

TO: Private forest landowners and parties interested in the forests of northern Michigan, Wisconsin, and Minnesota

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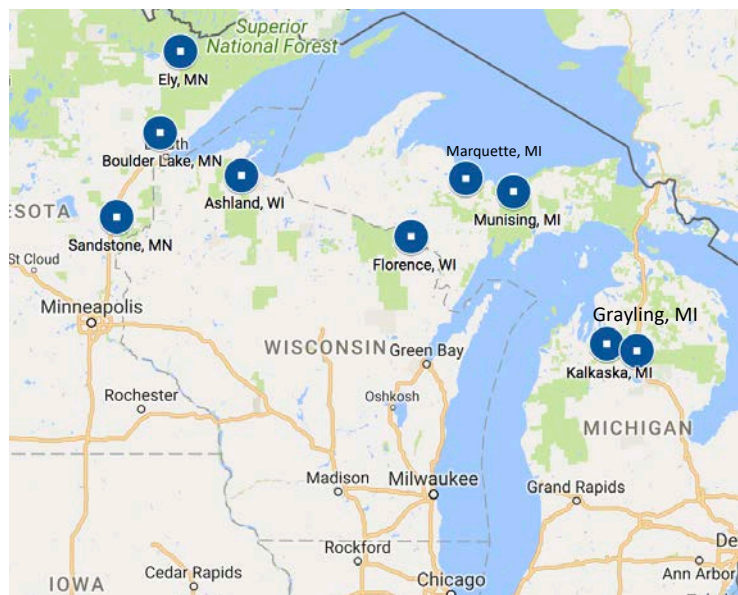
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SUBJECT: Summary of Northwoods landowner focus group discussions

This document summarizes discussions that took place among private forest landowners in nine focus group interviews that my research team conducted in northern Michigan, Minnesota, and Wisconsin in Spring and Fall 2017. The purpose of the focus groups was to learn how private landowners were experiencing and responding to changing conditions in local forests in the northern areas of these three states, an area we refer to as the Northwoods. An average of 10 landowners participated in each focus group, representing a variety of forest property sizes (mostly between 20 and 160 acres), reasons for owning forestland, and management approaches. The focus groups took place in local community centers, libraries, and other gathering places, and lasted approximately three hours each. Discussion topics included observed changes, experienced impacts, forest management responses, factors shaping responses, views about projected future changes, and information needs and resources. This summary does not represent the results of social science analysis, and should therefore be treated as preliminary.

Sites of private forest landowner focus groups conducted in Spring and Fall 2017:

Kalkaska, MI; Munising, MI;
Grayling, MI; Marquette, MI;
Ashland, WI; Florence, WI; Boulder Lake, MN; Sandstone, MN; and Ely, MN



A. Past Changes and Impacts

Landowners were asked to describe changes observed in their forestlands in addition to the impacts associated with those changes. Impacts refer to the results or consequences of the changes as landowners experienced them. When asked about changes they had observed and experienced in their forests, landowners primarily mentioned changes in the frequency, magnitude, and intensity of: (1) pests and pathogen outbreaks, (2) invasive plant infestations,

(3) wildlife herbivory, (4) weather patterns, (5) wildfires, and (6) severe storms. Alongside these changes, they said they had observed shifts in forest composition.

The areas where the focus groups were held experienced these changes differently. The most dramatic event occurred in Ely, MN: a summer 2016 wind storm that downed hundreds of acres of trees. Boulder Lake, Ashland, Florence, and Marquette were also affected by this event, as well as other storms, but the effects were not as severe as in Ely. Kalkaska and Alger county have been hit by a recent invasion of Emerald Ash Borer (EAB) and Beech Bark Disease Complex (BBDC). Landowners in Marquette and Florence discussed the continuing effects of past spruce budworm infestations, particularly high rates of blowdown due to wet soils and intense wind events. Landowners in Crawford and Sandstone experienced less remarkable shifts or events, but generally reported reduced soil moisture and snowpack, respectively. The impacts on landowners’ ability to enjoy or use their forests ranged widely based on the amount, frequency, magnitude, and intensity of the stressors they experienced on their lands. Landowners hit especially hard by storms, particularly in Ely, talked about being “at a loss of what to do” or being “back at square one.” Other landowners said they had experienced no notable changes.

Trends in environmental changes observed and experienced by focus group participants

	Pests			Weather patterns			Storms			Wildlife herbivory			Wildfire			Invasives		
	S	F	C	S	F	C	S	F	C	S	F	C	S	F	C	S	F	C
Kalkaska	↑	↑	↑	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alger	↑	↑	↑	↑	-	↑	↑	↑	-	-	-	-	-	-	-	-	-	-
Crawford	-	-	↑	↑	↑	↑	↑	↑	-	↓	-	-	↑	↑	-	-	-	-
Ashland	-	-	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	-	-	-	↑	↑	↑
Boulder L.	↑	-	-	↑	↑	↑	↑	↑	↑	↑	↑	↑	-	-	-	↑	↑	-
Sandstone	-	-	-	↑	↑	↑	↑	↑	↑	↑	↑	↑	-	↓	-	-	-	-
Ely	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	-	-	-
Marquette	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↓	↓	-	-	-	-
Florence	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	-	-	-	↑	↑	↑

S = severity, F = frequency, C = complexity; ↑ = increasing, ↓ = decreasing, - = constant

1. Pests and Pathogens

Landowners in all sites discussed an increase in the frequency, intensity, or complexity of pathogens or pest infestations, with the exception of Sandstone. Landowners in Kalkaska, Munising, Boulder Lake, Ely, Marquette, and Florence reported increased intensity of pests and pathogens; landowners in Kalkaska, Munising, Ely, Marquette, and Florence reported increased frequency of pest infestation or pathogen events; and landowners in all sites except Boulder Lake and Sandstone reported increased complexity of pest and pathogen events. When discussing pests and pathogen outbreaks, landowners observed impacts such as defoliation, declines in certain species, and shifts in forest composition.

2. Invasive Species

Landowners in Ashland, Boulder Lake, and Florence reported an uptick in the intensity and frequency of invasive species on their forestlands. Landowners in Ashland and Florence also

reported an uptick in the complexity of this threat. They reported impacts related to invasive species including the difficulty of establishing slower-growing desired species due to competition. Landowners also mentioned that managing invasive species required a great deal of effort.

3. Wildlife herbivory

With the exceptions of Kalkaska, Munising, and Crawford, landowners in all sites mentioned an increase in the intensity, frequency, and complexity of wildlife herbivory. Impacts associated with increases in wildlife and herbivory rates largely centered around the difficulty of ensuring high survival rates of new plantings in light of deer herbivory. Landowners who planted without any exclosures or caps found that deer would consume many new saplings before they could become established.

4. Weather Patterns

Aside from Munising, landowners in all sites talked about an increase in the frequency, intensity, and complexity of weather patterns. For example, landowners in Munising mentioned an increase in intensity and complexity, but not frequency. When discussing the impacts of changing weather patterns, landowners expressed concern about mortality, reduced production, an increase in the frequency and intensity of storms that cause severe damage like massive blowdown, an increase in the number of freeze-thaw cycles in the spring that damage newly-formed buds, and the difficulty of using heavy machinery in winter on ground that is not freezing completely.

5. Wildfire

Ely was the only site where landowners mentioned an increase in the intensity, frequency, and complexity in wildfire. Landowners in other focus groups reported incidents of wildfire in the general area but not on their forestlands specifically, even when their forests were located in fire-prone areas where wildfires are expected to become more frequent or severe. Although no landowners discussed being directly affected by wildfire, landowners in Alger, Sandstone, Boulder Lake, and Ely had experienced wildfire events in nearby areas and therefore were very concerned about wildfires.

6. Severe Storms

With the exception of Kalkaska, landowners in all sites talked about an increase in the intensity, frequency, and complexity of storms. Kalkaska was the only site where landowners did not discuss observing a change in storm trends. Impacts related to storms include increased blowdown of certain species, especially those with shallow root structures. Some landowners reported experiencing blowdown of entire tracts of land, losing hundreds to thousands of trees during a single storm event. Landowners also talked about storms causing increased vulnerability to flooding, an increase in erosion events on hilly areas, and an increase in moisture loss in soils where blow down has occurred.

B. Responses

Landowners responded to the changes they were observing and experiencing in their forests in a variety of ways. Landowners implemented direct management activities such as planting trees or building fences around saplings. Landowners also engaged in several planning and learning responses to increase their capacity to respond to future changes. In some cases, landowners chose to not employ any action or activity. In these instances, landowners felt responses were financially or physically infeasible. This was also reported when landowners felt they did not have enough information on a threat and appropriate treatment responses.

1. Management responses

Landowners engaged in four types of management activities in their forests in response to the changes they had observed and experienced: construction, harvest, planting, and treating activities. The **construction activities** that landowners reported included 1) building bridges, culverts, and levees, 2) capping newly-planted trees with paper or plastic coverings, 3) building enclosures or fencing, 4) building roads, and 5) installing fire defense sprinkler systems.

The **harvesting responses** reported by landowners included 1) cutting trees they anticipated would succumb to pests and diseases to prevent future damage or loss of value, 2) commercial harvests to maximize the present economic value of healthy wood, 3) harvesting to create patches that mimic natural disturbance regimes, 4) salvage harvesting after severe stress events like storms to promote the growth of new trees, 5) thinning of certain species, age classes, or vulnerability characteristics, to remove species vulnerable to stressors, and 6) modifying rotation intervals of harvests to promote species that might be resilient to future stressors.

Planting responses landowners mentioned included 1) planting to increase species diversity, 2) planting experimental species identify species that tolerate certain stressors, 3) planting species that have historically grown well in a certain area to increase robustness, 4) planting historically southern species to accommodate warming temperatures, and 5) transplanting saplings to assist with the survival of newly planted trees.

Treating responses landowners reported included 1) cleaning or fumigating machinery to prevent the spread of pests and disease, 2) clearing fallen trees and slash to reduce wildfire risk, 3) “limbing up trees” or removing branches close to the ground to reduce wildfire risk, and 4) manually removing trees to reduce wildfire risk.

2. Planning and learning responses

Landowners discussed engaging in a range of planning and learning activities in response to changes they had observed and experienced in their forests. Many landowners discussed enrolling in programs administered through their state department of natural resources and other agencies, especially programs that provided assistance with developing forest

management plan, and financial and technical support for management activities. Some landowners also reported placing their forest into conservation easements to protect against future threats, especially those related to development. Many landowners reported participating in educational programs to enhance or increase knowledge of threats to forest health, including webinars and trainings organized by state or federal agencies or non-profit groups. Landowners also discussed coordinating with each other to varying degrees, with responses ranging from engaging in neighborly chats to compare management practices and plans to cooperating on harvesting operations.

C. Barriers to Response

Landowners reported a wide variety of physical, social, economic, and personal barriers to responding to the changes they observed and experienced in their forests. Broadly, these barriers fell into the following categories:

Parcelization and the economics of small woodland management: Landowners expressed concern that as parcels become divided due to economic conditions and development pressure, forest lands become smaller and more fragmented. They asserted that fragmented landscapes tend to be more vulnerable to ecological stressors, especially those related to pests and disease, and are also more vulnerable to herbivory (particularly from deer, which thrive in landscape “edges”) and the spread of invasive species. Landowners discussed ownership changes leading to fragmentation, especially a recent uptick in lands sold for development by corporate owners such as Plum Creek, Weyerhaeuser, and Potlatch. Landowners expressed difficulty harvesting on these smaller lands despite a pressing need for active management. Many landowners found it difficult to identify loggers willing to come and work jobs on their land. They explained that the number of loggers willing to operate on small parcels had dropped since the 2008 recession, when many operators went out of business.

Forest management technology: Many landowners said they found it increasingly difficult to secure appropriate equipment for forestry operations and pointed out that the large, heavy machinery that is becoming more common in the region is difficult and expensive to maneuver on small forest properties. This machinery is particularly difficult to use under warm, wet conditions when it can cause damage to soils and roots. The lack of availability of small, light equipment is problematic for landowners who increasingly need to log during warmer and wetter winters, and especially for landowners who need to conduct salvage harvests immediately after damaging weather events (i.e. severe wind storms). Landowners discussed the need to use smaller machinery, coordinate with neighbors to reduce costs, harvest in mid-winter when the ground is frozen, and work with consultants to strategize more efficient harvests. Finally, landowners acknowledged a need to change their own expectations of what practices may realistically be executed in their forests, but often found doing so difficult.

Wood products industry: Landowners discussed a notable decrease in the number of mills that accept the type and amount of wood typical for a small forest landowner, especially since the

2008 recession. Some landowners also discussed an overall reduction in value of certain tree species and wood products, reducing their incentives to harvest. They said that after major stress events (such as windstorms or pest outbreaks), pulpwood and other types of low-value wood often gluts the market, causing prices for species like jack pine and balsam fir to drop to non-competitive levels, and making it difficult to manage in response to the stressors. Some landowners, particularly in Michigan, discussed the need for new, larger pulp mills to stimulate demand for low-value wood species, such as jack pine.

Information access: Landowners perceived a lack of access to information in some of the focus group areas. Some landowners, for example, said they did not know what signs to look for to indicate disease or pest infestation, or were otherwise unaware of what management practices they should use in response. Other landowners reported not knowing about cost-share programs available through state natural resource agencies.

Neighbor relations: Many landowners mentioned that they were concerned about conditions on adjacent land owned by absentee owners, public entities, and owners who lack knowledge of how to adequately manage their forests, and wished they could influence the management of those lands to reduce risks of damage by pests and diseases, storm blowdown, and wildfires on their own lands. Some participants expressed interest in coordinating management with other landowners to reduce these shared risks. Some pointed out that a lack of productive cooperative management relationships with their neighbors posed a barrier to their ability to respond to the changes occurring in their own forests. These landowners regretted that cooperation is not very compatible with typical sentiments about private land ownership and the need for landowners to feel confident that they can manage their lands however they wish.

Policies and programs: While many of the participants in the focus groups recognized that financial and technical assistance programs exist to support landowners' management efforts, some landowners suggested they are difficult to locate, cumbersome to enroll in, offer uncertain returns, and often provide inadequate compensation. The focus groups in Wisconsin, where a majority of landowners had enrolled in a managed forestry plan and were working directly with private forester as part of the Managed Forest Law, were an exception. Some landowners were concerned about effects of local- and state-level policy changes on forest management more generally. Landowners discussed a perceived lack of interest on the part of state natural resource agencies in supporting active and effective management. Some landowners claimed that they had observed a loss of local control or autonomy over decision-making processes that affect forest management. Within the context of discussing their own management practices, many landowners expressed concerns about their respective state's forest management practices contributing to the spread of pests and disease on their own lands. In some cases, landowners seeking to coordinate with public agencies to manage adjacent land said they had encountered obstacles in doing so, including navigating local and state bureaucracy.

Capacity: In several instances, landowners expressed an inability to respond to the changes they were observing and experiencing in their forests. They said they saw few feasible solutions, especially for managing invasive pests such as emerald ash borer. Some landowners said that they felt that the work of responding was simply too overwhelming, as in the case of Ely landowners who experienced complete blow-down on entire tracts of land. Some landowners who experienced these challenges suggested the best one could do is “do what you can with what they have.” Others contemplated “throwing in the towel” and even selling their land. A large barrier that many landowners discussed was the absence of a younger generation to take over management. Many of the landowners’ children lived out of state and had little interest in managing a small parcel of land in a rural location with the prospect of small financial returns from forestry

Values and philosophies: Some landowners discussed tensions between their value orientations and the types of management activities they actually employed in their forests. Some landowners came into forest ownership with a plan to “let nature take its course” and later realized that their forests required active management if they were going to avoid losses to pests and diseases, storms, and droughts. Many landowners were unclear about where to draw that line, and at what point management functions as resistance versus adaptation to change. They also suggested the need to decide on the point at which a lack of management becomes irresponsible. Landowners frequently discussed the role of human intervention in the context of a “mother nature” who is wily, strong-willed, and independent.

D. Views on Projected Changes

The research team distributed a series of maps of potential future socio-economic and environmental changes during each of the focus groups to encourage conversation about how future changes might affect landowners’ forests and how they might manage them. These maps depicted local (e.g., township-, county-level) projections of 1) increasing population and employment, 2) expanding pests or pathogens infestations, and 3) declining precipitation and rising temperatures, in some cases as a proxy for increasing wildfire risk. The data for the maps came from outputs from socio-economic, forest health, and climate impact models from state, federal, and academic research institutions (e.g., University of Michigan’s Institute for Research on Labor, Employment, and the Economy; Michigan State University-University of Michigan Great Lakes Integrated Sciences + Assessments; state departments of natural resources; US Forest Service Forest Health Technology Enterprise Team).

1. Socio-economic Changes

Most landowners felt the projections for population growth and increasing employment rates were not realistic. Landowners described jobs leaving their communities, and even expressed doubt in the potential of relatively large industries to generate significant economic activity in their rural communities. Many landowners pointed to aging populations in their communities, especially as a result of in-migrating retirees. A number of landowners felt growth, even if it were plausible, was undesirable. Many landowners were sensitive to tax increases brought on

by increased development, tourism, and population influx. They felt increased taxes might constrain their ability to devote financial resources to particular management practices on their lands. In N. Saint Louis County, Alger County, and Ashland County, landowners were quick to point out the economic benefits of tourism, but also recognized it as a driver of parcelization and demographic changes, which they expected would reduce the number of local landowners who were knowledgeable about forest management practices. Landowners generally expressed concern about population growth and urbanization, especially over the loss of forest and farmlands that seem to contribute to a shared rural community identity.

Description of maps of past and projected changes used in focus group discussions

	Socio-economic	Forest health	Weather patterns
Kalkaska	demographics, employment	BBDC	number of hot nights
Alger	demographics, employment	EAB, spruce budworm	number of hot nights
Crawford	demographics, employment	oak wilt, oak decline	soil moisture, fire probability
Ashland	demographics, employment	spruce budworm, composite of forest pests	soil moisture, number of days with 3 or more inches of precipitation
Sandstone	demographics, employment	spruce budworm, composite of forest pests	soil moisture, number of days with 3 or more inches of precipitation
Boulder Lake	demographics, employment	spruce budworm, composite of forest pests	soil moisture, number of days with 3 or more inches of precipitation
Ely	demographics, employment	spruce budworm, composite of forest pests	soil moisture, fire probability
Marquette	demographics, employment	EAB, spruce budworm	number of days with temperatures above 90° F, number of days with temperatures below 0° F
Florence	demographics, employment	EAB, spruce budworm	growing season, number of days with 1+ cm of snowfall

2. Forest Health

Discussions of projected expansion of pest and disease occurrence varied in richness depending on the geographic area's level of pest or disease risk. In Boulder Lake, where pests and diseases were viewed as very problematic, one participant felt the projections were too conservative, and pointed out climate change's role in exacerbating impacts. In Alger County, where pests and disease were not high-priority issues, participants said they had no basis for judging the accuracy of potential changes. In general, landowners discussed the implications of the projections in terms of negative effects on their forests, with little discussion of opportunities. Landowners were concerned about the role of globalization and the transmission of pests and diseases through shipping and trade, especially given many of the communities' close proximity to the Great Lakes where shipping is a prominent industry. Some participants in focus group sites that had not seen impacts from oak wilt disease (Ashland, Sandstone, and N. and S. Saint

Louis Counties) expressed trepidations about the damage it could potentially cause, with one landowner calling it “a windstorm of a disease.” Many landowners felt that action ought to be taken sooner rather than later, but pointed to financial barriers to early action. As one landowner said, “that’s just human nature. We’re not going to do anything until we have to. Because we don’t have the money, we want to spend it over here, or whatever.” In the event that huge infestations were projected, like with EAB some landowners expressed their limited options, especially given the context of a limited market. As one landowner said, “What’s the market for ash, other than either saw bolts or firewood? And if it’s got [EAB] then you can’t ship it anywhere.”

3. Weather Patterns

Many landowners expressed skepticism about the climate projections for temperature and precipitation that they were presented. Some landowners, especially those in Michigan, expressed doubt about scientists’ ability to “predict the future,” and pointed to larger climate fluctuations on the scale of geologic time to suggest that “weather has always been changing.” Landowners in North and South St. Louis county, on the other hand, felt the models were not representative and that temperatures and moisture stress will likely increase more than the models predicted. Irrespective of any beliefs they shared regarding anthropogenic climate change, most landowners said they had observed unexpected changes in weather patterns, specifically warmer and wetter winters, drier summers, and longer periods of more severe fluctuation between drought and precipitation events. Landowners expected a northward shift of the current species composition and pointed to the need to change their planting regimes to include more southern species. They also expressed concern about their trees’ increasing vulnerability to pests and disease given that they were already stressed by drought and warmer conditions. Additionally, some landowners discussed planting more diverse and historically southern species. They also mentioned altering harvest timing to reduce the potential for harvests to damage forest roads or increase vulnerability to pests and diseases, especially oak wilt disease. Regardless the cause, many landowners agreed that a worst case scenario might be the continuing trend of warmer winters with fewer nights below freezing. Landowners in Minnesota and Wisconsin were concerned about an increase in the number of large storm events resulting in severe wind damage, which they felt could be exacerbated by saturated soil from wet winters. Generally, landowners were concerned about changing weather patterns affecting their forests’ composition, growth, and vulnerability to pests and disease.

E. Information and Resource Needs

In N. St. Louis County, S. St. Louis County, Ashland, and Florence, participants seemed well-connected to one another and to resources offered in their community, and expressed a deep knowledge of the issues facing their forests and potential solutions to address them. Landowners in the other study sites seemed somewhat less connected to each other and to sources of information and assistance. A majority of landowners in the Wisconsin focus groups, for example, worked with DNR private lands foresters, in part to meet requirements of the Managed Forest Law. Landowners mentioned seeking information from multiple sources,

including neighbors, the university agriculture extension offices, webinars, classes, newsletters, state natural resource agency hotlines, NRCS service foresters, environmental non-profit organizations, and county soil and water conservation district offices.

Generally, landowners expressed interest in finding out more about information, advice, and resources, including financial and technical assistance, to help them manage their forests in response to the changes they were observing and experiencing on their lands. Landowners specifically mentioned the need for information about which species to plant and how to identify and manage invasive pests and diseases. They also said they could benefit from more resources to help with post-event cleanup (e.g., from wind throw). Landowners suggested a clearing house for information and networks for improving greater connectivity among and natural resource professionals to discuss emerging news and research, effective resources, and helpful techniques.

F. Next Steps

The research team compiled answers to the questions landowners in each focus group asked most frequently about forest changes and management responses and shared them with participants along with a summary of what was discussed. Now the research team is analyzing the transcripts of the focus group interviews with qualitative social science methods, developing scholarly articles for publication in peer-reviewed journals to convey the findings to a broad audience, and preparing for the next stage of the research: a large quantitative investigation of how forest landowners in the Northwoods are experiencing and responding to environmental and socio-economic changes, and factors that enable and constrain their ability to respond.

For more information, please contact Paige Fischer at apfisch@umich.edu or visit <https://sites.google.com/umich.edu/fischerresearchgroup/home>.

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