Review of Wisconsin's Investment in Forest Certification

Expenditures and Impacts 2005 to 2012

Council on Forestry Steering Committee 11/13/2013

Mark Heyde, Editor

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Summary

This review of the public expenditures and impacts of forest certification in Wisconsin is intended to inform future efforts related to certification. The question has been asked if the benefits of certification are worth the cost. There is a related question about whether forest certification is driving additional regulation of forestry practices in a way that hurts businesses. Available information can not directly answer these important questions; however inferences can be drawn from related data.

Wisconsin DNR and Wisconsin Counties with county forests have been directly involved with certifying public and private forests in Wisconsin since 2003. Certification of forest management and chain of custody was pursued at the request of Wisconsin's paper industry as the industry was under the threat of losing a major customer unless they could assure that Wisconsin paper was from certified sustainable sources.

A critical mass of certified wood supply has been achieved in the Lake States. The certified forests in Michigan, Minnesota and Wisconsin total over 19.6 million acres for the Sustainable Forestry Initiative (SFI) and American Tree Farm System (ATFS) and over 17 million acres for the Forest Stewardship Council (FSC). This makes up over 32% of the SFI certified forests and over 52% of FSC certified forests in the U.S.

More than 45% of Wisconsin's commercial forests are 3rd party certified; See Table 5 Summary of Certified Forests Acres for all Wisconsin owners.

Benefits of Forest Certification

The primary benefits of forest certification include the assurance of well-managed forests as measured by a 3rd party against internationally recognized standards, access to domestic and international markets that prefer certified forest products, and continuous improvement of forestry practices.

The market reach of SFI and FSC is illustrated by the number of Wisconsin companies that hold Chain of Custody (CoC) certificates. Of 1,324 forest products companies (primary and secondary, not including logging) one in five or 20.1% hold CoC certificates and are assumed to be doing business in certified markets. Three times as many companies hold FSC CoC certificates as compared to SFI. See Section 4.2.1. Summary of CoC for Wisconsin Companies

Only 14 or 2.8% of an estimated 500 Wisconsin logging firms hold CoC certificates; all in the FSC scheme.

Related to continuous improvement, 276 documented actions were taken in response to audit Corrective Action Requests or CARs. Of the actions taken, 80% were related to the improvement of internal systems or procedures while 20% had an external impact.

Costs of Forest Certification

The costs of forest certification includes the cost of audits and responding to Corrective Action Requests (CARs), adjusting management systems to conform to certification requirements and implementation of internal monitoring systems. The costs to Wisconsin DNR and Wisconsin County Forests are captured in the average annual per acre cost. There is no available data to estimate the cost of the external impact of CARs in the supply chain.

The average annual cost of certification ranges from \$.027 to \$.120 per acre for dual certification¹:

- MFL group \$.027 per acre, American Tree Farm System (ATFS) and Forest Stewardship Council (FSC)
- State Lands \$.058 per acre, FSC and the Sustainable Forestry Initiative (SFI)
- County Forest Program group² \$.120 per acre, FSC and SFI

Total payments to auditors totaled \$663,915 since 2003; payments to auditors in 2012 were \$103,630. See Section 6. Forest Certification Expenditure Analysis.

Impacts of Forest Certification

The impacts of certification are felt throughout the supply chain. Consumers may demand certified products, but may be unwilling to pay the additional cost. How the costs and benefits of certification accrue in the supply chain is not well understood.

The impacts of certification are broadly driven by the market. Companies have expressed their preference for one or more certification schemes and expect their suppliers to provide certified raw materials or products. For example, Time Inc. has a standard of purchasing 80% of their paper from certified sources and Procter and Gamble announced their intent to drop the purchase of uncertified wood pulp by 2015.

Detailed business impact data is proprietary and not available. However companies have generally reported the advantages and disadvantages of certification:

- The advantages rated highest in importance include: strategic positioning of an organization, signaling corporate social responsibility, and market-based benefits.
- The disadvantages rated highest in importance include: direct costs (audit costs), time and preparation costs, costs of [certification on] forest management, and recordkeeping.

See 7.1 Synthesis of Findings

Information Gaps

The primary information gap identified during this review was a lack of current information about the importance (e.g. costs and benefits) of forest certification to Wisconsin's forest industry. The most current Wisconsin specific study (Hubbard 2003)³ is more than 10 years old. Research on the importance of forest certification to Wisconsin forest products companies and markets is needed.

Future Challenges and Opportunities for Forest Certification

Forest certification is an expensive proposition. The future challenge and opportunity for certification schemes is to deliver real value across the entire supply chain, while maintaining system integrity and at the same time controlling or reducing costs.

¹ Dual certification with a combined audit format is estimated to save 20-40% over the cost of two individual audits.

² While most county forests are dual certified; some have chosen FSC or SFI rather than dual certification.

³ Hubbard, S.S. 2003. Environmentally certified forest products: An assessment of two segments in Wisconsin's wood products industry. University of Wisconsin-Madison, Madison, WI.

Review of Wisconsin's Investment in Forest Certification 2005-2012

Section 1. Introduction

Wisconsin DNR has held forest management and chain of custody (FM/CoC) certificates under the Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI), and the American Tree Farm System (ATFS) in cooperation with Wisconsin County Forests and private landowners for 6-8 years depending on the certification scheme. An appropriate time has passed where it is reasonable to assess the value of the state's investment in forest certification including the associated expenditures and the resulting benefits and impacts to the state, landowners, forest industry and other stakeholders. The Lake States Lumber Association, Wisconsin County Forest Association and Great Lakes Timber Professionals Association in particular have discussed or requested a review. The Wisconsin Council on Forestry is the review sponsor (Appendix A).⁴

Section 2. Scope

This review is an assessment of the current state of the public investment in certification, primarily Wisconsin DNR and Wisconsin County Forests. While the review has been described as a cost/benefit analysis, it is recognized that the cost/benefit methodology is most appropriately used where costs and benefits accrue to the same entity. However with respect to forest certification we recognize that costs may accrue to one entity while benefits may accrue to a different entity or organization. Therefore this review describes expenditures and impacts as well as costs and benefits.

It is helpful to think about forest certification in the context of a supply chain from the forest management unit to the final consumer. The major parts of the chain are:

- 1. Forest management unit (FMU)
- 2. Harvesting and transport of raw forest products
- 3. Primary manufacturing
- 4. Secondary manufacturing
- 5. Consumer

DNR's investment is primarily in the FMU (#1) and assuring that forestry practices and CoC documentation conforms to the various certification standards. The primary driver or pull for certification has come from secondary manufacturers who want to demonstrate environmental performance to their customers. The demand for certified products by secondary manufacturers has impacted forest managers, loggers, and mills.

This review does not recommend a future course of action; however, it may inform discussions about the Division of Forestry's and Wisconsin's future level of investment in forest certification.

Section 3. Process and Timeline

The review process was supported by a technical team of DNR Division of Forestry and Science Services staff members in consultation with forest managers and other experts. The review was planned over a 10 month time frame with initial findings in December 2012 and a final report to the Council in June 2013. The initial findings summarized existing data and presented data gaps for possible research to help inform the final report. The Council approved an extension to

⁴ Hellman and Heyde, COF Certification Review Issue Brief, June 20, 2012

December 2013 to allow for research about the importance of forest certification to Wisconsin companies.

Section 4. What is Forest Certification?

Mark Heyde, Forest Certification Coordinator, Dr. Steve Hubbard, Forest Products Specialist

Forest certification schemes provide assurance that forest management and chain of custody procedures meet the standard of "well managed" with the goal of sustainability.

Independent, third-party certification means management of Wisconsin's forests meets strict standards for ecological, social and economic sustainability. Publishers, building contractors and other manufacturers are expanding the use of certified wood to assure customers that their products are not tainted by timber theft or destructive timber cutting issues that plague some parts of the world. Objective review is also instrumental in improving how we care for our forests.⁵

Section 4.1. Comparison of Forest Certification Schemes

This review focuses on the Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI) schemes. Although the American Tree Farm System (ATFS) has its own standard, ATFS and SFI mutually recognize each other's' schemes and they are also both recognized by the Programme for Endorsement of Forest Certification (PEFC); so for the purposes of this review ATFS is considered together with SFI.

A 2011 review of the differences between the FSC and SFI certification standards by Dovetail Partners, Inc.⁶ stated that "A strong case can be made that the differences between the programs" standards are significant. There are also significant parallels and similarities due to the fact that both programs build upon compliance with local laws, regulations, forestry science and best management practices." Table 1 compares the standards at the principle level.

⁵ WI DNR, Forest Certification, http://dnr.wi.gov/topic/TimberSales/certification.html

⁶ Fernholz, Kathryn et al, Differences Between the Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI) Certification Standards for Forest Management, Dovetail Partners, Inc. March 2011.

SFI Principles	FSC Principles
1. Sustainable Forestry	1. Compliance with Laws and FSC
2. Forest Productivity and Health	Principles
3. Protection of Water Resources	2. Tenure and Use Rights and
4. Protection of Biological Diversity	Responsibilities
5. Aesthetics and Recreation	3. Indigenous Peoples' Rights
6. Protection of Special Sites	4. Community Relations and Workers'
7. Responsible Fiber Sourcing Practices in	Rights
North America	5. Benefits from the Forest
8. Avoidance of Controversial Sources	6. Environmental Impact
including Illegal Logging in Offshore	7. Management Plan
Fiber Sourcing	8. Monitoring and Assessment
9. Legal Compliance	9. Maintenance of High Conservation
10. Research	Value Forests
11. Training and Education	10. Plantation Management
12. Public Involvement	
13. Transparency	
14. Continual Improvement	

Table 1 The Principles of the SFI and FSC Standards

It is recognized that the FSC and SFI standards differ in origin, scope, market impact or reach and focus on the ground. Yet over time the standards have become more similar as each standard is revised and addresses perceived gaps or weaknesses. But in some cases, the standards have diverged e.g. PEFC recognition of SFI has changed the audit cycle from five to three years.

The differences between systems vary by region of the country but less than they did in the past due to the adoption by FSC of a US national standard that replaced regional US standards. Table 2 summarizes the differences described in the Dovetail report.

Consideration	SFI Approach	FSC Approach
Clearcutting and Opening Size	Single requirement	Regional variation and
Limits		plantation management
Green-up Requirements	Single requirement	Regional variation and
		plantation management
Land Use Conversion	Performance based requirement	Prescriptive requirement
Calculation of Harvest Levels	Periodic updating required; no	10 year time period required
	specific time period for	
Management Plan Updates	Annual documentation; no	10 year time period required
	specific time period for planning	
Old Growth	Regional variation	Single requirement with
		variation for American Indian
Training	Prescriptive requirement	Performance based requirement
Genetically Modified	Required to comply with	Not allowed
Organisms (GMOs)	applicable laws and policies	
	addressing GMO research	
Indigenous Peoples' Rights	Required for audits of public lands	Required for audits of all lands

Table 2 Summary of SFI and FSC Approaches to Considerations within the Standards

In addition to the differences described, Dovetail also recognizes that differences exist at a policy level specific to the FSC standard regarding pesticide use policies and protection of High Conservation Value Forests (HCVF).

From an audit system perspective, Wisconsin DNR has experienced more similarities than differences between the two systems. Individual audit firms are required to coordinate their work with audits so that one audit team made up of both FSC and SFI or ATFS auditors performs one annual audit for each certificate held. Qualified auditors have been able to work together, share observations, and coordinate findings. Audit findings are summarized in individual reports for each standard. WDNR's response to audit findings is individualized to the certificate and particular audit system.

Section 4.2. Wisconsin Chain of Custody Certified Companies: A Look at Participating Companies by System⁷

Forest certification is a market driven approach to assure consumers that the products they buy originate from well-managed forests. The potential market for each system is international in scope; FSC is international by definition and SFI (North America) and Tree Farm (US) schemes have gained international recognition and standing through the Programme for the Endorsement of Forest Certification (PEFC). Assurance is carried from the forest to the marketplace through Chain of Custody (CoC) systems.

Wisconsin's forest products industry is diverse in terms of both its product offerings and manufacturing sectors (i.e. Primary⁸ and Secondary⁹). Certification has played a role in both manufacturing sectors. Due to the nature of how participating companies are currently cataloged within each system, it is cumbersome to make distinctions between primary and secondary participants for each system and for dual certifications. Logging firms and landowners are not included in Wisconsin's forest industry statistics, so they have been pulled out of the data for FSC and SFI and treated separately in the summary.

 ⁷ For the purposes of this document we present the Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI), and Programme for Endorsement of Forest Certification (PEFC) certification systems.
 ⁸ For the purposes of this document primary manufacturers are defined as entities that have at the core of their operations the initial breakdown of a tree or log into a product(s) for further value adding opportunities. Examples include, but are not limited to, sawmills, veneer plants, pulp and paper etc.

⁹ For the purposes of this document secondary manufacturers are defined as entities that have at the core of their operations value adding to lumber or milled wood products. Examples include, but are not limited to, furniture makers, wood flooring plants, or wood moldings, paper converters, printers, brokers, etc.

FSC Chain of Custody Certificates			
Primary industry		Secondary industry	
Sawmill/lumber	17	Paper converting	38
Veneer	5	Printing	64
Flooring	1	Flooring	5
Pulp and paper	14	Millwork	9
Logging	14	Furniture/parts	17
Sub-total primary	51	Wholesale/retail	29
		Other	9
Note: CoC records may be duplicated		Lumber/veneer	14
for multiple business locations		Broker/trader	2
		Windows	6
		Sub-total	
(www.fsc.org, November 30, 2012, 244 records)		secondary	193

Table 3 FSC Chain of Custody (CoC) Certificates

Total number of FSC Chain of Custody certificates¹⁰: 244

Table 4 SFI and Programme for the Endorsement of Forest Certification (PEFC) Chain

 of Custody (CoC) Certificates

SFI and PEFC CoC Certificates								
Primary industry		Secondary industry						
Sawmill/lumber	4	Paper converting 10						
Pulp and paper	15	Printer 34						
Landowner	1	Broker/merchant 8						
Sub-total primary20Sub-total secondary52								
(www.sfiprogram.org, November 29, 2012, 72 records)								

Total number of SFI and/or PEFC Chain of Custody certified companies¹¹: 71

Section 4.2.1. Summary of CoC for Wisconsin Companies

- a. Total number of Forest Products Companies: 1,324
- b. Total number of SFI and/or PEFC Chain of Custody Certified Companies: 71

¹⁰ Source: Forest Stewardship Council. Personal communications with Isabel Gregersen, Project Manager, Forest Stewardship Council-US. November 16, 2012.

¹¹ Source: Sustainable Forestry Initiative website: http://64.34.105.23/PublicSearch/SearchCertificate.aspx accessed online 11/29/2012.

- c. Percentage of Wisconsin Companies Chain of Custody Certified to SFI and/or PEFC: 5.4%
- d. Total number of FSC Chain of Custody Companies: 230
- e. Percentage of Wisconsin Companies Chain of Custody Certified to FSC: 17.4%
- f. Total number of companies certified to both FSC and SFI/PEFC: 35
- **g.** Total percentage of companies doing business in certified markets 230 + 71 35 / 1324 * 100 = 20.1%
- h. Total percentage of logging firms that hold FSC CoC certificates: 2.80%¹²

The SFI CoC certificate data reflects the pulp and paper origins of the SFI system. Nearly all of the SFI and PEFC CoC certificates are related to pulp and paper, paper converting, printing, and paper brokering. By contrast the number of FSC CoC certificates is about three times as large as SFI and PEFC. FSC CoC also strongly reflects Wisconsin's pulp and paper, paper converting and printing industry. In addition, FSC CoC reflects a broad range of solid wood companies from sawmills and veneer to furniture, windows, doors, flooring, engineered wood products from the primary producer to the end consumer.

¹² Source: Based on 500 logging firms in Wisconsin, T. Mace and D. Peterson personal communication.

Section 5. Wisconsin's Forest Certification Story

Mark Heyde, Forest Certification Coordinator

In July 2003, Governor Jim Doyle charged the Wisconsin Council on Forestry (Council) to explore the prospects for sustainable forest certification.¹³ Gov. Doyle's charge to the Council was in response to forest industry requests for certifying forests to create a supply of certified fiber for Wisconsin's pulp and paper industry. Over the course of two years, the Council in collaboration with the WDNR Division of Forestry explored the feasibility of certification and successfully attained forest management certification for State Forests, the County Forest Program and the Managed Forest Land program. The Council's work to accomplish certification of almost 5 million acres of DNR or county administered forestland in less than two years was unprecedented and established Wisconsin as a leader in Lake States forest certification.

Since 2005, forest industry, tribes, NIPF landowners, MFL owners, WDNR and county forests have expanded certification to nearly 7.5 million acres or almost 50% of the commercial forests in Wisconsin. The original forest management certificates have also been expanded in scope to include chain of custody (CoC) certification under both FSC and SFI. ATFS does not have chain of custody or labeling for forest products under the Tree Farm scheme.

WDNR is the certificate holder for 6 separate certificates and provides a service to forest industry, county forests and private landowners by bearing the direct costs of certification audits and fees. DNR staffs also respond to audit findings including non-conformances, observations, and opportunities for improvement while managing the systems that support sustainable forest management and well-managed forests.

Wisconsin Certified					Tree Farm - Traditional 3rd Party Certified	Total by certificate
Acres - June 18, 2012	FSC Only	Dual FSC/SFI	SFI Only	Dual ATFS/FSC	(PEFC)	category
DNR Lands		1,531,187	57,225			1,588,412
County Forests Group	166,505	1,465,456	723,665			2,355,626
MFL Group				2,441,260		2,441,260
Forest Industries	396,888		190,256		197,236	784,380
Tribal	223241					223,241
Total by Standard	563,393	2,996,643	971,146	2,441,260	197,236	7,169,678

Table 5 Summary of Certified Forests Acres for all Wisconsin owners

¹³ Pingrey, Paul, Council on Forestry – Forest Certification Report, April 6, 2005.

Figure 1 Timeline of Certification and Wisconsin Milestones



Section 6. Forest Certification Expenditure Analysis

Teague Prichard, DNR State Forest Specialist Joseph Schwantes, DNR County Forest and Public Lands Specialist

Direct and indirect expenditures for certification and annual surveillance audits for each program area including state lands, the county forest program group and the Managed Forest Land (MFL) group were summarized for each year. Staff time was the only indirect expenditure in this analysis. DNR staff time was documented by program area from time records, while county forest staff time was estimated by county forest administrators.

Direct expenditures to audit firms were available by individual audit scheme, e.g. FSC, SFI, and Tree Farm; however indirect costs were not documented by individual scheme, therefore the average cost per acre reflects the cost of dual certification. One of the audit bid documents suggested that the coordinated dual audit format that WDNR required would result in a 20 to 40% discount over the cost of two individual audits.

On average, dual certification costs between \$.027 and \$.120 per acre based on the average annual expenditure.

MFL group average cost = \$.027/acre

State Lands average cost = \$.058/acre

County Forest Program group = \$.120/acre

Section 6.1. MFL Group

The MFL group obtained Tree Farm certification in 2005 and dual certification with the Rainforest Alliance for FSC began in 2008. The MFL group has grown in size at an average of 2 to 3% per year mirroring growth in the MFL program.

Fiscal Year	All	Expenses	DN	R Staff Time C	osts	То	tal Costs
2005	\$	38,020	\$	33,9	978	\$	71,998
2006	\$	10,089	\$	7,	063	\$	17,152
2007	\$	13,451	\$	7,	069	\$	20,520
2008	\$	67,699	\$	45,4	474	\$	113,173
2009	\$	26,890	\$	30,0	098	\$	56,988
2010	\$	7,697	\$	19,3	739	\$	27,436
2011	\$	18,924	\$	50,9	963	\$	69,887
2012	\$	77,028	\$	68,0	553	\$	145,681
					Total =		\$522,835
				Average	Cost / Year =		\$65,354
			Average Annual Cost / Acre = \$0.				

Table 6 WDNR Certification Costs for the MFL Group

Section 6.2. State Lands

Audit costs from 2005 through 2012 averaged \$95,000 per year, including full certification and surveillance audits. Of the total costs, approximately 60% of the costs are staff time of which 85% of staff time is born by central office administration. Annual average costs increased in 2009 when the scope of the certificate increased to include all DNR owned lands (1.6M acres).

Fiscal Year	All Expenses	DNR St	aff Time Costs	То	tal Costs
2005	\$ 12,311	\$	90,566	\$	102,877
2006	\$ 19,770	\$	52,979	\$	72,749
2007	\$ 31,697	\$	56,749	\$	88,446
2008	\$ 35,244	\$	50,975	\$	86,219
2009	\$ 103,096	\$	44,933	\$	148,029
2010	\$ 32,024	\$	59,872	\$	91,896
2011	\$ 36,117	\$	58,795	\$	94,912
2012	\$ 33,560	\$	42,503	\$	76,063
			\$761,191		
			\$95,149		
	Av		\$0.058		

Table 7 WDNR Certification Costs for State lands

Section 6.3. County Forest Group

			•			-	*	
Fiscal	ΔΙ	Exnenses	DN	R Staff Time	Total	DNR Costs	Cty Staff Time	Total DNR & Cty
Year		Expenses		Costs ¹⁴			Costs	Costs
2005	\$	1,332	\$	10,803	\$	12,135	\$ 222,611	\$ 234,746
2006	\$	21,321	\$	23,722	\$	45,043	\$ 222,611	\$ 267,654
2007	\$	953	\$	19,662	\$	20,615	\$ 222,611	\$ 243,226
2008	\$	40,154	\$	29,492	\$	69,646	\$ 222,611	\$ 292,257
2009	\$	8,738	\$	6,979	\$	15,717	\$ 222,611	\$ 238,328
2010	\$	75,675	\$	54,773	\$	130,448	\$ 222,611	\$ 353,059
2011	\$	31,993	\$	62,019	\$	94,012	\$ 222,611	\$ 316,623
2012	\$	30,983	\$	28,518	\$	59,501	\$ 222,611	\$ 282,112
				Total =		\$447,117		\$2,228,005
			Aver	age Cost / Year =		\$55 <i>,</i> 890		\$278,501
		Averag	e Annu	al Cost / Acre =		\$0.024		\$0.120

Table 8 WDNR and County Certification Costs for the County Forest Group

¹⁴ Based on actual time records.
 ¹⁵ Based on estimates provided by county forest administrators and averaged for all counties.

Section 6.3.1. County Forest Cost Methods and Assumptions

DNR staff time was calculated using timesheet activity codes. Salary and fringe rates were included in the staff costs. Fringe rates were specific to each FY. Expenses were calculated using WDNR FIRS system pulling all expenses by appropriate certification activity code.

County forest costs are based on a survey of county forest administrators. Each of the county forest administrators that responded provided an estimate of the number of hours spent for audit preparation and response, maintaining and providing documentation, reviewing and staying apprised of audit results and findings, and updating county policies and procedures as a direct result of certification. Additionally, the administrators estimated how much time they and their staff spend annually participating in the WCFA legislative/certification committee (time specifically spent on certification issues) or otherwise participating in the group review and response to certification findings. Administrators were asked to specify what time was spent on FSC and SFI certification issues if possible. 17 out of 27 certified county forests responded. None of the dual-certified counties was able to split the time required for FSC issues from SFI issues and consequently reported total hours for both systems.

The amount of time per acre that was required for certification, as described above, was calculated and then averaged for the 17 counties that responded. This average time/acre rate was than multiplied by the total number of certified county forest acres statewide. The hourly rate (\$/hour) for this time was calculated based on salary and fringe rates for all county forest administrators as is submitted annually with their county forest administration grant applications. This does not include supply costs and does not account for other staff that may participate but have different pay rates than the administrator on each county forest. It is important to note that the estimated time spent is based on estimates not reported hours. Further, it is important to note that the amount of time required varies each year based on which counties are audited and what findings are generated from an audit – the calculations done here attempt to estimate and average amount of time and cost.

Section 6.4 Future Certification Costs (direct costs only)

In the spring of 2013 audit services contracts were bid for 5 years from 2013 to 2017. Future out-of-pocket costs to be paid by Wisconsin DNR are:

Managed Forest Law			
Year	FSC	Tree Farm	Total
2013	\$20,240	\$18,290	\$38,530
2014	\$16,493	\$24,075	\$40,568
2015	\$16,778	\$16,778	\$33,556
2016	\$17,114	\$17,114	\$34,228
2017	\$17,890	\$25 <i>,</i> 070	\$52,960
Total	\$88,515	\$101,327	\$199,842

Table 9 MFL Group Audit Services Costs: 2013-2017

Table 10 Wisconsin State Lands Audit Services Costs: 2013-2017

Wisconsin State Lands	Total
2013 FSC Full Recertification + SFI Annual Surveillance Audit	\$49,746
2014 FSC Annual Surveillance Audit + SFI Annual Surveillance	\$30,840
Audit	
2015 FSC Annual Surveillance Audit + SFI Full Recertification	\$34,761
Audit	
2016 FSC Annual Surveillance Audit + SFI Annual Surveillance	\$31,971
Audit	
2017 FSC Annual Surveillance Audit + SFI Annual Surveillance	\$32,664
Audit	
Total	\$179,982

Table 11 Wisconsin County Forest Program Audit Services Costs: 2013-2017

Wisconsin County Forest Program (Multiple FMU	Total
Classification)	
2013 FSC Annual Surveillance Audit + SFI Annual Surveillance	\$27,430
Audit	
2014 FSC Full Recertification + SFI Annual Surveillance Audit	\$33,827
2015 FSC Annual Surveillance Audit + SFI Full Recertification	\$27,724
Audit	
2016 FSC Annual Surveillance Audit + SFI Annual Surveillance	\$26,820
Audit	
2017 FSC Annual Surveillance Audit + SFI Annual Surveillance	\$27,407
Audit	
Total	\$143,226

Total payments for external audit services across State, MFL, and County lands will total \$523,050 for 2013 – 2017; these costs do not include indirect costs (primarily staff time).

Section 7. Impacts of Forest Certification Dr. Tricia Knoot, DNR Research Scientist

Questions continue to arise as to whether the "benefits" of forest certification are worth the "costs". This debate is due, in part, to challenges in comparing the diverse range of perceived advantages and disadvantages of certification that are experienced along the supply chain—from those who supply certified forest products to those primary and secondary wood products manufacturers who may hold Chain-of-Custody certificates and sell certified wood products, and finally to end consumers. Through our review and this report (see Section 6), we present direct costs of certification that are experienced by landholding enterprises who supply certified forest products (i.e., direct and indirect expenditures for certification and annual surveillance audits We also identified and characterized the specific actions that are taken by these landholding enterprises to maintain certification (i.e., CARs) (see Section 8), which suggests potential impacts both internally to landholders as well as other stakeholders, such as those who procure certified timber.

However, through our review process, we found a general lack of available data or systematic analysis of how the full costs and benefits of forest certification accrue along the supply chain in Wisconsin and across the US. For example, the added costs to forest management in Wisconsin due to forest certification (considered an important disadvantage for firms across the US) are not yet identified nor quantified. This lack of understanding may in part be due to the fact that forest certification involves a bundle of standards, and each standard alone or in combination with others, may have different impacts on how forests are managed in Wisconsin. Also, perceived important benefits of forest certification, such as signaling of corporate responsibility or strategic positioning by a firm as summarized below, may be challenging to characterize and compare against costs such as expenditures on audits.

While recent data is lacking of the full suite of impacts of forest certification in Wisconsin, in the section below and Appendix C, we describe the current state-of-knowledge of perceived advantages and disadvantages that have been identified through reports and survey research. Specifically, four sources of information were found to be directly relevant to this task (Table 7), which includes a report by the Steering Committee of the State-of-Knowledge Assessment of Standards and Certification (2012)¹⁶, which provides a synthetic overview through an extensive review of data sources that document impacts of forest certification. Three additional sources of information¹⁷ offer details as to specific advantages and disadvantages experienced by enterprises

Moore, S.E., F. Cubbage, and C. Eicheldinger. 2012. Impacts of Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI) Forest Certification in North America. Journal of Forestry 110(2):79-88.

Rickenbach, M., and C. Overdevest. 2006. More than markets: Assessing Forest Stewardship Council (FSC) certification as a policy tool. Journal of Forestry 104(3):143-147

¹⁶ Steering Committee of the State-of-Knowledge Assessment of Standards and Certification. 2012. *Toward sustainability: The roles and limitations of certification*. Washington, DC: RESOLVE, Inc. On-line: <u>http://www.resolv.org/site-assessment/towardsustainability/</u> (*last accessed 9/19/2013*).

¹⁷ Hubbard, S.S. 2003. Environmentally certified forest products: An assessment of two segments in Wisconsin's wood products industry. University of Wisconsin-Madison, Madison, WI.

across the US (Moore et al. 2012; Rickenbach and Overdevest, 2006), and particularly in Wisconsin (Hubbard, 2003). We provide an overall synthesis of these documents below, but also bulleted highlights from each document in Appendix C.

Main Sources of	Title of Report/Paper	Focus of Report/Paper
Information		
Steering Committee (2012), Appendix F. Forestry Review by B. Cashore and G. Auld.	Toward Sustainability: The Roles and Limitations of Certification	 Review of the state of knowledge of forest certification (FSC and PEFC) and trends in impacts). Drew upon 5,500 sources of information. Highlights general trends and comparisons across certification schemes.
Moore, S.E., F. Cubbage, and C. Eicheldinger (2012).	Impacts of Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI) Forest Certification in North America	• Survey completed in 2007 of enterprises across North America. Highlights differences in perceived advantages/disadvantages according to FSC or SFI orientation.
Rickenbach, M., and C. Overdevest (2006).	More than markets: Assessing Forest Stewardship Council (FSC) Certification as a Policy Tool	• Survey completed in 2003 of enterprises that hold FSC certificates in the US. Highlights perceived advantages and degree of satisfaction.
Hubbard (2003).	Environmentally Certified Forest Products: An Assessment of Two Segments in Wisconsin's Wood Products Industry	• Survey completed in 2003 of primary wood manufacturers (those with and without Chain-of-Custody certificates) and industrial customers in Wisconsin involved in purchasing certified product.

Table 12 Main Sources of Information to Evaluate the State-of-Knowledge ofImpacts of Forest Certification

7.1 Synthesis of Findings

The direct overall costs of certification are relatively understood, especially those experienced by landholding enterprises and resource managers which are often described as auditing expenditures (Steering Committee, 2012). In Wisconsin, direct costs to the citizens of Wisconsin and costs to the County forests are described above (see Section 6). From previous studies as summarized in the Steering Committee report (2012), direct costs tend to decrease with ownership size due to economies of scale. However, they point out that ownership size alone does not determine cost of certification, given that the cost for changing operations to meet standards depends, in part, on how "close" a business is to already meeting these standards (Steering Committee, 2012). There are also questions as to how costs compare across different certification programs. It has been found that overall direct costs and benefits are relatively similar across certification programs (Steering Committee, 2012). However; specific types of costs may differ across programs due to different types of standards and actions that are required of certificate holders (Steering Committee, 2012; Moore et al., 2012). For example, while there was no statistical difference in the number of reported changes (i.e., corrective actions) made by FSC organizations as compared to SFI organizations in North America (Moore et al., 2012), the types of changes that were made differed. FSC organizations made more environmental/forest management and social/legal changes, while SFI organizations made more economic/system changes (Moore et al., 2012).

Compared to direct costs, indirect costs as well as benefits are less well-defined (Steering Committee, 2012) and have been most often assessed qualitatively and described as perceived advantages/disadvantages (Hubbard, 2003¹⁸; Moore at al., 2012; Rickenbach and Overdevest, 2006¹⁹). From the reviewed studies/reports, the general categories of **advantages of certification** rated highest in importance include: strategic positioning of an organization, signaling corporate social responsibility, and market-based benefits (Moore et al., 2012; Rickenbach and Overdevest, 2006). In the study by Rickenbach and Overdevest (2006), signaling effects were thought to be of greatest importance in certification decisions by the FSC certificate holders in the US. With respect to specific advantages, in the study by Moore et al. (2012) they found advantages were ranked similarly by FSC and SFI certificate holders and the highest ranked advantages (of the 29 advantages that were evaluated) were:

- Strategic position of the organization,
- Corporate social responsibility,
- Retaining or gaining market access,
- Marketing/sales tool,
- Better management systems performance,
- Better planning and implementation,
- Better forest management practices, and
- Fostering continuous improvement

¹⁸ Hubbard, S.S. 2003. Environmentally certified forest products: An assessment of two segments in Wisconsin's wood products industry. University of Wisconsin-Madison, Madison, WI.

¹⁹ Rickenbach, M., and C. Overdevest. 2006. More than markets: Assessing Forest Stewardship Council (FSC) certification as a policy tool. Journal of Forestry 104(3):143-147

With respect to perceived **disadvantages of certification**, the study by Moore et al. (2012) suggests that direct costs figure prominently. They found that four of the possible 16 possible disadvantages were thought to be important (> 3.0 mean rating), and included the impacts of:

- Audit costs,
- Time and preparation costs,
- Added costs for forest management, and
- Too much recordkeeping

In weighing the advantages versus the disadvantages, Moore et al. (2012) found that most respondents (SFI and FSC certificate holders) found "*benefits equal costs*". They also found that most SFI and FSC certificate holders would mostly likely continue to hold certificates. However, SFI respondents on average indicated greater certainty in maintaining certification. Likewise, in the survey of FSC certificate holders in the US, Rickenbach and Overdevest (2006) found that over 50% of the respondents thought they would recertify, and they would recommend forest certification to others.

In contrast to the surveys by Moore et al. (2012) and Rickenbach and Overdevest (2006), in which surveys were primarily targeted towards landholding enterprises, the survey by Hubbard (2003) represents perspectives of the business consumers, including primary wood manufacturing companies and industrial consumers in Wisconsin. Institutional and business demand for certified products is thought to play a more central role in market demand, while end consumers are generally unaware of forest certification (Steering Committee, 2012). Through this survey conducted in 2003, business consumers generally lacked knowledge of forest certification, and those holding chain of custody certificates experienced few benefits. However, this survey was conducted prior to the significant expansion of certified lands in Wisconsin that occurred between 2003-2005.

There are considerable gaps in knowledge concerning the impact of forest certification in general and particularly in Wisconsin. Such gaps in knowledge include:

- Where the specific costs and benefits accrue along the supply chain (e.g., landholding enterprises, procurement firms, and primary and secondary wood products companies) is not well documented and may require further research (Steering Committee, 2012).
- Some standards that are thought to impose significant added costs to forest management, yet lack full analysis, include requirements for tree retention, set asides, and the use of specific technologies (Steering Committee, 2012). Research efforts to understand such costs associated with forest certification would require first identifying those standards and associated actions that are solely tied to certification (i.e., would not occur if certification did not exist in Wisconsin).
- There is a general lack of understanding of the indirect impacts of forest certification, which may include impacts on operational efficiencies, cost avoidance associated with reduced litigation, or gains in knowledge by consumers.
- There is limited Wisconsin-specific information concerning the perceived advantages/disadvantages experienced by Wisconsin's primary and secondary wood products companies since the substantial increase in certified wood supply in the state over the last 10 years.

Section 8. Review of Corrective Action Requests (CARS) and Corrective Actions²⁰

Bradley Hutnik, DNR Forest Ecologist and Silviculturist

Since 2004, certification of State lands, County Forests, and the Managed Forest Law Program have resulted in 102 corrective action requests (CARS) from The Forest Stewardship Council, The Sustainable Forestry Initiative, and The American Tree Farm System. In addition, certification audits have resulted in numerous observations that do not carry the weight of CARS but can be elevated to CARS status if not addressed. In response to CARS, State Lands, County Forests and the MFL program have taken at least 276 corrective actions; in some cases more than one action is required to respond to a CAR. The highest numbers of CARS and corresponding corrective actions have been associated with State Land management.

• *Note*: Some of the difference in the number of corrective actions between certifiers can be attributed to differing audit formats.

Figure 2 Wisconsin CARS and Corrective Actions (2004-2011) across State, MFL, and County Lands



Corrective actions influence the way certificate holders do business and have both internal and external application. Internal applications are defined as CARS and resulting corrective actions that apply directly to issues solved solely by the certified body (State or County). An example of an internal corrective action is a staff training requirement. An external & internal application is a CAR that is solved by the certified body (State or County) that may directly or indirectly impact others in timber management and the forest products industry. An example of an internal / external CAR with direct or indirect impacts is a change in standard timber sale contract language. All corrective actions were classified according to these definitions. Since 2004, most corrective actions from FSC, SFI, and ATFS have internal application only.

²⁰ Note: some of the difference in the number of corrective actions between certifiers can be attributed to differing audit formats.



Figure 3 Application of Certification Corrective Actions (2004-2011) across State, MFL, and County Lands

Corrective actions can also be classified by the topic covered by the action. All corrective actions were classified according to best fit by topic. Each corrective action could fit more than one topic.

With application both internally and externally, the most frequent topics covered by corrective actions, both for FSC and SFI on State land and County Forests were:

- timber sale administration
- stakeholder input & notice
- water quality BMP's.

With application only internally, the most frequent topics covered by FSC corrective actions on State land and County Forests were:

- inventory
- reconnaissance & monitoring
- State & County Forest management (field work)
- internal guidance (ex. standard operating procedures or SOP's).

For SFI, the most frequent topics covered by corrective actions on State land and County Forests were:

- staff training
- internal guidance (ex. SOP's, etc.).



Figure 4 FSC & SFI External and Internal Corrective Action Classification for State Land and County Forests



Figure 5 FSC & SFI Internal Corrective Action Classification for State Land and County Forests

Section 9 Future Challenges and Opportunities for Forest Certification Mark Heyde, DNR Forest Certification Coordinator

Forest certification is an expensive proposition. The future challenge and opportunity for certification schemes is to deliver real value across the entire supply chain, while maintaining system integrity and at the same time controlling or reducing costs. Here are a few examples of issues and initiatives that may influence forest certification schemes and their implementation:

Challenges

- 1. ATFS, SFI, and FSC certification schemes have 5 year revision cycles for their respective standards; future changes represent an unknown cost of conformance.
- 2. A FSC international standard is in development; it is anticipated that the US Standard will be normalized to the international standard.
- 3. FSC has a stated intent to expand the reach of their scheme into the entire supply and production chain. A recent example is a proposal to require that forest nursery's supplying planting stock for certified forests conform to the FSC standards.
- 4. FSC requires CoC documentation each time a product changes ownership; this has a direct impact on Wisconsin loggers with added cost.

Opportunities

- 1. European Timber Regulations (EUTR) went into effect in March 2013 to assure the legality of timber in the European supply chain. EUTR may represent an opportunity for North American timber supplies because of its low risk (of illegal) supply.
- 2. Corporate statements of environmental and social responsibility may increase the demand for certified forest products.
- 3. International markets may favor certified forest products.
- 4. Programs for certifying the environmental performance of buildings (e.g. US Green Building Council's LEED program and the Green Building Initiative's Green Globe program) may increase customer demand for certified forest products.

Dual Certification vs. Single Certification

Wisconsin DNR holds dual certificates for DNR State Lands, and the majority of MFL owners and county forests. The notion of dual certification is rooted in the original request for certification from forest industry; although it did not specifically require multiple certifications. The DNR and counties also see dual certification as a kind of insurance policy to maintain certification despite changes to one scheme or the other and to stimulate healthy competition between schemes.

In summary, some advantages and disadvantages of dual versus single certification include: <u>Dual certification-</u>

- 1. Allows wood to flow to markets with different certification preferences.
- 2. Provides assurance that wood supplies can remain certified even as different schemes change.
- 3. Provides the opportunity for coordinated audits that reduce the costs of dual certification vs. two single certifications.
- 4. Increases the costs and complexity of conformance, as multiple standards must be met.

Single certification-

1. Wood can only flow to markets whose preference matches the chosen scheme.

2. Costs of single certification are less than dual certifications. The complexity of conformance is reduced compared to dual certification.

Section 10 Other Organizations' Certification Reviews and Outcomes Mark Heyde, DNR Forest Certification Coordinator

This section summarizes conversations with forest managers or certification coordinators from other organizations with the intent that their thought processes and decisions can help inform discussions about the costs and benefits of certification in Wisconsin. In all three examples decisions to certify or not were based on an assessment of the particular needs of the organization.

Indiana DNR: In 2012 Indiana DNR assessed their investment in certification and decided to drop American Tree Farm System (ATFS) certification in favor of maintaining FSC certification.

Indiana DNR's decision was driven by the need for chain-of-custody (CoC) for hardwood log markets and the lack of a mechanism for Tree Farm CoC through SFI. Indiana does not have a pulp and paper industry and therefore lacks a SFI State Implementation Committee. This was viewed as a significant barrier to implementing a Tree Farm CoC system under SFI. The SFI CoC system is also not recognized by PEFC (Programme for Endorsement of Forest Certification) and so lacks international recognition (Phil Wagner, Indiana DNR, personal communication 2012).

Indiana DNR decided to keep their FSC certification because FSC's chain of custody system offered what Indiana needed for bringing forest certification claims to the domestic and international hardwood log marketplace.

<u>Menominee Tribal Enterprises (MTE):</u> MTE was an early adopter of forest certification. In 1992 MTE sought both Rainforest Alliance and Scientific Certification Systems certification; the RA (i.e. Smartwood) and SCS schemes predated the establishment of the Forest Stewardship Council (FSC) in 1993. MTE was motivated by signals that the marketplace would reward third-party certified forests with price advantages or additional market share.

During the first four years the benefits to MTE versus audit costs were a break even proposition, but by the mid to late 1990's markets developed for FSC products, particularly in higher grade lumber and veneer for European markets. FSC certification was deemed to give MTE an economic advantage, shown by increased sales through the early 2000's.

By the middle 2000's economic challenges in Europe softened demand for certified lumber and veneer and MTE dropped FSC certification to save costs.

Recently, the pulp market has shown signals that the demand for certified wood, particularly FSC certified material, was strengthening.

MTE has again become FSC certified for both its forest management operations and a separate chain of custody certification for its mill operations. The MTE decision to certify, then decertify, and finally recertify was primarily an economic decision. The tribe feels that the benefits of forest certification, including market share and price premiums, outweigh the costs of certification including audits, training, internal monitoring and documentation (M. Pecore, personal communication 2013).

<u>Minnesota DNR</u>: In 2010 the Minnesota Department of Natural Resources reviewed their investment in FSC and SFI certification of Minnesota forests to determine whether to continue with forest certification. The decision to continue dual (FSC and SFI) certification of the forest lands it administers was made although the decision noted that the Department's concerns and issues had yet to be completely satisfied (R. Barnard, MN DNR, personal communication 2012). Actual movement was expected on issues of concern that included:

- The impact of SFI's change from a five year to a three year re-assessment audit timeframe.
- Expansive scope and scale of revisions to the FSC-US Forest Management Standard, complicated by instability associated with FSC-IC's current revision process to the Principles and Criteria.
- Inconsistent auditor interpretations and implementations of the Chain-of-Custody Standard.
- Too much emphasis on documentation requirements versus on-the-ground benefits and the actual impacts and effectiveness of changes to the Forest management Standard.
- Delay in stakeholder notification and consultation regarding policy or standard changes.
- To date, lack of recognition of the contribution that lands excluded from [MN] DNR's certificates play toward conservation values, protecting rare plant communities, and meeting social/cultural needs.
- Negative advertising campaigns and brand wars that devalue [MN] DNR's certificates. The [MN] DNR has previously expressed, and still believes, that the marketing aspect and negative advertising campaigns associated with specific "brands" of Forest Certification have gotten out of hand, when in reality, still relatively few consumers are aware or understand the concept of Forest Certification. Branding is not important to the [MN] DNR. The [MN] DNR believes being certified is very important. The department is clear that a quality certification program that adds value to land and landowners, combined with high standards and continual improvement, is more important to land managers than any particular brand..

"The [MN] DNR recognizes the sensitivity and potential impacts that decisions related to maintaining dual certification could have on Minnesota's forest industry and working relationships with other [MN] DNR stakeholders and cooperators. We will continue our commitment to be responsible and sustainable natural resource managers. [MN] DNR recognizes the value in third-party quality assurance and chain-of-custody recognition....However, this recent decision to pursue re-certification with FSC and SFI has not come without concerns...Therefore, [MN] DNR is cautiously moving forward with dual certification, and will continue to evaluate the value, effectiveness, stability, success, and costs/benefits certification provides to our management goals and the economy of the state." Mark Holsten, Commissioner, (decision memo August 2010).

Section 11 Establishment of a Great Lakes Certification Scheme *Mark Heyde, DNR Forest Certification Coordinator*

The Council discussed the merits of describing a Wisconsin or Great Lakes focused certification scheme. Discussion highlighted that market recognition of a certification scheme, including international recognition, is needed for successful implementation. It was noted that both the Sustainable Forestry Initiative and Forest Stewardship Council have invested significant resources and years of effort to build market share and brand awareness both domestically and internationally. The cost for developing a new certification scheme and building market recognition was deemed prohibitive.

<u>Alternatives for International Recognition:</u> The alternatives for international recognition are two-fold. First a scheme could be developed as an international standard e.g. FSC. There could be an opportunity to develop a Great Lakes scheme from an international perspective if it included Canada.

Secondly, international recognition can be sought through PEFC (the Programme for Endorsement of Forest Certification). PEFC has an established process for recognizing standards. This process takes on average nine months to complete and it consists of the following steps:

- A national certification system applies for assessment. An independent assessor is appointed, and PEFC announces the start of the assessment process.
- All documentation about the system is made publicly available. Global stakeholders are invited to comment and provide feedback on any aspect of the system. This public consultation lasts 60 days; it complements the national consultation process carried out as part of the standards development process.
- The appointed assessor evaluates compliance of the national system with PEFC requirements. The assessment is based on all comments received, field trips, and other available information.
- A Panel of Experts reviews the assessment report to ensure consistency, quality and robustness.
- The full assessment report, including all documentation and feedback from stakeholders, is evaluated by the <u>Board of Directors</u>, which provides a recommendation to the <u>General</u> <u>Assembly</u>.
- All the documentation and reports are then submitted to the General Assembly the highest authority of PEFC for endorsement.
- The General Assembly votes on the endorsement of the national system. A two-thirds majority is required for a system to be endorsed.
- Complete documentation relating to all endorsed systems, including full assessment reports and Panel of Experts' assessment, is made publicly available.

The hurdles that must be cleared for the formation of a certification scheme that has relevance in forest products markets nationally and internationally include development of a national certification scheme, developing support for a new national scheme from existing schemes (i.e. SFI and Tree Farm), and obtaining recognition at an international level (i.e. PEFC).

Section 12 Information Gaps

Mark Heyde, DNR Forest Certification Coordinator

The primary information gap identified during this review was a lack of current information about the importance (e.g. costs and benefits) of forest certification to Wisconsin Forest Industry. A 2003 study (Hubbard) surveyed Wisconsin's primary forest industries to assess forest certification importance. The Council on Forestry supported a follow-up longitudinal survey that in part would provide results to compare with the 2003 data.

Research on the importance of forest certification to Wisconsin forest products companies and markets. A proposal by Dr. Mark Rickenbach, UW-Madison, to do a follow-up survey (to Hubbard, 2003) was endorsed by the Council in March 2013. Subsequently a proposal to fund research about forest practices and their impacts on forest industry and landowners was funded in the State of Wisconsin's biennial budget. The Council along with the Great Lakes Timber Professional Association and the Wisconsin County Forests Association have oversight for implementation of up to \$600,000 of research funding over two years (FY 2014 and 2015). The Rickenbach study proposal will likely be considered by the Council in light of the overall research strategy for forest practices and their impacts on forest industry.

Appendix A: Council on Forestry Certification Review Issue Brief

Authors: Allison Hellman and Mark Heyde

Date Presented: June 20, 2012

Presenter: Paul DeLong (State Forester's Report)

Expected Outcomes:

Council members will understand the purpose of reviewing 3rd party forest certification certificates (FSC, SFI, and Tree Farm) held by Wisconsin DNR; and provide input regarding the project scope, those involved, and timeframe.

Background:

Wisconsin DNR has held certificates for 6-8 years depending on the certification system. An appropriate time has passed where it is reasonable to assess the value of the state's investment in forest certification including the associated costs and the resulting benefits and impacts to the state, landowners, forest industry and other stakeholders. This review is intended to be an assessment of the current state of DNR's investment in certification programs. This review will not recommend a future course; however, discussions about the Division of Forestry's future level of investment in forest certification will use this information.

Scope of project:

- Managed Forest Law Group Dual Certification ATFS and FSC
- State Forest Dual Certification FSC/SFI
- Other State Lands Dual FSC/SFI and SFI only
- County Forest Dual FSC/SFI and SFI only
- Chain of Custody

Areas to be examined:

Costs/Benefits:

- 1. Cost both internal (direct out of pocket costs and staff time) and external costs; additional costs for dual certification
- 2. Value/Benefits of certification including dual certification
- 3. Cost and benefit of activities we were directed to do, but which we normally would not have done on our own accord as a result of corrective action requests or observed opportunities for improvement.
- 4. Development of Wisconsin specific certification system: pros and cons.
- 5. Other certification efforts being undertaken by partners.

Impacts:

- 1. Overall impact of forest certification
 - a. Change in autonomy of management of certified lands
 - b. Change in level of consistency in management of County Forests, State Forests, and Other State Lands and MFL land.
- 2. Impacts to industry positive and negative; overall competitiveness
 - a. Price differential
 - b. Change in market share
 - c. How many customers/companies or what percentage of forest Industry business is certified products

- d. Impact to global competitiveness
- e. Impact to job retention
- f. Impact to supply
- g. Impact on those companies who are not certified

Public Perception:

- 1. Review of research conducted in past 5 years examining influence and impacts associated with certification and/or stakeholder perceptions
- 2. Stakeholder or customer view of certification:
 - a. Industry
 - b. Non-industrial large landowners
 - c. Industrial landowners
 - d. MFL participants
 - e. County
 - f. Environmental & conservation organizations
 - g. Cooperating foresters
 - h. Other?
- 3. Tribal view of forest certification

Proposed Timeline:

June 2012 – Form review team September 2012 – Interim report to Council December 2012 – Final report of findings to the Council

Council Action:

- 1. Discuss and approve scope
- 2. Determine level of Council involvement
- 3. Approve timeline

Appendix B: Forest Certification, A Comprehensive Description & Historical Context Within Wisconsin, pg. 35-37

Certification maps and data, pg. 38-42

FOREST CERTIFICATION A comprehensive description & historical context within Wisconsin

Background – What is Forest Certification?

Forest Certification is an independent, third-party verification scheme that evaluates and recognizes sustainable and responsible forest management and procurement practices. In the context of Forest Certification, sustainability includes maintenance of the ecological, economic, and social components of forests and surrounding communities.

Consumer / Market Demand

Forest Certification is widely seen as the most important initiative of recent decades to promote the sustainable management of the world's forests. Primarily a market-driven initiative, consumers began to demand "green" certified products in response to increased concerns over illegal logging and the degradation of tropical rainforests. Through chain-ofcustody certification, consumers can be confident that products displaying a certified logo were grown, harvested and produced in a sustainable manner, consistent with the principles of Forest Certification.

While participation in Forest Certification within the U.S. is voluntary, for much of the global forest products industry, sourcing from certified forests and providing chain-of-custody credentials is seen by customers as a pre-requisite or license to doing business.¹ Large retail chains such as Home Depot, Lowe's, and IKEA, that give preference to certified products by purchasing specific proportions of their wood products from certified firms or organizations; publishers; and public procurement policies are seen as the primary drivers of Forest Certification. Although consumers may not yet demand certified products explicitly, they do expect that the products they purchase are not derived illegally and do not degrade forest ecosystems.

Companies that buy wood and paper products face substantial marketplace risks and targeted negative media campaigns from environmental groups if their brands are associated with poor forest management practices that have detrimental environmental or social consequences. Time Inc., one of the corporations targeted in the early 2000s by environmental groups for not addressing forest sustainability issues, now has a paper purchasing standard requiring 80% to be sourced from sustainably managed, third-party certified forests.

Auditing Process

To maintain certification, certificate holders must successfully undergo re-certification assessments every 3 to 5 years, and annual surveillance audits during each non- reassessment year. Audits must be performed by approved, accredited auditing firms (i.e. certifying bodies). After each audit, corrective action requests (CARs) are assigned for conformance gaps. The organization seeking or striving to maintain Forest Certification, must respond to, and correct, each conformance gap within the time-frame allowed, generally 3 months to 1 year.

Certification "Brands"



Domestically, there are three major internationally recognized Forest

Certification schemes: Forest Stewardship Council (FSC), the Sustainable Forestry Initiative (SFI), and the American Tree Farm System (ATFS). SFI and ATFS are recognized by PEFC, the Programme for Endorsement of Forest Certification an organization that promotes the mutual recognition of credible forest certification schemes.

Early History of Certification in Wisconsin

In late 1990's, the Wisconsin Council on Forestry (COF) declined a proposal for Wisconsin state forests to be certified to the FSC standard as part of a pilot certification project funded through private foundations. But by the early 2000's, Time-Warner, Inc. required its Wisconsin paper suppliers to assure a supply of certified paper within three years. The Council on Forestry was charged with exploring the feasibility of certification and by 2004, WDNR had certified over 500,000 acres of its state forests under FSC and SFI. In March 2005, over 2.3 million acres of the county forests were dual certified under FSC and SFI. And the MFL group followed with Tree Farm certification of over 1.99 million acres in June 2005. In just two years WDNR gained certification of almost 5 million acres to help support Wisconsin's forest industry.

Since 2005, interest, recognition and support for Forest Certification have continued to grow. Concerns have also been raised about whether the benefits of Forest Certification outweigh the costs.

Why is Forest Certification Important?

Maintaining Forest Certification provides Wisconsin's forest industries the opportunity to compete in certified forest products markets and demonstrates and re- affirms WDNR's dedication to sustainable and responsible forest management. Certification of 6.43 million acres of WDNR administered forestlands including county forests and Managed Forest Lands provide a sustainable supply of forest products and services from healthy, diverse and productive ecosystems, independently recognized progress towards sustainability, continuously improved forest management practices, and improved interdisciplinary coordination and communication.

Given the current stresses of invasive species, forest conversion, climate change, etc., managing sustainably is crucial for ensuring a long-term flow of forest products and timber revenue. Forest Certification has not changed WDNR's priorities or management objectives, but has rather focused attention on mission- driven work and prompted action on managing sustainably by addressing wildlife habitat and biodiversity, water quality, planning, sustainable harvest levels and other issues that WDNR was already committed to, but in some cases had not risen to top priority.

Forest Certification can also be viewed as providing the social license to practice forestry.

In tough economic times certification has helped maintain the competitiveness of Wisconsin's forest products companies. Forest Certification has helped maintain markets for timber, thereby maintaining the ability to effectively manage forests while also maintaining the economic vitality of many of Wisconsin's forest dependent rural communities. Although data indicates that consumers are not willing to pay more for certified products (i.e., certificate holders are not receiving price premiums), many agree that Forest Certification has helped secure and ensure market access. Many customers, particularly business to business are requiring certified forest products. Recently Proctor and Gamble announced that it will drop the purchase of uncertified pulp by 2015.²¹

Regional Impact of Forest Certification *Wisconsin:*

Wisconsin's forest certifications have continued to expand to help meet market demand for certified forest products. Since 2005, FSC certification of the MFL group was achieved. The MFL group is the largest family forest certified group in the world under both the American Tree Farm System (ATFS) and FSC schemes. In addition to WDNR administered certificates, forest industry, the WI Tree Farm Committee, and NGO's maintain certified groups under FSC or ATFS bringing the total certified forest to 7.4 million acres or almost 50% of Wisconsin's commercial forestland.

Great Lake States & Nationwide:

The Great Lakes States Region is recognized as a hub for certified products. The Great Lakes Region provides a critical mass of certified supply to forest industry. The certified forestland in Minnesota, Wisconsin, and Michigan combined totals over 19.6 million acres for SFI/ATFS and over 17 million acres for FSC. This makes up over 32% of the SFI certified forests and over 52% of FSC certified forests in the U.S.

Since 2005, Maine, Maryland, Massachusetts, New York Department of Environmental Conservation, Pennsylvania, and Washington DNR have certified their state forestlands. More recently, Ohio and Indiana have also certified their state forestlands.

States are also examining their investment in forest certification. In 2010 Minnesota DNR reviewed their certification programs and decided to continue dual certification of MN DNR administered forests under FSC and SFI. In 2012 Indiana DNR assessed their investment in certification and decided to drop ATFS certification in favor of maintaining FSC certification. Indiana DNR's decision was driven by the need for chain-of-custody for hardwood log markets and the lack of a mechanism for Tree Farm CoC (no SFI state implementation committee) through PEFC (Phil Wagner personal communication).

²¹ Environmental Leader, P&G to Drop Uncertified Pulp by 2015, http://www.environmentalleader.com



Figure 1. Certified Acres in Wisconsin 2012

Chain-of-Custody Process

Chain-of-Custody (CoC) documentation allows an end product to be marketed and labeled as certified if it is sourced and manufactured in accordance with the certification standard(s). Documentation required to meet CoC requirements enables forest based products to be tracked back through the manufacturing process, thereby verifying that the product was sourced from a certified forest. If at any point in the supply chain a product is legally transferred (i.e. changes ownership) to a noncertified manufacturer, that product is no longer considered to be certified and cannot be labeled as such. Both FSC and SFI have separate Forest Management (FM) and CoC standards.

Impact of the Chain-of-Custody Process

Acquiring and maintaining a CoC certificate allows a manufacturer to market forest products using the certified logo. By doing so, the manufacturer is able to access a wider array of markets and customers. This is becoming increasingly important in today's market, where many consumers want assurance that their products were harvested and manufactured in a way that is consistent with responsible management.

WDNR's Certification Status & Contact

WDNR continues to see growth in the MFL certified group and modest increases are also realized when WDNR or Wisconsin Counties purchase additional forestlands.

Past audit reports, CAR responses, and other information can be found on WDNR's Forest Certification website: http://dnr.wi.gov/topic/TimberSales/certification.h

http://dnr.wi.gov/topic/TimberSales/certification.h

For more information, please contact: Mark Heyde Sustainable Forestry Certification Coordinator mark.heyde@wisconsin.gov (608) 267-0565



Figure 2. Wisconsin Certified Forests prepared for the WI Congressional Delegation





Certified U.S. Forestland by Ownership Type

Industry (69%) Public (12%) Private (10%)

FSC Certification Statistics as of August 2012 (fsc.org)

- 32,894,442 Acres certified in the US
- 164,291,121 Acres certified in the US and Canada
- 3,581 companies Chain-of-Custody certified in the US
- 4,558 companies Chain-of-Custody certified in the US and Canada

SFI Certification Statistics (sfiprogram.org)

- 60,340,867 Acres certified in the US and territories
- 196,306,430 Acres certified in the US and Canada
- 958 companies Chain-of-Custody certified in the US
- 1,242 companies Chain-of-Custody certified in the US and Canada

ATFS Certification Statistics

- 26,900,091 Acres Certified in the US (ATFS staff communication)
- 392 companies Chain-of-custody certified in the US (PEFC) (pefc.org)

²² Barnard, Rebecca, Forest Certification Fact Sheet, Minnesota DNR, June 2012

State	SFI Certified Acres	ATFS Certified	FSC Certified Acres		
Alabama	2 251 516	2 227 645	6.074		
Alabalila Alaska		3,237,045	0,074		
Arizona	-				
Arkansas	2.913.095	1.003.114	539.533		
California	2 544 888	1 426 559	1 258 933		
Colorado		122,288	1,200,000		
Connecticut	-	78.248	7.840		
Delaware	17,876	18,086	1,358		
District of	,	,	,		
Columbia	-				
Florida	1,520,581	1,126,142	120		
Georgia	2,376,318	2,609,357			
Hawaii	-		24,543		
Idaho	290,482	251,361	838,381		
Illinois		84,628	1,794		
Indiana	154,000	106,216	676,370		
lowa	-	81,602			
Kansas	-	8,416	156,757		
Kentucky	152,000	207,924			
Louisiana	2,950,556	1,824,380	603,584		
Maine	6,738,158	781,295	4,781,057		
Maryland	211,000	139,018	124,847		
Massachusetts	-	123,377	51,159		
Michigan	5,088,022	788,289	4,637,930		
Minnesota	6,789,831	225,990	6,845,367		
Mississippi	2,166,664	1,893,247	634,064		
Missouri	-	178,535	146,235		
Montana	1,303,431	174,090			
Nebraska	-	1,269			
Nevada	-				
New Hampshire	187,732	474,928	574,040		
New Jersey	-	59,367	20		
New Mexico	90,000	115,102	1 242 052		
New York	1,373,271	457,242	1,242,953		
North Carolina	1,087,880	355,444	10,455		
North Dakota	-	925	210 770		
Onio	202,927	461,650	218,776		
Okianoma	857,747	66,356	F66.020		
Doppouluonia	3,228,813	833,094	500,929		
Phodo Jologd	132,/8/	203,122	2,570,247		
South Carolina	- 1 120 חדב	52,200 1 070 1 21			
South Dakota	1,130,075	1,070,121 22 Q04	0,805		
	210 022	22,004	12 271		
rennessee	210,932	371,882	42,371		

Table CERTIFIED ACRES BY STATE - AUGUST 31, 2012

Appendix B

Texas	2,383,525	922,244	26,809
Utah	-		
Vermont	86,158	160,601	164,844
Virginia	414,707	971,421	209,683
Washington	6,226,489	377,778	240,372
West Virginia	257,044	621,170	
Wisconsin	3,994,362	2,756,529	5,678,132
Wyoming	-	14,975	
TOTAL	60,340,867	26,900,091	32,894,442

Sources: www.sfiprogram.org, ATFS staff, http://us.fsc.org/facts-figures.219.htm

Appendix C. Highlights from Four Relevant Studies/Reports

- **A.** Toward Sustainability: The Roles and Limitations of Certification (Steering Committee, 2012):
 - *Direct Costs:* FSC and PEFC (which recognizes SFI) have been found to be relatively similar in terms of *overall* benefits and costs, although specific direct costs may differ for an enterprise depending on certification programs and their associated standards.
 - Ownership size also impacts direct costs, with lower costs for those owning/certifying larger tracts due to economies of scale.
 - The cost for changing operations to meet standards depends, in part, on how "close" a business is to already meeting these standards.
 - *Changing Standards:* FSC and PEFC are regularly changing their standards, and the authors noted FSC is tending to modify policies to gain support from forest managers while PEFC has been thought to strengthen standards to gain support from retailers and certified wood product procurers. Therefore an understanding of impact of forest certification on enterprises must acknowledge and consider the dynamic nature of certification standards.
 - *Market Demand:* Institutional and business demand for certified products play a more central role in market demand, while end consumers are generally unaware of forest certification.
 - Gaps in Knowledge:
 - Information on direct costs (e.g., auditing fees) are better understood, while indirect costs (e.g., opportunity costs of staff time, costs of changing or creating procedures) are more difficult to quantify and are poorly understood.
 - Where the costs accrue along the supply chain is not well documented and requires further research.
 - Standards that are thought to impose significant costs, yet lack full analysis, include requirements for tree retention, set asides, and the use of specific technologies.
 - Chain-of-custody tracking is considered to be fragmented, so that much of the wood from FSC-certified forests is not labeled. There is a lack of information on the percentage of wood from certified forests that is identified as certified along the supply chain.
 - There is limited understanding of the indirect economic, social and environmental impacts of forest certification. Such indirect impacts include: providing a learning process that helps a governmental better develop policies; and, government use of forest certification systems and standards for implementing other licensing programs, which can reduce governmental costs.

- **B.** Perceptions of the Advantages/Disadvantages of Forest Certification (Moore et al., 2012):
 - The researchers surveyed all certified SFI organizations (landholding firms and procurement organizations) in the US and Canada and all FSC certified organizations (landowning firms and resource managers) in the US in 2007.
 - *Management changes:* There was no statistical difference in the number of changes (i.e., corrective actions) made by FSC organizations as compared to SFI organizations. However, the types of changes that were made differed. *FSC organizations made more environmental/forest management and social/legal changes, while SFI organizations made more economic/system changes.*
 - *Certification advantages:* They evaluated 29 possible benefits that fall into four categories: (1) strategic position/corporate social responsibility, (2) signaling stewardship commitment to external groups, (3) improved market shares or prices, and (4) better internal management, records, training, morale, and science.
 - For both systems, respondents *ranked highest* the specific benefits of:
 - Strategic position of the organization,
 - Corporate social responsibility,
 - Retaining or gaining market access,
 - Marketing/sales tool,
 - Better management systems performance,
 - Better planning and implementation,
 - Better forest management practices, and
 - Fostering continuous improvement
 - Rating of the benefits differed, where SFI respondents rated the benefits generally higher overall. *SFI respondents rated 70% of the possible benefits (mean rating) as important (> 3.0 mean rating), while FSC respondents rated about 40% as important.*
 - The researchers asked respondents about how expected benefits have been realized, (i.e., "expected" versus "actual" benefits). They found that the actual perceived benefits were thought to be lower than expected for strategic position, signaling, and markets, while internal management benefits were found to be greater than they expected. There were no differences in degree of expectations from SFI versus FSC respondents.
 - *Certification disadvantages:* Four of the possible 16 possible disadvantages were thought to be important (> 3.0 mean rating), and included the impacts of:
 - Audit costs,
 - Time and preparation costs,
 - Added costs for forest management, and
 - Too much recordkeeping
 - Average ratings for certification disadvantages tended to be higher (greater importance) for SFI respondents as compared to FSC respondents; however the mean differences were not statistically different.

- Weighing the costs and benefits:
 - Do benefits exceed costs? This question was asked of respondents, and the median response for both SFI and FSC respondents was *"benefits equal costs"*.
 - Will they maintain certification? The median response for both SFI and FSC respondents was expressed as "*probably yes*"; however, the mean response differed, *with SFI respondents on average indicating greater certainty in maintaining certification.*
- **C.** Perceptions of the Advantages of Forest Certification by US Enterprises (Rickenbach and Overdevest, 2006):
 - Researchers surveyed all FSC certificate holders in the US in 2003, with a response rate of 74%.
 - They evaluated the respondents' expected benefits for certification and degree of satisfaction. Expected benefits fell within three main categories, similar to the Moore et al. (2012) study, and included (1) market-based benefits, (2) signaling benefits, and (3) learning benefits. The benefits that fall within each of these categories include:
 - Market-based:
 - Access to certified markets
 - New marketing opportunities
 - Price premiums
 - Increased client demand
 - Differentiate product from competitors
 - o Signaling:
 - Gain recognition of forest management practices
 - Independent party affirmation
 - Improve/maintain relations with public
 - o Learning:
 - Learn about new management practices
 - Gain expertise in areas of management
 - Meet regulatory requirements
 - Meet high ecological standards in forest production
 - All enterprises *identified signaling effects as having highest importance in their decision*; with public enterprises placing significantly higher importance on these signaling effects.
 - The market-based perspectives were considered of second highest importance with larger enterprises indicating market effects as above average importance.
 - Enterprises were generally unsatisfied with markets effects, and were most satisfied with signaling effects.
 - Over 50% thought they would recertify, and would recommend to others.
- D. Perceptions of Primary Wood Manufacturers and Industrial Customers in Wisconsin, 2003 (Hubbard, 2003).

- Researchers surveyed all primary wood manufacturers in Wisconsin in 2003, as well as industrial customers from Menominee Tribal Enterprise (the largest certified landholder in WI at that time) in 2002.
- In 2003, most primary wood manufacturers and industrial consumers were "not at all familiar" with certification. Only 5% of the manufacturers who responded were chain-of-custody certified at the time of the survey.
- Of those *primary wood manufacturers* who were chain-of-custody certified(n=13):
 - Most of the companies produced hardwood and softwood lumber. Their dominant customers included lumber brokers, lumber wholesales, and furniture manufacturers. Roughly half of the firms reported selling their products to paper and pallet manufacturers.
 - These certificate holders employed between 10 to 150 full or part-time employees each.
 - At that time, most companies did not feel that certification had increased their market share, provided access to new markets, or received price premiums.
 - Overall, gains in new knowledge, improved employee safety, support from accreditor, use of an ecolabel, and increased competitiveness were experienced by at least some of the respondents.
 - o 47% felt that holding chain-of-custody certificates has created better public relations.
 - Other proposed advantages such as operational improvements or gains in efficiency were not yet realized by the companies.
- Of those *industrial customers* respondents (n=67), primarily secondary wood manufacturers, retailers, lumberyards, wholesalers, and brokers, they found:
 - Most of the chain-of-custody certified industrial customers did not experience increased market share or price premiums.
 - Overall, gains in new knowledge, improved employee morale/sense of pride, support from accreditor, use of an ecolabel, and competitive advantage were experienced by at least some of the respondents.
 - For those purchasing certified wood products, the most important criteria included product quality and price, whereas environmental assurances through certified status were thought of as less important.

Literature

Hubbard, S.S. 2003. Environmentally certified forest products: An assessment of two segments in Wisconsin's wood products industry. University of Wisconsin-Madison, Madison, WI.

Moore, S.E., F. Cubbage, and C. Eicheldinger. 2012. Impacts of Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI) Forest Certification in North America. Journal of Forestry 110(2):79-88.

Rickenbach, M., and C. Overdevest. 2006. More than markets: Assessing Forest Stewardship Council (FSC) certification as a policy tool. Journal of Forestry 104(3):143-147.

Steering Committee of the State-of-Knowledge Assessment of Standards and Certification. 2012. *Toward sustainability: The roles and limitations of certification*. Washington, DC: RESOLVE, Inc. On-line: <u>http://www.resolv.org/site-assessment/towardsustainability/</u> (*last accessed 9/19/2013*).