Checklist for Statewide Forest Resource Assessments and Strategies
Requirements of the 2008 Farm Bill

The State Assessment and Strategy must be submitted to the USDA Forest Service, with this check list signed by the State Forester, by June 18, 2010. Federal review will focus on the requirements as outlined in the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill).

State: Wisconsin
Approved by the State Forester: Paul DeLong June 18, 2010

Name *Date*

****

Statewide Forest Resource Assessment Includes:

The conditions and trends of forest resources in the state ..... Yes ❑ No ❑
The threats to forest lands and resources in the state consistent with national priorities ..... Yes ❑ No ❑
Areas or regions of the state that are a priority ..... Yes ❑ No ❑
Any multi-state areas that are a regional priority ..... Yes ❑ No ❑

Statewide Forest Resource Strategy Includes:

Long-term strategies to address threats to forest resources in the state* ..... Yes ❑ No ❑
Description of resources necessary for state forester to address state-wide strategy* ..... Yes ❑ No ❑

**Can be presented in a strategies matrix with columns for (a) programs that contribute, (b) resources required, (c) national objective it supports, and (d) performance measure(s) that will be used for each strategy.*

Stakeholder Groups Coordinated with for the Statewide Assessment and Strategy:

Note: this could be identified in the body of the documents or as an appendix.

State Forest Stewardship Coordinating Committee (required) ..... Yes ❑ No ❑
State Wildlife Agency (required) ..... Yes ❑ No ❑
State Technical Committee (required) ..... Yes ❑ No ❑
Lead agency for the Forest Legacy Program (if not the state forestry agency) (required) ..... Yes ❑ No ❑
Applicable Federal land management agencies (required) ..... Yes ❑ No ❑

Other Plans Incorporated in Statewide Assessment and Strategy:

Community wildfire protection plans (required) ..... Yes ❑ No ❑
State wildlife action plans (required) ..... Yes ❑ No ❑
Other ..... Yes ❑ No ❑

Forest Legacy Assessment of Need (check the one box below that applies)

❑ Previously approved AON remains unchanged and is incorporated by reference

OR

✓ Required AON components are included in the Assessment and Strategy (Note: AON elements will be evaluated outside the assessment and strategy certification process)

❑ **Deemed to be sufficient (all requirements met)**
Comments:

❑ **Not deemed to be sufficient* (missing one or more requirements)**
*Indicate Corrective Action(s) Necessary to Meet Sufficiency Requirement:

Certified by Regional Forester/NA Director: _____ _____
Name *Date*

DECISION BY THE *DEPUTY CHIEF FOR STATE & PRIVATE FORESTRY*

Approve ____ Date _____
Disapprove ____

WISCONSIN STATEWIDE FOREST STRATEGY 2010

Wisconsin Department of Natural Resources
Division of Forestry

June, 2010

Acknowledgments

Rebecca Gass
Project Manager

The following DNR staff contributed in a significant way to the development of this document. Please see the Statewide Forest Assessment for a list of the many others who were involved in that work. Their efforts are greatly appreciated:

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Finally, we appreciate our many partners who worked with us to assess the forest and identify how we can assure this magnificent resource continues to produce an array of benefits for generations to come.

The mission of the Division of Forestry is to work in partnership to protect and sustainably manage Wisconsin's forest ecosystems to supply a wide range of ecological, economic and social benefits for present and future generations.

Paul DeLong
Chief State Forester

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Table of Contents

Introduction

Wisconsin's Statewide Forest Strategy ("Strategy") is a statement of intent by those most involved in the protection and sustainable management of Wisconsin's forests regarding how to address the trends and issues that have the potential to significantly impact Wisconsin's forests over the next decade. It will provide a long-term, comprehensive, coordinated approach for investing resources to address the management and landscape priorities identified in the Statewide Forest Assessment ("Assessment"). In their entirety, the strategies represent a very large investment of resources. Recognizing the current economic constraints at all levels of government and in the private sector, it is necessary to determine which strategies and actions are the most important to focus on.

This "Strategy" is not a final product; it is the start of an on-going conversation for the forestry community. The strategies are broad; they function as guides. The major issues and threats affecting the forests of Wisconsin can not be tackled by one group, organization or agency. This is an opportunity to build synergy and focus efforts. Partners and the public who have engaged in this conversation are helping to identify the key issues and have a voice in determining the most important actions to take.

How were the strategies and actions developed?
The "Assessment" analyzed the current condition of forests (both public and private), looked for trends, and identified issues and threats to our forests for the next 10 years. From the analysis, thirty major conclusions were drawn. Another way to characterize the major conclusions is to think of them as a description of the major issues and threats to forests, opportunities to take, or strengths to build on and continue. Partners and the public were asked to prioritize these conclusions. There was strong support for the top twelve conclusions. The conclusions can be characterized by four themes. (See list below.)

Through this process, the Division of Forestry recognized that the "Assessment" did not fully analyze issues around protecting life and property in forested areas. Issues such as wildfire suppression, enforcing violations of forest based illegal activities and safety for the forest-based workforce and forest users was not covered in the "Assessment", which was focused on forest sustainability. The Division of Forestry has recently conducted reviews of our fire and law enforcement programs. They identified the issues and opportunities and provided the basis for making recommendations for strategies and actions. These are included in Theme E.

A. Fragmentation & Parcelization
B. Forest Composition & Structure
C. Energy & Climate Change
D. Forests as Economic Contributor
E. Protection of Life & Property in Forested Areas

The Division of Forestry's leadership team developed goals for each of the themes, following which an ad hoc committee of DNR staff developed draft strategies and actions. They started by first considering the current issues and condition of our forests as described in the major conclusions from the "Assessment". Then, using the goals as desired conditions, they developed strategies that seek to slow or reverse negative trends and continue current programs and activities that are strong and achieving objectives.

The strategies are not all new ideas. Nor do we suggest they all be implemented. The strategies and actions reflect both new ideas and existing actions or programs that are recognized as successful practices. There are not enough resources to implement all of the suggestions and more importantly, different groups will have different perspectives on how the strategies should be implemented.

The strategies do not specify who should be responsible for accomplishing a given strategy. We do not assume which organization or group can best accomplish a particular strategy, or who has the expertise to do so. Most importantly, to implement these strategies additional dialogue is needed within the forestry community.

Forests across the state are not the same. Some strategies should be implemented only in certain locations based on criteria. Recognizing budgetary constraints for all agencies and organizations, strategies should address priority landscapes when appropriate. Prioritized landscapes could be based on political boundaries (e.g., county boundaries), environmental factors (e.g., watersheds or ecological boundaries), social factors (e.g., population), or other considerations. Examples of priority landscapes could be areas with the greatest fire risk, health risks, or potential for producing ecosystem services. (See "Assessment" chapter: Priority Landscapes & Issues.)

Next Steps for the Statewide Forest Strategy

The 2008 Farm Bill requires the Division of Forestry submit the "Assessment" and "Strategy" to the USDA Forest Service[*]. The Department has revised the "Strategy" based on feedback we have received. Starting in July 2010, we will facilitate conversations amongst partners to discern collectively we can best implement the "Strategy".

As we hope other partners will do, the Division of Forestry will review the "Strategy" and determine what roles we are best positioned to fill with respect to implementing the strategy. We are calling this our Division of Forestry Strategic Direction and through it we will describe what actions the Division will take over the next five years to implement certain strategies. The Division of Forestry will again be seeking input as we make these decisions.

[*] Throughout this document, "we" refers to the Wisconsin DNR, Division of Forestry.

Public Comment - Process

The development of the "Strategy" grew from two previous planning efforts: Wisconsin's Sustainability Framework (2007) and the Statewide Forest Assessment (2009). Throughout the last three years, the Division of Forestry has worked with partners and the public to develop these documents.

Sustainability Framework
The Sustainability Framework is the result of a Governor's Council on Forestry initiative to determine how to measure the sustainability of Wisconsin's forest resource. A committee made up of different conservation organizations, forest industries, agencies, a tribal representative, universities, and private landowners developed the document. This document was reviewed by forestry experts, government agencies, tribes, partners, and the public.

Statewide Forest Assessment
The "Assessment" used the Framework as a blueprint to gather information. The "Assessment" draws on a wealth of data and analysis from partners and other agencies. Forestry experts, government agencies, tribes, partners, and the public were asked to review the "Assessment" and prioritize the major conclusions. Meetings were held with major stakeholders to discuss the results. These included the Governor's Council on Forestry, USDA Forest Service, Wisconsin Woodland Owners Association, Urban Forest Council, Wisconsin Forest Stewardship Committee, Voigt Task Force, National Resource Conservation Service – State Technical Committee, and other DNR Divisions including the Bureau of Endangered Resources which manages Wisconsin's Wildlife Action Plan (WAP).

Statewide Forest Strategy
The first draft of the "Strategy" was developed by a DNR ad hoc committee in January and February, 2010. Due to the federal requirement to submit our "Assessment" and "Strategy" by June 2010, we decided to develop the first draft internally. From March 23 to April 30, five surveys were posted on-line for anyone to comment on the strategies and actions in the five different themes. Emails or letters were requested as well.

In March, April, and May, we held meetings with major stakeholders to inform them of the "Strategy" and discuss the document. These included the Governor's Council on Forestry, Urban Forest Council, State Trails Council, Wisconsin Forest Stewardship Committee, Voigt Task Force, Wisconsin Native American Tribes, Great Lakes Forest Alliance, Wisconsin County Forest Association, Wisconsin Woodland Owners Association, DNR Fire Department Advisory Council, Natural Resource Conservation Service – State Technical Committee, Chequamegon-Nicolet National Forest, Great Lakes Timber Professionals Association, and other DNR Divisions including the Bureau of Endangered Resources which manages the Wildlife Action Plan (WAP).

We requested people comment and suggest edits to the strategies and actions. We specifically wanted to learn which strategies and actions people thought were important

and which should be deleted or edited. The draft "Strategy" for review did not represent all perspectives and ideas. We specifically asked reviewers if there were other strategies and actions that should be added in order to represent the range of perspectives held by forest stakeholders.

For every strategy, the surveys asked three other specific questions:

1. Some strategies are best implemented statewide and other strategies are best implemented only in specific landscapes. Should this strategy be implemented statewide or in landscapes based on certain criteria?

[*This question was asked to get a sense of where people think different strategies should be implemented. The USDA Forest Service requires that we identify priority landscapes and issues*.]

2. Of the actions for this strategy, which TWO are the most important to address the strategy over the next 10 years? (Only choose 2.)

[*This question was asked to see if there was consensus on certain actions that would signal future support. We hope the forestry community will find it valuable to see which actions are selected as most important and use that information for their strategic plans.]*

3. Would your organization and/or you personally want to be involved in implementing any of the actions in this strategy? (Check all that apply.)

- ❑ Yes, I personally want to be involved.
- ❑ Yes, my organization wants to be involved.
- ❑ I cannot speak for my organization.

[*The strategies will not be implemented unless one or more public or private entities initiates it. Based on who responds to this question, we will facilitate future conversations amongst the interested groups*.]

The Department has reviewed the comments received and modified the "Strategy" based on the feedback. Where a majority of people suggested a similar change or addition, it was made. When someone requested terms be defined, we have added definitions to the strategy descriptions. Many individuals shared their opinion on the efficacy of strategies and actions, but did not propose changes. By July, we will collate these opinions and share the common themes on the Division of Forestry webpage. Several people suggested new actions and these have been added to the chapter: Possible Actions.

Public Comment - Synopsis & Response

The following is a synopsis of the comments received on the “Strategy”. We requested people complete five surveys on line or send an email or letter with their comments. We also met with over fifteen stakeholder groups to discuss the “Strategy”. The bulk of the discussion presented here addresses comments that were made by stakeholder groups and those that sent emails or letters.

There were 330 surveys completed for all of the themes. At a minimum, there were 108 individuals that completed the surveys. Most likely individuals completed two to three surveys. The strategies within Theme A had the most comments with the range of comments per strategy being 12-25. The range of comments per strategy was considerably less for the other themes.

	Completed Surveys	**Range of comments per strategy**
Theme A	108	12 - 25
Theme B	69	1 - 10
Theme C	55	2 - 12
Theme D	51	0 - 7
Theme E	47	2 -10

Of the fifteen stakeholder meetings, the Governor’s Council on Forestry and the Forest Stewardship Committee are the two advisory groups we had the most in-depth discussion with. Both of these were day-long meetings where overall process was discussed and almost every strategy was commented on. The Governor’s Council on Forestry decided that it was most important to focus on discussing the goals and strategies and providing feedback on these. They found greater consensus on these than the actions. The Forest Stewardship Committee provided new ideas for actions and evaluated the effectiveness of many of them.

We received sixteen direct emails and letters from individuals, companies, and organizations. Many of these stated they were interested in staying engaged in the conversation on the strategies.

A range of organizations identified themselves in the survey and direct correspondence. This list represents the range of groups that shared comments and edits:

General public
Advisory boards:

- regional collaborations
- Councils

Associations:

- professional societies
- Industry groups
- family forest land owners

Conservation organizations:

- forests
- land use
- wildlife
- wetlands

Business:

- industry (paper, loggers, timber)
- consultants (tree care and forest management)

Government agencies:

- local, municipal, county
- state
- dederal
- tribes
- academia

The majority of the comments both from the direct communication and via the survey can be characterized by one of the following concerns:

1. Intent of the “Strategy”
2. Impacts on property rights
3. Too much reliance on government
4. Process to develop the “Strategy”

1. Intent of the Strategy:

There were many comments regarding the intent of the “Strategy” and how it would be implemented. The idea that the “Strategy” should reflect actions that all partners can do was difficult for people to understand.

- There is a belief that DNR will be the leader on all the strategies and all of the actions will be implemented. For example, in one comment, they interpret “public” lands to mean DNR rather than all public entities (other state agencies, federal, county, town, city etc).

- Many thought the “Strategy” will instantly be implemented. Two individuals used the term “passed”. Others thought the majority of the actions will remain rather than being a list of actions offered for consideration with the intent to further refine.

- Several thought strategies and actions did not include topics they are concerned with because they were not specifically stated. Strategies and actions were broad and purposefully did not try to describe every component. For example, a

strategy regarding improving forested communities would not list 'forested wetlands' specifically.

- Many thought all the strategies and actions were new and this implied more government.

RESPONSE:

It appears that key messages we tried to convey were not "heard." Those key messages are:

- The "Strategy" includes multiple ideas which will be sifted, winnowed and prioritized. This will not be done by the DNR alone.
- The intent is that the forestry community as a whole be involved in implementation of the plan.
- The plan is not a final decision; it is the start of an on-going conversation for the forestry community.
- The strategies and actions collectively cannot be tackled by one group, organization or agency.
- The strategies are not all new ideas. Nor do we suggest they all be implemented.
- We fully anticipate that there will be actions that are not worked on due to lack of interest by the forestry community and/or not being a priority in comparison to other efforts.
- We do not presume to know which organization or group can best accomplish a strategy or action, or who has the expertise to do so.
- Lastly, in regards to the scope of the document, strategies and actions were broad and purposefully did not try to describe specific components.

2. Property Rights:

There was concern regarding the potential negative impact some strategies would have on property rights and a landowner's ability to make decisions on their land.

- Several thought that strategies were restricting property rights which would result in a decrease in property value.

- Several were concerned with potential zoning and regulation of parcel size and being forced to manage for landscape scale goals.

- Another comment cautioned that the "Strategy" must remain cognizant of private property rights and the perception of too much government intervention while at the same time trying to provide forest benefits for all citizens of Wisconsin; a difficult balance to achieve.

RESPONSE:

As mentioned in the response for number one above, we fully anticipate that there will be actions that are not worked on due to lack of resources and/or not being a priority in comparison to other efforts. There is strong recognition in Wisconsin of private property rights. There is an expectation that efforts to realize the array of public benefits

derived from forests use tools that respect basic landowner rights while encouraging actions that enhance public benefits.

Those actions that might be perceived by some as threatening property rights identified methods (zoning, comprehensive planning) which normally require a separate system of public input. As a result, use of these tools will not be possible without additional dialogue by the public.

Interestingly, most of the actions that might be viewed as having the potential to impact property rights were selected as a preferred action in the survey by the respondents. Two of the strategies which specifically mention zoning and planning (6 & 18) were preferred. This suggests that there are diverse options about these tools and their use to achieve the stated goals.

3. Too much reliance on government:
Many comments expressed that there was too much reliance on government regulation and economic controls or incentives.

- There were suggestions to focus more on outreach and education instead of incentives.

- Some felt the reliance on government funding is not realistic in this economic time which means that the majority of actions based on government funding would, in actuality, not be implemented.

- One company said they "support the state buying land, but it then needs to be managed. Historically, the trees on state-owned forestland are not cut to the allowable cut, the forest becomes overgrown and that decreases the amount of forest products that come from the land …and therefore hurt industry." (strategy 11)

- One group expressed their concern with big government this way: the "Strategy"… "does not satisfactorily value private enterprise, free markets, individual or institutional initiative to reflect and meet the needs and desires of customers in order to facilitate the achievement of the survey's various goals."

- One reviewer advised that "the document must remain as balanced as possible to best represent the diverse views among Wisconsin's forestry community members." The abundance of comments focused on government intervention may reflect that people did not see the "Strategy" as balanced.

RESPONSE:
Due to the concerns expressed regarding lack of actions containing education and outreach, we will encourage discussion of this issue when we facilitate conversations amongst partners to talk about how the actions can be implemented and by whom.

Additionally, the Division of Forestry will discuss this when we review the "Strategy" and assess what our role and niche is for the strategies.

In regards to heavy reliance on government funding and perceptions of 'big government', as stated before, it was not the intent of the "Strategy" that all of the actions be implemented, nor that government at any level be the lead on them all. We agree that government, even in a healthy economic environment, would not have the resources to support all the incentives identified in the strategies. However, it is also important to note that a number of the incentives identified in the "Strategy" already exist. The "Strategy" is not focused merely on adding to what is already done; rather, it is focused on discerning what strategies and tools are most likely to achieve the desired outcome, irrespective of whether they exist today. It appears some of the concern about "big government" may have been due to the perception that the listed strategies and actions were all over and above what is implemented today.

Based on the responses to the survey and comments received, we hope to be able to identify those circumstances in which the forestry community believes incentives are most important. We will then use this information when deciding what the Division of Forestry's role and niche is for those issues as well as when we prioritize where and how we will allocate our resources during the next 5-10 years.

4. Process:

There were two concerns regarding the process to develop the "Strategy". The most prevalent comment regarding process dealt with stakeholder involvement.

- There is a concern that stakeholders (non-DNR) were not involved in the development of the actions primarily, but goals and strategies were also mentioned. It was suggested that doing so would have provided a broader range of ideas based on a wider range of perspectives.

- Some thought the themes and strategies were organized in priority order. They are not. Theme A, 'Fragmentation & Parcelization', is not more important than Theme D, 'Forests as Economic Contributors.'

- Many wanted terms better defined (e.g. passive, appropriate, large block, preservation, and remote).

RESPONSE:

The development of the strategies is part of a 3-year planning process which started with the Governor's Council on Forestry's initiation of a Sustainability Framework. The Division of Forestry engaged partners in the development of the framework and review of the "Assessment". We have once again engaged our partners and the public in development of the "Strategy". The Division requested the public and partners to prioritize the major conclusions from the "Assessment", the feedback from which directly influenced the development of the draft goals. The DNR used an ad hoc committee to

write the first draft of the strategies in order to produce a document quick enough so that there would be sufficient time for the public and partners to respond and provide comments before the June 18, 2010 federal deadline for submitting the “Assessment” and “Strategy”. In our request to reviewers, we specifically asked for new ideas and edits to the existing strategies.

Many people who commented wanted terms to be better described. It is likely that it would have been easier for people to provide their opinion if they completely understood each strategy. In the final “Strategy”, definitions have been included where they were requested. In some strategies, terms are not defined because doing so is a part of implementing the strategy. For example, people requested that the term “appropriate” be defined. This can only be defined by those who work to implement that particular strategy. We anticipate a group of stakeholders working together to decide what those terms mean within the specific context of their work.

Theme A: Fragmentation & Parcelization

GOAL

FOREST LAND: The amount of forest land increases and is focused in desired landscapes.

DESCRIPTION OF GOAL

The amount of forest land in Wisconsin has increased but the landscape patterns have changed due to fragmentation of forest patches, parcelization of forest ownerships, and urbanization. Fragmentation is a term used to describe landscape characteristics like how big a forest patch is, is the forest patch isolated from other forests, and how much 'edge' there is with other land uses (e.g., agriculture). "Permanent fragmentation" refers to long-term conversion of forest to urban, residential, agricultural, or other non-forest uses. Permanent fragmentation is a permanent loss of habitat and alters some ecological processes. "Habitat fragmentation" is defined as a disruption of habitat continuity caused by human or natural disturbance. Dispersal can be affected if species or their propagules cannot cross a disturbed area, find suitable habitat within it, or successfully compete with disturbance adapted species.

The growth in forests is not constant across the state – forests in eight counties have not increased. Increasing the amount of forest land can help ameliorate the negative effects of disrupted landscapes. In order to retain the forest we have and increase it, landowners could maintain their current amount of forest and plant more trees, and conversion of forestland could be reduced. Trees are not ecologically desirable in all ecological landscapes and strategies should be focused accordingly. (See DNR's Ecological Landscapes webpage).

Ecological landscapes are areas of Wisconsin that differ from each other in ecological attributes and management opportunities. They have unique combinations of physical and biological characteristics that make up the ecosystem, such as climate, geology, soils, water, or vegetation. They differ in levels of biological productivity, habitat suitability for wildlife, presence of rare species and natural communities, and in many other ways that affect land use and management.

STRATEGY

1. Encourage planting to enhance, protect, and connect larger tracts of forested land in appropriate locations consistent with ecological landscapes.

Due to fragmentation and forestland conversion, the connections between forests may be broken. This has effects on issues like wildlife movement and seed dispersal. Not all areas are ecologically desirable for forests, though on private lands this is a landowner's decision. The DNR's ecological landscapes help define where afforestation or reforestation is most desirable ecologically. Other criteria to prioritize reforestation could be areas that can connect or buffer existing high-quality forests.

STRATEGY

2. Reduce the rate of conversion of forestland to alternative uses.

Urbanization, population growth, and development in the wildland urban interface put conversion pressure on forestland. As forests are converting to different land uses, public values are lost, and the ability to return it to forests is difficult. There are different ways to maximize values for communities and landowners yet retain the benefits of working forests.

GOAL

PARCEL SIZE: The rate of forest land parcelization is reduced.

DESCRIPTION OF GOAL

Parcelization is the subdivision of a single forest ownership into two or more ownerships. The forest land itself may not change immediately when broken up into separate tracts, but it becomes more susceptible to fragmentation (e.g., some tracts may be sold for development). Increases in the number of small ownership holdings increase the difficulty in providing sustainable forest management plans. As parcel size decreases, the economies of scale to conduct forest management decrease. Furthermore, a higher percentage of landowners may not be willing to harvest if they have small properties, adversely affecting the forest-based economy.

As such, the strategies presented to address this goal focus on maintaining or slowing the rate of division of parcels. Attempting to increase the size of ownership holdings through policies, incentives, or other actions was seen as not practical or cost-effective. It might also result in unintended negative consequences (e.g., increasing the minimum size of MFL enrollments may in the end reduce participation and accelerate parcelization) and thus are not presented.

Given the differences in goals, pressures, and motivations between industrial forest owners and smaller, non-industrial private forest owners, the strategies address these groups separately.

STRATEGY

3. Reduce the rate of ownership parcelization of large forest blocks (i.e. greater than 500 acres).

There is continued need and opportunity to acquire conservation easements on key parcels that maintain large ownerships and keep them as sustainably-managed working forests. Many of these large blocks provide important ecological and economic benefits that are compromised when land is parcelized. Some large forest blocks may provide critical linkages between existing public properties or may provide essential habitat for rare species. Others may be prone to increasing the potential for catastrophic fire if they are divided and developed. 500 acres was chosen to describe large forests

because this is a common minimum acreage required by cost-share programs and grant opportunities.

Purchasing easements is an expensive but effective approach to prevent parcelization and development of forest blocks. There are also likely to be many more opportunities to purchase easements on large forest blocks than funding available for these acquisitions. Thus, there will be a need to prioritize easement acquisitions based on the habitat, environmental, economic, and recreation values provided.

STRATEGY

4. Reduce the rate of ownership parcelization of small forest blocks (i.e. less than 500 acres).

Forestland is changing hands at an increasing rate. As forest changes hands, it tends to be sold in smaller parcel sizes. For the small private forests, different factors influence parcelization (e.g., economic incentives, family dynamics, local land use, property values and taxes). Sustainable forest management incentive programs such as the MFL or cost-share help off-set those costs and help landowners sustainably manage their forest so they are able to produce a full array of economic and ecological benefits forests can provide. This type of management supports forest related jobs and businesses. A landowner who has learned about the benefits available from their land and an understanding of how to manage it may choose to keep their land instead of selling it.

To address these and other factors, an effective way to reduce the rate of parcelization is through improved consideration of forest values in local comprehensive plans (i.e. Smart Growth). One option that might result in keeping larger parcels intact would be to provide bonus payments for larger tracts. Similarly, providing increased incentives for landowners enrolling into longer-term contracts may result in slowing the parcelization of holdings.

A more aggressive approach would be to create a financial disincentive to parcelization through the creation of a fee on subdivisions or changes to land uses. This would require public support and may not be practical without other taxation offsets (e.g., a property tax reduction for maintaining land in existing uses). The fee could go to a program that supports public access to forest land or acquiring easements with the highest conservation and recreation benefits.

GOAL

LARGE BLOCKS OF FORESTS: Large blocks of forest are maintained/increase.

DESCRIPTION OF GOAL

Large expanses of working forests free of development pressure are decreasing. Anthropogenic factors such as housing and road development alter habitat, fragment

landscapes and threaten biodiversity. The majority of forests either contains or is near housing (Radeloff 2005). Fragmentation of forests creates smaller forest blocks. Fragmentation is a term used to describe certain kinds of landscape structures. Common measures of fragmentation are patch size, isolation (distance between patches), and edge (cumulative length of patch edges). “Permanent fragmentation” refers to long-term conversion of forest to urban, residential, agricultural, or other non-forest uses. Roads and utility corridors can also create permanent fragmentation. Permanent fragmentation is a permanent loss of habitat and alters some ecological processes. Permanent fragmentation therefore has the greatest negative impact on forest biodiversity.

“Habitat fragmentation” is defined as a disruption of habitat continuity caused by human or natural disturbance, which creates a mosaic of successional and developmental stages within a forested tract. At a landscape scale, aggregated human disturbance may result in relatively high levels of habitat fragmentation with negative impacts. In general, increased road and housing density threaten the conservation of biodiversity by:

- Altering composition, structure, and function of adjacent ecosystems.
- Changing land use through development (removing habitat).
- Increasing edge and decreasing interior forest.
- Providing avenues and sources of invasion for exotic species.
- Causing air and water pollution.
- Altering hydrological networks.
- Increasing ecosystem disturbance through increased human access and activity; impacts are both direct (e.g. road kills, potential overhunting) and indirect (e.g. habitat alteration, wildlife behavioral changes).
- Limiting management alternatives.

In order to maintain or increase large blocks of forest, strategies should look for opportunities to conserve and protect forest lands and pursue ways to collectively approach the management planning within all units of government.

STRATEGY

5. Pursue the conservation and protection of large, unfragmented blocks of forest lands.

The terms conservation and protection in this strategy include both active and restricted management. Sustainable forest management conserves forests and protection measures are meant to keep forests as forests, not to solely restrict management. Partnerships play an important role in this strategy. While it is recognized a collective approach can stretch the limited resources of each partner, it should be also noted working together allows for a broader range of goals and objectives depending on the ownership. With limited resources available, it is important that the lands conserved and protected provide the best opportunities. It is also important to focus efforts in landscapes involving environmentally, economically and ecologically important working forests. While acquisition can lead to a desired future state it is unrealistic to think all

benefits can be achieved by this method alone. There are more tools than just acquisition to conserve and protect large, unfragmented blocks of forest lands.

It can be several years between revenue producing activities on forest land and while it is understood there are many factors affecting the decisions of ownership it can be a financial burden to carry those costs. Finding alternatives to reduce that burden will create an atmosphere that allows long-term ownership in which forests will stay forest.

STRATEGY

6. Strengthen collaborative and large scale planning at the town, county, state and federal levels.

When considering large blocks of forest it is critical to think into the future. To begin to achieve a desired future condition such as increased canopy cover, partnerships in the planning effort need to be initiated no matter the jurisdictional boundaries. This strategy does not insinuate regulation; rather it encourages all levels of government to consider their plans in the context of a larger landscape with neighboring governments.

If the necessary steps are taken today in planning cooperatively, it is possible to think about the landscape at a larger level. In the end, this will allow Wisconsin to have a variety of options available to assist in maintaining a diversity of successional and developmental stages.

GOAL

LANDSCAPE SCALE MANAGEMENT: An increasing amount of land management at small scales is in alignment with landscape scale plans. Small forest parcels will be effectively managed forests at a landscape scale that accounts for multiple benefits such as ecosystem services and risks such as wildfire.

DESCRIPTION OF GOAL

The goal of landscape scale management has many components. This section focuses on the issue of maintaining the functional size of forest blocks as a means of applying larger landscape scale opportunities at smaller scales. To achieve landscape scale management on small parcels, landowners could coordinate management practices such as sharing road access for harvests or work together to reduce invasive species on properties that border one another. The issues related to connecting appropriate landscape-scale goals and objectives down to property level actions are addressed in Theme B. (Ecosystem services are functions performed by natural ecosystems that benefit human society, such as hydrological services, protection of the soil, biomass, carbon sequestration, habitat for wild species, and recreation opportunities.)

STRATEGY

7. Increase the functional size of forest blocks by encouraging coordination of management of clusters of forest ownerships.

There are many barriers to groups of individual landowners agreeing to both develop collaborative management plans and to implement various management actions in a coordinated fashion over time. However, by planning and managing collaboratively the functional size of forest blocks could increase and achieve significant results from conservation, forest health, ecosystem service and economic perspectives. The formation of formal and informal forest cooperatives speaks to this potential.

Private forest plans could be influenced by the management goals and actions prescribed on adjacent and nearby lands, as well as those on nearby public or other protected lands, consistent with the interest and desires of the affected landowners. Further, management plans for lands within Wildlife Action Plan Conservation Opportunity Areas could be influenced by the opportunities to address species and natural communities of particular concern.

Forestry professionals (both public and private) can facilitate developing management plans that meet a property owner's needs and goals in a manner that also incorporates larger ecological goals. Similarly, foresters and loggers can bring adjacent or nearby landowners together to coordinate harvest and management actions thereby potentially improving efficiency and outcomes.

Not all forested areas are good fits for trying to maintain large functional blocks. For example, some areas are simply too fragmented in their ownership while other forests are too disjunctive, small, or fragmented to realistically achieve meaningful, larger-scale management goals.

GOAL

SUSTAINABLY MANAGED FOREST: The percentage of sustainably managed forest land will steadily increase.

DESCRIPTION OF GOAL

In order to increase the amount of forest land that is sustainably managed either more private landowners could sustainably manage their forests (ones who are not already) and/or more public forest land could be purchased and sustainably managed. Seventy percent of timberland is owned by private individuals or corporations.

Challenges to reach this goal include smaller ownership size, more forest owners, limited capacity to deliver professional forestry assistance, and increasing forest land values. The average private forest parcel size decreased from 37 acres in 1997 to 28 acres in 2007. In the same time period, the number of private non-industrial forest owners grew by 37%.

Sustainable forestry is defined in statute as "the practice of managing dynamic forest ecosystems to provide ecological, economic, social, and cultural benefits for present and future generations (Ch.28.04(1)e, Wisconsin Statutes). "Wisconsin Forest Management Guidelines" are a commonly held standard for sustainably managing

forests. (See http://dnr.wi.gov/forestry/Publications/Guidelines/ for an electronic copy of the Guidelines.)

STRATEGY
8. Encourage a tax structure that favors well managed forests.

Every five years, taxes increase on average 10 percent. It is becoming increasingly difficult for landowners to carry that cost when at times revenue derived form the land is intermittent. Wisconsin has what is widely considered one of the best tax incentive programs for forest land owners in the country; however, one program does not meet the needs or desires of all landowners. (See Indicator 16.6 in the "Assessment" for a discussion on forest land in property tax incentive programs.)

It is often pointed out that undeveloped forest land requires fewer public services (roads, water, utilities, etc.) than developed land. Discussions about tax structure should consider this.

STRATEGY
9. Increase acreage of privately owned forests managed based on generally accepted forest management practices.

The MFL program requires management based on Wisconsin's forest management guidelines. The program is now twenty-five years old with the first round of entries expiring. A tremendous amount of investment has been made into these properties by the public and landowners. If these entries re-enrolled in the MFL program, the benefits would continue.

Third-party forest certification, such as Sustainable Forestry Initiative and Forest Stewardship Council in Wisconsin, is a generally accepted label of sustainably managed forests. If private landowners are not interested in the MFL program, forest certification offers another option to sustainably manage. Certification may provide an opportunity for landowners to increase income from their forests and therefore afford to retain it or purchase it. Certified status smoothes landowners an entry into ecosystem service markets such as the Chicago Climate Exchange.

Landowners realize many different benefits of owning forest land and produce ecosystem services for the general public like clean air and water. To date, there are limited opportunities to compensate landowners for those benefits they are providing to all citizens and the connections of enhancing those qualities through a well managed forest. If there were more ways to compensate these landowners, more people may purchase and manage their land.

STRATEGY
10. Increase acreage of publicly owned forests managed based on generally accepted forest management practices.

Public land in this document can refer to any level of government: local, county, state, federal. One way to increase the acreage of publicly owned forests is for government to purchase land. Public property plans outline project boundaries and areas for future purchase. By continuing to purchase land from willing sellers, the amount of sustainably managed lands under certification standards would increase.

Theme B: Forest Composition & Structure

GOAL

IMPROVING FORESTED COMMUNITIES: Improve all forest communities and increase in quality and extent forest communities that are under-represented.

DESCRIPTION OF GOAL

Forest communities and forest cover types are considered synonymous for this discussion. A community is an assemblage of plants and animals living together and occupying a given area. A forest cover type is a category of forest usually defined by its vegetation, particularly its dominant vegetation as based on a percentage cover of trees. Therefore, forest cover type is a forest community defined by tree species.

To improve our forests, there are three concepts that are important to consider. First, allow succession to take place in some of Wisconsin's forests. This will allow more of our forests to develop structure and late successional stage forest. Second, encourage disturbance. This will allow our forests to maintain a patch work of early, mid, and late successional stages. A patch work of different aged forest will harbor the most biodiversity. Forests rich in biodiversity will better weather the storm of invasive species, climate change, and large scale disturbances. Prescribed fire could be used more frequently in forest communities where fire was a natural occurrence. Finally, identify where forest communities are under-represented and define what actions are needed to improve these communities. (Under-represented is defined in Strategy 12.)

STRATEGY

11. Encourage the management of under-represented forest communities.

An under-represented community is determined by comparing the current amount to a previous time. Common comparisons use pre-European settlement, the first post-Cutover inventory or recent FIA reporting dates (e.g. 1983, 1996, and 2007). There is not one point in time that is desirable for all comparisons – values drive what are desired forest communities. For example, the aspen-birch cover type is currently the third most common forest cover type in Wisconsin, representing about one-fifth (20%) of all forest land. Based on Public Land Survey data from the mid-to-late 1800s, aspen- and white birch-dominated forests occupied about 0.4 million acres or 2% of forest land area historically. The aspen-birch type expanded dramatically after the Cutover, but today the total acreage is slowly and steadily declining. About 8% of the total acres present in the early 1980's have converted to other vegetation types.

The Statewide Forest Assessment specifically mentions five forest communities that are "under-represented". Each is considered under-represented based on certain variables described in the "Assessment":
http://dnr.wi.gov/forestry/assessment/strategy/data.asp?d=02.

1. Reduction in acres of the aspen-birch community.
2. Reduction in acres of the jack pine cover type.
3. Lack of regeneration of yellow birch, hemlock, and cedar in our northern forests.

4. Oak forests shifting towards more shade-tolerant species such as sugar maple, red maple, and “central hardwood” species in our southern forests.
5. A lack of older forests in general in Wisconsin.

There may not be an immediate economic benefit to manage “under-represented” forest communities. The community may be managed because it’s rare or declining and has important biological diversity value. For example, an oak savanna may not be able to enter into the MFL program because of the density of the forest, but it is valuable as a declining forest community.

STRATEGY

12. Improve all forested communities with a landscape management approach that considers the representation of all successional stages.

A landscape management approach that accounts for all characteristic successional and developmental stages with forest stands ranging from small to large will facilitate biodiversity conservation. These characteristics will be different depending on the ecological landscape and landowner objectives and what they define as appropriate. Silvicultural systems that more closely emulate natural disturbance and stand development processes are more likely to sustain ecological complexity and biodiversity (Crow et al. 1994, Niemela 1997, Seymour and Hunter 1999, OMNR 2002, Franklin et al. 2007, MFRC 2007, National Commission on Science for Sustainable Forestry 2007).

STRATEGY

13. Increase forest structure and diversity.

Adaptive silvicultural methods that develop and maintain biological legacies in managed stands can facilitate the promotion of stand level diversity, compositional and structural complexity, and the conservation of biological diversity. Guidance on the management of coarse woody debris (CWD), large trees, and snags / cavity trees was recently added to the DNR Silviculture Handbook. The goal of increased forest structure and diversity at the landscape level may have different goals than at the stand level and require different methods. For example, a goal for a landscape may be to increase the diversity of forest types whereas at the stand level, it may be appropriate based on the site to focus on the structure of only one forest type.

Appropriate regeneration techniques for timber types that require un-even aged management result in increased forest structure. High grading is the selective cutting of the most valuable and highest quality trees that leaves the low value and poor quality trees to predominate. High grading can accelerate the shift in species composition of our forests and reduce the genetic quality of our forests. Forest structure and diversity are negatively affected.

STRATEGY

14. Encourage the use of disturbance mechanisms to maintain diverse forest communities.

Certain forest communities depend on fire for regeneration and forest community maintenance. Fire dependent forest communities are shrinking with the lack of fire on the landscape. The lack of fire has a significant impact on stand structure and successional processes.

GOAL

LANDSCAPE SCALE PLANNING: More forest land is being managed and protected under landscape scale plans, or consistent with landscape scale considerations. Management on the ground is increasingly being made within the landscape scale context.

Forest communities are distributed across the landscape based on many factors. Among them are soil type, climate, aspect, and elevation. A forest community is an assemblage of plants and animals living together and occupying a given area. All forest management actions will have ripple effects throughout the forest community. Therefore, forest management guidelines should be created with the "ripple" effect in mind.

Landscape scale planning is important because forest communities flow and blend together across the landscape - they don't stop at property boundaries. Landowners have varying management objectives and therefore can decide to plan at the landscape scale or not.

STRATEGY

15. Maintain the appropriate forest types for the ecological landscape while protecting forest health and function.

Broad forest management guidelines at the landscape level could be the skeleton which specific recommendations are built on for application at the forest stand level. The Wildlife Action Plan and Ecological Landscapes Handbook are useful tools to help create forest management guidelines for the ecological landscapes.

A landscape management approach that accounts for all characteristic successional and developmental stages with forest stands ranging from small to large will facilitate biodiversity conservation. By working with the ecological landscape it will be easier to maintain healthy and functional forests.

To maximize the benefits provided by forests, future forest management must look beyond the trees to manage the forest. This may include management for ecosystem services, specific vegetation or animal species, or managing for specific forest communities.

STRATEGY

16. Encourage multi-state landscape scale planning.

The number of multi-state/region/landscape scale planning efforts has greatly increased over the last decade. Forest communities do not end at state boundaries. Therefore, it's valuable to work with our neighboring states when creating landscape scale plans. Landscape scale planning can provide beneficial economies-of-scale.

GOAL

DEER: Deer populations are managed to protect and enhance forest ecosystem functions while considering the full balance of potential impacts.

DESCRIPTION OF GOAL

Deer are a valued resource in Wisconsin for their cultural, social, economic and ecological benefits. Unfortunately, deer browse can damage forest regeneration. It is important to keep in mind that deer management is only one part of the equation when managing the impacts of deer herbivory. The impact of deer herbivory on a forest ecosystem is also affected by land management practices and how society sets environmental, economic and recreation priorities. Depending on the area of the state and the amount of deer, the impacts to the forest ecosystem vary. This section looks at management broadly and includes decision-making and communication along with traditional land and species management practices.

STRATEGY

17. Increase scientific knowledge needed to understand the economic, ecological and social impacts of various deer populations (and associated deer herbivory) on forests.

There are several efforts underway within the state that will result in much needed data on which to base herbivory related decisions.

STRATEGY

18. Encourage the forestry community to be engaged in deer management issues with an understanding of the long term significance of deer impacts on sustainable forestry.

There is a very large spectrum of opinions and beliefs regarding deer populations and their effects. The forestry community's voice has not been very overt. In order to enhance forest ecosystem functions, concerns over forest regeneration must be shared more broadly.

STRATEGY

19. Adapt forest management practices to sustainably manage forests with locally high deer populations.

In order to achieve short term forest management in high deer populations, applied forest management techniques and land use practices are necessary. These tend to be expensive practices or culturally important activities that can be expensive and difficult to implement. Examples include fencing and deer repellents.

GOAL

URBAN: Urban forests are more species diverse with greater tree canopy.

DESCRIPTION OF GOAL

Urban forests provide a wide range of ecological, economic and social benefits for 80% of Wisconsin's population that lives in an urban area. Urban forests face two main ecological issues. First, our current tree canopy cover is only 14%, well below the recommended 40% canopy cover, and second, it lacks species diversity. Urban forests are more resilient with more tree cover. Currently Wisconsin's urban forests contain a rich diversity of tree species with over 85 different identified tree species. However, tree species distribution (evenness) is very poor, with 43% of all trees being either maple or ash. This leads to a high level of instability (e.g. high susceptibility to catastrophic loss from a genus-specific pest such as Emerald Ash Borer (EAB) or Asian Long Horned Beatle (ALB).

STRATEGY

20. Characterize and assess urban and community forests.

There have been small and infrequent inventories of Wisconsin's urban forests. Without knowing the extent, type, and health of the forest, it is difficult to make appropriate management decisions. It is expensive for communities to invest in inventory and assessment of their resource during tough economic times even though forests provide extensive savings in heating and cooling costs.

STRATEGY

21. Expand and manage a diverse urban tree canopy cover to provide multiple public benefits.

Maintaining the health and safety of existing trees will increase their benefits. Building sustainable programs to manage forest health and longevity is critical to sustaining these benefits through time. Wisconsin could nearly triple the services provided by its urban trees if communities reached the 40% canopy goal, helping the state address greenhouse gas emissions and energy independence. Ash and maple make up over 43% of Wisconsin's urban forest. This has set communities up for catastrophic loss to exotic diseases and insects. Planting a diverse population is essential to a sustainable resource.

GOAL

INVASIVES: The spectrum of native and exotic invasive species is being addressed to minimize loss of forested ecosystem function.

DESCRIPTION OF GOAL

Invasive species (both native and exotic) are having a catastrophic impact on our ability to tend and regenerate Wisconsin's forests. This is a problem that will only get worse unless we adopt a process for working in partnership to prevent, detect, respond, control, manage, reduce, minimize or eliminate the potential for introduction,

establishment, spread, and impact of invasive species across all forested landscapes and ownerships in Wisconsin. What follows is a process for controlling invasives (native and exotic) that are already here, and preventing the introduction of those that will follow.

STRATEGY
22. Strive to prevent infestations of invasive species before they arrive.

Two Wisconsin Examples:
Hemlock Woody Adelgid. To our knowledge, it is not here yet. We continue to learn from states that are dealing with it and support quarantines where it exists and monitoring movement of wood.

Japanese Stiltgrass. This weed has not yet been found in Wisconsin, but is a problem in neighboring states. It adapts readily to low light conditions and a wide variety of soil types which will make it a major forest pest should it become established in Wisconsin.

STRATEGY
23. Work to detect new infestations early and respond rapidly to minimize impacts to forests.

A Wisconsin Example: Emerald Ash Borer. We discovered this devastating insect in 2008. We are working in partnership (with the federal agencies and local municipalities) to secure a funding source for control. We have established silvicultural guidelines for managing natural stands and we are assessing the spread of the insect through a trapping regimen. Government agencies can not identify all infested areas. Landowners and citizens play an important role in detecting infestations.

STRATEGY
24. Control and management of existing infestations.

A Wisconsin Example: Gypsy Moth. This population is well established. The initial goal was to "slow the spread" using federal dollars to spray. Once the population became established we developed an annual monitoring process and we treat stands based on the public's desire to support local spraying to minimize social impacts and tree mortality. We are living with the Gypsy moth.

STRATEGY
25. Rehabilitate, restore, or adapt native forest habitats and ecosystems.

A Wisconsin Example: exotic bush honeysuckle. We have had honeysuckle for around two hundred years. Their vigorous growth inhibits development of native shrub and ground layer species; eventually they may entirely replace native species by shading and depleting soil moisture and nutrients. Many landowners are trying to restore woodlands to previous conditions which include spring ephemerals. Public land can offer teaching and research plots to test rehabilitation techniques.

Theme C: Energy & Climate Change

GOAL

BIOMASS: Forests provide raw materials for energy and traditional forest products at a level that sustains forest ecosystems and the productive capacity of the land. Use of woody biomass for energy is done in a way that produces a high energy return on biomass input.

DESCRIPTION OF GOAL

Using wood for energy provides significant opportunities for the state in terms of reducing greenhouse gas emissions, reducing our reliance on fossil fuels, producing more of our energy here at home, creating new bioenergy industries and providing associated economic benefits. For these reasons, encouragement of new renewable energy industries is appropriate. This new demand also benefits sustainable forest management since along with the demand created by traditional wood products, it helps ensure that there is the need and incentive to sustainably manage our forests and keep them in forest

However, care must be exercised since the sharp increase in demand could create significant pressure on the forest resource above existing demand from traditional wood products. It is vitally important that the increase in demand not cause the state's forests to be managed in an unsustainable manner. High demand could not only cause changes in forest management, but also in land use such as conversions of grassland to short rotation woody biomass crops. We need to be mindful that such changes consider the environmental, economic and social implications.

Additionally, wood can be used for many purposes: lumber, furniture, paper, fuel and energy, just to name a few. To maximize the return from our wood resource, woody biomass used for energy should target processes that produce a high energy return. Caution needs to be exercised to ensure that our valuable forest resource is being used in a manner that best produces the array of economic, environmental, social benefits we derive from forests.

STRATEGY

26. Collect information and develop policy to ensure efficient and sustainable use of our forest resources in regards to energy production.

The state of biomass research and knowledge grows daily. In order to ensure best and sustainable use of our forest resources in regards to energy production, the first step is to collect and synthesize information that can be used for policy development. There are many variables, such as production, species, location, and alternative sources, which can affect what is the best and most sustainable use.

STRATEGY

27. Encourage establishment of sustainable renewable energy industries (or use of renewable energy by industries) which use woody biomass while improving or maintaining the health of the existing forest products industry.

Wisconsin has a goal of generating 25% of its electric power and transportation fuels from renewable resources by 2025, capturing 10% of the emerging bioindustry and renewable energy market by 2030. It is also leading the nation in groundbreaking research that will make clean energy more affordable and will create good paying Wisconsin jobs. In order for forestry to contribute to this goal, biomass must be available for industry (either new or current) to use. These are new markets and new technologies that businesses must learn and policy makers must understand in order to make the process sustainable.

GOAL

ADAPTATION: Forests are established and managed in a manner that increases their resilience and ability to facilitate adaptation of associated species and communities to changing climatic conditions.

DESCRIPTION OF GOAL

Because of the uncertainty of future climate conditions, different approaches to forest management will be needed to adapt to new and changing conditions (Swanston and Janowiak, 2009). Whether the forests change as a result of climate change, they will be stressed and need to adapt. Adaptation actions can moderate the vulnerability of forests to climate change and position forests to become healthier, resistant, and resilient (Spittlehouse and Stewart, 2003). There is not one right way to adapt. This will be highly dependent on landowner objectives and location.

STRATEGY

28. Seek to understand the probability and severity of future climate change impacts.

Climate change has the possibility of increasing forest productivity (e.g. longer growing seasons, increased precipitation, and CO2 fertilization) but also stressing forests (e.g. acclimation to CO2 fertilization, extreme weather events, longer growing seasons, species range shifts, expanded pest and disease ranges, decreased snow pack and early thaw). Gaining knowledge of the probability and severity of these localized changes is critical to make appropriate management decisions. As this knowledge grows, it is important to communicate this to the public.

STRATEGY

29. Attempt to improve the defenses of the forest and increase the resilience of natural systems to future climate change impacts

Just as our current best defense against climate issues such as drought, or insect infestations is to improve the resilience of the forest against effects of change (Millar et

al. 2007, 2008), so to should our future strategies. Rare or threatened forest communities may need special attention or extra management to insure they can accommodate change.

STRATEGY
30. Intentionally accommodate change and enable forest ecosystems to adaptively respond.

A more aggressive approach to climate change is to intentionally accommodate change. This may require assisting seed migration to more northern locations or re-evaluating site management goals based on future climate predictions.

Adaptation management tools can be an important tool in making management decisions with incomplete information and high levels of uncertainty under climate change. The flexibility of adaptive management allows landowners and managers to continually acquire new information for decision-making without indefinitely postponing needed actions (Association of Fish & Wildlife Agencies, 2009).

STRATEGY
31. Realign forest ecosystems to new conditions caused by climate change.

For severely changed or disturbed systems, it may be necessary to allow for readjustment to new conditions instead of returning it to its previous condition. For example, a raised water table in a lowland forest may render it too wet to support tree cover, whereas a lowered water table may result in succession to a different forest ecosystem.

GOAL

MITIGATION: Forests will increasingly be used as a tool to mitigate climate change.

DESCRIPTION OF GOAL
US forests annually sequester the equivalent of 10% of US carbon dioxide emissions from burning fossil fuels (Swanston, 2009). Carbon and methane stored in soils, forests, wetlands and solid wood products have the potential to rival large scale industrial emissions if released through large scale fire, disease or land use conversion events. Promoting the use of solid wood products from harvesting, and planning for rapid regeneration following disturbances will conserve forest carbon pools.

STRATEGY
32. Manage forest ecosystems (rural and urban) to sequester additional carbon while retaining the abundance of other benefits forest provide.

Increasing stand stocking and productivity has the potential to add to the 8 million tons of net CO2 reduction benefits provided by Wisconsin forests. Not all forests sequester

the same amount of carbon. Managing certain areas for greater carbon may not maximize production of durable wood products at the same time – tradeoffs that should be evaluated. Forest landowners have opportunities to earn money for sequestering carbon but access to these markets is challenging to navigate and returns are not guaranteed.

STRATEGY

33. Reduce green house gas emissions by substituting wood for products that have a more energy intensive carbon footprint (i.e. non-wood building materials such as steel and concrete).

There is a growing number of life cycle analyses for wood products that show wood has a smaller carbon footprint than alternative products. Much of the public is unaware of the benefits of using forest products over other sources. While it is important to recognize these benefits, there are opportunities to minimize carbon output in forest operations and product development.

STRATEGY

34. Utilize best management practices to minimize emissions from forest-based activities and production.

Forest management often requires the use of fossil fuels for harvesting, transport and timber stand improvements. The fossil fuels used for these activities decreases the beneficial reduction of emissions that good forest management provides. Reducing these inputs to forest management reduces fossil fuel emissions and increases the net benefit of wood based biomass fuel. Energy minded choices can be made when building processing and manufacturing facilities that considers distance to supply and markets and the energy efficiency of the facility. Policy decisions can be made to influence carbon lifecycle emissions such as reducing forest land conversion and suppressing wildfires.

STRATEGY

35. Increase the awareness of carbon markets by private forest landowners and facilitate their participation in established carbon markets.

Carbon credit programs have the potential to provide benefits to Wisconsin forestland owners (new income stream) and all Wisconsin citizens (clean water and air, etc.). The sequestration of carbon is one of the many ecosystem services which forests have the capacity to provide to the public. However, the forests' ability to provide ecosystem services is influenced by decisions landowners make regarding their land's management and use. Providing new streams of income for services heretofore provided at no cost to the public such as those derived from carbon can, therefore, influence what occurs to and in our forests. It will help landowners keep their forests in forests as well as increase the percentage of forests that are managed sustainably over the long-term maximizing the benefits they provide. Many carbon markets require landowners have a third-party certification. In Wisconsin it is crucial that private

landowners are able to participate in carbon markets because individuals and families hold the largest portion (57%) of forestlands.

STRATEGY

36. Ensure that climate policy reflects the potential positive contributions that forest conservation and sustainable management can make to achieving substantial net reductions in greenhouse gas emissions.

At this time there is not a federal, regional or state carbon offset policy or mandate. However, several of the emerging greenhouse gas reduction programs in the United States have developed or will be developing protocols under which forest carbon credits can be counted as an offset to industrial carbon dioxide emissions. This policy development stage defines how the various forms of carbon sequestered in a forest can become the legal equivalent of a greenhouse gas emissions reduction, and it is the critical step in establishing whether and how forest managers can demonstrate legal equivalency. It is imperative that forestry interests participate in the process of any forestry protocol or carbon offset policy development to establish rules that are scientifically sound and feasible for forest managers.

Theme D: Forests as Economic Contributors

GOAL

FOREST VALUE: Forest ecosystem services have economic values that are realized and managed to maximize the benefits to society and improve quality of life. (Ecosystem services are functions performed by natural ecosystems that benefit human society, such as hydrological services, protection of the soil, biomass, carbon sequestration, habitat for wild species, and recreation opportunities.)

DESCRIPTION OF GOAL

Ecological services provide value to people in both an intrinsic and economic context. While realizing the economic values can be the basis of more tangible goals, there are also opportunities to develop public understanding of the value of investing in forests, especially if based upon the values that the public already holds.

There are emerging systems being used to value ecosystem services from a traditional forestry perspective as well as for urban and community forests.

Building public understanding and influencing public actions can be more effective if we build upon language and terminology that the public understands. At the most basic level, we may need to build an understanding that the benefits do exist and the consequences if they are lost. Forested wetlands are a good example of how a forest provides a breadth of ecosystem services: water purification and recreation and tourism to visit these areas.

STRATEGY

37. Invest in forest conservation to contribute to a strong economy and provide clean water and air, wildlife, and other ecosystem services.

Forest conservation means that forests are kept as forests and continue to provide an array of benefits – ecological, economic and social. For the forests that drive the traditional forest economy, the need and opportunity exists to describe the additional benefits of those ecosystems in terms that the public already believes valuable, particularly the value of providing clean water. The level of benefits can be tied to level of investment.

Forest conservation includes maintaining and sustainably managing working forests, as well as protecting passively managed forests. Long-term sustainable forest management conserves forests and the benefits they provide.

STRATEGY

38. Encourage communities to invest in their urban forest canopy as part of a long-term plan for a community's quality of life.

Connecting community investments in planning, planting, and tree maintenance to the benefits derived from the community forest can show the value in real dollar terms of energy savings, storm water management, public safety, etc. Informing urban residents, public officials, businesses and organizations of the value and services urban trees provide may increase the number of people who are committed to insuring that urban forests are managed.

Working with a multitude of people and resources can increase the availability of people, equipment and finances needed to plan and manage local urban trees. The development of partnerships can help communities leverage investments that can improve the entire urban forest canopy.

Urban forests, like rural forests, have research needs to keep trees healthy and actively growing. Urban forests have many stressors that are not commonly found in rural forests, so research that focuses on urban areas is essential.

STRATEGY

39. Build public understanding about the benefits provided from investing in forest conservation.

Building public interest and understanding about the benefits from forests can help people value the need to invest in both rural and urban forest management. Long-term investments in forestry education as well as focused efforts to build upon values that the public already holds are necessary.

Forest conservation includes maintaining and sustainably managing working forests, as well as protecting passively managed forests. Long-term sustainable forest management conserves forests and the benefits they provide.

GOAL

MARKETS: Wisconsin is a hub of green forest product markets, producing a diversity of value added solid wood, fiber, energy and ecosystem services.

DESCRIPTION OF GOAL

Wisconsin needs to maintain existing forest products businesses while actively working to attract new businesses and markets. Existing companies need support for constant improvement of business practices, adoption of new technology, and expansion into international markets.

Future success will depend on maintaining the economic viability of 'green' markets and developing new markets that can be integrated with existing markets to use an expanded sustainable wood supply rather than just competing for existing supplies. The large volume of 3rd party certified forests is an opportunity to differentiate forest products grown in the Great Lakes states.

New markets for ecosystem services have a high degree of uncertainty because policies and frameworks for markets are still under development.

STRATEGY

40. Support existing forest products companies so that they are competitive domestically and internationally.

Businesses need comprehensive business services and support for international market development and process improvements. These can require long-term investments. Industries benefit from current and reliable data that helps companies compete in rapidly changing markets.

STRATEGY

41. Encourage the development of new markets and companies that leverage sustainable (e.g. third-party certified) supply and ecosystem services in emerging markets.

There is a broad range of opportunities and challenges for new markets in biomass, energy, ecosystem services, composites, chemical feedstocks, etc. The development of partnerships, associations, coordinated research efforts, and business models can help companies lessen the risk of entry into new markets. There are roles and opportunities for the full breadth of stakeholders, from landowners and loggers to foresters and industry and rural to urban.

Coordinating policy and strategy development can help develop and maintain a positive business climate for forest products companies. Incentives for new cooperative models, urban wood utilization, ecosystem services, and combined heat and power development, etc. are needed to support the development of new markets.

GOAL

CAPACITY: Forest management/protection providers, business, and other organizations in the forestry community have increased capacity to protect and sustainably manage forests.

DESCRIPTION OF GOAL

Even in the current depressed business climate, high state government vacancy rates, increased workload due to new markets, threats and opportunities, and increased demand from landowners for information and services, there are many ways to increase capacity of service providers, businesses, and other organizations. The increase in capacity could come from increasing the quality of work through certification and training, increasing the ability of service providers to be successful business owners, and new students and professionals entering the forestry profession.

Public and private agencies, organizations and individuals are likely to be enthusiastic in meeting forest resource needs if they have the funding, knowledge and resources

available to do their job. With adequate support more agencies and business will be successful, thus increasing the capacity for existing personnel to do more or for businesses to increase their size and/or services.

STRATEGY

42. Develop collaborations and partnerships to engage all forestry stakeholders

It is rare for one organization or agency to have all of the resources needed to meet the needs of its customers. Partnerships between all types of organizations are needed to meet the needs of society. This strategy recognizes existing partnerships in rural and urban settings and hopes to strengthen them, as well as establish new partnerships. If successful, services can be provided by an agency or organization with minimal overlap or duplication. The actions for this strategy do not cover all current partnerships that exist. It highlights those that are considered critical at this time.

STRATEGY

43. Increase the number of students who enter forestry related studies or a forestry profession in order to recruit and hire high quality and diverse individuals.

The potential workforce for forestry related jobs is decreasing except for in the urban forestry related fields. The workforce reduction includes field foresters, loggers, tree planters, timber stand improvement contractors, and other resource management specialists. This strategy looks at the long range view of increasing the number of service providers by focusing on attracting existing natural resource professionals and students into forestry related careers, thus insuring that a pool of diverse, high quality candidates is available to fill vacancies in both the public and private sectors. A focus would be on ensuring students and professionals have field forestry skills.

STRATEGY

44. Increase the number of private businesses (loggers, cooperating forester firms, tree planters, arborists, timber stand improvement contractors, etc.) that provide high quality goods and services to effectively and efficiently reach more forest landowners and sustainably manage more forest.

Providing high quality goods and services is necessary for businesses to succeed. Successful businesses increase the capacity of the forestry community to service the needs of the public and private individuals. Successful businesses are able to hire more people, complete high quality work in less time, purchase tools and equipment easier, and ultimately service a large clientele.

This strategy focuses on increasing the quality of work through certification and training and increasing the ability of service providers to manage a business. New service providers need opportunities to learn good business practices.

GOAL

RECREATION: Diverse recreational opportunities are available and have minimal impacts on forest ecosystems.

DESCRIPTION OF GOAL

Wisconsin's population grew 4.72% from 2000 to 2008 and outdoor recreation participation is expected to follow suit. The baby boom population is reaching retirement age and will increase demand for outdoor recreation facilities for the growing aged population. In addition, recreation participation tends to cycle through peaks and valleys which will account for upward or downward demands for a particular activity (SCORP, 2006). Preference of recreation activities change and each has different effects on the forest ecosystem. The overall recommendation for this goal is to first plan for activities statewide considering where the most sustainable location for specific activities could be and then discuss where to provide for those activities.

STRATEGY

45. Plan for a range of recreation opportunities at a statewide level suitable to the capability of the land and with minimal long term impacts.

Supporting and enabling communities to develop recreational facilities will increase the local economic diversity and opportunities. Communities are able to develop recreational facilities specific to their needs, keeping recreational dollars close to home.

Public lands and private enterprises have different experiences to offer. Each has a niche and expertise that can provide a wide spectrum of opportunities. Urban forests and areas around population centers are especially important to consider for providing recreation options because more people are likely to take more frequent, shorter trips for recreational activities if facilities are located within a one hour drive from their home

The diverse recreational activities now and in the future will likely make user conflicts intense, especially if the perception is that recreational uses are not compatible. Fostering discussion between divergent recreational user groups will increase the likelihood that compromises can be made to adequately address the needs of most recreational users.

Not all recreation is appropriate in every forest ecosystem. Trails placed in inappropriate areas can harm the forest, for example eroding soil and causing water quality issues or spreading invasive species. Sites must be evaluated for activities that can be sustained environmentally and economically.

STRATEGY

46. Provide sustainable recreation opportunities on forested public lands.

Public lands are held in perpetuity and provide many recreational opportunities for the public. Lands should continue to be purchased or leased to fulfill land management and

recreational needs. Master plans on state owned properties provide opportunities for the public to share views on appropriate activities and how they think recreation should be managed on the property. Not all recreation is appropriate in every forest ecosystem. Trails placed in inappropriate areas can harm the forest, for example eroding soil and causing water quality issues or spreading invasive species. Sites must be evaluated for activities that can be sustained environmentally and economically.

STRATEGY

47. Increase acreage of lands open to public recreation in areas where public land is not abundant.

As the population grows and communities expand, land is an important resource to provide recreation opportunities. Significant sectors of the state economy are dependent on growing recreation markets, and readily available lands are essential for that growth. Of the 5,782,353 total acres of public lands available for recreation, 45% of it is owned by counties, 31% by the federal government, and 24% by the state. City, town, and village parks account for 1%. There are parts of Wisconsin that do not have a lot of public land and it is difficult for citizens to access outdoor recreation areas. There has been an increase in the amount of people closing their MFL acres to public access. Recreation easements are an option on private lands for activities ranging from hiking to hunting to both motorized and non-motorized trails. Snowmobile clubs are a good example of a statewide group working to increase the amount of private land open to snowmobile routes.

Theme E: Protection of Life and Property in Forested Areas

GOAL

FIRE, SAFETY AND LAW ENFORCEMENT: Human life, property, and forest resources are at reduced risk of harm or loss.

STRATEGY

48. Improve safety for the forest-based workforce and forest users.

Many occupations in the field of forestry and law enforcement can be dangerous and require appropriate training. Fires not only put the fire fighter in dangerous situations but people and their homes. Visitors to public forests must have a safe experience. Urban forests can have hazard trees that are dangerous for the public and the resources are needed to monitor these trees. Although not all accidents can be prevented, education, training, and actions to mitigate hazards make visiting and working in a forest setting safer.

STRATEGY

49. Provide for early detection and rapid initial attack for all forest fires within the state.

Detecting, managing and suppressing all forest fires within the state is possible by using an interagency approach in a coordinated, efficient and effective manner. Because fighting wildfire is resource intensive, it is essential that the greatest strengths and most optimum roles of all stakeholders/protection agencies be used to maximize their capabilities.

The most cost effective approach to support general suppression capabilities in areas of lower wildland fire risk and exposure is to enhance the capacity of agencies such as local fire departments. The areas with a high risk of large, destructive wildland fires, from an ecological, social and/or historical perspective, should have the greatest wildland fire-specific capabilities. The Division of Forestry has highly specialized wildland fire equipment and is uniquely qualified to meet important aspects of wildland fire needs.

One of the key data gaps preventing effective appraisal of the wildland fire situation across the state involves the lack of accurate, reliable wildland fire data occurrence in the part of Wisconsin outside of the Division of Forestry's organized protection, commonly referred to as the cooperative area.

STRATEGY

50. Reduce wildland fire ignitions and minimize loss from fire.

Educating the public on wildland fire risks and applying fire prevention and mitigation measures reduces wildland fire ignitions and minimizes the loss from fire. The broad objective of this strategy is to grow greater understanding of the problems surrounding

wildland fire, including its causes, with the public, the group that is responsible for most of the preventable wildland fires in Wisconsin. Enhancing the public's understanding of the causes of wildland fires, the conditions that enhance the likelihood of their starting and the extent of the damage that can result, will contribute to a reduction in activities by the public that historically result in damaging wildland fires.

The Wildland Urban Interface (WUI) presents greater exposure of life and property to a wildland fire. Educating property owners on ways to lessen WUI associated risks will decrease the danger, both to the public and to suppression personnel. Partnerships with the towns and counties can address the dangers of WUI situations before they occur. Zoning can be used to influence at the town and county level to direct the development of platted communities toward less WUI oriented situations and within, or at least nearer to already established incorporated areas. The development of Community Wildfire Protection Plans deliberately involves all the most important stakeholders in the community and has the capacity to generate enthusiasm and momentum to comprehensively address dangers in a coordinated fashion, and in priority order.

STRATEGY

51. Protect the public and natural resource from unlawful practices.

Public land managers are required to provide safe visits to public forests. Higher profile presence of and actions by fire suppression/law enforcement personnel stimulates communication with citizens and citizens thinking about safety and compliance with laws. Educating the public on practices they can take to prevent illegal harvesting, like harvesting contracts, is a proactive step. Specialized law enforcement personnel are needed to investigate and enforce timber theft cases.

Possible Actions to Implement Strategies

The “Strategy” is arranged by themes, goals and strategies. The strategies are fairly broad and general. The following lists of actions are provided to suggest ways the strategies could be implemented. The actions represent an array of possibilities, not a commitment by any individual or group. Neither do they purport to represent the only ways that might be used to implement a strategy.

We asked our partners and the public, as part of the public comment process, to suggest new actions or edits to the existing ones. Additions are reflected in the lists below. Partners were also asked to select what they thought were the most important actions for each strategy. We described some of these comments in the Public comment section but will also post the results of the surveys on the Division of Forestry webpage.

It is important to remember that these actions will not automatically be implemented. Organizations must initiate these actions themselves or in partnership with others. Many of the actions require other public processes before the action could take place (e.g., zoning changes at the local level), should a decision be made to pursue such an action.

Theme A: Fragmentation & Parcelization

FOREST LAND

- Increase cost-share for tree planting and seeding in areas identified as priority for enhancing and protecting larger tracts of forested land in cases where natural regeneration methods have been found to be insufficient.
- Coordinate landscape-scale planting projects in targeted areas.
- Consider regulations, incentives and easements to discourage the deforestation of wooded wetlands.
- Provide tax credits for landowners who conduct forest reclamation. (Reclamation refers to changing land in uses such as abandoned brownfields, mines or borrow pits and restoring them to forests.)
- Encourage the afforestation of abandoned and marginal agricultural lands to expand the benefits from forests and enhance, protect, and connect larger tracts of forested land.
- Utilize comprehensive planning and zoning restrictions to prevent conversion of forestland.
- Monitor and respond to effects of agriculture use assessment on conversion of high value forests to agriculture.
- Increase the number of working forest easements and land trusts.

PARCEL SIZE

- Identify and seek to acquire easements or fee title on forests that provide the highest conservation and recreation benefits and are most at risk of parcelization.
- Link financial incentive programs to the quality of conservation and recreation benefits provided.

- Provide investment tax credits and property tax credits to landowners who do not convert their forest to other land uses.
- Create a taxing structure that is a disincentive to subdivision.
- Draft new legislation that addresses fragmentation and parcelization similar to the Working Lands Initiative for agriculture.
- Increase enrollment in sustainable forest management incentive programs.
- Work with regional planning commissions and local land use and zoning offices to enact policies that discourage parcelization.
- Develop educational and outreach materials, tools, and resources to understand the ecological and economic benefits of maintaining larger ownership blocks.
- Develop educational and outreach materials, tools, and resources on succession planning (e.g. Ties to the Land).
- Increase enrollment in sustainable forest management incentive programs (e.g., tax credits, cost-share).
- Provide higher incentive (bonus) payments for larger ownership blocks enrolled in a sustainable forest management program.
- Increase incentives for longer incentive program plan lengths.
- Establish disincentives to parcelization through a fee on ownership subdivisions.
- Identify and seek to acquire easements (including development rights) or fee title on forests that provide the highest conservation and recreation benefits and are most at risk of parcelization.
- Create tax categories for forested land that adequately reflect their cost to the local government(s) providing services.
- Research the true impact of tax burden on the decision of landowners to sell/develop forest land.

LARGE BLOCKS of FORESTS

- Provide education and outreach to landowners and the public on the benefits of large blocks of forests.
- Identify remote forests with minimal adjacent development and infrastructure.
- Increase the amount of reserved forest that is committed to be passively managed.
- Continue to identify opportunities to purchase easements through the Forest Legacy program and pursue existing Forest Legacy projects.
- Public agencies continue to acquire land within planned public property boundaries.
- Limit the road density in large blocks of forests in the north.
- Provide tax credits or structure that favors large block forest landowners for the continual ownership and proper management of the resource.
- Create a grant or loan program for large land holding industrial companies in exchange for a long-term commitment of ownership and proper management.
- Increase local aid payments for those units of government that have completed landscape level planning and implemented conservation strategies.
- Work with local units of government to influence zoning ordinances that favor conservation of large blocks of forestland.

LANDSCAPE SCALE MANAGEMENT

- Establish criteria that identify where blocks of forest in fragmented ownership could feasibly be managed to achieve broader landscape-scale goals, particularly related to ecosystem services and wildfire.
- Provide incentives for landowners to collectively develop and implement management plans (e.g., provide bonus payments or reduce costs to landowners that manage their forest land as a larger block).
- Educate landowners on the benefits of landscape scale management and how this can be done in a manner that respects landowner rights.
- Encourage that plans for private and public lands incorporate 1) the management plans of adjacent and nearby public lands and lands enrolled in conservation programs and 2) appropriate ecological opportunities as described in the ecosystem management handbook and the Wildlife Action Plan.
- Provide incentives to writers of property management plans to coordinate larger clusters of landowners into a unified management approach.
- Provide incentives to private contracting foresters, loggers and others involved in harvests to coordinate management actions with nearby landowners and incorporate broader forest management goals into harvest actions.

SUSTAINABLY MANAGED FOREST

- Adjust forest land property taxes to accurately reflect the price of public services (e.g., roads, water, utilities) required for forests.
- Evaluate forest tax incentive programs for inefficiencies, disincentives, effectiveness, and inclusion of other management opportunities.
- Implement procedures to quickly and easily re-enroll MFL properties when expiring.
- Educate landowners on how to manage based on accepted forest management practices.
- Seek opportunities that provide premium pricing on products harvested from properties practicing sustainable forestry.
- Develop programs with the forest certification systems that would target forest landowners not interested in joining other programs.
- Develop incentive programs that benefit landowners for managing for ecosystem services.
- Increase third party certification of public forest lands.
- Invest in the management of public lands to produce the desired values and goals the public has outlined in property plans.

Theme B: Forest Composition & Structure

IMPROVING FORESTED COMMUNITIES

- Locate under represented forest communities by ecological landscape and develop a process to define the viable level of under represented communities.
- Provide incentives to landowners who mange under represented forest communities in appropriate areas identified in the Wildlife Action Plan's Conservation Opportunity Areas.

- Where approaches are lacking to regenerate less common forest types (e.g. lowland white cedar), encourage landowners to not conduct practices that may not maintain the species/forest type on the landscape.
- Promote under represented forest communities on public lands.
- At the ecological landscape scale, identify, develop guidelines, and manage appropriate blend of early, mid, and late successional stages.
- Develop Natural Range of Variation models for Wisconsin forest types.
- Monitor the results of increased forest structure.
- Encourage landowners and forest managers to include management for coarse woody debris, large trees, snags / cavity trees, and, where appropriate, the restoration and protection of ephemeral ponds.
- Encourage landowners and forest managers to follow appropriate regeneration techniques for timber types that require un-even aged management.
- Develop science based guidance on forest structural components.
- Encourage a multi-agency and landowner prescribed burn team that promotes burning where appropriate across ownerships.
- Encourage the training and participation of local fire departments in prescribed burning.
- Provide incentives to landowners that allow disturbance for regeneration and forest community maintenance in appropriate areas identified in the Wildlife Action Plan's Conservation Opportunity Areas.

LANDSCAPE SCALE PLANNING

- Develop forest management guidelines at the landscape level that incorporate the Wildlife Action Plan and Ecological Landscapes Handbook (and others as appropriate).
- Develop incentives for forest owners to manage based on ecological landscape goals.
- Communicate ecological landscape goals to audiences ranging from the public to professional foresters.
- Establish a process that facilitates conversation and development of regional forest management guidelines between regional forest stakeholders

DEER

- Conduct studies that determine the impacts of deer herbivory at different population levels.
- Develop readily measurable indices for determining the impact of deer in forests by utilizing existing inventory systems (e.g. FIA, CFI, etc.)
- Invest in economic analysis expertise that can study the economic impacts of deer related to forests.
- Communicate applicable science to stakeholder groups regarding the impact of deer herbivory on Wisconsin forests through laymen publications workshops, etc.
- Identify the forest based interest groups that should be included in wider deer density discussions.

- Institute a multi-stakeholder, forestry advisory group that advises the Natural Resource Board, legislature and various publics focused on understanding and providing a forestry perspective on deer impacts to the forest.
- Allow for permits to shoot deer that have caused forest damage similar to permits for damage to agricultural crops.
- Identify applied forest management alternatives at the stand level in light of high deer populations (fencing, deer repellents, etc.).
- Decrease practices that enhance deer habitat where necessary and appropriate (e.g., edge, food plots, baiting, feeding).
- Develop practices that will tolerate or prevent damage from deer.
- Improve incentives for landowners to use deer abatement measures (e.g., fencing).

URBAN

- Establish a statewide continuous urban forest inventory and assessment designed to characterize Wisconsin's urban forests (e.g. composition, structure, cover type, habitat, threatened species, invasives), quantify ecological, economic and social benefits, monitor trends and evaluate success of management strategies.
- Evaluate urban forestry inventory data to identify and prioritize management strategies to address priority outcomes.
- Establish inventory and assessment tools for local municipalities that direct and prioritize urban tree management decisions.
- Plant a wide diversity of appropriate tree species in urban areas that will increase the social, ecological, and economic benefits from urban forests by creating jobs through "green infrastructure"; promoting energy conservation; preventing storm water run-off; mitigating the effects of air pollution; sequestering carbon; improving habitat for resident and migrant wildlife; and improving the quality of life for human inhabitants.
- Businesses (nurseries and retail) and agencies communicate on species composition and availability.
- Plant abandoned urban brownfields and establish corridors between urban tracts.
- Develop a wide variety of age and size class structures in the urban forest.
- Protect and care for the new and existing public and private tree canopy to maintain and expand benefits as trees grow over time.
- Develop guidelines and support tools to help public and private land owner's plant and maintain their urban tree canopy.
- Approve tree planting by municipalities as a credit towards NR151 in reducing stormwater runoff.
- Develop a template for tree preservation during road construction projects in urban areas.
- Include tree planting as a part of all state road projects in urban areas.

INVASIVES

- Work in public/private partnerships to conduct species risk assessments and identify priority invasive species for regulatory action consistent with NR40. (Current examples include Emerald Ash Borer, Gypsy Moth, Beech Bark Disease)
- Enforcement of laws related to the transport and introduction of invasive species

- Partner inside and outside the state to educate and build awareness of invasive species and their threat at all levels and jurisdictions.
- Develop a statewide data base and inventory of the locations of invasive species in Wisconsin.
- Based on risk assessment, implement Best Management Practices for preventing infestation with prohibited species and protecting priority areas.
- Reduce susceptibility to invasive species in native and urban forests by increasing species diversity and managing to reduce other stressors to improve resilience against infestation.
- Establish guidelines and criteria for responding to new introductions of invasive species and applying the best and most current information toward preventing their spread.
- Working with partners, develop rapid response incident teams that cross jurisdictional lines and respond quickly to invasive species outbreaks. (Example: Partner with Cooperative Weed Management Areas where they exist and encourage formation of CWMAs throughout the state)
- Develop citizen based monitoring opportunities.
- Complete the comprehensive inventory and mapping of all priority invasives in forests.
- Conduct a comprehensive risk assessment based on existing information for the purpose of identifying priority species and areas of focus.
- Focus resources on priority species control, in priority areas, as identified through risk assessments.
- Develop and implement biological, cultural, chemical and physical controls for priority species.
- Encourage development of a multi-agency and landowner invasive species control team that promotes the use of proven tools to control invasives.
- Promote utilization by land managers of the BMPs for Invasive Species.
- Monitor long-term invasive species population trends and effectiveness treatments. Make this information readily available to all stakeholders.
- Implement forest management guidelines that minimize the impact of invasives to the ecological landscape. Management activities should focus on reducing the forest's susceptibility to mortality.
- Learn from past success and failure: Compile, highlight and share information about existing restoration and rehabilitation successes about invasive species.
- Encourage and develop sources for native seed (based on ecological zone) for use in restoration projects.
- Provide technical and/or financial assistance to landowners who work to control and manage invasive species on their property and who rehabilitate and restore their forests.
- Tie incentive programs and cost-share to areas with the greatest threat or environmentally important areas such as Conservation Opportunity Areas identified in the Wildlife Action Plan.

Theme C: Energy & Climate Change

BIOMASS

- Develop a Forest BioEconomy Strategic Map that provides clarity and direction to ensure timely and sound development of the forest biomass resource by, 1) Providing market participants with sound information on the size and nature of the forest biomass supply, 2) Providing policy makers with recommendations to expand the supply of biomass in ways that are complimentary to the policy framework, 3) Evaluating bioenergy market opportunities and their contribution to Wisconsin, 4) Providing policy makers with recommendations to advance priority bioenergy market opportunities. Identify regions where bioenergy industry is lacking, but resource is available.
- Increase amount of readily available biomass from non-industrial private forests, plantations, reforestation, under-utilized species, commercial thinning, urban/waste sources and hazardous mitigation projects in WUI areas
- Conduct life cycle analysis of wood products to determine value provided in terms of energy efficiency, environmental impacts and reduction in greenhouse gases.
- Determine the environmental impacts and benefits of various methods of biomass production (harvesting from naturally managed forests vs. plantations vs. short rotation woody crops).
- Provide guidelines for determining preferred species, locations and methods for growing woody biomass. Monitor effectiveness of existing guidelines for harvesting woody biomass.
- Analyze the various policies for agroforestry produced biomass and subsequent policy implications.

ADAPTATION

- Develop protocol for managing areas that can no longer sustain forest cover types due to climate change (e.g. tamarack swamp).
- Evaluate whether the various actions, policies or laws regarding managing forests for adaptation and mitigation, biomass, energy, etc conflict with one another.
- As knowledge is gained regarding the impacts of climate change, communicate with the public and educate them on adaptation measures.
- Promote system connectivity to provide migration (seed) routes or evaluate assisted species migration.
- Develop, utilize and track seed zones in producing and distributing forest seedlings.
- Encourage a re-evaluation of site management goals to accommodate species diversity and adaptation to a changing climate.
- Evaluate the resilience of high conservation value forests and their ability to persist in climate change.
- Promote the use of existing forest management best practices that improve the current vigor of forests.
- Increase diversity (age, species evenness) in urban and rural forests.
- Facilitate rapid regeneration for appropriate forest types following disturbance or harvest.

- Develop mapping tools and models and monitor sensitive sites for early climate change impacts.
- Model the impacts of adding canopy cover to urban areas on a 5% additive increase to 100% canopy cover to assess the mitigation value versus cost at various levels.
- Promote an understanding of characteristics that would impact forest vulnerability (e.g. genetics, seed transfer, site, and fire severity).
- Facilitate regional collaboration, sharing of information, and recommendations for adaptation strategies for climate change.
- Evaluate the costs of policy choices in terms of risk mitigation (i.e. cost of doing nothing and/or cost of being wrong).
- Integrate state actions with regional and national adaptation activities

MITIGATION

- Increase and maintain existing urban tree canopies (this is for both carbon sequestration and mitigating heating/cooling).
- Facilitate partnerships between public and private sectors that foster initiatives for increasing carbon sequestration while supporting other sustainable forest management goals.
- Connect landowners with incentive programs for forest management that include ecosystem services.
- Establish a balance of forest vigor and the production of durable wood products.
- Identify appropriate land areas where forest carbon sequestration can be easily increased (e.g. increase stocking, afforestation).
- Develop industry opportunities that produce long-lived, durable wood products, while minimizing the carbon output it takes to get raw products to mills.
- Develop incentive programs that encourage purchasing long-lived products (e.g. tax credits people get when they buy appliances (similar to energy star): "wood credits")
- Advocate for policy choices that minimize carbon lifecycle emissions.
- Reduce the carbon footprint of forest operations through actions such as biofuel alternatives to carbon based fuels and lubricants in equipment.
- Promote the reduced emissions benefits of low impact forest recreational activities.
- Reduce forest land conversions that result in deforestation.
- Aggressively suppress wildfires to reduce carbon emissions.
- Quantify stormwater mitigation from urban forests.
- Facilitate partnerships which enable non-industrial private forest owner’s participation in carbon markets.
- Increase non-industrial private forest owner’s accessibility to third party certification systems for sustainably managed lands in order to facilitate participating in carbon markets.
- Promote sustainable management including afforestation and planting as a way to participate in carbon markets or reduce GHG impact.
- Increase affordable assistance for non-industrial private forest owners to develop forest management plans at the level of detail needed to participate in carbon markets.
- Increase the capacity of professional foresters to assist landowners in learning about and entering into carbon markets.

- In order to make the most informed decisions, increase the understanding of forestry organizations and landowners on the items being debated for participation in carbon markets (e.g. additionality, permanence).
- Increase coordination between regional forestry interests (government, partners, and industry) in order to provide recommendations and comments on proposed federal legislation and policies from a regional perspective. (i.e. a unified regional voice)

Theme D: Forest as Economic Contributors

FOREST VALUE

- Develop stable funding for forestry K-12 education programs.
- Promote general awareness of forestry-related contributions in Wisconsin, including development of a center for forestry education.
- Target marketing to the public using ideas people have shown interest and understanding in (e.g. water quality).
- Connect forest investments to the broad range of benefits such as improved health, protection of water quality, sustainable timber products, and energy conservation.
- Increase the number of municipalities that promote the benefits of their urban forestry programs.
- Develop urban forest plans for all communities.
- Implement tree maintenance programs in all communities.
- Encourage collaboration and participation among governments, businesses, nonprofit organizations, citizens, and communities to plant and manage local urban trees and the tree canopy.
- Develop regional and community foundations/funds to receive and disperse tree planting and management funds from individual and corporate philanthropists and leverage investments.
- Encourage communities and the state to change "generally accepted accounting principles" to allow designation of their trees as a capital asset.
- Exempt urban forestry expenditures from property tax levy limits.
- Provide funding for community to sustainably manage their urban forests.
- Encourage communities to create and enact aggressive tree preservation/protection.
- Develop data sets to characterize and estimate potential benefits/forest values (e.g. water and wildlife) by ecological landscape, watershed, or other common unit of measure.
- Develop regional long-term plans to provide for conservation (i.e. maintenance, development, and enhancement) of forest benefits.
- Support efforts to address forest conservation in local comprehensive planning and implementation process.
- Identify key source water protection opportunities that can be protected through forest conservation.
- Protect and sustainably manage forest lands to produce the benefits of ecosystem services (e.g., water conservation, carbon sequestration, improving air quality)

MARKETS

- Determine the feasibility of developing a cooperative biomass energy facility.
- Facilitate new partnerships between green building organizations and trade associations for both rural and urban wood.
- Build a forest products research community that can focus on opportunities for Wisconsin companies (e.g. biomass, composites, advanced fuels, chemical feedstock development, etc.)
- Develop Great Lakes regional branding to market sustainably produced products.
- Develop a state agency strategy (Dept of Administration, Dept of Commerce, Dept of Agriculture, Trade, and Consumer Protection, DNR) to support new forestry business development and a positive business climate.
- Establish incentive programs that encourage market development for energy and ecosystem services (e.g. carbon, water).
- Adopt policies that encourage communities and institutions to use sustainable wood supply for construction, heat, and power.
- Develop new markets for urban wood including potential uses in biomass and bioenergy.
- Fund participation for WI representatives in international trade missions.
- Develop annual reporting methods to provide reliable Timber Product Output data.
- Provide business development services for process improvement, business capital, technology improvements, and planning and permitting to streamline business expansion.
- Develop a unified forest products trade organization to represent the industry.
- Regularly produce data to characterize the potential supply of primary and secondary forest product raw materials.
- Produce sustainably managed forest products to add value to the marketplace.

CAPACITY

- Support and expand the role of the Wisconsin Urban Forestry Council in representing the voice of urban forests in the state.
- Create a Wisconsin Forestry Association that represents the forestry community and which helps set direction while fostering greater involvement and buy-in to collaboratively address items and issues facing both the resource and owners of that resource.
- Establish research priorities for forestry and mechanisms to implement those priorities.
- Establish clear roles and common goals between public agencies and non-governmental organizations.
- Educate the public and landowners on the benefits of professional resource managers (rural and urban).
- Continue providing fire departments with needed resources so that they remain a strong partner for wildfire initial attack.
- Develop partnerships to more efficiently deliver and expand public land management and outreach programs.
- Continue to provide training and tools for public agencies and partners to administer programs efficiently and effectively.

- Continue to improve consultation with Native American tribes to insure their rights on lands and protection and management of natural resources.
- Develop and implement a communication strategy to inform public officials, business, nonprofits, and residents of the value and services trees provide them.
- Increase the membership in forestry landowner organizations and forestry cooperatives.
- Develop forestry ambassador programs in local communities.
- Grow partnerships between organizations, agencies and landowners working to fight invasive species.
- Provide low interest education loans, grants, or scholarships for students who choose a career in a forestry-related profession.
- Provide information on careers at high schools, job fairs, etc. to encourage people to enter the forestry profession.
- Provide stable funding source for programs to encourage students to enter forest product manufacturing programs.
- Promote Wisconsin as being a great place to be a forester or other forestry-related professional.
- Work with educational institutions to promote forestry as a green career.
- Provide more opportunities for students to gain field forestry skills (e.g., through internships with professional foresters or field courses.
- Develop and deliver courses on business management for forestry related businesses.
- Develop programs to maintain and strengthen the professional logging industry.
- Provide incentives for foresters, arborists, loggers and other forestry-related professionals to attend high quality, certified training courses.
- Provide low interest business loans for forestry-related companies just starting up or expanding capacity, including hiring of new employees.
- Provide incentives for cooperating foresters to work on the large number of practices that public foresters are not able to take on due to workload and often are not implemented because of their low commercial value.
- Provide incentives to landowners to hire private consulting foresters.
- Increase the number of private foresters practicing sustainable forestry.

RECREATION

- Continue providing incentives for private landowners to open lands for public recreation.
- Continue to purchase or lease lands that provide recreational opportunities for the public.
- Complete and keep up to date master plans on public forests.
- Design, construct, and maintain trails and other recreational facilities using funding sources that adequately meet the financial and personnel needs of the facility.
- Research, develop, and share sustainable recreation design, construction, and maintenance practices.
- Increase capacity for friends groups to build, maintain, and manage facilities and trails.

- Determine the types of individual or group recreational activities and where additional facilities should be located that are easily accessible to the public, paying particular attention to those areas close to urban areas.
- Determine if recreational areas and activities can be best provided by public or private entities.
- Foster communication amongst recreational user groups to accommodate a variety of forest recreational activities and educate users on why not all activities should be provided everywhere.
- Provide educational materials and outreach to inform recreationists what impacts the resource and how to reduce it.
- Support communities in developing forest recreation opportunities to increase local economic diversity.

Theme E: Protection of Life, and Property in Forested Areas

FIRE, SAFETY, AND LAW ENFORCEMENT

- Gain compliance in forest recreation and protection laws by investigation, enforcing violations, and charging fire suppression costs.
- Manage urban hazard trees to reduce risk to citizens.
- Investigate illegal harvesting and other unlawful business practices to protect landowners and the forest resource.
- Develop materials that educate the public on forest based laws and administrative rules while also encouraging voluntary compliance.
- Educate K-12 students on the value and importance of urban forests, and laws governing these forests.
- Take a proactive approach to preventing illegal harvesting through contracts and other mechanisms.
- Landowners are educated about wildland fire and effectively mitigate the dangers of wildfire on their property.
- Encourage wildland urban interface-preventative local zoning ordinances that direct development away from fire prone areas.
- Encourage owners/builders to conduct hazard reduction before selling or constructing.
- Increase the number of Community Wildfire Protection Plans.
- Work with insurance industry to provide economic incentives for landowners to conduct fire protection practices.
- Encourage the inclusion of wildland urban interface objectives in incentive programs to make the area adjacent to the home Firewise (e.g. limited stocking, branches pruned, ground fuels cleared, etc.)
- Develop and conduct fire prevention messages and education programs targeted at the highest human caused fire problems.
- Develop and implement a methodology for analysis of fire occurrence.
- Develop voluntary fire best management practices to reduce risk and losses from fires.

- Develop burning permit systems that are easily available to people.
- Employ an efficient and effective fire preparedness process that meets fire readiness standards.
- Enhance statewide forest fire suppression coordination and capabilities by utilizing partnerships between state and federal agencies and local volunteer fire departments to provide wildland fire suppression assistance.
- Ensure that wildland fires and natural resource disasters are managed with the Incident Command System (ICS), through trained and qualified Incident Management Teams (IMT).
- Focus wildland-specific suppression capabilities in areas identified as having the greatest risk/exposure to wildland fire.
- Establish a mechanism to track and monitor wildland fire occurrence information statewide, to enable continuous assessment of changes in wildland fire risk/exposure.
- Make firefighter and public safety the number one priority in protecting life and property from wildland fire.
- Ensure safety training opportunities are available to all occupations within the forest workforce (e.g. fire, logging, industry, and arborists).
- Work with insurance companies to develop affordable insurance rates for forest workers.
- Ensure use of risk management processes prior to all activities to identify and assess hazards, establish controls, make decisions and evaluate success.
- Investigate, report, and mitigate accidents and fatalities. Develop lessons learned products to share situational awareness messages.
- Ensure visitors' safety and protection on rural lands with public access as well as urban areas such as community sidewalks, streets, trails, and parks.

Wisconsin's Forest Legacy Program (FLP)

This chapter, as part of the "Assessment" and "Strategy", is intended to meet the requirements of the Forest Legacy Program as outlined in the Forest Legacy Program Implementation Guidelines, June 30, 2003.

A. Description of Wisconsin's Forest Legacy Program
B. Implementation of Wisconsin's Forest Legacy Program
C. Eligibility Criteria for Wisconsin's Forest Legacy Areas
D. Recommended Forest Legacy Areas

A. Description of Wisconsin's Forest Legacy Program

The purpose of the Forest Legacy Program (FLP) is to identify and protect environmentally important forest areas that are threatened by conversion to non-forest uses. Lands are protected through the acquisition conservation easements or fee title. The FLP is a partnership between participating states and the USDA Forest Service. The FLP was established under the authority of the Cooperative Forestry Assistance Act (CFAA) of 1978, as amended in the 1990 Farm Bill (Food, Agriculture Improvement and Reform Act, [16 U.S.C.2103c et,seq.]).

The Forest Legacy Program in Wisconsin
A Forest Legacy Program Assessment of Need (AON), completed in November 2000, defined the Eligibility Criteria to be used in the identification of important forest areas to be proposed as a Forest Legacy Area (FLA); identified and delineated the boundaries of forest areas meeting the Eligibility Criteria for designation as an FLA; determined through analysis what defines "threatened" and "environmentally important forests"; and outlined the State's project evaluation and prioritization procedures. The 2000 Assessment of Need outlined four FLAs: The Northern Forest FLA, The West Central and Central Sands FLA, The Baraboo Hills FLA, and The Kettle Moraine FLA.

For the next ten years, Wisconsin's Forest Legacy Program applied for funding to complete land transactions within these Areas. The 2010 Forest Legacy Program Strategy includes the addition of the Upper Mississippi River Driftless Area FLA and an amendment to the Central Sands FLA boundary. All other components required in the 2000 AON have remained the same.

Goal of Wisconsin's Forest Legacy Program:
To minimize fragmentation and conversion of significant forested areas to non-forest uses, through the wise administration of conservation easements, that focus on the sustainable use of forest resources.

B. Implementation of Wisconsin's Forest Legacy Program

The Forest Legacy Program in Wisconsin will be implemented through a State Grant Option, by which the State of Wisconsin will hold title to all conservation easements or deeds for acquired tracts of forest land entered into this program. The Wisconsin Department of Natural Resources (DNR), Division of Forestry is the lead agency for this

program, with consultation by the Forest Stewardship Committee. The DNR may elect to delegate management and administration of individual tracts of land within the program to another division within the DNR. However, the DNR Division of Forestry is the only party that can enforce the terms of the conservation easement.

Means for Protection of Forest Legacy Area Tracts

The following standards will be applied when working in any of the FLAs:

- Acquisition of conservation easements is preferred to full-fee acquisition. However, in situations where a conservation easement is not appropriate or possible the Forest Stewardship Committee will consider recommending full-fee acquisition.
- Acquire development rights on all tracts. This would include the rights to subdivide, construct buildings, control utility right-of-way locations, and development of permanent access roads.
- Public access is preferred for most tracts, but will not be required, especially in cases where rare communities or species could be damaged by public access.
- All conservation easement tracts will have a current Stewardship Plan or a comprehensive, multi-source management plan. Plans will be approved by the State Forester or her/his designee.
- All fee title purchased tracts will have a management plan that ensures the interests of the Forest Legacy Program. This plan will be rolled into the property's Master plan when created or updated.
- Management plans will identify and protect the environmentally important values of the property.
- All properties will have a monitoring plan which identifies the monitoring agency, parameters to be measured and frequency of monitoring.
- Any timber or forest products harvesting will be subject to a harvesting plan approved by the State Forester or his designee. Timber rights retained by the landowner should be conditioned:
    - As outlined in management plan
    - In consultation with a professional forester
    - Approved by the department
    - Not harm environmental values of land
- Restrict the development of mining, drilling of mineral, sand, and gravel pits to sole use by the property owner for forestry uses, and to locations and sizes where such mining or drilling would not damage or impair water quality or other protected resource values. Upon landowner completion of operation, the land shall be reclaimed as much as practical to its original state. No commercial development will be allowed.
- No disposal of waste or hazardous material will be allowed on properties.
- Prohibit use of signs and billboards on properties, except to state the name and address of the property owner and/or provide Forest Legacy information and Forest Legacy Boundary information.
- Industrial, commercial and residential activities, except forestry and limited mining (as referenced above), are prohibited.

- Water quality best management practices (BMPs) will be applied to all practices initiated on the property.
- Property must be 75% forested, as defined in Chapter NR 46, Wisconsin Administrative Code.

Selecting Forest Legacy Projects
Forest Legacy Projects refer to the actual property(ies) being considered for a purchase. Only lands within a Forest Legacy Area may be considered for purchase. Thus, all proposed tracts within the project will have met the state and national eligibility criteria established for forest legacy areas. In addition, we anticipate that numerous tracts may be offered concurrently and there will be a need for Wisconsin to prioritize the projects that will be submitted to the Forest Service for consideration.

A request for projects will be released from the Department annually. Landowners and interested parties can access the current application on the Forest Legacy website: http://dnr.wi.gov/forestry/legacy/index.html or from the Division of Forestry. Landowners will be encouraged to work with their local forester or a resource professional familiar with their land to complete the application.

The Forest Stewardship Committee and the Forest Legacy Subcommittee will review and rank the applications based on established scoring criteria, which consider the elements listed below. The Forest Stewardship Committee may develop additional ranking information to better evaluate the projects. State scoring and ranking guidelines may vary from the national scoring guidelines.

All proposed projects must meet three or more of the following scoring criteria:

- It is part of a large tract or block of environmentally important forestland and could add to the continuity of the forest area.
- Tracts have the ability, or potential, to produce forest products.
- Tracts contribute to maintaining or improving the water quality of the area.
- Tracts provide a variety of natural resource benefits such as fish, wildlife, and recreation opportunities.
- Tracts contain significant attributes such as public access that are at risk of being closed or lost if not protected.
- Tracts that connect existing protected areas.
- Tracts contain rare forest communities.
- Tracts that are at risk of being converted to non-forest uses.
- Landowners are willing to donate all or some of the property or property rights to the program.

The Forest Stewardship Committee will rank the projects and recommend to the State Forester on the rank of the projects. Based on the Committee's recommendation the

State Forester will determine which projects to forward to the Forest Service for the national competition.

Public Involvement Process:
The "Assessment" and "Strategy" documents were reviewed in the public comment process as outlined in the 'Review & Comment Process' Appendix "Assessment" and the Public Comment chapter of the "Strategy".

Additional public comment was sought on the addition of the Upper Mississippi River Driftless Area FLA. County Land and Water Conservation and Zoning department staff received the draft FLP Strategy document in each county within the new FLA. The Forest Stewardship Committee also provided comments and input throughout the drafting of these documents, particularly at the October 14, 2009 meeting held in Wausau, WI and the March 25, 2010 meeting held in Steven's Point, WI.

C. Eligibility Criteria for Wisconsin's Forest Legacy Areas:

These eligibility criteria satisfy both the national criteria set forth in the FLP Implementation Guidelines as well as the additional criteria developed by Wisconsin to further refine the state's FLP requirements.

To be eligible as a Wisconsin Forest Legacy Area, an area's forest land must meet the following criteria:

1. Environmentally Important Forests
    - Environmentally important forest lands in Wisconsin are those areas having large forested blocks, including industrial forest blocks, that offer opportunities for the continuation of traditional forest uses such as timber harvesting and undeveloped recreation. Other contributing factors include protecting rare species of plants, animals and communities, sequestering carbon, conserving wildlife habitat, buffering streams and lakes, and conserving habitat diversity. These lands sustain productive high-quality forest ecosystems that can support commercial forest industries and other traditional economic enterprises or that contain forest resources deserving of protection. Such ecosystems and uses can best be sustained within large blocks of forest cover, which are reasonably intact. These large blocks often consist of multiple ownerships. The Forest Stewardship Committee is most concerned that these large blocks continue to remain as intact forest systems and are not converted to non-forest uses.

2. Contain two or more of the environmental values detailed below:
    - Opportunities for Traditional Forest Uses- large expanses of forested areas, rich in diversity of species, habitat and topography, capable of supporting high-quality timber, recreational opportunities, hunting, wildlife viewing, and gathering of forest products.
    - Fish and Wildlife Habitat- large expanses of forested areas rich in diversity that are capable of supporting diverse populations, including wide-ranging

mammals, forest interior bird species, fish and aquatic life, and a variety of forested habitats.

- Known Rare Species- large expanses of forested areas diverse in species habitats and topography that increase the chance of offering the habitat requirements for rare species or, forests that contain known occurrences of State or Federally listed threatened, endangered or rare species.
- Known Cultural Resources- large expanses of forested areas rich in diversity that encompass historical human migration routes such as rivers and old trails or forests that contain known cultural resources.
- Riparian Areas- large expanses of forested areas rich in diversity that offer the opportunity to buffer and protect inland lakes and streams.
- Scenic Values- large expanses of forested areas rich in visual diversity and topography that contain a corridor for viewing, such as a scenic byway, road, river, or lake.
- Public Recreational Opportunities- large expanses of forested areas offering the opportunity for land and water-based recreation which may encompass regionally important trails or areas for which a trail system is planned.

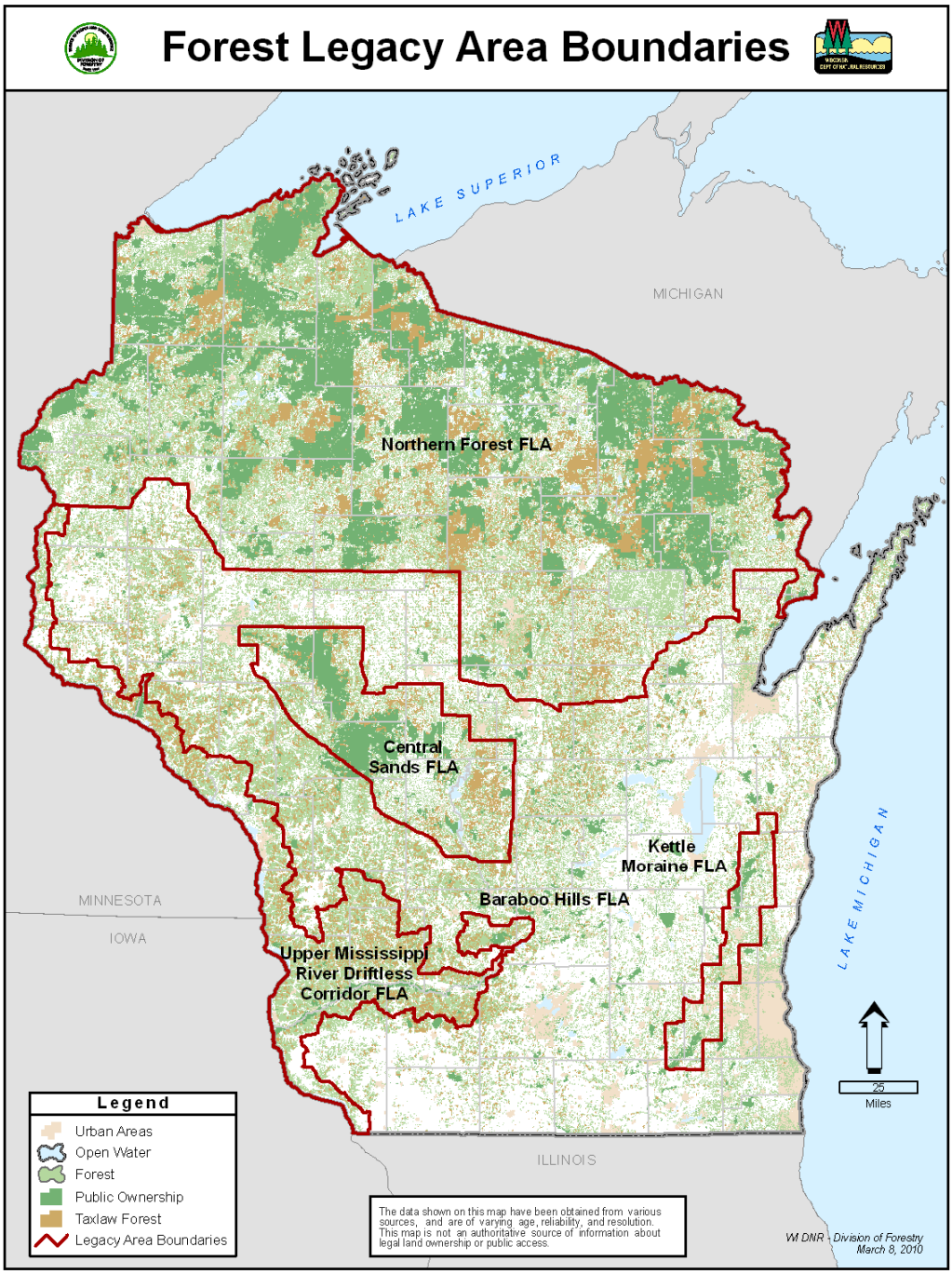
3. Be threatened by conversion to non-forest uses including:
   - Residential development . There is excessive development pressure in the forested portions of the state, particularly where the presence of lakes and streams increase the recreational potential of these lands and in parts of the state with easy access to metropolitan areas.
   - High property taxes. Forestlands are being assessed on the highest use value of that land rather than current use. High property taxes are forcing many private and industrial landowners to sell their land to developers.
   - Rapid turnover of property. An increased rate of ownership transfer results in owners who have no long-term connection to the property and who are less interested in sustainable forestry practices and principles.
   - Forest industry restructuring. Forest industries have been a major property owner in many areas of the state, particularly in the north. Companies are trending towards less land ownership and selling off their land holdings. This may further fragment forest ownership and forest cover.
   - Urban sprawl. Metropolitan areas are expanding into Wisconsin's forests, further fragmenting forest cover.
   - Deer population. When forest fragmentation occurs, the accompanying openings and landscapes, creates the ideal situation for deer populations to rise to abnormally high levels. This negatively impacts forest regeneration.

4. Large blocks of forest land are defined, for the purpose of the Forest Legacy Program, as those that are regionally or nationally significant or able to support diverse populations of wide-ranging mammals, forest interior bird species, and a diversity of communities and / or a variety of forest habitats.

5. Areas that meet the above criteria and are deemed threatened by conversion at a regional level.

D. Recommended Forest Legacy Areas

Five areas have been recommended to be targeted by the Forest Legacy Program in Wisconsin. Three of the FLAs were approved through the 2000 Assessment of Need (AON): The Northern Forest FLA, The Baraboo Hills FLA and The Kettle Moraine FLA. One of the FLAs from the 2000 AON has been amended: The Central Sands FLA. The Upper Mississippi River Driftless Area FLA is a new FLA being submitted for approval in 2010.



The four FLAs from the 2000 AON were identified with the assistance of the Forest Stewardship Committee, a public comment process, and analysis completed by the Department based on the program's eligibility criteria. The Upper Mississippi River Driftless Area FLA boundary was determined through consultation with regional DNR forestry staff, Upper Mississippi River Forest Partnership maps and reports, water

quality and fish/wildlife research, Driftless Area Initiative report, Wisconsin Land Legacy Report, and data from the Ecological Landscapes Handbook.

Public Benefits Derived from Wisconsin's FLAs

Protecting land, either through conservation easement or fee acquisition, within the FLAs using Forest Legacy funding will offer a variety of public benefits. Privately owned forests not only supply timber products, but also provide wildlife habitat, watershed protection, recreation and aesthetic values. Reducing fragmentation and parcelization of forests will protect valuable ecosystems and the biological, economic and social values they provide. The FLP will help maintain the forestland base, protect special forest resources and provide opportunities for traditional forest uses for future generations.

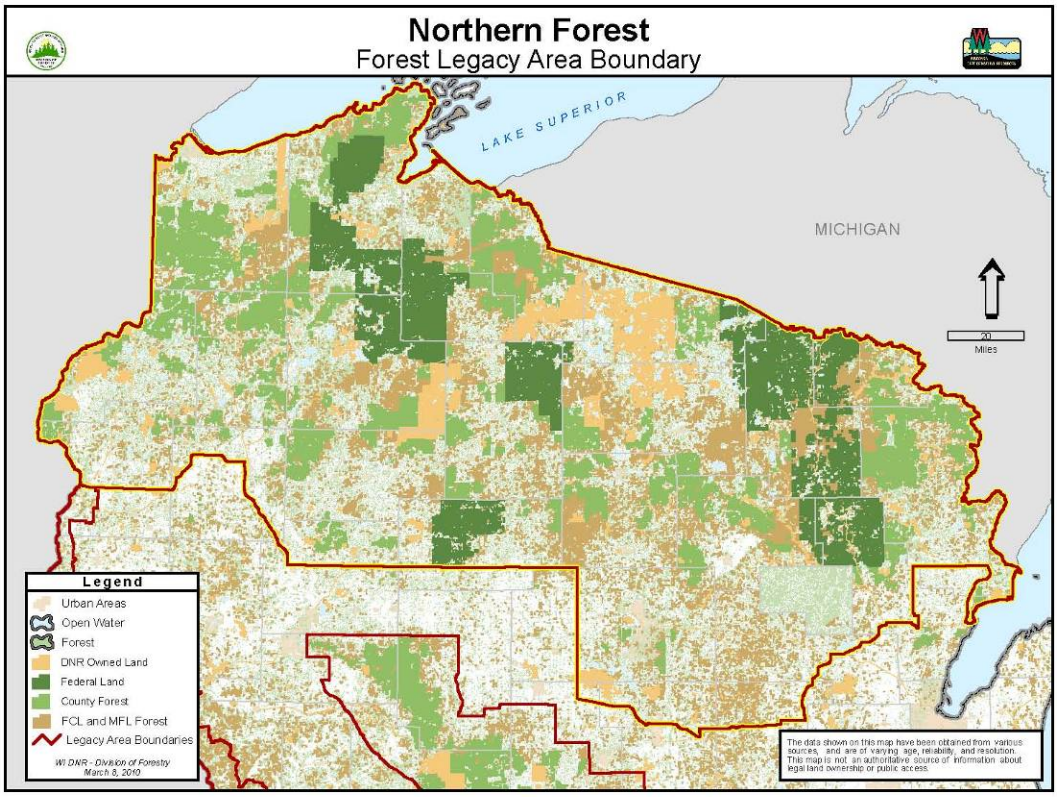
Land acquisition will focus on areas surrounding land that is already protected, either through conservation easement or through governmental or conservation organization ownership. Buffering protected lands from development will ensure surrounding lands are not converted to incompatible uses.

Besides the already stated benefits, Areas provide unique benefits due to their specific location's characteristics. It is likely that public access rights will be purchased for tracts located in either the Northern Forest FLA or the Central Sands FLA, providing for either continued or increased public recreation opportunities.

Projects within the Mississippi River Driftless Area FLA will provide protection and improvement in water quality for the watersheds and tributaries that drain into the Mississippi River.

Projects within the Baraboo Hills FLA and the Kettle Moraine FLA will protect greenspace within urban and developed areas and protect these lands from further subdivision.

1. Northern Forest Legacy Area.



All or parts of the following counties are within this FLA:
Polk, Burnett, Douglas, Bayfield, Ashland, Washburn, Barron, Rusk, Chippewa, Taylor, Sawyer, Iron, Price, Marathon, Wood, Portage, Waupaca, Lincoln, Oneida, Vilas , Langlade, Forest, Florence, Marinette, Oconto, and Menominee.

Goals of the Northern FLA:

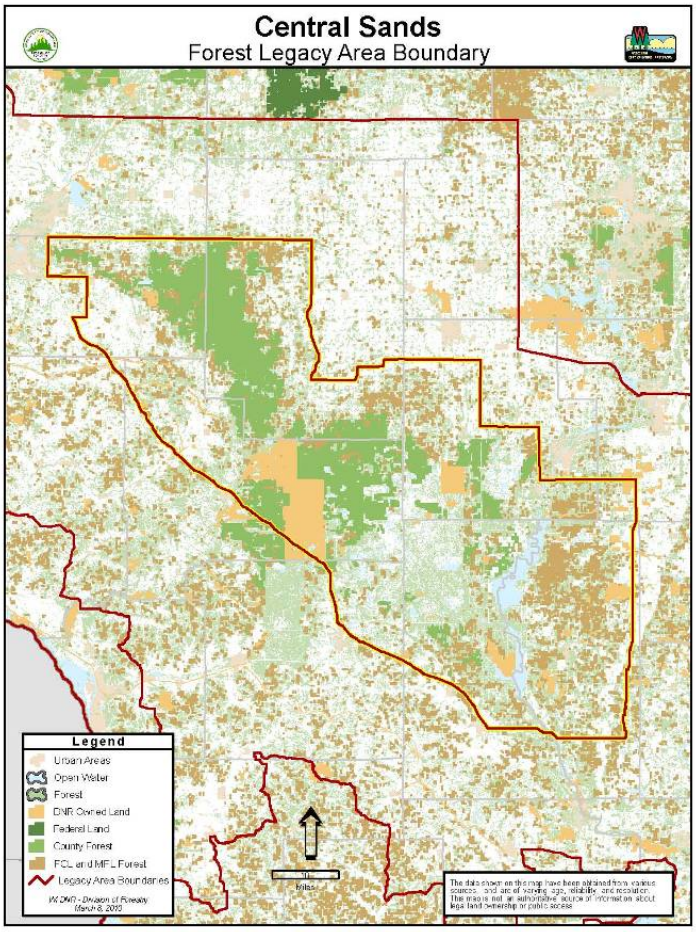
- Provide connectivity and environmental corridors with other protected lands
- Protect large blocks of forest, both industrial and NIPF ownership, from development and subdivision
- Protect forest resources
- Protect habitat for both rare and common species
- Protect public access for recreational opportunities in northern forests

Important Environmental Values of the Northern FLA:

- Large blocks of productive forests
- Forest communities including: Northern wet forest, northern mesic forest, boreal forest, northern dry mesic forest, northern dry forest, and Pine Barrens.
- Contains regionally and globally important habitat, a diversity of communities and supports an array of species including interior forest birds, several mammals, such as elk, wolves, bear, bobcats, and pine martens as well as many birds like northern goshawk, red-shouldered hawk, and spruce grouse.

- Northwest portion of this FLA contains the greatest concentration of Pine Barrens, which are globally rare, as well as some unique indicator species including 15 herpitile species considered to be at the northern, northeastern or northwestern fringe of their habitat.
- Rare and endangered plant and animal communities
- Important habitat for breeding song-bird populations
- Non developed areas for recreational opportunities

2. Central Sands Forest Legacy Area



All or part of the following counties are within this FLA:
Eau Claire, Clark, Jackson, Wood, Juneau and Adams

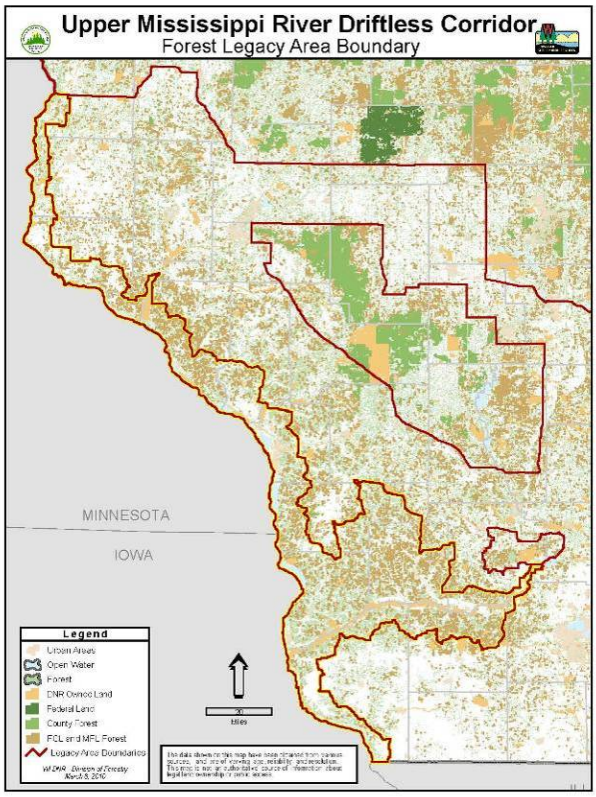
Goals of the Central Sands FLA:

- Protect productive timber lands
- Protect large blocks of forest, both industrial and NIPF ownership, from development and subdivision
- Create non-developed recreational opportunities
- Establish corridors and connection of forest where fragmentation is occurring
- Protect water quality

Important Environmental Values of the Central Sands FLA:

- Large wetlands
- Remnants of pine and oak barrens
- Rare habitats or communities
- Rare species

3. Upper Mississippi River Driftless Area Forest Legacy Area



All or part of the following counties are within this FLA:
Grant, Iowa, Crawford, Sauk, Dane, Columbia, Richland, Vernon, La Crosse, Trempealeau, Buffalo, Pepin, Pierce, St. Croix, and Polk

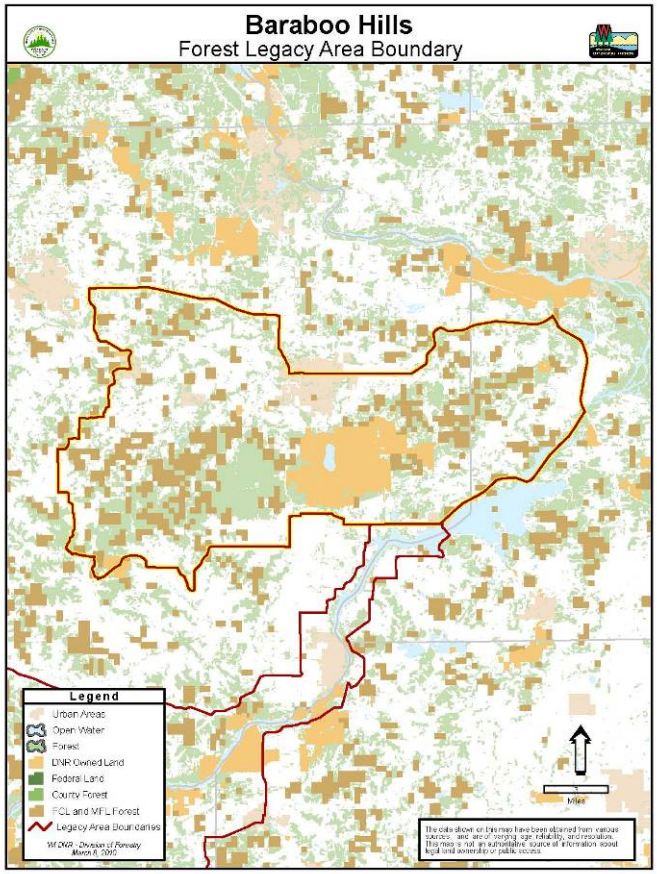
Goals of the Upper Mississippi River Driftless Area Corridor Forest Legacy Area:

- Protect important habitat and create environmental corridors for migratory birds
- Protect Area's remaining productive forestland including floodplain forests
- Protect and improve state's oak resource
- Reduce forest fragmentation
- Protect and Improve water quality
- Protect historical and cultural resources
- Protect rare and endangered species and communities, including non-forest areas where appropriate
- Complete multi-state projects

Important Environmental Values of the Upper Mississippi River Driftless Area FLA:

- Forest communities including: Southern dry and southern dry mesic.
- Important habitat for migratory birds
- Extensive floodplain forests
- Unique geological landscapes
- Rare and endangered species and communities

4. Baraboo Hills Forest Legacy Area



All or part of the following counties are within this FLA:
Sauk and Columbia

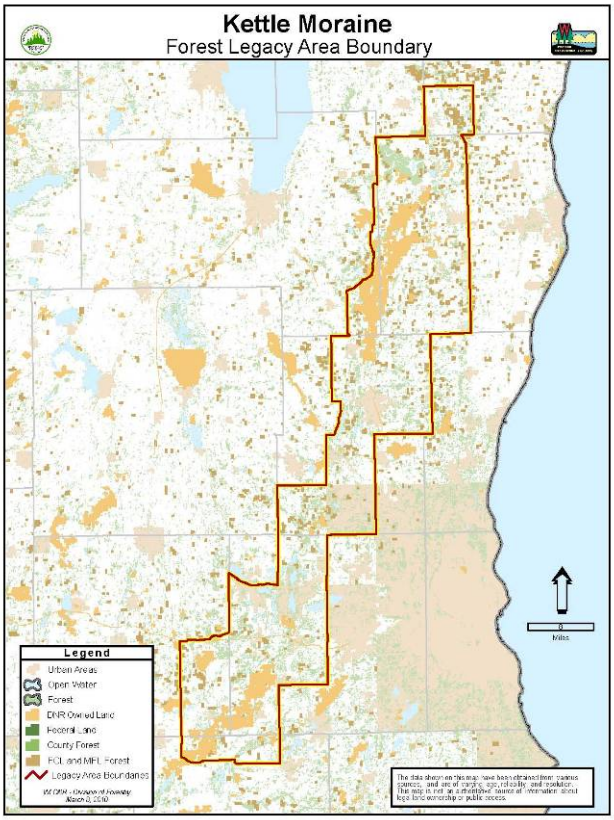
Goals of the Baraboo Hills FLA:

- Protect forest blocks that provide connectivity and environmental corridors between other protected properties.
- Reduce fragmentation to protect interior forests
- Protect rare and sensitive species and communities

Important Environmental Values of the Baraboo Hills FLA:

- One of the largest contiguous upland hardwood forests in the Midwest
- Incredible diversity of species, including more than 1,800 different kinds of plants and animals
- Scenic vistas and waterfalls
- One of the most ancient rock outcrops in North America, the Baraboo quartzite

5. Kettle Moraine Forest Legacy Area



All or part of the following counties are within this FLA:
Walworth, Jefferson, Waukesha, Washington, Fon du Lac, Sheboygan, and Manitowoc

Goals of the Kettle Moraine FLA:

- Establish environmental corridors and connectivity between the Northern and Southern units of the Kettle Moraine State Forest.
- Provide buffers around public lands to ensure compatible uses on lands surrounding public lands
- Protect remaining blocks of productive forest lands
- Protect water quality and associated kettle lakes

Important Environmental Values of the Kettle Moraine FLA:

- Only remaining contiguous forest in Southeastern Wisconsin.
- Important habitat for rare and endangered neotropical songbirds
- Critical landscape for both uncommon and rare species

Coordination with Other Resource Management Plans

In the process of developing the “Assessment” and “Strategy”, we took into consideration other existing statewide plans. Our intent was to build upon and complement other State natural resource plans and identify opportunities for coordination. The following are plans we reviewed and used to develop elements of the Strategy.

Community Wildfire Protection Plans (CWPP)
(http://dnr.wi.gov/forestry/fire/prevention/firewise/)
The DNR leads the facilitation of CWPPs for communities listed on the state’s Communities at Risk list. A CWPP is created by a core team that includes the town government, local fire department, and DNR. CWPPs address things such as wildfire response, hazard mitigation, community preparedness, and structure protection. The creation of a plan helps a community organize projects for mitigating hazards, including timeframes for projects and who will be responsible for managing each project. Plans give fire-prone communities an incentive to develop and implement wildfire preparedness and hazardous fuels reduction projects. Many of our strategies in Theme E deal with communities at risk and elements of CWPPs.

Wisconsin Wildlife Action Plan (WWAP)
(http://dnr.wi.gov/org/land/er/WWAP/)
The DNR, Bureau of Endangered Resources is responsible in Wisconsin for producing the Wildlife Action Plan. In our Assessment, the data and analysis for Indicator 4: Forest Communities and Species of Concern draws mainly on the WWAP. A member of the team that developed the WWAP worked on both our “Assessment” and “Strategy”. Theme A and B have strong connections to the WWAP actions.

Urban Council on Forestry – Annual Report 2007
(http://dnr.wi.gov/forestry/UF/council/pdf/UFAnnualReport07.pdf)
Wisconsin’s Urban Council on Forestry Reports and our “Assessment” and “Strategy” draw on the same data sources and share similar strategies. Theme B, C, D, and E all include strategies for urban forestry which mirror recommendations in the Council’s report.

State Comprehensive Outdoor Recreation Plan (SCORP)
(http://www.dnr.state.wi.us/planning/scorp/)
Many factors affect the supply, demand, and participation rates of outdoor recreation in Wisconsin. Since 1965 the state has developed and maintained the Statewide Comprehensive Outdoor Recreation Plan (SCORP) in an attempt to classify, measure, and ultimately provide for the preferences and needs of a statewide recreating public. We drew heavily on the data and analysis from SCORP for the “Assessment”. Many of the strategies in Theme D are based on the recommendations from SCORP.

Ecological Landscapes Handbook
(http://www.dnr.state.wi.us/landscapes/)

Ecological Landscapes are areas of Wisconsin that differ from each other in ecological attributes and management opportunities. They have unique combinations of physical and biological characteristics that make up the ecosystem, such as climate, geology, soils, water, or vegetation. They differ in levels of biological productivity, habitat suitability for wildlife, presence of rare species and natural communities, and in many other ways that affect land use and management.

The handbook provides an assessment of each Ecological Landscape, including its ecological, social, and economic characteristics. It also identifies opportunities to manage resources with consideration for long-term ecological and economic sustainability. The information will be used when selected strategies are implemented.

Wisconsin's Strategy for Reducing Global Warming
(http://dnr.wi.gov/environmentprotect/gtfgw/)

In April, 2007 Governor Doyle signed Executive Order 191 which brought together a prominent and diverse group of key Wisconsin business, industry, government, energy and environmental leaders to create a Task Force on Global Warming. The Task Force proposed measures to reduce a variety of our state's greenhouse gas emissions. The recommendations in this report influenced the strategies in Theme C.

Wisconsin's Sustainability Framework
(http://dnr.wi.gov/forestry/assessment/framework.htm)

Wisconsin's Forest Sustainability Framework (Framework) lays out a blueprint for gathering data to assess the sustainability of forests in Wisconsin. Although the Framework itself does not include any data, it does create a common language and unbiased set of metrics to discuss sustainability. The strength of the Framework lies in the fact that it was built by a distinguished group of individuals representing all facets of forestry: private landowner groups, conservation organizations, academic institutions, Native American tribes, industry, government, and non-profits. The "Assessment" used the Framework to identify the data and type of analysis needed.

Resources Necessary to Address Strategies

The following tables describe the resources necessary to address the strategies, identify the S&PF programs associated with implementing each strategy, and the national priorities the various strategies support.

Resources Available
This is an estimation based on current resources. Resource is defined broadly to include people, assistance, material, and funds that groups can provide. It lists current sources if the strategy is presently being implemented. If the strategy is new, the source(s) listed are merely possibilities. Many of these strategies benefit from partnerships and multiple funding sources. When possible, the applicable federal agency or agencies is noted. The term 'private' includes resources from groups such as landowners, businesses or non-profit conservation organizations. Acronyms used in the table include S&PF – State and Private Forestry, NRCS – Natural Resource and Conservation Service, FSA – Farm Service Agency, SFA – State Fire Assistance, VFA - Volunteer Fire Assistance, DOI – Department of the Interior, DOE – Department of Energy, APHIS – Animal and Plant Health Inspection Service, NRS – Northern Research Station, Forest Service, EPA – Environmental Protection Agency, SFRA – Sport Fish Restoration Act, and PR – Pittman-Robertson Act.

Associated S&PF Programs
The USDA Forest Service, State and Private Forestry Unit, funds several state programs, including: Stewardship (for private forests), Urban and Community Forestry, Fire Management, Forest Legacy, and Forest Health. The Forest Service provides support and technical assistance for several other state programs, including: Utilization and Marketing, Watershed Forestry, and Conservation Education. Wisconsin's focus is to integrate the S&PF programs with state and partner programs to accomplish priorities. In order to effectively integrate, it is important to understand the key opportunities and constraints associated with each S&PF program. As shown in this column, many strategies will benefit from the integration of different S&PF program areas as they exist today.

National Priority
Each of the goals in the "Strategy" support one or more National Priorities. This column notes which priority the state goal supports.
1 = Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
2 = Protect Forests from Threats
3 = Enhance Public Benefits from Trees and Forests

THEME A: FRAGMENTATION & PARCELIZATION				
	Strategy	**Resources Available**	**Associated S&PF Programs**	**Supports National Priority (1, 2, 3)**
	FOREST LAND: The amount of forest land increases and is focused in desired landscapes.			
1	Encourage planting to enhance, protect, and connect larger tracts of forested land in appropriate locations consistent with ecological landscapes.	State; Federal (S&PF, NRCS, FSA); Private; Tribes	Stewardship, Watershed Forestry	1, 3
2	Reduce the rate of conversion of forestland to alternative uses.	State; Federal; Local government; Private; Tribes	Stewardship, Forest Legacy, Fire (SFA)	1, 3
	PARCEL SIZE: The rate of forest land parcelization is reduced.			
3	Reduce the rate of ownership parcelization of large forest blocks (i.e. greater than 500 acres).	Federal; State; Private; Tribes	Forest Legacy	1, 3
4	Reduce the rate of ownership parcelization of small forest blocks (i.e. less than 500 acres).	Federal (S&PF, NRCS); State; Local government; Private; Tribes	Stewardship	1, 3
	LARGE BLOCKS OF FORESTS: Large blocks of forest are maintained/increase.			
5	Pursue the conservation and protection of large, unfragmented blocks of forest lands.	State; Federal (S&PF); Private; Tribes	Stewardship, Forest Legacy, Fire (SFA), Watershed Forestry	1, 3
6	Strengthen collaborative and large scale planning at the town, county, state and federal levels.	Federal (S&PF); State; Local government; Tribes	Stewardship, Forest Legacy, Health, Fire (SFA), Watershed Forestry	1, 3
	LANDSCAPE SCALE MANAGEMENT: An increasing amount of land management at small scales is in alignment with landscape scale plans. Small forest parcels will be effectively managed forests at a landscape scale that accounts for multiple benefits such as ecosystem services and risks such as wildfire.			
7	Increase the functional size of forest blocks by encouraging coordination of management of clusters of forest ownerships.	State; Federal (S&PF); Private; Tribes	Stewardship, Health, Fire (SFA)	1, 3
	SUSTAINABLY MANAGED FOREST: The percentage of sustainably managed forest land will steadily increase.			
8	Encourage a tax structure that favors well managed forests.	State and Local government		1, 3

9	Increase acreage of privately owned forests managed based on generally accepted forest management practices.	Federal; State; Private	Stewardship, Fire (SFA)	1, 3
10	Increase acreage of publicly owned forests managed based on generally accepted forest management practices.	State and Local government; Federal (USFS, DOI)		1, 3

THEME B: FOREST COMPOSITION & STRUCTURE				
	Strategy	**Resources Available**	**Associated S&PF Programs**	**Supports National Priority (1, 2, 3)**
	IMPROVING FORESTED COMMUNITIES: Improve all forest communities and increase in quality and extent forest communities that are under-represented.			
11	Encourage the management of under-represented forest communities.	State; Local government; Federal (S&PF); Private; Tribes	Stewardship, Fire (SFA)	1, 2, 3
12	Improve all forested communities with a landscape management approach that considers the representation of all successional stages.	State; Local government; Federal (S&PF); Tribes	Stewardship, Forest Legacy	1, 2, 3
13	Increase forest structure and diversity.	State; Local government; Federal (S&PF); Private; Tribes	Stewardship, Fire (SFA), Urban	1, 2, 3
14	Encourage the use of disturbance mechanisms to maintain diverse forest communities.	State; Local government; Federal (S&PF); Private; Tribes	Stewardship, Health, Fire (SFA)	1, 2, 3
	LANDSCAPE SCALE PLANNING: More forest land is being managed and protected under landscape scale plans, or consistent with landscape scale considerations. Management on the ground is increasingly being made within the landscape scale context.			
15	Maintain the appropriate forest types for the ecological landscape while protecting forest health and function.	State; Local government; Federal (S&PF); Private; Tribes	Health, Stewardship, Fire (SFA), Urban, Watershed Forestry	1, 2, 3
16	Encourage multi-state landscape scale planning.	State; Federal (S&PF); Tribes	Health, Stewardship, Fire (SFA), Urban, Watershed Forestry	1, 2, 3
	DEER: Deer populations are managed to protect and enhance forest ecosystem functions while considering the full balance of potential impacts.			

17	Increase scientific knowledge needed to understand the economic, ecological and social impacts of various deer populations (and associated deer herbivory) on forests.	State; Federal (S&PF, APHIS, USFS-NRS); Private	Health	1, 2, 3
18	Encourage the forestry community to be engaged in deer management issues with an understanding of the long term significance of deer impacts on sustainable forestry.	State; Private; Tribes	Stewardship	3
19	Adapt forest management practices to sustainably manage forests with locally high deer populations.	State; Local government; Federal (S&PF); Private; Tribes	Stewardship, Health	2
	URBAN: Urban forests are more species diverse with greater tree canopy.			
20	Characterize and assess urban and community forests.	Federal (S&PF); State	Urban	3
21	Expand and manage a diverse urban tree canopy cover to provide multiple public benefits.	State and Local government; Federal (S&PF); Private	Urban	3
	INVASIVES: The spectrum of invasive species is being addressed to minimize loss of forested ecosystem function.			
22	Strive to prevent invasive species before they arrive.	Federal (S&PF, APHIS); State; Tribes	Health, Urban	2
23	Work to detect new infestations early and respond rapidly to minimize impacts to forests.	Federal (S&PF, APHIS); State; Local government; Tribes	Health, Urban, Stewardship	2
24	Control and management of existing infestations.	State; Local government; Federal (S&PF, APHIS, EPA); Private; Tribes	Health, Urban, Stewardship	1, 2
25	Rehabilitate, restore, or adapt native forest habitats and ecosystems.	State; Local government; Federal (S&PF, EPA, ACE); Private; Tribes	Health, Urban, Fire (SFA), Stewardship	2, 3

THEME C: ENERGY & CLIMATE CHANGE				
	Strategy	**Resources Available**	**Associated S&PF Programs**	**Supports National Priority (1, 2, 3)**
	BIOMASS: Forests provide raw materials for energy and traditional forest products at a level that sustains forest ecosystems and the productive capacity of the land. Use of woody biomass for energy is done in a way that produces a high energy return on biomass input.			

26	Collect information and develop policy to ensure efficient and sustainable use of our forest resources in regards to energy production.	State; Federal (S&PF, DOE); Tribes	Utilization & Marketing (Wood Education Resource Center)	1, 3
27	Encourage establishment of new renewable energy industries (or use of renewable energy by industries) which use woody biomass while improving or maintaining the health of the existing forest products industry.	State; Local government; Private; Federal (S&PF, DOE); Tribes	Utilization & Marketing (Wood Education Resource Center)	1, 3
	ADAPTATION: Forests are established and managed in a manner that increases their resilience and ability to facilitate adaptation of associated species and communities to changing climatic conditions.			
28	Seek to understand the probability and severity of future climate change impacts.	State; Local government; Federal (S&PF, DOI, USFS-NRS, EPA); Tribes	Health, Stewardship, Fire (SFA)	2, 3
29	Attempt to improve the defenses of the forest and increase the resilience of natural systems to future climate change impacts	State; Local government; Federal (S&PF, USFS-NRS); Private; Tribes	Stewardship, Health, Urban	1, 2, 3
30	Intentionally accommodate change and enable forest ecosystems to adaptively respond.	State; Local government; Federal (S&PF); Private; Tribes	Stewardship, Health, Urban	1, 2, 3
31	Realign forest ecosystems to new conditions caused by climate change.	State; Local government; Federal (S&PF, DOI, EPA); Private; Tribes	Health, Stewardship	1, 2, 3
	MITIGATION: Forests will increasingly be used as a tool to mitigate climate change.			
32	Manage forest ecosystems (rural and urban) to sequester additional carbon while retaining the abundance of other benefits forest provide.	State; Local government; Federal (S&PF, EPA, DOE); Private; Tribes	Stewardship, Urban	1, 3
33	Reduce green house gas emissions by substituting wood for products that have a more energy intensive carbon footprint (i.e. non-wood building materials such as steel and concrete).	State; Local government; Private; Federal (EPA, DOE); Tribes	Utilization & Marketing (Wood Education Resource Center)	3
34	Utilize best management practices to minimize emissions from forest-based activities and production.	State; Local government; Federal (S&PF); Private; Tribes	Stewardship, Utilization & Marketing, Fire (SFA)	3

35	Increase the awareness of carbon markets by private forest landowners and facilitate their participation in established carbon markets.	State; Federal (S&PF); Private	Stewardship	3
36	Ensure that climate policy reflects the potential positive contributions that forest conservation and sustainable management can make to achieving substantial net reductions in greenhouse gas emissions.	State and Local government; Federal (EPA, DOE, DOI, USFS); Tribes		3

THEME D: FORESTS AS ECONOMIC CONTRIBUTORS				
	Strategy	**Resources Available**	**Associated S&PF Programs**	**Supports National Priority (1, 2, 3)**
	FOREST VALUE: Forest ecosystem services have economic values that are realized and managed to maximize the benefits to society and improve quality of life.			
37	Invest in forest conservation to contribute to a strong economy and provide clean water and air, wildlife, and other ecosystem services.	State; Local government; Federal (S&PF, USFS-NRS, EPA); Private; Tribes	Stewardship, Fire (SFA), Health, Urban, Forest Legacy, Watershed Forestry	1, 3
38	Encourage communities to invest in their urban forest canopy as part of a long-term plan for a community's quality of life.	State; Local government; Federal (S&PF); Private	Urban	3
39	Build public understanding about the benefits provided from investing in forest conservation.	State; Local government; Federal (S&PF, EPA); Private; Tribes	Stewardship, Urban, Utilization and Marketing, Watershed Forestry, Fire (SFA)	3
	MARKETS: Wisconsin is a hub of green forest product markets, producing a diversity of value added solid wood, fiber, energy and ecosystem services.			
40	Support existing forest products companies so that they are competitive domestically and internationally.	State; Private; Federal (S&PF); Tribes	Utilization and Marketing	3
41	Encourage the development of new markets and companies that leverage sustainable (e.g. third-party certified) supply and ecosystem services in emerging markets.	State; Private; Federal (S&PF); Tribes	Utilization and Marketing	3
	CAPACITY: Forest management/protection providers, business, and other organizations in the forestry community have increased capacity to protect and sustainably manage forests.			
42	Develop collaborations and partnerships to engage all forestry stakeholders	State; Local government; Federal (S&PF); Private; Tribes	All S&PF programs	3

43	Increase the number of students who enter forestry related studies or a forestry profession in order to recruit and hire high quality and diverse individuals.	State; Private; Tribes		3
44	Increase the number of private businesses (loggers, cooperating forester firms, tree planters, arborists, timber stand improvement contractors, etc.) that provide high quality goods and services to effectively and efficiently reach more forest landowners and sustainably manage more forest.	State; Private		3
	RECREATION: Diverse recreational opportunities are available and have minimal impacts on forest ecosystems.			
45	Plan for a range of recreation opportunities at a statewide level suitable to the capability of the land and with minimal long term impacts.	State; Federal (PR, SFRA)		3
46	Provide sustainable recreation opportunities on forested public lands.	State and Local government; Federal (National Forests, SFRA, PR)		3
47	Increase acreage of lands open to public recreation in areas where public land is not abundant.	State and local government; Federal (National Forest, S&PF); Private	Forest Legacy	1, 3

THEME E: PROTECTION OF LIFE AND PROPERTY IN FORESTED AREAS				
	Strategy	**Resources Available**	**Associated S&PF Programs**	**Supports National Priority (1, 2, 3)**
	FIRE, SAFETY AND LAW ENFORCEMENT: Human life, property, and forest resources are at reduced risk of harm or loss.			
48	Improve safety for the forest-based workforce and forest users.	State; Local government; Federal (S&PF); Private; Tribes	Fire (SFA, VFA, Ready Reserve), Urban	3
49	Provide for early detection and rapid initial attack for all forest fires within the state.	State; Federal (S&PF, USFS-NRS); Local government; Tribes	Fire (SFA, VFA, Ready Reserve)	2
50	Reduce wildland fire ignitions and minimize loss from fire.	State; Federal (S&PF); Local government; Private; Tribes	Fire (SFA, VFA, Ready Reserve)	2
51	Protect the public and natural resource from unlawful practices.	State; Local government; Federal (S&PF); Tribes	Fire (SFA, VFA, Ready Reserve), Stewardship	3