Wisconsin Council on Forestry Biennial Report

January 1, 2005 – December 31, 2006

The Council would like to thank the following people for their assistance in writing this report:

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- **Jane Cummings Carlson** – Division of Forestry
- **Vern Everson –** Division of Forestry
- **Rebecca Gass –** Division of Forestry
- **Earl Gustafson –** Wisconsin Paper Council
- **Kirsten Held** – Division of Forestry
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- **Terry Mace –** Division of Forestry
- **Trent Marty –** Division of Forestry
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- **Paul Pingrey -** Division of Forestry
- **Nicole Potvin –** Division of Forestry
- **Dick Rideout –** Division of Forestry
- **Jim Warren -** Division of Forestry

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's forest resources and forestry industry as detailed in *§* 26.02(2) (a) 1-10. Additionally, the Council chose to report on its accomplishments during the time period covered by this report.

Since the Council is staffed by the Division of Forestry, the report was primarily written by staff contained within the Division.

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EXECUTIVE SUMMARY

The Wisconsin Council on Forestry is a Governor appointed board 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 31 immediately preceding the date of the report.

During 2005 and 2006, 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 at http://wisconsinforestry.org.

Council on Forestry Accomplishments

The Council's work focused on five salient issues facing Wisconsin's forests: the use of woody biomass, best management for invasive species, prioritizing forestry research needs, deer management, and measuring sustainable forestry. As well, the Council advised the Governor and Legislature on multiple legislative proposals and supported many initiatives such as certification of the Managed Forest Law program, the Consortium on Bio-based Industry, soliciting federal funding for Emerald Ash Borer programs, the wisconisnforestry.org website, and a Land Bank for the Board of Commissioners of Public Land. The Council successfully advocated with the Legislature to add an additional non-voting member to the Council representing the USDA Forest Service.

State Forest Resources and Industry

Highlighted here are descriptions of the state's forest resources and industry 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 forest and multiple state and federal partners are working together to detect the arrival of this insect which is only 35 miles from our border.

The Managed Forest Law Program gained third-party forest certification under the American Tree Farm System. This recognition creates the largest group certification program for private landowners in North America.

The County Forests represent the largest public landholding in the state and 27 counties received third-party certification from the Forest Stewardship Council and/or Sustainable Forestry Initiative.

Direct employment in the forest industry has declined by 20,574 jobs between 2002 and 2005. Secondary forest industry, like furniture producers, counts for half of this decline.

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.

The Cottonville Fire, which burned 3,410 acres and destroyed almost 90 structures in May 2005, highlighted the fire risks in the wildland-urban interface and the need for increased prevention and protection measures by rural residents.

The Department of Natural Resources arranged the purchase of a site from Milwaukee County that includes about 50 acres of forest to build the proposed Forestry Education Center but requires further funding to support operating costs.

Deer herbivory is increasing in Wisconsin forests causing economic losses by reducing tree survival and growth, and altering species and age class composition. The continued overabundance of deer can directly threaten the future of sustainable forestry.

CHAIR'S INTRODUCTION

Wisconsin's forests are diverse. From the oak and hickory woodlands of the south to the northern hardwoods and pines in the north and all the urban forest canopies in between, forests provide Wisconsinites a range of social, economic and ecological benefits. To make sure our forests and the recreation and products industry that depends on them remain healthy and vigorous, the Council has focused its attention on several initiatives. This report highlights the accomplishments of that work and provides a closer look at our forest resources and industry.

Over the last two years, the Council investigated several major issues affecting Wisconsin's forests. Through the use of task forces and an advisory committee, the Council sought to understand the following issues and develop mechanisms to address them.

- Woody Biomass Task Force
- Forest Invasives Leadership Team
- Research Needs Task Force
- Deer Impacts on Forest Task Force
- Forest Sustainability Framework - Criteria & Indicators Advisory Committee

The Council is a productive body due to the energetic involvement of its members. I want to extend my appreciation to the Council for their efforts to address issues that are not easily solved. Serving on the Council is a commitment of time and energy and I thank Jon Geenen for his service to the Council from September, 2003 to August, 2005.

I also want to thank others in the forestry community who greatly assist Council members and who are also dedicated to continually improving and protecting our forests. Finally, I want to thank the Department of Natural Resources for their 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 s. 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	Member Type	Organization
Archie, Anne (03/2006–12/2006)	Interim Forest Service Representative	USDA, Forest Service Representative (non-voting member)
Bolton, Michael (08/2005 - present)	Represents labor unions affiliated with the forest industry	United Steel Workers
Brown, Dennis	Timber producers representative	WI Professional Loggers Association
Brown, Troy	Lumber industry representative	Kretz Lumber Co., Inc.
Breske, Roger	Senate Representative	State Senate
Church, Leon	Represents the industry that uses secondary wood	Sweetwood Builders
Clark, Fred	Private consulting forester	Clark Forestry, Inc.
DeLong, Paul	Chief State Forester	WI Dept. of Natural Resources
Decker, Russ	Senate representative	State Senate
Friske, Donald	Assembly representative	State Assembly
Geenen, Jon (09/2003–08/2005)	Represents labor unions affiliated with the forest industry	PACE International Union
Heerey, James	Represents those engaged in conservation education	President, Barron County Woodland Owners Association
Horvath, William	Represents non-industrial, private forest land	Wisconsin Woodland Owners Association
Hubler, Mary	Assembly representative	State Assembly
Huston, Mary Jean (Vice-Chair)	Represents nonprofit conservation organizations	The Nature Conservancy
Matthews, Colette (11/2005-present)	Represents the interests of counties with forests	Wisconsin County Forests Association
Ottman, Kenneth	Urban and community forestry representative	City of Milwaukee
Rogers, Robert	Society of American Foresters representative	Society of American Foresters UW-Stevens Point
Souba, Jr., Frederic (Chair)	Represents forest products companies	STORA ENSO
Stier, Jeffrey (Secretary)	Represents Wisconsin's schools of forestry	UW Madison, Dept. of Forest Ecology and Management
Ward, Bill	Represents the paper and pulp industry	Proctor & Gamble

2005-2006 COUNCIL on FORESTRY ACCOMPLISHMENTS

Woody Biomass - Task Force

The Task Force's objective is to determine the role Wisconsin forests can play in utilizing woody biomass to meet the growing demand for energy. It is working toward increasing demand for and supply of wood products.

The Woody Biomass Task Force began working toward its goal of promoting the production and utilization of woody biomass in April of 2004. Things have changed drastically since then. The high cost of oil and natural gas and the desire for energy independence have sparked a demand for bio-fuels and bio-chemicals. There are challenges to supplying woody biomass. Forest fragmentation for example, can create smaller forest parcels and reduce access opportunities to these properties and their woody biomass supply. One initiative the Task Force has recommended to support the supply and demand of biomass is the Great Lakes Timber & Biomass Commodity Exchange. Recognizing the developing issues surrounding woody biomass, the Task Force worked on two initiatives in the last two years.

1. Woody Biomass Legislation

The major objective of the Woody Biomass Task Force is to develop a comprehensive piece of legislation for the production and utilization of woody biomass. The Task Force undertook several activities to develop the legislation. A subcommittee was formed to specifically look at the supply side issues. In order to better understand how to deal with the transportation cost issues, the Driftless Area of southwestern Wisconsin was selected as a demonstration area. The Task Force reviewed the final report of the Bio-industry Consortium to see how the proposed legislation fits in with this effort.

The "Components for Comprehensive Legislation for the Production and Utilization of Woody Biomass" contained in the Woody Biomass Task Force's Draft Report to the Council on Forestry attempted to address issues of supply and demand. The components generally included the topics of grants, tax incentives, alternative wood uses, and increased research. Review and approval of the Legislative package is currently underway with a final Council action expected in 2007.

2. Fuel for Schools & Alternative Fuel Sources

The Council supported the Task Force's desire to see a Fuel for Schools program established in Wisconsin. The Task Force sent a letter to the Chair of the Assembly Committee on Forestry, Department of Administration Secretary Bablitch, and others to recommend that the State of Wisconsin undertake a concerted and deliberate effort to determine which facilities are best suited for utilizing wood for energy and issue a request for proposals to develop wood energy at appropriate state facilities. In 2006, Governor Doyle stated that Wisconsin will have four university campuses that are energy-independent.

Wisconsin currently has nine school districts burning wood. The Task Force met with the National Forest Supervisor, the Wisconsin County Forest Association, and the Wisconsin Professional Loggers Association in Rhinelander to look into stewardship contracting which could present a unique opportunity to fuel some of our schools under a long-term contract.

Forest Invasives Leadership Team

As a result of the momentum generated by the Governor's Conference on Forestry, the Council on Forestry's Invasive Species Task Group grew and evolved into the Forest Invasives Leadership Team. The Council on Forestry agreed to sponsor the development of Best Management Practices (BMPs) for Invasive Species for Forestry in Wisconsin in June 2005. Wisconsin has the distinction of being the first state to consider a forest invasive BMPs process. The USDA Forest Service, State and Private Forestry agreed to fund the Task Force's BMP project. It provided $60,340, the full amount that was requested, to the WI-DNR Division of Forestry.

The Team's strategy for addressing the threat of invasive species is through the development of BMPs for Invasive Species. These BMPs break down into four separate processes, or "tracks", representing different segments of the forest resource and different groups of stakeholders that need to be reached. Each track has its own steering committee.

Track 1 - Forestry BMPs for Invasive Species:

The fourteen member advisory committee for *Track 1* is made up of members from forest industry, conservation organizations, tribes, private woodland owners and other stakeholder groups. The Advisory Committee has reviewed and refined the standards and developed an outline for what the BMP product will look like. All products must be approved by the Advisory Committee before going out to the public.

Track 2 - Recreational Forest User BMPs for Invasive Species

In December 2006, an Advisory committee was formed. A number of organizations are represented, including members of the Wisconsin ATV Association, the Conservation Congress, and the Wisconsin Society for Ornithology.

Track 3 - Urban Forestry BMPs for Invasive Species

In February 2006, the Urban Forestry Council endorsed sponsoring Track 3. A Committee Chair has been selected and participants were sought from a number of different organizations. It is intended to reach nursery, landscape, and arboriculture communities.

Track 4 - Utility and Transportation Right-of-Way BMPs for Invasive Species

This is the least developed effort of the four attempts to deal with the ways that invasives are spread. It includes utility, pipeline, and electrical rights-of-way.

Research Needs – Task Force

The Council appointed a Task Force on Forestry Research in Wisconsin after recognizing the need to prioritize various initiatives started by the Council, the Governor's Conference on Forestry, and Governor Doyle's Conserve Wisconsin program. The Task Force was charged with the development of a strategic plan for addressing research needs and a plan of action for funding and allocation of funds for forestry research.

The Task Force on Forestry Research grouped research into the following eight areas of emphasis, with research needs grouped under appropriate areas, and refers to them collectively as the "Wisconsin Research Agenda":

1) Sustainable Management Certification for Wisconsin's State, County, and Private Forests
2) Conserving Wisconsin's Biological Diversity
3) Enhancing Wisconsin's Urban Forests
4) Managing the Impacts of Changes in Wisconsin's Land Use and Forest Ownership
5) Enhancing Assistance to Wisconsin Private Forest Landowners
6) Minimizing the Threat of Invasive Exotic Species to Wisconsin's Forests
7) Maintaining Wisconsin's Forest-Based Economy
8) Minimizing Recreational Use Conflicts in Wisconsin Forests

In February, 2006, the Council accepted the Task Force's five following recommendations:

1) That the Wisconsin Council on Forestry support the Wisconsin Research Agenda and encourages forest scientists to direct their efforts to developing new knowledge in the eight areas of emphasis.
2) That the Division of Forestry develop an initiative for $200,000 per year of base funding for the 2007-2009 biennium to support forestry research that addresses needs identified in the Wisconsin Forestry Research Agenda.
3) That the Division of Forestry work with the UW-System to develop a cooperative grant program for forestry research supported with WI-DNR funds.
4) That the Department of Natural Resources prepare a biennial report to the Council on all forestry research in Wisconsin and how it addresses the areas of emphasis in the research agenda.
5) That the Division of Forestry include a process for assessing and prioritizing forestry research needs when developing future statewide forest plans, and develop biennial updates and revisions of the research agenda.

<u>Deer Impacts on Forests – Task Force</u>

Recognizing that forest management and deer management are inextricably linked, the Council determined that investigating the growing impact deer have on forests was a critical topic to explore. The Council resolved to form a task force charged with gathering the information necessary to develop a statement of why the issue of deer is important to forestry concerns in Wisconsin, and developing steps for taking the issue forward.

The Task Force on Deer prepared a briefing proposal, *Deer Herbivory in Wisconsin Forests*. At issue is the deer herd in Wisconsin being above recommended levels, resulting in a browse level that negatively impacts the biodiversity and regeneration of our forests, threatening the sustainability of both forest ecosystems and forest products into the future.

The Task Force on Deer sent a letter and position paper to the Governor and Legislature communicating:

1) the Council's support of the Department of Natural Resources' management efforts to bring deer numbers down and encourage even lower numbers on deer herbivory,
2) its concern that deer herbivory is a serious problem that, if not addressed, will affect the sustainability of forestry in Wisconsin, and

3) to the Department of Natural Resources to gather together existing research and statistical data relative to the impact of deer on trees and organize it to identify where information is available and where it is lacking.

New Seat on Council

With over 1.5 million acres, the USDA Forest Service (FS) owns some of Wisconsin's largest blocks of contiguous forest, and is an important part of Wisconsin's landscape. The Council felt its deliberations would be enhanced with direct involvement by the FS including the National Forest System, FS research and FS State and Private Forestry. There are 19 seats on the Council by statute. Council member Mary Hubler took the lead in drafting a bill at the Council's request to add the FS as a 20th member. State Statute 15.347(19)(a)20 added a non-voting member from the FS to the Council.

Forest Sustainability Framework - Criteria and Indicators

To assess the actions of Wisconsin's Statewide Forest Plan, and determine if the state's forests are being managed sustainably, the WI-DNR proposed supporting the Criteria and Indicators (C&I) program developed by the USDA Forest Service Northeastern Area State & Private Forestry (NA). Wisconsin is committed to compiling data on 18 indicators that were developed to measure forest sustainability in the northeastern region. Other states in the region are following suit and the resulting data will be compiled to help reveal cumulative effects.

The WI-DNR requested formal support from the Council on this project to provide official backing for the initiative, engage an array of forestry partners in the decision making process, and lend a sense of credibility to the C&I development process. The Council created an Advisory Committee to recommend a Wisconsin set of criteria, indicators, and metrics. The Committee will provide advice and suggestions to the Chair and act as a sounding board for ideas and proposals. Their report is due to the Council in December 2007.

SUMMARY PER STATE STATUTE 26.02

I. The magnitude, nature, and extent of the forest resources in this state.
Of Wisconsin's 35 million acres of land about 16 million acres are forested. Forest area in Wisconsin has been steadily increasing for decades. In 1996, there were 15,965,000 acres of forest and in 2005 there were 16,119,000 acres. This is mostly due to the conversion of marginal agricultural land back to forests. Currently, forests cover about 46% of the total land area of the state. Urban forests, the trees and green space in communities and other built areas, cover an additional 1.7 million acres or about 4.7% 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. Maple-basswood, aspen-birch, and oak-hickory forest types are the most common. Maple-basswood accounts for 4.5 million acres, followed by oak-hickory with 3.4 million acres, and aspen-birch with over 3.2 million acres. While 82% of Wisconsin's forests are hardwood types, there are also significant softwood types occupying large areas, especially in the north. Red pine, northern white cedar, black spruce, jack pine, and tamarack are the most common conifer forest types.

Species composition by forest type

The maple-basswood forest type is the most common forest type in the northern part of the state and the state as a whole. 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-basswood supports a variety of understory plants and animals.

Second to maple-basswood in the northern part of the state is the aspen-birch forest type. Just less than 3.0 million acres of the Northern Mixed Forest region are 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 primarily by the prevalence of conifers. The most common conifer forest type is spruce-fir. 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 (1.0 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 (2.1 million acres). It represents about 48% 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.

About 17% (728,000 acres) of the forests in the Southern Broadleaf Forest are maple-basswood forest type. Species composition is similar to the northern maple-basswood forest, with sugar maple and basswood being the dominant species. However, the amount of hemlock is decreased, yellow birch and quaking aspen and the increased occurrence of oaks as compared to the northern maple-basswood forests.

The soft maple-ash forest type generally is a lowland type that makes up a higher percentage of the southern than northern forests. However, the Northern Mixed Forest contains a larger net acreage of soft maple-ash forest type. Common species in this forest type are black ash, green ash, silver maple, and red maple. Other forest types of note in southern Wisconsin are aspen-birch and white-red-jack pine.

Age class by forest type

Fifty-four percent of all forests in Wisconsin are over 50 years old. The oldest primary (>200,000 acres) forest type in Wisconsin's forests is the Northern white-cedar type. Ninety percent of this type is over 50 years old; with 19% of this over 100 years old. The youngest primary forest type is the jack pine type. Eighty-eight percent of the jack pine type is under 50 years old. The oldest primary hardwood forest type is white oak with 89% of the type over 50 years old. The youngest hardwood type is aspen with 79% under 50 years old.

Volume by species

In 2005, there were 20.0 billion cubic feet of growing stock volume, of which 5.3 billion were conifer, and 14.7 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, quaking aspen and northern red oak.

Growth, removals, mortality volume by species

In Wisconsin, our forests are growing at a rate that significantly exceeds harvest. Between 1996 and 2004, average net annual growth[1] exceeded harvests and other removals by almost 307 million cubic feet. Growing stock average annual mortality[2] was 180 million cubic feet. During the period between inventories, average net annual growth was 653 million cubic feet. Average annual removals were 346 million cubic feet, about 53% 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, maples, basswood, ashes, white and red pines, white and black spruces, and balsam fir. Bigtooth aspen, paper birch, eastern cottonwood and jack pine removals exceeded net growth between inventories. Growing stock average annual mortality exceeded average net annual growth for balsam fir, black spruce, jack pine, paper birch, butternut, balsam poplar and red mulberry. 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 remained roughly constant over the last 70 years.

Wisconsin forests have increased in age over the past 40 years. In 1968, only 34% of the forests in Wisconsin were over 50 years old. By 2005, the percentage over 50 years had increased to 54%. 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, balsam fir-white spruce and white pine forest types which remained virtually unchanged during this time period. The percentage of black spruce forest type over 50 years old increased more than any other forest type over the past 40 years (38% to 70%).

Overall growing stock volume on Wisconsin timberland has increased steadily since the first forest inventory in 1936 (7.6 billion cubic feet) to the seventh inventory in 2005 (20.0 billion cubic feet). Between 1996 and 2005, overall growing stock volume in Wisconsin's forests has increased by over 8%—about 1.5 billion cubic feet. Along with this overall increase, the state's maples, oaks (except Northern red oak), ashes, white and red pines, and white and black spruces are some of the commercially important species whose growing stock volume increased. Aspen, paper birch, northern red oak, balsam fir and jack pine volumes decreased between inventories.

Growing stock average net annual growth exceeded average annual removals between 1996 and 2004 for virtually all major species groups Previously, between 1983 and 1996, removals exceeded growth for select red and white oaks, aspen, paper birch and jack pine species groups. There was a partial reversal from this previous inventory when select red and white oaks and quaking aspen average net annual growth exceeded average annual removals between 1996 and 2004. 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/mi^2. The 2000 Census Bureau defines urban areas as census blocks with at least 1000 people/mi^2 and surrounding census blocks with at least 500 people/mi^2. 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.

The data was collected through a WI-DNR contract with the University of Wisconsin - Stevens Point and will be used to establish the sampling boundaries of a statewide urban forest assessment. Results of the state program will then be applied to establish a national urban forest inventory and assessment. Wisconsin's state urban forestry coordinator serves on the national task force charged with this responsibility.

Forest Health

Our forests are generally in good health, though problems do exist in certain forest types. Harsh climate conditions over the last two years have affected the health of our forests. Severe drought in northern Wisconsin during the 2006 growing season affected many species of trees but was most evident on the conifers. The injury from drought was amplified by the already drought-stressed status of the forests from low moisture levels in 2005. The drought caused plantings of tree seedlings to die in areas scattered across northern Wisconsin. Oak and pine, already stressed by past years of low moisture, finally succumbed to infestations by the two-lined chestnut borer (oak) and pine bark beetle (pine). Dieback in aspen was also observed in droughty areas. Shagbark and bitternut hickory throughout southern Wisconsin also continued to die as a result of past droughty years and infestations by the hickory bark beetle.

Populations of the jack pine budworm skyrocketed in 2005 in northwestern parts of the state. It then declined in this area but continued to rise and feed on both red and jack pine in west-central and north central Wisconsin. Surveys for exotic species including the emerald ash borer, beech bark disease, Sirex woodwasp and *Phytophthora ramorum* (the cause of sudden oak death) all returned negative results. Gypsy moth populations remained low, due to a collapse in 2004 but have continued to rise in scattered areas of south-central Wisconsin.

In 2006, the Wisconsin Department of Natural Resources Division of Forestry coordinated a survey of invasive plant species on priority sites in Wisconsin's northern State Forests for the purpose of collecting information on the ecology of invasive plants, mapping the current existence and extent of invasive plant infestations within the state forests, establishing a baseline GIS database to aid in the development of invasive plant management goals and objectives, increasing

departmental and public awareness of invasive plant issues, and creating support for management and prevention programs. The survey results provide information about the extent of several species that are of great concern in Wisconsin's forests. These plants are causing serious ecological damage to significant areas of the upper Midwest. While not all of these plants are widespread in Wisconsin, they spread aggressively and can become problematic if allowed to spread. The following results of the survey highlight the status of the most common invasive species:

- Garlic mustard, common in other forests, is thus far absent from the Brule River and Peshtigo River State Forests.
- Non-native honeysuckles (*Lonicera spp*.) and buckthorns (*Rhamnus spp*.) are among the most widespread invaders of forest understories. It is widespread in all of the state forests, and among the species most commonly observed during the survey.
- Spotted knapweed was the most commonly observed invasive species on state forest land.

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 of the urban forest. All too often the trees within a community can be taken for granted. Current urban forest benefit models can quantify the realized monetary benefits associated with urban trees, improving their standing 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, wildlife and weather pose current and future threats to the urban forest. Gypsy moth is the most notorious pest at this time, however other pests such as the emerald ash borer and Asian long-horned beetle, are potential new pests that, if introduced, could have significant impact. Preliminary results of the USDA Forest Service pilot assessment showed a potential impact to the resource from the emerald ash borer alone at nearly $1.5 billion.

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.

References:

- Wisconsin Department of Natural Resources, Division of Forestry. Wisconsin Forest Health Highlights. December 2006. Available online: http://dnr.wi.gov/org/land/forestry/Fh/pdf/FHH06.pdf

- Wisconsin Department of Natural Resources, Division of Forestry. Forest Health Conditions in Wisconsin Annual Report 2005. Available online: http://dnr.wi.gov/org/land/forestry/Fh/pdf/AnnualReport2005.pdf

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

In 1999 (the most recent numbers available), Wisconsin's forests provided 369,743 MCF (thousand cubic feet) of wood products to the forest industry, primarily to firms in Wisconsin. This is made up of 632 million board feet (bf) (111,017 MCF) of sawlogs to sawmills, 42 million bf (6,881 MCF) in veneer logs, 3 million cords (241,990 MCF) of pulpwood, and mixture of other products from cabin logs to posts. The pulp mills used an additional 644 thousand cords from other states, while 364 thousand cords produced in Wisconsin were used by mills located outside Wisconsin. These markets enable Wisconsin's forest to be actively managed by providing the economic means to manipulate the forest while meeting the goals of the land manager.

The demand for products from Wisconsin's forests has grown slightly each year, though some species like red pine have seen reduced use due to changes in demand by the paper industry while other species have seen increased demand. The Wisconsin Economic Development Institute, using county business pattern data, reported that in 2005 the direct employment for the forest industry was 72,603. This is down from 93,177 in 2002. Of the 20,000 jobs lost, almost 9,000 occurred in the pulp and paper industry and close to 12,000 jobs were lost in secondary forest industries (furniture and fixtures). The furniture market segment has seen significant decline while the kitchen cabinet and architectural wood working segments seem to be growing.

The value of shipments has increased slightly during the same time period from 19.5 billion dollars to 20.2 billion dollars. Wisconsin forest product companies are changing to meet the competition from a global market place through lean manufacturing and automation which is resulting in a decline in employment but improved productivity. The export of lumber from Wisconsin increased by 24% from 2004 to 2006 with $23 million exported in 2004 and $28 million in 2006 as reported by the Wisconsin Department of Commerce.

This steady flow of products, besides helping to manage the forests, provides for a strong economy through the 72,603 direct jobs that exist in the forest product industry. The timber production provides for primary, secondary and reconstituted wood products which includes the paper sector activity that accounted for approximately 6% of Wisconsin's 2003 gross state product (roughly $23.8 billion of $376 billion)[3].

Wisconsin's forest product industry creates high paying jobs – average wages for forest industry jobs are $38,000 annually, compared to the state average of $30,000. Paper mill workers earn $49,000 annually[4].

The other amenities provided by the forest are difficult to put a value on, but are significant. David Marcouiller, Natural Resource Economist with the University of Wisconsin-Madison has estimated that forest based recreation accounts for about $5.5 billion of the $14 billion spent on recreation, with $2.5 billion of that being spent locally in the rural community. People tend to buy their snowmobiles, groceries, camping gear where they live before heading out to the forests to

[3] Minnesota IMPLAN Group. IMPLAN Professional 2.0 and 2002 Wisconsin Data files. 2004
[4] Center for Technology Transfer, Inc. Wisconsin's Forest Product Industry Business Climate Status Report 2004.

recreate. It is also interesting to note that areas having a significant forest based recreation also have significant forest industry. This helps to provide the needed infrastructure for the recreation industry through service jobs that are created by manufacturing plants and their workers' service needs.

Urban forests in Wisconsin provide a myriad of ecological, social and economic benefits to the state. In the draft of a recent urban forest assessment piloted by the USDA Forest Service and WI-DNR, preliminary estimates show Wisconsin's urban forests annually remove 6,400 metric tons of air pollution valued at $36.3million, 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 recent study by the Wisconsin Agricultural Statistics Service released in 2004 showed that the "Green Industry", that is the production, installation and maintenance of landscape trees, shrubs, sod, flowers, etc., contributed $2.6 billion to the state's economy.

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 and capacity exceeds demand and then 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 market place 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 the 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 the global markets they should be able to grow and provide markets for Wisconsin wood. The transition of the paper industry to bio-refining, producing products other than paper such as 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 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. The remolding portion of the market has been a bright spot as this is in stable demand. Home building trends are cyclical and once the correction is over, home building will resurge again. The manufacturing sectors have continued to create the need for pallets and therefore lumber prices have been stable. Wood flooring continues its resurgence in the market place with production levels reaching those achieved in 1966. The 2004 shipment level of 672,805,000 board feet reflects a steady upward trend in flooring shipments according to the National Oak Flooring Manufactures Association. This has been caused by consumers making the choice of wood floors over carpeting. The foreign competition in the engineered and laminate flooring markets and to a lesser degree in the solid wood flooring continues to increase. International markets for quality hardwood flooring produced in Wisconsin continue to grow.

The 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. Continued assistance by the state to help companies move into these markets is needed to help Wisconsin family-owned business take advantage of these opportunities.

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. 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 of the 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

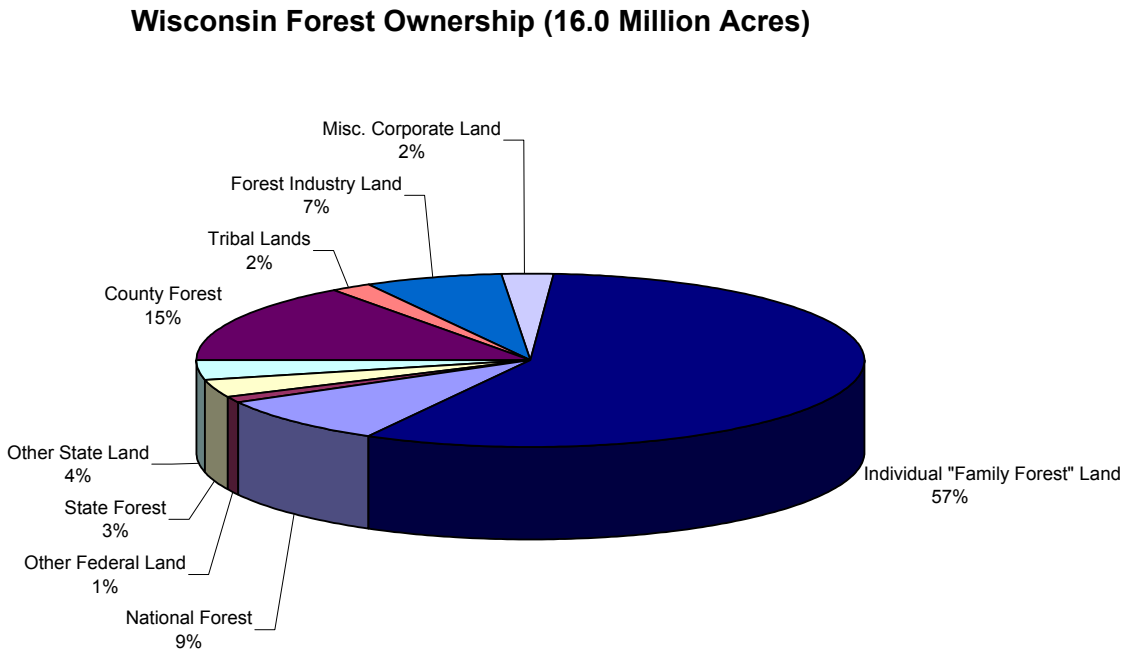


Figure 1. *Wisconsin Forest Ownership, 2003*

Of approximately 16 million rural forested acres in Wisconsin, 57% are in individual, "family forest" ownership (i.e., non-industrial private forest landowners (NIPF)). The rest is county forest, 15%; national forest, 9%; other State land, 4%; State Forests, 3%; private forest industry land, 7%; 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 1997 Forest Inventory Analysis, more than 262,200 private forest landowners hold an estimated 10.8 million acres of forestland. If preliminary data coming out of the 2003 Forest Service National Woodland Owner Survey for the northern region of the United States hold true for Wisconsin, the number of landowners is likely to be about 21% higher, or about 317,000 private landowners at present. That would be similar to a 20% increase in landowners observed in the previous ten-year time period dating back to 1984.

Based on the 1997 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). Statewide, the 1-9 acre parcel size class has 35% of the landowners, but only about 3.5% of the forestland (Figure 3). About 170,000 owners hold the 9.4 million acre balance. The overall

average parcel is about 35 acres in size for individual owners. For landowners with ten or more acres, the average parcel is 55 acres.

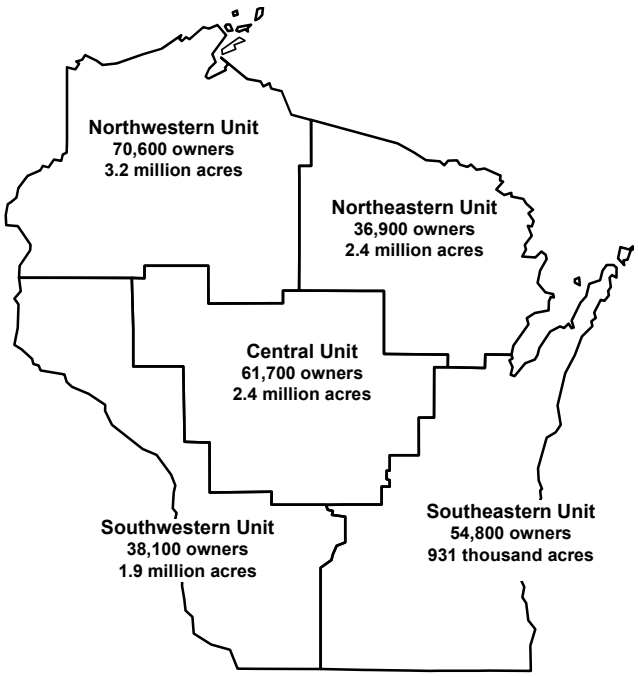


Figure 2. Distribution of private forestland owners and acres owned between forest survey units, 1997.

Owners and Acres by Unit				
	Owners		**Acres**	
Unit	***Thousand***	***Percent***	***Thousand***	***Percent***
Northeastern	36.9	14	2,432.3	23
Northwestern	70.7	27	3,165.7	29
Central	61.7	23	2,394.9	22
Southwestern	38.1	15	1,888.2	17
Southeastern	54.8	21	930.8	9
State total	262.2	100	10,811.9	100

Table 1. Estimated number of private forestland owners and acres owned by unit, Wisconsin, 1997.

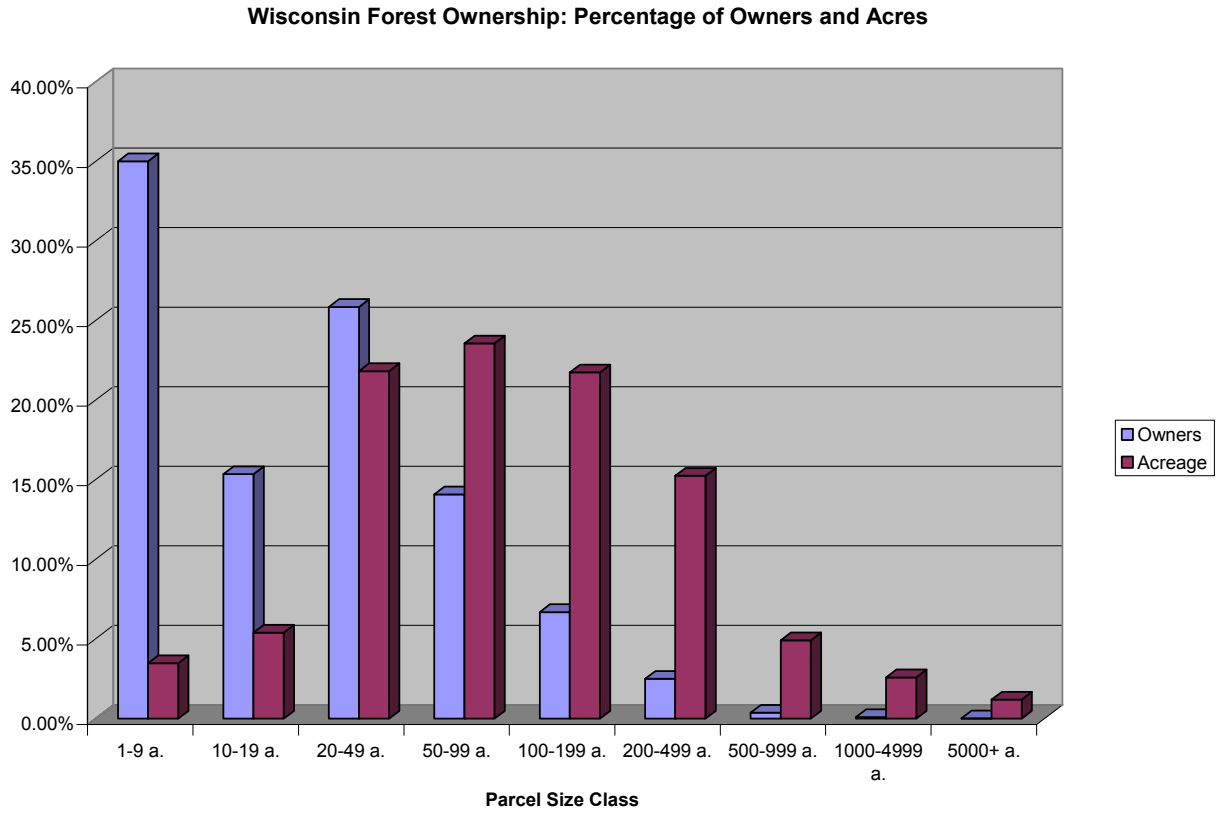


Figure 3. Percentage distribution of Wisconsin forest owners and acres by parcel size class, 1997.

Forest Industry Ownership

A growing trend in forest industry ownership is the transferring of woodland as global corporations realign or divest their land holdings. Since January 2003, approximately 37,000 acres were sold to small private landowners. Forest industry owners now hold 922,505 acres in Wisconsin Forest Tax Law programs. Of that land, only 1% (8,784 acres) is closed to public access.

Wisconsin Forest Legacy conservation easements currently protect approximately 36,000 acres of industrial forest lands from development, with another 52,000 acres funded but not completed. As part of the 1990 Farm Bill, Congress created the Forest Legacy Program to identify and protect environmentally important private forestlands threatened with conversion to nonforest uses - such as subdivision for residential or commercial development. To help maintain the integrity and traditional uses of private forest-lands, the Forest Legacy Program promotes the use of conservation easements.

Demographics of Wisconsin Individual Private Forest Landowners[5]

Individual private forest landowners are employed in a variety of occupations. Twenty-one percent are white-collar workers, 18 percent blue-collar workers, and 13 percent farmers. However, the most distinguishing factor about individual owners is that over one-fourth of them are retired. Collectively, retired owners hold nearly one-fourth 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.

Individual forest landowners are older than the general population. With a large share of forest landowners retired, it follows that 25 percent are 65 years of age or older, whereas only 13 percent of the general population is 65 or older. Young forest landowners, those under 44 years of age, make up only 16 percent of all owners.

Wisconsin's individual forest landowners have higher household incomes than the state's general population. In 1995, the median household income in Wisconsin was $40,955. In 1997, (the year of the survey) 55 percent of the individual forestland owners who answered the survey question about income had annual incomes greater than $40,000. Nineteen percent had incomes greater than $75,000.

Most individual owners reside within a mile of their forestland. However, more than one-fourth of all owners have forestland that is more than 25 miles from their residence. Thirteen percent of the owners maintained their primary residence outside of Wisconsin, mostly in Minnesota and Illinois.

Reasons for Owning Forestland

Forestland is owned for a variety of reasons. However, two reasons stand out ─ recreation and aesthetic enjoyment. Almost one-half of all individual owners hold forestland for those reasons. Interestingly, timber production is not an important reason for owning forestland for individual owners. Less than 1 percent of all individual owners hold forestland primarily for timber production. However, those holding forestland for timber production own about half a 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 recreation and aesthetics, nearly one-half (46 percent) of all owners have harvested timber from their land. About one-fourth of all harvesters removed timber because they thought it was "mature." One-fifth harvested timber for their own use, primarily for fuelwood.

[5] The balance of Section IV is taken from Wisconsin Private Landowners: A Profile, by Earl C. Leatherberry, Woodland Management Magazine, Spring 2001.

A majority (54 percent) of individual owners, holding one-fourth of all private forestland in Wisconsin, have never harvested timber. Nineteen percent of owners who did not harvest believe harvesting would reduce the beauty of their land. Other important reasons for not harvesting are owners generally do not believe that timber is of a size or quantity that warrant harvest (18 percent), or holdings are too small (15 percent). Sixteen percent of the owners did not harvest because they are opposed to harvesting. Those owners hold nearly half a million acres (430,172 acres).

Of the owners who did not harvest, many plan to harvest in the future. About 70 percent of all individual owners, holding 86 percent of individual private forestland, intend to harvest timber sometimes in the future. However, 26 percent of owners say they will never harvest timber. Those owners hold over 300,000 acres of individual private forestland.

Knowledge and Use of Forest Management Assistance

About 35% of all individual owners surveyed did not know of an agency or office to contact for forest management assistance. The smaller the tract size, the less likely an owner has knowledge about who to contact for assistance.

Size of holding (acres)	**Do not know whom to contact for assistance** (percent of owners)
1-49	40
50-499	22
500+	6

Twenty-eight percent of owners have sought advice or assistance in managing their forestland. Knowing whom to contact for assistance and seeking assistance obviously are strongly related, and are influenced by tract size. As size of holding increases, owners are more likely to use assistance as shown below:

Size of holding (acres)	**Sought assistance** (percent of owners)
1-49	20
50-499	53
500+	86

Due to the increasing number of private forest landowners, there will likely be an increasing need for forest management assistance. In 2005 and 2006, WI-DNR and Cooperating Foresters made over 12,000 initial (new) forest assistance calls.

Private Forest Management Assistance 25005 & 2006	**DNR Only**	**Cooperating Foresters**
Comprehensive MFL or Stewardship Plans	4,076 (number)	565 (number)
	238,244 acres	47,564 acres
Total Technical Service Contacts	19,473	7,342

Forest Recreation

Two-thirds 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 20 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. Fifty-five percent of all individual private forestland is posted.[6]

References:

- Leatherberry, Earl C. 2001. Wisconsin Private Timberland Owners: 1997. Research Paper NC-339. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station.
- Leatherberry, Earl C. 2001. Wisconsin Private Landowners: A Profile. Woodland Management Magazine. Spring: p.16-18.
- Miles, Patrick D. Forest inventory mapmaker web-application version 1.7. Available online: http://www.ncrs.fs.fed.us/4801/tools-data/mapping-tools/default.asp. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. Accessed: February 5, 2005.
- Schmidt, Thomas L. 1997. Wisconsin Forest Statistics, 1996. Resource Bulletin. NC-183. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station.

[6] In July 1996 Act 451, which no longer required landowners to post their properties in order to prosecute trespassers, became effective. As a result, the survey percentages of landowners who post their property may no longer be accurate.

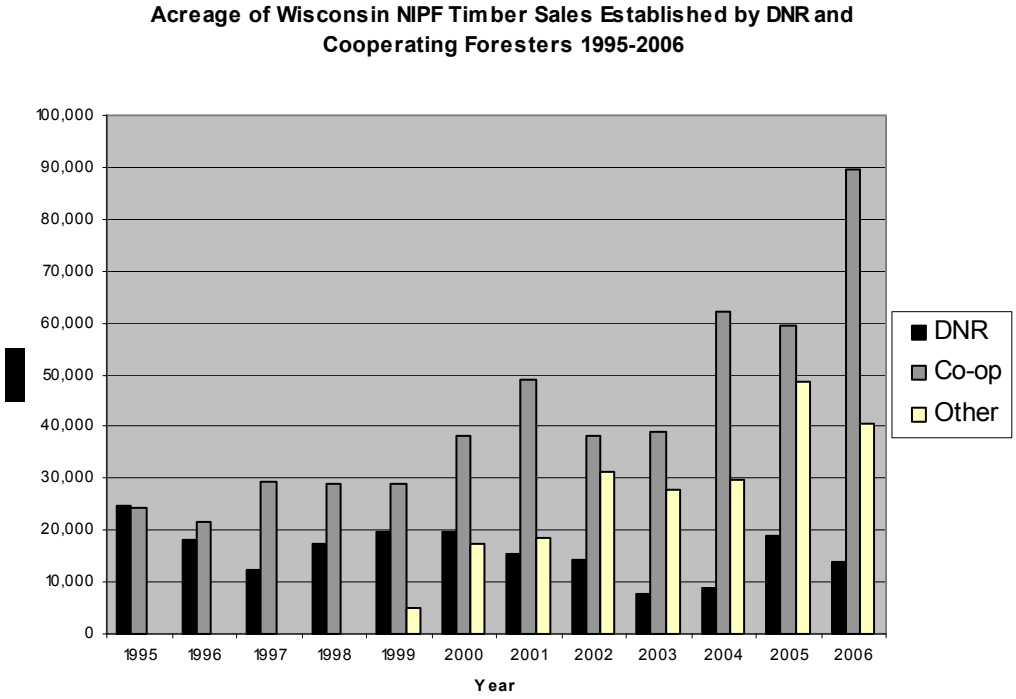
V. The success of existing incentives that are offered to stimulate the development of forest resources.

Technical Assistance

WI-DNR 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 WI-DNR foresters workload is administration of incentive programs. WI-DNR foresters only establish sales if private consulting foresters decline to provide the service.

There are about 120 private consulting foresters and industrial foresters who offer services to private landowners. Consulting foresters are independent contractors who make their living by charging a fee for the work they do. The WI-DNR began the Cooperating Forester program in 1989. Private consulting foresters and industrial foresters voluntarily apply to participate. They are listed in a WI-DNR published directory and receive referrals from WI-DNR foresters. In return, Cooperating Foresters must comply with WI-DNR standards and rules when giving forest management advice. Cooperating Foresters must also attend continuing education courses and file periodic reports with the WI-DNR.

In 2005 and 2006, Cooperating foresters and other WI-DNR approved foresters established on average 88% of all timber sales.



Forest Tax Laws

Today about 29,000 landowners, owning more than 2.9 million acres, are enrolled in the two existing forest tax law programs: Forest Crop Law (FCL) and Managed Forest Law (MFL). The FCL program closed to new enrollment in 1986, when the Managed Forest Law program replaced both FCL and the former Woodland Tax Law.

In 1985, the Wisconsin State Legislature enacted the Managed Forest Law (MFL) Program to allow Wisconsin landowners to be recognized for their forest stewardship efforts and qualify for a reduced tax burden because of the public benefits provided by well-managed forests. The MFL Program is widely recognized as a model program for addressing landowners' interests while promoting public benefits of sustainable forestry. Lands entered under the forest tax laws are required to have written management plans that landowners must follow. The management plans can address harvesting and thinning timber, tree planting, erosion control, and wildlife measures. These plans must be prepared either by a certified plan writer or a WI-DNR Forester.

The Wisconsin Managed Forest Law (MFL), which provides a significant property tax reduction and technical forestry guidance, is the primary forest stewardship incentive offered to Wisconsin landowners. As of January 1, 2007, MFL includes 40,145 MFL Orders of Designation for individual, predominantly "Family Forest" landowners. The agreements cover 2,134,547 acres. Of those lands, 19% (406,143 acres) were open to public access. Current enrollment in the FCL is about 2,500 landowners with about 359,000 acres. Renewal is not permitted. A landowner may enter his or her land into the Managed Forest Law (MFL) program.

2005 Wisconsin Act 25 (Appendix A) made modifications to the Managed Forest Law regarding who prepares management plans for the MFL program. For the May 15 petition deadline, a Certified Plan Writer (CPW) must prepare the management plan. For the July 1 petition deadline, petitions will be placed on a referral list, which will be made available to the CPWs, for 60 days. If a CPW makes an offer to the landowner to prepare the plan, the WI-DNR will not prepare the management plan. If a landowner does not receive an offer within 60 days, the WI-DNR may agree to prepare the plan. Offers will be reported to the WI-DNR by the CPW.

Wisconsin Forest Landowner Grant Program (WFLGP)

This state program is administered by the WI-DNR Division of Forestry. It provides up to 50% cost-share for the preparation of management plans and the implementation of designated practices. The maximum cost shares earned set by the state is currently $10,000 per year. Wisconsin gets an annual allotment of $1.65 million for this state run cost share program. Cost sharing is available for: Plan Preparation, Tree Planting, Timber Stand Improvement, Soil & Water Protection, Fencing, Wildlife Practices, Fisheries Practices, Buffer Establishment, Threatened & Endangered Species Protection, and Historic & Aesthetic Enhancement.

For 2006, WFLGP funded the following projects.

- 195 stewardship plans and revisions ($112,389)
- 369 site preparations ($423,002)
- 413 tree plantings ($500,963)
- 11 shrub plantings ($3,994)
- 6 fencing practices ($4,378)
- 413 undesirable species control ($406,398)
- 30 landowners' tree shelters ($18,898)
- 24 pruning projects ($25,556)
- 79 crop tree releases ($108,593)
- 4 vine removal ($808)
- 2 road layout and design ($1,220)
- 2 erosion control measures ($1,383)
- 10 native grass establishments ($6,933)
- 2 wetland restorations ($6,551)
- 12 wetland creation/enlargements ($32,875)
- 2 wildlife openings ($2,950)
- 7 direct seedlings ($7,995)
- 2 removals insect and disease control ($1,865)

Environmental Quality Incentive Program (EQIP)

This federal program is administered by the Natural Resources Conservation Service (NRCS) with NRCS and WI-DNR 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 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.

EQIP funded the following practices in 2005:

- 10 brush management practices
- 584 site preparations
- 11 forest stand improvements
- 36 tree plantings
- 3 trails and road practices
- 3 windbreaks and shelterbelts

Conservation Reserve Enhancement Program (CREP)

CREP is a federal program administered by Farm Services Agency (FSA) with Natural Resources Conservation Service (NRCS) and WI-DNR as technical agencies. This annual payment program is based on bids submitted by the landowner. The program provides 50% cost-share for cover establishment. The maximum annual payment is established for not farming, not for cost shares received. Cost sharing is available for: Plan Preparation, Tree Planting, Wildlife Planting, and Grass Establishment.

In 2006, the following forestry practices were funded:

- 1882 acres of riparian buffers
- 650 acres of wetland restorations

Forest Lands Enhancement Program (FLEP)

FLEP is a federal program administered by the WI-DNR Division of Forestry. It provides up to 65% cost share for the preparation of management plans and the implementation of designated practices. Maximum cost shares earned set by federal government are $10,000. Wisconsin landowners were awarded $77,000 from USFS as part of a 2006 grant.

In 2006, the following forestry practices were funded:

- 26 stewardship plans
- 13 site preparations
- 10 tree plantings
- 30 non-commercial timber stand improvement practices
- 2 soil and water protection practices
- 4 wetland and riparian protection practices

Unfortunately, FLEP is no longer funded federally.

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. Types of projects funded include: conducting inventories, staff training or public education workshops, developing urban forest management plans, training materials or public information fliers, planting, pruning or removing trees, celebrating Arbor Day and other projects specific to a community's urban forest needs.

Over the past two years, the department has given out 106 grants to cities, villages, towns, counties, tribes, and nonprofit organizations throughout the state totaling almost $1.3 million. These grants provide communities the incentive to initiate or improve management of their urban forest resources. The grants not only result in improved management, but also result in public-private partnerships that stimulate the commercial and non-government sector. 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 162 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 if forest product marketing is improved or if there is increased business dealing in the use of forest products from Wisconsin's forests are varied.

In the pulp and paper industry, bio-refining may offer the potential for 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. The use of biomass for fuel may help to lower their cost of operation as the technology for removing it 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 potential to help in the management of the forest. For example, with the reduced use of red pine for paper, using this species to produce structural lumber may be an opportunity for companies. New ways of managing may promote healthy forests and new markets as well. The introduction of excavator based cable yarding systems to Wisconsin may increase the availability of hardwood timber in difficult to manage areas with steep terrain. Technical staff in the State Forester's office and university is necessary to find and develop new ideas to implement and work on these types of efforts. Just as in business, 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 globally for Wisconsin forest product companies. 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 in this area. Targeted trade missions organized for the forest industry have been very successful in introducing companies to markets and in helping the 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.

Biomass

The biomass area offers the potential to provide markets for forest materials traditionally not used. However, care needs to be exercised so that it does not encourage biomass over 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 are 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 a demand for much of the material currently not used.

The growing wood pellet industry may lead to more use of biomass in schools and other facilities. It is an industry that may well develop to take material that was not used in the past and also create opportunities to displace fossil fuels. 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 the 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.

Permitting

Government permitting and environmental regulation need to be structured to allow for prompt responses to industry needs. These regulations also need to be cost effective so the industry can compete in a global market. If our environmental protection costs are significantly higher than the companies Wisconsin firms compete with, it puts Wisconsin companies at a disadvantage. The speed at which permits are available can have a significant impact on new plants and plant retention.

Since 2003, effort has been undertaken to streamline air, waste and water permitting. The WI-DNR launched an initiative to streamline the state's air pollution permit process. The emphasis was on process improvements to reduce permitting transaction costs and to increase efficiency. As a result of these changes, 95% of all minor emission sources and 91% of all facilities needing a federally enforceable operation permit will be eligible for a streamlined permit tool: a permit exemption, a registration or a general permit. These 1,500 plus businesses will be able to construct and operate either immediately or within 15 days of submitting their permit

application, pay substantially lower fees and have tremendous flexibility to manage their operations and respond to changing market conditions, without triggering the need for new or revised permits.

Revised hazardous waste and used oil rules went into effect August 1, 2006, culminating a several-year effort. Like the old regulations, the new rules are based on the U.S. Environmental Protection Agency's hazardous waste and used oil rules, incorporating more recent federal rule changes and closely following the organization and content of the federal rules. The new rules reduce paperwork requirements and further encourage legitimate recycling of hazardous waste.

A 2004 law (Act 118) changed Wisconsin's long-standing waterway permit system from one in which essentially all projects in or near public waterways were required to receive an environmental review and individual permit to one in which projects were divided into three tiers with different permit and review requirements. In 2006, under direction from the Natural Resources Board, WI-DNR worked with stakeholders to evaluate the performance of the new system and report back findings and recommendations for improvement. The evaluation found that:
• More than 50 percent of applications were eligible for streamlined review, reducing time, paperwork and money for those applicants.
• WI-DNR met all deadlines in cases in which people requested a WI-DNR ruling on whether their project was exempt from permitting, and met 98 percent of the deadlines associated with general permits.

For areas measured so far, the new waterway permit system has decreased the time applicants wait to get permit decisions, and those decisions are more consistent and predictable statewide.

Certification

Independent, third-party certification means management of Wisconsin's forests meets strict standards for ecological, social and economic sustainability. Publishers, building contractors and other manufactures are expanding use of certified wood to assure customers that their products are not tainted by timber theft or destructive timber cutting issues that plague some parts of the world. Forest certification helps Wisconsin remain competitive in global markets that increasingly demand certified raw materials. Objective review is also instrumental in improving how forests are cared for.

Building on the previous certification of State forests, both the MFL program (June 2005) and a majority of the County Forests (December 2004 and March 2005) gained third-party forest certification status. The County Forest programs are dual certified under Forest Stewardship Council (FSC) and Sustainable Forest Initiative (SFI) standards. The WI-DNR holds the certificate for 27 participating counties with 2.4 million acres. The Managed Forest Law program participates in American Tree Farm System (ATFS) Group Certification, designed specifically for smaller "family forests" in private ownership. Membership in MFL includes nearly 29,000 landowners with over 36,000 MFL orders of designation on 2 million acres.

Together, FSC, SFI and ATFS certification programs constitute credible certification with internationally recognized performance requirements. Detailed audit reports for each WI-DNR program are available on the following pages:

- County Forests Certification : http://dnr.wi.gov/org/land/forestry/certification/county.html
- MFL Certification : http://dnr.wi.gov/org/land/forestry/certification/MFL.html

Besides state, county and MFL enrolled lands, there are several areas of exploration to expand the certification of Wisconsin's forests. For WI-DNR land besides State forests, the Forestry Division provided consultation services about certification to the Division of Land in 2005-2006. The State's FSC and SFI auditors attended a WI-DNR Land Leadership Team meeting in July 2006 to respond to preliminary questions. The Land Leadership Team made a decision to pursue a formal scoping assessment in 2007. The cost of the scoping assessment was shared by the Divisions of Forest and Land. The National Forest Service (USFS) conducted a test certification evaluation in Fall 2006. It will likely be several more years until the USFS makes any decisions on whether to proceed with certification.

Transportation

Transportation costs play a significant role in the ability of forest industries to compete. Modification to the current statutes which would reduce transportation costs will help the companies compete in the global market. For example, calculating the allowable weight based on number of axles would allow more gross weight. Careful monitoring of road restrictions to keep them to a minimum are some very general examples.

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.

From 1997 to 2000 the number of logging contractors declined by 23% (418 contractors). This reflects a change to more mechanized operations and loggers leaving or retiring from the profession. 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.

WoodLinks for Wisconsin

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 30 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 is now in 501 (c3) status which will allow them to compete for grants and to 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.

Technical College –Wood Worker Programs

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. The 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 which 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 in high schools play an important role in introducing high school students to the opportunities in this area. A limited attempt at this 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.

University - Wood Products Curriculum

The University of Wisconsin at Madison and Stevens Point both offer forestry degrees. There is a need to continue and expand upon the basic forest products courses at these institutions so the graduating foresters will have the necessary knowledge to work in the industry. These courses are taught by University Extension staff.

Business Assistance

University and Technical College Assistance

University and technical college staff provide detailed and personalized assistance that has helped expand and grow forest industry in Wisconsin. University Extension staff provide one-on-one consultation with companies. They often model ways to improve business operation alternatives such as kiln drying capacity. Technical colleges reach local businesses through specialized equipment training on campus or workshops for industry employees.>>

Lean Manufacturing

New technologies are developing that improve solid wood manufacturers' ability to recover more products from the timber they use. Changing technology will also allow them to utilize material that they could not in the past. Some sawmills have installed computer optimization equipment which improves the volume and value recovered from the products produced and from the logs they process. The potential to improve a company's competitiveness and viability through the use of these lean manufacturing techniques has been well documented by the

University Minnesota Duluth NRRI staff. The consultants that provide this service are extremely expensive and the small to medium primary and secondary manufacturers do not consider paying for this service. These skills need to be incorporated in the WI-DNR, Division of Forestry Utilization and Marketing (U&M) staff to provide introductory lean manufacturing training to the forest industry in Wisconsin.

Market Assistance.

Forest Product Export Program

State assistance to forest industries who export has been done through the reallocation of resources and occasional federal grants. With the increased importance of exporting to the forest product industry 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. The market development which includes identification and introduction of the industry to foreign markets is important due to the limited management structure of many Wisconsin forest product companies. They do not have the resources to hire international business experts on staff. The WI-DNR, Forestry U&M Staff have 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.

Forest Products Extension Staff

Currently, there are two positions in Wisconsin's Forest Product Extension program which benefit the industry and help it grow. These positions need to be maintained in order to provide valuable education, outreach services and technical help to a major industry in Wisconsin. It should also be noted that the decline of the USDA Forest Service, Rural Development Program, which houses the Technology Transfer efforts, will be a loss of valuable resources such as grants and technical support. Efforts on a national level to maintain or reestablish the program need to be made.

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.

Wisconsin statutes, administrative codes, local ordinances, and policy making create the framework and the environment in which public and private forest managers function. These state and local laws and policies have a continual impact on forest management and, as one potential result, the location of markets for forest products.

Since the previous Biennial Report by the Council on Forestry, remarkably diverse legislation, administrative rules and policies intended to assist, stimulate or improve forest management in Wisconsin have been, or are being, addressed in legislative and public venues. Below is a brief summary of key legislation that was deliberated and signed into law between 2005 and 2006. (See Appendix B for a table of forest legislation that was passed in 2005-2006.)

1) Act 166 (AB 254) – Healthy Forests: The Healthy Forest Initiative requires consultation with the Chief State Forester on the development, review, or implementation of a management plan for all forest land under jurisdiction of the WI-DNR. It also requires the Chief State Forester to manage emergencies that threaten state forest land, except those declared emergencies by the Governor. It does not supersede the Department of Agriculture Trade and Consumer Protection's authority to declare and manage emergencies relating to the detection and control of pests injurious to plants. Act 166 mandates WI-DNR to establish annual allowable timber harvests for WI-DNR properties, maintain an inventory of forest resources, and report to the Council on Forestry and standing committees in each house of the legislature. It also requires reporting by the Council on Forestry should WI-DNR reports indicate timber harvest levels are outside of established sideboards. Lastly, it also gives WI-DNR authority to establish rules to allow for the use of cooperating consultant foresters on state land timber harvests and to pay them out of the proceeds of such sales.

2) Act 79 (AB 59) – Right to Practice Forestry: This bill provides that in areas where forestry is allowed, no ordinance may prohibit forestry operations that are in accordance with generally accepted forestry management practices, as defined under s. 823.075 (1) (d).

3) Act 167 (AB 678) – Truck Weight Limits: This bill allows trucks with six or more axles carrying raw forest products to carry 98,000 lbs year round, not just during frozen road declarations. It also requires mills purchasing wood by weight scales to retain scale slips to allow law enforcement to view the scale slips for up to 30 days.

4) Act 352 (AB 1012) – WI-DNR Purchase of Board of Commissioners of Public Lands (BCPL): The bill authorized the (BCPL) to sell certain lands to the WI-DNR. The purchase will be paid for by the Warren Knowles – Gaylord Nelson Stewardship Program. The BCPL has targeted approximately 12,000 acres of scattered lands with high ecological value for possible sale.

5) Act 229 (AB 7) – Managed Forest Law (MFL) Parcels: This bill removes the requirement under the MFL program that the minimum number of contiguous acres required for enrollment be located within a single municipality.

6) Act 423 (AB 1173) – Harvest on Tax Delinquent Lands: This bill provides exceptions to the prohibition against the harvest of raw forest products from tax delinquent lands.

7) Act 64 (AB 679) – MFL Correction: This bill eliminates the exemption from yield tax for certain lands in MFL, changes the submission deadline and specifies that only plans prepared by certified plan writers will be exempt from paying a plan preparation fee, and changes how the withdrawal tax is calculated if MFL land under a expanded order is withdrawn before the original order would have expired.

8) Act 48 (AB 316) - County Forest Plans: This bill changes the county forest land use plan period from 10 to15 years and gives authority to WI-DNR to not issue grants to a county if they are more than one year delinquent in approving a comprehensive county forest land use plan or revised plan.

A few other noteworthy topics that were debated with their resolution yet to be determined or that were not passed were: 1) consideration of revisions to the workers compensation program affecting timber producers, 2) changes in construction standards for certain load-bearing lumber, 3) consideration of timber theft legislation, 4) proposed penalties for failure to pay for raw products agreed upon in contract, and 5) proposed requirement to disclose that land being sold is subject topenalities if withdrawn from the MFL.

With a diverse membership, including legislators with strong interest and expertise in forestry issues, plus knowledgeable and engaged stakeholders from throughout Wisconsin's forestry community, the Council on Forestry continues to be one key forum in the state to help assure that governmental laws and policy continue to have a beneficial impact – whether guiding, facilitating or supporting – forestry management, and the resulting location of markets for forest products in Wisconsin.

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.

Cooperative Fire Program

A statewide review (study) of the Cooperative Fire Program was begun in 2000 and approved by the Forestry Policy Team in August 2001. The review identified that in order to meet the needs of the Cooperative Fire Program, a total of 10 full time employees (FTE) serving as Regional Cooperative Fire Officers would be needed. Including operational support and one-time equipment purchases, a total of $1.6 million in funding would be required to meet this initiative. This initiative would improve safety, training, incident support, equipment, communications, law enforcement, fire prevention and fire suppression in cooperative fire protection areas that cover 13.7 million acres in 44 counties of Wisconsin. This initiative would address important wildland-urban interface issues facing communities throughout the state.

The objective of the Cooperative Fire Program is to facilitate and assist the needs of townships and fire department resources to better provide forest fire protection to the citizens of the State of Wisconsin in cooperative fire protection areas. Currently, many cooperative fire protection areas do not have adequate programs in place to effectively meet their community's needs. The efforts of the Cooperative Fire Program with the local fire services would be designed to continually enhance their effectiveness in forest fire suppression and management. The most important initial activity would involve wildland fire suppression training. An improved version of the course "Introduction to Wildland Fire Fighting for Wisconsin Fire Departments" will be a sound, comprehensive beginning to this training effort. This program would be presented by the Cooperative Forest Rangers, and will focus on appropriate fire suppression tactics, safety, equipment usage, command structure, laws, authorities and forest fire fuels issues.

Limited budgetary support in fiscal year 2003/2005 and fiscal year 2005/2007 has allowed the hiring of four limited term employees (LTEs) as cooperative fire instructors to begin the wildland fire training for cooperative fire departments. In the last three winters, these LTE instructors have conducted wildland fire training for 162 cooperative fire departments totaling over 2400 firefighters. These LTEs have also encouraged the participation of cooperative fire departments in department grant programs, by which they have enhanced their readiness and equipping for wildland fires. As a result, the department has enhanced their relationships with these cooperative fire departments, and continues to grow in understanding the needs of the cooperative areas. With the establishment of permanent Cooperative Forest Rangers, those needs could be addressed, and wildland fire training support could continue for the 409 cooperative fire departments yet to be trained.

Having such training would help rural fire departments accomplish the National Fire Protection Association 1051 standards. This standard defines the national requirements for wildland firefighting. Accomplishing this standard would facilitate the development of a Memorandum of Understanding between the Department and each local fire department, similar to the arrangements in WI-DNR forest fire protection areas. Once that arrangement was in place, fire department access to federal and state grant funding would improve the fire suppression capabilities and equipment of cooperative departments.

The current Forest Fire Protection (FFP) Grant program has done an excellent job of better equipping fire departments in WI-DNR forest fire protection areas. However, part of the reason cooperative departments are not more effective in forest fire suppression, aside from training, is that they are ill equipped for that activity. Cooperative Forest Rangers would be involved in informing departments about grant availability, helping administer the grant programs, and provide encouragement to be involved. Cooperative Forest Rangers would also support the Federal Excess Property Program (FEPP) and forest fire suppression vehicle related issues.

The relationships that could grow from involvement at this level would facilitate comprehensive reporting of forest fire occurrence, cause, size and damage information. This, in turn, will enhance Wisconsin's ability to access federal funding sources, and attract additional funding.

Cooperative Forest Rangers would also provide support and on-scene tactical advice for large wildland fires occurring in cooperative areas during fire season. Their expertise and availability during fire season would be similar to that of WI-DNR forest rangers and wildland fire staff in WI-DNR organized fire protection areas.

For additional information see: WI-DNR Division of Forestry Cooperative Fire Program Report, August 2001.

Forestry Law Enforcement

The needs assessment of the Wisconsin Forestry Law Enforcement Program within the Wisconsin Department of Natural Resources provided insights into the forestry law enforcement program and detailed recommendations on the future direction for the program. This study was conducted by the Forestry Law Enforcement Study Committee at the request of the Division of Forestry Leadership Team in December, 2005.

The information collected by the team, through personal interviews and focus groups with forestry program members and internal and external partners, truly painted an accurate picture of where the forestry law enforcement program is today. The Forestry Law Enforcement Study Committee put forward a litany of recommendations to address needs within the forestry law enforcement program. These recommendations encompass broad areas of safety, workload, policy, personnel, training, attitude and education for forest fire, forest management and recreational law enforcement. The Forestry Leadership Team made the commitment to address these recommendations and is looking forward to moving the forestry law enforcement program forward.

Some of the key recommendations from this law enforcement study that will chart the course for the future of the Division of Forestry and the law enforcement program include:

- the development, in conjunction with other natural resources law enforcement bureaus, of a Department of Justice accredited natural resources law enforcement training academy for state personnel to attend and become certified natural resource law enforcement officers
- the concept of forestry law enforcement investigators to accomplish the complex and time consuming forest fire, arson, MFL and timber theft investigations
- the concept of each administrative area having a designated credentialed, law enforcement expert, including the cooperative fire protection areas
- the appointment of the Bureau of Forest Protection as the lead for recreation law enforcement issues on the state forests
- the development of a Forestry Law Enforcement Handbook to provide guidance and policies to our law enforcement programs
- increased staffing of recreational law enforcement on the state forests to address the issues that arise with increased recreational users and the diverse recreational opportunities provided on these properties
- the development of a forestry law enforcement data base to permit the collection and analysis of our law enforcement program
- the development of a new forestry classification specification to address the uniqueness of the northern state forest law enforcement positions

It is these types of recommendations and the others contained within the study document that will position the forestry law enforcement program to address issues in the future.

The report may be requested from the WI-DNR, Bureau of Forest Protection Director, Trenten Marty (Trent.Marty@wi.gov)

Urban Forestry Program

A statewide review of the Urban Forestry Program began in 1998 and was approved by the Forestry Policy Team in December 2000. The study found that staffing in the highly populated areas of the state was insufficient to meet demand. The study also found that demand for cost-share grant funding exceeded available funds by 50% and it identified two major areas that the department was lacking – urban forest resource assessment and public awareness/marketing. As a result of the review, the department undertook two pilot studies regarding urban forest assessments with the USDA Forest Service to identify specific needs.

To meet the existing and increasing demand for technical and financial services by local governments and nonprofit organizations, the study recommended increasing regional coordinator staffing by two FTEs and increasing central office grant and program staffing by two FTEs. In 2005 and 2006, the WI-DNR, Urban Forestry Program secured a Forest Service grant to hire a grant program manager. The state has authorized an Urban Forestry Grant Program FTE, but no funding has been allocated to this position. The study also recommended increasing the grant appropriation to meet existing demand and recommended addressing the lack of resource

assessment and awareness. To meet staffing, grants, and contracting needs for this initiative would require an annual total of $675,000. To date, none of this has been funded. This initiative would improve the ability to deliver, develop and coordinate public, private and nonprofit urban forest management services addressing the critical needs of environmental, social and economic vitality of communities throughout the state.

For additional information see: Enhancing Wisconsin's Urban Forests - Assessment of Wisconsin's Urban Forestry Assistance Program. Urban Forestry Study Team. February 6, 2001. Available at: http://dnr.wi.gov/org/land/forestry/UF/resources/UFStudyRpt.pdf

Information Technology (IT)

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 WI-DNR's web site, through the myriad systems like GIS, GPS units and satellites that manage and provide data of our forest resource to the desktop computer – now such a fundamental part of the daily life of nearly every forester.
Some of the technological changes facing forestry include:

- The increasing use of the Internet for access to data, as a mechanism to serve forestry applications and information to multiple users, and as an important tool for communication with internal staff and external partners.
    - The Division of Forestry's intranet and internet presence is increasingly important as a primary means of communication. 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.
    - The Wisconsin Council on Forestry in 2006 agreed to adopt wisconsinforestry.org as its website, to communicate its activities and to foster communication and cooperation with and among forestry's publics and partners. To date, this site has been developed and supported by Division of Forestry staff. Additional staffing to support this site is needed.
- The Division of Forestry embarked on a four-year project (2006-2010) to develop a forestry public and private land management system that will meet the needs of the Division and its external partners. The new system, Wisconsin Forestry Inventory and Reporting System (WisFIRS) will leverage many aspects of the Division's existing forestry systems, incorporate current technologies and databases, and expand to cover essential forestry practices that are not currently automated. WisFIRS is a web-based system that will primarily run on the Department's intranet. In order to accommodate the Division's partners, portions of the system will be available for their use over the internet. One of the key goals of this project is the integration of geographical information throughout the system. Three of the Division's current land management data systems are being redesigned and integrated as part of this effort.
    - RECON/Timber Sale (Public Lands)
    - Managed Forest Law (MFL) (Private Tax Law Lands)
    - PlanTrac (Private Tax Law Lands)

The Division of Forestry has attempted through the biennial budget process, with limited success, to fund $1.15 million of unmet need in the IT program, including a structural deficit in the budget line that is used to replace staff computers as they age. Additional funding needs to support the WisFIRS project are projected at $1.5 million for completion and $200,000 per year to maintain the system.

Forestry Communication and Education

The forthcoming Forestry Education and Awareness Center to be located near Milwaukee (details later in this report) will be a key strategy for bringing the sustainable forestry message to urban residents who, as surveys show, do not recognize the ecological, social, and economic value of forests in Wisconsin. WI-DNR has acquired the land for the center and spending authority for $160,000 of ongoing funding through the biennial budget process. This funding level is approximately 10% of projected operating costs, and is only minimally sufficient to support current stages of organizational development and planning for the program, facility, and grounds. Ultimately, ongoing funding will provide partial funding for yearly programming, staffing, exhibit development, property and facility maintenance, and supplies and services. Funding for building construction will be raised through capital development. If additional ongoing planning and operations funding can not be secured through the biennial budget process, the 90% balance of operating costs will have to be raised by leadership partners and revenues.

Forest Health Program

A statewide study of the Wisconsin Forest Health Program (WFHP) was completed and approved by the Forestry Leadership Team in March 2006. The Forest Health Program study also consisted of an Invasive Plants Program Feasibility study that looked at the feasibility of establishing an invasive plants program within the Forest Health Program. The study was in part the result of recommendations by the Governor's Council on Forestry task group on invasive species and the Wisconsin Council on Invasive Species.

The study concluded in part that WFHP is both anticipatory and forward looking, that its success relies on a cooperative relationship among its members and cooperating agencies, with the WI-DNR acquiring/providing additional expertise as necessary, and that this relationship bolsters the overall efficiency with which WFHP can address forest health problems. This cooperative arrangement provides WFHP members with access to expertise otherwise outside the scope of their respective agencies, which in turn helps them deliver services more efficiently, yet in a manner consistent with the statutory authorities under which they operate. The study identified the need for an additional FTE to handle forest health related issues in the southern third of the state.

The invasive plant study recommended that the Forestry Division proceed with developing an invasive plants program. A new program began in 2007 through the decision to reallocate .75 FTE as an invasive plants coordinator, and because of funding received in the 2005-2007 biennial budget. The study recommended a range of alternatives the Forestry Division could implement. At a minimum level (Alternative 'A'), the study recommended action at the local level. Over the longer term, the most comprehensive alternative (Alternative 'B') is desirable

because it includes a research component for new biocontrols and silvicultural methods that are seen as essential to the long-term success of our efforts against invasive plants.

Alternative 'A' assumed that a .25 FTE would be identified to complete the .75 FTE invasive plants coordinator position and also requested the equivalent of .5 FTE per region for a total of 2.5 FTE at a cost of approximately $260,000. Additional funding for monitoring, early detection, eradication, and control activities would be appropriate at this level at a cost of about $500,000.

Alternative 'B' would require an equivalent of a full 1.0 FTE per region for a total of 5 FTE at a cost of approximately $555,000. In addition to the activities listed above, research would be appropriate at this level. Total cost for this program would be approximately $3 million.

Other Forestry Programs

The Forestry Leadership Team has directed the Training Program within the Division of Forestry to undertake a program review. While program reviews vary in specific purpose and scope of their reviews, at a minimum they look at the future needs of individual programs. The Training Program study is expected to be completed in 2007.

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

Following is an overview of existing forestry communication and education programs in Wisconsin. While the current efforts outlined below represent outstanding efforts to share forestry information and reconnect students, residents and visitors with the forest resource, all of them are under funded. See Section IX for recommendations to help ease the funding challenges these programs face.

Wisconsin DNR conducted a social research study in 2000 to determine Wisconsin residents' perceptions and attitudes towards their forests, including their understanding of and concern for environmental and forestry issues and their views on forest dependency and management.

Results of this survey indicated a shared concern among respondents for Wisconsin's forests, and a belief that forests primarily serve as contributors to the environment. Forests were far more recognized for their environmental importance than their importance to the economy, or as a means for jobs and income. The survey indicated that many respondents are not well educated about forestry issues. Many respondents express a concern that the use of trees today jeopardizes their future availability.

According to the survey, the public is open to increased government involvement in forest management and believes that forests should be protected through human efforts. Given this belief, and the trust that the public shares in the WI-DNR as a source of information on environmental issues, the research analysis concluded that the WI-DNR is in an excellent position to, through a comprehensive strategy, educate the public about forests and sustainable forestry concepts.

A cross-tabulation of the data between Milwaukee and the other counties was also conducted as the original focus group research had shown a marked difference in the level of awareness between Milwaukee residents and the rest of the state. Both research efforts emphasized the need for extra effort to help residents in the Greater Milwaukee area connect with the forest resource and its statewide importance.

Milwaukee Forestry Center

Because many people living in Southeastern Wisconsin depend upon and benefit from forests in ways they do not understand, the WI-DNR – Division of Forestry is forming a coalition of partners to develop a Forestry Education Center in Milwaukee County. This center will focus on delivering the win-win message of sustainable forest management to this population that shows the lowest level of connection with our forests and lowest level of appreciation for the key role that forests play in the economy of the area and in our daily lives.

Wisconsin DNR arranged the purchase of a site from Milwaukee County that includes about 50 acres of forest plus an open space to build the proposed Forestry Education Center. This site (located in Wauwatosa) provides a unique opportunity to provide a demonstration forest right in the heart of the largest urban population in Wisconsin.

The vision for this proposed facility and the associated woodlands is to reach learners of all ages with the sustainable forestry message. An important focus of the Forestry Center will be groups of school children, but it will combine K-12 educational needs with attractions to draw residents of all ages from all walks of life. Hopes are that the Forestry Education Center will ultimately link with jobs and recruitment of youth into forestry professions and skilled forestry jobs available in Milwaukee and throughout Wisconsin.

An educational needs assessment and a market analysis conducted by the Division of Forestry have documented the educational and recreational niches available for the Center. These studies provide valuable information for planning a successful Center. Research has shown that there are 253 schools serving over 150,000 students located within a 50-mile radius of the site, making it a perfect resource for children who have never "experienced" a forest.

Now that the property has been secured, work has begun to create a leadership group, develop an interpretive plan and implement the many planning steps to be ready to break ground in several years.

Five-year Strategic Communication and Education Plan

Conclusions drawn from the analysis of the 2000 survey described above helped shape a strategic communications and education plan to raise the level of awareness about Wisconsin's valuable forest resource. The five-year plan targeted those in a position to influence the well-being of Wisconsin's forests, including key decision-makers, forest landowners and the general public. Development and implementation of the strategic plan was a partnership effort among groups holding a vested interest in the sustainable use of Wisconsin's forests. A coordinated public outreach effort as outlined in the five-year plan is critical to the future sustainability of Wisconsin's forest resource. Unfortunately, this effort was not adequately funded through the state budget or through partnerships. As discussed in the previous section, a true public awareness campaign would require an ongoing budget of about $1 million per year over a prolonged period to be successful. Although this plan was not fully implemented due to lack of resources, the key messages identified in the plan have guided forestry communication and education efforts since then.

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 initiate and facilitate the development, dissemination, implementation and evaluation of forestry education in Wisconsin schools. LEAF is funded by a surcharge on tree seedlings sold at DNR nurseries.

Since its inception in 2002, the LEAF program has made tremendous progress in documenting forestry concepts that Wisconsin K-12 students should learn, developing a "Wisconsinized" K-12 forestry education lesson guide and providing teachers professional development in forestry education. This curriculum utilizes a unit-based approach with lessons building upon one another to provide connectivity in the student's educational experience.

In the past two years, LEAF has worked to develop two new classroom resources—a wildland fire supplement and an urban forest supplement. Introduced on the heels of the Cottonville Fire, the wildland fire supplement will provide teachers a venue to build required student skill sets, while using wildland fire as a real-life, interesting context. The urban forest supplement focuses on the forests that most of our population lives in and makes broader connections to rural forests of the state.

The LEAF Program also manages Wisconsin's School Forest Program. Over the past several years, LEAF has worked to require that school forests have an education plan and active management plan in order to receive funding from the Wisconsin Environmental Education Board Grants Program. Due to this initiative, LEAF has helped 32 schools work on completing an education plan for their forest and helping them connect with local foresters to update their management plan.

The LEAF Program continues to provide workshops and in-services for educators and school districts on the use of the LEAF materials. Currently over 1200 educators have been trained in the use of the LEAF materials. Program priorities include providing additional services and digital resources for teachers and schools involved in the program and additional educational consulting services for developing school forest programs.

The LEAF program has also focused on building partnerships with forest landowners, forest managers, nature centers and other organizations to support forestry education goals. Visit the LEAF Website (www.uwsp.edu/cnr/leaf) to learn more about the impressive accomplishments of this program.

Wisconsin Environmental Education Board

Wisconsin Environmental Education Board (WEEB) grants are a keystone to forestry education efforts in Wisconsin. Since 1998, $200,000 from the forestry account has annually gone to WEEB to fund forestry education projects at a grassroots level. Several years ago, an additional annual allotment of $200,000 was earmarked from the forestry account for WEEB to specifically fund forestry education projects on Wisconsin's school forests. These general forestry and school forest grants support forestry education locally throughout the state.

Basin Education Program

The Basin Education Program was established to design and provide educational programs and other services in areas delineated by the state's major river basins. At the core of this effort is a network of educators whose task is to encourage local partnerships and provide educational and technical support to stakeholders.

Four of these 15 statewide educators are funded by the state's forestry program and focus on forestry concerns. The main target audiences for their forestry education efforts are non-industrial private forest landowners and forestry professionals (loggers and foresters). The goals

are to help these groups become informed decision makers and manage forests in a responsible manner.

During the past year, the forestry-related basin education programs emphasized general forest management for woodland owners, special programs targeting landowners involved in the Managed Forest Law program who have fallen behind in their practices, working with communities in the fire-prone regions of the state and issues related to forest health.

For more information about Wisconsin's Basin Education Program, visit http://basineducation.uwex.edu/

Wisconsin Forest Resource Education Alliance

Wisconsin Forest Resource Education Alliance is a partnership among a broad array of forestry interests dedicated to enhancing public understanding of sustainable forestry. They have produced an educational CD-ROM packet called "Wisconsin Forests Forever" as well as a series of short educational videos that have aired on public broadcasting stations. This organization has also coordinated successful tours to introduce classroom teachers to sustainable forest management in Wisconsin.

For additional information about Wisconsin Forest Resource Education Alliance visit: http://www.wfrea.org/

Naturalists

Naturalists play an important role in helping residents and visitors better understand our natural resources. In particular, the northern State Forests offer an untapped goldmine of opportunities to reconnect people with Wisconsin's forests.

Other Forestry Education

WisconsinWoodland Owners Association (WWOA) is a non-profit educational organization that provides a variety of learning opportunities for private forest owners and others interested in managing Wisconsin's woodlands. Through field days organized by local chapters, annual meetings, and programs funded by WEEB grants (over $47,000 dollars in the last two years), WWOA fosters and encourages the wise use and management of Wisconsin's woodlands.

Wisconsin also has a rich network of nature centers that help connect residents with our forests and other natural resources. Two organizations in particular focus on forestry education – Trees for Tomorrow in Eagle River and 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.

The Seno Woodland Education Center is 131 acres of forest, fields, prairie and wetlands located in southeast Wisconsin's rolling kettle moraine country. The Wisconsin Woodland Owners Association Foundation manages the property to 1) provide educational opportunities for educators, students, landowners and the general public, and, 2) demonstrate sustainable management of forest and related resources.

FINAL THOUGHT'S from the CHAIR

I am impressed with the work the Council has accomplished in the last two years. The issues that the members have addressed are critical to promoting the health and sustainability of Wisconsin's forests. Not only have we focused on current needs like controlling invasive species and deer herbivory but planning for future uses of our forests by investigating woody biomass, defining a research agenda, and charting a course for assessing the sustainability of our forests.

These are important topics, but there is still more to address in order to ensure we are meeting our needs and those of future citizens. I am not dismayed at the amount of work before us. Those on this council and others in the forestry community have proven their resolve to confront tough issues head on. Sustaining this energy and momentum is critical to continuing this good work.

Appendix A – Act 25 (MFL changes)

FACT SHEET 2005 Act 25 and Act 64
MANAGED FOREST LAW CHANGES

Rev 01/03/2006

On July 25, 2005 the Governor signed into law 2005 Wisconsin Act 25, the 2005/07 Budget Bill. This act has made some changes to the Managed Forest Law (MFL) related to the application fee, who is responsible for preparing management plans required for enrollment, and the cost for the development of the management plan. The initial effective date for these changes was June 1, 2005 however 2005 Act 64 modified the effective date to be July 2, 2005. Therefore all petitions received for the 2007 MFL entry year (on or before July 1, 2005) can be handled the same under the previous rules. Although the changes are to MFL statutory language there are some impacts on the Wisconsin Forest Landowner Grant Program (WFLGP) due to the cost sharing of management plans. The following is a list of the statutory changes, and the rule and administrative revisions designed to deal with the statutory changes. Emergency rules with modifications to NR46 and NR47 were passed in October 2005. They will be in effect until the permanent rules are passed. It is expected that the permanent rules will be passed around June or July of 2006.

MANAGED FOREST LAW CHANGES

APPLICATION FEE

The application fee for applications has been reduced from $300 to $20. This $20 fee is provided to cover the cost of recording the documents associated with a managed forest law entry.

PLAN PREPARATION RESPONSIBILITY

In the past, by statute, the Department has had the responsibility to prepare any MFL management plan if the landowner requested that the Department prepare it. 2005 Wis. Act 25 has changed this to allow the Department to decline to prepare a plan. A process to refer all MFL applications received to Certified Plan Writers (CPW) is being proposed to help determine which plans the Department will prepare. A CPW is a private professional forester who has received special training in preparing MFL management plans.

The goal of allowing the Department to *decline to write management plans* is to encourage landowners to utilize the growing number of private professional foresters to write the management plans required for enrollment in the managed forest law. This will free up the time of Department Foresters to work with all aspects of MFL program administration and to devote time to other high priority forestry work that is not being adequately addressed now.

PETITION REFERRAL PROCESS (applies to petitions submitted for the July 1 petition deadline only.)

1. Petitions received on or before July 1 without a plan will be placed on a MFL Petition Referral List.
2. The referral list will be made available to CPWs who will have 45* days to make an offer to the landowner to prepare their MFL management plan. Notice of the offer must be supplied to the Department within 5 days of making the offer and include landowner information and the date the offer was made. If an offer is made the Department will not prepare the plan.
3. If the landowner does not receive an offer within 45* days of being placed on the referral list the Department may agree to prepare the plan.

* Permanent rules propose 60 days.

The landowner can have their name removed from the list if they have already hired an Independent Certified Plan Writer (ICPW) to prepare the plan. A list of Certified Plan Writers (CPW) is available on the internet or from the Department. An ICPW is simply a CPW who has been hired by a landowner.

PLAN COST

For any plan the Department agrees to prepare the landowner will be responsible for the cost of the Department to prepare the plan. The plan preparation fee will be billed when the plan is sent to get the landowner's signature. If the landowner hires an ICPW to prepare the plan they will pay the ICPW what ever they agreed to.

(DNR) PLAN PREPARATION FEE

The plan preparation fee (PPF) will be assessed to the landowner for any plan the Department agrees to prepare for enrollment. The PPF must be established annually based on comparable market rates. The proposal is to have one statewide PPF that would be made up of a base rate plus a cost per acre.

The initial PPF for the 2008 entry year will be set in Wisconsin administrative Rule as listed below with a formula for calculating the rate each year after that (beginning July 2, 2007 for 2009 entries).

Initial PPF for 2008 entries
Base = $375/plan
Cost/acre = $5.60/acre

Cost data from DNR contracting with consultant foresters to prepare MFL plans in the last year was used to set the initial rate.

PPF Formula

Average of the cost data supplied by ICPWs for MFL plan preparations completed in the previous year (June 1 through May 31). The PPF will consist of a base rate plus a cost per acre rate.
CPWs will be required to supply the cost data as part of their certification maintenance requirements.

The $280 of each PPF will be deposited in the contracting appropriation. This is money designated to be used by the Department to contract with CPWs to prepare plans. The balance of the fee will be deposited in the Forestry Account.

DELINQUENT PLAN PREPARATION FEE

The landowner will be given 30 days to pay the PPF. If the fee is delinquent on October 1 of the year in which the order of designation will be issued, entry will be denied (e.g. orders of designation for 2008 entries will be issued in November 2007).

CERTIFIED PLAN WRITER (CPW) REQUIREMENT

CPW will be required to submit MFL plan preparation cost data to the Department on an annual basis. Data must be submitted by May 31 each year to be used in the calculation of the PPF.

DEADLINE FOR DRAFT PLAN (applies to May 15th application process only)

It is anticipated that this later deadline will become the main application deadline. The deadline for a draft plan would be moved up to February 1* (from April 1) to allow sufficient time for Department review.
* Permanent rules propose March 1.

Appendix B - Forestry Legislation 2005-2006

These acts were signed into legislation by the Governor. Acts in **bold** were supported by the Council either by letter, providing a technical report on the issue or other communication to members of the Legislature and Governor.

Title & Name	Description	Website	Date Signed
Act 229: MFL-Parcel	Location of contiguous land for purposes of eligibility under the MFL program	http://www.legis.state.wi.us/2005/data/acts/05Act299.pdf	04/10/06
Act 79: Right to Practice Forestry	**Actions against forestry operations and granting rule−making authority.**	**http://www.legis.state.wi.us/2005/data/acts/05Act79.pdf**	**12/22/05**
Act 166: Forestry Omnibus	**Managing, harvesting timber, and emergencies on state forest lands; Actions against forestry requiring the exercise of rule-making authority**	**http://www.legis.state.wi.us/2005/data/acts/05Act166.pdf**	**03/21/06**
Act 48: County Forest Plans	Authority to WI-DNR to not issue grants to counties if plan is not updated in 15 years	http://www.legis.state.wi.us/2005/data/acts/05Act48.pdf	10/13/06
Act 167: Truck Weight Limits	Increases weight limits for raw forest product hauling	http://www.legis.state.wi.us/2005/data/acts/05Act167.pdf	03/21/06
Act 64: MFL Correction	Eliminating the exemption from yield tax for certain managed forest land, management plans for designating land as managed forest land, and calculating withdrawal tax for certain managed forest land.	http://www.legis.state.wi.us/2005/data/acts/05Act64.pdf	12/20/05
Act 290: Hunting in School Forests	Allows a school board to allow hunting in a school forest, but not closer than 1,700 feet from school grounds.	http://www.legis.state.wi.us/2005/data/acts/05Act290.pdf	04/08/06
Act 168: Council on Forestry Membership	**Adds an employee of the federal Department of Agriculture, Forest Service, to the Council on Forestry as a nonvoting member.**	**http://www.legis.state.wi.us/2005/data/acts/05Act168.pdf**	**03/21/06**
Act 352: WI-DNR Purchase of BCPL Lands	WI-DNR to use stewardship funds to purchase Board of Commissioner's of Public Land (BCPL) lands.	http://www.legis.state.wi.us/2005/data/acts/05Act352.pdf	04/19/06
Act 423: Harvest on Tax Delinquent Lands	Provides exceptions to the prohibition against the harvest of raw forest products from tax delinquent lands	http://www.legis.state.wi.us/2005/data/acts/05Act423.pdf	05/19/06
Senate Resolution 14: National Forest Management	**Urges congress to return National Forest management responsibilities to Counties**	**http://www.legis.state.wi.us/2005/data/SR-14.pdf**	**
Senate Joint Resolution 69: Appreciation Day	Recognizes March 23, 2006, as Wisconsin Professional Logger and Forest Products Industry Appreciation Day	http://www.legis.state.wi.us/2005/data/SJR-69.pdf	**

**Resolutions are not signed by the Governor