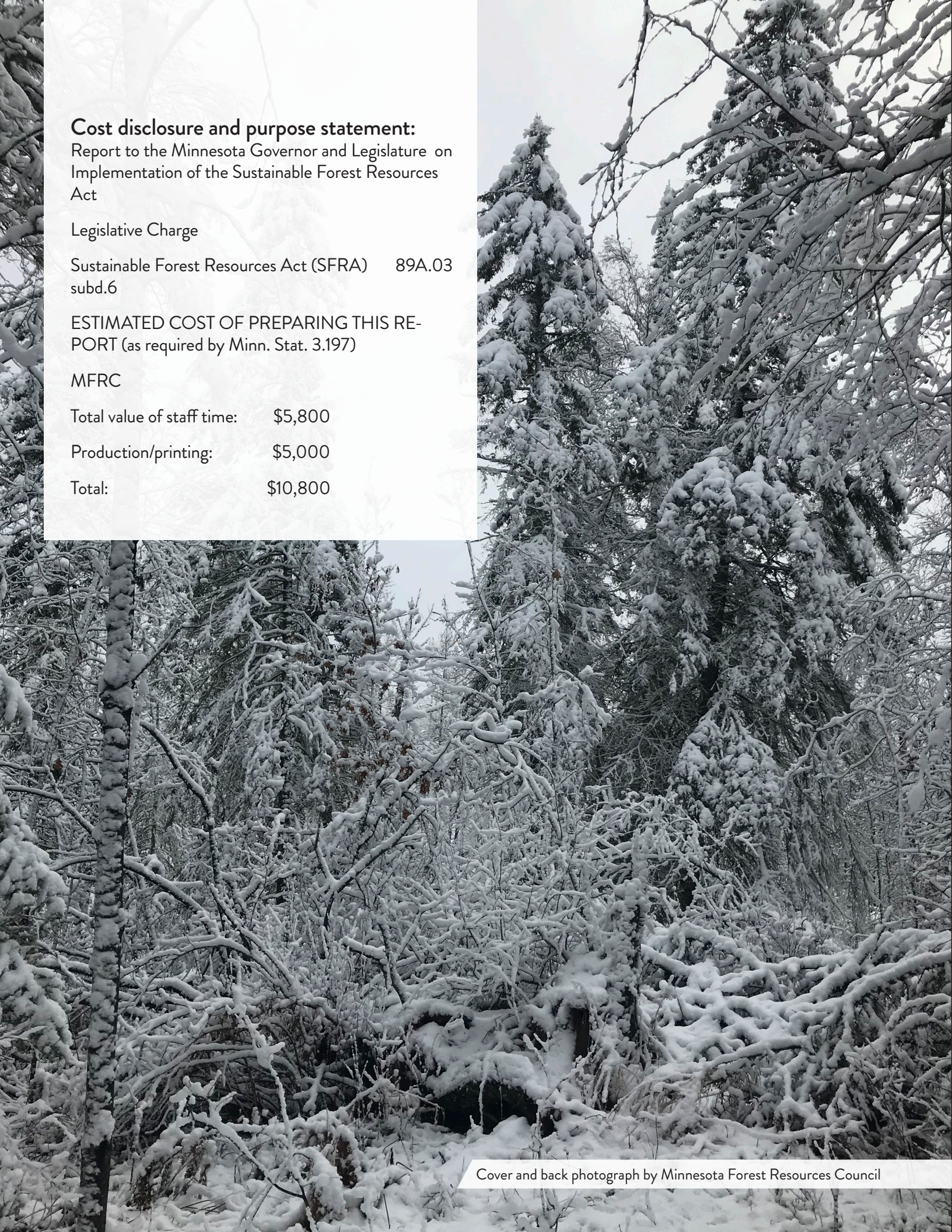


# 2021-2022 Report to the Minnesota Governor and Legislature on Implementation of the Sustainable Forest Resources Act



**Cost disclosure and purpose statement:**

Report to the Minnesota Governor and Legislature on  
Implementation of the Sustainable Forest Resources  
Act

Legislative Charge

Sustainable Forest Resources Act (SFRA) 89A.03  
subd.6

ESTIMATED COST OF PREPARING THIS RE-  
PORT (as required by Minn. Stat. 3.197)

MFRC

Total value of staff time: \$5,800

Production/printing: \$5,000

Total: \$10,800

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## MFRC CHAIR REPORT

### Addressing Minnesota's Forest Sustainability Concerns

Last year in this biennial report, your Minnesota Forest Resources Council (MFRC) highlighted its 25-year history of proactively addressing forest sustainability concerns in our state. This 2021 – 2022 biennial report chronicles the implementation of the MFRC's 5-year strategic plan, which centers around climate change and other challenges that lie ahead for Minnesota's forests.

As in the past, MFRC's statutory mission clearly directs us to balance the economic, ecological, and social values of Minnesota's forest resources. As MFRC chair, I work daily with staff and 16 Council members who represent the diverse forest stakeholder interests of our state. Together with our stakeholders we search for the "common ground" path ahead that ensures the sustainability of our forest resources for the benefit of future generations of Minnesotans.

Using the best available science, your Council seeks to better understand the threats and opportunities present in our cherished forests. At the top of this list is climate change. Climate change is anticipated to impact Minnesota forests in many ways--warmer temperatures, greater intensity storms, more frequent droughts, expanded ranges of invasive insects and tree diseases, and increasing potential for wildfire. At the same time, Minnesota forests and forest products have the power to mitigate and adapt to climate change by sequestering and storing carbon, and by offsetting emissions through the substitution of renewable, carbon-light forest products for non-renewable, carbon-intensive alternatives. As one of the most valuable tools to respond to climate change, sustainable forestry can significantly contribute to all six areas of the Minnesota Climate Action Framework. Resolutions included in this report align with the goals of the Minnesota Climate Action Framework.

In this biennial report you will learn about important steps that your Council is taking to better understand the carbon cycles of Minnesota's forests and forest products. We are working to make that information easily accessible to Minnesotans. You also will find updates on Council efforts to improve sustainable forest management across the state at the landscape and site-levels. Finally, we urge you to consider Council recommendations and proposed action steps for moving Minnesota's forests towards a more sustainable future.

Sincerely,

Pete Aube

MFRC Chair





## OUR VISION

The MFRC is a recognized leader that promotes sustainable forest policies and practices and works collaboratively to ensure ecosystems thrive, the human spirit is fed, and forest products and services meet societal needs today and into the future.

## OUR MANDATES

### Sustainable Forest Resources Act (MN Stat. 89A)

The Sustainable Forest Resources Act (SFRA), Minnesota Statutes, Chapter 89A, passed in 1995, provides a framework for state, local, and private collaboration to assure sustainable management, protection, and balanced use of Minnesota's forest resources.

SFRA established the MFRC to provide balanced and multifaceted representation of forest stakeholders from tribal, federal, state, county, and private forestland managers; forest product industries, manufacturers, and loggers; environmental, conservation and game management organizations; and higher education, tourism, and union labor interests.

The MFRC's statutory purpose is to develop recommendations to the governor and to federal, state, county, and local governments on forest resource policies and practices that further Minnesota's economic, environmental, and social goals.

The SFRA requires MFRC to develop and periodically revise comprehensive timber harvesting and forest management guidelines. These guidelines must sustainably preserve and balance the economic, ecological, and social forest values based on the best available science.

SFRA also directs the MFRC to support and guide locally led regional forest committees in landscape-level resource planning and coordination. Regional landscape committees serve as a forum for representative interest groups to collaboratively discuss and develop landscape level plans with social, economic, and ecological goals for regional and statewide forest resources. In addition the MFRC is statutorily responsible for providing oversight and direction to the commissioner of the Department of Natural Resources on monitoring forest conditions and trends.

*White oak barrels manufactured from sustainably grown and locally harvested wood are just one example of the more than 700 diverse lumber, wood product, millwork, and wood furniture businesses in Minnesota.<sup>11</sup>*

<sup>11</sup> Minnesota Department of Natural Resources (2022). Minnesota's Forest Products Industry at a Glance. Fact Sheet. Minnesota Department of Natural Resources Division of Forestry, St. Paul, MN. <https://files.dnr.state.mn.us/forestry/um/mn-forest-industry-fact-sheet.pdf>

The Research Advisory Committee (RAC), also established by SFRA, is appointed by the MFRC for the purpose of identifying and initiating priority forest resources research activities. The RAC determines strategic direction of forest resources research, disseminates research findings, and facilitates forums to increase communications between those conducting forest resources research and the users of such information.

### 2021 SFRA Reauthorization

With the unanimous support and upon the full recommendation of the MFRC, Minnesota legislators voted to reauthorize the Sustainable Forest Resources Act in 2021 by extending its "Sunset" provision to June 30, 2028. The reauthorization legislation was signed and adopted into law by Governor Tim Walz (June 29, 2021).





## 2021 – 2022 MFRC PROGRAM HIGHLIGHTS

### Minnesota Climate Action Framework

In early 2021, Governor Tim Walz and Lieutenant Governor Flanagan’s Advisory Council on Climate Change and the administration’s Climate Advisory Committee began soliciting stakeholder and public input on Minnesota’s Climate Action Framework. The purpose of the action framework is to create a vision for how Minnesota will respond to and prepare for climate change. The framework identifies immediate and near-term actions to achieve a long-term goal of a carbon-neutral, resilient, and equitable future for Minnesota.<sup>2</sup>

Guided by its own 2020 report “Climate Change and Minnesota’s Forests”, MFRC members individually and collectively participated in Climate Action Framework committees designed to provide stakeholder input and recommendations.<sup>3</sup> MFRC provided substantial input in the development of the goals and actions in the “Climate Smart Natural and Working Lands” section of the document. Using the definitions contained in the action framework, natural and working lands include agricultural lands, forestlands, and other natural lands such as wetlands.

The 2035 climate action framework objective is to increase the amount of carbon sequestered and stored annually in natural and working lands by 25% compared to 2014-2018 average levels. Specific forestry sector action strategies include maintaining, expanding, and actively managing forestland; and promoting forest products that store carbon and reduce GHG emissions. Furthermore, the framework recognizes that increasing carbon sequestration and storage in forests and harvested wood products is uniquely significant for negatively offsetting carbon dioxide (CO<sub>2</sub>) emissions from other Minnesota sectors. The Minnesota Pollution Control Agency (MPCA) 2021 biennial greenhouse gas emissions reduction report credits forest regrowth as offsetting increases in emissions from crop and livestock agriculture (Figure 1)<sup>a</sup>. While no predictable trend was found, the authors note that forest carbon increased between 2005 and 2018.

<sup>2</sup> <https://climate.state.mn.us/minnesotas-climate-action-framework>

<sup>3</sup> <https://mn.gov/frc/>

<sup>a</sup> <https://www.pca.state.mn.us/sites/default/files/Iraq-1sy21.pdf>

In 2018, MPCA estimated that forest regrowth sequestered almost 9 million tons of carbon dioxide equivalents.

- Electricity Generation: Fuel combustion, emissions from electricity consumption in Minnesota, including electricity imported to meet demand.
- Transportation: Fuel combustion in gasoline and diesel vehicles, aviation, rail, air conditioning leakage, natural gas pipelines.
- Agriculture and Land use: Livestock flatulence, animal feedlots and manure management, fertilizer use, crop cultivation, fuel combustion, sequestration of carbon in forest regrowth.
- Industrial: Fuel combustion, taconite processing, petroleum refining, magnesium casting, lead recycling, and manufacturing steel, glass, insulating foam, and semiconductors.
- Residential: Fuel combustion (space and water heating, dryers), fertilizer and product use, carbon storage in housing material, air conditioner and refrigerator leakage.

### 2018 Minnesota Greenhouse Gas Emissions and Sequestration by Economic Sector

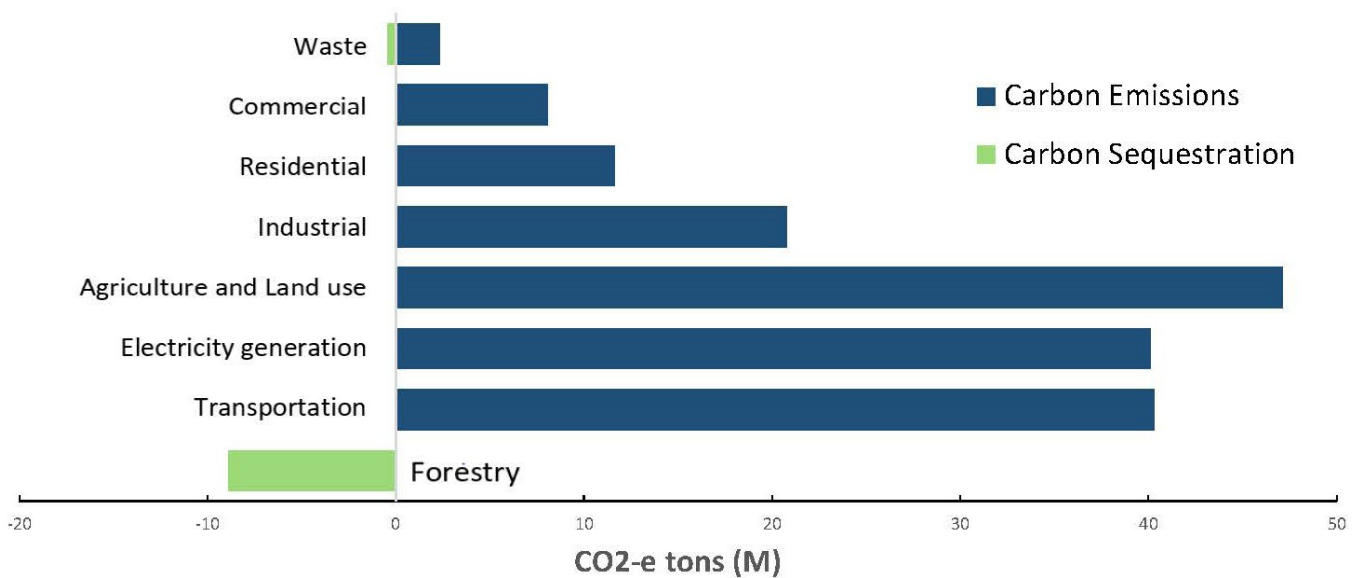


Figure 1: Minnesota Pollution Control Agency Greenhouse Gas Emission Data (Adapted by MFRC 2022)<sup>4</sup>



<sup>4</sup> Minnesota Pollution Control Agency. "Greenhouse Gas Emissions (CO2-e Tons) by Sector, Activity, Source, GHG and Year." Greenhouse Gas Emissions Data, Tableau.com, 1 Jan. 2021, public.tableau.com/app/profile/mpca.data.services/viz/GHGemissioninventory/GHGsummarystory. Accessed 4 Jan. 2023.



# SUSTAINABLE FOREST POLICY RECOMMENDATIONS

MFRC offers recommendations on sustainable forest management policies, programs, plans and practices in many different forms. When sharing sustainable forest management policy recommendations with the Governor or Legislature, most often the MFRC does so in the form of a resolution. During the 2021-2022 Biennium, MFRC approved the following three policy resolutions. Full copies of the resolutions are provided in Appendix 1.

## Minnesota Forest Resources Council Resolution 2022-1

### *“Supporting Minnesota’s Climate Change Goals Through Development of Sustainable Forest Products Markets”*

This resolution supports expanded Minnesota markets for forest and mill residuals, and other types of sustainably harvested woody biomass, encourages the inclusion of woody feedstocks in statewide fuel or energy standards, and supports broadly available production incentives for renewable biofuels derived from woody biomass or other bioenergy feedstocks.

The resolution also commits MFRC to develop an action and communications strategy to further align new market development and sustainable forest management by: a) evaluating appropriate sources of “woody biomass” or “forest residuals”; b) describing how harvesting of these materials acknowledges Tribal treaty rights while integrating with existing forest management plans, timber harvesting guidelines, and forest certification standards; and c) recommending policies and strategies for attracting new markets that align with the state’s management objectives.

## Minnesota Forest Resources Council Resolution 2022-2

### *“Contributing to Minnesota’s Climate Change Goals by Increasing Minnesota Nursery Capacity”*

This resolution recommends enhancing nursery capacity in both State run and privately owned forest nurseries by: a) upgrading State Forest Nursery facilities by 2027, to produce both containerized and bare-root seedlings; b) increasing State Forest nursery production to 10 million trees per year by 2027, double capacity again by 2032, and plant up to 1 million acres

of new forest by 2050; c) Providing long-term contracts and other incentives to support the expansion of private nursery operations.

It also recommends enhancing tree seedling capacity, production, and delivery associated with seven specific actions.

## Minnesota Forest Resources Council Resolution 2022-4

### *“Supporting Minnesota’s Informational Needs for Sustainable Forest Resource Management, Products and Policies”*

This resolution recommends an annual appropriation to MFRC for securing immediate and priority information and research as determined by the MFRC’s 17 stakeholder representatives.



# LANDSCAPE PLANNING AND COORDINATION

With the Sustainable Forest Resource Act (SFRA), the MFRC has a framework and leadership structure for inclusive, locally driven, regional landscape planning for sustainable forest management across Minnesota. Local and regional stakeholders work together to strategically plan and collaborate on sustainable forest management across all landownership types (state, federal, private industrial, and family forests) across six regional landscape areas. While MFRC provides facilitation and support, the program is voluntary, grassroots, and incorporates the broad variety of interests and perspectives on forest management and forest resource issues. The regional committees operate in an open and public process to identify goals, challenges, and solutions to Minnesota’s evolving landscape. The committees also provide critical feedback to the MFRC on regional and statewide issues and opportunities.

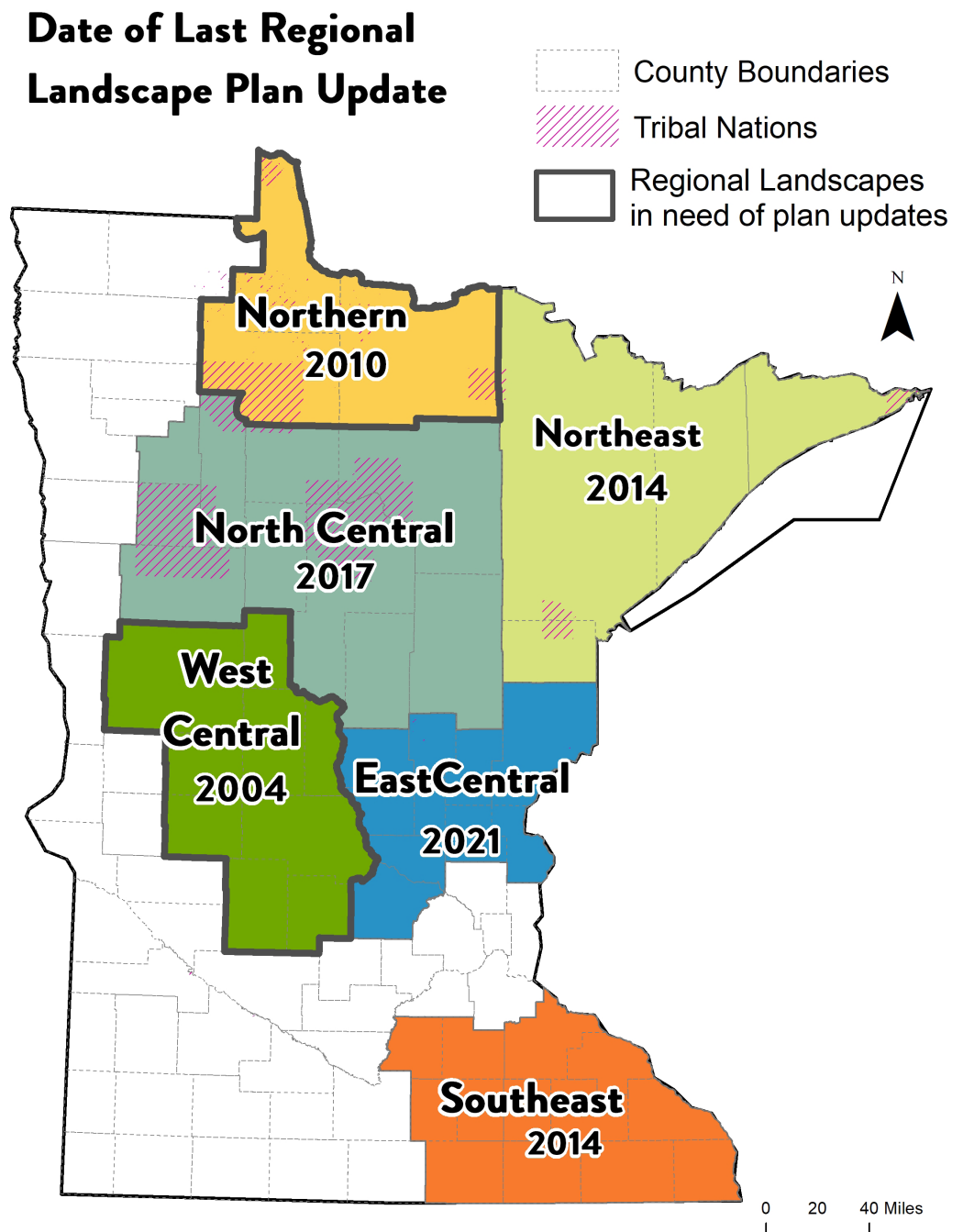
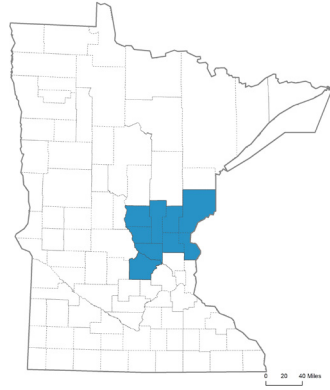


Figure 2: Current and relevant regional landscape plans are vital, as they are integrated into county and state plans. Regional landscape plans provide direction for sustainable forest management implementation. Updates are needed on the Northern and West Central landscape plans, whose current plans age back to 2010 and 2004 respectively.



## REGIONAL LANDSCAPE COMMITTEE ACCOMPLISHMENT HIGHLIGHTS

Despite complications from COVID-19 and the vacancy of a MFRC Landscape Coordinator, several landscape committees continued to meet, share information, and coordinate on forest resource management.

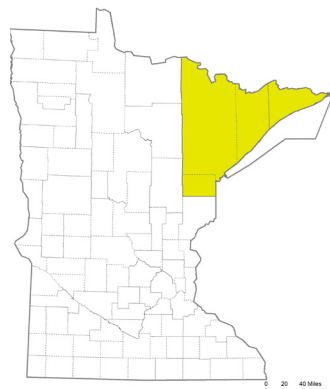
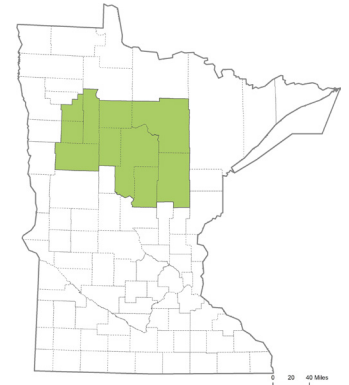


### East Central

The East Central Committee completed their 2nd generation landscape plan via a series of virtual meetings throughout 2021. First to include climate mitigation and management considerations, this plan sets the standard for all future landscape plans.

### North Central

The North Central committee also is rebuilding after a change in leadership. With the onboarding of the new MFRC landscape coordinator, and appointment of a new committee chair, the committee is re-establishing and recruiting membership for continued collaboration on landscape plan implementation.

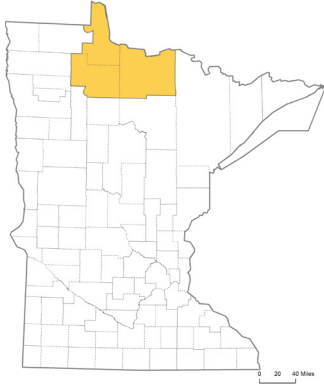


### Northeast

The Northeast Committee has largely focused on the Arrowhead Collaborative Project in northern St. Louis County.<sup>5</sup> The Arrowhead Collaborative is a large-scale cross-boundary effort to coordinate forest management across state, federal, county, tribal, and private lands. MFRC in partnership with the Minnesota Interagency Information Cooperative (IIC) created an ArcGIS online shared forest data visualization/mapping tool to facilitate planning by this project team. Staff from the US Forest Service's Superior National Forest and the Northern Institute of Applied Climate Science led the group through a climate adaptation workbook exercise to identify areas of climate vulnerability.<sup>6</sup> The group identified potential adaptation actions in strategic locations that could be implemented and will carry forward a detailed interactive planning session as the next steps.

<sup>5</sup> <https://storymaps.arcgis.com/stories/048cab35ade9479faf11853174e65fae>

<sup>6</sup> <https://adaptationworkbook.org/>

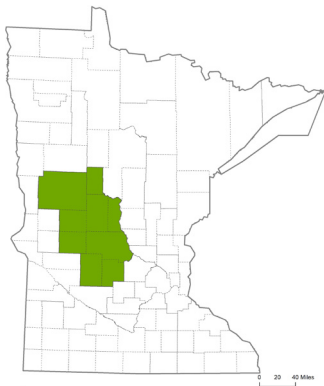
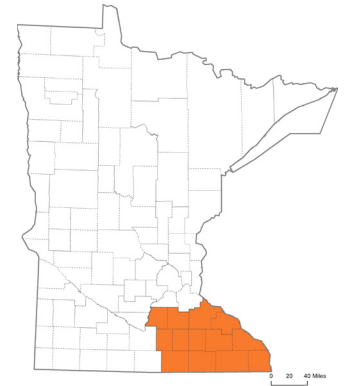


## Northern

The Northern Committee is preparing for a landscape plan update, completing a survey of committee members in 2021. The survey will be used to guide the next generation of landscape planning. This committee also organized several trainings on a broad range of topics including cultural and scientific knowledge, private forest management, forest health, and biochar. Committee members have spent considerable time with emergency response, first to severe and exceptional drought in 2021 then to severe flooding on Lake Kabetogama and Rainy River in 2022.

## Southeast

The Southeast Committee advocated for specific practices within the Conservation Reserve Enhancement/Reinvest in Minnesota program to benefit forest bluff edges and submitted a grant proposal to the US Forest Service Landscape Scale Restoration program. If awarded, the funds will be utilized to secure and strategically invest in forestland protection through the Minnesota Board of Water and Soil Resources (BWSR) One Watershed One Plan (1W1P) program and state Legacy funds.



## West Central

West Central Committee is rebuilding after a change in leadership. Informally they have continued collaboration on their regional plan strategic policy framework by providing advocacy for initiatives aligning with their regional plan. They advocated for The Nature Conservancy's Million Acre Initiative, enrollment changes to Sustainable Forests Incentives Act, and the DNR Climate Smart Tree Seed Procurement proposal as part of the Climate Smart provisions of the Farm Bill.



## Forest Metrics Dashboards

Regional landscape committees are increasingly interested in monitoring and tracking progress toward regional goals. In 2020 the MFRC, in collaboration with the Interagency Information Cooperative (IIC), created user-friendly statewide and regional summaries of forest inventory and forest carbon resources. Summaries contain graphical, interactive charts of forest dynamics and carbon storage in Minnesota's forests presented as interactive "dashboards" on the MFRC regional landscape committee webpages.<sup>7</sup>

IIC developed the forest metrics dashboard using the USDA Forest Service Forest Inventory and Analysis Program (FIA) data and summarized in graphical format

for Minnesota.<sup>8</sup> Trends are summarized from 2003-2019 (Figure 3).

The forest carbon dashboard was developed as a graphical representation of the MFRC report "Carbon in Minnesota's forests: current status and future opportunities", which summarizes Minnesota forest carbon sequestration, estimates of carbon pools, and greenhouse gas emissions and removals from FIA and FIA-derived data summaries for Minnesota.<sup>9,10,11,12</sup> Data is displayed statewide and by region from 1990-2019.

MFRC is investigating the use of these dashboards and other tools that will foster results-driven, goal-focused planning and collaboration.

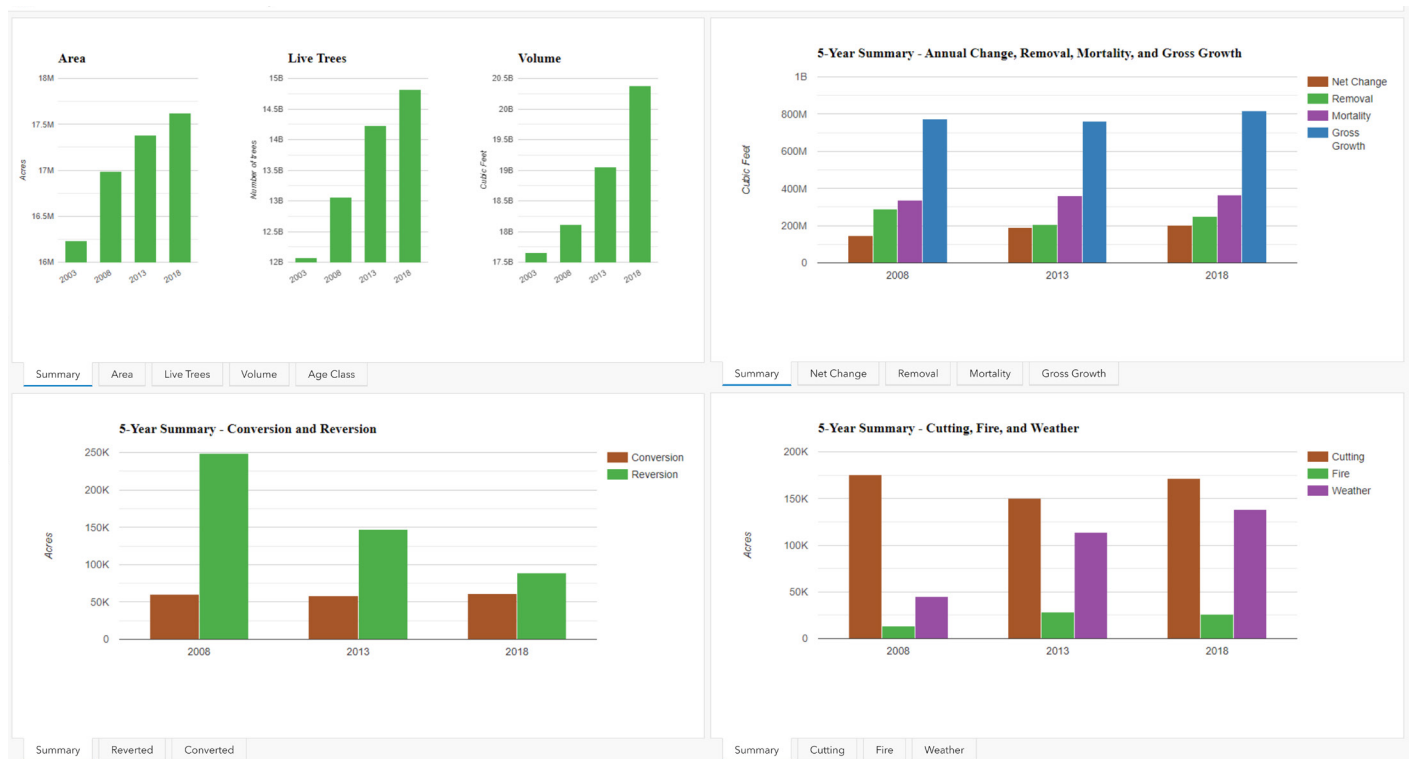


Figure 3: Screenshot of the MFRC forest metrics dashboard located on the Regional Landscape committee page. The dashboard shows forest area, change, growth, conversion/reversion, and disturbance over time.

<sup>7</sup> <https://mn.gov/frc/landscape/ec/>

<sup>8</sup> USDA Forest Service. 2020. Forests of Minnesota, 2019. Resource Update FS-232. Madison, WI: U.S. Department of Agriculture, Forest Service. 2p. <https://doi.org/10.2737/FS-RU-232>

<sup>9</sup> Domke, G.M., B.F. Walters, D.J. Nowak, J.E. Smith, M.C. Nichols, S.M. Ogle, J.W. Coulston, and T.C. Wirth. 2021. Greenhouse gas emissions and removals from forestland, woodlands, and urban trees in the United States, 1990-2019. Resource Update FS-307. Madison, WI: U.S.

<sup>10</sup> Russell, M., C.B. Edgar, M. Windmuller-Campione, R.L. Moser, E. Sagor, J. Nolan, J. Zobel, and C. Babcock. 2022. Carbon in Minnesota's forests: current status and future opportunities. A report prepared for the Minnesota Forest Resources Council. University of Minnesota, Department of Forest Resources, St. Paul, MN. <https://carbon.umn.edu>

<sup>11</sup> USDA Forest Service (2022). Forest Inventory and Analysis Program, Forest Inventory EVALIDator web-application Version 1.8.0.01. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. Available online at: <http://apps.fs.usda.gov/Evalidator/evalidator.jsp>

<sup>12</sup> Walters, Brian F.; Domke, Grant M.; Nowak, David J.; Smith, James E.; Ogle, Stephen M. 2021. Greenhouse gas emissions and removals from forestland, woodlands, and urban trees in the United States, 1990-2019: Estimates and quantitative uncertainty for individual states. Fort Collins, CO: Forest Service Research Data Archive. <https://doi.org/10.2737/RDS-2021-0035>

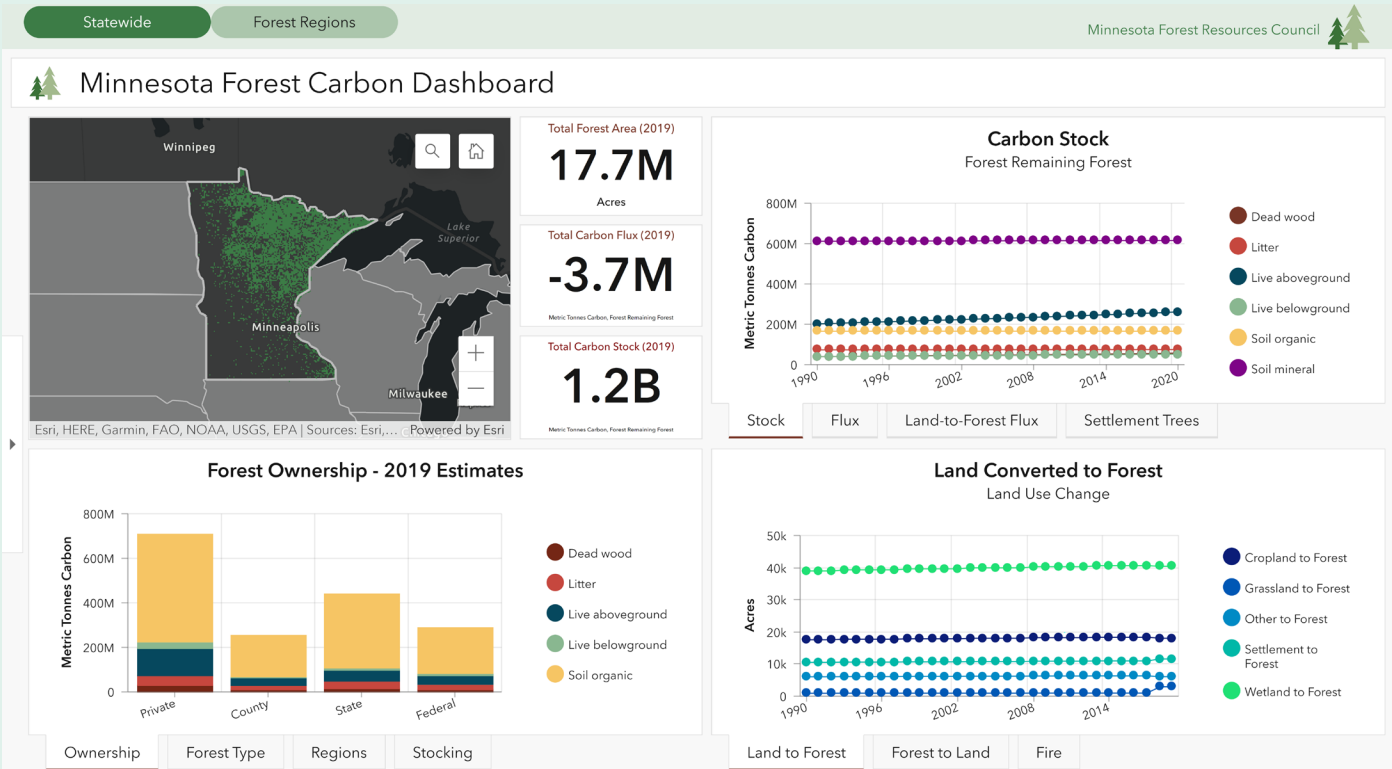


Figure 4: Screenshot of the MFRC Carbon Dashboard located on the Regional Landscape committee pages. The dashboard can be utilized to see where Minnesota's forest carbon is located by region, ownership, forest type, and component of the forest.

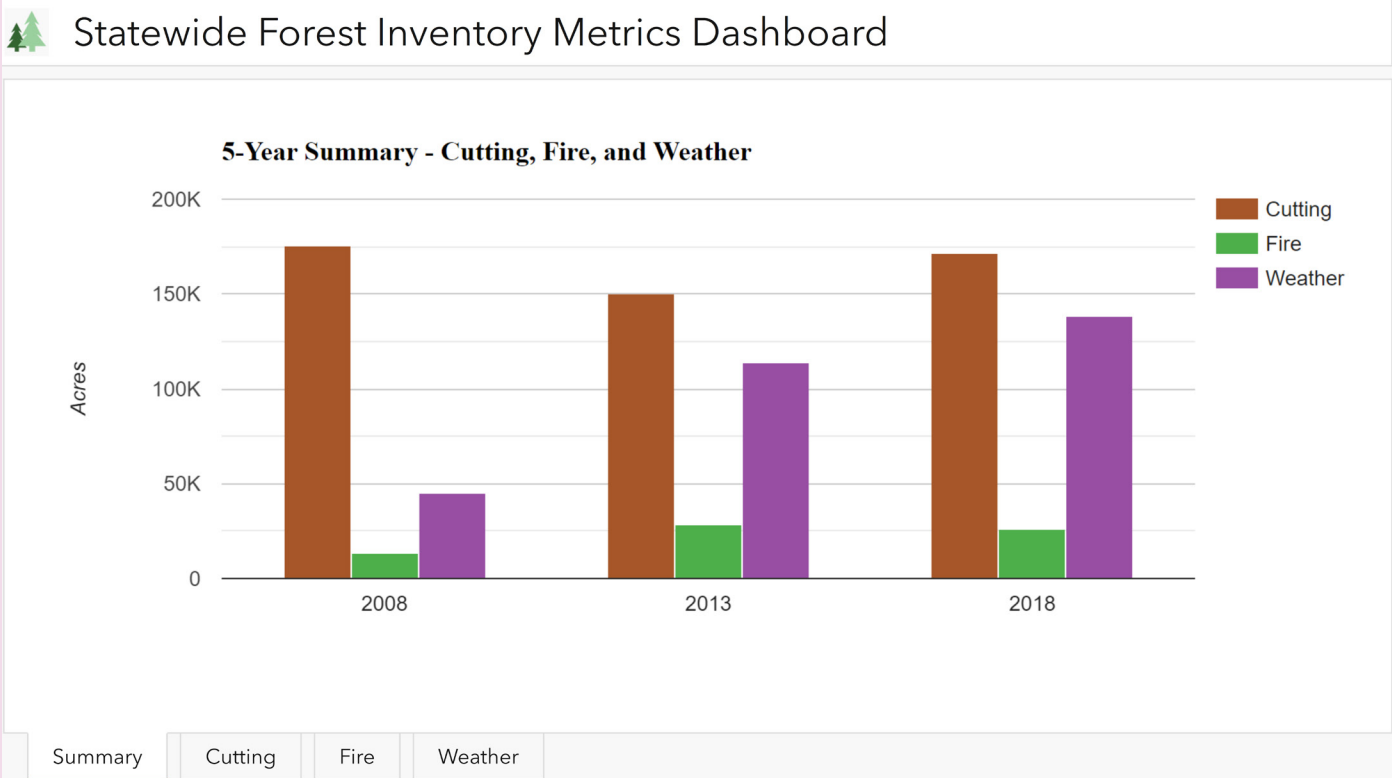


Figure 5: The MFRC Regional Landscape pages now contain statewide and regional interactive graphical summaries of Forest Inventory Data, such as disturbance through cutting, fire, and weather.

## Regional MFRC Landscape Plan Integration into Watershed Plans

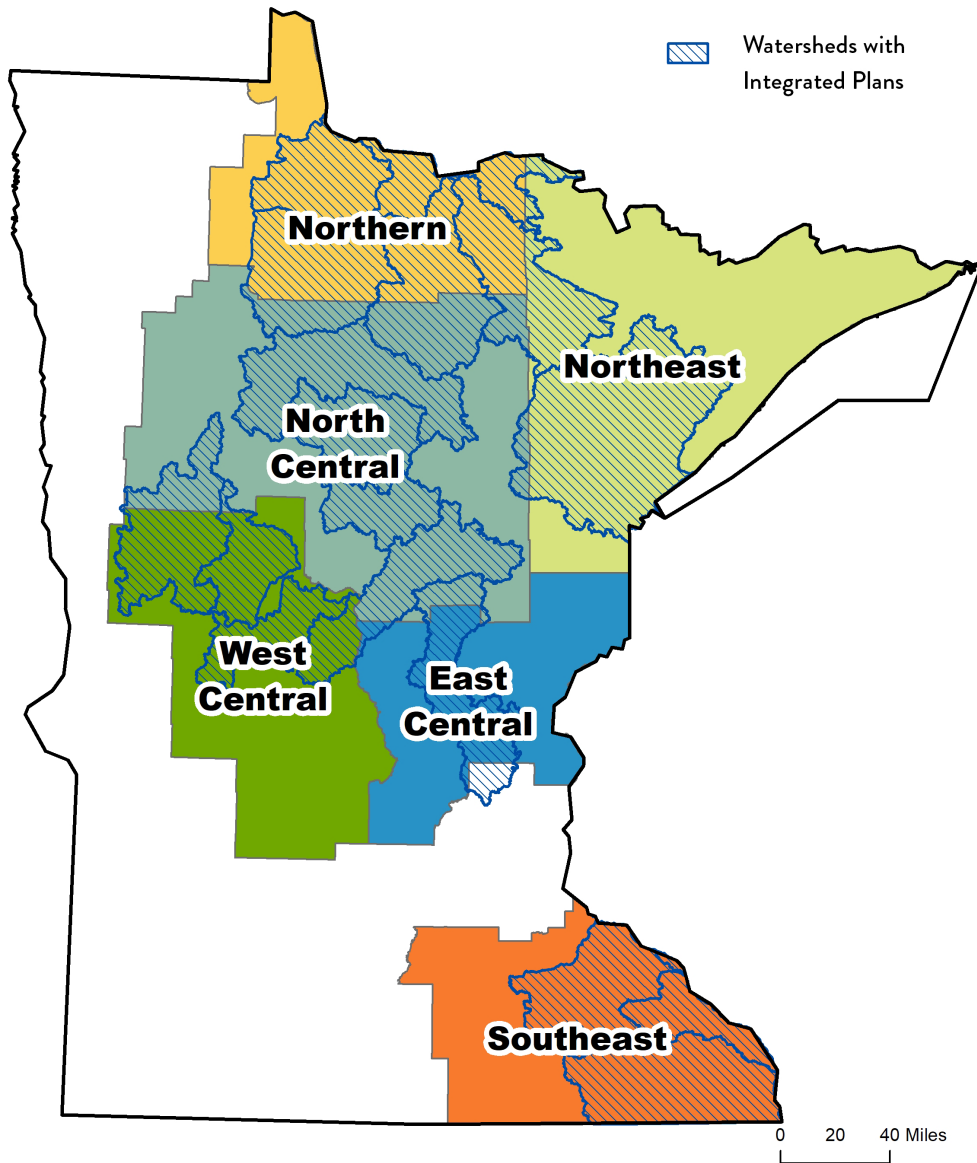


Figure 6: Many MFRC regional committees report actively integrating their MFRC Regional Landscape Plans into water quality protection and restoration efforts through One Watershed One Plan.

Over the past several years there has been an increasing awareness of the connection between intact well-managed forests and clean water. This awareness highlights the importance of private land management and conservation on overall ecosystem health in forested landscapes. The 2020 Minnesota State Forest Action Plan notes a key strategy for private forest management is through Landscape Stewardship Plans (LSP) as part of the Board of Soil and Water Resources (BWSR) One Watershed One Plan (1W1P) efforts.<sup>13,14</sup> In the last two

years, several committees reported working with soil and water conservation districts and private forest management practitioners to implement their regional landscape plan on private forestlands. Figure 6 shows watersheds where regional landscape plans are being integrated into watershed analysis, planning, and implementation.

<sup>13</sup> <https://www.dnr.state.mn.us/forestry/forest-action-plan.html>

<sup>14</sup> <https://bwsr.state.mn.us/one-watershed-one-plan>

## MFRC Private Land Working Group

In September of 2022, MFRC coordinated a gathering of the key organizations who work and interact with private family forests owners. The purpose of the meeting was to prompt discussion on solutions related to the inclusion of and engagement with private family forest-landowners in sustainably managing Minnesota's forests, and to determine what role the MFRC can serve to aid in supporting those solutions. The group also reviewed and discussed the 2015 DNR System Framework for Minnesota Family-Owned Forests.

The meeting was very well attended by representatives from over 12 different organizations including Minnesota DNR, Minnesota Association of Soil and Water Conservation Districts, Minnesota Extension Office, Minnesota Forestry Association, Minnesota Tree Farm, private consulting foresters, The Nature Conservancy, and the USDA Natural Resources Conservation Service.

Attendees discussed current forest management challenges including the lack of oversight and consistency in voluntary market carbon credit programs, an aging forest industry workforce, need for tracking management activities on private lands, complex cost-sharing programs, and need for improved connection with private landowners. Several successes and opportunities were also considered including the forest management and protection conducted as part of Board of Soil and Water Resources (BWSR) One Watershed One Plan, the increasing emphasis on forest and carbon sequestration, collaboratively outreach to landowners, and improved and targeted messaging through the University of Minnesota Extension. MFRC plans to reconvene several members of this working group to facilitate discussion and support agencies and practitioners implementing private forestland management throughout Minnesota.



*DNR Cooperative Forest Management Supervisor, Gary Michael presenting how private forest management is integrated into watershed protection and restoration efforts.*



## SITE-LEVEL FOREST MANAGEMENT GUIDELINES

A full review of the voluntary site-level forest management guidelines (FMGs) was initiated in 2020 and was concluded during the summer of 2022. The MFRC Site-Level Committee implemented a three-prong approach in the review of the FMGs, which included the following three steps:

1. A survey of stakeholder perceptions of FMG effectiveness and implementation during the summer of 2020 and spring of 2021.
2. Quantification of FMG implementation using guideline monitoring results from 2014 – 2018 and 2020 – 2021 monitoring periods.
3. A comprehensive literature review, which was open for citation submissions from the public through April 2022, to identify advances in research related to the FMGs.

As of August 2022, the Site-Level Committee had completed the three-prong review process and is now pivoting to create recommendations for FMG revisions, clarifications, and education/training improvements that will continue into the next biennium. The Site-Level Committee and MFRC staff evaluated the information collected through the three-prong FMG review process with the objective to determine appropriate actions for each topical section of the FMGs (e.g., no action, minor language clarifications, education improvements, major revisions).

At this time, no topical sections have been identified as needing major modifications. Minor modifications to clarify language, update information, or provide additional photos will be made as necessary throughout the FMGs.

However, some sections require further investigation and review as identified during the review process. The topical sections identified as needing further investigation and review during the 2023-2024 biennium are as follows:

1. Riparian management zones (RMZs)
2. Leave trees
3. Invasive species
4. Climate change and carbon (proposed as new information to be added)

Review of the topical section(s) needing further investigation may include peer review of proposed additions and/or minor revisions and consultation with experts in fields related to these topical sections. Further investigation of these topics may also require additional consultation with the Research Advisory Committee and/or the Ad Hoc Committee on Climate Change and Carbon.

The results of monitoring suggest that insufficient training and education contribute to lower implementation/compliance of some FMGs, not the content of the FMGs as written. A need to re-emphasize FMG education programs to practicing foresters as well as loggers was identified in addition to increasing the availability of field training opportunities when possible. MFRC staff and the Site-Level Committee will work with education programs such as the Sustainable Forests Education Cooperative and Minnesota Logger Education Program to increase and improve available trainings, especially for sections of the FMGs that had low implementation rates during monitoring.

MFRC staff are also working to improve the accessibility of the electronic version of the FMGs and to make the FMGs suitable for use on a smart phone or tablet. Accessibility improvements which enable access by screen readers and improve visual clarity will make the FMGs adhere to the state guidelines for accessible documents and websites. They will also increase ease of navigation throughout the document. These improvements involve updating hyperlinks throughout the FMGs and converting the format to adhere to accessibility guidelines.

## Guideline Monitoring Program

The SFRA (Minnesota Statutes, section 89A.07, subd. 2) charged the DNR Commissioner to establish a program for monitoring silvicultural practices and application of the timber harvesting and forest management guidelines at statewide, landscape, and site scales. In 2013, the program was modified by focusing harvest site monitoring at the eight-digit hydrologic unit code (HUC-8) watershed scale. MFRC provides oversight and program direction for the development and implementation of the monitoring program. Monitoring is an important aspect of the MFRC Site-Level Program by providing information for guideline revision and targeted outreach. Monitoring of the implementation of the Voluntary Site-Level Forest Management Guidelines (FMGs) continues to be an extremely valuable tool in the revision process. Overall implementation and compliance is high across the FMG topical sections. The 2020 – 2021 monitoring report is posted on the MFRC website.<sup>15</sup> Monitoring results are being used to inform decisions related to the revision of the FMGs and to determine any potential educational needs that can improve implementation and compliance to the guidelines.



## APPLIED FOREST RESEARCH AND REPORTS

One of the legacies of the MFRC is an on-going series of applied forest research, studies, and reports addressing important sustainable forest resource topics. The MFRC maintains a library of these accessible to the public on the MFRC website.<sup>16</sup> During this biennium, the MFRC contracted with the University of Minnesota (UMN) and UMN's Interagency Information Cooperative to produce *“Carbon in Minnesota's Forests: Current Status and Future Opportunities.”*<sup>17</sup>

In addition to providing a conceptual overview of forest carbon sequestration, storage, cycles, and trends, the research shared in the UMN carbon report simulated the carbon outcomes of different forest management scenarios associated with four important forest types in Minnesota: red pine, aspen, mesic hardwood, and oak. The scenarios included “business as usual,” a climate adaptation management approach, and a no management alternative. The simulations for business as usual and climate adaptation management scenarios also included

assessments of carbon outcomes associated with harvested wood over 100-year or 150-year time periods.

The carbon report also provided an overview of carbon markets in Minnesota and included a focus group study of the top ranked carbon strategies as viewed by federal, state, county, tribal, industry, and non-profit forestry professionals. Perhaps most importantly, the UMN carbon report identified nine forest carbon informational needs to be considered by the MFRC. The MFRC ranked these informational needs and identified the top three as: 1) understanding the carbon outcomes of different forest management and forest product scenarios using carbon life cycle assessments; 2) developing a forest carbon baseline for Minnesota that is easily understood and tracks future carbon stocks and emissions; and 3) a comprehensive study of carbon markets associated with Minnesota and their potential consequences for sustainable forest resources.

<sup>15</sup> [https://mn.gov/frc-stat/docs/Site-level\\_Monitoring\\_Report\\_2020\\_2021\\_Final\\_Accessible.pdf](https://mn.gov/frc-stat/docs/Site-level_Monitoring_Report_2020_2021_Final_Accessible.pdf)

<sup>16</sup> <https://mn.gov/frc/reports/>

<sup>17</sup> [https://mn.gov/frc/assets/Carbon\\_in%20Minnesota\\_10\\_June\\_2022\\_tcm1162-531123.pdf](https://mn.gov/frc/assets/Carbon_in%20Minnesota_10_June_2022_tcm1162-531123.pdf)



### **Carbon Stocks and Emissions in Minnesota Forests and Forest Products Study**

In November, the MFRC committed \$350,000 for a research study to assess carbon stocks and emissions in Minnesota forests and forest products. The study will conduct a “cradle to grave” carbon life cycle assessment of different forest management and forest product scenarios. In addition, the study will develop a forest carbon baseline as described by University of Minnesota’s 2022 carbon report. The MFRC plans to select a recipient for the grant in early 2023 with the expectation that the study will be completed by June 30, 2024.

### **Communication Committee**

During the biennium, the MFRC formally established a Communication Committee and updated its committee charters reflecting the goals and objectives set forth in the MFRC 2020 Strategic Plan. The Communication Committee provides overall leadership, direction, and oversight of the MFRC website, newsletters, and other communication actions. This Committee also supports and assists individual MFRC members’ outreach to their respective stakeholder groups. A copy of MFRC Resolution 2021-3 on Committee charters and procedures and description of the Communication Committee purposes is available on the MFRC website.<sup>2</sup>

## PUBLIC CONCERNS REGISTRY

The SFRA mandated the creation of a Public Concerns Registration Process (PCRP), MN Statutes 89A.07, Subd. 5) to accept comments from the public on timber harvesting or forest management practices. The process is initiated when a citizen reports a concern about a specific activity that they have observed via the PCRP hotline (1-888-234-3702) or by using a web form on the MFRC website. A third-party professional forester may inspect the site to determine if the reported activity has deviated from MFRC's recommended management or harvesting guidelines.

PCRP encourages sustainable management of Minnesota's forests through education. The PCRP is not a regulatory or dispute resolution program. Instead, landowners, loggers, and foresters become more aware of public concerns regarding forest management, and citizens learn about guidelines for sustainable forest management.

In 2021, the MFRC updated its PCRP protocol to include a review of sustainable forest certification status and involvement of certified organizations in the PCRP if the site is found to be certified. The names of the involved parties and other report details continue to be handled in a confidential manner. A full copy of MFRC Resolution 2021-2 is available on the MFRC website.<sup>18</sup>

During the biennial period (2021-2022), MFRC received six inquiries or concerns registered by public citizens. Three of these were determined to be outside the scope of this program. Three resulted in an investigation by a consulting forester. Investigations resulted in both written and verbal communication with citizens and involved parties providing educational materials and recommendations on opportunities for improved forest management guideline implementation. PCRP annual reports are available on MFRC's website.<sup>19</sup>



## INTERAGENCY INFORMATION COOPERATIVE

The Interagency Information Cooperative (IIC) is operated under the oversight of the University of Minnesota Dean of the College of Food, Agricultural, and Natural Resources Sciences following guidance provided by the Sustainable Forest Resources Act (SFRA). The purpose of the IIC is to coordinate the development and use of forest resources data and information in the state. During the biennium, MFRC provided funding to IIC for the aforementioned forest metrics and forest carbon dashboards created for use by the regional landscape program.

In addition, the IIC provided technical support to the Arrowhead Pilot Project located within the Northeast Regional Landscape. IIC assisted Arrowhead working groups in accessing and using the project's online GIS data portal. The IIC also assisted individuals with registration and access to the portal. Instructional materials were developed on using the portal and distributed among project working groups and individuals in a variety of modes. Finally, IIC staff provided technical assistance to the team developing a "Story Map" for the project.<sup>20</sup>

<sup>18</sup> [https://mn.gov/frc/assets/2021-2\\_MFRC%20Resolution\\_PCRP%20Procedures\\_SIGNED\\_tcm1162-516600.pdf](https://mn.gov/frc/assets/2021-2_MFRC%20Resolution_PCRP%20Procedures_SIGNED_tcm1162-516600.pdf)

<sup>19</sup> [https://mn.gov/frc/assets/2022\\_PCRP%20Report%200822\\_2022\\_tcm1162-540029.pdf](https://mn.gov/frc/assets/2022_PCRP%20Report%200822_2022_tcm1162-540029.pdf)

<sup>20</sup> <https://storymaps.arcgis.com/stories/048cab35ade9479faf11853174e65fae>





## MEET THE MFRC

### **Pete Aube**

Chair

### **Kim M. Berns-Melhus**

Environmental Organizations Representative

### **Forrest Boe (Retired 2022)**

Department of Natural Resources Representative

### **Kory Cease**

County Land Department Representative

### **Connie Cummins (Retired 2022)**

USDA Forest Service Representative

### **Craig Engwall**

Game Species Management Organizations Representative

### **Janet Erdman**

Nonindustrial Private Forestlandowners Representative

### **Katie Fernholz**

Environmental Organizations Representative

### **Rick Horton**

Forest Products Industry Representative

### **Keith Karnes**

Minnesota Indian Affairs Council Representative

### **Mike Kilgore**

Research and Higher Education Representative

### **Jim Manolis**

Conservation Organizations Representative

### **Bob Owens**

Secondary Wood Products Manufacturers Representative

### **Scott Pittack**

Commercial Logging Contractors Representative

### **Kathleen Preece**

Nonindustrial Private Forestlandowners Representative

### **Deb Theisen**

Resort and Tourism Industry Representative

### **Tim Wegner**

Labor Organizations Representative



## MFRC STAFF

**Eric Wolf Schenck**  
Executive Director

**Jaimé Thibodeaux**  
Landscape Program Coordinator

**Sadie Mathison**  
Information Specialist

**Dick Rossman**  
Forestry Guideline Monitoring Program Coordinator

**Anna Stockstad**  
UMN Researcher 4 – Under contract

## MFRC RELATED PUBLICATIONS

Russell, M., C.B. Edgar, M. Windmuller-Campione, R.L. Moser, E. Sagor, J. Nolan, J. Zobel, and C. Babcock. 2022. **Carbon in Minnesota's forests: current status and future opportunities. A report prepared for the Minnesota Forest Resources Council.** University of Minnesota, Department of Forest Resources, St. Paul, MN. <https://carbon.umn.edu>

Moser, R.L., Windmuller-Campione, M.A., Russell, M.B. **Natural Resource Manager Perceptions of Forest Carbon Management and Carbon Market Participation in Minnesota.** *Forests* 2022, 13, 1949. <https://doi.org/10.3390/f13111949>

Stockstad, A.B., Slesak, R.A., Toczydlowski, A.J., Blinn, C.R., Kolka, R.K., Sebestyen, S.D. 2022. **The effects of combined throughfall reduction and snow removal on soil physical properties across a drainage gradient in aspen forests of northern Minnesota, USA.** *Forest Ecology and Management*, Volume 524, 120538, ISSN 0378-1127, <https://doi.org/10.1016/j.foreco.2022.120538>.

Stockstad, A.B.; Slesak, R.A.; Toczydlowski, A.J.; Blinn, C.R.; Kolka, R.K.; Sebestyen, S.D. **Limited Effects of Precipitation Manipulation on Soil Respiration and Inorganic N Concentrations across Soil Drainage Classes in Northern Minnesota Aspen Forests.** *Forests* 2022, 13, 1194. <https://doi.org/10.3390/f13081194>







**Minnesota Forest Resources Council Resolution 2022-1**  
**“Supporting Minnesota’s Climate Change Goals**  
**Through Development of Sustainable Forest Products Markets”**

1. **WHEREAS**, Minnesota is facing multiple challenges related to over-abundance of mill residuals, forestry residuals, and underutilized tree species.
2. **WHEREAS**, uneven policy support in Minnesota for bioenergy production using mill residuals, forest residuals, excess woody biomass, dead trees, diseased trees or otherwise unmarketable timber has resulted in the loss of a number of markets for such woody material.
3. **WHEREAS**, management of trees killed by extreme storm events, diseases, or insects such as emerald ash borer and spruce bud worm, is a critical problem in Minnesota that is expected to continue to grow over time with climate change.
4. **WHEREAS**, dead and dying wood, if unmanaged, creates multiple risks including risk of wild fire, habitat loss, and loss of the biogenic carbon sink.
5. **WHEREAS**, active forest management and stewardship, supported by local markets, and following sustainable forest management practices and sustainable management plans, is essential to maintaining healthy, productive forests that are resilient and adaptable to climate change.
6. **WHEREAS**, under the direction of the Minnesota Sustainable Forest Resources Act (MN Stat. 89A) the Minnesota Forest Resources Council (MFRC) has developed forest management guidelines for the sustainable harvest of forest residuals and woody biomass.
7. **WHEREAS**, MFRC is charged by statute with developing recommendations to the governor and to state government with respect to forest resource policies that result in the sustainable management, use, and protection of the state's forest resource.
8. **WHEREAS**, it is important that MFRC recommendations for new market attraction strategies to support sustainable forest management not create additional competition for otherwise marketable wood species.
9. **AND WHEREAS**, it is desirable for Minnesota to be a leader in developing and attracting the most advanced forest products industries to the state and to set the example for sustainable management of its forests
10. **BE IT THEREFORE RESOLVED**, the Minnesota Forest Resources Council, consistent with its statutory responsibility, recommends support for new and expanded Minnesota markets for forest and mill residuals, and other types of sustainably harvested woody biomass and encourages elected and appointed officials to:
  - a. Include woody feedstocks in statewide fuel or energy standards and/or offer broadly available production incentives for low carbon renewable biofuels derived from woody biomass or other bioenergy feedstocks.

11. **BE IT FURTHER RESOLVED**, the Minnesota Forest Resources Council commits to developing an action and communications strategy to further align new market development and sustainable forest management by:
- a. Evaluating appropriate sources of material that could be considered “woody biomass” or “forest residuals” such as mill residuals, harvest residuals, wood waste, diseased wood, unmerchantable wood, and other material removed for fuel reduction.
  - b. Describing how harvesting of these materials acknowledges Tribal treaty rights while integrating with existing forest management plans, timber harvesting guidelines, and forest certification standards.
  - c. Recommending policies and strategies for attracting new markets that align with the state’s management objectives, to potentially include energy products (e.g commercial and residential heating, pellets, biofuels) and non-energy products (e.g thermally-modified wood, biochar, activated carbon, biobased chemicals and extractives, and engineered and specialty wood products).

Motion supporting the resolution “**Supporting Minnesota’s Climate Change Goals Through Development of Sustainable Forest Products Markets**” (MFRC Resolution 2022-1) as a 2022 priority policy recommendation of the Minnesota Forest Resources Council; and directing the MFRC Policy Committee, MFRC Landscape Advisory Committee, and MFRC Communications Committee to collaboratively develop an action and communications strategy for conveying the recommendation to the Governor, Legislature, and stakeholders.

AYES (9) Craig Engwall, Janet Erdman, Kathleen Preece, Katie Fernholz, Kim Berns-Melhus, Kory Cease, Mike Kilgore, Pete Aube, Rick Horton

NAYS (1) Keith Karnes

ABSTAIN (2) Forrest Boe, Jim Manolis

ABSENT (4) Bob Owens, Connie Cummins, Deb Theisen, Scott Pittack



Attested to by:

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Pete Aube, Chair, Minnesota Forest Resources Council

01/18/2022

Date



**Minnesota Forest Resources Council Resolution 2022-2**  
**“Contributing to Minnesota’s Climate Change Goals**  
**by Increasing Minnesota Nursery Capacity”**

1. **WHEREAS**, Minnesota’s forests provide critical benefits for the economy, recreation, wildlife, clean water, biodiversity, and greenhouse gas mitigation; and
2. **WHEREAS**, the state forest nursery once produced over 12 million seedlings per year to support those benefits, but now produces < 4 million; and
3. **WHEREAS**, the State Nursery is outdated, inefficient, and incapable of producing containerized seedlings; and
4. **WHEREAS**, a modernized state forest nursery and additional private nurseries could play a critical role in mitigating climate change and increasing other benefits forests provide; and
5. **AND WHEREAS**, per Minnesota Statutes 89A Subd2, it is the role of the Minnesota Forest Resources Council to recommend policies and practices that: foster the productivity of the state’s forests to provide a diversity of sustainable benefits at site levels and landscape levels; enhance the ability of the state’s forest resources to provide future benefits and services; and foster no net loss of forest land in Minnesota;
6. **BE IT THEREFORE RESOLVED**, the Minnesota Forest Resources Council recommends enhancing nursery capacity in both State run and privately owned forest nurseries by:
  - a. Upgrading State Forest Nursery facilities by 2027, to produce both containerized and bare-root seedlings, using modern technology to track seed-source locations, while minimizing risks to seeds that are stored on site.
  - b. Increasing State Forest nursery production from current capacity of 4 million trees per year to 10 million trees per year by 2027, to double SFN capacity again by 2032, and to continue to increase SFN production capacity as necessary to plant up to 1 million acres of new forest by 2050.
  - c. Providing long-term contracts and other incentives to support the expansion of private nursery operations in furtherance of reforestation goals.

7. **BE IT FURTHER RESOLVED**, the Minnesota Forest Resources Council recommends enhancing tree seedling capacity, production, and delivery by:
- a. Promoting collaborative efforts to reforest 1-million acres of appropriate non-forested lands by 2050.
  - b. Incentivizing private land tree planting through cost-share programs, partnerships, and projects to fully utilize planned increases in nursery stock.
  - c. Increasing funding for state forest nursery staff and contracted seed collectors to ensure adequate labor for the entire process from collecting seed to preparing seedlings for distribution.
  - d. Utilizing tree seed orchards, localized tree storage/distribution centers, and other nursery supply diversification strategies.
  - e. Re-evaluating the current “enterprise” model for the State Nursery that depends upon annual seedling sales to cover operational costs.
  - f. Removing legislative prohibitions on state forest nursery production capacity and seedling sales.
  - g. Implementing quality assurance strategies to improve seedling survival, tree genetics, disease resistance, and species suitability for changing climate.

Motion adopting “**Contributing to Minnesota’s Climate Change Goals by Increasing Minnesota Nursery Capacity**” (MFRC Resolution 2022-2) as a 2022 priority policy recommendation of the Minnesota Forest Resources Council; and directing the MFRC Chair to submit the resolution to The Honorable Governor Timothy Walz, and to the Chairs and Ranking Minority Members of the appropriate House and Senate Committees of the Minnesota State Legislature.

AYES (11) Craig Engwall, Janet Erdman, Kathleen Preece, Katie Fernholz, Kim Berns-Melhus, Kory Cease, Mike Kilgore, Pete Aube, Rick Horton, Keith Karnes, Jim Manolis

NAYS None

ABSTAIN (1) Forrest Boe

ABSENT (4) Bob Owens, Connie Cummins, Deb Theisen, Scott Pittack



Attested to by:

-----  
Pete Aube, Chair, Minnesota Forest Resources Council

01/18/2022

Date



**Minnesota Forest Resources Council Resolution 2022-4**  
**“Supporting Minnesota’s Informational Needs**  
**For Sustainable Forest Resource Management, Products, and Policies”**

1. **WHEREAS**, the Minnesota Forest Resources Council (MFRC) is charged by the Sustainable Forest Resources Act (SFRA) with developing recommendations to the governor and to state government with respect to forest resource policies that result in the sustainable management, use, and protection of the state’s forest resources.
2. **WHEREAS**, MFRC’s Research Advisory Committee (RAC) also is charged by the SFRA to undertake an assessment of strategic directions in forest resources research and to promote these informational needs to forest managers and users, and to the public.
3. **WHEREAS**, the Interagency Information Cooperative (IIC), as defined by the SFRA, is maintained by the dean of the College of Food, Agricultural and Natural Resources Sciences at the University of Minnesota for the purposes of coordinating the development and use of forest resources data and information in the state.
4. **AND WHEREAS**, up-to-date, science-based, forest resource information is essential for achieving the purposes of the Sustainable Forest Resources Act, benefitting the people of Minnesota, and protecting the sustainable future of Minnesota’s forest resources.
5. **BE IT THEREFORE RESOLVED**, the Minnesota Forest Resources Council, consistent with its statutory responsibility, recommends an annual appropriation to the Council to support securing immediate and ongoing priority information, data, and research needs as determined by MFRC’s 17 stakeholder representatives.

Motion adopting a resolution “**Supporting Minnesota’s Informational Needs For Sustainable Forest Resource Management, Products and Policies**” (MFRC Resolution 2022-4) as a 2023-2024 priority policy recommendation of the Minnesota Forest Resources Council; and directing the MFRC Chair convey the recommendation to the Governor, Legislature, and stakeholders.

AYES (13)                      Tim Wegner, Deb Theisen, Katie Fernholz, Bob Owens, Pete Aube, Craig Engwall,  
Kory Cease, Jim Manolis, Janet Erdman, Kathleen Preece, Kim Berns-Melhus,  
Mike Kilgore, Rick Horton

NAYS (0)

ABSTAIN (0)

ABSENT (2)                      Keith Karnes, Scott Pittack

Attested to by:   
Pete Aube, Chair, Minnesota Forest Resources Council

11/16/2022  
Date





**MINNESOTA  
FOREST  
RESOURCES  
COUNCIL**