

Wisconsin Council on Forestry Biennial Report

January 1, 2009 - December 31, 2010

The Council would like to thank the following Division of Forestry staff for their assistance in writing this Report: Jolene Ackerman, Blair Anderson, Jeff Barkley, Tom Boos, Jane Cummings Carlson, Vern Everson, Genny Fannucchi, Rebecca Gass, Kirsten Held, Allison Hellman, Joe Kovach, Terry Mace, Trent Marty, Kathy Nelson, Carol Nielsen, Janel Pike, Nicole Potvin, Dick Rideout, Candice Sovinski, Jeff Stagg, and Carmen Wagner.

This biennial report is required by state statute 26.02(2). The purpose is for the Council on Forestry to report on the status of the state § 26.02(2) (a) 1-10. Additionally, the Council chose to report on its accomplishments during the time period covered by this report.

The Council is staffed by the Wisconsin Department of Natural Resources – Division of Forestry (WDNR). This report was written by DNR staff, with review and approval by the Council at its meeting on December 14, 2010.

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EXECUTIVE SUMMARY

The Wisconsin Council on Forestry is a board appointed by the Governor and comprised of individuals representing the diverse forest stakeholders. Wisconsin State Statute 26.02 created the Council on Forestry with a charge to advise the Governor, the Legislature, the Department of Natural Resources, the Department of Commerce, and other state agencies, as determined to be appropriate by the council, on the varied aspects of forestry in this state. The Council is required to prepare a biennial report on the status of the state's forest resources and forestry industry. This report is prepared in odd-numbered years for distribution to the governor and the appropriate standing committees of the state legislature. It covers the 24-month period ending on December 31st immediately preceding the date of the report.

During 2009 and 2010, the Council on Forestry focused on several issues that affected the ability of our forests to provide the full range of social, economic and ecological benefits not only today, but for those who follow. This report highlights that work. It also reports on the status of the state's resources and forest industry as required by state statute. The report is available electronically at <http://council.wisconsinforestry.org/publications.php>.

Council on Forestry Accomplishments

The Council's work focused on eight salient issues facing Wisconsin's forests: statewide forest assessment and strategy, best management for invasive species, MFL program changes, the harvest and use of woody biomass, deer management, fire assessment, Forest Management Guideline revision, and utilization of urban wood.

State Forest Resources

Highlighted here are descriptions of the state's forest resources and key trends or changes that occurred in the time period of this report. (These topics are discussed in depth in the report.)

- Wisconsin's forest resource is changing. Some noticeable trends include: hardwood succession is very apparent and overall growing stock volume has increased.
- Urban forests annually provide over \$64 million in carbon sequestration, air pollution mitigation, and energy savings. Urban areas comprised about 5% of the total land in Wisconsin; a growing component of forests in Wisconsin.
- Emerald Ash Borer is a threat to the health of Wisconsin's forests. EAB threatens 5.2 million urban trees—20% of the entire resource. Multiple state and federal partners are working together to prevent the spread of this insect.
- In 2008, direct employment in the forest industry was 65,694, down from 72,603 in 2005. Secondary forest industry such as furniture manufacturers have seen large market declines, affected by global competition and the recent recession.

- Wisconsin is moving forward on new economic opportunities for the forest industry with initiatives such as bio-refining by pulp mills and the use of woody biomass for fuel.
- In an effort to identify how best to address threats from wildfire, the Division of Forestry conducted a statewide fire assessment in 2009-10. The results will be used to inform the DNR Division of Forestry's Strategic Direction.
- Deer herbivory in Wisconsin forests is causing economic losses by reducing tree survival and growth, and altering species and age class composition. Forests need to be factored into the debate and decisions regarding management of Wisconsin's deer herd.

CHAIR'S INTRODUCTION

Forests serve a crucial role in the quality of life we enjoy. Wisconsin's economic, ecological and social well-being is closely linked to the diverse benefits we depend on daily from our forests. To make sure our forests – and the recreation and forest products industries that depend on them – remain healthy and vigorous, the Wisconsin Council on Forest has focused on several initiatives focused on the future sustainability of forests in Wisconsin.

Key highlights of the work of the Council in the past two years have been the successful completion of the Invasive BMPs for Forest Management, the Biomass Harvesting Guidelines, MFL Task Group resulting in a recommendation to the Legislative Council Study Group to review the MFL Program and providing input as well as determining its role in the Statewide Forest Strategy. In addition the Council has provided input on change to BMPs for water Quality and the deer impacts on forest management.

This report highlights the accomplishments of the work on these and other initiatives as well as providing a closer look at Wisconsin's forest resources and industry. The Council is dedicated to helping chart the course for sustainable management of today's forests to ensure they not only meet the current needs, but also those of future generations. I hope you enjoy reading this overview of our efforts.

Service on the Council represents a commitment of time and energy and my sincere thanks are extended to the members for their energetic involvement and willingness to address the challenging issues facing Wisconsin's forests today. I also offer my thanks to others in the forestry community who assist the Council and work tirelessly to improve and protect our forests, including Division of Forestry staff who provide staff support for the Council.

Sincerely,
Fred Souba, Jr.

COUNCIL CHARGE

The Wisconsin Council on Forestry was created by State Statute 26.02 in July 2002 to advise the governor, legislature, Department of Natural Resources, Department of Commerce, and other state agencies on a host of forestry issues in the state, including:

1. Protection of forests, from fire, insects, and disease
2. The practice of sustainable forestry, as defined in § 28.04 (1) (e)
3. Reforestation and forestry genetics
4. Management and protection of urban forests
5. Public knowledge and awareness of forestry issues
6. Forestry research
7. Economic development and employment in the forestry industry
8. Marketing and use of forest products
9. Legislation affecting management of Wisconsin's forest lands
10. Staffing and funding needs for forestry programs conducted by the state

COUNCIL MEMBERS (During the term of this report)

Name	Organization
Michael Bolton	United Steel Workers
Dennis Brown	Wisconsin Professional Loggers Association
Troy Brown	Kretz Lumber
Leon Church	Sweetwood Builders, Inc.
Representative Fred Clark	Wisconsin State Assembly
Matt Dallman	The Nature Conservancy
Paul DeLong	Wisconsin Department of Natural Resources
Representative Donald Friske	Wisconsin State Assembly
James Heerey	Baron County Woodland Owners Association
Jeanne Higgins	United States Forest Service
James Hoppe	Packaging Corporation of America
William Horvath	Wisconsin Woodland Owners Association
Representative Mary Hubler	Wisconsin State Assembly
Mary Jean Huston	The Nature Conservancy
Senator Bob Jauch	Wisconsin State Senate
Kenneth Ottman	Wisconsin Urban Forestry Council
Kimberly Quast	Quast Forestry
Robert Rogers	Wisconsin Society of American Foresters
Jane Severt	Wisconsin County Forests Association
Fred Souba	NewPage Corporation
Paul Strong	United States Forest Service
Senator Kathleen Vinehout	Wisconsin State Senate

2009-2010 Council on Forestry Accomplishments

Wisconsin's Statewide Forest Assessment and Strategy

Work on Wisconsin's Statewide Forest Assessment and Strategy began in 2008 and was completed in June, 2010. The Division of Forestry facilitated the development of these documents with input from the Council and others in the forestry community. The 2008 Farm Bill required each state to submit an assessment and strategy. The Statewide Forest Assessment analyzes the state of affairs and identifies issues and threats to our forests every 10 years. The Statewide Forest Strategy (aka Plan) includes multiple ideas on how the forestry community as a whole can address major issues and priority topics over the next 10 years.

As the Assessment was developed, the Council provided input and comments on the analysis and major conclusions. The Division developed a first draft of the Statewide Forest Strategy and met with the Council to discuss the goals and strategies. As these documents were revised, the Council provided input and suggested revisions.

Currently the Council is evaluating which strategies it will work to implement and what the Council's role should be. It also is providing input to the Division on what is most important for the Division to be working on over the next five years. This will continue to be an on-going conversation between the Division and Council in partnership to implement the respective strategies and actions each has a role in.

Recommendations and Report of the Forestry Invasives Leadership Team

Many landmark activities were completed over the last two years including the final development of Best Management Practices for Invasive Species (BMPs). Each track developed an advisory committee to write the BMPs and has since formed education subcommittees, guided by Forestry Invasives Leadership Team (FILT). The status of each track is described below, including the post-acceptance outreach efforts.

Track 1 – Forestry BMPs for Invasive Species:

The Advisory Committee met for the last time in February 2009 to finalize the BMPs. The BMPs were accepted by the Council in March 2009. The BMP manual has since been printed for distribution. Since then, much outreach has taken place including seven Forest Industry Safety Training Alliance training sessions, DNR staff training and countless presentations to organizations like Wisconsin Woodland Owners Association (WWOA) and Wisconsin County Forest Association (WCFA).

Track 2 –Recreational Forest User BMPs for Invasive Species:

The Advisory Committee met for the last time in May 2009 to finalize the BMPs. The BMPs were accepted by the Council in September 2009. Due to the diverse nature of this track, different “spokes” were created to discuss individual recreation areas. A great deal of outreach has taken place including a presence at the Wisconsin State Fair with a major

focus on recreational user BMPs. Many presentations have been given and a template handout was made specifically for the bicycle spoke, which can easily be altered for each audience.

Track 3 – Urban Forestry BMPs for Invasive Species:

The Advisory Committee met for the last time in August 2009 to finalize the BMPs. The BMPs were accepted by the Council in September 2009. Outreach has not been as aggressive with this track, but a plan to jump start the subcommittee is in the making.

Track 4 – Utility and Transportation Right-of-Way BMPS for Invasive Species:

The Advisory Committee met for the last time in November 2009 to finalize the BMPs. The BMPs were accepted by the Council in December 2009. Outreach includes many presentations to town and county highway groups. There is great momentum in this track to implement the BMPs and educate the appropriate audiences. The utility contingent was very proactive in response to the invasive species rule (NR40). Several of them developed their own training materials over the winter in preparation for the upcoming 2010 field construction and field season.

General outreach that spans the four tracks includes the development of outreach materials including: handouts on common terrestrial invasives, regulated terrestrial plants, “Slow the Spread”, and a manual entitled “A Field Guide for Terrestrial Invasive Plants in Wisconsin”.

Upon adoption of NR40 (Invasive Species Identification, Classification and Control), the BMPs have been widely accepted as reasonable precautions for complying with NR40. NR 40 and Invasive Species BMPs have greatly increased the awareness of invasive species.

The BMP development process began with funding from the US Forest Service, with the intent of other states adopting or altering the product to their specific needs. There are efforts to collaborate on outreach efforts throughout the Northeastern Area of the nation to avoid duplicate efforts. This discussion has grown to potentially include the entire nation. Clearly, the development of the BMPs is a landmark effort and exemplifies the importance of preventing the introduction and spread of terrestrial invasive plants, insects and diseases.

At its December 15, 2009 meeting, the Council accepted the recommendations that the Forestry Invasives Leadership Team and the Council continue to support the outreach effort and seek funding to implement the BMPs.

Recommendations Regarding a Managed Forest Law Legislative Council Study

The Council developed a background paper on the Managed Forest Law (MFL), outlining a series of issues that merited consideration for a Joint Legislative Council (JLC) Study. The report was submitted to key legislative committees with the Council’s recommendation that a JLC committee be appointed to evaluate the MFL.

The JLC approved a special committee for the 2010 interim to review the Managed Forest Land Program in order to ensure the long-term management and sustainability of private forest lands and to increase participation in the program. The committee charge is to review the following issues: (a) the scope and statutory purposes of the MFL program; (b) ways to increase public access on MFL lands; (c) the relationship between local zoning and the entry of parcels in the MFL program; (d) the impact of MFL enrollment on local and county revenues; and (e) trends in forest ownership and trends in forest product markets including biofuels. There are eighteen members on the committee including three senators, three representatives, and twelve public members. The membership list can be found at the Wisconsin Legislative Council website at http://legis.wisconsin.gov/lc/committees/study/2010/MFL/files/mfl_list.pdf Committee meetings began on August 18, 2010 with presentations from the Department of Natural Resources and invited speakers. Additional meetings of the full committee were held in September, October, November and December, with sub-committee meetings held in October and November.

A full report and recommendations by the committee, including draft legislation, is expected to be completed by the end of December 2010.

Woody Biomass Harvest Guidelines

The Council continued to recognize the importance of increasing Wisconsin's production and utilization of woody biomass for energy. The Council recognized that the federal Biomass Crop Assistance Program (BCAP) could significantly enhance the state's ability to increase the amount of woody biomass by improving its economic feasibility. The Council invited Susan Butler, Wisconsin Farm Service Agency to a meeting to brief them on the program. Additionally, the Council asked DNR staff and Office of Energy Independence to brief them on the impacts of Phase I of the program which operated under a notice of funds availability (NOFA) as well as an overview of the proposed final BCAP rule and those areas contained in it on which the Commodity Credit Corporation (CCC) was requesting comments. This information facilitated Council members individually commenting on the proposed final BCAP rule. The final rule was released in October 2010.

Two items in the proposed final rule that could significantly affect Wisconsin and were the focus of Council concern were:

1. Change in the Forest Stewardship Equivalent – from being determined by State Forester to being determined by SFI and American Tree Farm or equivalent as determined by DATCP Secretary.

The State's Position: The State Forester should make determinations.

2. Proof of Sustainable Harvest – interpreted from NOFA as being unnecessary for logger to sell material.

The State's Position: An owner or operator who provides material should be required to show proof of sustainability.

The Biomass Crop Assistance Program (BCAP) was authorized by the Food, Conservation, and Energy Act of 2008 (the 2008 Farm Bill). BCAP is intended to assist agricultural and forest land owners and operators with the establishment and production of eligible crops in selected project areas for conversion to bioenergy, and the collection, harvest, storage, and transportation of eligible material for use in a biomass conversion facility. The rule specifies the requirements for eligible producers and participants, biomass conversion facilities, and eligible renewable biomass crops and materials. While there are many complexities in the development of a national strategy for biofuels—the pursuit of more economical conversion technologies, transportation infrastructure upgrades, expanded and affordable consumer access, financial risk mitigation tools—the success of all of these efforts ultimately must rest upon a foundation of a strong biomass feedstock source. The creation of that source, however, faces the classic chicken-and-egg challenge. An established, large-scale energy crop source must exist if commercial-scale biomass facilities are to have sufficient feedstock supplies. Conversely, a strong consumer base to purchase the crop must exist if profitable feedstock production is to occur.

BCAP is designed to serve as a catalyst to unite these multiple dynamics. By providing risk mitigation and production incentives, BCAP will encourage landowners to consider switching from familiar, revenue generating crops to new, unconventional, non-food, non-feed crops that must be ready for a nascent marketplace. While BCAP is fundamentally a crop cultivation program, other considerations such as wildlife and conservation protection are nevertheless important parts of BCAP.

Additional information on the final BCAP rule can be found at:
http://www.fsa.usda.gov/Internet/FSA_Federal_Notices/bcap_10_27_2010.pdf

A Woody Biomass Commodity Exchange feasibility study was completed in 2009 and examined the feasibility of establishing a Woody Biomass Commodity exchange that would provide needed price discovery and risk management tools to the biomass market and a mechanism for the purchase and sale of woody biomass commodity products. The study examined current cash market practices, market structure, the role of futures markets and the applicability of futures contracts in the context of these practices and this structure. On the basis of this analysis, we conclude that the biomass cash markets are not ready for futures contracts due to current market concentration issues and current inadequate trading activity.

The next step that has been proposed is raising funding for the exchange. This process is slated for 2011. This has been held off due to market conditions; specifically the delay associated with the development of commercial scale cellulosic ethanol/advanced fuel facilities and bio-power facilities. The lack of robust demand in traditional forest products markets has limited the potential for this effort. Finally, financial market

conditions in the VC market for cellulosic-targeted activities have also not been favorable.

White-tailed Deer in Wisconsin – Impacts on Forest Ecology and Management

Deer herbivory is pervasive in Wisconsin's forests. Where overabundant, deer are causing detrimental impacts to forest regeneration and quality, and to biological diversity. Deer herbivory causes economic losses by reducing tree survival and growth, and altering species and age class composition. If deer are managed at levels that are too high, they can directly threaten the future of sustainable forestry in Wisconsin.

During 2009 through 2010, deer impacts on forest ecology and management continued as a major initiative for the Council. The Council advocated sustainable integrated deer and forest management.

The Council's internet site was maintained to provide information and advocacy (<http://council.wisconsinforestry.org/deer/>).

The Council Position on deer management was re-examined and reaffirmed (<http://council.wisconsinforestry.org/pdf/deer/DeerPositionPaper.pdf>).

Letters reiterating concerns about impacts of deer on forest sustainability were sent to:

- Natural Resources Board - September 2009
- Senator Holperin and the Senate Committee on Transportation, Tourism, Forestry, and Natural Resources – December 2009 and March 2010
- Representative Hraychuck and the Assembly Fish and Wildlife Committee – December 2009 and March 2010
- Chair Ed Harvey and the Wisconsin Conservation Congress – March 2010

Council Representatives provided testimony regarding deer impacts on forest sustainability to the Natural Resources Board and at Legislative Hearings. In addition, most member organizations provided additional testimony and letters expressing concern regarding the detrimental consequences of overabundant deer populations.

Fire Assessment

The Fire Program Assessment is a comprehensive review of a key program in the Division of Forestry's overall strategy to protect and sustainably manage forests in Wisconsin. Amid much change since the program was last evaluated in the early 90's, the effort acknowledges shifts -- social, economic and ecological -- in values related to Wisconsin's forests and the people whose lives and property we are tasked with protecting. The forests are changing, and both partner and technological capabilities are growing, compelling us to take a fresh look at the program.

The objective of this effort was to determine how to allocate limited resources to best meet the mission of protecting life, property and natural resources from wildfire throughout Wisconsin to

1. Provide for the health and safety of our employees and general public by keeping this as the top priority in all assessment considerations.

2. Describe public and forest protection needs/risks in Wisconsin.
3. Explain how public and forest protection needs can best be met if program funding were to remain the same, increase by 10% and 20% or decrease 10% and 20%. Throughout these scenarios consider the Department's role, role of partners, and various resource allocations.
4. Evaluate ways to increase efficiency and effectiveness of the fire program, including utilization of new technology, use of resources (staffing standards), infrastructure and appropriate fire suppression equipment mix.
5. Identify any changes needed to current statutes, policies, agreements, and operational procedures.

The fire assessment identified relative risk across the state associated with wildfire and evaluation on how best to allocate limited resources across the state. As a result of the assessment team's work, a number of changes in the approach to the fire program were identified. While there are many priority recommendations identified, these items provide a big-picture overview of key program impacts proposed.

- Fire program activity levels should be established based on Fire Landscapes (FL). The 16 landscapes identified are based on physical characteristics on the ground and property-based characteristics associated with development.
- 76 tractor plows are recommended to be based in the field, with one cache unit based in Tomahawk. Currently, there are 76 units assigned to the field, and four cache units, 3 of which are assigned to the field. Additionally, 2 heavy dozers and 4 low ground (marsh) units should be assigned to the field.
- A specific full time equivalent (FTE) position should be assigned to each tractor plow, heavy dozer and low ground unit to assure their availability. Presently, some units are staffed by backup operators or partners to be identified at the time of need. Using this approach provides the depth presently being met by backup operators.
- 53 Type 6 engines and 60 Type 8 engines are recommended for assignment to the field, each with a specifically identified individual associated with it. The Type 6s should be staffed by initial attack rangers linked to a fire response unit.
- Four cooperative area rangers are proposed to be assigned responsibilities in parts of the present cooperative area. These should be positions focusing on various activities in the cooperative area, but available to help with fire needs in landscapes where the Division has initial attack responsibility.
- A specific field based FTE workload associated with Wildland Urban Interface (WUI) needs was identified for the four highest risk landscapes.

- Some fire landscapes not presently in organized protection areas were identified as having wildland fire risk as high or higher than some areas for which we presently have initial attack protection responsibilities. In those areas, the Division would support efforts to bring about legislative change to adjust boundaries between Department of Natural Resources (DNR) organized protection and cooperative areas, if requested by local government.
- Funding needs to be provided for key program areas now largely dependent on diminishing federal grant funding. Specifically identified was fire prevention and WUI related activities.
- There are some areas where there should be exploration of opportunities to share responsibility with external partners to a greater extent than is currently the case. For example, fire departments may provide help with prevention efforts and Home Ignition Zone (HIZ) assessments.

A complete copy of the Wildland Fire Management Program Assessment is available at: http://intranet.dnr.state.wi.us/int/land/forestry/Forestry_Teams/FPA/pdf/Final_Report.pdf

Forest Management Guidelines Revisions

In 2003, the DNR published the Wisconsin Forest Management Guidelines (FMG) for the first time. The FMG was written to establish basic, sensible concepts that outline responsible resources management at the site level for resource managers and enthusiasts and it is now referenced in the definition for generally accepted forestry practices in NR 1.25, Wis. Admin Code. In 2010 the Council on Forestry members were called upon to participate in the first revision of the guidelines by identifying revisions needed and review of the draft chapters. The main revision for the 2011 FMG Update includes adding the new Forestry BMPS for Invasive Species, the updated Forestry BMPs for Water Quality, and a new chapter on Invasive Plants, Insects and Diseases.

Wisconsin's Forestry Best Management Practices for Water Quality

At its December 2008 meeting, the Council charged the Forestry BMPs for Water Quality Advisory Committee with reviewing the Forestry BMPs for Water Quality related to biomass harvesting concerns. The Advisory Committee broadened the scope of review to all BMPs for Water Quality and solicited input from various stakeholders and received expert review of specific stakeholder concerns. Working with a field manual subcommittee comprised of experienced BMP users, the BMPs for Water Quality were reviewed over the course of 2009 and 2010. The final guidelines went through public and tribal review.

Updates to the BMPs include:

- Basing streamside riparian management zones (RMZs) on stream width and trout stream designation.

- Modifying the 50-foot “no equipment zone” in the 100-foot RMZ to a 15-foot “no equipment zone” and allowing equipment within 15 to 50 feet of the ordinary high water mark during frozen or dry conditions.
- A BMP that states do not harvest fine woody material within the 50 feet of the 100-foot RMZ and the first 15 feet of the 35-foot RMZs.
- Establishing a 35-foot management zone for dry washes (commonly found in southwest Wisconsin and in the Lake Superior area) that allows landowners to harvest timber while preventing further erosion in the dry wash during forest management activities.
- Creating a 15-foot filter strip around wetlands with the goal of preventing soil erosion and sedimentation in the area immediately adjacent to wetlands, while still allowing timber harvesting to occur.

In March 2010, the final recommendations for the Forestry BMPs for Water Quality were presented to the Council.

Utilization of Urban Wood

DNR Forestry Division staff partnered with Michigan and Illinois on the **Tri-state Urban Wood Marketing and Branding** project led by the SE Michigan RC&D. Through three working summits of regional and national leaders in urban forestry, forest marketing and utilization, forest product producers, manufacturers and users, the project showed that urban wood recovery is both needed and feasible. An off-shoot of the project is underway to form a new organization, the **Urban Forest Products Alliance** to support urban wood market and business development.

Over the last two years, the Forestry Division has undertaken several efforts related to urban wood utilization and marketing focusing on dealing with the expected wood that will hit communities as emerald ash borer expands its foothold in Wisconsin.

- **Regional Workshops** in areas close to the state’s existing infestations demonstrated harvest techniques and recovery of products from infested Ash in urban settings.
- The division received a USDA Forest Service directed appropriation for Glacierland RC&D to address the lack of **firewood treatment standards**, infrastructure and organization that could allow communities and companies to successfully regulate, treat and safely utilize EAB infested wood for the firewood market. The project issued 3 grants to companies to do heat treatment and will be doing another call for proposal to find more companies.
- Forestry Division staff partnered with state and national agencies, businesses and the city of Oak Creek to study and demonstrate the **use of mechanized logging and processing equipment** in an urban setting. The study demonstrated the potential to reduce tree removal and disposal costs for communities, generate marketable pulpwood, biomass and sawlogs and provide loggers with a new urban market for their services during downtimes in traditional forest harvesting. During the week-long demonstration in Oak Creek, over 500 trees were removed producing one semi load of saw logs (4,000 bf), 70 cords of pulpwood and roughly two semi-loads of biomass.

SUMMARY PER STATE STATUTE 26.02

I. The magnitude, nature, and extent of the forest resources in state.

Of Wisconsin's 35 million acres of land, almost 16.7 million acres are forested. Forest area in Wisconsin has been steadily increasing for decades. In 1996, there were 15,963,019 acres of forest and in 2008 there were 16,697,190 acres. This is mostly due to the conversion of marginal agricultural land back to forests. Currently, forests cover 48% of the total land area of the state. Urban forests, the trees and green space in communities and other built areas, cover an additional 1.8 million acres or about 5.1% of the total state land area.

Forest Resources

Acres of forest land by forest type

The most abundant forest types in Wisconsin are hardwood forest types. Oak hickory, maple-beech-birch, and aspen- birch forest types are the most common. Oak-hickory accounts for 4.2 million acres, followed by maple-beech birch with 3.7million acres, and aspen-birch with 3.2 million acres. While most of Wisconsin's forests are hardwood types, there are also significant softwood types occupying large areas, especially in the north. Red pine, black spruce, eastern white pine, tamarack, northern white cedar and jack pine are the most common conifer forest types.

Species composition by forest type

The maple-beech-birch forest type is the most common forest type accounting for 27% (3.2 million acres) of the forestland in the northern part of the state. A predominance of sugar maple and basswood characterize this type. Red maple, northern red oak, quaking aspen, white ash, hemlock, yellow birch, and paper birch are also common. Maple-beech-birch supports a variety of understory plants and animals.

Second to maple-beech birch in the northern part of the state is the aspen-birch forest type. About 24% (2.9 million acres) of the Northern Mixed Forest region is in aspen-birch. Common tree species in this forest type include quaking aspen, bigtooth aspen, paper birch, red maple and balsam fir.

The Northern Mixed Forest is distinguished in large part by the prevalence of conifers. The most common conifer forest type is spruce-fir accounting for 11% (1.4 million acres) of the Northern Mixed Forest. Spruce-fir forests are fairly diverse and can occur in many moisture regimes. They are the most common wet forests in the north, and often surround and blend into bogs. Common tree species in spruce-fir forests include northern white-cedar, tamarack, black spruce, balsam fir, and white spruce.

Nine percent (1.1 million acres) of the Northern Mixed Forest in Wisconsin is pine forest type. Red pine, eastern white pine, and jack pine are the common pine species that occur in Wisconsin. Forest character can vary from jack pine barrens, to red pine plantations, to thick stands of young white pine, to old growth stands with pines hundreds of years old. Other than pines, common associates of pine forests are eastern hemlock, red maple,

quaking aspen, sugar maple and balsam fir.

The most common forest type in the Southern Broadleaf Forest is oak-hickory (2.4 million acres). It represents about 53% of the forests in the southern part of Wisconsin. Dominant tree species in oak-hickory forests include northern red oak, white oak, black oak, red maple, burr oak, shagbark hickory, and northern pin oak.

The soft maple-ash forest type generally is a lowland type that makes up a slightly higher percentage of the southern (11.7%) than northern (9.7%) forests. However, the Northern Mixed Forest contains a larger acreage of soft maple-ash forest type (1.2 million acres compared to 539,000 acres in the south). Common species in this forest type are black ash, green ash, silver maple, and red maple.

About 10% (471,000 acres) of the forestland in the Southern Broadleaf Forest is in the maple-beech-birch forest type. Species composition is similar to the northern maple-beech-birch forest, with sugar maple and basswood being the dominant species. However, there is less hemlock, yellow birch and quaking aspen, and an increased occurrence of oaks as compared to the northern forests. Other forest types of note in southern Wisconsin are white-red-jack pine (439,000 acres) and aspen-birch (333,000 acres).

Age class by forest type

Most forests in Wisconsin are 41-80 years old. Approximately 12% of the forests are under 20 years of age, and 43% over 100 years of age. The forest types proportionally best represented in the younger age classes are aspen, pine, and oak-pine; the latter two predominantly associated with dry sites. The forest types proportionally best represented in the over 100 age classes are spruce-fir, pine, and oak-hickory.

Volume by species

In 2008, there were 21.2 billion cubic feet of growing stock volume, of which 5.6 billion were conifer, and 15.6 billion were hardwood. The highest volume softwood species were red pine, white pine, and Northern white-cedar. The highest volume hardwood species were sugar maple, red maple, northern red oak and quaking aspen.

Growth, removals, mortality volume by species

In Wisconsin, our forests are growing at a rate that significantly exceeds harvest. Between 2003 and 2008, average net annual growth¹ exceeded harvests and other removals by almost 259 million cubic feet. Growing stock average annual mortality² was 204 million cubic feet. During the period between inventories, average net annual growth was 586 million cubic feet. Average annual removals were 327 million cubic feet, about 56% of average net annual growth.

¹ Mortality is taken into account when calculating net growth.

² Definition of growing stock average annual mortality: The average cubic foot volume of sound wood in growing-stock trees that died in one year from causes other than as a result of logging or other removals (i.e. land clearing, timber stand improvement, standing volume on land classified originally as timberland but later designated as reserved from timber harvesting, etc.). Average annual mortality is the average for the years between inventories

Along with net growth exceeding removals overall, net growth exceeded removals for the state's oaks (except black oak), maples, basswood, ashes, white and red pines, and white spruce. Paper birch, jack pine, black oak, quaking aspen, balsam poplar, black spruce, and balsam fir removals exceeded net growth between inventories. Growing stock average annual mortality exceeded average net annual growth for paper birch, balsam fir, American elm, jack pine, slippery elm, eastern hophornbeam, and pin cherry. For all other species net growth exceeded mortality.

Changes in trends

Most of the major trends in Wisconsin forests have remained relatively constant since periodic inventories by the Forest Service began in 1936. Although trends have remained relatively constant, the forest itself has not. Areas and relative proportion of various forest types have changed significantly over the last 70 years. Hardwood succession is very apparent. Since the first official statewide forest inventory in 1936, aspen-birch forest area has decreased steadily, although it is still much more common than at the beginning of the Cutover. The Cutover was the period of intense timber harvest in the Lake States, lasting about 40 years, from 1880–1920. Since 1936, maple-basswood, soft maple-ash, and oak-hickory forests have increased just as steadily. Conifer forest area has increased at roughly the same pace as total stocked forest area in the state over the last 70 years (18% of total stocked forestland).

Wisconsin forests have increased in age over the past 40 years. In 1968, only 23% of the forests in Wisconsin were over 60 years old. By 2008, the percentage over 60 years had increased to 42%. However, forests over 100 years old declined during the same time period from 6% to 3% of total forest land.

Most forest types followed the same pattern as total forest land. The exceptions were the soft maple-ash, and white pine forest types which have each maintained about the same percentage of total forest land over 60 years old during this time period. The percentage of black spruce forest type over 60 years old increased more than any other forest type over the past 40 years (18% to 53%).

Overall growing stock volume on Wisconsin timberland has increased steadily since the first forest inventory in 1936 (7.6 billion cubic feet) to the 2008 inventory (21.2 billion cubic feet). Between 1996 and 2008, overall growing stock volume in Wisconsin's forests has increased by almost 15%—about 2.7 billion cubic feet. Along with this overall increase, the state's maples, oaks (except black oak), ashes, and white and red pines are some of the commercially important species whose growing stock volume increased. Paper birch, aspen, black oak, balsam fir and jack pine volumes decreased between inventories.

Growing stock average net annual growth exceeded average annual removals between 2004 and 2008 for most major species groups. This is virtually unchanged from the previous inventory period between 2000 and 2003, when removals exceeded growth for jack pine, paper birch, and bigtooth aspen. Paper birch and jack pine average annual

removals continue to exceed average net annual growth.

Urban Forests

There are several competing definitions of “urban forest.” The USDA Forest Service defines it as areas where the population density is greater than 500 people/mi². The 2000 Census Bureau defines urban areas as census blocks with at least 1000 people/mi² and surrounding census blocks with at least 500 people/mi². In Wisconsin, the extent of the urban forest is defined as 2000 census urban areas and any additional area encompassed by the political boundaries of cities and villages. Most communities also have undeveloped land within their boundaries. This land is included in the delineation of the urban forest because it is either managed as urban forest, as in the case of parks and open space, or development is expected in the long term. Using this definition, Wisconsin has 1.8 million acres of urban forest or about 5.1% of the total land area of the state. A 2002 Urban Forest Inventory and Analysis (UFIA) pilot study reported Wisconsin urban areas contain 26.9 million trees, averaging 36.9 trees per acre with an estimated total structural/replacement value of \$10.9 billion.

Forest Health

Although sustainable forest management practices continue to facilitate the regeneration of healthy, multi-use forests, a few insects, diseases and invasive plants pose significant threats to the health of our forests. The Emerald Ash Borer (EAB) remains the most important threat to the health of ash in our rural bottomland, swamps, northern and southern hardwood forests and to our urban forests. In 2009, the beech scale (an exotic insect) was first detected in Door County. This insect and the fungi associated with it, threaten the health of the American beech resource, primarily located in northeastern Wisconsin.

Although not a common tree in our state, American beech is a critical part of unique habitats that provide excellent food and nesting sites for several wildlife species. Surveys in 2010 have confirmed the presence of the beech scale in Door, Kewaunee, Manitowoc, Marinette, Oconto, Ozaukee and Sheboygan counties. The gypsy moth defoliated 3,620 acres in 2009 and 347,000 acres in 2010. The greatest increase in this insect’s population occurred in Menominee, Marinette and Oconto counties. Even though defoliation increased, the gypsy moth population was significantly decreased by the end of the caterpillar stage, by two biological control organisms: a fungus and a virus.

This population collapse from biological control is expected to reduce the impact of this insect in 2011. 2010 was the tenth year for the cost shared gypsy moth suppression program in Wisconsin. In 2010, 5,574 acres were sprayed with insecticide to prevent defoliation by out-breaking populations of gypsy moth, about half of that treated in the 2009 program. Progress in the fight against Annosum root rot (a fungus infecting conifer trees) was made when a product was registered for treatment of conifer stumps through the mechanized felling process. Although Annosum root rot is now known to be present in 22 counties, this disease is still not widespread, but only present in a few areas per

country. Several loggers have invested in the equipment necessary to apply the preventative treatment and outreach and education efforts have increased the number of landowners utilizing preventative treatments.

The completion of the Forestry Best Management Practices for Invasive Species and the passage of the Invasive Species Rule (NR40) provided excellent vehicles for promotion of activities that protect forest health. A new invasive species guide book was developed for invasive plants and invasive insects, diseases and plants were one of the major themes of the forestry exhibit at the 2010 state fair.

Urban Forest Threats

Threats to the urban forest come from a variety of sources including people and nature (biotic and abiotic). A fundamental appreciation for the urban forest and its associated benefits is essential for maintaining a healthy/productive resource. Support is needed at all levels, ranging from high ranking elected officials to individual property owners, in order to realize the full potential of urban forests.

First and foremost is a general lack of awareness that urban trees comprise a forest. All too often the trees within a community can be taken for granted. However, collectively public and private trees form a canopy over the entire community. Current urban forest benefit models can quantify the realized monetary benefits associated with this canopy, improving the standing of urban trees to one of green infrastructure rather than a cultural amenity. These benefits can amount to millions of dollars annually as a result of carbon storage and sequestration, air pollution removal, storm water reduction, and energy savings.

Diseases, insects and weather along with human development and construction activities pose current and future threats to the urban forest. Gypsy moth and emerald ash borer are the most notorious pests at this time with the emerald ash borer threatening to destroy over 5.2 million urban trees—20% of the entire resource. However other pests such as the Asian long-horned beetle, thousand canker disease or sudden oak death are potential new threats and, if introduced, could have significant impact.

Finally, the most important long-term threat to the urban forest is lack of research—biological, ecological, social, and economic. Without this on-going study, communities will not have the tools to manage the urban forest ecosystem into the future.

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II. The current use of forest products in this state and the benefits that these forest products provide to the state.

Wisconsin forests yielded a total of 414.2 million cubic feet of roundwood in 2007, up from 408.6 million cubic feet in 2002. Hardwood species comprise the vast majority (79.2%) of total roundwood production in Wisconsin, a proportion that has been stable over the last decade. Over half (52.8%) of all roundwood produced in Wisconsin (for both hardwood and softwood species) in 2007 is pulpwood destined for paper and paperboard production. For all species in 2007, sawlogs were second-most prevalent (24.1% of all roundwood), followed in descending order of production by composite products, fuelwood, miscellaneous products, and post, poles, & pilings.

The demand for products from Wisconsin's forests has grown slightly each year until 2006, the 2006 pulpwood report shows that pulpwood demand in Wisconsin has declined by 1/3 to 2.2 million cords and based on national statistics it is estimated that saw timber and veneer demand has declined by 50% in 2008. According to 2008 data, direct employment for the forest industry was 65,694. This is down from 72,603 in 2005. Employment in Wisconsin's forest industry has declined since 2000, paralleling a slowdown in the global economy.

Employment in pulp and paper industries, secondary forest industries (furniture and fixtures), and other forest product industries have all dropped. The furniture market segment has seen significant decline while the kitchen cabinet and architectural wood working segments seem to be growing until 2006 when they started to decline as a result of the recession. The value of shipments has decreased from a 1995 high of 26.8 billion to 20.1 billion by 2008. Wisconsin forest product companies are changing to meet the competition from a global marketplace.

This steady flow of products, besides helping to manage the forests, provides for a strong economy through the direct jobs that exist in the forest product industry. The timber production industry provides for primary, secondary and reconstituted wood products. Wisconsin's forest products industries comprise 15.2% of all manufacturing sectors. Wisconsin's forest product industry creates high paying jobs. Average wages for forest industry jobs are \$44,000 annually, compared to the state average of \$36,000. In all, the forest products industry contributes about \$3 billion per year in wages to the Wisconsin economy.

The other amenities provided by the forest are difficult to put a value on, but are significant. On an annual basis, forest-based recreationists spent approximately \$2.5 billion within Wisconsin communities (Marcouiller and Mace, 1999). This spending stimulates the economy further and it is estimated that forest-based recreation is a \$5.5 billion dollar industry (WEDI, 2004).

Urban forests in Wisconsin provide myriad ecological, social and economic benefits. In a recent urban forest assessment piloted by the USDA Forest Service and WI- DNR,

estimates show Wisconsin's urban forests annually remove 6,400 metric tons of air pollution valued at \$36.3 million, annually sequester 119,000 metric tons of carbon valued at \$2.4 million and annually reduce building energy use by \$9.6 million. The structural value of the urban forest (the cost to replace the trees) was estimated at \$10.9 billion. In addition, a study by the Wisconsin Agricultural Statistics Service released in 2004 showed that the "Green Industry" (the production, installation and maintenance of landscape trees, shrubs, sod, flowers, etc.) contributed \$2.7 billion to the state's economy and provided 43,000 jobs.

III. The projected future demand for forest products and the projected benefits that these forest products will provide to the state in the future.

The forest industry has often been referred to as a spider web of inter-dependencies; therefore, projecting the future is difficult. In Wisconsin, the pulp and paper industry is the largest sector within all forest industries. It accounts for approximately two-thirds of the output in value and raw material consumption. Paper demand has historically grown with the growth of population, but has followed a five year up and down cycle as new plants come on line; capacity exceeds demand, and demand catches back up to production and the cycle starts over again. .

It can reasonably be expected that the demand for paper will grow in the world, but determining the supply source is a greater question. If the domestic suppliers can stay competitive in the global marketplace, they should survive. Demand has been growing for the high quality paper that Wisconsin produces. China, who has been a net importer of fine writing paper, has begun to export fine writing paper, which has generated increased competition for Wisconsin's paper industry.

There are concerns that the paper industry in Wisconsin has not been investing enough capital to keep their plants efficient and competitive in global markets. This is changing as more recently we have seen significant investment in infrastructure by the industry. It will take an active role by the government to make sure that the long term direction of this industry is growth and not decline. If the paper industry remains competitive in global markets, it should be able to grow and provide markets for Wisconsin wood. The transition of the paper industry to bio-refining and producing non-paper products like ethanol, hydrogen, acetic acid, and others will be key to the long term survival of the pulping industry in today's global market.

The housing slump has impacted sawmills and veneer plants in Wisconsin with some of the lowest lumber prices in recent history. Many of the firms realize the need to export their product in order to make up for the decline. Kitchen cabinets and flooring continue to provide solid markets to Wisconsin companies. However, this market has also been severely impacted by the recession. The remodeling portion of the market has also declined. Home building trends are cyclical and once the correction is over, home building levels may return to more normal levels. Manufacturing sectors have continued to create the need for pallets. As a result, lumber prices for pallet lumber have provided

needed market demand for sawmills during the recession.

International markets offer increased potential for Wisconsin companies, particularly in the high end furniture sector. Current limits on hardwood exports from Russia to China have opened markets. European markets also appear to be opening up. Those sawmills and veneer plants that are exporting have been doing better during the recession than those that are trying to exist solely on domestic markets. Continued assistance by the state to help companies move into these foreign markets is needed to help Wisconsin family-owned business take advantage of these opportunities and recover from the recession.

As furniture production has moved off-shore, the demand for hardwood lumber from the kitchen cabinet industry has provided one of the stabilizing forces in the market. The flooring and kitchen cabinet markets are projected to grow when housing markets have returned to more normal levels. This should provide a good market for Wisconsin mills unless significant competition starts from off-shore producers. The cyclical nature of these markets will continue to occur. Some producers are looking to export some of their products such as lumber, doors, windows, and logs to diversify their customer base. Wisconsin has high quality hardwood that will continue to be in demand for solid wood products.

IV. The types of owners and forms of ownership that apply to forests in this state, including the reasons why persons own forest land.

Wisconsin Forest Ownership

Wisconsin Forest Ownership (16.7 Million Acres)

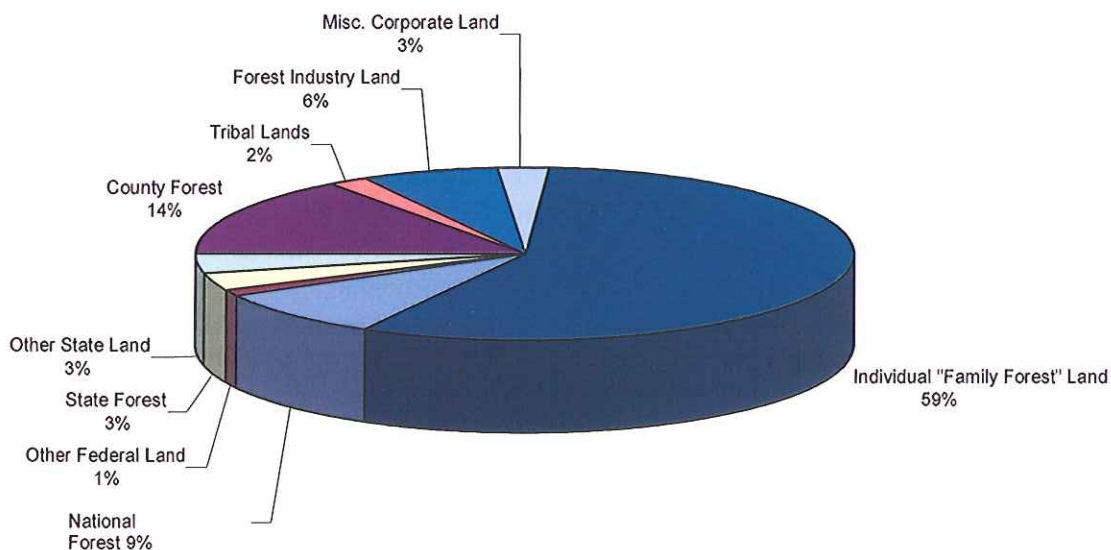


Figure 1. Wisconsin Forest Ownership, 2008

Of approximately 16.7 million rural forested acres in Wisconsin, 59% are in individual, "family forest" ownership. The rest are county forest, 14%; national forest, 9%; State Forests, 3%; other state land, 3%; private forest industry land, 6%; miscellaneous private corporation land, 2%; tribal land, 2%; and other federal land, 1%. In addition to rural forestlands, there are 1.8 million acres of urban forest in Wisconsin.

Number of Private Owners and Parcel Size

According to the 2006 Forest Inventory Analysis (FIA) and National Woodland Owners Survey (NWOS), more than 362,000 private forest landowners hold an estimated 11.1 million acres of forestland. This is a 38% increase over the number of private landowners reported in the 1997 NWOS. This is almost double the 20% increase in landowners observed in the previous ten-year time period dating back to 1984.

Based on the 2006 reports, private forest landownership is well distributed throughout the state, although parcel sizes tend to be significantly smaller in the more populous areas (Figure 2 and Table 1). Statewide, the 1-9 acre parcel size class has 50% of the

landowners, but only about 4.7% of the forestland (Table 2). About 186,000 owners hold the 10.6 million acre balance. The overall average parcel is about 30 acres in size for all private owners. For private landowners with 10 or more acres, the average parcel is 55 acres. These parcel sizes represent a significant decrease from parcel sizes in 1997 (41 acres and 61 acres, respectively).

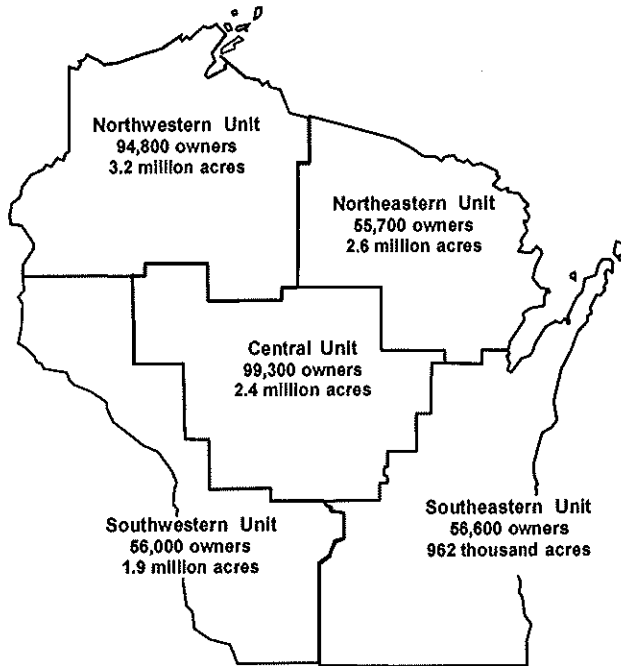


Figure 2. Distribution of private forestland owners and acres owned between forest survey units, 2006.

Owners, Acres and Average Parcel Size by Unit					
Unit	Owners		Acres		Ave. Parcel Size acres
	thousands	percent	thousands	percent	
Northeast Unit	56	15	2,586	23	46
Northwest Unit	95	26	3,195	29	34
Central Unit	99	27	2,432	22	24
Southwestern Unit	56	15	1,944	17	35
Southeastern Unit	57	16	962	9	17
Total	362		11,117		31

Table 1. Estimated number of private forestland owners, acres owned and average parcel size by unit, Wisconsin, 2006

Area and Owners by Size of Landholding				
Size of forest landholdings	Acres		Owners	
	<i>Thousands</i>	<i>Percent</i>	<i>Thousands</i>	<i>Percent</i>
1-9	529	5	176	49
10-19	575	5	46	13
20-49	2,204	20	77	21
50-99	2,411	22	36	10
100-199	996	9	19	5
200-499	496	4	7	2
500-999	423	4	<1	<1
1,000-4,999	309	3	<1	<1
5,000+	-	0	<1	<1
Total	11,117	100	362	100

Table 2.--Area and number owners for private forests in Wisconsin by size of forest landholdings, 2006

Forest Industry Ownership

A growing trend in forest industry ownership is the transferring of woodland as global corporations realign or divest their land holdings. Lands once held by paper companies are increasingly held by Timberland Investment Management Organizations (TIMO) and Real Estate Investment Trusts (REIT). These ownership types typically sell portions of their land base to maintain higher returns on investment than timber management can provide. Since January 2003, approximately 215,000 acres have been sold to small private landowners or public agencies. Forest industry and investor groups now hold 792,614 acres in Wisconsin's Forest Tax Law programs. Of that land, only 3.25% (25,783 acres) is closed to public access.

As a new provision to the 1990 Farm Bill, Congress authorized the creation of the Forest Legacy Program to help identify and protect environmentally important forestlands that are threatened by conversion to a nonforest use. To help maintain the integrity and traditional uses of private forest-lands, the Forest Legacy Program promotes the use of conservation easements. Forest Legacy Program conservation easements currently protect approximately 62,000 acres of industrial forest lands from development, with another 25,000 acres funded but not completed. The Forest Legacy program has also funded conservation easements on approximately 1,100 acres of family-owned forestland as part of the Baraboo Hills and Holy Hills projects. The development of residential and commercial subdivisions and commercial mining operations are two common nonforest uses that are restricted under the program.

Demographics of Wisconsin Individual Private Forest Landowners

Individual private (family) forest landowners are employed in a variety of occupations. Twenty percent are white-collar workers, 20 percent blue-collar workers, and 6 percent

farmers. However, the most distinguishing factor about individual owners is that almost 40 percent of them are retired. Collectively, retired owners hold over one-third of all private forestland in Wisconsin. Retired owners have taken the place of farmers as the predominant forestland holders because farmers have been divesting their holdings. For example, in 1956, farmers owned 6.4 million acres of forestland in Wisconsin. By 1997, farmer-owned forestland had declined to 1.5 million acres and in 2006 farmers owned less than 900,000 acres of forestland. Approximately 55 percent of family forest landowners reside within one mile of their forestland.

Family forest landowners are older than the general population. With a large share of forest landowners retired, it follows that 30 percent are 65 years of age or older, whereas only 13 percent of the general population is 65 or older. Forest landowners less than 44 years of age make up only 13 percent of all owners.

Forty-five percent of Wisconsin's family forest landowners reported household incomes lower than the state's general population. The median household income in Wisconsin (2008) was \$52,103. In 2006 (the year of the survey), 41 percent of the family forest landowners who answered the survey question about income had annual incomes between \$50,000 and \$99,000 and 15 percent had incomes greater than \$100,000.

Reasons for Owning Forestland

The two primary reasons people own forestland are aesthetic enjoyment and because the land is part of their primary or secondary residence. Almost two-thirds of all individual owners ranked these reasons as important or very important reasons. Only 25 percent of all individual owners hold forestland primarily for timber production. However, those holding forestland for timber production own over two million acres of forestland. Benefits landowners say they derive from owning forestland correspond closely to reasons for owning forestland. Recreation and aesthetic enjoyment are the primary benefits received from owning forestland.

Timber Harvesting

Although many individual owners hold forestland for uses other than producing forest products, 51 percent of family forest owners have harvested timber from their land. About one-fourth of all harvesters removed timber because they thought it was "mature" or to improve the quality of remaining trees. Almost one-fifth harvested timber for personal use, mostly as fuel wood.

About 10 percent of family forest owners holding 30 percent of family forest land intend to harvest timber in the next 5 years. Approximately one-third intend to harvest firewood. Thirty-six percent, holding 25 percent of the family forest land, say they have no activities planned.

Forest Management Advice and Sources

Twenty-three percent of all family forest owners have received professional forestry advice in managing their forestland. Seeking assistance is strongly related to and influenced by tract size. As the size of holding increases, owners are more likely to use assistance as shown below:

Size of holding (acres)	Sought assistance (percent of owners)
1-9	15
10-49	22
50-99	43
100-499	58

Nearly 50 percent of those who received advice utilized the state forestry agency. Fifteen to twenty percent received advice from university extension, a federal agency, another landowner, a private consultant, or a logger.

Less than one-quarter of family forest owners who harvested timber consulted with a forester on the harvest. Similar to management advice received by all family forest owners, consulting with a forester on a timber harvest is strongly related to the size of the forest holding. As the size of the tract increases a landowner is more likely to consult a forester when harvesting timber.

Size of holding (acres)	Consulted forester on timber harvest (percent of owners)
1-9	4
10-49	29
50-99	42
100-499	50

Due to the increasing number of family forest landowners, there will likely be an increasing need for forest management assistance. In 2009 and 2010, WI-DNR and Cooperating Foresters made over 6,000 initial (new) forest assistance calls.

Private Forest Management Assistance 2009 and 2010	DNR Foresters	Cooperating Foresters
Comprehensive Managed Forest Law or Stewardship Plans	1,124	2,017
number		
acres	76,798	134,268
Number of Initial (New) Contacts	4,002	2,040
Total Technical Service Contacts	15,591	7,994

Non-profit educational organizations including Wisconsin Woodland Owners Association, Wisconsin Tree Farm Committee and Wisconsin Family Forests provide a variety of learning opportunities for private forest owners and others interested in managing Wisconsin's woodlands. Through field days, meetings, workshops and various partnerships these organizations help foster and encourage the wise use and management of Wisconsin's woodlands.

Forest Recreation

Over 50 percent of individual owners use their forestland for recreation. This is not surprising, as recreation is an important reason for owning forestland. Individual private owners tend to limit public use of their forestland; only 13 percent of all individual owners make their forestland available for public recreation. Owners with larger tracts are more likely to permit public access to their forestland than are owners with smaller tracts. Almost 40 percent of all individual private forestland is posted.

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V. The success of existing incentives that are offered to stimulate the development of forest resources.

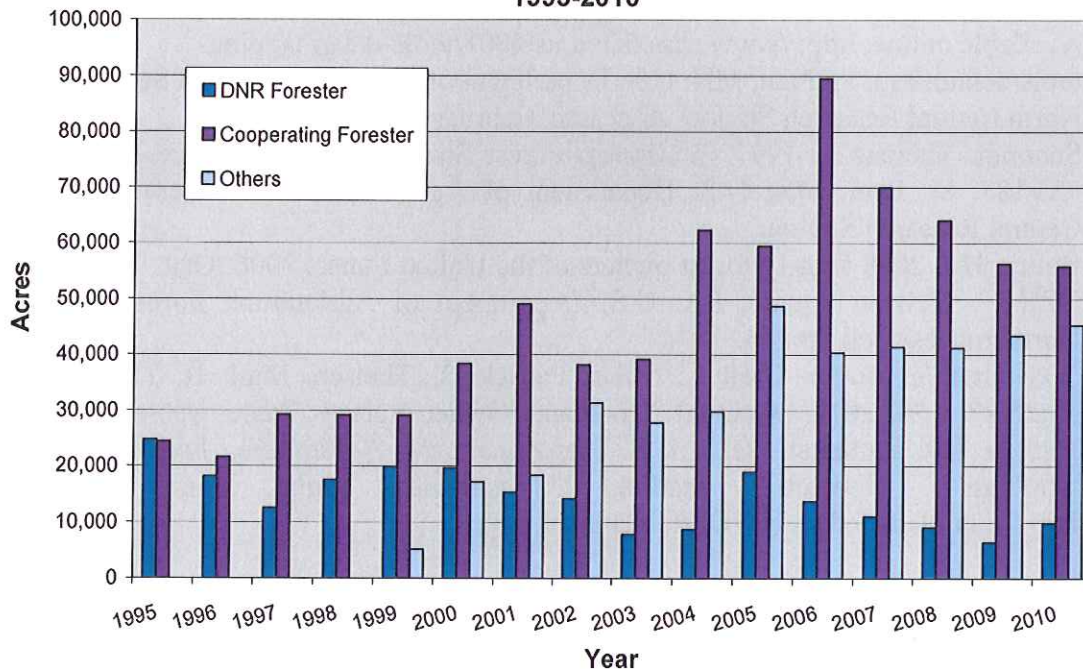
Technical Assistance

Wisconsin Department of Natural Resources foresters are located in nearly every county of the state to motivate and guide landowners to practice sustainable forestry. The free knowledge and assistance they provide can be the motivation for a landowner to

sustainably manage their woods. The majority of WDNR foresters' workload is administration of incentive programs, though DNR foresters do conduct outreach to landowners who do not receive professional assistance in an effort to increase the amount of private land that is sustainably managed. WDNR foresters only establish sales if private consulting foresters decline to provide the service.

There are over 190 private consulting foresters and industrial foresters from 125 firms who offer services to private landowners in Wisconsin. Consulting foresters are independent contractors who make their living by charging a fee for the work they do. The WDNR Division of Forestry began the Cooperating Forester program in 1989. Private consulting foresters and industrial foresters voluntarily apply to participate. Cooperating Foresters are listed in a directory. (<http://dnr.wi.gov/forestry/private/assist/>) and receive referrals from WDNR foresters. In return, Cooperating Foresters must comply with WDNR standards and rules when giving forest management advice. Cooperating Foresters must also attend continuing education courses and file periodic reports with the WDNR. In 2009 and 2010, over 90% of all timber sales were either established by Cooperating foresters or established by others and then approved by WDNR foresters.

**Acreege of Wisconsin NIPF Timber Sales Established by
DNR and Cooperating Foresters and Others
1995-2010**



Forest Tax Laws

Private forest landowners are encouraged to sustainably manage their woodlands through two incentive programs, the Managed Forest Law (MFL) and the Forest Crop Law (FCL). A total of 46,929 landowners and 3.32 millions acres of woodland are enrolled in these programs. The FCL program closed to new enrollment in 1985 after the Wisconsin State Legislature enacted the Managed Forest Law (MFL) program.

The MFL Program is widely recognized as a model program for addressing landowners' interests while promoting the public benefits of sustainable forestry. The MFL program provides landowners with a significant property tax reduction and technical forestry assistance. Lands entered under MFL are required to have written management plans that landowners must follow. Management plans address harvesting and thinning timber, tree planting, erosion control, and wildlife and aesthetic management. These plans must be prepared either by a certified plan writer or a WDNR forester.

The MFL program continues to grow at a rate of 3% each year. As of 2010, the program includes 45,418 MFL entries covering 3,089,938 acres. Of those lands, 37% (1,137,372 acres) are open to public access. Current enrollment in the FCL is 1,519 entries with 212,426 acres. FCL renewal is not permitted, but a landowner may enroll their land into the MFL program. The first MFL landowners who enrolled into the program in 1987 for 25 years were notified of the upcoming expiration of their MFL lands on December 31, 2011 and options for re-enrollment.

2009 Wisconsin Act 365 was enacted on May 19, 2010. This act eliminated the multiple MFL application deadlines and required that a management plan be submitted with the application. Other provisions help landowners stay in compliance with the law and to learn about MFL enrollment on forested lands they wish to purchase.

The certified plan writer (CPW) program has been very successful since its inception with 115 CPWs by the end of 2010. Plan writing services are now available throughout the state and WDNR foresters write very few new MFL management plans. In recent years the department has generally written fewer than 15 plans per year, with some years as little as 2 plans. The list of Certified Plan Writers can be found at http://dnr.wi.gov/forestry/ftax/cpw_list_public.pdf.

Wisconsin Forest Landowner Grant Program

Wisconsin Forest Landowner Grant Program (WFLGP), a state program administered by the WDNR Division of Forestry, provides up to 50% cost-share for the preparation of management plans and the implementation of designated practices. Wisconsin's annual allotment for 2009 and 2010 was \$1.087 million each year for this state-run cost share program. The maximum cost share that can be earned is \$10,000 per year. Almost 2,700 practices were funded in 2009 and 2010 (Table?).

Cost sharing is available for: plan preparation, tree planting, timber stand improvement, soil and water protection, fencing, wildlife practices, fisheries practices, buffer establishment, threatened and endangered species protection, and historic and aesthetic enhancement.

Wisconsin Forest Landowner Grant Program Practices Funded in 2009 and 2010				
	2009		2010	
	Number	Dollars	Number	Dollars
Stewardship plans and revisions	488	\$265,841	474	\$243,019
Undesirable species control	315	\$300,831	251	\$232,716
Tree plantings	286	\$286,164	235	\$246,944
Site preparations	224	\$251,644	210	\$270,945
Crop tree release	20	\$29,700	64	\$52,102
Tree shelters practices	16	\$9,986	9	\$5,702
Vine removals	9	\$7,600	6	\$6,750
Shrub plantings	9	\$2,643	3	\$708
Native grass and forbs establishments	9	\$4,298		
Pruning projects	7	\$4,115	25	\$13,936
Erosion control measures	7	\$8,131		
Direct seedings	6	\$2,080	1	\$462
Road layout & design	4	\$3,359	1	\$350
Wetland restoration and creation	4	\$9,150		
Fencing practices	2	\$741	1	\$300
Diversions	1	\$2,000	1	\$1,500
Removals: insect & disease control			4	\$6,800
Totals	1407	\$1,188,281	1285	\$1,082,234

Table: The number of grants and dollars encumbered by practice for fiscal years 2009 and 2010.
Dollars are based on the estimated cost for the practice at the time the application was approved.

Environmental Quality Incentive Program (EQIP)

Environmental Quality Incentive Program (EQIP) is a federal program administered by the Natural Resources Conservation Service (NRCS) with NRCS and the WDNR Division of Forestry as technical agencies. It provides up to 75% cost share. At least 65% of dollars available are allocated to priority areas, the remainder is available statewide. The maximum cost shares set by the federal government is currently \$10,000 annually; \$50,000 per contract. Cost sharing is available for: tree planting, ecosystem management, erosion control (on agricultural land), agricultural waste management and stream buffers.

Conservation Reserve Enhancement Program

The Conservation Reserve Enhancement Program (CREP) is a voluntary land retirement

program that helps agricultural producers protect environmentally sensitive land, decrease erosion, restore wildlife habitat, and safeguard ground and surface water program. It is administered by the Farm Services Agency (FSA) with Natural Resources Conservation Service (NRCS) and WDNR providing technical expertise. This annual payment program is based on bids submitted by the landowner. The program provides 50% cost-share for cover establishment. In 2007, CREP funded 763 acres of riparian buffers and 203 acres of wetland restorations.

CREP contracts require a 10- to 15-year commitment to keep lands out of agricultural production. CREP provides payments to participants who offer eligible land. A federal annual rental rate, including an FSA state committee-determined maintenance incentive payment, is offered, plus cost-share of up to 50 percent of the eligible costs to install the practice. Further, the program generally offers a sign-up incentive for participants to install specific practices.

Urban Forestry Grants

The urban forestry grant program provides 50-50 cost-share funds to Wisconsin cities, villages, towns, counties, tribal governments, and 501(c) (3) nonprofit organizations to improve their ability to manage their urban trees. In 2007 and 2008, projects that prepared communities for emerald ash borer (EAB) were given priority. These include conducting inventories, assessing community impact of EAB, developing EAB readiness plans, removing high risk ash, planting a diversity of non-ash species and providing EAB staff training or public outreach. Other types of projects funded include: developing urban forest management plans, urban forestry training and public outreach, tree maintenance, celebrating Arbor Day, and other projects specific to a community's urban forest needs.

Over the past two years, the department has given out 98 grants to cities, villages, towns, counties, tribes, and nonprofit organizations throughout the state totaling almost \$1.13 million. Of those grants, 68 had an EAB component, totaling \$777,473. This has helped communities prepare for and respond to EAB, which was first found in Wisconsin in 2008.

In 2007, Governor Doyle signed Wisconsin Act 13 into law, which established the Wisconsin Urban Forestry Catastrophic Storm Grant program. This program provides match-free grants up to \$50,000 to remove, repair, and replace urban trees damaged in storms where the governor has declared a state of emergency. These grants now allow the DNR to respond immediately to communities that have suffered catastrophic storm damage to their urban forests. The first grants of this new program were provided as a result of the January 2008 tornado in Kenosha County.

Urban forestry grants not only improve management, but also create public-private partnerships that stimulate the commercial and non-government sector. In addition to EAB readiness, the grant program has played a significant role in helping Wisconsin communities achieve the national recognition of Tree City USA, ranking Wisconsin third

in the nation with 174 Tree City USAs.

References:

- Wisconsin Department of Natural Resources, Division of Forestry. Forest Tax Laws website: <http://dnr.wi.gov/forestry/ftax/index.htm>
- Wisconsin Department of Natural Resources, Division of Forestry. Certified Plan Writer website: <http://dnr.wi.gov/forestry/ftax/cpw.htm>

VI. The possible economic opportunities that may result if improved forest-product marketing, and increased business dealing in or use of forest products, occurs in this state.

Economic opportunities that may result from improved forest marketing or increased business dealing in the use of Wisconsin's forest products are varied. In the pulp and paper industry, bio-refining may allow pulp mills to develop other products as part of their processing process. This would then add to the revenue stream, improving their competitive picture in the global economy. Through the use of lean manufacturing principals (process improvement techniques) and targeting middle to upscale markets furniture manufacturing there may be an opportunity to grow the Wisconsin furniture industry and compete with foreign manufacturing through improved service, delivery and specialization. The use of biomass for fuel may help mills to lower their cost of operation as the technology for removing biomass from the land improves. These industries are constantly looking for new products and processes to remain profitable.

The development of new products and the increasing acceptance of nontraditional materials and methods have the potential to help in the management of the forest. For example, with the reduced use of red pine for paper, this species may be used to produce structural lumber—a new opportunity for companies. New ways of managing forests may promote healthy forests and new markets as well. The introduction of cable yarding systems to Wisconsin may increase the availability of hardwood timber in difficult to manage areas with steep terrain. Technical staff from the WDNR and University of Wisconsin will be needed to develop and implement these types of efforts. As in most businesses, there is a need to constantly encourage new products in order to maintain markets and thus enable sustainable management of the forest.

There are significant opportunities for Wisconsin forest product companies in the global economy. However, many of the state's companies are small to medium with no international experience and limited capability for global market research and development. To diversify and strengthen these companies, assistance is needed in market identification and in development of international market skills through technical assistance. Targeted trade missions organized for the forest industry have been successful in introducing companies to markets and in helping managers become comfortable in international sales. These efforts should be expanded to meet the increasing need for companies to do business internationally.

VII. Recommendations for increasing the economic development of the forestry industry and employment in the forestry industry.

Forest Product Export Program

The marketplace for Wisconsin forest products has become a global marketplace. Wisconsin's primary wood processing industry has not declined as much as it would have during the recession, due to the companies exporting products. The lack of decline in the primary wood processing industry is directly related to companies increasing their global sales. Similar global market development has not occurred in the secondary wood processing industry. Previous trade missions were funded by federal grants, but federal grant funding that supported past market development has been eliminated.

With the increased importance of exporting in order to maintain markets, a formal program should be developed and funded to allow for trade missions and market development to be done on a regular basis. Market development, which includes identification and introduction of the forest products industry to foreign markets, is important due to the limited management structure of many Wisconsin forest product companies. These companies do not have the resources to hire international business experts on staff. WDNR Division of Forestry staff provided this service through finding an occasional grant to fund the effort. Providing for the continuity of this effort is important and will require future funding.

Biomass

Biomass offers the potential to provide markets for forest materials not traditionally used. However, care needs to be exercised so use of forest materials for biomass does not overtake other uses that have higher value, such as pulp and paper. Further care needs to be taken to ensure the long-term sustainability of the forest when excess biomass is harvested.

The technology involved with producing ethanol from cellulose is rapidly developing and will create markets for material currently under-utilized. The potential for adding bio-refining at pulp mills is excellent. The biomass industry has typically been the lowest valued use of the forest. This is changing as the cost of fossil fuels increases and uses of biomass is becoming more competitive with pulp and paper. The major push to develop cellulosic ethanol will bring this technology into production soon. This will help the pulp and paper industry by providing another product from their facilities. The stand alone ethanol plant using cellulose as a feed stock will change the demand on the forest and the structure of the industry by creating demand for material not currently used.

The creation of a "Fuel for Schools" program provides schools the opportunity to reduce fuel costs by displacing natural gas, electricity, or oil consumption by using the residual wood of a nearby wood processing plant. This also holds potential for other applications as removal technology lowers the costs of accessing the residuals left in the woods. Supporting wood pellet use in public institutions would keep expenditures for fuel costs in local businesses, which may help the rural economy create markets for locally

available material.

Logger and Wood Industry Worker Education

The work force that is available to an industry plays a role in their success. Currently there is a shortage of loggers and skilled woods workers. The average age of logging contractors in Wisconsin, according to the Wisconsin Professional Logger association, is 52.

Wisconsin's WoodLinks program has recognized there are many loggers who will retire in the next decade and is developing specific logging programs for schools in northern Wisconsin to train the future forestry work force. The WoodLinks program connects the forest industry to technical education programs in high schools. Wisconsin has been a leader in the implementation of the WoodLinks program with over 34 schools now in the program. There is a need for a permanent statewide WoodLinks coordinator to organize the interaction of schools and the forest industry. The Wisconsin WoodLinks now has 501(c)(3) status, allowing them to compete for grants and develop stable funding for the program. The WoodLinks coordinator has been very successful in providing direction to the program. Continuity is needed for this program to succeed.

With the shortage of forest workers, there is a need for a technical college program to help prepare workers for successful employment in this field. Current forest industry equipment is becoming increasingly sophisticated to operate. Timber processors used in the woods can take up to three months of training to be able to run and several years to become proficient. The lack of skilled operators is limiting expansion of this industry. A technical college program that introduces woods workers to forestry, surveying, safety procedures, conventional harvesting, and automated harvesting would help prepare workers to gain employment in the forest industry. The WoodLinks program plays an important role in introducing high school students to opportunities in this area. A limited attempt at this sort of program has begun at North Central Technical College in Wausau with an introductory training program.

There are currently wood techniques programs at the technical colleges. They provide needed training and manpower for both the primary and secondary forest product industries. The continued support of this effort through adequate funding is import to maintaining the strength of this industry.

References:

- Center for Technology Transfer. 2004. Wisconsin's Forest Products Industry Business Climate Status Report 2004. Available online: <http://www.cleantechpartners.org/uploads/images/pdf/BusinessClimateStatusRptRevised.pdf>

VIII. The effect of state and local governmental laws and policy on forestry management and the location of markets for forest products.

2009-2011 Legislation

<http://www.legis.state.wi.us/>

Below is a summary of bills which were passed and have impact on forestry in Wisconsin or employees within the Division.

SB 188 - Wisconsin Act 54 - Requires the Department of Natural Resources (DNR) to permit the use of golf carts in Governor Tommy G. Thompson Centennial State Park and the Peshtigo River State Forest by persons age 16 and over. The Act specifies that the DNR must promulgate rules that limit the use of the golf carts to at least the same hours and in at least the same places as golf carts were used in those areas before the state purchased the properties.

SB 264 - Expands the current statutes that prohibit trespass with an all-terrain vehicle (ATV), snowmobile, or off-road vehicle to apply to all property, rather than just private property. This change will allow wardens and other law enforcement officers to enforce these trespass provisions on all lands.

SB 408 – Creates an exception to the assessment of withdrawal taxes and fees against a landowner who transfers ownership of or leases managed forest land for siting a public safety communications tower.

SB 429 - Under this bill, in a proceeding regarding benefits for a state, county, or municipal fire fighter, emergency medical service provider, law enforcement officer, or correctional officer who dies or is disabled as a result of certain infectious diseases, there is a presumption that the disease was caused by the person's employment as a fire fighter, an emergency medical service provider, a law enforcement officer, or a correctional officer if the person's qualifying medical examination showed no evidence of the disease. The bill does not require a minimum term of employment to qualify for the presumption.

SB 531 – Authorizes DOT to issue annual or consecutive month permits, for the transportation on a vehicle or combination of vehicles of loads exceeding statutory length or weight limitations that authorize all of the following:

- The transportation of loads over any class of highway for a distance not to exceed 11 miles from the Michigan-Wisconsin state line.
- The transportation of exclusively peeled or unpeeled forest products cut crosswise, wood chips, or forestry biomass anywhere upon USH 2 in Iron County or Ashland County or upon USH 2 in Bayfield County from the Ashland County line through Hart Lake Road if the vehicle or combination of vehicles is traveling between this state and Michigan and does not violate length or weight limitations established, as of April 28, 2004, under Michigan law.
- The transportation of exclusively peeled or unpeeled forest products cut crosswise, wood chips or forestry biomass upon USH 2 from STH 13 in the City of Ashland through Hart Lake Road in Bayfield County.

If the roads desired to be used by an applicant for a permit under this provision involve streets or highways other than those within the state trunk highway system, the application must be accompanied by a written statement of route approval by the officer in charge of maintenance of the other highway.

AB 562 - Wisconsin Act 181 - Specifies that Master Logger scholarships under the grant program are for individuals seeking certification by the Great Lakes Timber Professionals Association. This change reflects the new name of the organization that certifies master loggers.

AB 580 - Makes various changes to the Managed Forest Law (MFL) program. These changes include providing a process for an MFL owner to receive a withdrawal tax estimate from the Department of Revenue, eliminating the creation of stumpage values through the administrative rule-making process, and technical changes related to administering the program. It also eliminates the March 31 renewal deadline for large landowners and replaces it with a June 1 deadline; therefore all MFL owners will have the same renewal deadline. The bill also requires that real property, or any portion of the real property, that is being sold will, after the sale, continue to be subject to an order designating it as MFL, the owner must provide a written disclosure, no later than 10 days after the acceptance of the contract of sale or option contract, that the property will continue to be subject to the MFL order after the property is transferred. The disclosure must explain that the terms of MFL orders are for 25 or 50 years. Further, the disclosure must state that the Division of Forestry monitors MFL management plan compliance and must provide the buyer with information as to how to contact the Division of Forestry. The bill also requires that the disclosure contain the following statement: "Changes you make to the property that is subject to an order designating it as managed forest land, or to its use, may jeopardize your benefits under the program or may cause the property to be withdrawn from the program and may result in the assessment of penalties." The requirement of notice to prospective buyers would first apply to property transfers that occur on the effective date of the bill.

AB 778 - Specifically allows transportation of raw forest products in vehicle combinations having a gross weight not exceeding 98,000 pounds if the vehicle combination has six or more axles and meets other criteria (an "RS permit") must expressly authorize the vehicle combination to exceed any special weight limits imposed in connection with the thawing of frozen highways and to be operated at the full allowable weight. The bill also specifically allows raw forest product haulers to reload up to 2,000 pounds, or pay a forfeiture of \$50 for failure to reload, for a vehicle combination being operated under the permit if the vehicle combination exceeds, by not more than 2,000 pounds, any per-axle weight limit specified in the permit. An adopted amendment to the bill also directs the DOT to suspend an RS permit if the person operating under the permit violates any weight limitation specified in the permit either: (1) more than two times during the valid period of the permit; or (2) by exceeding the weight limitation by 10,000 or more pounds. The suspension must be for six months. If the remaining valid period of the permit at the time of suspension is less than six months, the person may not apply for, or operate under, any other RS permit for a period of six months from the suspension. Another adopted amendment provides that an RS permit must expressly authorize the vehicle combination to exceed any special weight limits imposed in connection with the thawing of frozen highways and to be operated at the full allowable weight only on state trunk highways and connecting highways.

IX. Recommendations as to staffing and funding needs for forestry programs and other conservation programs related to forestry that are conducted by the state to support and enhance the development of forest resources.

The recommendations contained within this section are drawn from program studies completed by the Division of Forestry in which staffing and funding needs were identified. Since not all programs in the Division of Forestry have recently undergone a study, this list of recommendations is not comprehensive and does not address all the staffing and funding needs of the Division, nor other conservation programs that enhance the development of forest resources.

Communities and Wildfires

The Division sponsors several programs to help communities and homeowners address the potential hazards of forest fires. The Firewise Community program recognizes communities that have developed and implemented strategies to improve their community's fire readiness. Community Wildfire Protection Plans assist communities in assessing local fire hazards and identifying mitigation strategies to address those hazards. There are 574 cities, villages, and towns in Wisconsin identified as a Community at Risk or a Community of Concern. These communities cover 42% of Wisconsin's land area. Of these communities, 13 completed a Community Wildfire Protection Plan in 2009 and 2010, bringing the state total to 17 CWPP's. In addition, 12 homeowner groups in identified high risk communities were accepted into the national Firewise Community USA recognition program in 2009-10, bringing the state total to 14 recognized Firewise Communities.

Forest Fire Management

The mission of the Division of Forestry is to work in partnership to protect and sustainably manage Wisconsin's forest ecosystems to supply a wide range of ecological, economic, and social benefits for present and future generations. The Wildland Fire Management Program is an integral part of accomplishing the Division of Forestry's mission. It plays a key role in the sustainable management of forest resources, through early detection and rapid initial attack to limit the damage caused by wildfire, as well as preventing such damage, and performs a vital service to protect public health and safety.

Of primary importance is the acknowledgement and endorsement of the idea that the Wildland Fire Management Program is dependent on ground based resources, early detection, and aggressive initial attack. This principle may be gleaned from the various recommendations, but it is such an essential guiding philosophy that it needs to be stated outright.

Additional information about the Fire Program Assessment can be found in the Council accomplishments section of this report.

Urban Forestry Program

In 2010, the Wisconsin Urban Forestry Council presented the WDNR Secretary and the State Forester with its 2009 report on the state of urban forestry in Wisconsin. The council reported on progress since its 2007 report, identified five current challenges, and four opportunities, recommended four strategic directions, and made six specific policy, funding and staffing recommendations.

The challenges the Council identified are:

- Emerald ash borer – EAB threatens 5.2 million urban ash trees, 20% of the entire resource.
- Inadequate Funding - State and community urban forestry programs are underfunded despite a 3-to-one return on investment
- Insufficient tree cover - Community tree canopy cover is only 14%-20% compared to the desired 40%
- Lack of management and care – Maximum benefits from urban tree canopy cover is not fully realized
- Species diversity – Maple and ash comprise 43% of the trees in Wisconsin communities

The Council identified four major opportunities that could be exploited by expanded urban forests and improved management:

- Economic development
- Energy conservation
- Environmental service
- Partnerships and collaborations

The Council reiterated the four strategic directions it recommends to address the critical issues:

- Manage the trees we have.
- Plant more trees.
- Increase biodiversity.
- Facilitate partnerships and collaboration.

The Council made specific policy, funding and staffing recommendations to DNR to address these challenges, opportunities and strategies.

- Institute a continuous urban forest inventory and canopy analysis to set resource goals, identify new threats, measure initiative results, and quantify benefits to the public.
- Increase the urban forestry grant program by \$1 million to provide necessary incentives to local governments and nonprofits.
- Hire a permanent full time Partnership Coordinator to increase collaboration among public and private organizations.
- Increase commitment of DNR staff resources to assist with on-the-ground efforts to combat EAB and implement the Urban Forestry BMPs for Invasive Species
- Compete for federal and private funding beyond the Forest Service
- Include urban forestry in all state climate change and energy conservation legislation.

For additional detailed information see: *Wisconsin Urban Forestry Council 2009 Report* at: <http://dnr.wi.gov/forestry/UF>

Information Technology

IT is one of the largest emerging tools in sustainable forest management. It permeates every aspect of the forestry program; from the first contact a landowner has with the WDNR website, through the myriad of tools like Geographical Information Systems, Global Positioning System units, the use of satellite and aerial imagery and other IT applications that help with the automation of business workflow and reporting. Forestry staff manages and provides data about our forest resource using this technology. IT has become a fundamental part of the daily life of nearly every forester.

The Division of Forestry's on-line presence and increasing use of the Internet for access to data, as a mechanism to serve forestry applications and information to multiple users, is becoming increasingly important as a primary means of communication with internal staff and external partners.

The Division has been working with the rest of the Department to redesign the Department's external web presence. This reorganization is an effort to engage citizens in conservation and environmental protection, provide opportunities for citizens of all ages to connect to the outdoors, provide information regarding DNR initiatives and strategic direction as well as updates regarding ongoing activities, and provide customer service to citizens and businesses seeking or buying licenses, permits or registrations. With improved navigation and site design you can expect to see features like real-time news updates, links allowing you to easily subscribe to web updates and events, a web map portal to get you to your destination and many other new features.

The Division has also embarked on a seven year project (2006-2013) to develop a specialized forestry public and private land management system that will meet the needs of the Division and its external partners by automating workflow, allow for easier reporting and keep pace with supported platforms. The new system, WisFIRS (Wisconsin Forest Inventory & Reporting System) is a system that will enable foresters to store data collected in the field, plan for and track completed practices (e.g. timber sales), report accomplishments, calculate the financial aspects of the programs (e.g. millions of dollars collected and dispersed to towns and counties), and track open Managed Forest Law (MFL) lands to hunting and recreation to name a few. This application manages core business functions for public and private forest management in Wisconsin, serving hundreds of DNR staff as well as our partners (county forests and cooperating (consulting) foresters).

Due to the importance of knowing where on the landscape practices are being done, geographical information systems (GIS) is being integrated throughout the system. WisFIRS is being developed to encompass the business functions of three existing applications, which are running on old technology. These applications were different enough that field staff had to learn how to use each application individually, making it incredibly cumbersome and in some cases staff have to re-enter the same information up to four times, increasing errors in the data. The WisFIRS project is not only rewriting existing applications into new, current technology, but also re-designing workflows to gain efficiencies in the field, allowing for easier reporting, and increased access to the

data. The new website and applications will make more efficient use of existing workforce and allow for timely responses to requests for information related to these applications.

However, while it is a technology solution that the Division must embrace to be aligned with current business practices, there is no base funding in place to support IT staffing for this activity. IT development and maintenance at the DNR was a centralized service provided by the Bureau of Technology Services (BTS). As a result of workforce reductions, the function to develop and maintain IT applications was transferred from the BTS to the programs, although the staff resources to accomplish this function were not. As a result a gap in staff resources to maintain specialized forestry applications (i.e. WI Forest Inventory & Reporting System, Fire Reporting System) after development exists. The Division currently has a request for a position in the budget for a developer to assist with the maintenance and support of these systems to secure our return on investment.

The Division has also experienced changing technologies with respect to aerial photography, and availability of traditional film based products. The Division's Aerial Photography Acquisition project, up until now, has used traditional methods such as film based products to collect stereo photos of the landscape that foresters use to interpret the forest stand level species composition. Changes in aerial photography technology is forcing the evaluation of other options (digital acquisition), which is more expensive than traditional film based products. Having up-to-date photography is a critical tool for forest management and fire control field operations.

Forestry Communication and Education

The Forest Exploration Center being planned for a 68-acre site in Milwaukee County will play a key role in bringing the sustainable forestry message to urban residents who, as research has shown, do not recognize the ecological, social and economic value of forests in Wisconsin. WDNR acquired the land for this facility from Milwaukee County and was granted spending authority by the legislature for \$150,000 of ongoing funding through the biennial budget process. While this funding level has been minimally sufficient to support early stages of organizational development and project planning and will ultimately support a small portion of the project's operating expenses, additional funding is needed for site preparation work. The building construction will be funded by the nonprofit Forest Exploration Center, Inc., but the state first needs to make a substantial investment in site development, both in anticipation of the future building and to improve the site for educational and recreational use.

Emerald Ash Borer

Current Status

The Emerald Ash Borer (EAB) continues to be a significant threat to the health of Wisconsin's ash resources in rural forests where more than 600 million ash trees grow in several timber types and in urban areas where ash is a common municipal and yard tree.

Since the first find of EAB in Ozaukee and Washington counties in 2008, several other infestations have been detected including: 1) Vernon and Crawford counties, around the Village of Victory and 2) Milwaukee County in the cities of Oak Creek, Franklin and Cudahy. Adult beetles were also detected on traps in the cities of Green Bay and Kenosha, but no infested trees have been found associated with those trap catches.

Regulation

Eleven counties are currently quarantined for EAB as per the Wisconsin Department of Agriculture, Trade and Consumer Protection's (DATCP) authority. The quarantine prohibits the movement of infested material during certain times of the year and requires that businesses receiving ash from quarantined areas obtain a compliance agreement that outlines how infested material must be handled to prevent spread of this insect. In 2009, the invasive species rule, NR40 – was passed. This rule gives authority to DNR law enforcement personnel to write citations for violations of DATCP's quarantines. This was a very important step towards limiting the movement of EAB. The DNR's firewood rule, NR45.045, was strengthened by reducing the distance firewood may move (if coming onto DNR property) from 50 miles to 25 miles. This change was supported by research conducted by the USDA Forest Service. A USDA grant was obtained by Glacierland Resource Conservation and Development (RC&D) to organize a multi state firewood manufacturers association and support development of a model business plan for heat treatment and certification.

Outreach and Education

The focus of outreach and education has been on the dangers of moving firewood and how to prepare for/ mitigate the damages caused by EAB in both rural and urban settings. Several publications were developed. Most notable were the urban ash guidelines and the silvicultural guidelines. The state EAB website was updated and remains an excellent source of information: www.emeraldashborer.wisconsin.gov. Two wood utilization workshops for rural landowners and two for municipalities were held in the Washington, Ozaukee and Milwaukee county areas. Four workshops, held throughout the state, focused on management options (particularly pesticides) for urban settings. All of these efforts were partially funded by USDA grants and were conducted in cooperation with UW-Extension.

Management

A new approach to developing and managing a response to EAB was implemented in the Victory area (Vernon and Crawford counties) and in the Oak Creek area (Milwaukee County). This approach maximizes use of local expertise and provides the opportunity for information flow from the local response teams to the state EAB operations team. Three USDA grants are supporting urban and rural ash management work in Milwaukee, Washington, Ozaukee, Vernon and Crawford counties. This work is being done through cooperative projects with the Town and Country and Southwest Badger Resource Conservation and Development nonprofit groups and through Renewable Resource Solutions (a private consulting firm). These projects are showcasing sustainable forest management practices and utilization options. A management trial, utilizing "sink" trees (girdled ash trees) to attract and subsequently destroy EAB, was conducted in Ozaukee

Country. The project proved successful in attracting the population of EAB back towards the center of the infestation, yet the number of insects destroyed was insignificant as the number of insects in the sink trees was low.

The DNR invested in four research/pilot projects related to EAB: 1) Mapping of the rural ash resource; 2) Mitigation of black ash mortality in northern Wisconsin's forests; 3) Biological control of EAB; and 4) Biosurveillance for EAB with a native wasp, *Cerceris fumipennis*.

X. Recommendations as to the need to increase the public's knowledge and awareness of forestry issues.

Following is an overview of forestry communication and education programs in Wisconsin. While these efforts represent progress in sharing forestry information and reconnecting students, residents and visitors with the forest resource, all are underfunded.

Forest Exploration Center

Because residents of Southeastern Wisconsin depend on and benefit from forests in ways they do not realize, the Council and the WDNR-Division of Forestry have laid the groundwork for an education facility called the Forest Exploration Center, to be located in Wauwatosa. The site includes about 45 acres of forest, maintaining valuable green space in this urban area and providing a unique opportunity for visitors to learn about the forests of Wisconsin. Through innovative programs, exhibits and events, the Forest Exploration Center will deliver the win-win message of sustainable forestry to this population that shows the lowest level of connection with Wisconsin forests and the lowest level of appreciation for the key role forests play in the economy of the area and in their daily lives.

While the Forest Exploration Center will attract visitors of all ages, an important focus of this effort will be groups of school children. The site will be a field trip destination and serve more than 250 schools with over 150,000 students within a 50-mile radius. During 2009-2010, a nonprofit organization was created and the founding board of directors developed a strategic plan, business outlook and other planning tools to move the effort forward. Additionally, the board of directors has hired an executive director to continue leading the planning for this project.

LEAF – Wisconsin's K-12 Forestry Education Program

The mission of the Wisconsin K-12 Forestry Education Program, known as LEAF (Learning, Experiences and Activities in Forestry) is to advance excellence in K-12 forestry education through partnerships that develop, disseminate, implement and evaluate relevant resources and services. Primary funding is provided by the DNR Division of Forestry through a surcharge on seedlings sold through the State Nursery Program. UW-Stevens Point and the Wisconsin Center for Environmental Education provide in-kind contributions for the operation of the program. LEAF generates additional funds through grants and other contracts.

LEAF program services include, professional development for both formal and non-formal classroom educators through teacher workshops and offering graduate credits (face-to face and on-line); the coordination of Wisconsin's School Forest Program; the dissemination of resources such as the K-12 forestry education grade based lesson guides with supplements, web-based materials and other resources; community connections through presentations and workshops at events statewide and consulting on assistance with forestry education adoption for school districts, outdoor education facilities and various organizations.

A LEAF program accomplishment proposed in 2009-10 that will be realized in 2011 is the revised grant requirement for the WEEB (Wisconsin Environmental Education Board) School Forest Grants category. During the 2011-2012 grant cycle, funding in the school forest category grant cycle will only be awarded to public school districts with an officially registered school forest site, an officially approved school forest education plan, and a Department of Natural Resources approved forest stewardship management plan on file with the LEAF program's school forest coordinator. To date, LEAF has helped over 50 schools work on completing an education plan for their forests and connect with local foresters to update their management plans. There are currently 357 registered school forests owned or controlled by public school districts, private schools, universities and technical schools, located in 66 of the 72 counties in Wisconsin.

The LEAF program continues to provide professional development and in-services for educators and school districts on the use of the LEAF materials. To date professional development for 2813 educators has been accomplished. Over 200,000 unique visits have been made to the LEAF website during 2009-10. LEAF's 2009 Annual report is posted at <http://www.uwsp.edu/cnr/leaf/Adobe/About/2009annualreport.pdf>
Access LEAF's website at <http://www.uwsp.edu/cnr/leaf/>

Wisconsin Environmental Education Board – Forestry Education Grants

Since 1998, the forestry account of the conservation fund has funded WEEB's forestry education grants. These grants are currently divided into three categories; general forestry education; school forest education plan grants; and school forest grants (dollars to implement initiatives within a school districts approved school forest plan). Demand for available dollars continues to grow. General forestry education and school forest grants support forestry education at the grass-roots or local level throughout the state. Access the 2011-2012 WEEB Grant Program Portal Page at <http://www.uwsp.edu/cnr/weeb/grant-program/index.htm>

UW-Basin Education Initiative

The UW-Extension Basin Education Initiative in partnership with the Wisconsin Department of Natural Resources designs and delivers educational programs, assists organizations, and builds local partnerships to promote understanding and stewardship of Wisconsin's natural resources at the watershed and landscape scale.

Four of the 15 statewide basin educators are primarily funded by the state's forestry program. In addition, UWEX contributes to the operations of the program. The Basin Education Initiative also generates additional funding through grants and other contracts.

The Basin Education program works primarily with adult audiences but may incorporate other educational activities as part of a specific community-based initiative. The program seeks coordination with educational efforts by governmental agencies and nongovernmental organizations. The Initiative hosts and keeps current a Wisconsin Woodland Assistance web-page <http://basineducation.uwex.edu/woodland/>. The Initiative has achieved great success with "The Learn About Your Land" series, a statewide educational series that reaches "unengaged" NIPF woodland owners (those with limited or no contact with Wisconsin DNR foresters or other forestry professionals, no formal management plans and no membership in woodland organizations). Approximately 209 classes were held throughout the state during 2009-2010 with an attendance of over 5500 individuals or approximately 1600 households.

A new education series titled "Ties To The Land" designed to give landowners the tools to make a successful transition from one generation to the next is currently in production. It features a mix of presentations and practical exercises that will help families develop techniques needed to address the key challenges facing family forest ownership and motivate families to address those challenges. The Division of Forestry's partnership with the UW-Basin Initiative provides unlimited opportunity and potential for service to Wisconsin's woodland owners. The UW-Extension Basin Education initiative's website is located at <http://basineducation.uwex.edu/>

Wisconsin Forest Resource Education Alliance

In 2009 a decision was made by the WFREA Board of Directors to dissolve this organization, since WFREA had achieved its purpose.

Naturalists

Naturalists continue to play an important role in helping residents and visitors better understand our natural resources. Our northern state forests continue to offer many opportunities to reconnect visitors to Wisconsin's forests and many continue to offer education and interpretation programs. Other state forestlands providing additional recreational opportunities are managed by the Wisconsin State Park System.

Other Forestry Education

Wisconsin has a rich network of nature centers that help connect residents with our forests and other natural resources. Two organizations in particular continue to focus on forestry education, Trees for Tomorrow in Eagle River and the Seno Woodland Education Center near Burlington.

Trees For Tomorrow (TFT) is an independent, nonprofit natural resource specialty school which uses a combination of field studies and classroom presentations to teach conservation values as well as demonstrate the benefits of contemporary resource management. Its mission is to deliver balanced, objective information on the management

and use of trees, forests, and other natural resources. Its field-based programs, place people in direct contact with resources which support human needs, teach knowledge and skills leading to responsible lifestyle choices. More information about TFT can be found on its web-site at <http://www.treesfortomorrow.com>

The Wisconsin Woodland Owners Association Foundation was created to foster forestry education and research. The Seno Woodland Education Center (<http://www.senocenter.org/>) in southern Wisconsin is managed to provide educational opportunities for educators, students, landowners and the general public and to demonstrate sustainable management of forests and related resources.

The Wisconsin Woodland Owners (www.wisconsinwoodlands.org) and its 13 chapters also carry out an array of educational activities including hosting between sixteen and twenty workshops for landowners, sponsoring workshops such as Ties To The Land, and providing to its members a highly regarded quality magazine on forestry and forestry related issues. It often co-sponsors activities and events with agencies such as DNR and the University of Wisconsin.

