

**Wisconsin
Department of Natural Resources**



Fish, Wildlife and Habitat Management Plan

Guidance for fish and wildlife conservation, management and recreation related activities in the Wisconsin Department of Natural Resources funded under the Federal Aid in Sport Fish Restoration Act and the Federal Aid in Wildlife Restoration Act

July 1, 2007 - June 30, 2013

June 2007

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PURPOSE AND SCOPE

The purpose of the Fish, Wildlife and Habitat Management Plan (FWHMP) is to provide specific direction to the Wisconsin Department of Natural Resources' fish and wildlife conservation, management and recreation related programs. The scope of the plan is work funded by the Federal Aid in Sport Fish Restoration Act (SFR) and the Federal Aid in Wildlife Restoration Act (WR), along with non-federal funding used to provide the required 25% match for these funds – primarily funding from state hunting and fishing licenses.

The FWHMP (or “the plan”) is part of a portfolio of plans and reports that provide strategic direction and guidance regarding Wisconsin’s biological communities and ecosystems. Attachment 1 lists the plans and reports that are part of this portfolio.

The plan establishes Goals and Objectives to support fish and wildlife conservation, management and recreation associated with:

- Sport fish, associated habitat, aquatic education and boating access.
- Wild birds and mammals and associated habitat, game species in general and non-game species as specifically indicated.
- Hunter education and shooting range construction.

The plan also includes descriptions of some of the Trends, Challenges, Opportunities and Major Issues that may influence the accomplishment of the Goals and Objectives.

The intent of the plan is to satisfy the strategic planning requirement under Chapter 4 of the Fish and Wildlife Service Manual for States administering their SFR and WR grant programs under a Comprehensive Management System (CMS) grant. In addition to providing direction for the specific aspects of the Wisconsin DNR’s fish and wildlife programs under the CMS grant, the plan may also serve as guidance and as a resource for other related fish and wildlife programs, initiatives and projects identified in Attachment 1.

Other Department plans also provide direction and serve as a resource as fish and wildlife programs are administered and as projects and initiatives are developed and implemented. As appropriate, those plans are referenced in this document – and together with the specific direction provided in this plan – serve as the comprehensive guide for the activities funded under the CMS grant.

DEPARTMENT MISSION, VISION, AND VALUES

This Fish, Wildlife and Habitat Management Plan (FWHMP) is established under the umbrella of the Wisconsin Department of Natural Resources Strategic Plan – which includes the mission, vision and values for the agency along with four strategic goals. The Strategic Plan provides the foundation for specific goals and objectives for Department programs and initiatives – and therefore is the starting point the development of the FWHMP.

Our Mission

*To protect and enhance our natural resources:
our air, land and water;
our wildlife, fish and forests
and the ecosystems that sustain all life.*

*To provide a healthy, sustainable environment
and a full range of outdoor opportunities.*

*To ensure the right of all people
to use and enjoy these resources
in their work and leisure.*

*To work with people
to understand each other's views
and to carry out the public will.*

*And in this partnership
consider the future
and generations to follow.*

Our Vision

We share responsibility as natural resources stewards with Wisconsin's citizens, governments, businesses and visitors.

We recognize the air, land and water are interconnected in sustaining all life, in protecting public health and in achieving healthy, diverse ecosystems and the sustainable economies that depend on these ecosystems.

We recognize that forestry, farming and nature-based recreation like hunting, fishing and trapping are key to the state's economy and quality of life.

We value our dedicated staff and provide them with the tools and training needed to ensure that Wisconsin has the best-managed natural resources in the world.

Our Values

In meeting the goals and objectives, and carrying out the strategies of this plan, we will build upon the following Department values as a philosophy for how we do business.

Manage Natural Resources as Ecosystems - We recognize the synergy of air, land and water and how each contributes to defining the places in Wisconsin we call home. We consider the needs of local ecosystems, and the social and economic needs of the people living in them, in all our decisions, to assure the highest possible quality of life in our state.

Respect People - We serve the people of the state, treating them as we want to be treated, using fair and open processes and working with them as partners in protecting the environment. We appreciate the diversity of our society and strive to reflect that diversity in our work force. We respect the differing values held by our publics. We recognize that human needs for economic and cultural security are tied to a high quality environment.

Share Responsibility - We work in partnership with people, a wide variety of public and private organizations, and with governments at all levels to share the responsibility for managing Wisconsin's natural resources.

Value Our Employees - Employees are the department's single most important asset. Each employee brings to the organization important knowledge, a commitment to serve the public and the state's natural resources, and a strong desire to learn, grow and contribute. We strive to provide the financial, technological and other resources and management support for employees to be effective in their jobs. We foster a spirit of pride in employees and the quality of their work. We involve them in decision-making, are open and candid with them, and encourage creative thinking, problem-solving and intelligent questions. We invest time and training to maintain and to continue to develop an internationally respected staff, and we cultivate and reward employee innovation and initiative. We care about our employees and their needs, recognize them for their efforts, and find ways to improve the quality of their work life.

Work Together - We appreciate the power of collective knowledge. People from different disciplines -- both within and outside the department -- share their expertise, skills and the best available scientific knowledge to search for sound solutions and make informed decisions. We respect the work and goals of the department and our peers, and support and value each other as colleagues who share in the great endeavor of understanding and protecting our ecosystem.

Respect the Earth - We seek harmony with our ecosystem, the interconnected web of natural processes supporting life on this planet. We strive to set a good example by the way we protect and manage all living things in or on the air, land and water under our stewardship.

Prevent Environmental Harm - We anticipate and prevent damage to the environment and develop processes and policies to protect our resources and the well-being of the public. We help people, business, industry and local governments ensure that their activities will not harm the environment. When problems occur, the state's resolve is certain; we use enforcement as one of many tools to intervene on behalf of our citizens and natural resources.

Hold Ourselves Accountable - We reaffirm our commitment to future generations as we carry out our mission. We continually refine management approaches and systems to achieve cost-effective, efficient and sustainable outcomes. We set clear objectives, evaluate our progress, and hold ourselves accountable for achieving our objectives.

Assure Quality Management - We use continuous quality improvement techniques in implementing our plans and policies: We plan, implement, check for problems and opportunities for improvement, and incorporate needed changes, knowing that flexibility is needed to accommodate the changing issues and needs of the people and resources.

Adapt to Future Needs - DNR must adapt and respond to Wisconsin's future needs and will accomplish that in part by making this Strategic Plan a living, breathing document that we refer to often and evolve as natural resources and environmental needs and the will of the people direct.

WISCONSIN DNR STRATEGIC GOALS

The following goals reflect the Department's approach to carrying out its mission and vision by: promoting open and collaborative relationships among those who value the state's natural resources; protecting the health and safety of people, wildlife and natural communities that depend on those resources; and promoting opportunities to enjoy and benefit from natural resources in ways that are consistent with protection of the environment. In subsequent sections of this plan, we identify the specific Trends, Challenges, Opportunities, Major Issues and Objectives that guide our sport fish and wildlife restoration-related programs in reaching these overall Department Strategic Goals.

Goal I: Making People Our Strength

People, organizations and officials work together to provide Wisconsin with healthy, sustainable ecosystems. In partnership with all publics, we find innovative ways to set priorities, accomplish tasks and evaluate successes to keep Wisconsin in the forefront of environmental quality and science-based management.

Goal II: Sustaining Ecosystems

The state's ecosystems are balanced and diverse. They are protected, managed and used through sound decisions that reflect long-term considerations for a healthy environment and a sustainable economy.

Goal III: Protecting Public Health and Safety

Our lands, surface waters, groundwater and air are safe for humans and other living things that depend upon them. People are protected by natural resources laws in their livelihoods and recreation.

Goal IV: Providing Outdoor Recreation

Our citizens and visitors enjoy outdoor recreation and have access to a full range of nature-based outdoor recreational opportunities.

REGULATORY, STATUTORY, AND CONSTITUTIONAL REQUIREMENTS

The Department's authority to manage fish and wildlife populations is found in State Statute 29.011 and 29.014. There are additional specific authorizations throughout Chapters 29 and 23. Administrative rules affecting fish and wildlife are found in NR 1, NR 10 (game) and NR 20 - 26 (fishing). Additional authorizations are found in NR 10 through NR 27 and NR 45. Chapters 30 and 31 of the statutes protect aquatic habitat.

FISH, WILDLIFE AND HABITAT

TRENDS, CHALLENGES, OPPORTUNITIES AND MAJOR ISSUES

Goals for fish and wildlife conservation are the same for the future as they were in the past: protecting, promoting, enhancing, and passing on our natural resources to future generations.

While the goals are the same, we face new challenges and opportunities. It's clear from a review of trends that the circumstances under which conservation work will be carried out have changed and will continue to change rapidly in the next decade and beyond - as a result of shifting social, technological, economic, and environmental landscapes.

In order to make effective use of Federal Sport Fish and Wildlife Restoration funding, it's important we look to the future, consider the changes that are occurring and interpret the implications in terms of what they may mean to future conservation efforts. With this approach, we're better able to fashion strategies that will allow us to be successful in addressing the challenges ahead, and in adapting our approaches to take advantage of new opportunities.

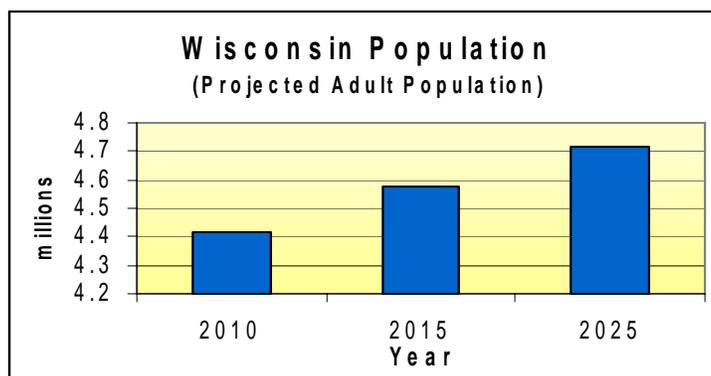
Following is a review of some of the trends that have implications for fish and wildlife conservation, how these trends may shape conservation work in the future – followed by some specific challenges, opportunities and issues we considered as we developed specific strategies and objectives for this plan – and will need to continually consider as we implement fish and wildlife programs.

TRENDS

A. PEOPLE - Wisconsin's Population

We expect a 6.8% increase in our state's adult population by 2025.

Population growth directly affects habitat and resource use. More people mean more competition for space and more development pressure on the resource, with increased potential for conflict among those who use and enjoy the resource.



B. PEOPLE - Population Age

In Wisconsin, the population of those over age 65 will double by 2030 and represent nearly 20% of the population.

We are about to experience a change in the age structure of society never before encountered in human history. Within the next 30 years, for the first time ever more people will be turning 65 than turning 18. Evidence of this impending shift is readily available by merely checking age structure in the room at a meeting of any conservation organization. It's a demographic inevitability, for example, that we'll have fewer hunters and fewer of our traditional advocates for conservation in the future than we have today. Additionally, the population of hunters will be smaller proportionally to the overall population. The implications for fish and wildlife conservation are many – from shifting participation in various types of outdoor recreation – to changes in the membership of conservation organizations – to changes in the fish and wildlife program funding structure.

C. PEOPLE - Diverse Population

As a society, we are becoming more diverse. Currently, on a national level, one in seven Americans is Hispanic. In Wisconsin, in the Madison school district, 44% of the school children have an ethnic background other than white. These are the future voters and stewards of our natural resources. We need to understand the varied interests of our increasingly diverse customers, and sponsor fish and wildlife programs with new approaches in place to address those interests.

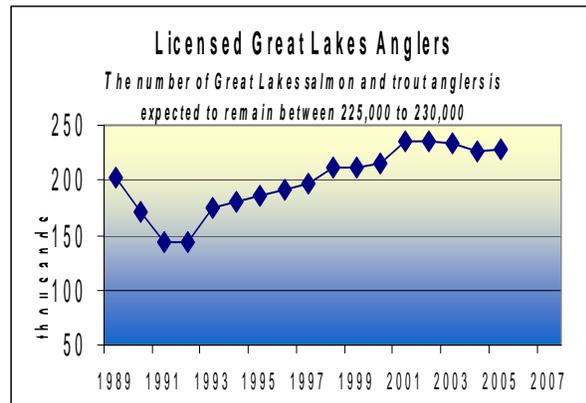
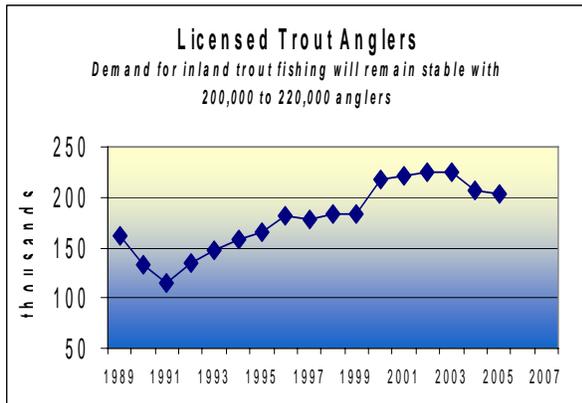
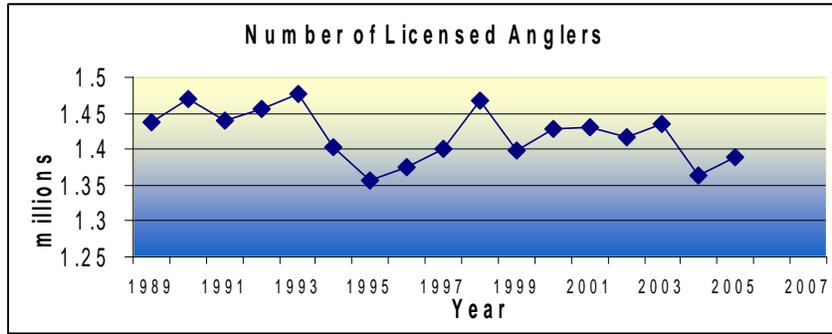
D. PEOPLE - More Urbanized Population

We are becoming increasingly more urbanized. When Theodore Roosevelt died in 1919, we were approximately 50% urbanized. By 2010, it's predicted 80% of Americans will live in an urban environment where their experiences and the opportunities to connect with the outdoor world differ from those of a predominately rural population. We'll need a good understanding of how to tailor fish and wildlife programs to more urban customers.

E. OUTDOOR RECREATION- Fishing

We expect the number of anglers to remain fairly steady or decline slightly - fluctuating between 1.3 and 1.4 million.

Actual license sales for the last twenty years show that though sales vary from year to year by as much as three to five percent, total numbers are expected to decline slightly. Resident angler participation rates, as measured by seven separate random surveys, remained stable over the period between 1992 and 2002 with no discernable trends, and averaged 47.9% of the age 18+ Wisconsin population. Results of a 2005 statewide outdoor recreation survey show that 40.7% of the age 16+ population fishes. Survey results also show slightly more anglers than actual license sales.

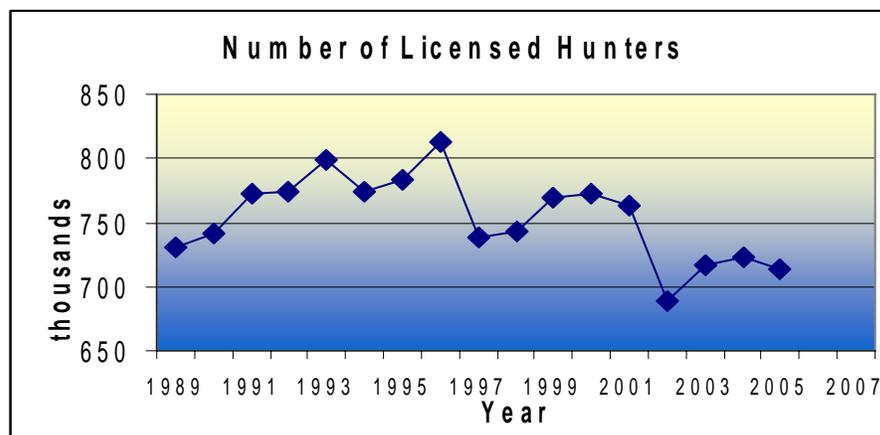


Includes Patron's License after 1992. This license granted trout and salmon fishing privileges to Patrons license holders without their need to purchase a separate stamp.

According to national survey estimates by the U.S. Fish and Wildlife Service, licensed anglers spent 22 million days fishing in Wisconsin and contributed over \$1 billion directly to the state's economy. Though specific data are not available, we believe that today's anglers are more effective than in the past because of better equipment and more information about where and how to fish. Public demands for stocking continue to increase, and stocking policies and practices need refinement to make the most efficient use of hatchery-produced fish. A growing number of anglers seek trophy and catch and release fishing opportunities, especially for premier sport fish (musky, bass, and trout). More anglers participate in organized fishing tournaments and public concern about the impacts of tournaments is rising.

F. OUTDOOR RECREATION - Hunting

We expect the total number of hunters in Wisconsin to decline over the next 20 years, along with the number of hunters as a percentage of the population. Nationally, the total number of hunters is also expected to decline.

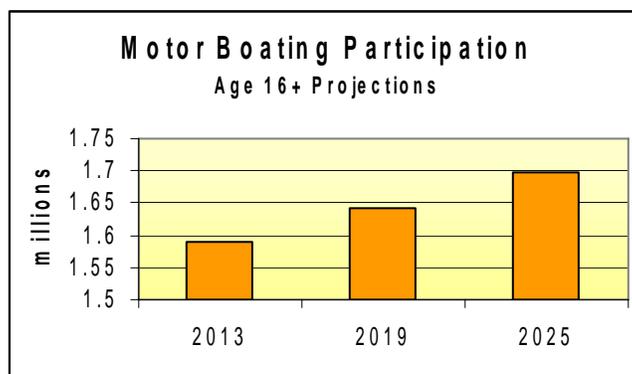


Actual license sales for the last 10 years show the number of hunters varied from a low of 714 thousand in 2005 to a high of 813 thousand in 1996. The higher figure in 1996 was due to a change in the way hunters were counted in that year and an early deadline for bonus permit sales. As a percentage of the population, participation in hunting remained stable during the 1990's, with approximately one-fourth of Wisconsin's adult population participating in hunting each year.

G. OUTDOOR RECREATION – Boating

By 2025, we expect a 10.2% increase in the number of people participating in motor boating.

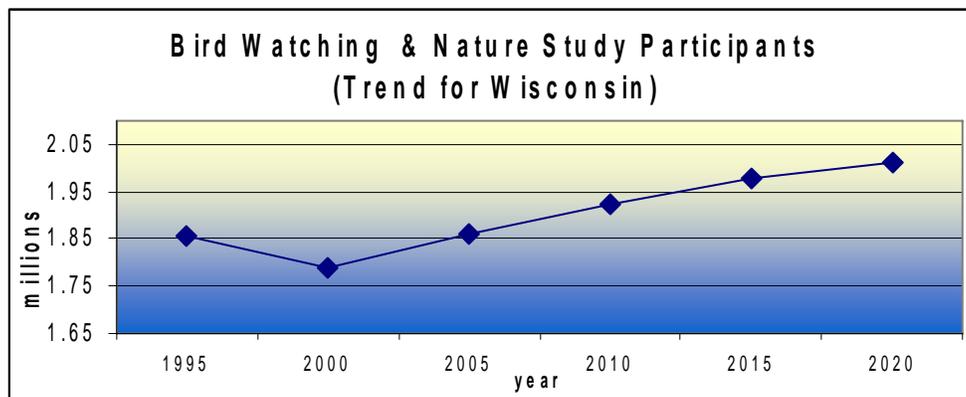
The number of motor boat registrations increased by over 15% since 1996. Surveys indicate an average of 36% of Wisconsin citizens participate in boating each year, and this level of participation is expected to continue. In 2007, an estimated 1.5 million people will be involved in motor boating, and we expect this number to rise to about 2 million in 2025, a 10.2% increase. Federal law requires that at least 15% of SFR funds granted to a state are used for the development, operation and maintenance of motor boat access sites. The Department has experienced an increase in the demand for access, and the trend toward higher land prices and larger watercraft is resulting in greater acquisition and development costs.



H. OUTDOOR RECREATION - Wildlife Watching

By 2010, we expect a 9% increase in the number of people who take part in wildlife watching.

Nationwide data from the National Recreation Survey for the period between 1982 and 1995 shows that bird watching was the fastest growing outdoor recreation activity. It is estimated that currently about 46% or 1.8 million Wisconsin adults participate in bird watching or nature study activities. General wildlife viewing is also very popular, with an estimate of almost 60% or 2.3 million Wisconsin adults participating.



I. ECONOMIC

Deficits, an aging population, changes in participation in certain types of outdoor recreation activities, rising health care costs, and many other trends affect the availability and the increased competition for limited financial resources in the future. Couple this with a reduction in the number of people who buy hunting licenses - and the challenges for funding fish and wildlife conservation become obvious.

J. TECHNOLOGY

The ways in which people get information and communicate with each other – the various options for electronic communications – are much different now than they were in the past. Greater demands will be placed on fish and wildlife agencies to provide data and information quickly to customers, and tailor communication to meet a wide range of customer needs. The changes in technology also provide opportunities to collect and interpret data more efficiently, and communicate information quickly. Technology is also increasing the effectiveness of harvesting fish and game, which may have the implications for fish and wildlife programs, how fishing and hunting are monitored and regulated.

K. ENERGY

Energy related issues will have significant impacts on all facets of life in the next decade. Exploration, extraction, and transportation of remaining fossil fuels and the construction of new power lines have the potential to change landscapes and alter habitats. Transitioning from fossil fuels to biofuels and the corresponding increase in corn production for ethanol have the potential to alter habitats through reduced Conservation Reserve Program (CRP)

participation and funding. This shift also presents opportunities for alternative sources of funding for wildlife conservation work.

L. ECOLOGICAL - Climate Change

Most scientists are no longer debating if global warming is occurring. Research is now focused on first understanding, then anticipating the magnitude of global warming and its impact. A number of states have started to study the specific implications of a changing climate on fish and wildlife species and their habitat. A nationwide survey of licensed hunters and anglers last year commissioned by the National Wildlife Federation found that 76 percent of those polled agreed that global warming was occurring and the same percentage said they had observed climatic changes in the areas where they live. Eighty percent of the outdoors enthusiasts surveyed said they believed the United States should be a world leader in addressing global warming.

M. ECOLOGICAL – Water Quality and Quantity

Water quality and quantity related issues are becoming more prevalent around the world. Both water quality and water quantity issues have the potential to significantly impact fish and wildlife habitat, and consequently fish and wildlife populations.

N. ECOLOGICAL – Fish and Wildlife Diseases, Exotic & Invasive Species

Fish and wildlife diseases present significant challenges and have dire consequences for both fish and wildlife and the habitats that support them. Invasive species on both land and water threaten to drastically change intricate ecosystems.

O. ECOLOGICAL - Changing Land Use and Ownership Patterns

Land use and ownership patterns are changing rapidly. This presents significant challenges for the forest industry, agriculture, wildlife habitat, for access to outdoor recreation, the overall health of the ecosystem, and ultimately the sustainability of society. An increasing amount of rural residential development and urban sprawl are converting farm land to subdivisions. As paper companies sell large tracts of land once open to public recreation, buyers are breaking it into smaller private tracts.

Currently, over 60% of the forested land in the United States is owned by people 55 and over, who, in the next 20 years, may transfer large amounts to their heirs, creating uncertainty for the future of the land. Leasing land for hunting is becoming more common, threatening to price many people out of hunting. As energy prices rise and ethanol becomes economically feasible, owners may convert wildlife habitat lands from the CRP for ethanol production, possibly affecting access to outdoor recreation, wildlife habitat, the future of the logging industry, water quality and food production.

P. ECOLOGICAL -Terrestrial Habitat and Community Trends

- **Oak and Pine Barrens**

Less than 1% of the pre-settlement oak and pine barren habitat remains. The long term sustainability of this habitat and the organisms that it supports will require that we protect and connect the existing scattered sites. Pine barrens originally covered 2.3 million acres of Wisconsin. Oak barrens covered 1.8 million acres in pre-settlement Wisconsin. The composition, structure, and ecological function of these communities depend on periodic fires as a management tool.

It is unclear how many acres of good quality oak and pine barrens remain. A statewide assessment of the extent and condition is needed. Acreage of oak on very dry and dry sites has increased in the last decade but jack pine forest continues to decrease. After the jack pine budworm outbreak in northwestern Wisconsin in the mid-1990's, there was a short-lived increase followed by a decrease in this type of community. Planting of red pine plantations on these sites has eliminated some natural jack pine forests and oak-pine barren affected by the budworm outbreaks. Some natural conversion from jack pine to white pine has occurred due to lack of fire.

- **Southern Forests**

Although the southern forest type is common, large, high-quality, unbroken tracts are becoming rare. Fragmentation and reduction will continue to increase. Residential development is causing the loss of high quality woodlands. Other management issues contributing to loss of biodiversity associated with southern forests include the difficulty in using fire to maintain oak forests, the spread of oak wilt and the problem of exotic shrubs and herbs becoming dominant on some sites. Unsustainable management practices such as high-grading also continue to impact composition.

Unsustainable forest practices, e.g. high grading, continue to occur in the southern oak forests contributing to the loss of high quality red and white oak forests. Oak regeneration continues to be a problem on dry-mesic and mesic sites. With lack of fire or other disturbance, oak forests are continuing to convert to more mesic forest species. Oak wilt and competition from invasive shrubs continue to be a problem in some areas.

Earthworms are increasing and the impact of increased earthworm populations is unknown for this type of forest. Beech forests continue to decrease in extent. Beech forests are threatened by beech bark disease now found in Michigan.

- **Grasslands**

Original land survey records of the 1830's indicate there were 3.1 million acres of treeless grassland in Wisconsin or 9% of the total landcover. Tallgrass prairie and related oak savanna are now the most decimated and threatened plant communities in the Midwest and in the world. Wisconsin has only 0.5% (13 thousand acres) of its original grassland ecosystem remaining in a relatively intact condition and much of this remnant acreage has been degraded to some degree by livestock grazing or woody invasion. Over

80% (11 thousand acres) of this remaining acreage is sedge meadow and the rest (two thousand acres) is native prairie.

Recovering and maintaining native grassland biodiversity in Wisconsin is feasible for many, but not for all, components. Most remnants are too small for most vertebrate species but are capable of supporting viable populations of plant species. The greatest opportunities for recovery of degraded sites are at the dry and wet ends of the soil moisture spectrum, where several thousand acres of degraded dry prairie and sedge meadow still exist.

The ecological landscapes within Wisconsin which have opportunities to restore and preserve prairie are the Western Coulee and Ridges, Western Prairies, Southwest Savanna, Southern Lake Michigan Coastal, Southeast Glacial Plains, and Central Sands Plains. Top priority landscapes for grassland restoration are: Military Ridge Prairie Heritage Area, Muralt/Monroe Grasslands, Buena Vista/Leola Grasslands, White River Marsh Complex, Star Prairie Pothole Grasslands, Yellowstone/Pecatonica River Grasslands, Scuppernong Marsh, Badger Army Ammunition Plant, and the Lower Wisconsin River Prairies and Barrens.

Private landowners have become increasingly interested in restoring or replanting prairie habitats on their land. The federal Conservation Reserve Program continues to provide replanted native prairie or surrogate grassland habitat for many grassland bird species.

For surrogate grasslands, early hay mowing is still a problem for many grassland birds, destroying their nests before they can fledge young. Especially in southwest Wisconsin, an increase of short-term, high intensity rotational grazing has caused an increase in surrogate grasslands. Depending on the rotation interval of cattle among pastures, the rotational grazing could benefit grassland birds. Some continuously grazing pastures provide good grassland bird habitat if stocking densities of cattle are low.

- **Oak Savanna**

In the absence of active management, the future of oak savanna looks very bleak in Wisconsin and throughout its entire range. In a few ecological landscapes the recovery potential exists with active management. In the early mid-19th century, the oak savanna as an ecosystem was fragmented and nearly totally destroyed from conversion to agricultural use and cessation of fire throughout its range. Oak savanna is one of the most threatened plant communities in the Midwest.

Intact examples of oak savanna vegetation are now so rare that less than 500 acres are listed in the Natural Heritage Inventory as having a plant assemblage similar to the original oak savanna. This is less than 0.01% of the original 5.5 million acres. The increasing abandonment of lightly to moderately grazed wooded pastures and the accelerating succession of oak woodlots toward heavy shade producing trees and shrubs will lead to the decline and possible loss of much of what remains of the savanna flora and fauna, including eventual decline of the oaks themselves.

Threats to the future survival of oak savanna include the lack of knowledge about the community, the resistance to the prescribed use of fire, the lack of understanding of the importance of fire in maintaining oak savanna and increasing human population pressures.

Opportunities to reverse this trend and increase oak savanna acreage exist primarily in the Southeast Glacial Plains, Western Coulees and Ridges, Southwest Savanna, and possibly the Central Sand Hills Ecological Landscapes. The best opportunities for restoration using intensive management regimes are the Southern Unit of the Kettle Moraine, Mississippi River bluffs, along the Lower Chippewa River, and in the Upper Mukwonago River watershed. Conservation planning is needed to ensure this community type will be sustained into the future.

- **Northern Forest**

Both the species composition and relative proportion of pre-Euro American settlement forest types have been greatly altered by humans. Northern forest communities have lost hemlock, yellow birch, and Canada yew. Overall stand age has decreased and tree species relative abundance has changed. Generalist species have increased and specialist species have declined. Invasive species have continued to degrade northern forests. Continued second home building, lakeshore development, and road building fragments the forest. Private property parcels continue to be split and sold making parcel sizes smaller, increasing the difficulty for management. ATV and snowmobile use may cause erosion or introduce invasive species into the forest. Invasive earthworms could also have a large impact on the future of the northern forest.

Second growth northern hardwood forest lacks species diversity. Sugar maple has a competitive edge at this time. White pine as a canopy dominant has been lost in some areas, but is regenerating. Red pine stands of natural origin are lacking. White pine and balsam fir have been increasing. Emerald ash borer could greatly reduce the ash component of the forest in the future. Long-term sustainability of cedar swamps may be in question, with little regeneration occurring.

However, there is still great potential for maintaining and enhancing biodiversity in the northern forest. Certification of public forests may increase sustainability for the future. Identification of “high conservation value” forests via planning processes will increase the likelihood that we’ll sustain ecologically important forests. We’ve made several large acquisitions of property in the northern forest. A conservation design plan is needed for the northern forest to protect all forest types, ages, and the species dependent on them.

- **Wetlands**

Dutch elm disease continues to cause the loss of American elm from the overstory, altering the southern floodplain forests. Reed canary grass continues to spread, eliminating floodplain forest tree regeneration in some areas. Emerald ash borer poses a threat to ash trees as a component of future floodplain forests. Increased harvest of floodplain forests has been occurring without a comprehensive plan. Conservation planning is needed to protect floodplain forests.

Site quality has declined in some floodplain forests due to hydrologic changes that prevent periodic flooding. Overpopulation of deer continues to be a problem in some forested wetland types, especially cedar swamps, causing lack of tree regeneration and loss of browse sensitive species. Ash swamps are potentially susceptible to emerald ash borer and hydrologic changes. Tamarack continues to decline in southern Wisconsin.

Emergent marshes continue to be degraded by invasives such as purple loosestrife, phragmites, and hybrid cattail. Common carp continue to impact wetlands, destroying aquatic vegetation and degrading water quality. Runoff from adjacent agricultural fields and urban areas deposit nutrients and other pollutants into marshes. Wetland mitigation and the federal Wetland Reserve program have been restoring wetlands but some wetlands continue to be lost due to road and other construction.

Q. ECOLOGICAL - Aquatic Habitat and Community Trends

- **Cold Water Streams**

Wisconsin's 10 thousand miles of cold water designated trout streams are protected by a number of habitat protection laws and regulations, but continue to be threatened by development, agricultural feed lots, uncontrolled cattle grazing, non-point runoff, and changing land use such as urban sprawl and construction site runoff. Quantity and quality of trout streams continue to improve in the southwest part of the state, allowing opportunities for increased brook trout management and restoration.

- **Warm Water Rivers and Streams**

Wisconsin's more than 30 thousand miles of warm water rivers and streams are the most biologically diverse aquatic ecosystems we have and the most threatened nationwide. The habitats found in these systems are reflections of their watersheds and its many land uses. Modification of these rivers and streams and their landscapes have changed the character of these important systems. These systems harbor over 150 fish and 53 mussel species. About a third of the mussel species are endangered and threatened. More than 3,700 dams have been built on these rivers and three to four hundred of these are obsolete and pose hazards to human safety, property, and the ecosystem. Though not appropriate in all situations, dam removal is one management tool we can use to restore streams.

- **Lakes**

Wisconsin has 15,057 lakes totaling 982,155 acres. The majority of these lakes are small. About 3,620 lakes in Wisconsin are larger than 20 acres representing about 920 thousand acres. Wisconsin lakes represent the heart of the U.S. distribution of the native range of both walleye and muskellunge, making these two species key components of the fish communities and fisheries of the larger lakes of the state. Degradation of near-shore and shoreline habitat is increasing with the pace of development, particularly in northern Wisconsin where, since 1960, two thirds of the larger lakes have been developed, the number of home sites has doubled, and the annual number of permits for sea wall construction has tripled. To protect shorelines, many counties are now enacting zoning

standards for minimum lot sizes, riparian buffers, and minimum setbacks for buildings and other structures.

- **Great Lakes**

Lake Michigan and Lake Superior provide fishing opportunities for over 250,000 sport anglers and a carefully managed commercial fishery for lake whitefish, lake trout, round whitefish, yellow perch, smelt, and bloater chubs. The sport fishery provides over 2.8 million hours of recreation each year. The major sport fish are coho and chinook salmon, rainbow, brown, brook and, lake trout, northern pike, smallmouth bass, yellow perch, and walleye. Sport and commercial harvests of individual species fluctuate from year to year, but we expect continued overall vitality in the sport and commercial fisheries.

As a signatory to “A Joint Strategic Plan for Management of Great Lakes Fisheries”, the Wisconsin DNR is committed to working with other jurisdictions to develop fish community objectives for the two lakes, identify habitats needed to allow the attainment of those objectives, and support ecosystem management. The Wisconsin DNR participates in the Lake Michigan and Lake Superior Committees, multi-jurisdictional bodies that consider issues of common concern. The Lake Michigan Committee provides regular reports on progress toward achievement of the existing fish community objectives for Lake Michigan.

Specific fisheries management activities in Wisconsin waters of Lake Michigan are guided by the Lake Michigan Integrated Fisheries Management Plan. For Lake Superior, management activities are guided by the Lake Superior Basin Plan.

- **Wetlands**

Despite recent legislation protecting isolated wetlands, we expect a continued decline in the quality of our wetlands due to land use, hydrological changes, and expansion of existing and new invasive species. The 1985 Wetland Inventory estimated that there were 5.3 million acres of Wisconsin wetlands which is only 53% of the state's original wetland acreage. Over 75% of the wetlands are in private ownership.

During the next six years we expect current protection, permitting, and restoration programs to hold the line against direct wetlands loss. We estimate a permitted loss of 312 acres per year based on a review of Corps of Engineers permits for the period between 1991 and 1998. Illegal wetland fills add an unknown amount to this total. On the positive side, between 1992 and 1998, the Wetland Reserve Program, a voluntary program offered to land owners, estimated that 11,312 acres of wetland have been restored or improved and an additional 11,312 acres of associated upland habitat have been protected on private lands. During the period between 1990 and 1997, Wisconsin Department of Transportation road projects resulted in a loss of 1,299 acres of wetlands that were compensated by 1,903 acres of restoration, compensation and mitigation banking. From 1992 to 1997, more than 50 thousand acres of wetlands were protected, restored, or managed and an additional 156 thousand acres of uplands were managed to protect wetlands through the North American Waterfowl Management Plan.

CHALLENGES, OPPORTUNITIES AND MAJOR ISSUES

As indicated above, many of the trends discussed create specific challenges and opportunities for fish and wildlife conservation now and in the future. Following is a list of some of the major issues we'll be facing as we administer and implement our programs – along with a short discussion on some of the specific challenges and opportunities each of these issues presents.

1) Information - More accessible, accurate, and timely information is needed to influence decisions which affect fish, wildlife and their habitats.

Wisconsin's resources should be managed with the best demographic, sociological, biological, and ecological information available to ensure that we can enjoy and protect these resources into the future. We do not have a good understanding of the public's vision and level of satisfaction for a wide range of resource related activities. We need to adequately understand, anticipate, and plan for what our diverse publics want today and in the future. Lack of information elicits conflict and lack of support. We need to understand the nature and impacts of these demographics and their changes in order to anticipate changing customer needs, identify non-traditional funding sources, and manage for future environmental threats.

2) Connecting with People

Information technology presents an opportunity to communicate and do business with people on a scale never before possible. Today, people can decide how and when they want to get their information – and they expect service when they want it. Natural resource agencies in the future will need to leverage every means possible to serve customers and provide needed information.

3) Fish and Wildlife Program Staff - Wisconsin's fisheries, wildlife, and enforcement programs face an unprecedented turn-over of senior employees during the period from 2007 through 2013.

More than 20% of our senior employees are eligible for retirement before 2010. Our challenge is to recruit and train replacements, pass on the knowledge and experience of retiring employees, and maintain personal relationships with stakeholders and partner groups.

4) Connecting to Nature - There is a growing lack of connection between people and nature.

This is caused by a number of factors, including but not limited to, changing demographics and changing interests in recreational pursuits. Communicating with Wisconsinites about the outdoors and the importance of our natural resources is one way to help reconnect people with nature. Natural resource agencies will need to focus more resources on marketing, education and outreach strategies. Facilitating community collaboration on behalf of conservation, increasing the level of ecological knowledge, developing an involved citizenry, and raising environmental consciousness will all be critical prerequisites to success.

5) Focus Specific Strategies on the Legacy of the Baby Boomer Generation

Age structure changes present an opportunity for natural resource agencies to work collaboratively with the children to help shape their conservation legacy. The conservation legacy the baby boomer generation leaves behind in the next 15 to 30 years will be critical. Natural resource agencies will need to reach out to this group of people who have time, financial assets, and tend to be politically active and enlist their support for conservation. The health benefits of a clean environment, the benefits of outdoor exercise such as walking on trails with their grandchildren, the importance of leaving a conservation legacy and the social benefits of being involved in community oriented conservation efforts.

6) Create a More Diverse and Inclusive Fish and Wildlife Conservation Constituency

The ranks of the traditional constituency, predominantly hunters and anglers, are slowly shrinking. At the same time society is becoming increasingly diverse. Given these changes, natural resource agencies will need to engage a more diverse constituency to be effective. In the future, successful conservation efforts will require a bigger, more inclusive tent - one in which everyone feels welcome – one that includes the diverse array of fish and wildlife conservation interests and perspectives. It will be important to have a broad and diverse cross section of society understanding the importance of conservation and advocating on behalf of our natural resources. To accomplish this, natural resources agencies will need to proactively reach out to a diverse array of cultural communities to diversify the constituent base to include everyone. Agencies will need to create inclusive organizational cultures and hire people who have the competencies to effectively and comfortably work across cultural boundaries.

7) Adopt a More Adaptive and Strategic Orientation

Organizationally, several key elements will be necessary for fish and wildlife programs to be successful in the future. Foresight will be needed to assess the landscape of the future and strategically plan the path to be taken. This will require a conscious effort by both agency leadership and staff to balance the reactive mindset that can pervade the day-to-day activities of an agency on one hand, and the execution of strategically contemplated actions designed to shape the future on the other. This shift to a proactive, anticipatory mode of operation requires leadership, organizational agility, and capable people. To quickly seize opportunities and effectively address emerging challenges, natural resource agencies will require an organizational culture with the ability to scan and see trends – such as **climate change, energy use and demands, shifting demographics** and some of the other trends discussed earlier - assess their implications, and change or adapt strategies quickly, and execute competent and integrated multi-program responses.

8) Focus Program Strategies and Objectives on Specific Results

Given the future economic challenges, fiscal accountability will be important to any efforts to secure additional or alternative sources of funding for conservation. We will need to have

effective systems in place for establishing clear targets – and using performance measures to determine our progress. In order for fish and wildlife programs to be successful in obtaining critical funding, the public will need to see natural resources agencies as a good investment.

9) Outdoor Recreation

- **Demand for Use of Public Lands**

There is growing recreational use on public lands and waters along with increasing demand for accommodating “non-traditional” uses. Many groups of organized recreationists are increasingly requesting accommodation of their interests on existing public lands and waters as well as requesting additional public lands for their recreation. For example, addressing the growing demand for motorized recreation on the public land and water base to assure resource protection and avoid conflicts is especially challenging. The variety of recreation activities, along with increasing numbers, can lead to both conflicts among recreation participants as well as adverse impacts on natural resources. As a result, there is a need for more intensive planning and management to assure that recreation uses do not adversely impact the purpose for which the land was acquired.

- **Access and Participation in Outdoor Recreation**

A lack of time, knowledge and access to outdoor areas reduces some Wisconsinites’ ability to enjoy fishing, hunting, trapping, exploring streams, hiking, bird watching, or other outdoor pursuits. Outdoor activities are popular and create strong personal connections to nature that increase our understanding and support for conservation efforts. People who hunt, trap and fish provide an essential service in controlling some populations of fish and wildlife. Current Wisconsinites must continue passing along outdoor traditions to guarantee the future of our outdoor recreation heritage.

- **Purchasing Land and Creating Incentives for Access to Private Lands**

Land use and ownership patterns suggest we continue to purchase public land for recreation, wildlife habitat, and forest production. In addition, it will be critical that private landowners are provided education and incentives to promote stewardship of the land. These steps will be necessary to ensure recreational access to land, a continuous supply of forest products that fuel the economy, adequate agricultural lands for food production, preservation of wetlands to maintain water quality, and retain Wisconsin’s aesthetic beauty. Having a place to recreate and connect with the natural world is a key element in passing on the conservation ethic. This is particularly true in areas proximate to urban centers - so people have opportunities to connect to the natural world near their place of residence. The forestry and agriculture in Wisconsin turns on having access to productive land. Maintaining Wisconsin’s tourism economy requires we protect the land and habitat that supports wildlife and aesthetic scenic beauty people come here to experience.

- **Children and Outdoor Recreation**

Another critical area of focus will be encouraging opportunities for children, the future stewards of our natural resources, to connect with nature and develop what Leopold called the “ecological conscience.” As we become more urbanized, this will become increasingly difficult. The goal should be to introduce children in some way to the natural world so they gain an appreciation for it and understand the need to protect our natural resources. Programs and initiatives such as No Child Left Inside, Learn to Hunt, Learn to Fish, Becoming an Outdoors Woman, Project Wild, Outdoor Expositions, and a diverse range of urban oriented outdoor experiences will be important.

10) Economy

- **The current level of resource management using existing funding and sources is not sustainable.**

Fish, wildlife, and their habitats are at risk because the system for funding management of these resources is not adequate due to the increased cost of doing business, demand for monies. The majority of funding for fish and wildlife management comes from hunting and fishing license fees. The growing demand for a broad array of fish and wildlife management services, both for species that are hunted and fished as well as other species of fish and wildlife, requires a diverse source of secure funding.¹

- **Secure Resources for the Future**

Finding stable funding for conservation is critical. For over 120 years, hunters and fisherman have paid for a great share of the cost for fish and wildlife conservation. The demographics clearly show that sustaining the level of programs we currently have is no longer possible with current funding sources.

- **Promote the Economic Benefits of Sustainability and Conservation**

Increasing energy demand, coupled with increased cost, will be a significant issue, and opportunity, in the future. Increased demand and cost will drive new technology aimed at energy efficiency, alternative forms of energy, and cleaner energy sources. This has the potential to create entire new sectors in the economy - marketed by conservation of our natural resources - an economy that can get developing new technology, sustainability, tax incentives, and public policy all on the same side of the ledger as conservation.

¹ Nationwide, many state fish and wildlife agencies have traditionally relied on funding for game species conservation through hunting and fishing licenses and federal excise taxes on hunting and fishing equipment (Pittman-Robertson Wildlife Restoration Act and Dingell-Johnson Sport Fish Restoration Act). The Endangered Species Act provides funds for federally listed species. The rest of our nation's wildlife has lacked secure and adequate funding for long-term conservation. Once a species has declined to the point where it is listed as federally or state threatened or endangered, the cost to protect or restore populations and their habitat is often far greater than would have been required to prevent their decline in the first place. Until recently, the conservation of thousands of native fish and wildlife species that are not hunted or fished and not endangered fell into a federal funding gap. Since 2001, the State Wildlife Grants (SWG) program has helped to close the funding gap for these species and their habitats. However, the SWG program is not a permanent source of funding; allocations are made to each state on an annual basis. The relatively small amount of annual funding (on average, \$1.1 million/year for Wisconsin) and lack of permanence of the program still leaves the majority of Wisconsin's non-game wildlife and their habitats at risk.

11) Infrastructure

The fisheries infrastructure of hatcheries and research vessels in many cases is antiquated, obsolete, and inadequate to address the needs of the program 10 to 15 years from now. Maintaining an extensive infrastructure is costly. Some of our hatcheries are 50 to 90 years old, obsolete, and poorly configured to meet future demands for feral fish, multiple strains, and genetic integrity in our product. There is no quarantine facility. Great Lakes research vessels are more than 60 years old and need replacement.

12) Ecological

- **Habitat continues to be degraded, simplified, fragmented or destroyed by some land and water use practices, policies and development decisions.**

Wisconsin's fish and wildlife, our continued enjoyment of hunting and fishing, our tourism industry, native biodiversity, and our quality of life depend on high quality natural habitat.²

- **Wisconsin's ability to manage and protect lands has not kept pace with public demand, the number of approved acquisition projects, and increases in agency land ownership.**

As the state population grows, it creates greater demand for public recreational land. An increasing population also contributes to fragmentation and degradation of remaining lands, increasing the urgency for land protection. Funding for the acquisition of land and land rights is often not adequate to secure available lands of high resource and recreational value. There is also a need for additional resources to manage acquired land to standards the public expects.

- **Much of the fish and wildlife habitat in Wisconsin is privately owned or affected by local regulations.**

Federal, state, and local units of government need to work effectively with private landowners to protect and manage natural resources.

² **Residential development adjacent to public lands is increasing.** Because public lands are permanent "greenspace" they tend to attract housing along their boundaries. As more houses are built, they create a "hard edge" which can impact the conservation and recreation values of public lands. Adjacent development can also directly eliminate opportunities to either expand or buffer public properties and can significantly increase the cost of land, thereby reducing the likelihood of the Department meeting the property's acquisition goal. **The increasing conversion of rural land, particularly farmland, to development adversely impacts fish and wildlife resources.** Undeveloped rural land, particularly farmland, provides important feeding, resting, and nesting habitat, provides travel corridors for many species, and buffers public lands. The growth of Wisconsin's population combined with its increasing wealth has resulted in a continued demand for suburban and rural housing.

- **Wisconsin's wildlife and fish populations, people and economies in the state are threatened by diseases, contaminants, invasive and exotic species, emerging pathogens and parasites, e.g., chronic wasting disease in white-tailed deer or viral fish diseases such as largemouth bass virus (LMBV) or viral hemorrhagic septicemia (VHS).**

Increasing possession of captive wildlife creates concerns for humane care and risk of disease introduction to wild animals. Major reallocations of staff time and financial resources are needed for disease investigation and control programs, including those with no specific funding provisions, e.g., programs to control invasive and exotic species.

- **Abundant wildlife is causing increasing levels of damage and nuisance for human investments and safety.**

Conflicts between people and wildlife are rising as the interface of human developments and abundant wildlife populations grows, requiring increased attention from wildlife staff. Many species of wildlife are well adapted to suburban, urban and cultivated habitats, often causing damage or nuisance situations including damage to crops and structures, browsed landscaping, defecation on lawns, aggressiveness toward people or pets, road flooding, safety problems at airports, and traffic safety problems.

These situations also occur in rural and suburban areas where the number of houses is rapidly increasing in areas of wildlife habitat around the state. Species involved in these situations include white-tailed deer, bear, Canada geese, turkeys, beavers, muskrats, rabbits, woodpeckers, mute swans, wolves, and coyotes. Local municipalities, businesses and individuals demand help to address these situations.

- **By its nature, habitat management is complex.**

Managing habitats will positively affect some species and negatively affect others. Land managers have long wrestled with how best to balance the needs of multiple species and habitats for a variety of conservation and economic uses. For example, managing for older growth forests at a location may benefit some species, but may conflict with the needs of other species that require forests at earlier successional stages. Decisions about how to manage must consider the spatial and temporal scale of the action as well as the ecological, socio-economic and institutional context within which the action will be taken.

- **Within the context of ecosystem management, it's important to recognize there is a need to manage for individual species or groups of species.**

Multiple user groups want and expect properly managed populations of species that are of special interest to them. Hunters, anglers and trappers desire abundant game species. Birders and wildlife watchers want to see their favorite species in the habitats in which they expect them. Additionally, many wildlife species require individual or special management actions because they have low abundance, decreasing trends or are threatened by other environmental factors.

FISH, WILDLIFE AND HABITAT STRATEGIC OBJECTIVES

Following are the Strategic Objectives for this Fish and Wildlife plan. The Objectives were developed following a review of on-going, core work in each of the Wisconsin DNR fish and wildlife related programs, along with a review, inventory and analysis of the trends, challenges, opportunities and major issues discussed earlier.

The Objectives are organized around each of the Department's four Strategic Goals to show how they fit into the larger scope of work performed by the Wisconsin DNR. The lists of Objectives also show funding source and program function and are limited to those functions that are eligible for funding from the Sport Fish and Wildlife Restoration Program.

The Wisconsin DNR has the opportunity to direct how we use these funds to ensure we're investing these resources to effectively address the long term strategic goals and issues. The level of detail in this section varies depending upon the planning and special needs of the individual programs.

More specifically, the Objectives support fish and wildlife conservation, management and recreation related to:

- Sport fish, associated habitat, aquatic education and boating access.
- Wild birds and mammals and associated habitat, game species in general and non-game species as specifically indicated.
- Hunter education and shooting range construction.

The Water Division has chosen to address the Wisconsin DNR strategic plan in a very specific way. The Division has created four goals and assigned them to the bureaus within the Division. The Bureau of Fisheries Management and Habitat Protection is one of those bureaus and has been assigned to the Department goal on Outdoor Recreation and assigned the following Water Division goal:

"To enhance and restore outstanding fisheries in Wisconsin's waters."

All fisheries work (except for employee safety and training) falls under the single goal stated above and is directly linked to the Outdoor Recreation goal in the DNR strategic plan.

Note: Some activities found in the 2000-2007 Fish Wildlife and Habitat Management Plan and formerly assigned to the Fisheries Management and Habitat Protection program were reassigned along with staff, associated non-fisheries funding and regulatory authority to the Watershed program in the Water Division. Among these are habitat protection, shoreline protection, and wetlands regulation and management.

Strategic Goal I: Making People Our Strength

People, organizations and officials work together to provide Wisconsin with healthy, sustainable ecosystems. In partnership with all publics we find innovative ways to set priorities accomplish tasks and evaluate successes to keep Wisconsin in the forefront of environmental quality and science-based management.

Sport Fish Restoration (SFR):

A. Employee Training and Safety

A safety first culture must be established and nurtured to avoid injuries or risks to employees. Fisheries management and research field activities involving heavy equipment, shops and tools, boats and other on-water based equipment, electroshocking, chemicals, and similar activities introduce safety risks for employees.

This program function includes technical and field safety training for fisheries staff, orientation and mentorship programs for new biologists and supervisors, and a mentorship program for technicians to be trained in specialized field activities.

A.1. Employee Safety

- a. To create a culture that puts safety first, we will implement and manage the seven-component Fisheries Management Safety System through 2013 with primary responsibility assigned to the Fisheries Board and Safety Task Force.
- b. The Safety Task Force and Fisheries Board members will investigate employee safety concerns within 48 hours of being reported.
- c. Conduct safety inspection audits annually in each region and report to the Fisheries Board.

A.2. Employee Training and Succession Planning

By 2010, more than 20% of our senior employees in fisheries will be eligible for retirement. The recruitment, hiring, training, and mentoring of high quality staff to replace those who retire is a strategic need that must be met. We need to recruit, train, and retain a professional and technical workforce suited to meet the challenges managing Wisconsin's fishery resources and serving its fishery customers in the future.

- a. By 2007, establish a statewide fisheries technical training team and engage the university community in developing and teaching a curriculum for fishery staff.
- b. By 2007, establish and manage a mandatory technical and safety training program of 100 hours per year for fishery biologists and 100 hours per year for technicians.

- c. By 2007, develop and implement an orientation and mentorship program of not less than 320 hours for new biologists and supervisors during their first year on the job.
- d. By 2007, the Fishery Board will develop and implement a succession plan for key supervisory positions to ensure a transition overlap of three months, allowing senior employees to work with their successors.
- e. By 2007, develop and implement a mentoring program for technicians to ensure an adequate pool of technicians trained in specialized activities, e.g., electrofishing construction and maintenance; assistant boat captains on Great Lakes research vessels; heavy equipment operation and safety certification, fish disease diagnosis, and chemical applications.

Wildlife Restoration (WR):

A. General Support of the Wildlife Program

This program function includes strategic and operational planning, budget, personnel, and data management, performance measurement and program review for the wildlife program.

A.1. Internal Staff - Professional and Safety Training and Information

- a. Develop and provide not less than 40 hours of technical training per year for current staff in each subprogram.
- b. Develop and implement an orientation program of not less than two to three hundred hours for new biologists, technicians and managers during their first year on the job.
- c. Hold an annual statewide technical training workshop for employees.
- d. Place additional emphasis and resources towards the recruitment process for new staff. Work to streamline the process in order to shorten the overall length of time from announcement to start date. Work with universities, technical schools and colleges to clarify our needs.
- e. Encourage acting assignments to enhance professional development and to allow movement from field to central office and vice versa.
- f. Review compensation issues and support pay comparable to private sector and surrounding states' rates.
- g. Provide and encourage attendance at professional meetings and training opportunities.
- h. Encourage more wildlife staff to attend the Leadership Academy.

- i. Provide timely access to new research data both internally and externally using the intranet, the wildlife newsletter and the Internet.
- j. Develop methods to efficiently communicate to staff the research findings shared at conferences and in journals.
- k. Develop internet links to reputable national wildlife information sources, such as the Association of Fish & Wildlife Agency Furbearer Management Web site, on both our internal and external Web sites.
- l. Use the internal wildlife newsletter to circulate short articles written by various staff with specialized expertise.

A.2. Partners and the Public

- a. Develop a wildlife information “needs list” to deliver through citizen-based monitoring programs by 2009.
- b. Encourage partners to contribute funds and staff toward accomplishing our education objectives as described in A.3. and Part B.
- c. Work with partners to continue youth conservation programs.
- d. Make wise use of remaining years of the Stewardship Fund through partnerships and leveraging to maximize land protection efforts.
- e. Sustain and enhance partnerships with statewide and local conservation organizations to develop and manage habitat.

A.3. Wildlife Education, Marketing, and Outdoor Skills Training

Package and market existing wildlife outdoor skills and awareness programs to schools and youth development agencies. Wherever practical, correlate programs to the Wisconsin Department of Public Instruction’s model academic standards to encourage interdisciplinary use by upper elementary and middle schools. Modify programs where necessary to address the different needs of different target audiences. Offer fish and wildlife programs in conjunction with other complimentary department education programs. Supplement with highlights of local education efforts developed by Wisconsin DNR biologists and conservation wardens.

- a. Encourage and sponsor activities such as Archery in the Schools, Learn to Hunt programs and outdoor skills events to increase participation and emphasize the importance of hunting.

- b. Continue our curriculum improvement for the Trapper Education Program in cooperation with Wisconsin Trappers Association. Improve support materials for the program.
- c. Continue the Turkey Hunter Education Program to attract and help new turkey hunters.
- d. Provide hunter information in other languages, e.g., Spanish and Hmong.
- e. Partner with sporting goods companies to promote outdoor skills and small game hunting as a recruiting tool.
- f. Continue to educate the public on the “right way” to gain access to private land.
- g. Increase elementary, middle and high school student and teacher understanding and appreciation of Wisconsin wildlife and other natural resources.
- h. Provide resource materials for public schools to promote outdoor skills, ethics, and habitat related messages.
- i. Provide funding to Wisconsin DNR wildlife education centers so that curriculum and staffing are adequate to meet public demands.
- j. Promote the Watchable Wildlife program at teacher conferences each year for the next six years.

A.4. Customer Satisfaction

- a. Incorporate surveys into the rule making process wherever possible.
- b. Explore new ways of getting input from the public such as the Automated License Issuing System (ALIS) and the new harvest registration database.
- c. Include partners, such as the sporting goods industry, in identifying our customer needs.
- d. Continue to conduct sociological surveys on key management issues, e.g., chronic wasting disease.
- e. Explore the possibility of using the Department’s Web site for questionnaires to gauge the public pulse on important issues.
- f. Continue to conduct surveys of hunting, harvest of game species, and hunter satisfaction and expand the surveys beyond hunters.

A.5. Conservation Funding and Support

- a. Print one or more wildlife or habitat related success stories about a major project in each area's local press every year in order to establish credibility with constituents and the Legislature.
- b. Annually report wildlife accomplishments, innovations, highlights, and costs to the public, the Legislature and the U.S. Fish and Wildlife Service.
- c. Explore and obtain at least one new alternative funding source through partnership coalitions. Develop a plan to show how new revenues would be spent. For example, explore advertising in regulation pamphlets.
- d. Implement the Nature is our Business initiative.
- e. Seek stable funding for statewide acquisition of critical habitats identified in the Land Legacy Report.
- f. Biennially work with the Legislature and the public to include a regular increase in the operating budget for Wisconsin DNR's fish and wildlife properties and state natural areas.
- g. Seek legislative approval and funding for a development, rebuilding and facilities maintenance program for DNR fish and wildlife properties to provide an adequate outdoor recreational infrastructure.
- h. Seek reauthorization of the Stewardship Program to ensure needed funding to secure properties of high resource value as they become available.

B. Hunter Education and Shooting Ranges

This program function includes strategic and operational planning, budget, personnel, and data management, performance measurement and program review for the total hunter education project.

- a. Each year, promote safe, responsible, and ethical conduct to all existing hunters from all cultures through improved communications in the media and Department publications.
- b. Recruit, train, and retain the volunteer instructor corps in the hunter education program to certify new hunters.
- c. Establish an improved instructor incentive program to recruit and retain volunteer instructors.

- d. Monitor 33% of all hunter education classes each year to assure consistent delivery messages and content.
- e. Improve on the current regional instructor workshops and conduct an annual standardized training workshop for all hunter education instructors.
- f. Deliver a hunter education instructor academy statewide in each region yearly by 2008.
- g. Train new hunters and instill in them the four basic firearms safety rules, TABK (T = Treat every firearm as if it is loaded; A = Always point the muzzle in a safe direction; B = Be certain of your target and what’s beyond it; K = Keep your finger outside the trigger guard until ready to shoot).
- h. Deliver advanced hunter education clinics and seminars in all five regions by 2009.
- i. Increase nontraditional delivery of hunter education certification by 25% by 2008.
- j. Create and offer a youth hunter education challenge for kids under age 18 who have graduated from hunter education to further enhance knowledge, skills and behavior.
- k. Develop a mentor program with incentives to get youth involved in hunting.
- l. Develop and implement a “test out” for the basic hunter education certification by 2009.
- m. Utilize funding for shooting range development as available.
- n. Promote partnerships with organizations and agencies to offer hunting educational opportunities to women and minority communities through staffing expertise, public relations outreach, and course curriculum assistance.

Strategic Goal II: Sustaining Ecosystems

The state's ecosystems are balanced and diverse. They are protected, managed and used through sound decisions that reflect long-term considerations for a healthy environment and a sustainable economy.

Wildlife Restoration (WR):

A. Maintain Wildlife Habitat and Biodiversity

Maintain wildlife habitat (grassland, wetland, forest and savanna) on public and private land.

A.1. General Goals and Objectives

- a. Make full use of the Biodiversity Report, Land Legacy Report, Ecosystem Management Handbook, Wildlife Action Plan, and other planning documents to help guide land protection efforts of government and non-government organizations.
- b. Identify, protect and restore critical habitat in each administrative area with priorities determined for each ecological landscape.
- c. Identify, investigate, and conduct research on the causes of habitat loss or impairment and take corrective actions in each administrative area.
- d. Identify and implement strategies to minimize the effects of rural residential development adjacent to protected habitat.
- e. Continue to educate staff on the necessity and safe use of prescribed burning and other tools for habitat management that may not be well understood or accepted, e.g., clear-cutting, herbicide application. Continue to educate the public on the importance of these methods for ecological management.
- f. For habitat conservation planning, integrate the many existing habitat plans by ecological landscape or other land unit.
- g. Educate the public on adverse habitat trends and what the Department has been and is doing to slow or reverse these trends.
- h. Investigate and advocate for strategies that reduce global warming and its impacts on habitat.
- i. Protect unique habitats of statewide significance such as bat hibernacula.
- j. Manage lands to provide enhanced food resources for wildlife.

- k. Complete Ecosystem Management Planning team chapters on ecological opportunities for each ecological landscape.
- l. Manage habitats on public lands to encourage less represented communities including early successional and late successional habitat types.
- m. Continue to make progress on writing master plans for state forests, scientific natural areas, and wildlife areas.
- n. Work to establish corridors of habitat to connect major blocks of important habitats across the state.
- o. Promote recognition of statewide habitat plans in local planning and zoning decisions.

A.2. Aquatic Communities – General

- a. Support and further promote Forestry Best Management Practices for water quality.
- b. Continue to work with local units of government to further protect and restore shore lands.
- c. Restore forests, grasslands and wetlands in watersheds to enhance water quality in streams and lakes.

A.3. Wetlands

- a. Implement "Reversing the Loss: A strategy for protecting and restoring wetlands in Wisconsin".
- b. Identify and prioritize wetlands in need of protection, restoration and enhancement in each ecological landscape or administrative area.
- c. Seek authority for and develop a comprehensive state administered wetland regulatory and enforcement program including compensatory mitigation for permitted wetland loss.
- d. Protect wetlands with high value through acquisition, incentives and other innovative strategies together with federal, state and local government and conservation organization partners.
- e. Restore degraded wetlands on public and private lands to recapture ecosystem function and value and in certain areas enhance migratory waterfowl habitat.
- f. Evaluate wetland restoration and management techniques for effectiveness.
- g. Promote to the public Department efforts with wetland restoration and management.

- h. Implement the Upper Mississippi River and Great Lakes Region Joint Venture management plans for water birds, waterfowl and shorebirds.
- i. Rewrite Wisconsin’s portion of the Joint Venture management plan for waterfowl and wetland management.
- j. Seek opportunities to manage shallow water lakes to benefit wildlife.
- k. Conduct a wetland management training program for wildlife staff.
- l. Manage wetlands and flowages through water control structures, water level management, and dike establishment and management.
- m. Develop and implement a comprehensive wild rice management plan.
- n. Develop an educational brochure on shallow lakes and flowage management.
- o. Educate the public on the value of prescribed burning for wetland management.
- p. Regularly use disturbances such as fire, mowing, disking, or herbicide to prevent herbaceous wetlands from succeeding to woody habitats.
- q. Develop forest management techniques for regenerating bottomland floodplain forests.

A.4. Oak and Pine Barrens

- a. Implement the Northwest Sands Integrated Ecosystem Management Plan in concert with the signatory partners.
- b. Work with private landowners with sandy soils to restore barrens and maintain open landscapes in barrens areas.
- c. Restore significant blocks of open barrens community in northeast sands ecological landscape, e.g., Dunbar, Spread Eagle, Athelstane.
- d. Restore significant blocks of open barrens community in central sands ecological landscape, e.g., Quincy Bluff.
- e. The Ecosystem Management Team will produce maps and data for central sands ecological landscape.
- f. Implement Karner Blue Butterfly management plans to increase oak and pine barrens habitats

- g. Implement pine barrens curriculum at education centers and schools in northwest and central Wisconsin.
- h. Work with forestry and forest industry to have oak and pine barrens restoration viewed as a priority within the sand-dominated landscapes.
- i. Lease Namekagon Barrens to preserve open barrens landscape.
- j. Continue to manage for open barrens habitat as a priority on Crex Meadows Wildlife Area.
- k. Work internally to foster timber sales beyond the scope of sustainable forestry for wildlife benefits, e.g., moving mosaic to produce both wood and open landscapes.

A.5. Southern Forests

- a. Protect, enhance and maintain remaining large block southern forest landscapes, e.g., Kettle Moraine area, Baraboo hills, driftless area, Mississippi River, Lower Wolf River Bottomlands, and Wisconsin River.
- b. Implement land planning efforts that protect and enhance large blocks of southern forests, e.g., the Kettle Moraine Feasibility Study, the Southeast Region Natural Areas Feasibility Study, and the Land Legacy Report.
- c. Identify priority southern forest restoration areas with forestry staff and use available dollars, e.g., Turkey Stamp, Farm Bill, Conservation Reserve Enhancement Program, Stewardship, to enlarge and connect them.
- d. Implement management practices to benefit and enhance native flora and fauna associations, in particular interior forest birds.
- e. Offer liberal hunting regulations to encourage hunters to harvest enough deer to manage deer populations near established population goals to reduce impacts on forest flora and fauna; investigate impacts of existing deer population goals.
- f. Use partnerships established through the Wisconsin's Bird Conservation Initiative to improve habitat for wild birds in southern forests.
- g. Work with consulting firms and forestry to certify forested lands on all department lands.
- h. Work with foresters to ensure that timber management on wildlife areas is consistent with property goals and beneficial to a diversity of wildlife.

- i. Develop guidelines that would help incorporate wildlife management into properties enrolled in the Managed Forest Law and properties receiving funds through the Wisconsin Forest Landowner Grant Program.
- j. Provide incentives that encourage practices that maintain oak dominance in southern forests.
- k. Implement state lands forest management initiative.
- l. Restore agricultural lands to forests where they would add to existing large forest blocks.

A.6. Grasslands

- a. Implement recommendations for this community found in the Biodiversity Report and the Management for Grassland Birds document, e.g., Central Wisconsin Grassland Conservation Area, Southwest Grasslands, Jefferson County Habitat Area, Western Prairie Habitat Restoration Area, and Glacial Habitat Restoration Area.
- b. Protect, manage, and enhance native prairie remnants as refuges for flora, fauna and ecological processes.
- c. Protect and manage significant blocks of sedge meadow not currently afforded management or protection.
- d. Explore perennial bio-fuel options for wildlife values on private lands.
- e. Regularly use disturbances such as fire, mowing, disking, or herbicide to prevent established grasslands from succeeding to woody habitats.

A.7. Oak Savanna

- a. Establish savanna habitat at several landscape scales to meet area requirements for a wide range of species.
- b. Work with partners to restore large blocks of degraded oak savanna on private land.
- c. Continue oak savanna restoration across its historical range on several Department-owned properties.
- d. Use the “use-value” tax incentives to promote use of grazing land for private savanna restoration.
- e. Educate wildlife biologists, foresters, and landowners on the value of prescribed fire for savanna restoration.

- f. Work with the resurging grazing industry to facilitate savanna preservation and restoration.
- g. Work with local zoning administrators to preserve important grasslands.
- h. Work with farm agencies, organizations and landowners to convert row crops to grazing lands with practices to benefit grassland birds.
- i. Work within the Department to identify areas where grassland will be a higher priority than trees (and vice versa).
- j. Work to provide corridors between major grassland areas, e.g., Killsnake and Brillion Wildlife Areas.

A.8. Northern Forest

- a. Maintain a full spectrum of forest ecosystems with a range of successional stages, patch sizes, ages, geographic distribution, and connectivity.
- b. Work with foresters to plan for and increase the number of large blocks of various forest components.
- c. Continue to incorporate wildlife needs through the private tax law.
- d. Work with counties to implement 15-year county forest plans.
- e. Maintain large, contiguous forests for ecological, economic and social reasons.
- f. Prioritize large forest ownerships for protection through acquisition, easements and other methods and secure special legislative appropriations for these large forests rather than using so much of stewardship funds that other critical habitats cannot be acquired statewide.
- g. Restore under-represented elements of northern forests, e.g., flora, fauna, forest structure and ecological processes.
- h. Provide department input on national forest plans.
- i. Work with industrial forests to protect and enhance wildlife habitats; embrace working forests for the wildlife values they provide.
- j. Manage forest openings in early successional habitats.

A.9. Urban and Suburban Areas

- a. Protect and enhance birds using urban environments, e.g., Bird City USA, green space planning, and National Wildlife Federation backyards for wildlife, with special attention to corridors and riparian habitats.
- b. Work with municipal parks to develop demonstration projects.
- c. Work with urban governments to improve water quality in associated rivers and lakes.
- d. Work with private nature centers in urban areas on practices for city dwellers to implement on their properties.
- e. Promote use of native species for urban habitat plantings.

A.10. Private Lands

- a. Department staff will perform a direct role in Farm Bill policy negotiations through legislators, the Wildlife Management Institute, Association of Fish and Wildlife Agencies, State Technical Committee, etc.
- b. Quantify the impact of the 2007 Farm Bill programs on Wisconsin wildlife by 2011 and deliver this information for decision-making for the next farm bill.
- c. Build a coalition of partners, including Wisconsin Bird Conservation Initiative partners, to lobby for farm bill policy that benefits wildlife habitat and populations.
- d. Work with the U.S. Department of Agriculture on Wetland Reserve Program implementation through shared project positions.
- e. Field staff will work with landowners to improve habitat directly or through federal farm programs.
- f. Use waterfowl, turkey and pheasant stamp funds for private lands habitat projects.
- g. Cooperate with Resource Conservation and Development Districts and the Wisconsin Woodland Owners Association to inspire private lands wildlife habitat work.
- h. Update the educational Wildlife and Your Land series.
- i. Seek ways to increase wildlife management considerations on lands under Managed Forest Law and in the Wisconsin Forest Landowner Grant Program.
- j. Provide information that will cause consideration of wildlife needs in land use planning discussions of local governments.

- k. Seek ways to bridge the gap between inadequately staffed agencies with habitat improvement funds and landowners who may be interested in programs.
- l. Evaluate alternatives to the current “use-value” tax law which may have less adverse impacts on wildlife habitat.
- m. Seek tax breaks for preserving or restoring critical natural communities, e.g., prairie, savanna, sedge meadows, and wetlands.
- n. Promote recognition of statewide habitat plans in local planning and zoning decisions.
- o. Creatively work with partners to enhance delivery of wildlife management practices on private lands.
- p. Seek tax breaks for lands with resource protection deed restrictions.

A.11. Exotic and Invasive Species

- a. Prevent, control where feasible, or contain priority non-native invasive plant species.
- b. Identify invasive species that will be a priority for Department control and then identify priority sites for invasive control in each administrative area.
- c. Develop and implement statewide invasive species management plans, including education, research and control.
- d. Develop guidelines for field biologists to use in controlling invasive species.
- e. Communicate with landscaping companies and nurseries on invasive species that are particularly hazardous for Wisconsin.
- f. Continue to support and evaluate bio-control efforts, e.g., purple loosestrife, garlic mustard, spotted knapweed.
- g. Secure funding for programs that would have significant impact on invasive species, particularly terrestrial species.
- h. Work toward control of harmful, non-native animal species.
- i. Continue to use management tools to control mute swan populations according to the Natural Resources Board’s approved mute swan management policy.
- j. Ensure the Aquatic Nuisance Species Plan is implemented.
- k. Develop and implement a feral pig control plan.

- l. Continue to work to minimize carp populations in wetland habitats important for waterfowl production and migration.
- m. Identify and implement measures, e.g., pet owner education, to reduce feral cat impacts on wild birds and mammals; consider evaluating trap-neuter-release programs
- n. Work to prevent the introduction and manage the impacts of priority high-risk foreign fish and wildlife disease agents.
- o. Assess the potential risk to Wisconsin species from emerging continental and global diseases.
- p. Develop tools to prevent and monitor for the introduction of high risk disease agents.
- q. Develop and implement tools for the control and/or containment of priority emerging diseases.

B. Establish and/or Manage Wildlife Populations

Analyze and interpret wildlife population data in order to manage species levels, set quotas, and establish hunting seasons. Results would be shared in publications and communications with the public.

B.1. Non-game Mammals

- a. Implement the Wolf Management Plan.
- b. Continue rare mammal tracking and reporting.
- c. Assess location, population characteristics, and movements of bats along the Niagara Escarpment. Develop a Wisconsin bat management plan by 2013.
- d. Incorporate small mammal inventories into master planning inventories and other inventories on public lands.
- e. Prepare a Pine Marten Plan update by 2009 and explore opportunities for enhancing the pine marten populations in northern Wisconsin.
- f. Inventory Wildlife Management Areas for wild mammalian species of greatest conservation need.
- g. Implement components of the Wildlife Action Plan the benefit wild mammals.

B.2. Non-game Birds

- a. Continue eagle and osprey population monitoring and productivity surveys.
- b. Continue population monitoring and productivity surveys for trumpeter swans; update and revise the recovery plan to incorporate new down-listing and delisting goals, which will be based on a population viability model.
- c. Implement Partners in Flight (PIF) plans for migratory songbirds for Areas 16 and 20 Plans through step-down effort by Wisconsin Bird Conservation Initiative (WBCI). Participate in planning efforts to determine the staff and resource costs for implementing the PIF plans, and develop approaches for meeting those needs.
- d. Revise and update the peregrine falcon recovery plan; continue recovery activities.
- e. Integrate shorebird management into management of wildlife impoundments, and develop other initiatives as opportunities present themselves in the Wisconsin Bird Initiative.
- f. Continue population monitoring and management efforts for colonial water birds, e.g., herons, gulls, terns, cormorants, egrets, and piping plover.
- g. Develop and implement a cormorant management policy.
- h. Develop and implement a statewide population monitoring and management program for marsh/wetland birds that allows us to track and monitor populations. Pursue citizen-based monitoring options for population monitoring.
- i. Coordinate efforts with Department research programs to implement landscape scale management efforts for grassland birds. Implement the Central Wisconsin Grassland Conservation Plan, Western Habitat Restoration Area (HRA), Glacial HRA and Prairie Chicken Management Plan. Complete the Southwest Wisconsin Grassland Feasibility Study.
- j. Serve as a partner in the recovery of whooping cranes. Implement the state management plan.
- k. Develop and implement management guidelines for habitats supporting forest raptors. Participate in studies to determine status of the northern goshawk; contribute nesting data to the National Heritage Inventory database. Comply with federal eagle management rules.
- l. Participate in the Mississippi Flyway Council non-game technical section to develop policy, plans, and regulations.

- m. Inventory wildlife management areas for wild bird species of greatest conservation need.
- n. Implement components of the Wildlife Action Plan that benefit wild birds.

C. Monitor Diseases and Environmental Contaminants in Wildlife

Investigate significant mortality of wildlife, monitor health of species of concern, certify health of captive wildlife, work to eradicate chronic wasting disease (CWD) in our deer herd, and monitor environmental contaminants in wildlife.

C.1. Wildlife Health

- a. Minimize the impact of CWD on the state’s deer herd, economy, hunters, and landowners. Implement phase two of CWD management, including components for surveillance, research, herd reduction, education and outreach, and disease prevention.
- b. Contain and control CWD in the known infected areas, with the goal of eventual eradication of the disease.
- c. Continue surveillance statewide for CWD.
- d. Use a “learn and adapt” approach by incorporating new scientific information into CWD management.
- e. Conduct and assist CWD research efforts to develop greater knowledge on disease ecology, testing diagnostics, control strategies and human dimensions.
- f. Provide information, education, and opportunities for public involvement on CWD management to major stakeholders
- g. Seek authority to ban deer baiting and feeding statewide, perhaps beginning with public lands.
- h. Continue agency shooting and trapping of deer in infected areas.
- i. Continue a strong program of fish and wildlife disease monitoring, including surveillance of significant species to detect introduction of new diseases, changes in disease patterns, and significant impacts on fish or wildlife populations.
- j. Develop and maintain an integrated wildlife health database that allows archiving of disease and health testing data and promotes analyses of these data to identify health trends.

- k. Develop wildlife disease emergency response plans and capacities in partnership with federal and state agencies and industries, so prompt action can be taken when needed for emerging diseases.
- l. Provide health management for reintroduction and conservation programs for endangered, threatened, extirpated and rare species.

C.2. Captive Wildlife

- a. Develop and implement licensing, enforcement, and education systems to ensure appropriate disease risk management and humane care for captive wildlife, while minimizing negative impacts on Wisconsin's wildlife populations.
- b. Work with state and federal agencies and industries to manage CWD and other disease risks in captive cervid facilities.
- c. Implement a wildlife rehabilitation licensing and education system that ensures appropriate disease risk management, humane care and treatment, and release or placement of orphaned, injured and sick wildlife.
- d. Ensure that the falconry license and education system provides appropriate disease risk management, humane care and treatment of birds.
- e. Provide technical guidance for the implementation of new regulations for dog training to ensure better control over health, humane care and disease risks of the species used.
- f. Develop regulations to prohibit possession and release of swine at risk to become feral pigs.

Strategic Goal III: Protecting Public Health and Safety

Our lands, surface waters, groundwater and air are safe for humans and other living things that depend on them. People are protected by natural resources laws in their livelihoods and recreation.

Wildlife Restoration:

A. Monitor Diseases and Environmental Contaminants in Wildlife

Investigate significant mortality of wildlife, monitor health of species of concern, certify health of captive wildlife, work to eradicate chronic wasting disease (CWD) in our deer herd, and monitor environmental contaminants in wildlife.

A.1. Wildlife Diseases

- a. Monitor birds for avian influenza.
- b. Monitor birds for West Nile virus.

A.2. Contaminant Monitoring

- a. Continue contaminant monitoring in identified geographic areas, species of concern, e.g., fish-eating birds and insectivores, or habitats of concern, e.g., northern wetlands.
- b. Conduct surveillance on newly emerging contaminants of concern, e.g., polybrominated diphenyl ethers (PBDEs), nanomaterials, perfluorooctane sulfonate (PFOs), pharmaceuticals and endocrine disrupting compounds.
- c. Monitor contaminant levels in urban goose populations to facilitate harvest for consumption as a population management alternative.
- d. Utilizing baseline information from studies such as lead in woodcock, PBDEs in cormorant eggs and mercury in otter, and contaminants in loons, eagles, osprey and mink, continue to monitor changes by periodic sampling of populations.
- e. Work with customers to explore legislation or administrative codes to minimize exposure to contaminants, e.g., ban lead fishing weights and upland use of lead shot.
- f. Assess impacts of pesticides on wildlife populations.
- g. Initiate contaminant monitoring of wildlife species regularly consumed by humans.

B. Establish and/or Manage Wildlife Population

Analyze and interpret wildlife population data in order to manage species levels, set quotas, and establish hunting seasons. Results would be shared in publications and communications with the public.

B.1. Animal Damage

- a. Control native species or their populations that have been determined to be detrimental. Identify the populations.
- b. Continue to implement the urban wildlife grants program.
- c. Increase the public's ability to handle their own wildlife nuisance by developing a "ready reference" educational tool and liberalize or modify regulations to allow landowners to legally handle their own problems. Increase availability of "how to" and "self-help" materials for landowners by 2013.
- d. Update policies on abatement for nuisance and agriculture damage bears and turkeys by 2008.
- e. Participate in a joint U.S. Department of Agriculture/Wisconsin DNR DNA-marking study to measure the frequency that individual bears are causing agricultural damage or nuisances.
- f. Clarify existing rules and consider promulgation of regulations and certification for the nuisance wildlife control industry.
- g. Continue to implement the Endangered and Threatened Species and Gray Wolf damage program.

Strategic Goal IV: Providing Outdoor Recreation

Our citizens and visitors enjoy outdoors recreation and have access to a full range of nature-based outdoor recreational opportunities.

Sport Fish Restoration (SFR):

A. Boating Access

This program function includes site reclamation and development and maintenance and public information about the location and use of access sites.

- a. Develop an average of 1.5 new boat access sites per year.
- b. Renovate approximately six to ten access sites per year.
- c. Utilize 15% of the available SFR-grant funds to acquire, develop and improve motor boat access sites.
- d. Utilize state boat access funds (\$300,000) to develop and improve public boat access sites focusing on southeast Wisconsin as required by the appropriations.
- e. Combine appropriate state and federal grant sources such as Stewardship, County Fish and Game, Recreational Boating Facilities, SFR and Land and Water Conservation programs in order to maximize program effectiveness.
- f. Allocate approximately one third of SFR motorboat access funds in the Sport Fish Restoration Grant for maintenance of Department-owned motor boat access sites.
- g. Implement major maintenance and renovation projects as identified in the Department's six-year facilities plan and selected utilizing the process identified in the Comprehensive Management System grant proposal.
- h. Provide training, technical assistance or consultation and design services to achieve compliance with the Americans with Disabilities Act.
- i. In those regions that do not have a list, develop a list of the highest priority lakes and rivers for public access that lack adequate public boat access and help assure that local managers and land agents are aware of the priorities and seeking out potential opportunities.
- j. Develop regional lists of the top five Department-owned access sites that will receive priority for upgrades. Work with property managers in an effort to assure that these projects and sites are included in the Department's six-year facilities plan.

- k. Maintain and update the Department’s six-year facilities plan for boat access sites to prioritize development, and renovation projects.
- l. Collect data from all public access sites, enter the data into the inventory system, and continue to support and manage the data.
- m. Add and verify additional data elements (target: October 2008) to blend into the Department’s inventory system.
- n. Use part of the 15% available SFR grant funds to complete the overall statewide boat access information system.
- o. Place priority on local partnerships for the development and maintenance of state owned or funded boat access sites.
- p. Provide staff training and information that highlight the value of the boat access program for Department staff and on the CMS and other federal SFR requirements.
- q. Meet with fishing clubs, conservation organizations, and other interested parties to discuss boat access related issues.
- r. Use existing Department publications and the Department’s Web site to highlight the boat access program.

B. Land Management – Fishery Lands

The primary focus of this program function is the maintenance and up-keep of the “land” portion of approximately 420 fishery areas. Activities include, but are not limited to, site reclamation, parking lot, trail, road and general property maintenance, assuring user health and safety, property posting, and development activities designed to facilitate use and management. Implementation of soil stabilization techniques such as planting of seed mixtures and trees and other land based activities to protect or enhance aquatic resources are also included.

Realty activities including land acquisition contacts and negotiations, and encroachment investigations are included in this function as are feasibility studies for the expansion of existing fishery lands or the establishment of new lands. Also included in this function are property planning activities such as master plans for determining the uses and management of the property and site planning work necessary for proposed development. Development of policies, activities related to grant requirements such as compliance and accomplishment reporting, and the development of public informational materials are included in this category. This category also includes the development of access routes for sport fishing purposes through other Department property types, e.g., wildlife areas, state forests, etc.

- a. Continue to provide clean, safe, and well-maintained fishery properties.

- b. Improve access to sportfishing opportunities.
- c. Perform management activities needed for the protection and enhancement of aquatic resources.
- d. Work with fisheries staff to ensure acquisition efforts are targeted to priority sites which protect critical aquatic resources, provide good fishing opportunities, or are key locations for fishing access.
- e. Working with and fisheries staff, determine master planning priorities, develop a strategy for updating property plans, and complete priority plans, with a target of one group of five to eight properties per region per year.
- f. Continue to improve public information materials about fishery properties. This includes the development of up-to-date, user friendly, GIS-based property maps on the Web in a PDF format, and distribution of hard copy maps at service centers.

D. Fisheries Assessments, Surveys, Research

Fisheries managers need adequate information to set attainable management objectives, evaluate attainment of those objectives, and make recommendations on required fishing regulations, stocking quotas, and habitat restoration and improvements.

We recognize that fish populations naturally vary from year to year. Our fishery management surveys measure these natural fluctuations in various ways to detect fish populations that are below what they should be when compared to similar lakes and streams. In these cases we may, with public support, recommend habitat improvement, different fishing regulations, or a change in stocking to restore the population.

We base all management decisions, e.g., stocking, habitat, fishing regulations, on a population's status relative to the objectives set below. The population objectives expressed in this plan are based on accepted scientific principles applied to a statistical analysis of 3,955 lake surveys, 5,023 wadable stream surveys, and 903 river surveys conducted during the 2001-07 planning period and entered into the statewide data base. We conduct all surveys using a standard protocol to assess the status of fish populations and measure the impact of our management actions relative to the objectives. This method provides a basis from which we learn and adapt management of the state's waters.

The fishery assessment objectives for 2007-13 are:

1. With the standard Tier 1 sampling protocol, complete statistically valid assessments of all Wisconsin sport fisheries resources on a rotational schedule that surveys:
 - a. 100-acre or larger lakes with public access every 12 years.
 - b. 1st order trout streams and all 2nd order or greater streams every 12 years.
 - c. Major river sites every year.

2. Complete data entry into the statewide database by the end of the 4th quarter of each fiscal year. We interact with this data base to statistically analyze the data we have collected concerning baseline population measures on species. Tier 1 findings will be augmented with more detailed Tier 2 surveys of specific fish populations and waters to identify sources of problems and evaluate management efforts. Specific Tier 2 objectives and surveys are established each biennium and selected through work planning. As provided in the Fisheries Technical Version, populations not meeting their potential will be further investigated by diagnostic Tier 2 monitoring. The results of Tier 2 will indicate what specific remedy may be warranted to restore the population to its expected natural variance. Depending upon the specific results of the investigation in each situation, actions may include remedies such as additional detailed survey work, regulation changes, stocking, or habitat improvement, etc.
3. Maintain and improve the statewide database through 2013.

Fisheries Research will continue to develop statewide methodology used to classify lakes. This work is relevant to goal setting for every species of interest. Effective lake classification groups lakes based on limnology and lake morphometry, allowing assessment of the fishery in relation to predictable limitations imposed by natural features of the lake. Lake classification can be an effective tool for assigning appropriate regulations for the type of lake. Thus, regulations can be standardized by having a set of options, yet flexible because the choice of a particular option is related to lake class. This type of network is efficient because it allows biologically relevant generalization while recognizing important differences among lakes.

By 2009, Fisheries Research will complete the Wisconsin Fisheries Potential Model. The GIS-based modeling approach will develop quantitative, predictive models of fish occurrence and abundance in flowing waters that will improve stream classification, monitoring and evaluation, and environmental protection/restoration, and help direct fisheries management activities in over 50,000 miles of flowing waters in Wisconsin.

Fisheries Research will provide research and scientific support on the impacts of dams on riverine fishes and prepare to evaluate the benefits improved flow regimes and fish passage in selected rivers.

Fisheries Research will continue research quantifying the large-scale effects of watershed and riparian agricultural and urban land uses on stream health and fish communities in streams and lakes.

D.1. Walleye

Wisconsin's primary walleye fishery on lakes greater than 100 acres consists of approximately 480 lakes sustained by natural reproduction and approximately 330 lakes where the stocking of walleye fry and fingerlings provides most of the angling opportunities.

- a. Three or more adult walleye per acre and total harvest is less than 35% of the adult population to protect spawning adults on 683 lakes with natural reproduction.
- b. 25% of all adult walleye over 10 inches are 15 inches or larger in northern lakes
- c. 50% of all adult walleye over 10 inches are 15 inches or larger in the southern lakes where the growing season is longer.
- d. 25% of all walleye over 10 inches are 18 inches or larger on stocked lakes.
- e. Survey all walleye lakes over 100 acres with public access at least every twelve years.
- f. Fisheries Research will continue a long-term study on the effects of exploitation rates on northern walleye populations and will provide information about sustainable walleye exploitation rates. The study will allow managers to more effectively implement the walleye management plan and will assist them in developing and refining regulations.
- g. Fisheries Research will develop a study to evaluate the role(s) of population dynamics, e.g., recruitment, and genetics has on recruitment status and viability of Wisconsin walleye populations. The specific objectives will include:
 1. Determine spatial distribution of walleye genetic diversity in naturally recruiting walleye populations.
 2. Evaluate the relationship between effective population size and recruitment patterns in Wisconsin walleye populations contrasted with traditional population dynamic model predictions.
 3. Correlate walleye habitat availability and quality with recruitment status, genetic diversity, and effective number of breeders.
 4. Determine specific objective measures to delineate the various recruitment categories used to discriminate Wisconsin walleye populations.
 5. Investigate the potential roles genetic diversity and effective population size play in the overall productivity of walleye populations.
- h. By 2010, complete the evaluation of the impact of these three fishing regulations:
 1. 14-18” protected slot
 2. one walleye over 14”
 3. three walleye over 18”

D.2. Musky

Muskellunge are found in lakes of all sizes and in slower water of large rivers, generally occupying areas with abundant submerged aquatic plants. The heart of the range is north central Wisconsin, although they are found in many other locations throughout the state. Nearly 90% of muskellunge waters occur in the Northern Region. Muskellunge are the largest predatory game fish found in Wisconsin. They are sleek, powerful predators, known to feed on virtually every fish species as well as aquatic birds and mammals. Their large size and predatory nature mean that muskellunge are usually present at low densities, with most waters generally containing less than one adult per acre. Muskellunge are managed with a bag limit of one per day and high size limits. Long hours are often required to catch a muskellunge. However, most avid anglers are more than willing to invest the time required to encounter a muskellunge and many now practice catch-and-release fishing to help improve the quality of fishing.

Muskellunge occur in 711 lakes (615,241 acres) and 83 river segments (1,682 miles). Waters are subjectively divided into three classes based on the relative abundance of muskellunge and the quality of the fishery:

Class A – Support good muskellunge populations and provide the best muskellunge fishing (356 waters; 217,364 acres).

Class A1 – “Trophy waters” (104 waters; 118,173 acres)

Class A2 - “Action waters” (252 waters; 99,191 acres)

Class B – Support intermediate populations that provide good fishing, but with generally lower catch rates than in Class A waters (222 waters; 115,452 acres).

Class C – These waters have fishable muskellunge populations but they are generally not of major importance to the fishery (216 waters; 282,425 acres).

- a. 30% of all adult musky larger than 30 inches are 38 inches or larger.
- b. Complete an update of the musky management plan by 2007.
- c. Complete a comprehensive survey of musky genetics to identify stock boundaries by 2008.
- d. Increase trophy fishing opportunities for muskies above 45 inches by increasing the number of lakes with trophy size limits where growth potential and public support warrant it.
- e. Fisheries Research will coordinate the musky genetics project with collection of tissue samples from populations of interest, obtaining archival material to reconstruct historical patterns, and by acting as a thesis committee member for a student at University of Wisconsin-Stevens Point.

- f. Fisheries Research has initiated a project to evaluate growth potential of native Chippewa River Basin muskellunge and Mississippi River (Leech Lake) muskellunge in waters of the St. Croix Basin. We developed this project in response to angler interest in genetically based differences in growth potential.
- g. Fisheries Research is conducting evaluations of tagging methodology in muskellunge. Passive Integrated Transponder (PIT) tags provide long-term identification of individual fish, aiding assessments of growth and other important population parameters. This technology also provides a tool for quantifying the contribution of the propagation program to the fishery.
- h. Fisheries Research will conduct research to gain a better understanding of muskellunge population dynamics and population variability in naturally reproducing populations. The study will include both exploited and unexploited populations and will provide managers with valuable baseline information that can be used to interpret the effects of harvest and management scenarios on other musky populations. As part of this study, we will also model a muskellunge stock-recruitment relationship using various biotic and abiotic factors.

D.3. Bass in Lakes

Wisconsin is home to both largemouth and smallmouth bass. The popularity of bass fishing has increased in the past six years as both a recreation and competitive sport. Over half (56.5%) of Wisconsin residents reported fishing for bass which is the second most sought after game fish in Wisconsin, finishing second only to the walleye. Largemouth are common in 4,151 lakes; smallmouth are common in 1,500 lakes and 214 streams. Our goal is to manage both species of bass as self-sustaining populations by identifying and protecting shallow water habitat critical to bass survival and reproduction. We intend to manage bass fishing with regulations to provide the angler with a variety of bass fishing experiences.

- a. 30% of all adult bass over eight inches are 14 inches or larger.
- b. Fall surveys of eight inch or larger bass find at least:
 - 10 largemouth bass per mile of shoreline in northern Wisconsin
 - 20 largemouth bass per mile of shoreline in southern Wisconsin
 - three smallmouth bass per mile of shoreline
- c. All bass lakes over 100 acres are sampled at least once every twelve years.

D.4. Smallmouth Bass in Streams and Rivers

The long term direction is to develop a targeted management program of regulations and habitat rehabilitation similar to trout.

- a. Classify all bass streams and rivers by 2013 with respect to the catch from standard protocol surveys per mile of stream thread for juvenile bass, bass over eight inches, and bass over 14 inches.
- b. Continue to manage smallmouth bass in streams with a minimum statewide size limit and occasional stocking or habitat restoration. We will modify these objectives as we accumulate and analyze data.
- c. Fisheries Research will provide technical guidance in designing and implementing scientifically sound fish monitoring programs for smallmouth bass streams and rivers.
- d. We will provide comprehensive monitoring of select smallmouth bass streams to help set statewide fisheries management objectives.

D.5. Bluegill and Crappie

- a. 30% of all adult bluegills over three inches are six inches or larger.
- b. 30% of all adult black crappie over five inches are eight inches or larger.
- c. Sample 1,223 waters on a six-year rotation using the standard protocol.

D.6. Lake Sturgeon

The waters of Wisconsin collectively possess one of the largest self-sustaining populations of lake sturgeon (*Acipenser fulvescens*) in the world. The lake sturgeon is a unique species with respect to longevity, spawning maturity, intolerance to pollution, and the ease in which a population may be impacted in an exploited fishery. Sturgeon populations are declining worldwide and are threatened with extinction, except in Wisconsin. Here, careful management of sturgeon and its habitat, in cooperation with individual anglers and sturgeon clubs, have secured its future as a sustainable fishery. Our goal is to manage Wisconsin sturgeon populations as a sustainable fishery and restore native lake sturgeon to the waters where they were once found.

- a. Continue to manage the sturgeon fishery of the Winnebago-Wolf River system as a sustainable population through harvest regulations, protection, and habitat improvement.
- b. Preserve and enhance existing naturally reproducing populations. Reestablish populations in waters within their original range consistent with their genetic origins.
- c. Reintroduce Lake Michigan strain lake sturgeon into suitable tributary habitats in cooperation with other states as discussed in the Joint Plan for Management of Great Lakes Fisheries.
- d. Continue to restore at least four lake sturgeon populations through 2013 from prioritized waters listed in the Wisconsin Lake Sturgeon Management Plan, e.g.,

middle Wisconsin River, Menominee River, Milwaukee River, Manitowish River, Manitowoc River, and Green Bay.

- e. Revise Wisconsin’s Lake Sturgeon Management Plan by 2008 with the involvement of stakeholders.
- f. Allow for sport harvest opportunities where there is a harvestable surplus.
- g. Evaluate impact of sturgeon hook and line harvest tag on angler participation, sturgeon harvest and management activities by 2012.

D.7. Trout

The trout resources in Wisconsin are generally in very good shape. Improved land use in the western Wisconsin driftless area has resulted in increased water infiltration and increased trout stream flows. Especially where combined with trout stream habitat restoration, this has resulted in increased trout populations, more natural reproduction, and conversion to native brook trout. For example, in the last 10 years, over 250 trout streams and 800 miles have been added to our list of classified trout streams.

In 2005, the Wisconsin DNR became one of the main partners in the Midwest Driftless Area Restoration Effort – a geographically-focused, scientifically based, broad partnership to improve the trout resources throughout the four-state driftless area. The effort is part of the National Fish Habitat Action Plan and is expected to bring numerous funding sources to bear on this unique area. It will attempt to bring all partners together in a coordinated regional approach to increase the effectiveness of watershed restoration by strategically linking upland conservation efforts with stream restoration.

The trout resources of Wisconsin are not without some threats to their health. Groundwater use in the central sand plains appears to be reducing flows in many trout streams and has completely eliminated flow in at least two streams for short periods of time. Recent legislation gives the DNR some authority over new high-cap wells within close proximity to trout streams, but will require help from Fisheries program to successfully implement. Recent droughts have aggravated the problem, but increasing competition for groundwater will result in allocation issues that will be difficult to solve.

- a. Sample trout populations in all 1st, 2nd, 3rd, 4th, and 5th order streams on a one, three, six or twelve-year rotation plus any 1st order streams that have adult trout populations.
- b. Sample approximately 30 (six per region) unclassified but potential trout streams every year as candidates for a higher level of environmental and ground water protection as trout streams.
- c. Fisheries Research is continuing to develop and refine models that predict stream temperature, fish presence/absence and relative fish abundance using GIS landscape

- data and climate data. We will use this stream classification and land-use model allocate trout stream monitoring efforts, e.g., identifying unclassified but potential trout streams, to identify streams for restoration work based on the potential for success, and to evaluate the relation between watershed land use and trout populations in streams.
- d. The Wisconsin DNR has a wild trout stocking program that uses hatchery-reared trout of wild parentage to develop self-sustaining populations of brook trout and brown trout in waters that lack them and to increase the survival and longevity of trout stocked in streams. We will continue to study the viability of the source populations that provide eggs for this program to ensure a sustainable wild trout stocking program into the future. These studies will examine viability from both population dynamical and genetics aspects.
 - e. Fisheries Research will continue to study how to use in-stream habitat restoration to benefit native brook trout versus brown trout in streams in which they coexist.
 - f. Fisheries Research will continue to develop population models to help manage trout populations in Wisconsin streams. Trout population models will complement stream classification and land-use modeling. Stream classification and land-use modeling will be used to predict the ecological status of streams and how current and future land use may broadly affect fish habitat and fish assemblages. Trout population models will explicitly consider trout size and age classes. Given that there is a population of trout in a stream, stressors such as habitat degradation or loss and angler catch and release or harvest may affect trout reproduction or growth or survival of trout in different size and age classes. Trout models will aid in the better understanding of processes that regulate and factors that limit trout populations and will provide a framework for the rigorous evaluation of trout fishing regulations and habitat management activities.

D.8. Great Lakes

The Great Lakes fisheries program comprises a variety of activities such as assessments, regulations and stocking and supporting recreational fishing, commercial fishing and native species restoration (Great Lakes spotted muskie and lake sturgeon). The program follows an annual cycle of work and reporting that is grounded in longer-term strategic planning. The major strategic planning documents are the Fish Community Objectives for Lake Michigan, the Fish Community Objectives for Lake Superior, the Lake Michigan Integrated Fisheries Management Plan, the Wisconsin Lake Superior Basin Brook Trout Plan, the Lake Trout Restoration Plan for Lake Michigan, and four restoration plans adopted by the multi-agency lake Superior Committee, one each for lake trout, walleye, brook trout, and lake sturgeon.

Restoration of several species is being pursued, including lake trout on both lakes, lake sturgeon in two Lake Michigan tributaries, Great Lakes spotted muskie in Green Bay, walleye in the Milwaukee River, and lake sturgeon in the St. Louis River. Coordination

with other jurisdictions is accomplished through the Lake Michigan and Lake Superior Committees and the Lake Michigan and Lake Superior Technical Committees, under terms of the Joint Strategic Great Lakes Fisheries Management Plan. On Lake Superior, the management and exploitation of lake trout and other species are guided by terms of the State-Tribal Lake Superior Agreement.

- a. Continue to assess and monitor the recovering yellow perch populations of Green Bay and Lake Michigan and manage recreational and commercial harvest appropriately to allow exploitation consistent with continued population recovery.
- b. Continue to assess and monitor the recovering lake trout population in Wisconsin waters of Lake Superior and work with the Red Cliff and Bad River bands of Lake Superior Chippewa to support the State-Tribal Lake Superior Agreement and to adjust harvest limits appropriately to allow exploitation consistent with continued population recovery.
- c. Continue to pursue brook trout restoration in Lake Superior tributaries pursuant to the Wisconsin Lake Superior Basin Brook Trout Plan.
 1. Fisheries Research is evaluating relations between brook trout and introduced salmonids in Lake Superior tributary streams. This work is designed to identify potential limiting factors in local brook trout abundance, and will help set realistic goals for rehabilitation.
 2. Additional work on genetic profiles of brook trout in tributary streams has provided a framework for evaluating rehabilitation strategies. This work allows assignment of brook trout captured in the lake to a local stream or hatchery population. Thus, we can verify successful rehabilitation efforts by matching genetic profiles of individuals exhibiting a potadramous life history to work done in individual streams.
- d. On Lake Michigan, continue to work with other jurisdictions through the Lake Michigan Committee to adjust lakewide salmonine stocking strategies to meet mutually accepted fish community objectives and support recreational fishing.
- e. Work with the Lake Michigan Committee to finalize and implement a new lakewide lake trout restoration plan.
- f. Sustain long-term assessment data bases on both lakes.
- g. Continue to develop and improve statistical catch-at-age population models for lake trout in Lake Superior and yellow perch in Green Bay and Lake Michigan.
- h. Continue to develop and enhance our human and technological capabilities for science-based fisheries management.

- i. Continue stocking and reintroduction of Great Lakes strain spotted musky into Green Bay, Lake Michigan, and appropriate tributary streams in the Lake Michigan basin in cooperation with other states and the U.S. Fish and Wildlife Service (USFWS). [A goal of self-sustaining stocks is not achievable during this planning period.]
- j. Continue management of Lake Michigan strain lake sturgeon in the Menominee, Peshtigo, and Oconto rivers as source populations for Green Bay and Lake Michigan. Reintroduce Lake Michigan strain lake sturgeon into suitable former river habitats in cooperation with other states and the USFWS with techniques such as streamside rearing and fish passage.
- k. Fisheries Research will coordinate the genetic monitoring and assessment of the long-term sustainability of streamside rearing of lake sturgeon in Lake Michigan. This project will include the collection, analysis, and archiving of tissue samples from adult spawning lake sturgeon and representative progeny to determine the genetic diversity of stocked fish, the future genetic diversity of returning adults, and the straying rate.
- l. Revise the Lake Michigan Integrated Fishery Management Plan and the Lake Superior Plan and gain stakeholder and Department approval by 2013.

D.9. Mississippi River

- a. Rehabilitate five to seven hundred acres of Mississippi River habitat each year using the Environmental Management Program.
- b. Fisheries Research will conduct annual standardized monitoring of Pool 11 of the Mississippi River and the Lower Wisconsin River to determine game fish abundance and as surveillance monitoring for the invasion of Asian carp into the upper pools of the Mississippi River.

E. Treaty Assessments

The Chippewa Tribes of Wisconsin ceded their land in the northern one-third of Wisconsin to the U.S. Government in the Treaties of 1837 and 1842, but reserved their off-reservation rights to hunt, fish and gather within the Ceded Territory. These rights were affirmed in a 1983 court decision. The Wisconsin DNR is under a court mandate to monitor, assess and manage the joint sport and tribal fisheries in the Ceded Territory and establish safe harvest limits for walleye and musky.

- a. Ensure that the joint sport and tribal fishery in Wisconsin's ceded territory is managed at a sustainable harvest level and within the constraints of the federal court decision.
- b. Implement the court-mandated requirements for monitoring, assessing, and managing the joint sport and tribal fisheries in the ceded territory. Conduct approximately 25 to 30 walleye and musky population surveys, 150 fall young-of-year surveys and 15 to 20 creel

surveys each year. Establish treaty safe harvest levels for walleye and musky on 800 lakes each year.

- c. Fisheries Research will continue a long-term study on the effects of exploitation rates on northern walleye populations. This research will provide information about sustainable walleye exploitation rates as included in the current walleye safe harvest system referenced in Objective b.

F. Habitat Restoration and Development

This program function includes in-lake habitat restoration through biomanipulation, chemical rehabilitation, control of carp and other exotics, water level management, warm water spawning habitat and lake aeration systems. It also includes habitat restoration of warm water rivers, including dam removal and restoration of riparian areas, inland trout stream habitat improvement, fencing where directly related to improving habitat, spring pond dredging, maintenance of previous improvements and beaver control.

F.1. Trout Habitat Improvement

Effectively utilize available Trout Stamp funding to restore and improve an optimal amount of inland trout stream habitat each year. Provide additional Fish and Wildlife Account funding so that total investments in inland trout management programs, including inland stocking, are commensurate with the number of inland trout anglers and trout harvest (currently about 12% of total anglers and catch).

- a. Restore 25 to 30 miles of trout stream per year, based on funding, and maintain past habitat development, while protecting and enhancing habitat for non-game, threatened or endangered species.
- b. In conjunction with the Wisconsin Department of Agriculture, keep high priority streams free of beaver dams, consistent with the beaver control policy.

G. Fish Propagation, Stocking and Hatchery Development/Maintenance

While most Wisconsin waters do not need fish stocking to provide outstanding fishing because they have adequate natural reproduction, approximately 10% of lakes and streams including Lakes Michigan and Superior will have better fishing for some species if stocked. To accomplish this, the Wisconsin DNR effectively stocks all waters that need stocking as determined by scientific assessments. State fish hatcheries currently produce 90 different species, strains, and sizes of fish for stocking to ensure a diversity of sport fishing experiences, the genetic integrity of specific fish populations, and the selective reintroduction of native species to Wisconsin waters.

Our general strategy for the Wisconsin state fish hatchery system is to redevelop a small number of our current facilities to meet our needs through the middle of the 21st Century. We recognize that doing so implies a consolidation from the many small and obsolete

facilities we have inherited from the past; many of our current facilities are 50 to 90 years old. In 2003, we received legislative approval for redevelopment of the Wild Rose Hatchery and reconstruction began in 2006. In planning for the future, we recognize the need for more flexibility in our facilities and better environmental controls to produce a healthy product and meet anticipated environmental standards. We anticipate the need to produce many different strains of fish to ensure the genetic integrity of our native species and their restoration and to respond to emerging fish disease issues.

G.1. Propagation and Stocking

- a. Implement the 2007 statewide stocking guidelines, and subsequent revisions, to direct the priority system for establishing stocking quotas and set production goals.
- b. Fisheries Research will continue to conduct stocking evaluations to determine whether it is more cost effective to stock small walleye fingerlings (1.5 inches) in June or extended growth walleye (over six inches) in September. We will use the results of the study to amend the statewide stocking guidelines.
- c. Current stocking guidance requires the use of regional brood stocks to guard against the risk of outbreeding depression. Conversely, the repeated use of regional brood stock lakes runs the risk of inbreeding depression. Research staff will examine the utility of Passive Integrated Transponder (PIT) tagging adult muskellunge to identify individual fish within a lake and develop a database to ensure gametes are not repeatedly collected from the same fish for the hatchery system. We will also use the same tagging technique to evaluate the contribution of stocked muskellunge fingerling to the fishery.
- d. By 2007, complete a University of Wisconsin-Green Bay production cost analysis of all hatchery products and implement recommendations from the evaluation after 2008.
- e. Operate and maintain the hatchery system as a flexible system of facilities that responds to quota requests developed for a six to ten year horizon.
- f. Fisheries Research will continue assessing whether walleye returns can be improved by stocking 2.5 inch fingerling instead of 1.5 inch fingerling during a critical life history stage in late June.
- g. Issue an annual stakeholder report of stocking efforts.
- h. Use contract and cooperative agreements for species routinely produced by private aquaculture where it is cost effective and meets management needs for healthy fish and appropriate genetic stocks.

G.2. Propagation Infrastructure

- a. Complete the renovations to the Wild Rose Hatchery Phase I by 2008 and begin Phase II by 2009.
- b. By 2009, complete a statewide propagation facilities study to guide redevelopment and consolidation of facilities to meet the stocking needs and staffing constraints of the future.
- c. Gain Department, Governor, and Legislative support for a propagation system redevelopment plan by 2009-2010.

H. Fish Health

This program function includes fish health assessment and protection at the hatcheries and investigations of fish kill causes by the fish pathologist.

- a. Ensure the fish stocked in Wisconsin are healthy and conduct diagnostic testing and annual health inspections at state hatcheries.
- b. Use the best techniques available, including vaccination, high quality diet, good water quality, and improved aquaculture, to prevent the transfer and transmission of fish pathogens and the occurrence of fish diseases.

I. Public Piers

The Wisconsin DNR's approach to shore fishing facilities fully recognizes that there are an enormous number of potentially good shore fishing sites among our 15,057 lakes, 8 thousand miles of trout streams, 30 thousand miles of inland rivers, and hundreds of miles of shoreline on the Great Lakes and Green Bay. Through June 30, 2007, under the federal Sport Fish Restoration program, the Department has developed 99 shore fishing facilities (Northeast Region – 19, Northern Region – 29, Southeast Region – 14, South Central Region – 20, West Central Region - 17).

Shore fishing facilities include fishing piers that extend out into the water, flat spots along the shore and fishing trails with several fishing stations. A fishing facility may include other amenities, such as restrooms or a fish cleaning station, depending on the level of use. Our intent is to provide ADA compliant accesses in good fishing locations for the many anglers who don't have a boat. The actual demand for shore fishing facilities has not been quantified, however, anecdotal information from local communities, non-governmental organizations, service organizations, and fishery biologists suggest that the current demand is far from satisfied. Given other program priorities, we choose to manage the shore fishing program with:

- A relatively low level of asset investment.

- A high emphasis on partnerships with local communities, federal agencies, and non-governmental organizations where the Wisconsin DNR provides partial or full funding for shore fishing facility development to partners willing to provide long-term maintenance of the facility and long-term angler use agreements.
- Minimal investments in sites on Department property where we will incur a continuing maintenance obligation.

Consequently, we look for good fishing sites with a high degree of commitment and long-term involvement by active partners. The goals and objectives reflect this strategic assessment and approach. The department and its partners will provide and improve shore fishing facilities on the state's navigable lakes, rivers and streams. Developments and improvements will occur that are consistent with demand and sensitive to the capacity of the resource to support recreation.

- a. Develop eight to twelve shore fishing facilities per year that meet federal ADA standards for non-boaters with an annual allocation of \$200,000-300,000.

Priorities for development include:

- Sites on water without shore fishing facilities or the first facility over five miles from the next facility on a river, Great Lake or large lake with greater than five miles of shore.
 - Sites that are close to a local community center or a cluster of housing or are located in a campground area.
 - Facilities that will be funded in part with non-SFR funding (any state or local funding source).
 - Facilities that will be planned and constructed by a non-DNR partner and/or will be maintained by a non-DNR partner.
 - All sites must provide reasonable sport fishing opportunities for shoreline angling.
- b. Allocate up to 10% of SFR funds available annually for shore fishing facilities for maintenance and upgrades of Department-owned facilities.
 - c. Where practical, seek agreements with local units of government and other partners to maintain shore fishing facilities when it is in the best interest of the Department to seek partnerships for state-owned facilities.
 - d. Seek local partnerships for the development and maintenance of shore-fishing facilities in order to complete more projects with the available resources.
 - e. Ensure that local partnership agreements provide for federal ADA accessibility.
 - f. Provide information about shore fishing facilities available statewide on the Department's Web site, which both Department staff and the public can access.

- g. By June 30, 2008, verify through site visits the information currently entered into the statewide access Web pages and collect additional information for each shore fishing site.
- h. Add additional shore fishing sites as completed, update information as necessary and upgrade the access Web pages as needed.

J. Aquatic Education and Public Awareness

The Fisheries Outreach and Aquatic Education program is focused on increasing the ecological literacy of our citizens and their relationship to Wisconsin's waters and fisheries. The program operates through regional fishery biologists who speak to anglers, interest groups, and schools. It also operates more formally through our aquatic resources education director who trains school teachers to use our materials which are aligned to state teaching standards and the Wisconsin Model Academic Standards as set forth by the Wisconsin Department of Public Instruction.

The program also provides accessible information over the Internet, produces exhibits, and provides fishery biologists with selected materials for discussion with the public and school groups. Although the program will build on its past accomplishments, initiatives, and active volunteer instructors, its focus through 2013 will be on teacher training to enhance formal education in schools and consistent outreach messages to traditional and non-traditional publics.

J.1. Aquatic Education

- a. Increase the number of teachers trained at workshops offered for university credit as requirements to maintain state licensure from 50 to 100 per year and then average 100 or more through 2013. Teacher participation may be assisted through stipends to cover expenses for teachers from poorer school districts. Once trained, we expect each teacher to reach 30 to 60 students each year.
- b. Attend, demonstrate, market, and recruit teacher candidates to the for-credit workshops at a minimum of five professional educator statewide conferences each year.
- c. Provide school district-wide in-service workshops upon demand as schedule allows.
- d. Provide PDF versions of all written and visual information to decrease dependence on printed materials. Encourage use of the fish habitat Web pages by fisheries staff, educators, volunteers, and the public as materials are updated. Provide CDs as companion student materials for teachers to print as needed.
- e. With regional fisheries staff, parks staff and select partner organizations, maintain and replace equipment at 42 or more tackle loaner sites around the state.

- f. Develop and test exhibits at major event venues and then locate the final exhibits at hatchery facilities consistent with the operating parameters for the facility.
- g. Regional fisheries staff, interns, and other DNR staff will participate in 15 to 25 fishing related events (including free fishing weekend, state fair, etc.) to promote fishing, especially in urban areas.
- h. Develop consistent fishery messages and materials for fishery biologists to use in discussing the relationship between people, actions, Wisconsin's waters and its fisheries.
- i. Collaborate with Department and university colleagues to offer comprehensive aquatic education resources to schools and partner organizations that support fish habitat goals and objectives, in conjunction with other related nature-based education programs.

J.2. Outreach

- a. Develop and implement an annual outreach communications plan to traditional and other stakeholders that includes an annual Spring Fishing Report, annual report of expenditures, and a consistent message package concerning ecological literacy and fisheries management with supporting graphics and images for use by all biologists.
- b. All biologists will plan 200 hours per year to present these messages, with additional local information to schools, conservation and angling groups, lake associations, and non-traditional stakeholder groups.
- c. Increase the utility and timeliness of the external Web site for fisheries information.
- d. Fisheries Research will continue to compile data on all aspects of the biology, e.g., taxonomy, identification, distribution, ecology, life history of all fish species in the state and make these data available in accessible and easy-to-use formats for both our managers and the public.

Sport Fish and Wildlife Restoration:

A. Engineering and Construction Management for SFR and WR Projects

The Engineering and Construction Management Section and field engineering staff provide project administration, technical expertise, surveying, cost estimating, design, specification preparation, construction supervision, environmental cleanup/remediation on state lands, and inspection services statewide for boat access sites, fish hatchery projects, fish passages and other water control structures, public access to shore fishing areas and related public contact areas, as well as fisheries habitat improvement projects.

- a. On an annual basis, provide engineering staff services for approximately 25 boat access sites and 10 fishing piers or shore fishing facilities and provide construction oversight for phase two development of the Wild Rose State Fish Hatchery.
- b. Provide necessary engineering services for wetland wildlife habitat projects.

Wildlife Restoration (WR):

A. Wildlife Surveys

This program function includes all surveys that are used by wildlife managers to assess various species population status, trends and responses to management and landscape changes.

- a. Perform auditory and visual surveys of wildlife.
- b. Continue key surveys of wildlife to support knowledge on wildlife trends, knowledge of wildlife responses to weather and land use changes, and models to predict population levels and set harvest quotas and permit levels.

B. Establish and/or Manage Wildlife Population

Analyze and interpret wildlife population data in order to manage species levels, set quotas, and establish hunting seasons. This program function also includes publications and communications with the public.

B.1. Black Bear

- a. Continue to gradually bring the bear population toward its goal of 11,300, through the use of liberal quotas when necessary. Administer the permit system to fairly distribute hunting opportunities based on harvest objectives.
- b. Continue to communicate with other states to improve our population model and our survey method, and to keep abreast of the new modeling and surveying technology and techniques available.
- c. Provide bear management training for new wildlife biologists or those who recently began to see bears in their area.
- d. Conduct research to improve population monitoring procedures.
- e. Complete a statewide bear management plan by 2008.
- f. Develop operational guidelines on bears in urban environments and on translocating nuisance bears.

B.2. Elk

- a. By 2010, manage for a healthy, growing population of elk numbering somewhere between 200 to 300 animals. Implement first elk season and permit system as the elk population reaches 250.
- b. Develop an elk hunter education program.
- c. Request surplus elk from Elk Island National Park in Alberta, Canada, to both supplement the Clam Lake herd and establish a second herd in Jackson County. If approved, translocate elk to Wisconsin through strict adherence to health testing and monitoring requirements.
- d. Implement strategies to reduce elk mortality caused by vehicle collisions and diseases.
- e. Encourage landowners, including the U.S. Forest Service (FS), to provide critical habitat for elk in the elk management area near Clam Lake.

B.3. Wild Turkey

- a. Implement habitat management practices to meet objectives outlined in the wild turkey management plan using primarily turkey stamp revenues supplemented by license funds. Management practices to benefit turkeys and turkey hunting include: prairie ecosystem establishment and management, oak savanna establishment and management, barrens management, oak-hickory ecotype management, hunter education, population monitoring and population dynamics research.
- b. Improve habitat to benefit turkeys on private land.
- c. Develop partnerships to fund farm bill biologists to increase landowner use of beneficial farm bill programs.
- d. Update priorities for the use of turkey stamp funds.
- e. Consolidate turkey management zones and explore additional regulation simplifications for turkey hunting.
- f. Administer fall and spring seasons and permit numbers that maximize quality hunting opportunities without adversely affecting turkey populations.
- g. Update the Turkey Management Plan by 2013.

B.4. Ring-necked Pheasant:

- a. Expand pheasant hunting opportunities while improving hunt quality and hunter satisfaction. Implement habitat management practices to meet objectives outlined in the pheasant management plan using primarily pheasant stamp revenues supplemented by license funds. Management practices for pheasants include: prairie ecosystem establishment and management, Conservation Reserve Program expansion and implementation, wetlands preservation and restoration, and population monitoring and population dynamics research.
- b. Develop partnerships to fund farm bill biologists to increase landowner use of beneficial farm bill programs.
- c. Revise and update the pheasant plan by 2013.

B.5. Ruffed Grouse:

- a. Encourage high hunter participation in ruffed grouse and woodcock hunting in Wisconsin.
- b. Implement habitat management practices to meet objectives outlined in the ruffed grouse management plan. Work with foresters, planners, county personnel and FS personnel to ensure that timber harvest remains a primary use (where feasible) of Wisconsin's forests.
- c. Implement the North American Ruffed Grouse/Woodcock Plan.
- d. Evaluate the need for a grouse/woodcock stamp.
- e. Implement State Lands Forestry Initiative.
- f. Continue wildlife habitat improvement grants for county forests, e.g., Dime an Acre Program. Establish wildlife habitat priorities for this program.
- g. Revise and update the Ruffed Grouse Management Plan by 2013.

B.6. Sharp-tailed Grouse:

- a. Encourage implementation of the northwest barrens management plan to promote a core sharp-tailed grouse range. Support identification of central Wisconsin core areas to maintain populations. Implement habitat management practices to meet objectives outlined in the sharp-tailed grouse management plan.
- b. Continue to manage sharp-tail harvests at safe levels through a permit system; evaluate whether sharp-tailed grouse should continue to be hunted.

- c. Revise and update the Sharp-tailed Grouse Management Plan by 2008.
- d. Investigate the need and priorities for sharp-tailed grouse translocations for range expansion or genetic restoration.

B.7. Ducks

- a. Continue to implement the objectives in the Upper Mississippi River Joint Venture including cooperation of "all bird objectives." This will be done by restoring and enhancing wetlands and upland cover important for ducks and other bird species. The key to our success will be working through partners to achieve the goals established in the Joint Venture. We will also continue to funnel dollars through a non-profit organization for waterfowl habitat work in Canada that achieves the objectives of our state waterfowl program, as required by state statute.
- b. We will continue to work with the Flyway Council and U.S. Fish and Wildlife Service (FWS) in the annual rule process to ensure that our annual regulations offer waterfowl hunting opportunities that support population goals. We will do this by working with our constituents year round.
- c. We will initiate species research to address critical information needs.
- d. We will continue our spring breeding waterfowl survey and waterfowl banding and enhance procedures as needed.
- e. Complete the update to Wisconsin's Waterfowl Management Plan by 2008.
- f. Reinvigorate the Wisconsin Steering Committee of the Joint Venture.
- g. Explore the potential for an increased fee for the waterfowl stamp.
- h. Increase the marketing of waterfowl stamps.
- i. Support annual winter waterfowl workshop with waterfowl conservation partners and enthusiasts.
- j. Apply for and administer North American Wetlands Conservation Act grants for waterfowl habitat management and acquisition.
- k. Conduct wetland restoration and management activities using state waterfowl stamp funds.
- l. Evaluate the need and support for limiting hunter numbers for some public hunting grounds.

B.8. Geese

- a. Continue to improve our Canada goose harvest management procedures to ensure we offer our hunters a simple system that meets scientific and management needs. We will continue to work with the Flyway Council in monitoring the status of migrant birds and participate in collection of data to address critical information needs. We continue to monitor the status of Canada geese nesting and summering in the state and adjust hunting seasons as appropriate to maintain population at specified goals.
- b. Implement goose a hunting season structure approved by the Mississippi Flyway Council and the FWS.
- c. Evaluate and implement new federal resident goose regulations.
- d. Continue critical banding programs.

B.9. Mourning Dove

- a. Continue to enhance habitats for doves, monitor their populations and adjust hunting regulations consistent with those populations.
- b. Participate in the national banding program for doves.
- c. Evaluate dove management potential and develop habitat management guidelines.
- d. Participate in non-toxic shot evaluation; evaluate whether non-toxic shot regulations are prudent for doves and other small game.
- e. Evaluate the need and support for limiting hunter numbers for some public hunting grounds.
- f. Establish food patches through sharecropping on some public hunting grounds.

B.10. Beaver

Beavers are plentiful throughout the state. Populations have been reduced by as much as 45% in northeastern Wisconsin; availability of FWS and U.S. Department of Agriculture (USDA) staff to counties and local townships has helped to reduce problems and protect habitat from valued trout streams to town roads to unique waters such as wild rice management areas.

- a. Continue our three-year rotation of beaver population surveys in Zones A and B.
- b. Secure funding for and develop a similar survey for the remainder of the state.
- c. Develop zone specific population goals by 2011.

- d. Continue our beaver harvest survey with a focus on obtaining additional information about densities, harvest pressure and pelt value trends.
- e. Explore funding opportunities for municipalities for beaver damage control.

B.11. White-Tailed Deer

- a. Implement effective harvest management strategies, e.g., seasons, permit systems, regulations, to manage deer populations near goals in most areas of the state.
- b. Conduct deer management unit reviews as required by administrative code and treaty rights.
- c. Continue to monitor populations on a unit-by-unit basis including mandatory registration. Improve the believability of this monitoring data and subsequent modeling outputs. Explore survey enhancements and models other than Sex-Age-Kill (SAK) in greater detail during the next six years.
- d. Implement SAK audit recommendation as feasible.
- e. Complete a two-year review and evaluation of alternative deer seasons for years 2006 and 2007.
- f. Collaborate with the Governor’s Council on Forestry on strategies to reduce forestry deer impacts.
- g. Involve diverse stakeholder groups in deer management discussions.
- h. Create a 20-minute video on the deer management program.
- i. Continue the deer hunt TV show.
- j. Explore additional deer hunting rule simplifications.
- k. Explore the use of deer population levels in forest certification as an incentive to manage deer.

B.12. Fishers, Otters and Bobcats

- a. Administer the permit system to limit harvest in consideration of population levels relative to population goals.
- b. Continue to examine carcasses from harvested animals for modeling data.
- c. Conduct aerial surveys of otters.

B.13. Prairie Chickens

- a. Continue to transplant prairie chickens from outside Wisconsin to central Wisconsin to improve the genetics of our population.
- b. Expand the acreage of grassland habitat as described in the prairie chicken management plan.

B.14. Northern Bobwhite

- a. Participate in the revision of the Northern Bobwhite Conservation Initiative and implement habitat management practices contained in the U.S. Department of Agriculture Farm Bill CP33.

B.15. Sandhill Crane

- a. Work with the Mississippi Flyway Council Technical Section to write a sandhill crane management plan.

B.16. Woodcock

- a. Implement the North American Woodcock Management Plan.

C. Development of Rules & Regulations Affecting the Use of Wildlife & Public Lands

This program function includes the review of past season harvest information, research and other surveys to assist in the establishment of harvest management recommendations. Once the Wildlife Management Program makes harvest recommendations, the mechanics of setting regulations is carried out by legal counsel and law enforcement procedures.

- a. Evaluate options for rule simplification with hunters and trappers.
- b. Promulgate rules annually to address customer demands and resource management needs. Work with stakeholders. Hold hearings. Present rules and statutory proposals to the Natural Resources Board and legislative committees.

C.1. Managing User Conflicts

- a. Provide information to hunters on how their behavior affects other outdoor users and explain the funding of wildlife management through public service announcements, safety education programs, warden contacts, brochures pamphlets and personal contacts.
- b. Assist municipalities with developing ordinances and management plans that ensure compatible use opportunities appropriate for the local resources.

- c. Use master planning and program direction to define property uses and minimize potential user conflicts. We will also identify other facilities or lands to meet the needs of alternative recreation, e.g., ATV, dog trialing, etc.
- d. Evaluate the amount and composition of recreational uses of state lands.
- e. Increase vigilance in defending public rights to hunt and trap where they were historically legal, e.g., public lands adjacent new developments.
- f. Wildlife biologists and other staff shall involve partners and communities in identifying and solving issues affecting wildlife, endangered resources, and habitat. They will resolve user conflicts within each administrative area through increased contact with landowners and community-based action.

D. Wildlife Facility Maintenance

This program function includes the repair and maintenance of existing DNR facilities and equipment (for public and departmental use) to ensure that the facilities continue to serve their intended purpose.

- a. By 2010, complete the inventory of all wildlife properties and develop minimum property maintenance standards for wildlife, including basic infrastructure to support public use.
- b. Repair or replace habitat management equipment as needed.

E. Acquisition, Easements and Leasing of Land

This program function includes preliminary work by wildlife management staff related to the purchase, leasing and grant easements on wildlife management lands. Included are landowner contacts, providing technical assistance for public hunting grounds leases and conducting biological reviews for proposed easements.

- a. Continue leasing private lands for public hunting in southern Wisconsin.
- b. Expand and promote tools for locating public hunting lands.
- c. Develop GIS mapping for wildlife areas and make it available to the public.
- d. Explore the opportunity for a private lands access program for hunting.
- e. Implement the Land Legacy Plan for land acquisition and protection, including wildlife lands and state natural areas, to support resource conservation and public outdoor recreation.

ATTACHMENT 1:

PORTFOLIO OF PLANS AND REPORTS IMPACTING THE FISH, WILDLIFE AND HABITAT MANAGEMENT PLAN.

STATEWIDE PLANS

Department Strategic Business Plan

This document identifies the goals and strategies of the Wisconsin Department of Natural Resources to carry out its mission and vision to protect the health and safety of people, wildlife and natural communities that depend on those resources; and to promote opportunities to enjoy and benefit from natural resources in ways that are consistent with protection of the environment.

Six-Year Fish and Wildlife Plan

This document addresses the Wisconsin DNR Mission, implements the four goals of the Department's Strategic Plan, and provides specific information and objectives relevant to fish, wildlife, and habitat management for the six-year period from July 1, 2007, through June 30, 2013. The plan is required to receive federal aid.

Biodiversity Report

This report presents a Wisconsin DNR strategy for the conservation of biological diversity. It provides an overview of the issues associated with biodiversity and provides a common point of reference for incorporating the conservation of biodiversity into our management framework.

Wisconsin Ecological Landscapes Handbook

This handbook is organized by ecological landscapes, areas similar in ecology and management opportunities within the state. It contains ecological and socio-economic data and descriptions about each of Wisconsin's 16 ecological landscapes. This information is used to determine what ecological resources and what ecological opportunities exist within an ecological landscape to benefit regional and statewide efforts for maintaining and restoring natural resources. It also offers suggestions on what socio-economic activities would be compatible and sustainable with the ecological landscapes.

Land Legacy Report

This report identifies 229 places within Wisconsin believed to be most important to meet the state's conservation and recreation needs over the next 50 years.

Statewide Comprehensive Outdoor Recreation Plan (SCORP)

Since 1965, the Wisconsin DNR has developed and maintained the Statewide Comprehensive Outdoor Recreation Plan (SCORP) in an attempt to classify, measure, and provide for the

preferences and needs of a statewide recreating public. The SCORP examines these trends to assess current and future recreational needs within the state. With its comprehensive statewide and regional focus, this plan guides the allocation of limited recreation funds to acquire additional recreation and conservation lands and support the continued development of outdoor recreation opportunities.

Wisconsin Strategy for Wildlife Species of Greatest Conservation Need (and State Wildlife Action Plan)

This strategy takes a thorough look at the animal species that are part of Wisconsin's natural heritage, identifies those most in need of our attention because they are declining or are dependent on habitat or places that are declining, and suggests conservation actions to ensure that Wisconsin's natural species are preserved. The State Wildlife Action Plan will provide strategies on how to implement management to preserve species of greatest conservation need.

Department State Forest Plan

This plan includes a common vision for Wisconsin's forests based on five goals and ten assumptions for statewide sustainable forestry, a description of 52 trends and issues, and objectives to address each trend and issue. Each trend and issue write-up contains a summary discussion of the relevant ecological, economic, and social implications, explores relationships among them, and provides a strategic objective. The final plan also includes the possible actions.

Wisconsin Bird Conservation Initiative (WBCI) All-bird Plan – in preparation

This effort will coordinate the plans listed below into one "All Bird Plan" for the state of Wisconsin. Wisconsin partners will deliver the full spectrum of bird conservation, including both game and non-game birds, by working together in voluntary, cooperative initiatives. Bird-based projects will be coordinated to ensure effective management for all birds in Wisconsin. Birds and their habitats will be monitored and managed using the best available science and using ecological landscapes as the management units.

North American Landbird Conservation Plan
North American Waterfowl Management Plan
U.S. Shorebird Conservation Plan
North American Waterbird Conservation Plan
Partners in Flight regional plans - Regions 16 and 20
Upper Miss. River & Great Lakes Region Joint Venture – Implementation Plan
Upper Mississippi River and Great Lakes Regional Waterbird Plan-in preparation
Upper Mississippi River and Great Lakes Regional Shorebird Plan
Managing Habitat for Grassland Birds: A guide for Wisconsin

Department Shoreline and Shallows Strategies

Despite current shorelands and shallows management program efforts, Wisconsin is still experiencing the incremental loss of shorelands and shallows. These strategies are intended to

change this trend to one of increasing protection and restoration of shorelands and shallows. Threats to shorelands and shallows include an increase in development and scale of development, increased intensity of recreational use, and the invasion of exotic species. Shorelands and shallows are vital for flood protection, water quality protection, natural scenic beauty, recreational opportunity, and economic health. A hierarchy of ecological goals is an underlying concept for the strategies:

- Ensure protection of ecosystem function.
- Protect ecosystem structure.
- Protect ecosystem composition.

Water Monitoring Strategy

The Wisconsin DNR Water Monitoring Strategy covers all monitoring done under the bureaus of Fisheries Management, Watershed Management, and Drinking Water and Groundwater and identifies efficiencies that can be gained by working together. It also clarifies which monitoring efforts are used to meet the Clean Water Act, Fisheries, and Public Trust Doctrine objectives, and prioritizes where future efforts will be focused given varying funding levels.

Wisconsin Great Lakes Strategy

In parallel to the Great Lakes Regional Collaboration, the Wisconsin DNR Office of Great Lakes is drafting a Wisconsin Great Lakes Strategy. The Wisconsin Great Lakes Strategy will serve as the vehicle for coordinating and allocating resources and will better position Wisconsin to begin program and project implementation in the event that significant funding comes from Congress for the Restoration of the Great Lakes. Based on comments from the public, the Wisconsin Great Lakes Strategy was revised and finalized in 2006. We will use this document guide restoration and protection efforts in the Wisconsin portion of the Great Lakes Basin. Following the release of the initial strategy, we will design and implement a process to revise it in future years.

Department of Agriculture, Trade and Consumer Protection's Wisconsin Working Lands Initiative

Wisconsin's extensive farmland that established our character as the dairy state is rapidly disappearing to development. The forested lands that built our paper and recreation industries are being sold as small, private lots. These changes are essentially irreversible, and are accelerating. Our goal is to find new approaches to planning and zoning, and policies that promote residential and commercial development while also preventing the further loss and fragmentation of Wisconsin's working lands.

Hunter Education Strategic Plan

This document identifies the goals and strategies of the Wisconsin Department of Natural Resources Hunter Education Program to carry out its mission and vision to train hunters to be safe, knowledgeable and responsible. It outlines processes by which safety and promotion of hunting opportunities will be presented to the public. It further outlines the necessary projects needed to continue the growth of the program to meet the changing demographic and social trends of society.

REGIONAL, PROPERTY, OR SPECIES PLANS

State of the Basin Reports

These reports provide a picture of the status of Wisconsin's water-based ecological resources and identify key areas for management for each of the 22 major watersheds in the state. The reports are required by the U.S. Environmental Protection Agency for federal funding.

Department Property Master Plans

Each Wisconsin DNR property has a "master plan" that establishes goals and objectives for the property and identifies how it will be managed and developed. These plans are designed to clearly communicate to the public how the property will look and what benefits it will provide.

County Forest Plans

County forests operate under the direction of fifteen-year plans. These plans originate through the input of counties, the State of Wisconsin, local townships, citizens and various other groups. Fifteen-year plans set policy on all actions conducted within county forests. The forests provide revenue to the counties while they practice sustainable forestry. This revenue also supports recreational uses and environmental protection. These plans are vital because they involve the public in how county forests are managed.

Karner Blue Habitat Conservation Plan

The Karner blue butterfly is a federally listed endangered species. Although the species is rare nationwide, it is relatively common in central and northwestern Wisconsin, especially where pine barrens, oak savannas, and mowed corridors support wild lupine, the only food of the Karner blue caterpillar. The Habitat Conservation Plan is based on a legal agreement between the U.S. Fish and Wildlife Service, the Wisconsin DNR, and an array of public and private land managers. The agreement allows Wisconsin land managers to continue operating in and around Karner blue habitat, provided they modify their activities to minimize incidental take (death, harm or harassment) of Karner blues.

Department Fish and Wildlife Species Strategic Plans

These plans are developed for individual species or groups of fish and wildlife species by Species Advisory Committees of experts. Plans in revision include sharp-tailed grouse, bear, and waterfowl.

Department Endangered/Threatened Species Recovery Plans

Developed by Endangered Resources staff, these plans help ensure the recovery and survival of endangered and threatened species.

Upper Mississippi Forest Partnership

The Upper Mississippi River Watershed Forestry Partnership is a cooperative venture of the USDA Forest Service Northeastern Area, the Wisconsin DNR-Division of Forestry, and the state foresters of Illinois, Indiana, Iowa, Minnesota and Missouri. The partnership's mission is to provide solutions to environmental problems in the watershed through targeted efforts in tree and forest restoration, protection and sustainable management.

Northwest Sands Landscape Level Management Plan

This report presents the results of a landscape level management planning effort for the northwest sands area within Bayfield, Burnett, Douglas, Polk, and Washburn Counties. The plan is multi-jurisdictional encompassing multiple land owners, political jurisdictions, and social service organizations, some of which already have plans in place for their individual ownership or organizations. The purpose of the plan is twofold:

1. Provide a comprehensive database of information which could be used by individual jurisdictions in their own planning efforts to see how they fit within the larger context, and
2. Identify opportunities that individual jurisdictions could consider acting on within their individual areas of responsibility.

Landscape Analysis and Design on the Chequamegon-Nicolet National Forest

This plan was instituted to take a large-scale look at the entire National Forest and surrounding areas in Wisconsin to meet the needs for sustaining ecosystems as well as producing forest products. The plan used an inventory and assessment phase to collect information to design how the national forest might be managed to meet biodiversity and forest products needs. This effort became part of the national forest planning process.