



FOREST REGENERATION MONITORING SURVEY RESULTS

Thank you for your participation in the Forest Regeneration Monitoring program. Your involvement gives us invaluable information to better understand factors affecting forest regeneration in Wisconsin.

Surveys are being conducted across private lands enrolled in the Managed Forest Law (MFL) program, private lands not enrolled in MFL, state, county, and federal lands. Survey information will help the Wisconsin Department of Natural Resources (DNR) to create sustainable management guidelines for healthy and productive forests and to monitor forestry trends.

The following pages summarize the results of the regeneration survey that was conducted on your property. These results have been shared with your Tax Law Forestry Specialist. The goal of this survey was to provide a general overview of the regeneration found on your land and should not take the place of a more thorough assessment completed by your forester. Any conclusions we draw from these results do not consider your specific property conditions or management goals.

We hope the information provided serves as an additional resource in these early stages of your forest's regeneration. Please refer to the last page for contact information for any questions you may have.

SPECIES COMPOSITION OF YOUR NORTHERN HARDWOOD FOREST



*species that make up less than 2% of forest composition are not displayed

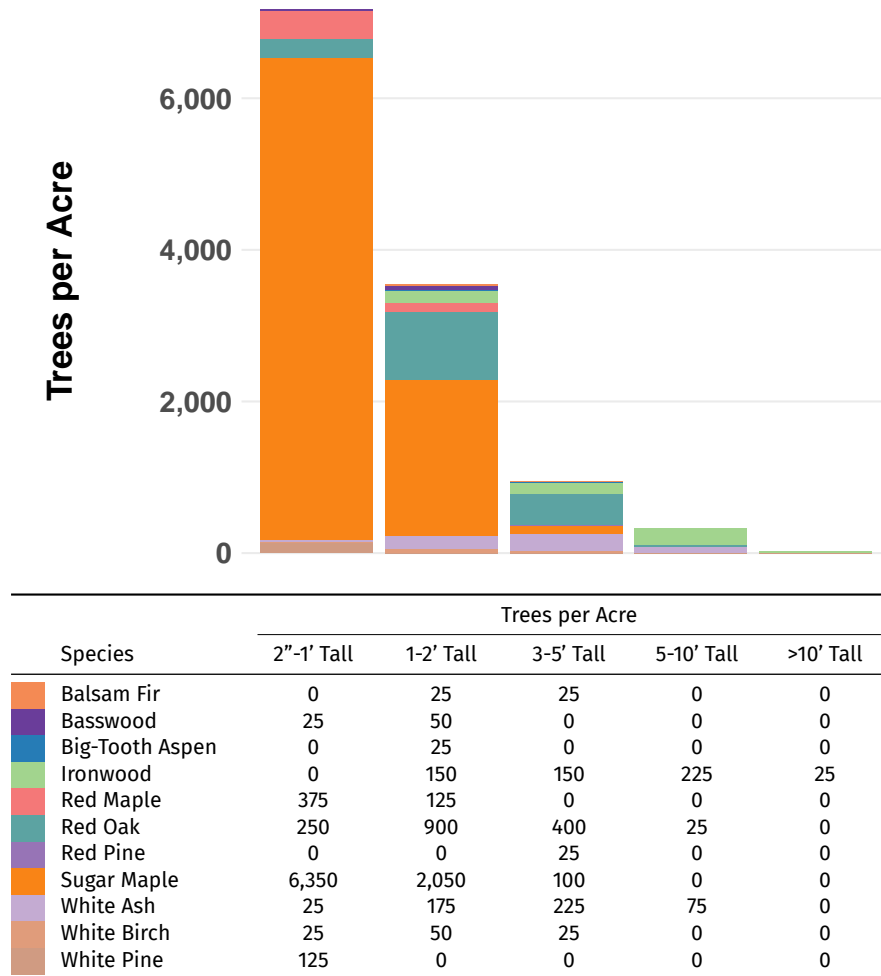
Your assigned MFL program forester had previously classified this section of your forest as part of the northern hardwood forest type. Forest types are categories of forests usually defined by dominant tree species and common associated secondary species. While each forest is unique, these classifications help foresters make management decisions using established management guidelines for each forest type.

Generally, the primary tree species of sugar maple, American beech, basswood, white ash, or yellow birch distinguish the northern hardwood forest type. Common associates can include green ash, red maple, red oak, hemlock, white pine, and balsam fir. The northern hardwood cover type occurs throughout Wisconsin, but is most common on nutrient-rich sites north of the tension zone.

Your forest is primarily composed of the aforementioned species and currently fits the definition of the northern hardwood forest type. If these species continue to be the ones that are more successful in regenerating, the makeup of your forest will likely continue to be defined as northern hardwood.

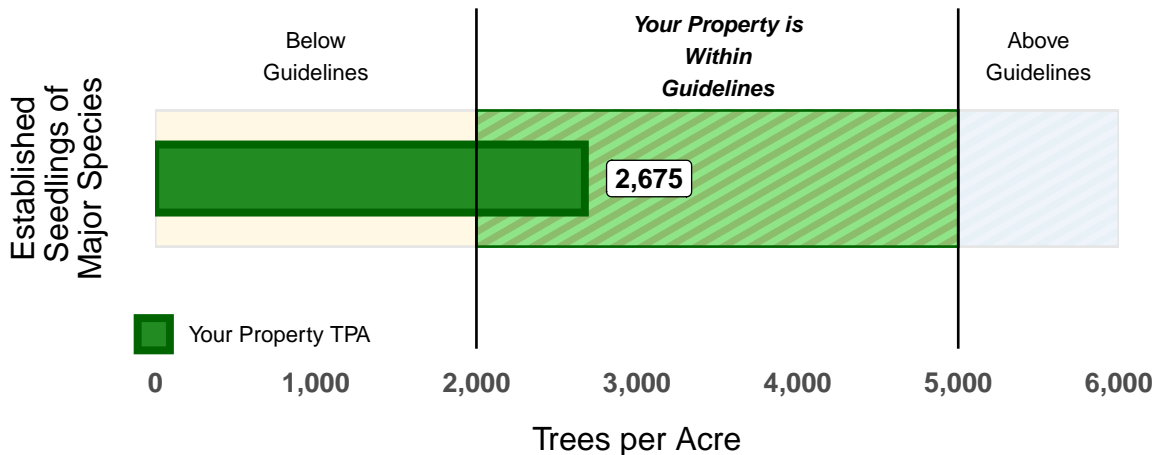
Your forest is in its early stages of regeneration and tree species populations are likely to continue to shift over time. Further monitoring is important to ensure that the composition of the regeneration meets your management objectives. If you have any concerns, consult your forestry professional.

SPECIES COMPOSITION BY HEIGHT CLASS



During the early stages of regeneration, young trees are developing and growing to renew tree cover on your recently harvested land. The species whose seedlings survive and are able to grow to taller sizes will determine the future makeup of your forest. The above graph shows which species are dominant at different size classes and have the greatest density of trees per acre (TPA). This information can inform what species may have increasing or decreasing regeneration trends. An abundance of smaller seedlings may indicate seeing more of that species in the future. Continued monitoring will help put these trends into perspective and guide future management over the next few years.

NORTHERN HARDWOOD STOCKING DENSITY



Each forest type has recommended guidelines for how many seedlings and saplings are needed for a healthy forest in the future. These density goals are based on established seedling populations, typically meaning trees taller than 1-2 feet. Young trees of this size have a high probability of reaching adulthood and have sufficient vigor to escape juvenile mortality.

In the northern hardwood forest type, the recommended densities are 2000-5000 desirable and established trees per acre (TPA). The amount of time to reach this benchmark can vary depending on environmental conditions, site characteristics, and management practices, and can take approximately 3-8 years for this particular forest type. If these standards haven't been met at the end of the typical regeneration period, further management may be required if having a fully stocked stand of this particular forest type is important to your objectives.

This survey was conducted at an early stage in your forest's regrowth, and meeting stocking recommendations at this time is not expected, as many of your seedlings are not yet at an established height. By looking at the Species Composition By Height Class chart, you can assess the populations of the smaller unestablished size classes to help predict how your forest will likely compare to future recommendations.

Your forest already meets this base criterion. Meeting this benchmark means that your forest is on track to become fully regenerated at this early stage. While this is a great sign, it is important to continue monitoring the status of your regrowth to make sure this trend is maintained as your forest reestablishes. With your permission, we will take follow-up measurements in a few years to better assess the stocking status.

FACTORS AFFECTING REGENERATION

Forest ecosystems are complicated, with many factors influencing which species thrive or struggle. The FRM survey assessed two common obstacles to regeneration success, plant competition and deer browse. While these two metrics are important, many other factors can affect regeneration such as disease, pests, past management, soil type, weather and climate. While the survey did not assess this multitude of factors, if future monitoring indicates problems with your forest regeneration, these other factors could be investigated further.

PLANT COMPETITION

Understory plant species are part of healthy forest ecosystems and are generally grouped into herbaceous plants (grasses and forbs) and woody plants (shrubs and smaller trees). However, these plants can take over and outcompete young trees for sunlight and nutrients. If non-tree species are dominant, they may impede the progress of regeneration. We assessed the overall percent cover of both competing groups on your property and found:

Herbaceous Plant Competition: 71% Cover

Woody Plant Competition: 52% Cover

HERBIVORE BROWSE

Browse on young trees by herbivores, particularly deer, can impede regrowth. Deer may preferentially eat certain tree species that you'd like to see in your forest, which can make it more difficult for them to succeed. Your tree species had the following browse pressures:

Species	Trees per Acre					Total	Browse Severity Index
	2in-1ft	1ft-3ft	3ft-5ft	5ft-10ft	>10ft		
Balsam Fir	0	25	25	0	0	50	None (0% Stems Browsed)
Basswood	25	50	0	0	0	75	None (0% Stems Browsed)
Big-Tooth Aspen	0	25	0	0	0	25	High (51-75% Stems Browsed)
Ironwood	0	150	150	225	25	550	None (0% Stems Browsed)
Red Maple	375	125	0	0	0	500	Low (1-25% Stems Browsed)
Red Oak	250	900	400	25	0	1,575	Low (1-25% Stems Browsed)
Red Pine	0	0	25	0	0	25	None (0% Stems Browsed)
Sugar Maple	6,350	2,050	100	0	0	8,500	Low (1-25% Stems Browsed)
White Ash	25	175	225	75	0	500	Low (1-25% Stems Browsed)
White Birch	25	50	25	0	0	100	None (0% Stems Browsed)
White Pine	125	0	0	0	0	125	None (0% Stems Browsed)
Total	7,175	3,550	950	325	25	12,025	Low (1-25% Stems Browsed)

QUESTIONS?

Thank you again for your participation in the Forest Regeneration Monitoring program! Your involvement helps us better manage Wisconsin's forests.

We may contact you in the future to coordinate a follow-up visit to assess how your regeneration has continued to progress. Survey results provide a general overview; however, a more detailed regeneration survey may be needed to more thoroughly assess your stand conditions.

For questions about these results or forest regeneration monitoring, contact the program specialist by emailing DNRFRRegenerationMonitoring@wisconsin.gov or calling

Your local Tax Law Forestry Specialist (TLFS) will be following up with you if there are any additional Managed Forest Law (MFL) concerns or additional practices needed.

ADDITIONAL RESOURCES:

For additional resources, visit the following DNR webpages at dnr.wisconsin.gov:

Forest Regeneration Monitoring: <https://dnr.wi.gov/topic/ForestManagement/regenMonitoring.html>

Forest Landowners:

<https://dnr.wisconsin.gov/topic/ForestLandowners>

Managed Forest Law:

<https://dnr.wi.gov/topic/ForestLandowners/mfl/>

Forestry Assistance Locator: <https://dnr.wi.gov/fal/>

Tree Planting:

<https://dnr.wi.gov/topic/TreePlanting/>

Tree Planting And Site Preparation Vendors:

<https://dnr.wi.gov/forestryapps/siteprepvendor>