

Forest Products Services Update

Wisconsin Council on Forestry

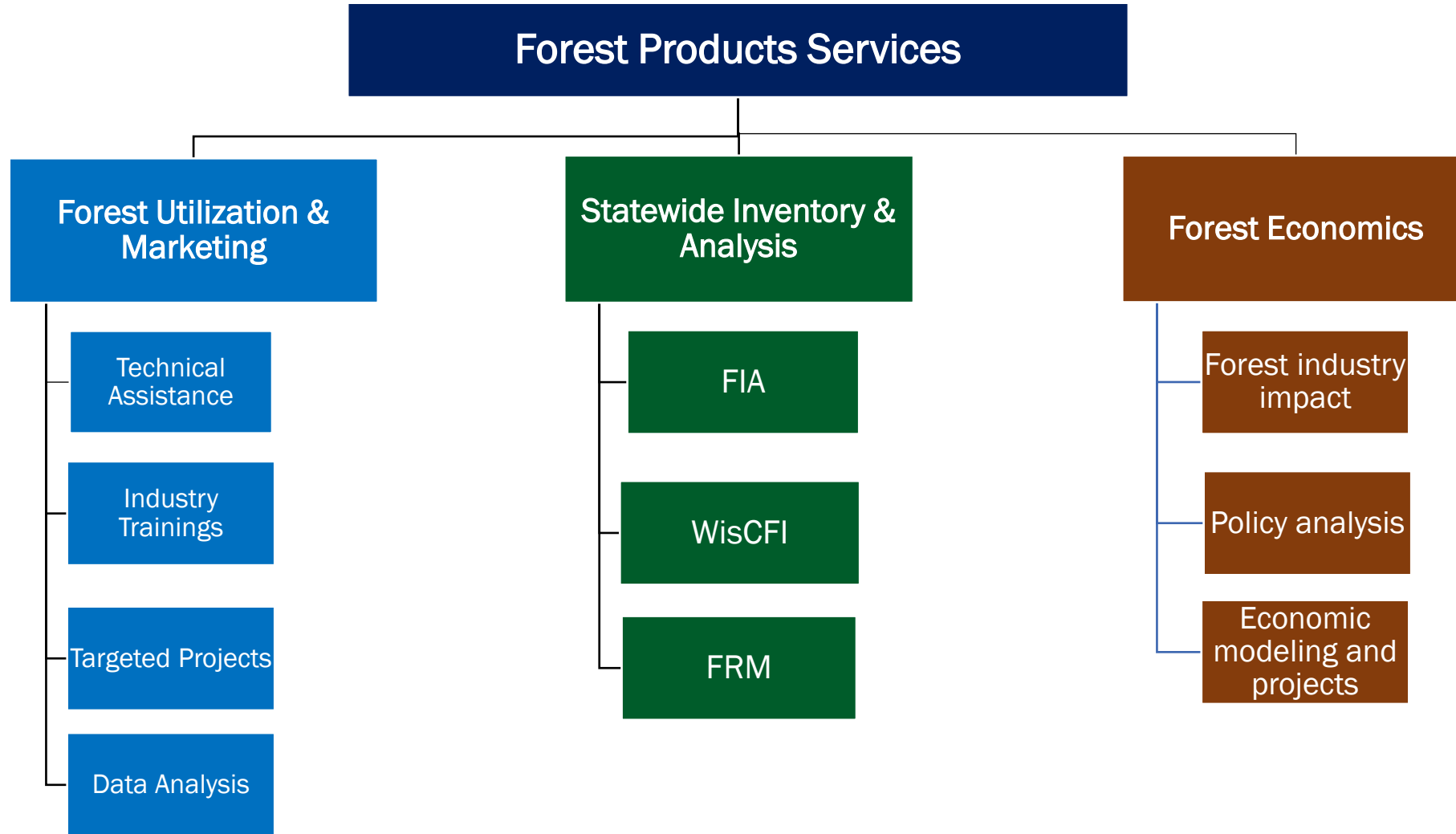
January Meeting

1/24/22



- Program Overview
- Forest Regeneration Monitoring
- Economic Contributions of the Forest Industry
- Team Projects

FPS – Our Work



FPS – Our People

Forest Utilization & Marketing

- Alex Anderson – Tomahawk
- Scott Lyon – Green Bay
- **Brian Zweifel – Dodgeville**
- *Vacancy ~ NW WI*

Forest Inventory & Analysis

- **Ryan Heiderman (Analyst) – Madison**
- Kori Schroeder (FRM Specialist) – Madison
- 8 – 10 LTE Regeneration Foresters

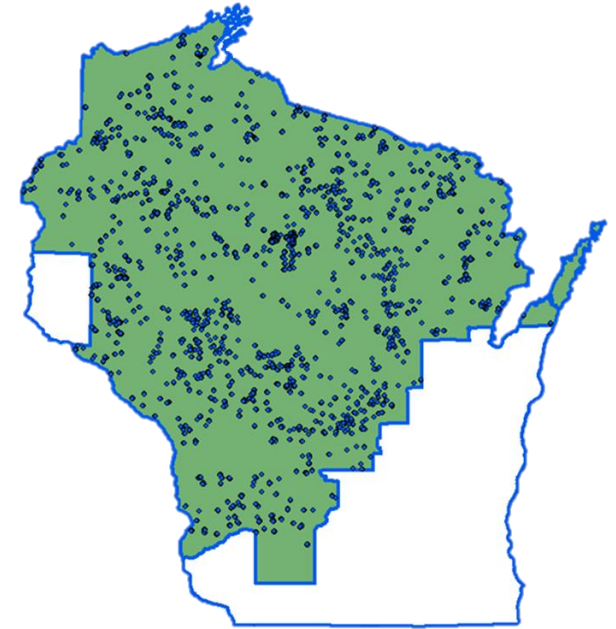
Forest Economics & Policy

- **Ram Dahal (Forest Economist) – Madison**
- **Kelly Martinson (Program Coordinator) – Madison**



FOREST REGENERATION MONITORING PROGRAM OVERVIEW

- Initiated in 2018
- Measured in forests that have been recently harvested or managed for natural regeneration
- Counties that have >30% forested area
- Focus on northern hardwood, oak-hickory, and red-white-jack pine forest types but others are included
- All ownerships: public and private lands



THE NEED FOR FOREST REGENERATION DATA

- Forest regeneration is critically important to Wisconsin's forest health and productivity
- Issues with scale and consistency of forest regeneration data
- No long-term data on deer browse impacts has previously been collected
- The Natural Resources Board (NRB) has requested county-level forest regeneration and deer impact data for the CDACs



PROGRAM GOALS

- Develop Wisconsin-specific regeneration standards by forest type
- Monitor long-term changes in the composition of Wisconsin's forests
- Assess the sustainability and effectiveness of our forest policy and regeneration methods
- Provide a metric for resource managers to more comprehensively assess stand-level regeneration
- Provide county-level data on impacts of deer browse on forest regeneration to County Deer Advisory Councils (CDACs) and wildlife resource managers



Program Timeline

2012

- **Deer Trustee Report** calls for development of various metrics, including forest regeneration problems, for use in deer population management.

2014

- NRB requests that the Division of Forestry provide county-level forest regeneration data to assist in County Deer Advisory Councils (CDACs) deer population decisions.

2015

- **General Technical Report (GTR NRS-148)** was published defining the protocol for P2+ regeneration indicator, which was adapted ultimately to create the Forest Regeneration Metric. (William McWilliams, 2015)

2017

- FRM pilot was established on one county and one state forest in three different forest types.

2018

- Funding and support for FRM program through PR funds was finalized.
- **First field season completed** with 5 staff and 3,182 plots collected.

2019

- March – CDAC focus group held.
- June/October – Second field season with 12 technicians collecting FRM data on 8,200 plots

2020

- June/October – **Cycle 1 completed.** Third field season.
- **December – CDAC county reports published.**

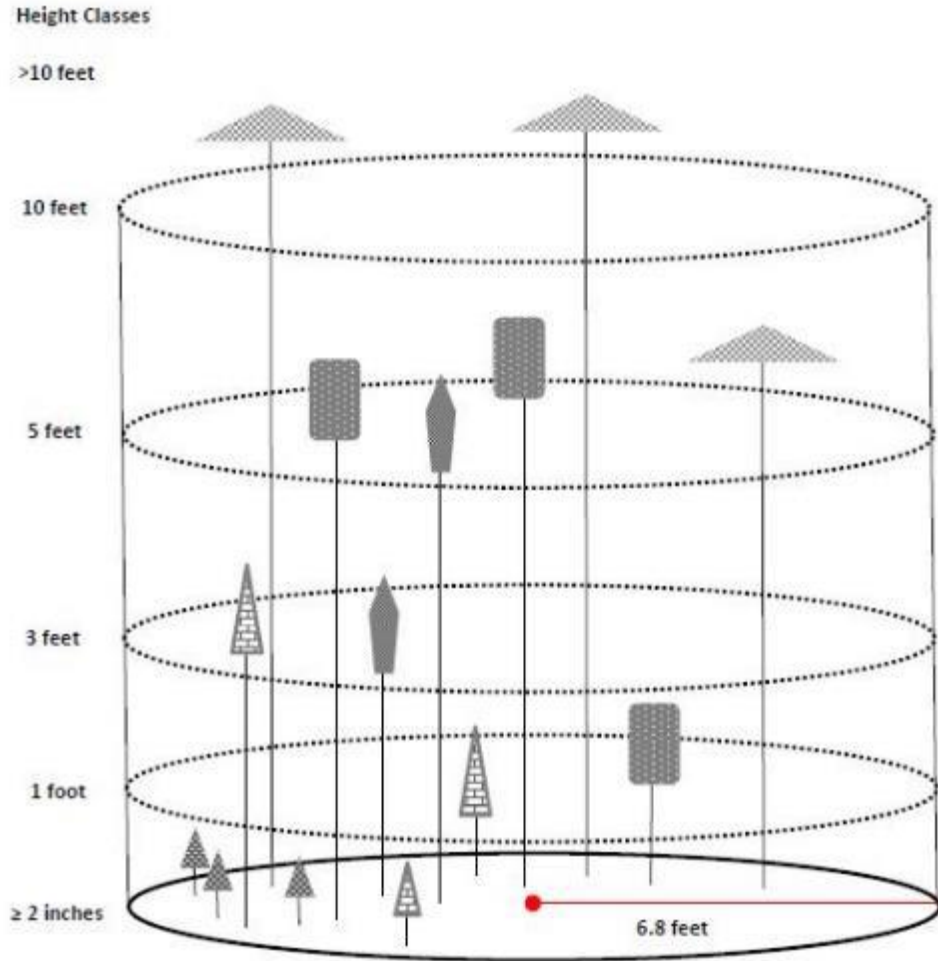
2021

- June/October -- 1st year of Cycle 2, 2018 stands revisited
- New requirement for FRM in Public Lands Handbook

2022

- 2nd year of Cycle 2, 2019 stands revisited

Forest Regeneration Monitoring (FRM) Plot



- 1/300th acre plot (6.8ft radius)
- All tree species (<5" dbh) are tallied by height class
 - Height classes are: 2"-1', 1'-3', 3-5', 5-10', and 10+'
- All tree species are assessed for deer browse intensity
- Each plot is assessed for herbaceous and woody competition
- Each plot is assessed for overstory shade density

HOW CAN FRM DATA BE COLLECTED?

The screenshot shows the Forest Matrix software interface. It includes a top navigation bar with icons for Close File, PT, Stand, Analysis, Pref, and Map. Below this are sections for 'PT' and 'TREES' with buttons for 'DELETE PT', 'CHANGE PT #', 'SET LAT/LONG', and 'LAT/LONG'. A 'PT COMPLETE?' checkbox is checked. The main area contains radio buttons for 'NAT. REGEN', 'FRM', 'ART. REGEN', and 'CUSTOM'. Under 'FRM', there are options for 'OVERSTORY SHADING' (Full, Partial, Shade), 'HERB COMP.' (0, 1-25, 26-50, 51-75, 76-100), 'SHRUB COMP.' (0, 1-25, 26-50, 51-75, 76-100), and 'DEER EXCLOSURE' (Y, N). At the bottom, there is a 'SPECIES' section with a grid for different size classes (2'-1', 1'-<3', 3'-<5', 5'-<10', 10'+) and a 'BROWSE' column. Species listed include HS - HICKORY, SUGARBARK and OR - OAK, RED.

Forest Matrix

Example Datasheet

Tree Regeneration Datasheet

Measurement Date: Oct 17 2016 MFL Order #: Stand: 3 Years since last entry: 5
 Primary Cover Type: Oak Last harvest type: Shelterwood
 County: Lincoln Compartment: 1 Years to next entry: 10
 Township/Range/Section: 22N, 7E, 4 Property: 3508 Next harvest type: Shelterwood

Plot	Species	2'-<3'	1'-<3'	3'-<5'	5'-<10'	≥10'	Overstory Shading	Understory Competition	Deer Browse	Deer Excl
1	BETA 1:	☒			*		Partial	H 25-50	3	
1	POTRS *	☒	**	☒	**				2	
1	ACRU *	**			*				2	
1	PRSE2	**							2	
2	POTRS *	☒	**	☒	**		Partial	H 50-75	1	X
2	BETA	**			**				1	X
2	PRSE2 *	☒			*				1	X
2	ACRU DEIT	*			*				1	X
3	PRSE2 *	☒	**				Full	H 0-25	2	
3	GRU2	☒							3	
3	ACRAB **								2	
4	ACRAB 1:	☒	**	☒	*		Partial	H 0-25	1	X
4	ACRU	☒	**						1	X
4	BETA				**				1	X
4										

Paper Data Sheet



Survey123

FOREST REGENERATION MONITORING PROGRAM CYCLE



Planning: January - May

- Hiring
- Site selection
- Technical prep
- Meeting with wildlife staff

Data Collection: May – October

- FRM foresters connect with DNR and county forestry staff
- Field season

Reporting: October - January

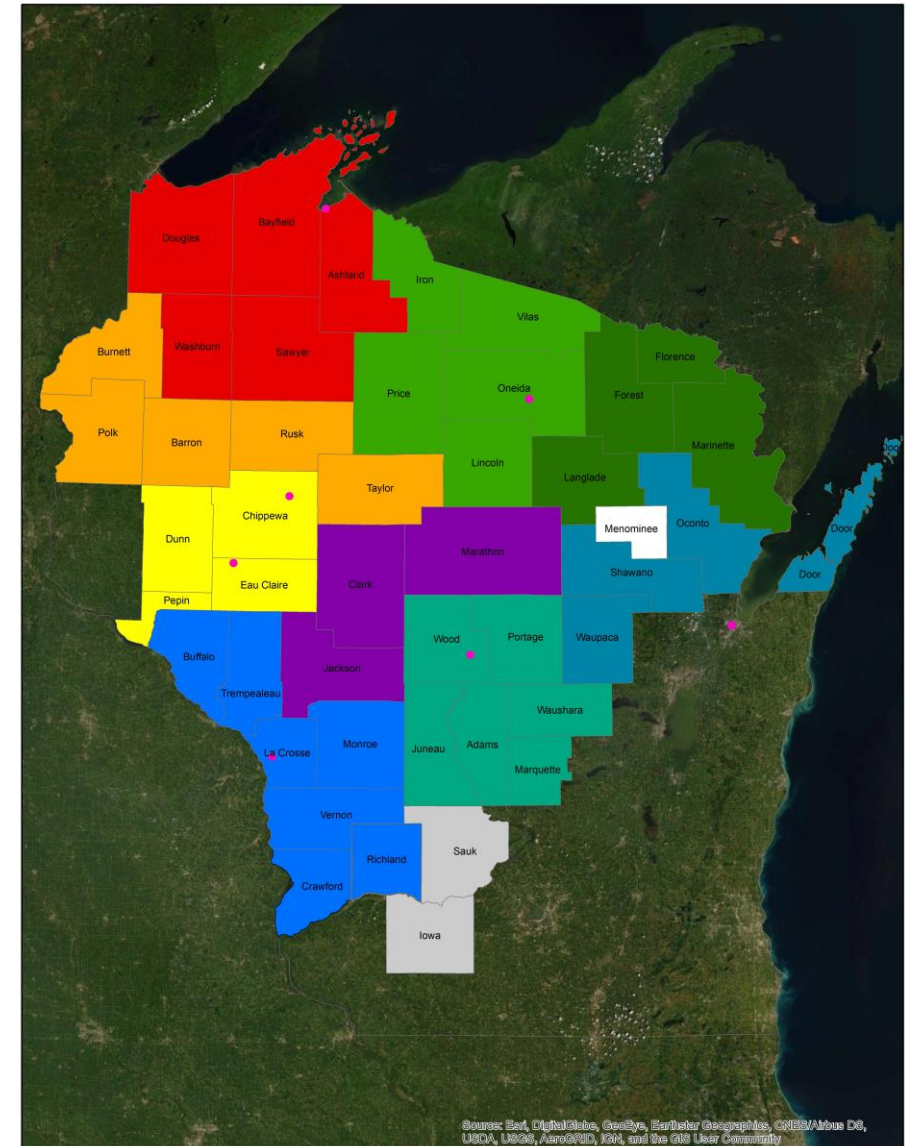
- Data merge
- Private land reports
- Public land reports
 - County, state, Federal (Ft. McCoy, USFS, GNA)
- CDAC reports (as needed)

Forest Regeneration Monitoring Program Update



2022 Data Collection Efforts

- 5th year of data collection
 - 2nd year of revisits
- 10 FRM foresters measured 5703 plots on 781 stands
 - 71% (559) of stands sampled are revisits to stands first sampled in 2019
- Breakdown by ownership: 45% private, 28% county, 17% state, 10% federal
- Sampled 396 private landowner harvests
- Sampled data on 23/27 county forests, 59 state properties, and completed 88 regen checks on CNNF GNA properties
- 105 stands visited by state and county foresters.



Choose your County Grouping

Forest Regeneration

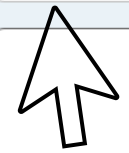
While not always realized, light to moderate deer browsing can increase forest biodiversity and provide positive benefits to forest health. However, if browsing is greater than what a forest can withstand, not only can the future forest regeneration become compromised, but available browse for future generations of deer can become depleted and can decrease the overall deer carrying-capacity of the forest. It is important to have an estimate of the abundance of tree seedlings (<1" dia.), small saplings (1-2" dia.), large saplings (2 - 5") and pole-size trees (5 - 11") across the region. These size classes are important as they are the size classes available to deer and other wildlife as browse. For foresters and forest managers, these size classes also provide important clues about future forest composition, quantity, quality, and value. For additional information....

Using the Metrics

County Grouping Map

The following reports summarize the overall risk deer currently pose to forest regeneration by county. These reports are the first attempt to summarize and communicate these data in a manner that is useful to CDAC members.

- [Adams](#)
- [Clark](#)
- [Monroe](#)
- [Wood](#)
- [Eau Claire](#)
- [Juneau](#)
- [Jackson](#)



Jackson County Forest Regeneration 2021 County Deer Advisory Report

Wisconsin Department of Natural Resources - Division of Forestry

March 08, 2022

Summary - Forest Regeneration

In Wisconsin, forest management relies on natural tree reproduction or regeneration to ensure the benefits of sustained outdoor recreation, wildlife habitat and timber production. Natural regeneration is the process when new tree seedlings become established through natural seeding, sprouting, suckering, or layering after trees are harvested or die from other causes. Successful regeneration is critical to sustainable forest management.

There are many factors that can affect forest regeneration such as the weather, interfering plant species and forest management practices. Animals browsing for food on seedlings and sapling can also pose a significant impediment to forest regeneration. In Wisconsin, white-tailed deer are the most common large animal that regularly eats tree leaves and stems. Research has regularly shown that high deer density often leads to increased browse impacts on forest regeneration.

Jackson County Forest Regeneration Metric



Jackson County Forest Regeneration 2021 County Deer Advisory Report

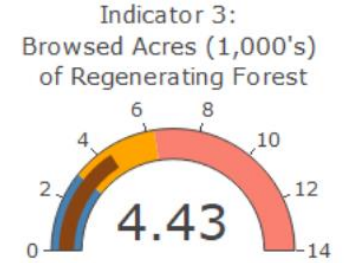
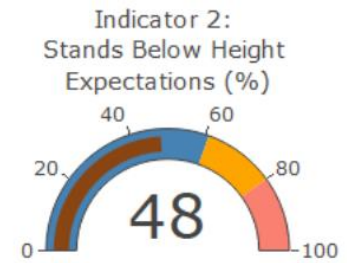
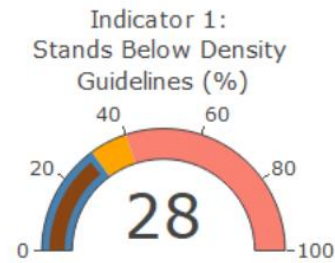
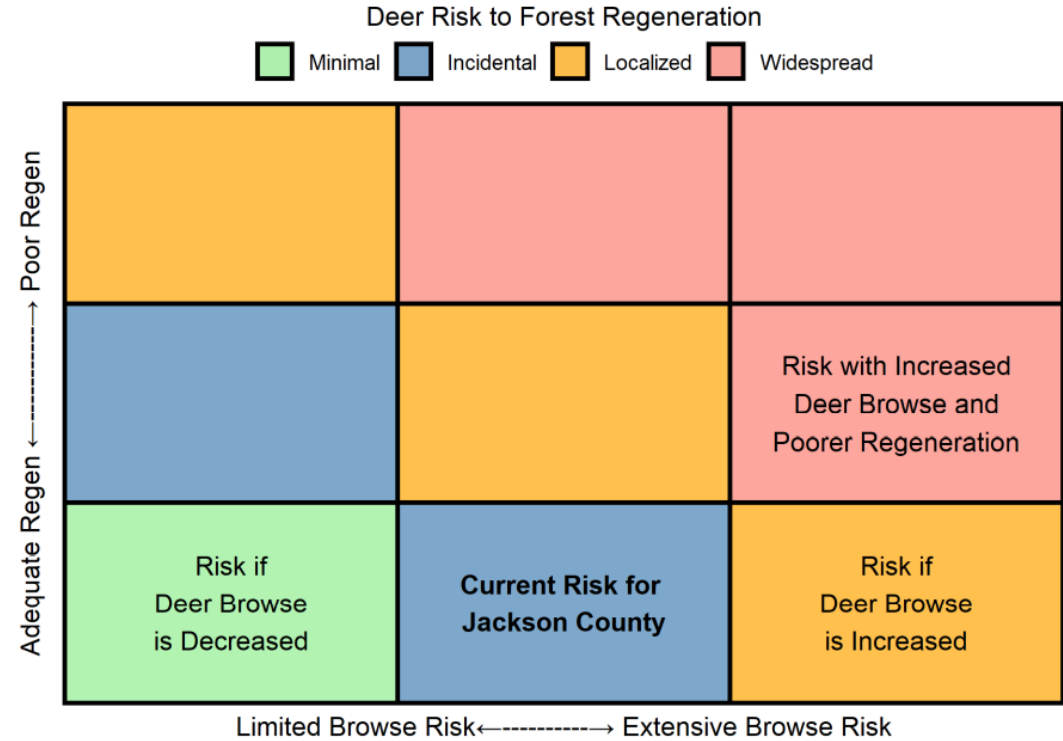
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Looking Ahead...

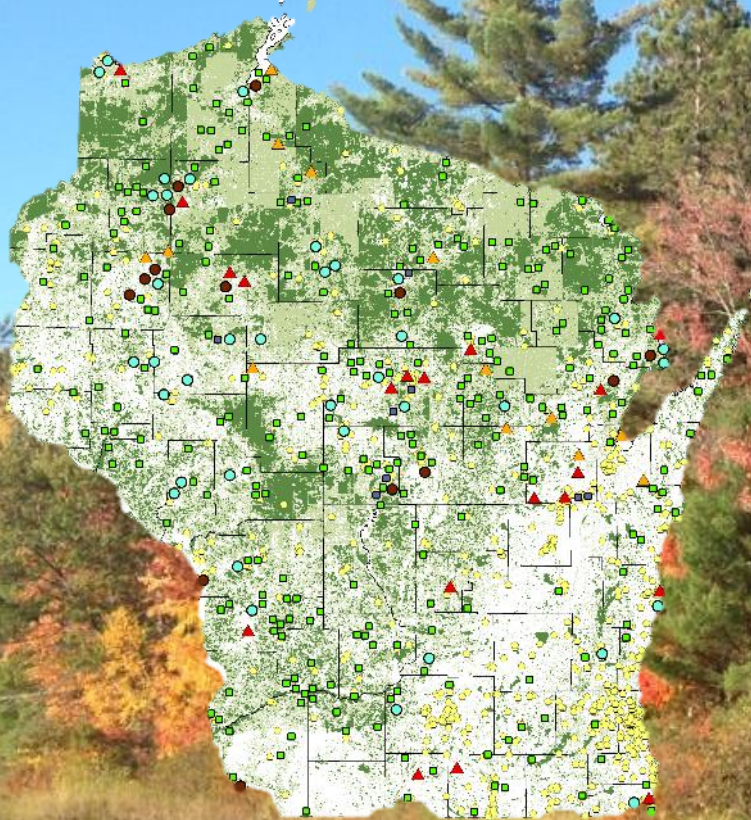
FRM: data usage and applications

- GNA regeneration assessments
- Landowner reports and regeneration monitoring results
- NRCS cost share programs
- County-level forest regeneration reports

- Public lands handbook recommendation/requirement
- FRM protocol in Wisconsin Silviculture Guide
- Survey123 for external partners – Spring 2023
- Cycle 2 complete – Spring 2024
 - Additional research/analyses to expand understanding of regeneration successes and challenges
 - Updates to CDAC reports (coincides with 3-year objective meetings)

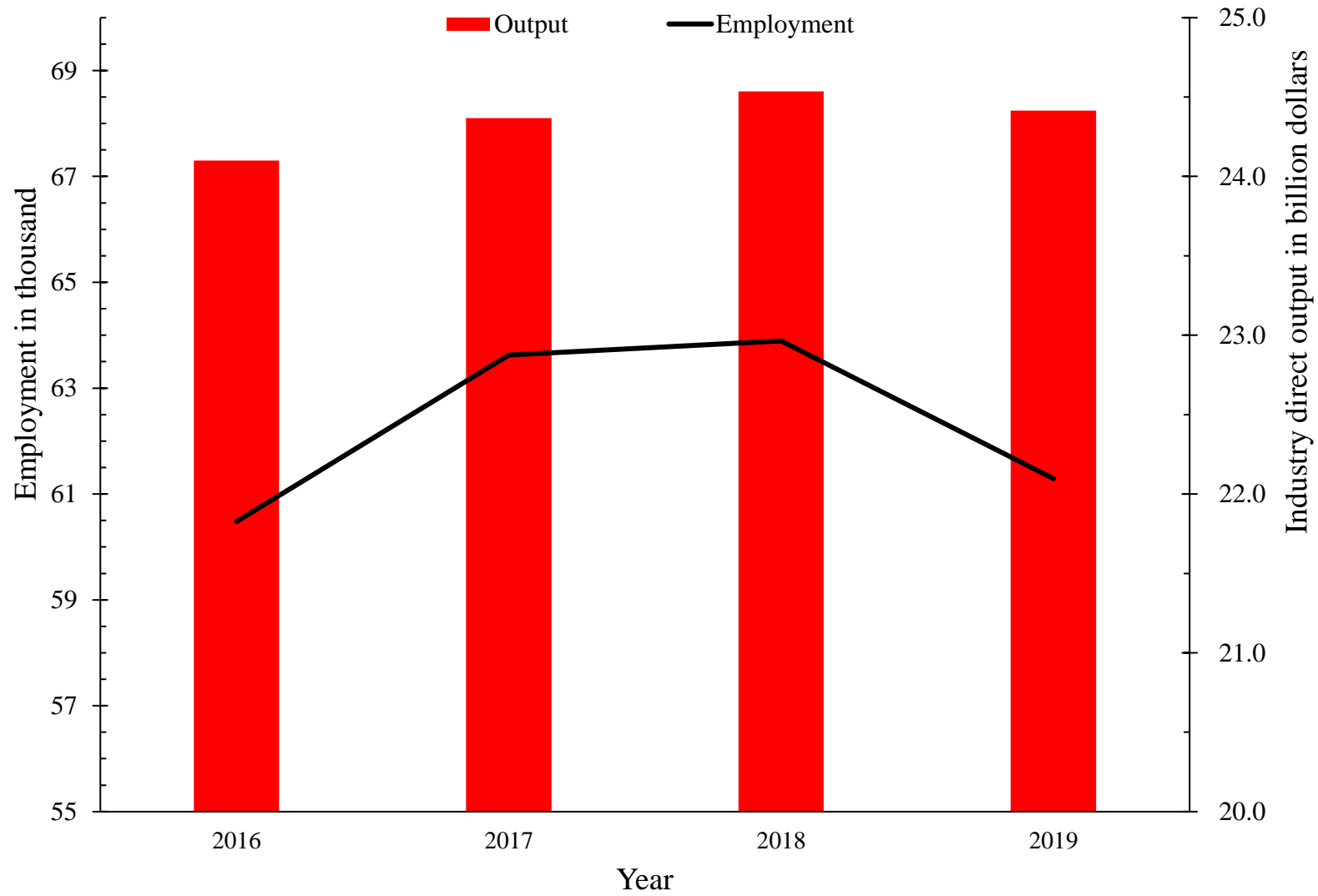


Wisconsin's Forest Economy



- ~1,200 establishments
- 61,291 jobs
- \$24.4 billion in goods and services annually
- Approximately 14% of manufacturing jobs





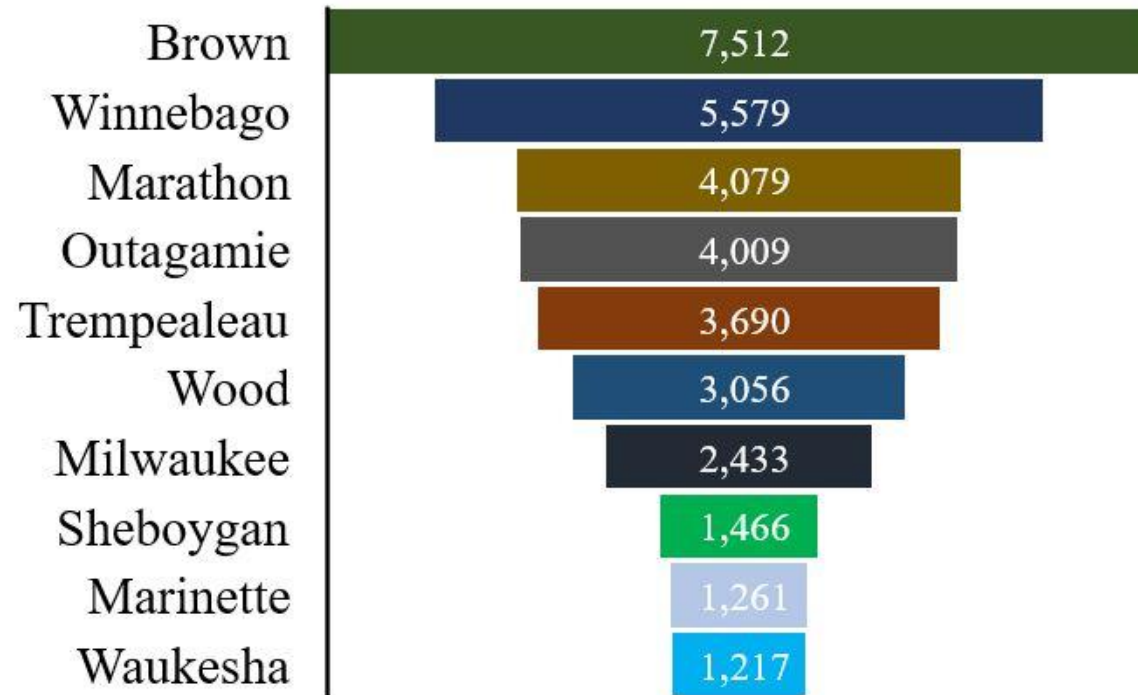



Figure 2. Top 10 counties that generated highest forest products industry direct jobs


Other Economic Information

- Imports and exports (foreign and domestic)
- Tax contributions to local government
- Wages paid to workers
- Identify supporting industries in a particular county
- Impact analyses of mill closures (or new industries)

Wisconsin Department of Natural Resources



Forest Economy Oneida County



Highlights

- The forest products industry ranked 1st in terms of industry output in the county.
- The average annual income in the forest products industry was \$91,000, \$44,000 higher than the county average.
- Every 10 jobs in the forest products industry supported an additional ten jobs in the county.
- Every million dollars of output in the forest products industry generated an additional \$300,000 output in the county.
- The forest products industry shared 2% of jobs, 7.44% of output and 4.21% of value-added in the county.

Economic Contribution Of Forest Products Industry Reported In Dollars 2019

Forest products industry	Employment		Labor Income		Industry Output		Value-added	
	Number	% of County	MM \$	% of County	MM \$	% of County	MM \$	% of County
Direct effect	451	2.00	41.14	3.85	240.19	7.44	68.64	4.21
Indirect and induced effect	459	2.03	21.99	2.06	71.90	2.23	37.18	2.28
Total effect	909	4.03	63.12	5.91	312.09	9.66	105.82	6.50
Multiplier	2.02		1.53		1.30		1.54	
County total (all industries)	22,565		1,067.83		3,229.88		1,628.71	

Note: MM \$ stands for million dollar

Tax Contribution (MM \$)


Total state/local	7.34
Total federal	13.28
Total tax contributions	20.62

Note: MM \$ stands for million dollar

• Forestry and logging

• Sawmills and wood products

• Pulp and paper

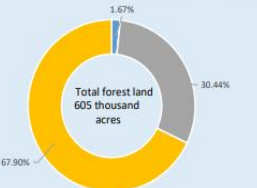


\$240.19 million direct industry output

• National Forest

• State and local

• Private



Total forest land 605 thousand acres



Forest land acres by ownership (source: FIA 2019)

For more information, contact: Ram Dahal, Forest Economist
Wisconsin Department of Natural Resources
Phone: 715-225-9892 Email: ram.dahal@wisconsin.gov

www.dnr.wi.gov

Forest Products Industries' Economic Contributions in the Northeast and Midwest

March 2020

PUBLIC SECTOR CONSULTANTS

Prepared by
[Public Sector Consultants](#)
Lansing, Michigan
www.publicsectorconsultants.com

Prepared for
[Michigan Department of Natural Resources](#)
Forest Resources Division
Lansing, Michigan
www.michigan.gov/dnr






Table Appendix 3. Total effect of the sawmills and wood furniture sector on Wisconsin economy (2019 in million dollars)

Sectors	Employment	Labor Income SMM	Gross Output SMM	Value-added SMM
Sawmills and wood furniture	2,219	138.56	190.22	126.86
Forestry and logging	27,435	1,378.74	6,363.65	2,093.29
Pulp and Paper	79	6.73	42.92	10.23
Ag, Forestry, Fish and Hunting	275	2.92	13.54	6.53
Mining	9	0.20	3.58	1.06
Utilities	131	23.48	164.92	74.86
Construction	194	12.61	40.50	18.04
Manufacturing	704	48.55	243.21	91.90
Wholesale trade	2,526	207.33	660.16	351.21
Retail trade	2,331	74.52	205.49	115.43
Transportation and warehousing	2,523	152.38	353.22	190.95
Information	420	37.92	185.72	89.06
Finance and Insurance	1,206	86.99	348.45	160.97
Real estate and rental and leasing	1,158	29.01	463.21	301.57
Professional, scientific and technical services	1,542	112.19	242.06	146.60
Management of companies and Enterprises	591	71.90	138.18	84.33
Administrative, support, waste management and remediation services	1,936	76.73	167.30	92.58
Educational services	339	14.81	25.34	17.42
Health care and social services	2,911	188.83	351.42	215.05
Arts, entertainment and recreation	516	11.93	33.43	18.37
Accommodation and food services	1,997	42.57	126.97	65.14
Other services (except public administration)	1,815	83.15	162.95	95.25
Public administration	135	10.45	42.21	19.84
Total	52,991	2,812.50	10,568.65	4,386.55

Forestry and the Wisconsin Economy | | Wisconsin DNR

https://dnr.wisconsin.gov/topic/forestbusinesses/factsheets

A photograph of a wood processing facility. In the foreground, a large, dark grey and orange Norwood LumberPro mill is positioned over a long, light-colored wooden beam. The mill has a protective cover and a handle. In the background, a worker wearing a black shirt and a tan cap is operating the machine. The facility has wooden walls and various equipment. The text "Forest Industry Assistance" is overlaid in white on the image.

Forest Industry Assistance

Biochar production/field trial







Sawmill Badger

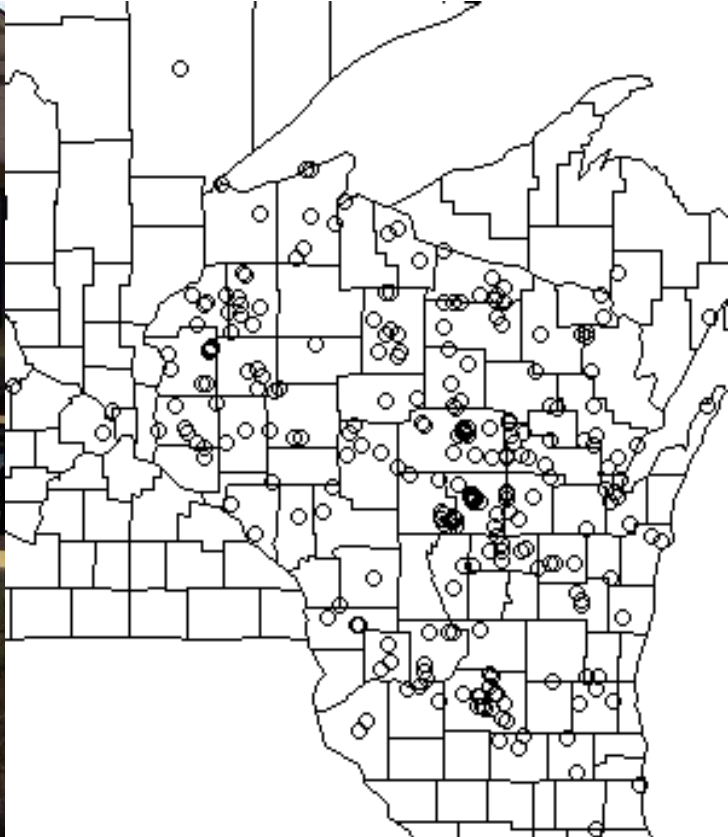
Hardwood Sawmill Analysis Tool

*Bringing your costs and
profitability into focus*

- Sawmill processing efficiency and profitability app (mobile-friendly)
- Replaces spreadsheet tools
- WDNR/UW-Extension/NMSFA
- USFS Funded



Local Use Dimension Lumber Certification



Projects in the Pipeline for 2023/2024

- State Forest WisCFI and forest resource updates
- Mass timber manufacturing feasibility study
- Lake states wood utilization analysis
- Biochar production demonstration – WUI and/or urban center
- Wisconsin consumer preference project
- Mexico pine market development
- Bridge rental program (TBD)

CONNECT WITH US

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OFF THE RECORD"