assessment>).

Next Steps:

With the help of willing foresters and landowners, NIACS is creating a growing 16 *Michigan Forests, Summer2015*

network of real-world adaptation examples across the Midwest and Northeast, including many from Michigan: www.forestadaptation.org/demonstration-projects. The projects that were discussed at the recent workshops will add to this network, so foresters and landowners will have an even larger library of case studies to explore! NIACS has hosted a dozen workshops across the Midwest and Northeast, and we plan to hold additional sessions in Michigan next year. Contact me if you’re interested to participate in a future workshop or if you’d like to learn more about how climate adaptation could make sense for your property or the lands that you manage.

Stephen Handler (sdhandler@fs.fed.us; 906-482-6303x21) works with the Northern Institute of Applied Climate Science (NIACS) and coordinates the Northwoods Climate Change Response Framework. Contact Stephen with any questions about climate change impacts or adaptation.



Helpful Resources

- *Climate Change Response Framework – a collaborative climate change adaptation project operating in Michigan: www.forestadaptation.org*
- *Forest Adaptation Resources: Climate Change Tools and Approaches for Land Managers – a resource that walks landowners through the Adaptation Workbook process: www.nrs.fs.fed.us/pubs/40543.*
- *Adaptation Workbook – a self-paced,*

interactive, online version of the Adaptation Workbook: www.adaptationworkbook.org.

- *Forest Management in a Changing Climate: a series of five 1-page bulletins prepared by NIACS and Michigan State University Extension, covering a range of helpful topics: www.forestadaptation.org/MI_climate_bulletins. ♣*





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