Priority Landscapes & Issues

This section describes priority landscapes and issues the state has identified in order to meet a Farm Bill requirement. It begins with a description of what priority landscapes and issues are, how they were developed, and what the intent of these areas is. The Wisconsin priority areas are described followed by the multi-state priority areas and issues.

Farm Bill requirement
The Farm Bill requires states to describe areas or regions of the state that are a state priority and any multi-state areas that are a regional priority. We must identify, describe, and spatially define (if possible and appropriate) forest landscape areas or issues where outreach and activity will be emphasized. Identification of these priority areas is intended to (1) enable the efficient, strategic, and focused use of limited resources; (2) address current state and national resource management priorities; and (3) produce the most benefit in terms of critical forest resource values and public benefits. Regional and multi-state priority landscapes or issues are where states can share resources to address regional threats and opportunities.

The Forest Service developed three national themes with associated objectives to identify where and how the USDA Forest Service, State & Private Forestry Unit (S&PF) resources should be focused in order to make the most significant progress in providing diverse and sustainable public benefits from trees and forests. (For more information on the themes and how they relate to the “Assessment” & “Strategy”, see: http://www.fs.fed.us/spf/redesign/index.shtml) The three national themes are set in law as national priorities and the State Assessments and Strategies are required and are central to S&PF program delivery. Each national priority has several objectives and performance measures on which states need to report.

The national priorities are:
1. Conserve and manage working forest landscapes for multiple values and uses.
2. Protect forests from threat.
3. Enhance public benefits from trees and forests.

Each of the goals and strategies in the “Strategy” implement one or more of the national priorities and achieve the objectives. Recognizing the importance of the national priorities and the goals in the Statewide Forest “Strategy”, the Division of Forestry identified six issues that could be USED TO prioritize strategies and actions (not all geospatially). The priority landscapes can then be used to focus action and achieve state and national objectives.

Application of priority landscapes and issues
Using regional or landscape-level prioritizations is not a new concept in Wisconsin. Several models and programs already exist, such as the Wisconsin Wildlife Action Plan, which identifies prioritized areas to conserve species of greatest conservation need. Another example is the Forest Legacy Program, which prioritizes and protects

environmentally important forest areas that are threatened by conversion to non-forest uses through acquisition of conservation easements or fee title. With limited resources, it is necessary to prioritize areas or issues to address. By prioritizing landscapes and issues, people working on forest issues in the state are better prepared to identify areas where implementing particular strategies and actions would be most effective.

Wisconsin DNR's Division of Forestry receives funds from the S&PF to assist the state in delivering urban and community forestry, health, fire, and private forest stewardship programs. Many of the strategies identify possible actions these programs can implement. Priority areas will assist these programs and their partners in focusing where federal dollars are spent. Each of these maps can assist in identifying where to implement multiple strategies that have different but complementary objectives. The following are examples from the urban, fire, and forest management maps.

1) The map, 'Increasing Urban Forest Canopy Cover,' could be used to identify areas that need to increase their canopy as well as areas that have greater than average canopy and require management assistance to support it.
2) The map, 'Reducing Wildfire Risk Across the State,' could be used to identify areas where the greatest suppression efforts are needed as well as areas of less risk that might benefit from increased training of local fire departments to be able to respond when needed.
3) The map, 'Actively and Sustainably Managing Forests,' could be used to identify large forest patches that can provide needed recreation opportunities for a region as well as small forest patches that are a part of a Conservation Opportunity Area (as identified in the Wildlife Action Plan).

Through a S&PF competitive grant program, states can receive additional federal funding. The projects funded with these grants should demonstrate that federal funds are being spent on projects that address both nationally and regionally significant issues or landscapes, as described by the National Priorities, and that hold the greatest promise for success. Projects may be on any combination of land ownerships except federal lands. Projects funded are based on an analysis within the state or region that identifies the issue or landscape being addressed as a priority in the "Assessment" and "Strategy". Other state or regional assessments and plans, including those completed by other agencies or partners, will also be used to help identify priority issues or landscapes.

Developing priority landscapes
We show, through a combination of maps and narrative descriptions, how Wisconsin is prioritizing landscapes and issues that our "Strategy" will address. It's important to remember that some of the issues we face in the state are not landscape or geospatially based (e.g., remaining competitive in a global forest industry market). Not all of our issues can be mapped (e.g., parcel size due to lack of geospatial data).

Criteria were selected to prioritize each issue. Almost all of these criteria have been used in recent prioritizations the Division or partners have done. The Division of

Forestry's Fire Assessment and a federally initiated project called the Spatial Analysis Project that identified priority private lands for stewardship potential used many of the criteria in the following maps. These criteria have been vetted by many specialists as part of these and other projects. The narratives that accompany each map explain the criteria used to prioritize the areas.

When looking at the maps of priority landscapes, it is important to remember that not all variables can be mapped and there may be more areas than those shown on the map. The elements that could not be mapped do not have geographical data. These are described in the narrative. Furthermore, within one map, areas may be prioritized for different reasons.

A basic explanation for how each map was developed is included in the narrative for each priority landscape. Generally, maps were developed in one of three ways: 1) criteria are weighted by the percent of influence (e.g., fire analysis), 2) criteria are presented on the map where they exist without adding weights or points (e.g., urban canopy cover), and 3) each criterion is given a score (e.g. 1- 3 points, 3 being the highest value) and if an area represents one or more criterion, then the scores are added together and the area's final point total is represented on the map (e.g., economic benefits). Detailed GIS methodology is available on request.

The following are six issues that we have identified priority landscapes for.

1. Managing and reducing threats to forest and ecosystem health

2. Urban forests:
    (a) Increasing urban forest canopy cover
    (b) Improving communities urban forest management

3. Wildfire
    (a) Reducing wildfire risk across the state
    (b) Assisting communities at risk of wildfire

4. Actively and sustainably managing forests

5. Managing for ecosystem services

6. Maintaining and enhancing economic benefits from forests.

Wisconsin priority landscapes

1. Managing and reducing threats to forest and ecosystem health.

Throughout the state, Wisconsin's forests are at risk of mortality from both native and exotic insects and diseases, invasive plants, deer, damaging storms, climate and air pollutants. The threats to forest trees have long played an important role in forest succession, reducing tree density in overstocked stands, creating openings in the canopy that encourage successful regeneration and providing down woody material. In some cases, tree diseases or insect infestations can cause such high levels of mortality that a species may be reduced to only a few individuals on a site or over an extensive area. This map, considered with other information from research, surveys and monitoring, helps determine which issues are the most critical to address.

The following criteria identify areas at risk of experiencing 25% or more tree mortality over 15 years from a combination of insects and diseases.

Insects and Disease: Native forest insects and diseases contributing to risk of mortality include forest tent caterpillar, jack pine budworm, red pine pocket mortality and pine bark beetle. Exotic insects and diseases contributing to risk of mortality include gypsy moth, hemlock woolly adelgid, beech bark disease, sudden oak death, oak wilt and emerald ash borer.

In order to evaluate risk for any particular insect or disease, a list of contributing factors needs to be determined. Factors are different for each insect and disease. Sources of input factors include census data (population density, median housing value, density of campgrounds), species density maps (normal range, canopy cover or basal area maps), climate data (mean annual temperature or precipitation), historical presence of the particular disease or insect in the area, and habitat type. Once these factors are weighted, every acre of land then has a value representing the overall risk of the particular disease or insect occurring on that acre.

Invasive Plants (not mapped): Some threats, such as invasive plants, have not been consistently mapped to date. Efforts are underway for a coordinated database of species present and their location. There are three basic principles that apply to invasive plant prioritization efforts: prevention, rapid response, and control. Depending on what species and threat to a location is being considered, the action and area for addressing the species will be different. At this point in time, these are difficult variables to map.

Invasive Species Identification, Classification and Control rules (NR40) act as a prioritization tool in that the two regulatory categories, prohibited and restricted, determine the course of action upon discovery. Prohibited species are intended to be controlled and ideally eradicated, whereas restricted species are not, although control is encouraged. Similarly, if an invasive species is detected in an area not previously found,

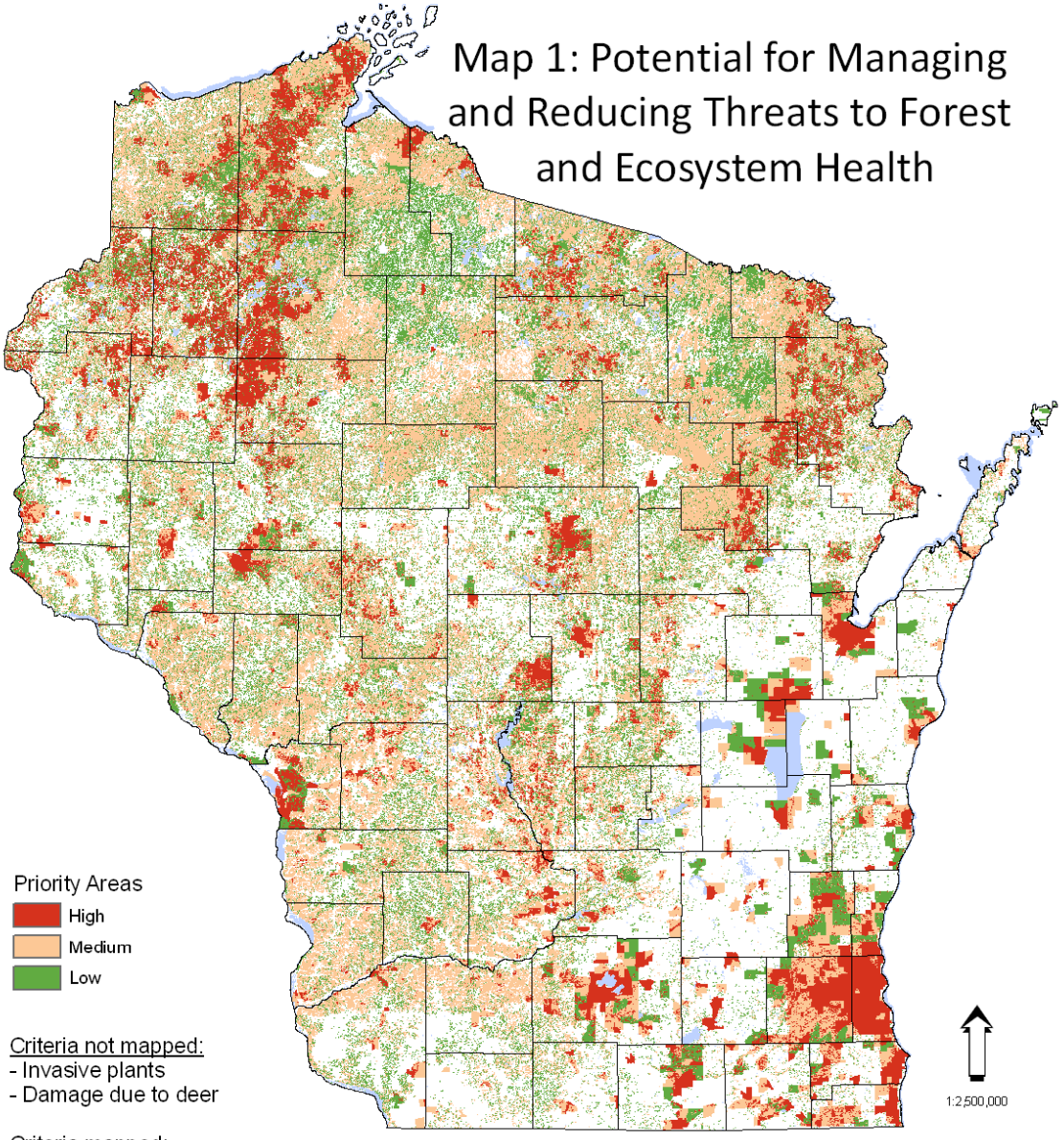
rapid response to attempt to eradicate or at least manage the population is important to limit the spread.

Prioritization of control efforts for a particular invasive plant species is based on the potential threat to a site, as follows.

- State Natural Areas
- Conservation lands- those owned and managed by Federal, State, County and Local governments and agencies.
- Critical plant community types under greatest threat of spread (i.e. barrons, black spruce swamp, etc).
- Populations along rivers for those species that easily spread via water.

Deer (not mapped): Another criterion that is difficult to map is deer damage to forest regeneration due to over-browsing. There are several trials across the state that have documented the connection between deer and forest health but no statewide data exist. Possible proxy data to use are locations where deer populations are over goal (See a map of over population areas at: http://dnr.wi.gov/org/land/wildlife/hunt/deer/post_hunt_pop.pdf). Deer can cause forest damage anywhere, but over-populated areas could have a greater impact on forest regeneration.

Map 1: Potential for Managing and Reducing Threats to Forest and Ecosystem Health



Criteria not mapped:
- Invasive plants
- Damage due to deer

Criteria mapped:
- Census data (population density, median housing value)
- Density of campgrounds
- Species density (normal range, canopy cover, or basal area)
- Climate data (mean annual temperature or precipitation)
- Historical presence of particular disease or insect
- Habitat type

Insects and diseases included: Forest tent caterpillar, oak wilt, gysy moth (urban/rural suppression needs), emerald ash borer, sudden oak death , jack pine budworm, hemlock wooly adelgid, beech bark disease, red pine pests

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Division of Forestry
May 3, 2010

2. Urban forests:

(a) Increasing urban forest canopy cover

(b) Improving communities urban forest management

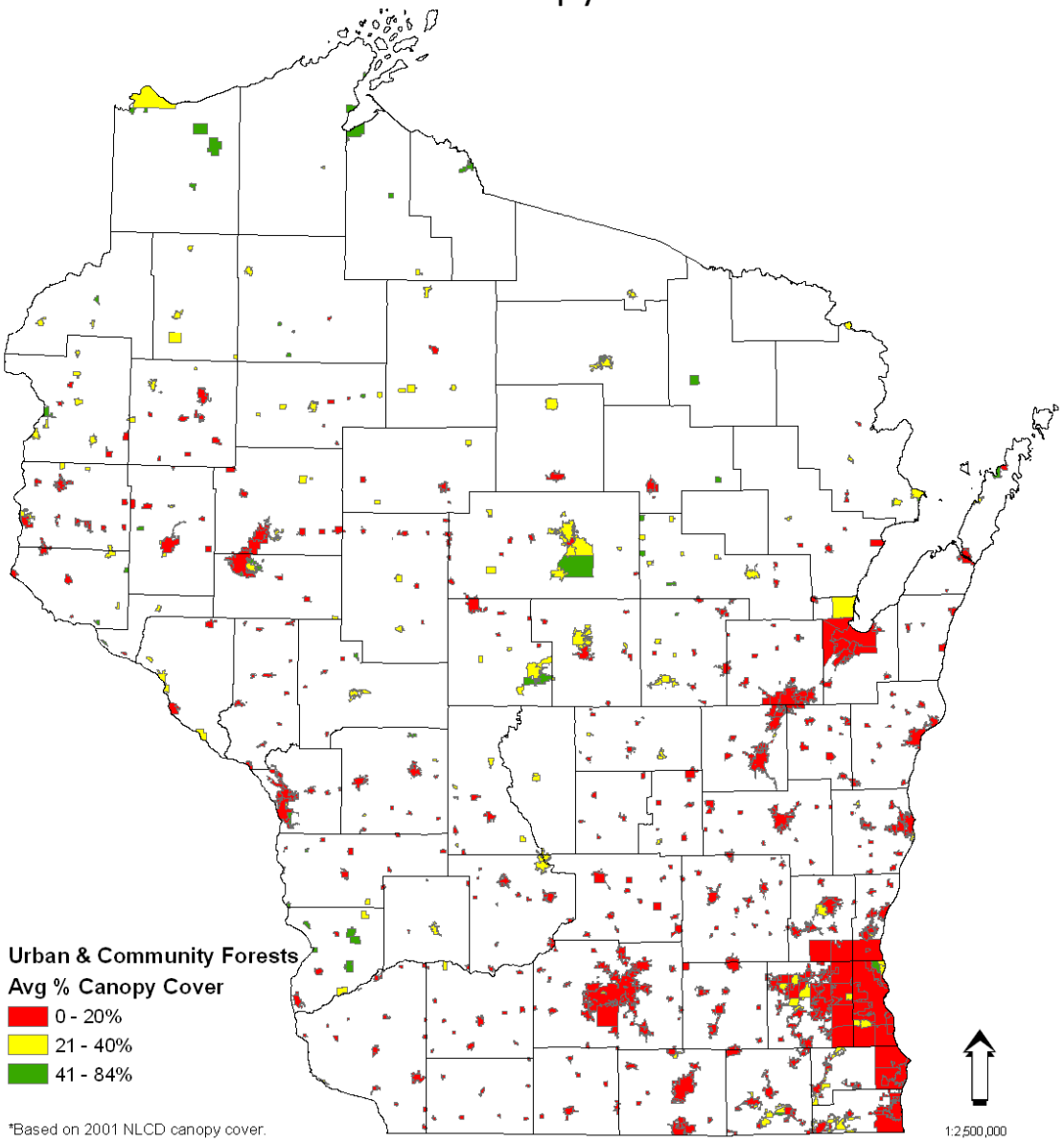
Wisconsin's urban forests are a significant resource. They cover about 5% of the state's land area and are home to about 80% of the state's population as measured in 2002. The amount of urban forest is increasing as agricultural and forest lands are converted to development. Forecasts predict urban land in the state will grow to 8.3% of the land area by 2050.

Canopy cover: The average urban tree canopy statewide is low compared to many other states with similar ecotypes. There is an opportunity to fill vacant planting space and manage existing trees to increase canopy cover in urban forests. Map 2 (a) shows average canopy cover in urban communities across the state. The national benchmark for canopy cover is 40%. This map highlights areas under 40% that should be prioritized for increased canopy cover. Canopy cover can fluctuate with changes in land use. Conversion of agricultural or other open land to development will initially decrease average canopy statewide, but these areas offer the greatest opportunity for planting and increasing overall tree canopy over time. Conversion of forest land to urban forest will increase overall average urban tree canopy at the expense of rural forests.

Urban forest management: Good urban forest management includes up-to-date inventories that support operational plans. While there has been a steady increase in communities that have urban forest inventories over the last 16 years, two-thirds of Wisconsin communities still lack an inventory of their resource. The number of communities with some type of urban forestry plan increased somewhat since 1992, however this still represents less than one-third of Wisconsin communities.

Map 2 (b) shows urban and community 'Accomplishments Reporting System' (CARS) scores. This national scoring system identifies communities that have one or more of the following attributes: an active urban and community tree and forest management plan; a professional forestry staff; ordinances or policies that focus on planting, protecting and maintaining their urban and community trees and forests; and an Advisory Organization that advocates or advises on urban forestry related issues within the community. A score of one means they have any one of the attributes, and a score of four means they have all. Depending on a community's score, and which attribute is missing, this map assists prioritizing different strategies for different areas.

Map 2 (a): Potential for Increasing Urban Forest Canopy Cover



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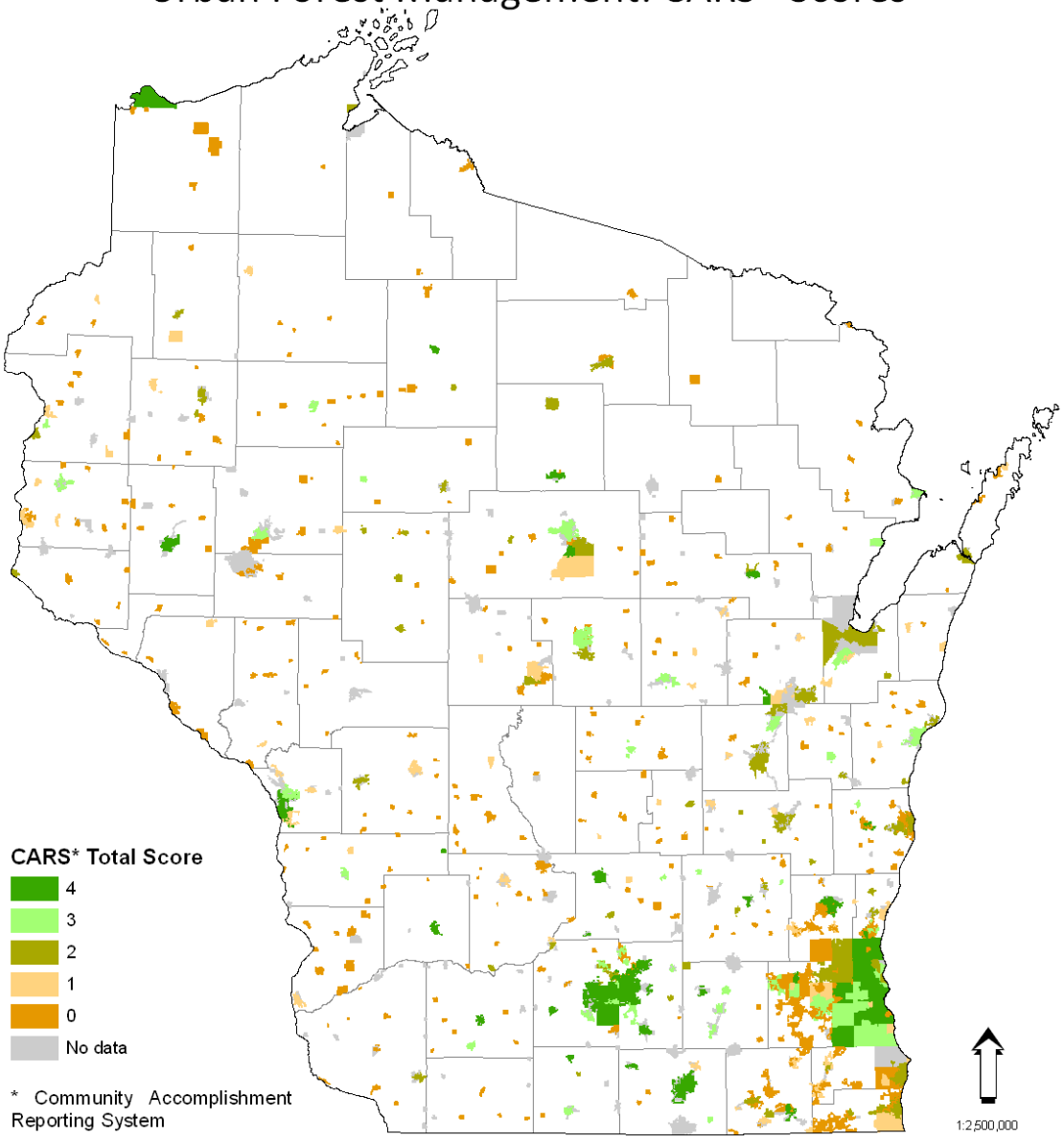
Map 2 (b): Potential for Improving Communities Urban Forest Management: CARS* Scores



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3. Wildfire

(a) Reducing wildfire risk across the state

(b) Assisting communities at risk of wildfire

Wisconsin DNR Forestry is statutorily responsible for suppressing wildfires across a significant portion of the state. We utilize various methods, such as partnerships with fire departments and other agencies, to protect human life and property and natural resources. We prioritize how and where state and federal resources will be spent based on fire risk within areas that are designated as DNR protection areas or areas where we work cooperatively with partners (Map 3 (a)). Statewide, we prioritize areas for hazard mitigation with our Communities-at-Risk analysis (Map 3 (b)).

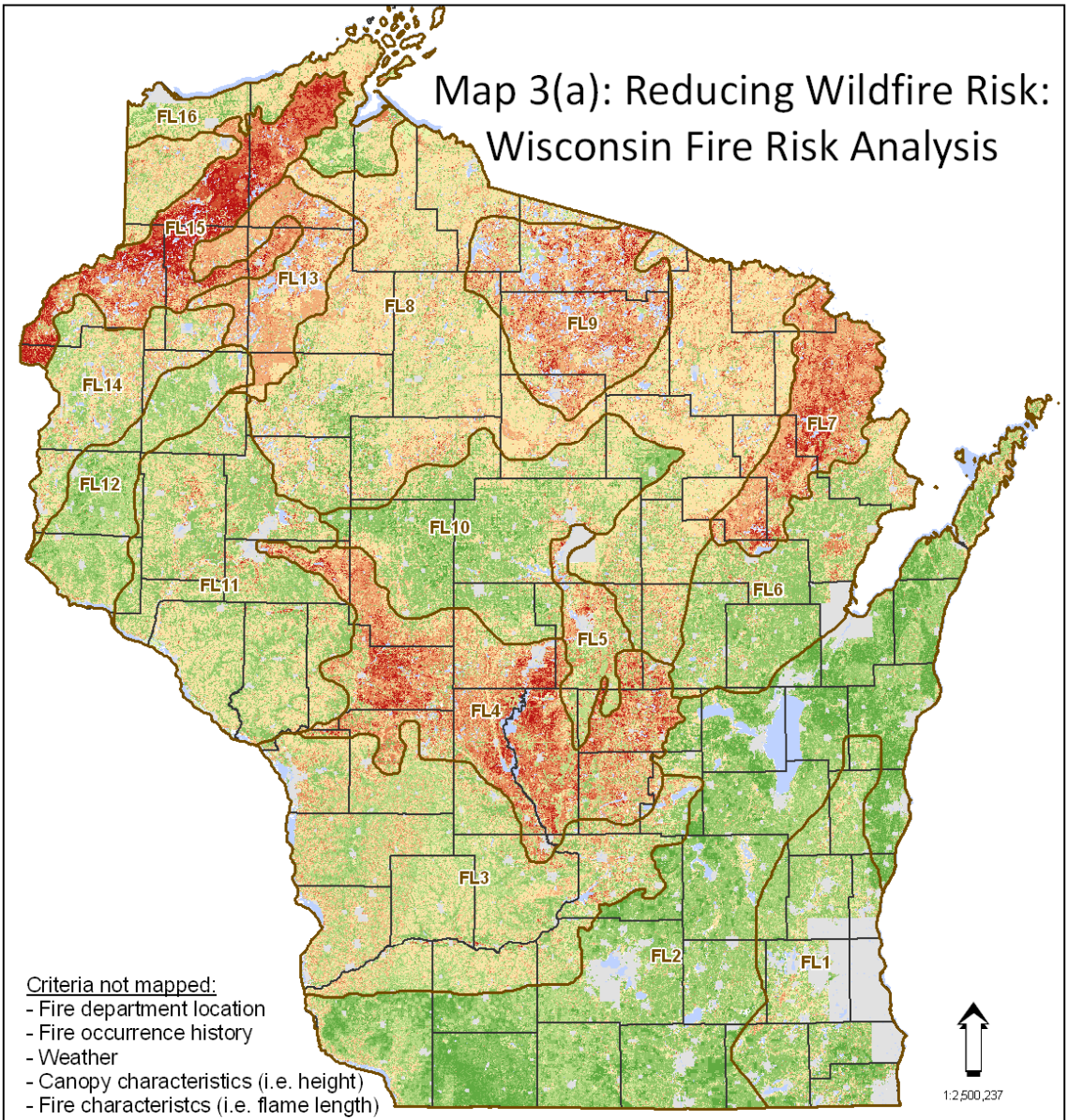
Wildfire risk: The Fire Risk Analysis (Map 3 (a)) conducted in 2010 developed levels of fire suppression risk for the state based on elements that could be used to determine the level of suppression need. This in turn helps DNR Forestry make resource decisions regarding facilities, prevention education, communications, and other suppression and detection needs. The Analysis was conducted by overlaying data considered instrumental in predicting fire hazard (vegetation, ecological landscapes, soil, forest patch size, and parcel improvements). Wisconsin DNR cooperates with local fire departments (municipal and volunteer), tribes, and other agencies as part of our statewide fire suppression mandate. The Analysis is one tool that can be used to award vital funding for local fire departments.

There are several datasets that are not included in this analysis that would benefit the analysis. These include: fire department locations, fire occurrence history, canopy characteristics, fire characteristics, and weather data. Statewide data sources for fire department locations are difficult to obtain due to legal issues. Fire occurrence data only exists for part of the state. Canopy characteristics and fire characteristics data is variable and not consistent. Weather data

Communities-at-Risk: The federal initiative “Communities-at-Risk” (Map 3 (b)) helps Wisconsin prioritize areas for hazard mitigation. This includes projects for planning (e.g., Firewise), education, and fuels reduction. There are currently over twenty Firewise communities and nineteen Community Wildfire Protection Plans (CWPP) either created or in development. Communities-at-Risk are identified by community/population weighted criteria (vegetation, historic fire regime, wildland-urban interface, population density, historic fire occurrence, and proximity to road or railroad). Communities identified as a Community-at-Risk, or Community-of-Concern are prioritized to receive hazard mitigation funds based on their geographic location as well as non-geospatial criteria that measure a project’s individual merits.

As with Map 3 (a), locations for fire departments across the state is difficult to obtain and is not included in Map 3 (b). Fire departments response time is another valuable piece of data that would be used for Communities-at-Risk if it were available.

Map 3(a): Reducing Wildfire Risk: Wisconsin Fire Risk Analysis



Criteria not mapped:
- Fire department location
- Fire occurrence history
- Weather
- Canopy characteristics (i.e. height)
- Fire characteristcs (i.e. flame length)

Criteria mapped:
- Vegetation (56%)
- Ecological landscapes (~ 14%)
- Soil (~ 10%)
- Forest patch size (10%)
- Parcel improvements (10%)

WI Fire Landscape

Fire Risk*

Low — Very High

1:2,500,237

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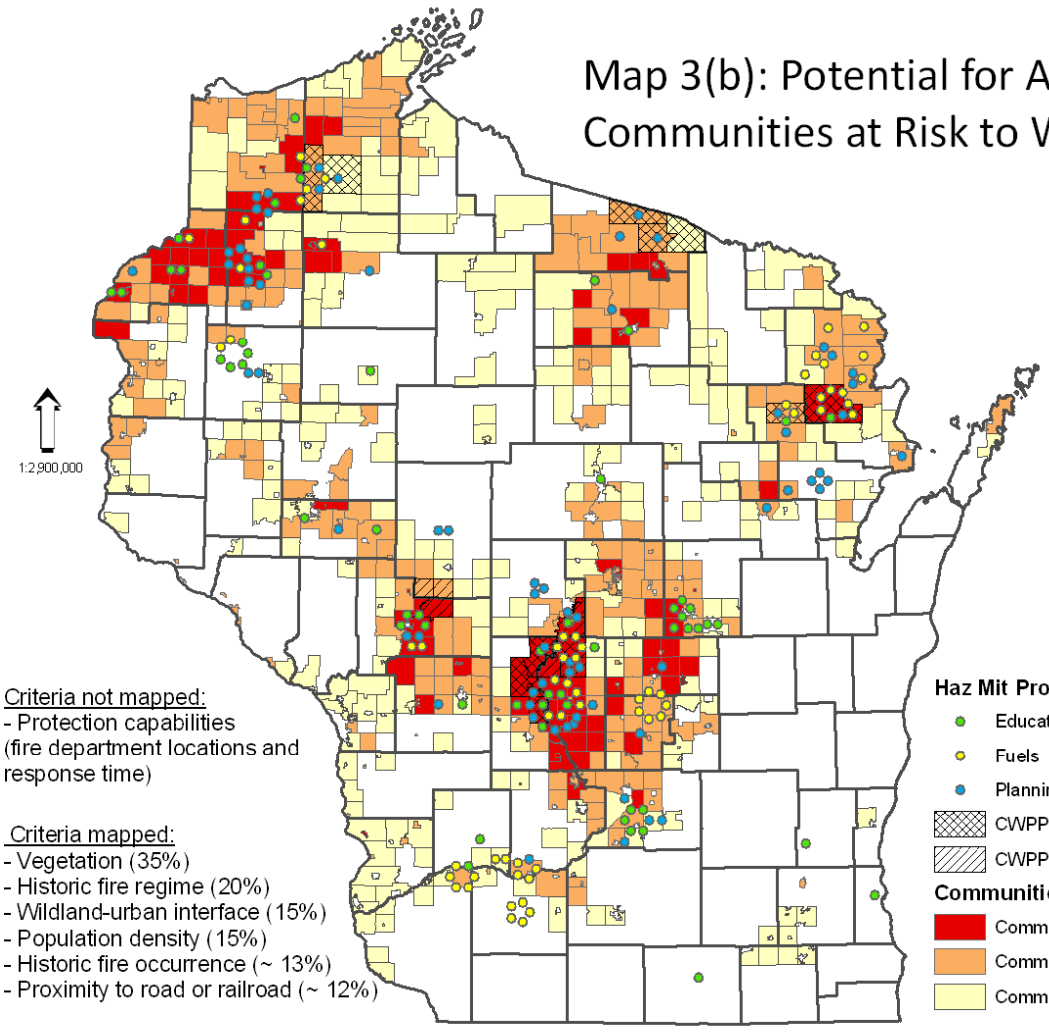
December 3, 2009

Map 3(b): Potential for Assisting Communities at Risk to Wildfire



Location	# of Projects
Adams County	4
Amberg	1
Armenia	1
Athelstane	4
Barnes	9
Barron	1
Barron County	1
Big Flats	3
Black River Falls	4
Bridge Creek	1
Brule	1
Buena Vista	2
Casey	5
Clark County	2
Columbia County	3
Conover	1
Crivitz	1
Crystal Lake	7
Cumberland	7
Dayton	1
Dodgeville	5
Dunbar	1
Easton	1
Eau Claire	1
Eau Claire County	1
Farmington	2
Friendship	4
Germantown	1
Grantsburg	2
Hartford	1
Hayward	1
Jackson County	2
Janesville	1
Juneau County	4
Ladysmith	1
Land O Lakes	1
Lind	2
Manchester	2
Marinette County	2
Marquette County	1
Milwaukee	1
Minong	1
Monroe County	1
Mountain	1
Muscoda	6
Necedah	1
Oconto County	4
Oneida County	1
Pembine	1
Peshtigo	1
Poynette	6
Quincy	6
Rhinelander	1
Richland Center	1
Riverview	4
Rome	10
Saratoga	1
Sawyer County	1
STATEWIDE	**36**
Stephenson	7
Swiss	2
Tomah	1
Trego	1
Underhill	1
Vilas County	1
Wascott	5
Washburn County	1
Waupaca	2
Wausau	1
Waussukee	1
Waushara County	1
Webster	2
Wescott	1
West Marshland	1
Weyauwega	2
Wisconsin Rapids	2
Wood County	3
Woodruff	1
Total	*225*

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May 3, 2010

Fire_CARetc.mxd\ Priority_hazmit.pdf

4. Actively and sustainably managing forests

This map and narrative describe relative potential for active and sustainable management on a geographic basis. This does not only refer to production of forest products, but also includes areas that benefit from sustainable management such as improving forest habitat in Conservation Opportunity Areas identified in the Wildlife Action Plan or Outstanding and Exceptional Resource Waters that benefit from forested riparian areas. This map will help focus where to implement strategies to address issues as diverse as parcelization, composition and structure, climate change, and recreation opportunities.

The following criteria identify forests that have desirable conditions for actively and sustainably managing forests and also forests that would benefit from management. An area that has multiple criteria will have a higher score.

Forest patch size: The benefits of large forest patches include but are not limited to wildlife habitat for species that need remote interior forest, wilderness aesthetics, recreation activities, and producing economies of scale for timber management. The minimum patch size mapped is 10 acres. This is the typical limit for possible management. Patch size in the northern and southern ecological province (NHFEU[1]) are rated with different scales. In the north, patch size of greater than 500 acres is given the highest ranking and in the south, patch size of greater than 100 acres is given the highest ranking.
(Weight: one to three points, with three points going to the larger patch sizes.)

Proximity to protected and conserved land: This layer includes forested lands that are managed for various objectives and in a legal status that will keep the forest as forest. This includes public forest land (national, state, county), State Natural Areas, publicly held forest easements on private land, Board of Commissioners of Public Land, Native American lands, private lands enrolled in the Managed Forest Law and Forest Crop Law, and Forest Legacy Areas. These are forests that will remain forests for an extended period of time and have a management plan. Lands in close proximity to these are important because if they are actively and sustainably managed, they essentially make the protected areas larger.

Communities that zone working forest areas in their jurisdiction provide another category of protected land that keep forests as forests. We do not have geospatial data for these and so they are not included in this map but are considered a potential area for active and sustainably managed forest.
(Weight: one to three points, with three points going to protected, conserved, and public lands and their immediate, less than .25 miles, surrounding area.)

Wildlife Action Plan – Conservation Opportunity Areas (COA's) in forested habitats: The Wildlife Action Plan identified COA's to protect native Wisconsin species of greatest

[1]For information on the NHFEU, see:
http://www.dnr.state.wi.us/forestry/GIS/Data_Maps/map_gallery/existing_maps/map_descriptions.htm

conservation need. Some of these species require forest habitat which could benefit from management. COA's that are forested are shown on the map. Forest communities that are under-represented in the state are also of special concern and will be considered when prioritizing areas for management. These are difficult to map and are not shown. For a complete description of COA's, please see: http://dnr.wi.gov/org/land/er/wwap/implementation/.
(Weight: one point for forest within a COA.)

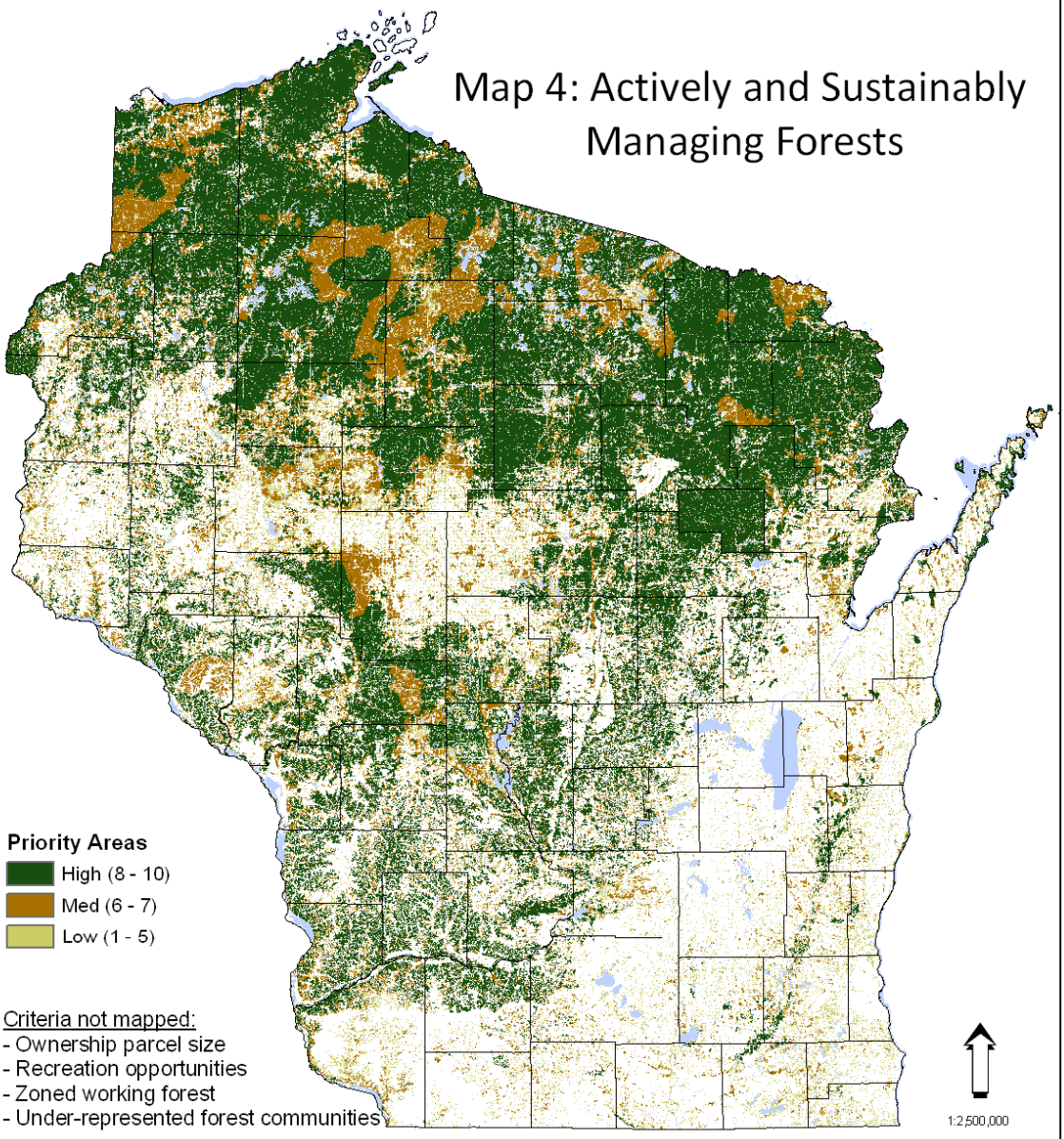
Outstanding and Exceptional Resource Waters (OERW): Wisconsin's OERW designation is designed to maintain the water quality in Wisconsin's cleanest waters. An outstanding resource water is defined as a lake or stream having excellent water quality, high recreational and aesthetic value, high quality fishing and being free from point source or non-point source pollution. Exceptional resource water is defined as a stream exhibiting the same high quality resource values as outstanding waters, but with existing or potential impact by point source pollution or future discharge from a small sewer community. Sustainably managed forests assist in keeping these waters clean by the use of best management practices and other management considerations.
(Weight: one point for forested OERW's unless it is also a classified as part of a COA.)

Priority watersheds: Forests play a critical role in preserving clean water supplies by maintaining a protective forest floor that prevents soil erosion, and filters and infiltrates water. This map layer identifies watersheds that have large areas of private forests that are important for maintaining clean water and in need of protection from development pressures. Low scoring watersheds either have a large percentage of protected forest land, low percentage of private forest land, low development pressure, or low ability to produce clean water. A low score does not mean a watershed is unimportant; rather depending on why it is ranked low, it may be an example of a successfully managed and protected forested watershed or it may be a priority for reforestation and other efforts.
(Weight: one to three points, with three points going to the highest priority watersheds.)

Ownership parcel size (not mapped): Average forest parcel size has decreased over time and the number of private landowners has increased. In 1997, the statewide average parcel was 37 acres. In 2006, the average dropped to 28 acres. Smaller forest ownerships can make it difficult to manage a forest. We do not have geospatial data on forest parcel size and therefore it is not represented on this map. Depending on the strategy, either areas that show the greatest decrease in parcel size, or the largest will be prioritized.

Recreation opportunities (not mapped): Forests provide a myriad of recreation opportunities. Areas where more forested recreation is needed and would have minimal impacts to the ecosystem will be important to consider. There is currently no geospatial data on these recreation opportunities.

Map 4: Actively and Sustainably Managing Forests



Priority Areas

- High (8 - 10)
- Med (6 - 7)
- Low (1 - 5)

1:2,500,000

Criteria not mapped:
- Ownership parcel size
- Recreation opportunities
- Zoned working forest
- Under-represented forest communities

Criteria mapped:
- Forest patch size (1-3 pts),
- Proximity to protected and conserved areas (1-3 pts),
- Conservation Opportunity Area or Outstanding and Exceptional Resource Water (1 pt),
- Priority watershed (1-3 pts)

Total possible = 10 points. *Priority broken by natural breaks in the data. Data limited to forested areas.*

WI Department of Natural Resources
Division of Forestry
June 10, 2010

5. Managing for ecosystem services

This map and narrative describe potential areas for managing for ecosystem services such as water quality, air quality, carbon sequestration, and habitat for threatened or endangered species. All forests provide ecosystem services in different amounts. The areas identified as high in this map represent multiple attributes. This map does not show where ecosystem services could be improved or enhanced, rather where we want to keep managing for the ecosystem services provided. For example, this map does not include marginally productive agricultural lands. While they are lands that have the potential to provide greater ecosystem services if they were planted with trees, they do not currently provide such services.

Several of the following criteria are the same as those for Map 4 'Potential for Actively and Sustainably Managing Forests.'

Forest patch size: (see description for Map 4)

Proximity to protected and conserved: (see description for Map 4)

Wildlife Action Plan – Conservation Opportunity Areas in forested habitats: (see description for Map 4)

Outstanding and Exceptional Resource Waters (OERW): (see description for Map 4)

Threatened and endangered species or NHI forested community[2]: This input shows forested habitat where threatened and endangered species have been observed and where there are forested communities of concern. The presence of one or more rare species and natural communities in an area can be an indication of the area's health and ecological importance. Similarly, maintaining these features also sustains habitat for common and perhaps other rare species and maintains the larger complex of which the natural community or feature is a part. All are important elements of biodiversity which is an ecosystem service.
(Weight: one to two points depending on forest community and species of concern overlap.)

Priority watersheds: (see description for Map 4)

Forested wetlands: Wetlands provide habitat for more species of plants and animals than any other type of landscape in Wisconsin. Habitat is not their only functional value. Wetlands can also store water to prevent flooding, purify water, protect lake and stream shores from eroding and provide recreational opportunities for wildlife watchers, anglers, hunters, and boaters. Forest management is an important tool to support the benefits wetlands provide.
(Weight: one point for areas classified as a forested wetland type.)

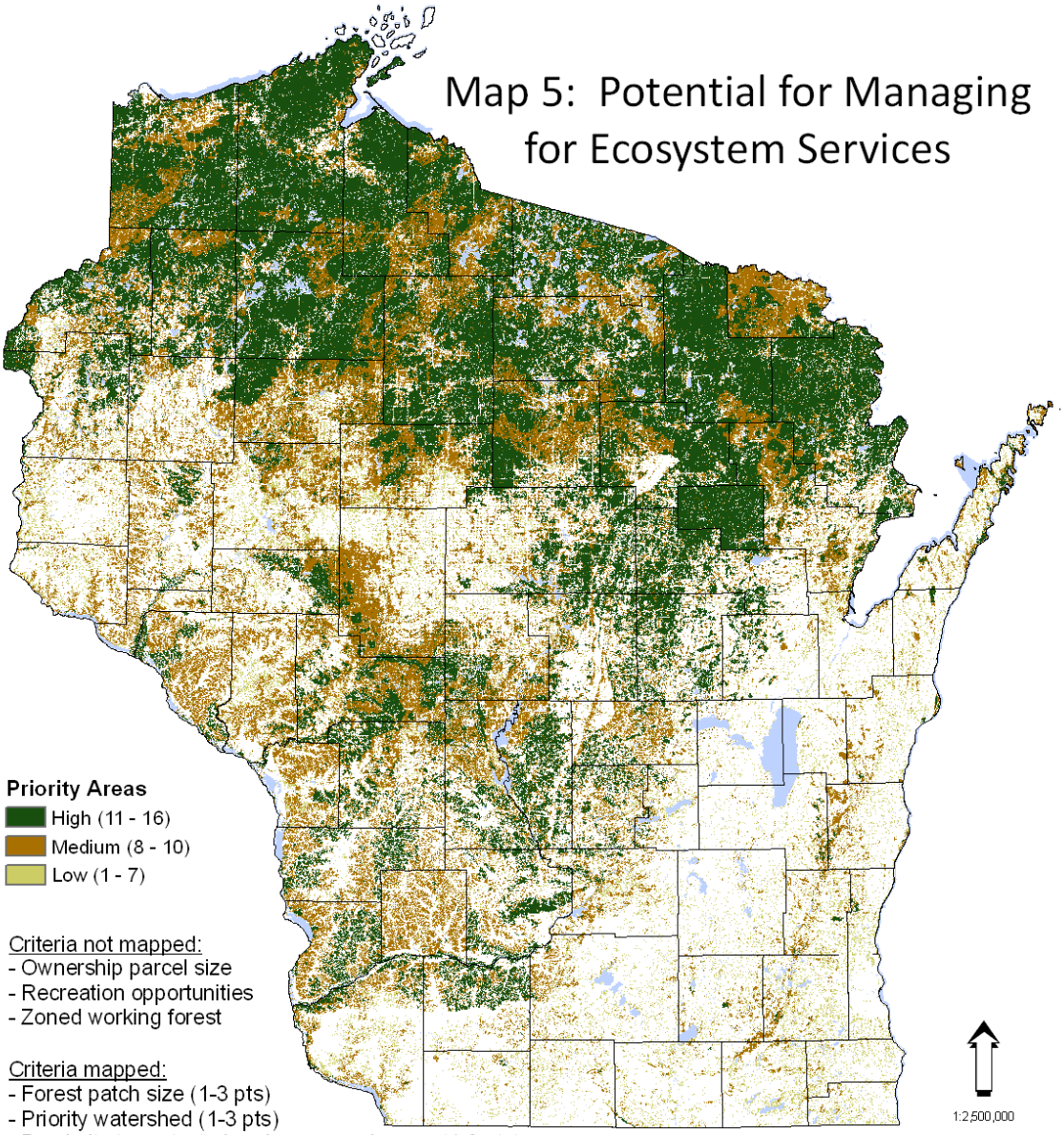
[2] For more information on the Natural Heritage Inventory and forested communities, see: http://dnr.wi.gov/org/land/er/communities/

Carbon sequestration: Forests sequester carbon in different amounts depending on a wide variety of factors. Carbon sequestration can be managed for anywhere, but there are certain areas where sequestration is greatest. It is represented as biomass in this map and areas that have more biomass are scored higher. By county, the amount of biomass (as proxy for carbon) will be ranked high, medium, and low.
(Weight: one to three points, with three points going to counties with the largest amount of biomass.)

Ownership parcel size (not mapped): (see description for Map 4)

Recreation opportunity areas (not mapped): (see description for Map 4)

Map 5: Potential for Managing for Ecosystem Services



Priority Areas

- High (11 - 16)
- Medium (8 - 10)
- Low (1 - 7)

1:2,500,000

Criteria not mapped:
- Ownership parcel size
- Recreation opportunities
- Zoned working forest

Criteria mapped:
- Forest patch size (1-3 pts)
- Priority watershed (1-3 pts)
- Proximity to protected and conserved areas (1-3 pts)
- Carbon sequestration (1-3 pts)
- Presence of threated/endangered species or NHI forest community (1-2 pts)
- Conservation Opportunity Area or Outstanding and Exceptional Resource Water (1 pt)
- Forested wetland (1 pt)

Total possible = 16 points. *Priority broken by natural breaks in the data. Data limited to forested areas.*

WI Department of Natural Resources
Division of Forestry
June 12, 2010

6. Maintaining and enhancing economic benefits from forests.

This map and narrative describes potential areas for maintaining and enhancing economic benefits from forests. Forests provide a variety of economic benefits including, but not limited to, traditional forest products. Many communities in forested areas depend heavily on forest industry and forest based recreation and tourism dollars. Ecosystem services are beginning to be monetarily quantified as research can assess impact costs or alternatives that produce the same benefits. These will be important to consider as markets are established.

To identify priority areas for maintaining and enhancing economic benefits from forests, the following criteria are used:

Proximity to protected and conserved: (see description for Map 4)

Third party certified forests: A requirement of some ecosystem markets is that lands be 3rd party certified as sustainably managed. When a forest is certified, it can open up more economic opportunities for the landowner. Forest lands (all ownerships) that are certified are presented on this map.
(Weight: one point for lands that are certified.)

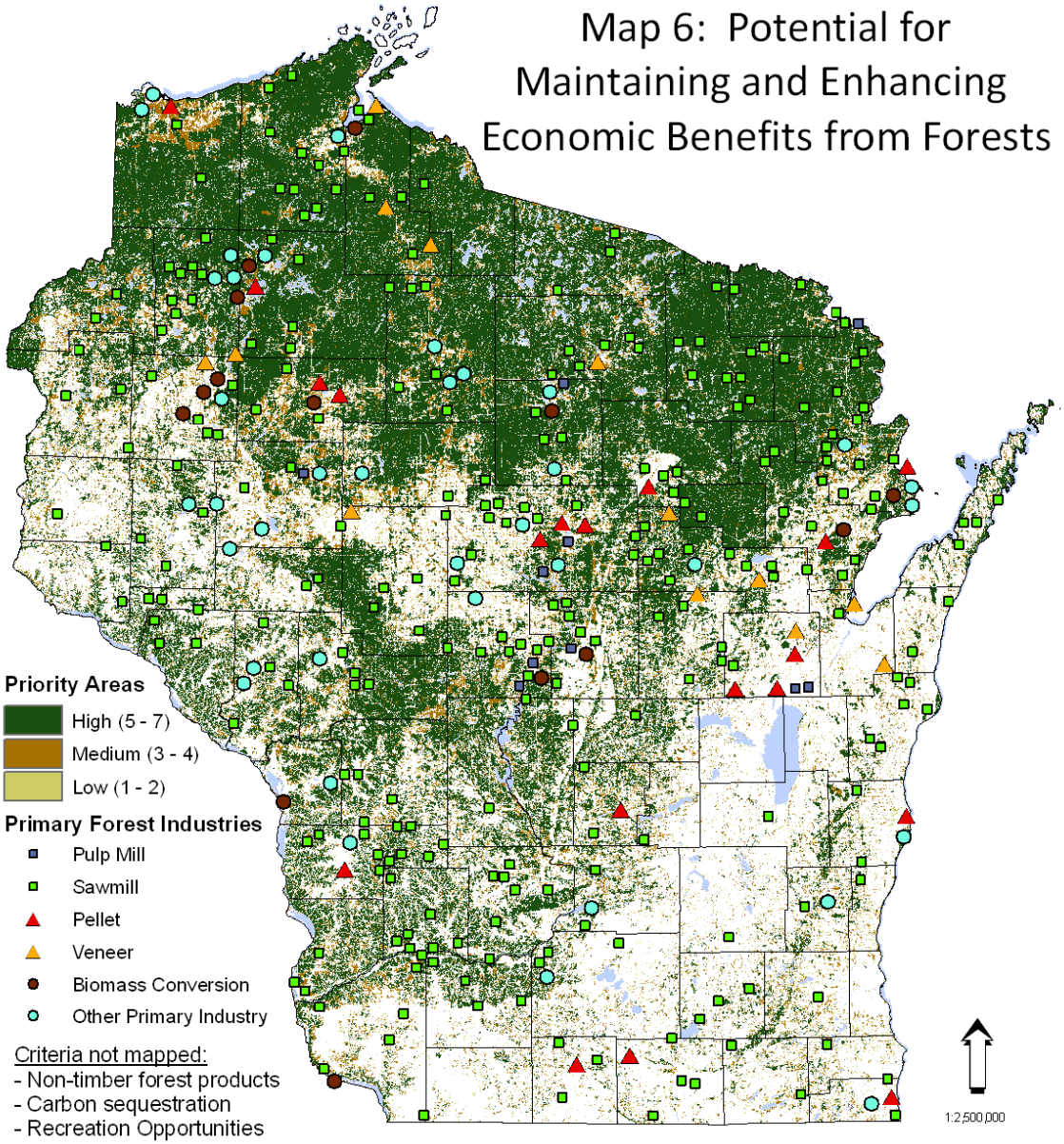
Forest industry: Forests that are near a forest products company or a utility using renewable material are likely to be able to sell forest products easier due to their proximity to these companies. Wisconsin's primary wood-using industry consists of firms that manufacture logs and pulpwood into value-added wood products. Locations of the following are displayed on the map but are not included in the analysis: pulp mills, sawmills, pellet makers, veneer plants, biomass conversion facilities and as well as companies that manufacture such products as composite panels, log cabins, and treated wood. This data is routinely updated and new data will be available late summer, 2010.

Recreation opportunity areas (not mapped): (see description for Map 4)

Areas with high rates of carbon sequestration (not mapped): Carbon can be managed for in any forest, but certain types of management in certain stands can sequester at higher rates. The two ways to sequester carbon for the least cost in Wisconsin are by extending the rotation age in softwoods and increasing the stocking of under-stocked stands (Winrock, 2008). Geospatial data to show where these forests are is difficult to obtain and is not shown in this map but will be considered as priority areas. (Note: Map 4 shows amount of carbon. This criterion is where there is the greatest economic opportunity to sequester carbon.)

Non-timber forest products (not mapped): Products such as balsam boughs and birch bark support local economies. There is not much geospatial data to represent non-timber forest products and their economic potential. This criterion will be used to prioritize but cannot be spatially mapped at this time.

Map 6: Potential for Maintaining and Enhancing Economic Benefits from Forests



Priority Areas

- High (5 - 7)
- Medium (3 - 4)
- Low (1 - 2)

Primary Forest Industries

- Pulp Mill
- Sawmill
- Pellet
- Veneer
- Biomass Conversion
- Other Primary Industry

1:2,500,000

Criteria not mapped:
- Non-timber forest products
- Carbon sequestration
- Recreation Opportunities

Criteria mapped:
- Forest patch size (1 - 3 pts)
- Proximity to protected and conserved areas (1-3 pts)
- Certified forest (1 pt)
- Industry (location only)

Total possible = 7 points. *Priority broken by natural breaks in the data. Data limited to forested areas.*

WI Department of Natural Resources
Division of Forestry
June 15, 2010

Multi-state priority landscapes and issues

Wisconsin worked with neighboring states and the USDA Forest Service to develop the list of multi-state priority landscapes and issues. These are not listed in any significant order. Currently, the multi-state landscapes and issues that Wisconsin has identified for possible coordination with Minnesota, Michigan, and depending on the issue, some combination of Iowa, Illinois, Missouri and Indiana are:

1. Climate change
2. Ecosystem services (e.g. carbon markets)
3. Forestation/reforestation
4. Driftless Area Initiative
5. Fire (Great Lakes Fire Compact)
6. Sustaining forest industry and markets
7. Great Lakes Restoration Initiative
8. Invasive species
9. Lake States branding (timber products, certification)
10. Upper Mississippi Forest Partnership
11. Great Lakes Forest Alliance
12. Promoting sustainable active management of private forests (e.g. Call before you cut)
13. Increase urban FIA (improve urban inventory data)
14. Upper Midwest and Great Lakes Landscape Conservation Cooperative (UMGL LCC)

St. Paul Field Office Service Area

1. Climate Change

Important questions exist about the impact that potential changes in climate will have on forest resources in the future. How will a rise in temperature or change in timing and extent of precipitation affect the continued viability of the existing forest ecosystems? How will these changes affect the existing forest industry? Will both ecosystems and industry be able to respond quickly enough to changing conditions to prevent the collapse of either?

States: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Wisconsin

Issues:

- Uncertainty exists over the extent temperatures might rise, and precipitation might vary from historic norms, in the future. This uncertainty makes long-term planning difficult because future climatic conditions are not known.

- Forestry and the forest products industry are important contributors to the economy of the region, particularly in the northern states. Climatic change may alter the tree species that make up the various forested regimes in the region, their rate of growth and how they can be sustainably managed.
- Tourism is also a major industry in the region and the forested landscapes of the north make this area a prime destination. Changes in the forested condition of this region might impact its appeal as a tourist destination.
- Mitigation and adaptation strategies will be challenging to develop and implement.
- Trees under stress due to a changing climate would be increasingly vulnerable to insect and disease infestation.
- As federal and/or regional regulation of greenhouse gas emissions becomes regulated, states will need to quantify the amount of carbon being sequestered and well as emitted due to changes in land use. Developing accurate systems to do so is complex and expensive and generally beyond the expertise of state forest agencies.

Opportunities for partnership, cooperation, and projects:
Natural resource agencies within the region should collaborate and share information in order to produce assessments that will provide managers and policy makers the information needed to decide on a response to climate change impacts on our environment. The Forest Service effort could foster a network of science professionals within state agencies, universities and other research organizations to work at a regional scale and cooperate with their out of state counterparts. A template for this type of organizations could be built upon the Wisconsin Initiative on Climate Change Impacts (WICCI). Funding could be provided to support research and collaboration (i.e. administrative support and travel expenses for meetings).

2. Ecosystem Services
(For more information and reference for the following text, see: http://www.fs.fed.us/ecosystemservices/)

Healthy forest ecosystems are ecological life-support systems. Forests provide a full suite of goods and services that are vital to human health and livelihood, natural assets we call ecosystem services.

Many of these goods and services are traditionally viewed as free benefits to society, or "public goods" - wildlife habitat and diversity, watershed services, carbon storage, and scenic landscapes, for example. Lacking a formal market, these natural assets are traditionally absent from society's balance sheet; their critical contributions are often overlooked in public, corporate, and individual decision-making.

When our forests are undervalued they are increasingly susceptible to development pressures and conversion. Recognizing forest ecosystems as natural assets with economic and social value can help promote conservation and more responsible decision-making.

States: Minnesota, Wisconsin, Michigan, Iowa, Missouri, Illinois, Indiana

Issues:
Climate change, pollution and land-use change are some of the drivers of ecosystem loss, as well as resource challenges associated with globalization and urbanization. The 2005 Millennium Ecosystem Assessment, prepared by a group of over 1300 international experts, found that 60 percent of ecosystem services assessed globally are either degraded or being used unsustainably. Land use change is an immediate issue in the United States. Today, the nation is experiencing a loss of open space and a decline in forest health and biodiversity, particularly on private lands.

Recent trends in parcelization and divestiture of private lands in the United States suggest that private landowners are commonly under economic pressures to sell their forest holdings. Rising property values, tax burdens, and global market competition are some of the factors that motivate landowners to sell their lands, often for development uses. The loss of healthy forests directly affects forest landowners, rural communities, and the economy. As private lands are developed, we also lose the life-supporting ecosystem services that forests provide.

The ability to capture the financial value of ecosystem services may help landowners who currently do not benefit from the true value of their land and all of the goods and services forests provide. Because most ecosystem services are not traded and do not have a “price,” landowners are not typically compensated for the critical benefits forests naturally deliver to the public. New natural revenue streams might help forest owners cover the costs of owning forestland and provide them with incentives to hold onto their land and practice sustainable forest management. Valuing ecosystem services will encourage forest restoration and may provide a new means to finance reforestation, afforestation, and management activities. Valuing forests as natural assets will increase society’s appreciation and support of lands that are already protected and healthy.

Opportunities for partnership, cooperation, and projects:
Mechanisms are needed by which private forest landowners can seek returns on their forestland *in addition* to those commonly associated with commercial forest products.

Due to the national nature of markets, the Forest Service is in the best position to explore national opportunities to advance markets and payments for ecosystem services. With help from their partners and others, they could help encourage broader thinking and collaboration that stimulates market-based conservation and stewardship.

Academia and the Forest Service could partner to provide data which substantiates the value of ecosystem services in order to provide a basis for developing markets.

3. Forestation-Reforestation

Healthy diverse forests are essential for providing a broad range of goods and services from our forested ecosystems. Maintaining a balance of the many forest-types within the landscape is increasingly difficult due to the many and diverging interests of various forestland owners/managers. Further, many forest-types are becoming increasingly harder to maintain and/or regenerate due to a variety of factors including climate, disease, insect activity, lack of fire disturbance, deer herbivory, and invasive plants to name a few.

States: Minnesota, Wisconsin, Michigan, Iowa, Missouri, Illinois, and Indiana

Issues:

- Invasive plants such as garlic mustard, Japanese stilt grass and reed canary grass have literally taken over the understory on many locations out-competing the native vegetation, including tree seedlings, reducing or eliminating natural regeneration on these sites.
- Extremely high deer populations reduce natural regeneration or shift species composition by favoring some tree species as browse over another. This has contributed to a trend towards increasing amounts of red maple (less favorable browse) in some areas and a complete lack of white cedar (highly preferred browse) regeneration in other areas.
- The low-land hardwood forest type has been severely impacted by the loss of American elm due to Dutch elm disease. Now the Emerald Ash Borer threatens to eliminate ash species, especially black ash that is another important low-land hardwood species.
- Specific stressors could have significant impact on future urban tree mortality. In Wisconsin, Emerald Ash Borer poses a mortal risk to 20% of urban trees. The high percentage of several other tree species makes them susceptible to other invasive species which have not yet arrived in Wisconsin. For example, Asian Long Horned Beetle could decimate the even higher percentage of maple trees in our urban areas and the prevalence of butt and stem decay is likely to result in substantial urban tree removal.
- Oak regeneration has proven to be extremely difficult to achieve on many sites that have historically been oak dominated systems.
- Historically, large-scale forest disturbance patterns initiated forest regeneration, these include fire, tornadoes/wind. Fire suppression has virtually eliminated large-scale fire as a disturbance agent. Large scale-wind events are still with us;

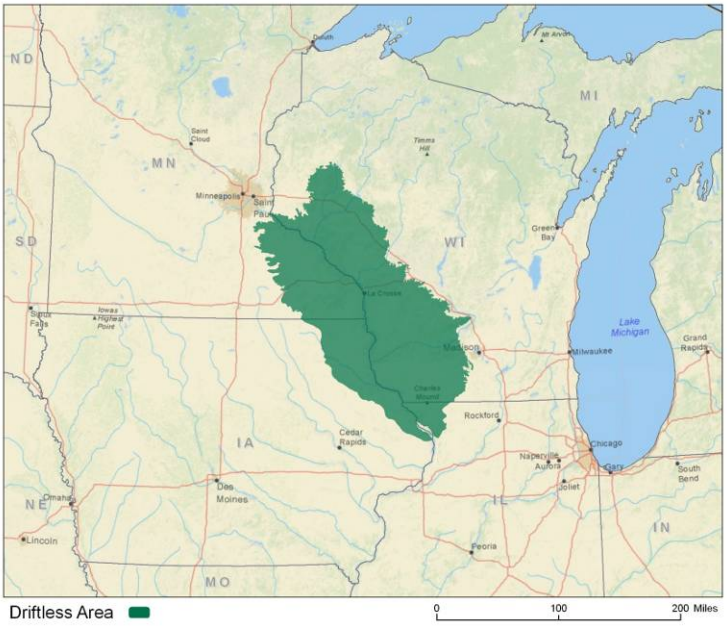
however their impact on the landscape is often tempered by forest fragmentation and land-use patterns.

- Climate change is forcing us to rethink our notion of species range. As temperatures rise, many tree species may no longer be able to thrive in locations where they existed historically.
- The long term impacts to site productivity as a result of increased harvest levels due to biomass harvesting are relatively unknown.
- Forest fragmentation has created many smaller blocks of forest and greatly increased the amount of forest "edge" than has existed historically. Edges tend to favor sun-loving species where shade tolerant species may have once dominated.
- Many forest tree nurseries in the region have closed or are producing at greatly reduced capacities. Adequate stocks of planting material may be an issue with reduced capacity.

Opportunities for partnership, cooperation, and projects:

- Wildlife habitat considerations drive many reforestation efforts. By partnering with wildlife agencies and non-governmental wildlife interests, forest managers might increase opportunities for mutually beneficial tree planting efforts.
- Water quality issues provide opportunities for non-traditional partnerships. Establishment and expansion of riparian forest buffers provide opportunities to increase tree cover while providing the benefit of clean drinking water.
- The current interest in carbon markets and carbon sequestration creates an opportunity to increase tree cover and provide other ecosystem benefits while achieving the goal of increasing carbon storage and sequestration.
- The ability of urban forests to mitigate climate change through carbon sequestration and reducing energy consumption and thus reduction in greenhouse gas emissions provides opportunities for non-traditional partnerships and an alternate funding mechanism (carbon markets).
- NRCS offers a variety of programs to off-set the costs of forest establishment for a variety of purposes including enhancing wildlife habitat and active forest management

4. Driftless Area Initiative



States: Illinois, Iowa, Minnesota, Wisconsin

Issues associated with the area:

- Cold water, spring fed streams that are sensitive to non-point source pollution due to the karst geology.
- Maintenance of a high value recreational resource.Trout Unlimited has estimated that anglers generate an annual $1.1 billion economic benefit.
- Forest fragmentation impacting forest-interior bird habitat.
- Lack of forest management related to limited market accessibility.
- Forest invasives decreases sunlight to understory plants as they die off bare soil on steep slopes is subject to soil erosion.

Opportunities for partnership, cooperation, and projects:

- The Driftless Area Initiative is a partnership of 6 RC&D Areas in four states; maintaining a high quality forest resource is a priority.
- Several watersheds in the Driftless Area have been designated as priority watersheds for the Upper Mississippi Forest Partnership.
- The Root River watershed has been selected as a priority watershed for several initiatives: Upper Mississippi Forest Partnership, NRCS Mississippi River Basin Initiative, and the Midwest Natural Resources Group.

5. Wildfire (Great Lakes Forest Fire Compact – (http://www.glffc.com/content/)

The Great Lakes Forest Fire Compact (GLFFC) is made up of 3 U.S. States and 2 Canadian Provincial Natural Resources agencies. They have created a formal association in order to promote effective prevention, pre-suppression and control of forest fires in the Great Lakes Region of the United States and adjacent areas of Canada. Their purpose is to promote effective prevention, presuppression and control of forest fires in the Lake States region of the U.S. and adjacent areas of Canada by the

member agencies by providing mutual aid in prevention, presuppression and control of fires.

States: Minnesota, Michigan, Wisconsin, Iowa, Missouri, Indiana, Illinois, Canadian Provinces of Ontario and Manitoba

Issues:

- Fire regime condition class change has been occurring over the decades. Vegetative cover and fuel loading has changed due to change in the land management practices and settlement patterns.
- Prescribed burning and its use as a multi-purpose land management tool. There are common issues in the states regarding training, qualifications and the number of people available for burning as well as the environmental issues associated with prescribed fire.
- Significant weather events which have damaged the forest and change fuel composition.
- Community Wildfire Protection Planning – Successful community planning efforts can mitigate losses and the impacts of wildfire to the ecosystems. Planning to reduce fire risk can be incorporated into overall land management planning or specifically identified for communities at risk of wildfire.
- Aging of personnel - an overall problem for all the states as the workforce ages which will result in a decrease in the fire management program's capacity.

6. Sustaining Forest Industry and Markets

The loss of forest products industries and markets constrains opportunities to manage forests and diminishes options for the production and enhancement of an array of ecosystem services

States: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Wisconsin

Issues:

- Competition for forest resources amongst various industrial users of low quality wood likely to increase as biomass markets (e.g., pellet production) grow rapidly.
- New state and federal energy/climate policies will increasingly stimulate demand for forest resources. For instance, proposed federal Renewable Energy Standards are already catalyzing coal fired power plants to co-fire with wood.
- Requests for resource information (inventory and timber product outputs) will increase as resource use patterns change.

- Due to the increased demand on the resource due to renewable energy and fuel standards, a more complex assessment, as compared to that historically provided for traditional wood products, of the availability of the wood resource is needed in order to ensure forest continue to be sustainabily managed. Such analysis needs to include: existing demands, other proposed demands, impacts on the resources (i.e. soil nutrients) and availability both in terms of ease of access and extraction. Currently, there is not sufficient research on the long term impacts of increased harvest levels such as that associated with biomass.
- Systems need to be developed which easily and accurately enable businesses to verify the wood they are purchasing is coming from a sustainable source especially wood being used for renewable energy or fuel.
- Methods need to be developed for harvesters to easily determine if the amount of materials left after harvest is sufficient to meet biomass harvesting guidelines.
- Though still a very large part of US demand for wood, pulp production has declined for more than 10 years. Acute shortage of loggers as boomers retire and industry fails to recruit new entrants.
- Discussion and information needs regarding forest products production and bioenergy application impacts on carbon lifecycles will increase
- Housing. Softwood lumber demand associated with homebuilding has been off dramatically. Predictions are a return to normal housing starts of 1.5-1.7 million starts by 2012.3 Homeowner improvements and remodeling are expected to begin a gradual rebound in 2010. 4 Some suggest a trend towards smaller homes with less use of hardwoods for flooring and millwork as homebuyers try to economize on housing costs.
- Hardwood, solid wood products. Recent years have seen outsourcing of furniture, kitchen cabinets, millwork and flooring production to China and other Asian countries has caused many companies to close with a permanent loss of 25-35% of productive capacity nationally. Indexed prices since 2004 show decline in all graded hardwoods with only lumber prices for pallets and railroad ties remaining stable or increasing slightly.
- Green building is experiencing significant interest and is one of the few areas in forest products trending upward. Currently, green building volume as a proportion of the market remains rather low.

[3] National Association of Homebuilders. March 24, 2010. Urs Buehlman, Virginia Tech personal communication
[4] Harvard Joint Center for Housing Research. Urs Buehlman, Virginia Tech personal communication

7. Great Lakes Restoration Initiative

The President's 2010 Budget provides [$475 million in EPA's budget] for a new Environmental Protection Agency-led, interagency Great Lakes restoration initiative, which will target the most significant problems in the region, including invasive aquatic species, non-point source pollution, and contaminated sediment.

This initiative will use outcome-oriented performance goals and measures to target the most significant problems and track progress in addressing them. EPA and its Federal partners will coordinate State, tribal, local, and industry actions to protect, maintain, and restore the chemical, biological, and physical integrity of the Great Lakes.

The Initiative builds upon 5 years of work of the Great Lakes Interagency Task Force (IATF) and stakeholders, guided by the Great Lakes Regional Collaboration Strategy.

States: Illinois, Indiana, Michigan, Minnesota, Ohio, Pennsylvania, New York, Wisconsin, Canadian Province of Ontario

Issues associated with the area:

- Aquatic invasive species
- Habitat and species loss
- Coastal health
- Areas of Concerns (related to sewer overflow discharges)
- Nonpoint source pollution
- Contaminated sediments and toxic pollutants
- Coordination of data collection and communication
- Development of Indicators for measuring the health of the Great Lakes
- Need for sustainable development

Opportunities for partnership, cooperation, and projects:

- Partner with land trusts, conservation organizations, local communities and state agencies to protect or restore riparian forests and upland habitats.
- Partner with state water quality regulatory agencies to promote the use of urban forests for storm water reduction and on-site infiltration.

8. Invasive Species

Non-native invasive species have the potential to reduce forest diversity and cause huge economic and ecological damage to forests. Insect species such as the Emerald Ash Borer, Gypsy Moth and Asian Long Horned Beetle have already caused major damage in forests and in urban areas in the Midwest. Non-native disease causing organisms, typically fungi, that cause mortality such as those that cause White Pine Blister Rust, and Dutch Elm Disease are well documented historically. More recent examples include Beech Bark Disease and Sudden Oak Death. Dozens of invasive plants species spread and flourish in both urban and rural forested areas. Resource agencies must have evolving and adaptive responses to detect and reduce the potential for the introduction and spread of new invasive species.

States: Iowa, Illinois, Indiana, Michigan, Minnesota, Missouri, Wisconsin

Issues:

- Prevention of invasive insects and plants is time consuming and costly. Eradication efforts are very expensive. Doing nothing has far-reaching cost consequences. The lack of consistency and accuracy of invasive plant data and the methods used to collect the data, makes analyzing the extent and condition of invasives extremely difficult and unreliable.
- Invasive plant populations influence, and are influenced by, environment and co-occurring plant and animal species. An integrated ecosystem-based approach is therefore essential but difficult to achieve.
- There is a varying level of awareness about invasive species and their impacts. In addition to general awareness and education, there is also a need to provide guidance that is more nuanced and site-specific.
- Quarantines on timber product movement placed on states in infested areas cause economic hardship as well as difficult utilization and marketing challenges.
- The loss of forest diversity reduces the ecological stability of forests.
- Control techniques and methodologies need to be developed, shared and implemented for new invaders.

- The inability to effectively control plants introduced via the horticultural industry allows many problem plants to continue to be bought and sold in the marketplace.
- A changing climate may make our forests more susceptible to invasive species.

Opportunities for partnership, cooperation, and projects:
States realize that a cooperative approach to costly survey, detection and eradication efforts that focus on those infestations which pose the greatest threats to natural resource values are the highest priority. Developing invasive species best management practices, educating and instructing foresters, landowners and land managers to detect and control invasive species can be completed and shared across the 7 states. Cooperating to conduct coordinated survey and detection work is a multi-year task. Monitoring for spread of insects and plans as well as evaluating the threat to natural resources can be shared across landscapes. Rehabilitation of lands and forests adversely impacted by invasive plants and insects is crucial.

9. Lake States Branding
The Wisconsin, Minnesota and Michigan have made significant investments in encouraging certification of public and private lands to encourage sustainable management and in effort to maintain and develop diverse forest markets to enable forest management.

The three states contain 53.28% of FSC certified acres, and 25.8% of the SFI certified acres and 8.39% of the American tree farm acres in the United States. In Wisconsin and other lake states there is a high percentage of certified forestlands and a well recognized forest ethic. In Wisconsin alone, 44 percent of its forestland is certified through the FSC, SFI, and American Tree Farm Programs. This is 7,095,083 acres of certified forestland of the 16,274,000 acre total. The certified land includes private non-industrial, private industrial, state, and county owned lands. Of the certified land, 55.70% is public land and 44.30% is private ownership. These certified forestlands assure consumers of sustainable management, but also document that the timber is legally harvested which has become increasingly important with recent amendments to the Lacy Act.

By developing a branding program, regional producers would have a brand identity as well as professional marketing material to promote their product locally, nationally, and globally. Other groups, such as the Appalachian hardwood producers, have has success with regional branding efforts. The combination of well managed forestlands and high quality hardwoods would make a similar branding effort in the Lake States a sure success.

States: Wisconsin, Michigan, Minnesota.
Issues:

- Some companies may hesitate to adopt a regional brand because of competition among states or the need to use products from outside of the Lake States to fill some orders.
- Improve markets for forest products and diversification of forest industries in the three states.
- There is a need to provide information on the economic impact information and effectiveness of a branding/promotion program.
- Provide an assessment of the economic benefit of the efforts certify public and private lands.
- A general design and structure of branding\promotional program that could be used by other regions.

Opportunities for partnership, cooperation, and projects:

- Stakeholders such as state planners, state marketing specialist, and managers of certified forests collaborate to develop a regional wood branding program.
- A collaborative process could be used to develop marketing and informational documents which emphasize the areas that will aid in ecological objectives of the state assessments.
- Development of promotional materials through a consensus process with the industry, state planners, marketing specialist, extension specialist, and forest certification specialist.

10. Upper Mississippi Watershed

States: Illinois, Indiana, Iowa, Minnesota, Missouri, Wisconsin

Issues associated with the area:

Water Pollution--Sediment, nitrogen and phosphorus are the main pollutants in the Upper Mississippi watershed. A significant portion of sediment, nitrogen and phosphorus loads to the Mississippi River comes from human activities: runoff and groundwater from farming, discharges from sewage treatment and industrial wastewater plants, and

stormwater runoff from city streets. The delivery of high amounts of nitrogen to the Gulf of Mexico causes a hypoxia zone (abnormally low levels of dissolved oxygen in bottom waters) to expand each summer. About 90% of the nitrate load to the Gulf of Mexico comes from nonpoint sources, and over 31% of that load comes from the Upper Mississippi River.

Loss of Migratory Bird Habitat--The north-to-south orientation of the Upper Mississippi River and its contiguous habitat make it critical to the life cycles of many migratory birds. It is a globally important migratory flyway for 40 percent of all North American waterfowl and 60 percent of all the bird species in North America. The loss of more than 50% of historic floodplain and valley hardwood forests creates a problem for many waterfowl, raptors, songbirds, and shorebirds.

Forest Loss and Fragmentation--Forests and prairies are the most beneficial land use in the Upper Mississippi River Basin in terms of protecting watersheds and water quality. Nearly all of the prairies and about 70 percent of the forest land have been converted to agriculture and urban land uses. The remaining forest land is critical to watershed health and clean water. The ability of forests to produce abundant clean water declines as they are broken up (fragmented) and eventually lost. Fragmentation is a process where large, contiguous forest landscapes are broken into smaller, more isolated pieces, often surrounded by human-dominated uses. The loss and continued break up of forest land increasingly impairs water flow and quality, forest health and diversity, and other economic and recreational benefits.

Opportunities for partnership, cooperation, and projects:

There are many overlapping initiatives in the Upper Mississippi Basin. Recently the Northeastern Area and the Upper Mississippi Forest Partnership participants analyzed where several major initiatives have set priorities, trying to find areas of overlap where efficiencies may exist. The initiatives included in this analysis are:

- Upper Mississippi Forest Partners GIS analysis,
- Northeastern Area, Stewardship Analysis Project,
- Northeastern Area, Forest-Water-and People,
- NRCS, Mississippi River Basin Initiative,
- State Wildlife Plan-conservation opportunity areas,
- Audubon Society-Important Bird Areas.

Through this analysis and talking to local partners a list of priority watersheds for the Upper Mississippi Forest Partnership was completed. A map of these selected watersheds attached.

Also the National Fish and Wildlife Foundation manage an Upper Mississippi Watershed Fund for the Upper Mississippi Forest Partnership. An annual RFP is a sent out to about 250 potential partners.

11. Great Lakes Forest Alliance

Difficult and complex forestry issues often span political boundaries. In many cases, the best approach to addressing these issues and opportunities involves a concerted effort that exceeds the reach of individual state forestry organizations and their partners.

Great Lakes Forest Alliance

States: Michigan, Wisconsin, Minnesota

Opportunities for partnership, cooperation, and projects:

The Great Lakes Forest Alliance, (GLFA) is a non-profit organization whose mission is to advance and promote healthy, sustainable forests in the upper Midwest. The GLFA has a diverse membership from Michigan, Wisconsin, Minnesota, and Ontario. Members include public land managers at the federal, provincial, state, and county level; non-industrial private forest landowners; forest industry; academia; and conservation organizations. The GLFA is uniquely positioned to help address issues and opportunities that span Michigan, Wisconsin, and Minnesota.

Past and existing efforts:

The GLFA recently completed a series of workshops to inform the retail forest products sector of green building principles, trends, and terminology so that they could better promote and take advantage of the “green” movement in the construction trade. Also, the GLFA is preparing to conduct a series of workshops and a regional conference to inform non-industrial private forest (NIPF) landowners of potential opportunities available to them in new “ecosystem markets.” By informing landowners of these new markets they might more actively manage their land. The subject of new markets may also foster increased communication between NIPF owners and the professional forestry community.

12. Promoting Sustainable & Active Private Forest Management

The Upper Midwest contains a large proportion of private forestland ownership in the nation. A significant amount of these private forestlands may be unmanaged or undermanaged. This represents an untapped resource. By promoting sustainable active management of these forestlands, the productivity of the regions’ forestlands could be enhanced. Active forest management can help to off-set the rising costs of forest ownership, while contributing to the health and resiliency of the regions forests.

States: Minnesota, Wisconsin, Michigan, Iowa, Missouri, Illinois, Indiana

Issues:

- Most land owners own woodlands for reasons unrelated to forest management. Typically private citizens own forests for hunting, recreation, or aesthetic reasons.
- Engaging effectively with private forest landowners is challenging due to the lack of systems and processes to contact these landowners. An outreach and education strategy which would include the creation of systems to identify, contact and reach-out to landowners is necessary to provide information and technical assistance on sustainable forest management practices.
- Landowner turnover rates are increasing due to the aging demographic of current forest owners. This creates opportunities to engage these new landowners who may be more receptive to active forest management.
- Average woodland parcel size is decreasing which leads to increasing the numbers of woodland owners. This creates a capacity issue for those agencies charged with providing landowner assistance.
- Rising land values, and associated property tax rates, are making woodland ownership less appealing to many would-be landowners. Existing landowners may be increasingly tempted to sub-divide large holdings for financial benefit or to reduce their tax burden.
- Many woodland owners are not knowledgeable about forest management and are not aware of programs or cost-share opportunities that might enable them to take an active role in the management of their woodlands.

Opportunities for partnership, cooperation, and projects:

- Most states have non-governmental woodland owner organizations that encourage woodland stewardship and provide educational opportunities for woodland owners. Supporting or otherwise partnering with these organizations can help to increase their effectiveness.
- Cooperation with forestry extension could be expanded to help reach and educate landowners and to inform them of landowner assistance opportunities with the state and federal agencies.
- Peer-to-peer networks of forest landowners have proven very effective at conveying forest management information to private woodland owners who might otherwise be reluctant to take advantages of opportunities presented by well-intentioned “strangers”.

- Forest Service could facilitate/fund the development of a consistent methodology of using tax information data combined with remote sensing data to identify forest landowners by name and address.
- Call Before You Cut – Several Midwestern states have partnered together to create the "Call Before You Cut" campaign. The effort is targeted at those forest landowners who do not have a forest management plan, but are at the point of undertaking a harvest activity. It encourages these folks to seek out the help of a professional forester before making management decisions. The effort shares the same name and slogan despite operating in multiple states and they share a common website where landowners can find contact information. http://www.callb4ucut.com/

13. Increase Urban Forest Inventory and Analysis

The Forest Service's Forest Inventory and Analysis (FIA) Program provides the information needed to assess America's forests. FIA reports on status and trends in forest area and location; in the species, size, and health of trees; in total tree growth, mortality, and removals by harvest; in wood production and utilization rates by various products; and in forest land ownership. The Forest Service has significantly enhanced the FIA program by changing from a periodic survey to an annual survey, by increasing capacity to analyze and publish data, and by expanding the scope of data collection to include soil, under story vegetation, tree crown conditions, coarse woody debris, and lichen community composition on a subsample of our plots.

States: Wisconsin and possibly others.

Issues:

- Continuous inventory data is currently lacking for urban forests, thus limiting the ability of state and regional managers to track conditions and trends.

Opportunities for partnership, cooperation, and projects:

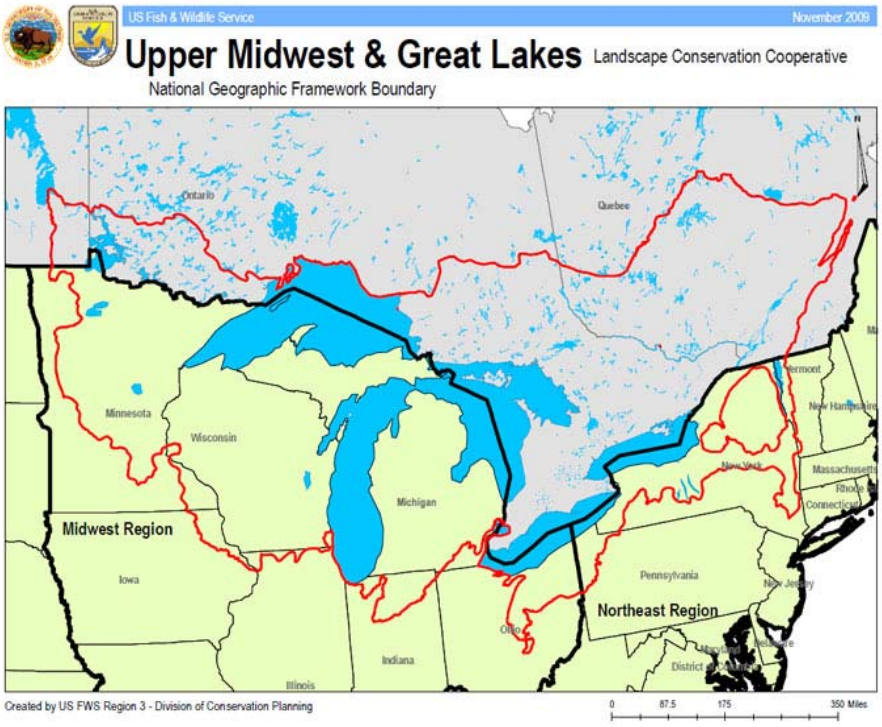
- Partner with neighboring states that share contiguous urban areas for funding and data collection.

Existing efforts:

- Pilot projects were completed in Indiana, Wisconsin, and New Jersey in 2001, 2002, and 2003, respectively. Reports can be found at: http://na.fs.fed.us/urban/monitoring_projects.shtm
- Pilot projects have also been completed (4 panels over 4 years) in Colorado and Tennessee.

14. Upper Midwest and Great Lakes Landscape Conservation Cooperative (UMGL LCC)

States & Provinces: Minnesota, Iowa, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, New York and Vermont, Manitoba, Ontario and Quebec.



Landscape Conservation Cooperatives are management-science partnerships that inform integrated resource management actions addressing climate change and other stressors within and across landscapes. They will link science and conservation delivery. LCCs are true cooperatives, formed and directed by land, water, wildlife and cultural resource managers and interested public and private organizations. Federal, state, tribal, local government and non-governmental management organizations are all invited as partners in their development. (http://www.fws.gov/science/shc/lcc.html) The Fish & Wildlife Service is initiating the cooperatives around the country.

The UMGL LCC area includes unparalleled deepwater habitats, beaches, coastal wetlands, more than 35,000 islands, major river systems, boreal forests, and prairie-hardwood transition zones. These habitats provide for extensive resident and non-resident game populations, fish and many other aquatic resources, waterfowl, colonial waterbirds, marshbirds, and neotropical migrant landbirds.