

**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
(2010 UPDATE)**

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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.

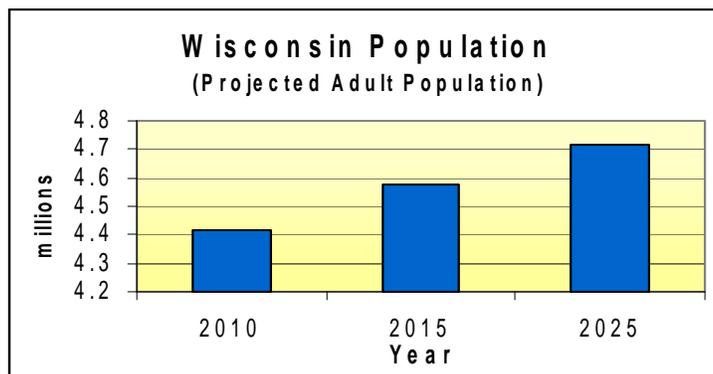
Following is a review of some of the trends that have implications for fish and wildlife conservation, how these trends may shape conservation work in the future – followed by some specific challenges, opportunities and issues we considered as we developed specific strategies and objectives for this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

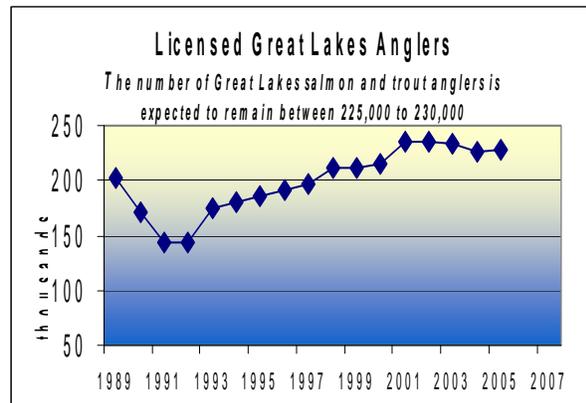
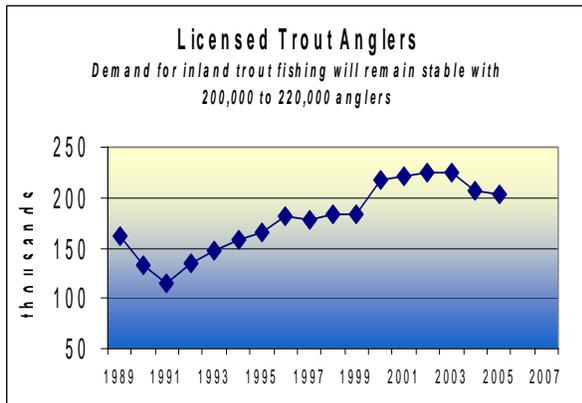
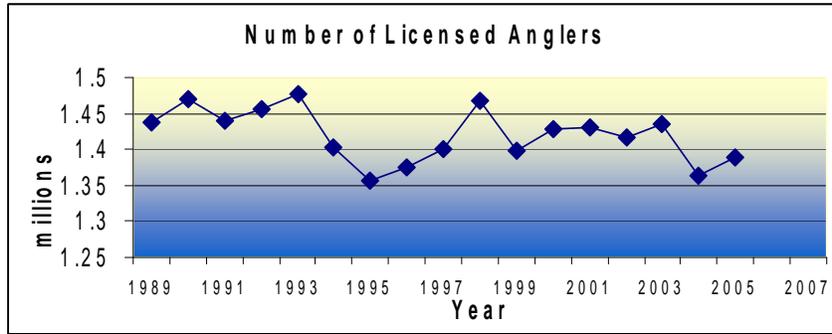
D. PEOPLE - More Urbanized Population

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.

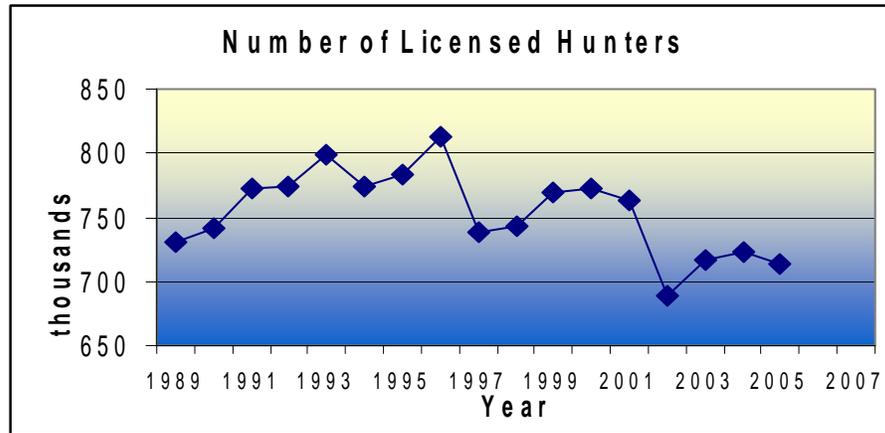


Includes Patron's License after 1992. This license granted trout and salmon fishing privileges to Patrons license holders without their need to purchase a separate stamp.

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.

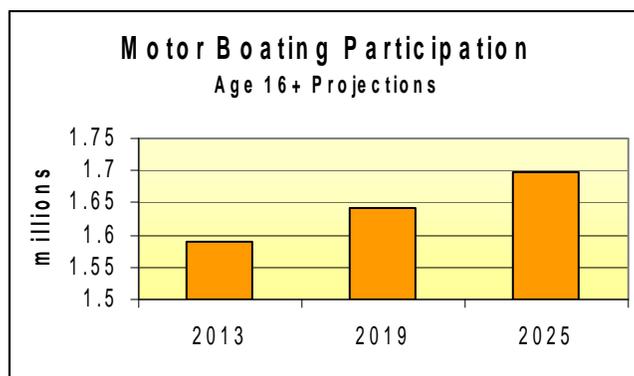


Actual license sales for the last 10 years show the number of hunters varied from a low of 714 thousand in 2005 to a high of 813 thousand in 1996. The higher figure in 1996 was due to a change in the way hunters were counted in that year and an early deadline for bonus permit sales. As a percentage of 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.

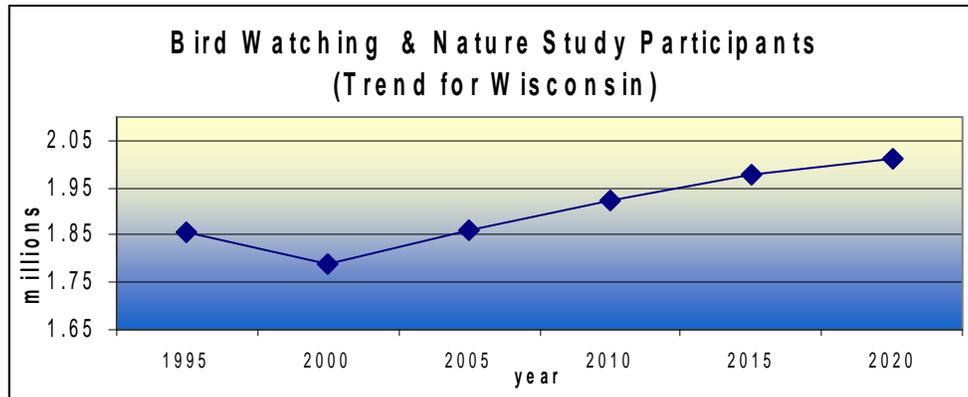
The number of motor boat registrations increased by over 15% since 1996. Surveys indicate an average of 36% of Wisconsin citizens participate in boating each year, and this level of participation is expected to continue. In 2007, an estimated 1.5 million people will be involved in motor boating, and 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 climate change is occurring. Research is now focused on first understanding, then anticipating the magnitude of the myriad impacts from climate change. Changes in temperature, weather patterns, and precipitation, will likely result in significant effects on our nation's fish and wildlife resources now and in the future. A number of states have initiated efforts to study the specific implications of a changing climate on fish and wildlife species and their habitat. It will become increasingly critical to forecast population and habitat changes, assess vulnerabilities, link models of physical processes to ecological models, and to initiate monitoring to link climate impacts to ecological responses. Resource managers are increasingly in need of tools to help fish and wildlife and their habitats and ecosystems adapt to climate change.

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.

-The training team has been established but the curriculum is still in development.

- 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.

-This has been completed and is implemented on an annual basis.

- 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.

-This has been completed and will be implemented when the department receives authorization to hire new biologists.

- 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.

-This has not been implemented because of the hiring freeze that has affected the Fisheries Management program.

- 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.

-No progress has been made on this program.

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.

- Ongoing performance objective for program staff.

- 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.

- Completed and implemented a 12-month training program for new wildlife biologists. A similar training program for wildlife technicians is currently under development. We piloted, then implemented, a formal knowledge-transfer

process to capture institutional knowledge with top-priority given to employees due to retire within the next 5 years (and will be applied when staff transfer or resign as well). Supervisors were directed to include the knowledge transfer process as a performance measure in biennial work-planning guidance. Wildlife Management Operations Handbook rewrite initiated and will serve as a complete, up-to-date guide for new and seasoned employees upon completion.

- c. Hold an annual statewide technical training workshop for employees.

- Wildlife management program conferences held annually.

- 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.

- Hiring freezes in place, however we have turned around technician vacancies for lateral transfer within weeks. We have expanded our intern programs. Currently we have contracts with University of Wisconsin at Stevens Point and River Falls. Additional campuses are being considered.

- e. Encourage acting assignments to enhance professional development and to allow movement from field to central office and vice versa.

- Ongoing acting assignments in the Bureau and Regions (Acting Wildlife Health section chief (Bureau); acting Upland Game Biologist (Bureau); and Acting Regional Wildlife Supervisor (Region)).

- f. Review compensation issues and support pay comparable to private sector and surrounding states' rates.

- Unable to proceed on this initiative because no pay issues are being considered during the State of WI budget deficits.

- g. Provide and encourage attendance at professional meetings and training opportunities.

- Staff attendance encouraged and approved for the Wildlife Society Conference (WI Chapter) and the North American Fish and Wildlife Conference.

- 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.

- Wildlife Policy Team approval of program membership in JSTOR (online reference library) & enrollment is pending.

- j. Develop methods to efficiently communicate to staff the research findings shared at conferences and in journals.

- Methods have been established. Intranet and Newsletter are used to communicate important findings on research. New research information this year will be posted on the external web and communicated with the public via GovDelivery.

- 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.

- Each program has chosen external links to support information found on their web pages. Most staff members regularly check these links for accuracy and to be sure information is still relevant.

- l. Use the internal wildlife newsletter to circulate short articles written by various staff with specialized expertise.

- Developed and well received. Includes monthly "getting to know you" articles that feature one staff member. WM Journal page on the IntraNet is an archive of articles written by staff.

A.2. Partners and the Public

- a. Develop a wildlife information "needs list" to deliver through citizen-based monitoring programs by 2009.

- We have an assessment of the wildlife inventory needs through the DNR's "Inventory and Monitoring Review: Final Report" (available at <http://wiatri.net/AboutATRI/im/IMFinalReport.pdf>) and the "Wisconsin's Strategy for Wildlife Species of Greatest Conservation Need" (Chapter 5 - Monitoring, pp 10-28; available at <http://dnr.wi.gov/org/land/er/wwap/plan/>). Wildlife inventory needs are delivered via the WDNR's Aquatic and Terrestrial Resources Inventory "Statewide Inventory" website (available at <http://wiatri.net>) and the Citizen-Base Monitoring Network's website (available at <http://wiatri.net/cbm/>).

- 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 (LTH) programs and outdoor skills events to increase participation and emphasize the importance of hunting.

- *Have hired a National Archery in Schools Program (NASP) coordinator and now have NASP in nearly 200 schools with around 800 NASP instructors. Staff has helped coordinate many LTH programs each year under the coordination of a Law Enforcement staff person. Staff lead a number of activities in the Youth Outdoor Expo.*

- *In 2009 conducted 106 LTH events with 1479 participants and 1823 mentors*

- *In 2009 WDNR sold over 14,000 mentor hunting licenses under Wisconsin Mentor Hunting Law that took effect Sept 1, 2009. 4,3000 mentor hunting licenses were sold for the 2010 Spring Turkey Season. Not one safety-related incident to date.*

- *Currently working with UW-Stevens Point to evaluate the LTH program as an overall recruitment and retention tool, based on evaluation make program modifications.*

- *Currently working with UW-Madison to research and utilized "social marketing" as a hunting and shooting sport recruitment and retention tool. Development of "Hunter Network of Wisconsin" website, e-newsletter and connecting Facebook page with over 200 followers. Huntersnetwork.org is where young and old share hunting experiences and organization can learn about and share recruitment/retention information.*

- b. Increase diversity efforts within the Learn to Hunt (LTH) program and encourage external partners to find ways to involve participation from outside the normal hunting community.

- c. Continue our curriculum improvement for the Trapper Education Program in cooperation with Wisconsin Trappers Association (WTA). Improve support materials for the program.
 - *Staff meet annually with WTA to implement and improve program. A new Trapper Ed manual is nearly complete.*
- d. Continue the Turkey Hunter Education Program to attract and help new turkey hunters.
 - *Staff advertise and hold many THE clinics each year with the help of many volunteer instructors.*
- e. Provide hunter information in other languages, e.g., Spanish and Hmong.
 - *Hunting regulations are now provided in Spanish and Hmong. Persons speaking these languages can now call the DNR information line and be connected with a staff person who can speak their language.*
- f. Partner with sporting goods companies to promote outdoor skills and small game hunting as a recruiting tool.
 - *A number of companies are working with DNR to provide necessary equipment for the National Archery in the Schools Program.*
- g. Continue to educate the public on the “right way” to gain access to private land.
 - *Guidance has been provided in various media formats each year.*
- h. Increase elementary, middle and high school student and teacher understanding and appreciation of Wisconsin wildlife and other natural resources.
 - *Staff have produced Wisconsin Wild Cards that describe life history of various wildlife species. Information about various wildlife species is also provided in documents on the DNR web page. Deer and furbearer “trunks” are made available to teachers. The youth outdoor expo has booths that teach students about wildlife. The education specialist has proposed development of a DVD for teachers to use to help students understand more about Wisconsin’s wildlife.*
- i. Provide resource materials for public schools to promote outdoor skills, ethics, and habitat related messages.
 - *Staff has produced an outdoor skills manual for activities lead in schools and clubs. This manual has been widely distributed.*

- j. Provide funding to Wisconsin DNR wildlife education centers so that curriculum and staffing are adequate to meet public demands.

- Education staff and budgets are provided at the Sandhill, Mead, Horicon and Crex Meadows educational facilities. The Mead has a new educator position. Horicon has a new education center.

- k. Promote the Watchable Wildlife program at teacher conferences each year for the next six years.

- This has not been done due to work on other listed priorities, however watchable wildlife area signs remain on highways near such areas, and a Wildlife Viewing Guide document is available. The Recreation Committee of the Wisconsin Bird Conservation Initiative produced several bird trails publications for each area of the state.

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. .

- We are using "Survey Select" to develop on line questionnaires in addition to independent websites on a project by project basis (CWD plan comments, etc.).

- 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.
- *Contribute to the agency's fish and wildlife annual report which is posted on the public website.*
http://dnr.wi.gov/invest/conservation/fwreports/fwbrochure08_09.pdf.
The annual performance report to USFWS was reformatted and now includes opportunities to narrate highlights.
 - *Science Services and the Office of Communications collaborated with programs to develop an annual brochure to report accomplishments, innovations, and expenditures to the public. The 2006-2007 brochure is available at <http://dnr.wi.gov/wnrmag/html/images/PDFs/FishandWildlifeinsert.pdf> . The 2008-2009 brochure is available at http://dnr.wi.gov/invest/conservation/fwreports/fwbrochure08_09.pdf*
- 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.
- *Ongoing*
- e. Seek stable funding for statewide acquisition of critical habitats identified in the Land Legacy Report.
- *Accomplished through renewal of the Stewardship program. (See h. below)*
- 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.
- *Requested increase, but not approved.*
- 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.
- *The state Stewardship program has been renewed for another 10 years and includes 11 million/year for capital development.*
- h. Seek reauthorization of the Stewardship Program to ensure needed funding to secure properties of high resource value as they become available.

- Stewardship has been reauthorized and allocates 50 million dollars/year for 10 years for DNR properties and 12 million per year in grants to local units of governments and NGO's.

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 hunters from all cultures through improved communications in the media and Department publications.

- Annually run a minimum of 3 PSA for Cable TV, Weather Channel Scroll, and radio. Two print articles per month and web page updates – all efforts related to hunting safety messages

- b. Recruit, train, and retain a diverse 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.

- Completed by the Regional Recreational Safety Wardens through mini and full academy format

- 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.

- Minimal effort with shotgun and rifle marksmanship efforts

- i. Increase nontraditional delivery of hunter education certification by 25% by 2008.

- Currently the online HE program is running and popular but not at the 25% level yet.

- j. Create and offer a youth hunter education challenge for people 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, females and minorities involved in hunting.

- l. Develop and implement a “test out” for the basic hunter education certification by 2009.

- Developed and will be implemented by Fall of 2010

- m. Utilize funding for shooting range development as available and/or increase utilization of existing shooting ranges.

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.

- These plans are being used by staff for work planning purposes. Regional EcoSummits are being held in each region (3 so far) to help staff determine what places and practices would best meet state, regional and global priorities outlined in these plans. These plans are also being used in the development of a draft acquisition guidance document for Wisconsin.
- b. Identify, protect and restore critical habitat in each administrative area with priorities determined for each ecological landscape.

- See a. above. This is being done through the EcoSummits
- c. Identify, investigate, and conduct research on the causes of habitat loss or impairment and take corrective actions in each administrative area.

- There are many research projects ongoing that are being used to determine limiting factors on species such as prairie chickens, sharp-tailed grouse, martens, grassland birds, loons, raptors, and other species. A matrix is being developed to correlate bird count data with habitat information. There is not research per se on the causes of habitat loss, but most causes are obvious (e.g. forest aging, fragmentation, CRP contract expiration, exurbia, intensification of agriculture).
- d. Identify and implement strategies to minimize the effects of rural residential development adjacent to protected habitat.

- Various wildlife staff members have met with municipalities to outline impacts for consideration in land use planning.

- 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.

- WDNR has a burn team that works on these issues. It also has a mandatory training program and implementation protocol for those involved in prescribed burns. Prescribed burning has and will be a featured topic at the Youth Outdoor Expo.

- f. For habitat conservation planning, integrate the many existing habitat plans by ecological landscape or other land unit.

- See a. above. Information is provided by ecological landscape in the Ecosystem Management Handbook and other plans. The EcoSummits are serving to integrate plans in administrative areas consisting of several counties that have staff working on the same team.

- g. Educate the public on adverse habitat trends and what the Department has been and is doing to slow or reverse these trends.

- These messages are routinely incorporated in talks by staff to various audiences, but more could be done.

- h. Investigate and advocate for strategies that reduce global warming and its impacts on habitat.

- The Wisconsin Initiative on Climate Change Impacts is operational with many interests working together to predict impacts of climate change, develop an understanding of vulnerabilities, and develop adaptive strategies. One of its subteams is the Climate Change Wildlife Working Group, which has produced a draft report in the first phase.

- i. Protect unique habitats of statewide significance such as bat hibernacula.

- A bat protection protocol is being developed with increased urgency due to the spread of white nose syndrome.

- j. Manage lands to provide enhanced food resources for wildlife.

- Public lands are routinely managed for a full range of ages, seral stages, and habitat components to provide for the food of wildlife. In addition, food plots are provided on a number of properties through share-cropping agreements.

- k. Complete Ecosystem Management Planning team chapters on ecological opportunities for each ecological landscape.

- This handbook is very close to completion as a result of special assignments of staff.

- l. Manage habitats on public lands to encourage less represented communities including early successional and late successional habitat types.

- The WDNR is doing this by implementing the Upper Mississippi and Great Lakes Region Joint Venture All Bird Plan. A number of staff and committees have been doing additional land use analysis and training of staff, particularly on grassland, savanna, shrubland and wetland needs.

- m. Continue to make progress on writing master plans for state forests, scientific natural areas, and wildlife areas.

- A plan for writing master plans has been developed. It is estimated that it will take 15 years to complete all of them. In the meantime, the DNR website has information on the management of each wildlife area. Forest certification has created another mandate for these plans. The Wildlife Program has a new public lands staff specialist to help coordinate and speed up this process.

- n. Work to establish corridors of habitat to connect major blocks of important habitats across the state.

- Specific needs for this work have been identified for prairie chickens in central Wisconsin and sharp-tailed grouse in northwest Wisconsin. The Climate Change Wildlife Working Group will be identifying corridor needs for species vulnerable to climate change.

- o. Promote recognition of statewide habitat plans in local planning and zoning decisions.

- Various staff have met with local municipalities to share information.

A.2. Aquatic Communities – General

- a. Support and further promote Forestry Best Management Practices for water quality.

- Ongoing.

- b. Continue to work with local units of government to further protect and restore shore lands.

- Wisconsin has a shoreland protection law and has produced educational materials and research results regarding these needs.

- c. Restore forests, grasslands and wetlands in watersheds to enhance water quality in streams and lakes.

- Ongoing across the state. WDNR has provided funds to hire farm bill biologists to increase enrollment in programs that reduce erosion and will be providing staff to help with the general CRP sign up in June 2010.

A.3. Wetlands

- a. Implement "Reversing the Loss: A strategy for protecting and restoring wetlands in Wisconsin."

- Wildlife staff participate on a team with other WDNR staff, other government agencies and non-government agencies to work on this objective. Duck stamp funds have been used to restore and enhance wetlands. Federal grants (e.g. GLFWR Act, NAWCA) have been secured to restore and enhance wetlands as well

- b. Identify and prioritize wetlands in need of protection, restoration and enhancement in each ecological landscape or administrative area.

- Wildlife staff have a plan of priority areas for wetland restoration based on topography, hydrology, and soils. This plan is being updated. UMRGLR Joint Venture Science staff have provided tools for prioritizing areas to restore and enhance wetlands for waterfowl and waterbirds.

- c. Seek authority for and develop a comprehensive state administered wetland regulatory and enforcement program including compensatory mitigation for permitted wetland loss.

- Ongoing through Water Division.

- d. Protect wetlands with high value through acquisition, incentives and other innovative strategies together with federal, state and local government and conservation organization partners.

- Wildlife staff work with many partners to restore wetlands including the USFWS, WDOT, USDA NRCS, Wisconsin Wetlands Association, Wisconsin Waterfowl Association, Pheasants Forever, Audubon, and Ducks Unlimited using municipal, state, federal and private funds.

- e. Restore degraded wetlands on public and private lands to recapture ecosystem function and value and in certain areas enhance migratory waterfowl habitat.

- A significant portion of duck stamp funds have been used for major renovations and maintenance activities to retain wetland values.

- f. Evaluate wetland restoration and management techniques for effectiveness.

- *Cattail management techniques are currently under investigation.*
- g. Promote to the public Department efforts with wetland restoration and management.
 - *Staff routinely incorporate these messages in talks to various audiences, but more could be done.*
- h. Implement the Upper Mississippi River and Great Lakes Region Joint Venture management plans for water birds, waterfowl and shorebirds.
 - *Presentations have been made to wildlife staff at statewide and regional meetings to help them understand the objectives outlined in these plans. Staff are working to integrate plans and determine the actions they can take that will best meet these regional objectives in their administrative areas.*
- i. Rewrite Wisconsin's portion of the Joint Venture management plan for waterfowl and wetland management.
 - *A group of partners met to initiate work on this plan, but most effort has been placed on wetland restoration, maintenance, and staff training to date rather than updating the plan.*
- j. Seek opportunities to manage shallow water lakes to benefit wildlife.
 - *A number of high profile projects have included Rush Lake and Muskego Lake restorations.*
- k. Conduct a wetland management training program for wildlife staff.
 - *A multi-day training program was provided to WDNR and partner staff with around 200 attending. Plans are underway to bring in wetland management guru Leigh Frederickson for two training sessions this coming year.*
- l. Manage wetlands and flowages through water control structures, water level management, and dike establishment and management.
 - *Wildlife staff continue to manage these flowages and have used a significant portion of duck stamp funds for these purposes in the last couple years. Still, funds are not adequate to keep all flowages operational.*
- m. Develop and implement a comprehensive wild rice management plan.
 - *A wild rice committee comprised of DNR, Tribal, and partner staff has been working on this plan. Funding for a wild rice coordinator has been proposed but not yet secured.*

- n. Develop an educational brochure on shallow lakes and flowage management.
- o. Educate the public on the value of prescribed burning for wetland management.
 - *This topic is occasionally incorporated in staff talks to various audiences.*
- p. Regularly use disturbances such as fire, mowing, disking, or herbicide to prevent herbaceous wetlands from succeeding to woody habitats.
 - *Ongoing across the state, but a never ending battle that is made more difficult as DNR acquires and manages more wetlands with existing staff.*
- 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.
 - *Ongoing with significant attention to maintaining and increasing openland barrens habitats*
- b. Work with private landowners with sandy soils to restore barrens and maintain open landscapes in barrens areas.
 - *Ongoing; we held a barrens workshop but it did not accomplish anything "on-the-ground."*
- c. Restore significant blocks of open barrens community in northeast sands ecological landscape, e.g., Dunbar, Spread Eagle, Athelstane.
 - *Additional openland barrens has been created through timber harvests and subsequent management.*
- d. Restore significant blocks of open barrens community in central sands ecological landscape, e.g., Quincy Bluff.
 - *Limited additional acreage of open barrens has been provided on state lands in this area.*
- e. The Ecosystem Management Team will produce maps and data for central sands ecological landscape.
 - *EMT work on the handbook for all ecological landscapes is nearly complete as a result of special staff assignments.*

- f. Implement Karner Blue Butterfly management plans to increase oak and pine barrens habitats.
 - *This is ongoing work for wildlife managers responsible for public lands that support KBB.*
- g. Implement pine barrens curriculum at education centers and schools in northwest and central Wisconsin.
 - *Not completed, but this topic is incorporated in staff talks to various audiences.*
- h. Work with forestry and forest industry to have oak and pine barrens restoration viewed as a priority within the sand-dominated landscapes.
 - *Conversations regarding these values continue.*
- i. Lease Namekagon Barrens to preserve open barrens landscape.
 - *This important county land is again under WDNR lease.*
- j. Continue to manage for open barrens habitat as a priority on Crex Meadows Wildlife Area.
 - *Open barrens habitat has increased with aggressive treatments of woody vegetation including biomass harvesting.*
- 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.
 - *Wildlife staff routinely work with foresters to address wildlife needs.*

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.
 - *Significant planning and management efforts are ongoing in these areas. The Driftless Area Initiative and the WBCI Southern Forest Planning Committee are examples.*
- 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.

- See a. above.

- 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.

- *Limited progress on connecting forests, however, these funds have been used to enhance forests and plant trees.*

- d. Implement management practices to benefit and enhance native flora and fauna associations, in particular interior forest birds.

- *Wildlife staff work with foresters to manage some units for young forests while others are managed for older forests. A team has developed strategies for old forest management.*

- 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.

- *Thanks to aggressive harvest prescriptions and regulations and adverse winter impacts, most northern forest and central forest units are near or below goals for the first time in decades.*

- f. Use partnerships established through the Wisconsin's Bird Conservation Initiative to improve habitat for wild birds in southern forests.

- *A new WBCI committee has been initiated to focus on southern forest birds*

- g. Work with consulting firms and forestry to certify forested lands on all department lands.

- *WDNR lands are now certified by 2 certification companies, and staff are working to address recommended corrective actions.*

- h. Work with foresters to ensure that timber management on wildlife areas is consistent with property goals and beneficial to a diversity of wildlife.

- *Wildlife staff routinely do this work with foresters. A new state law has accelerated timber management on state lands, with the first steps being inventory and discussions regarding property goals.*

- 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.

- The Wildlife Implementation Team has developed a seminar to train MFL consultants.

- j. Provide incentives that encourage practices that maintain oak dominance in southern forests.

- Forestry grants and turkey stamp grants have been aimed at this objective.

- k. Implement state lands forest management initiative.

- See h. above.

- l. Restore agricultural lands to forests where they would add to existing large forest blocks.

- Staff are doing this through turkey stamp grants; CRP tree planting is also helping.

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.

- A WBCI Grassland Committee led by wildlife staff from WDNR and USFWS has developed a plan for priority areas and has been meeting with field staff to help implement the plans. They have also provided training on grassland bird management at a statewide training meeting for DNR and partner staff and at several local training workshops especially targeted toward partners such as USDA FSA and NRCS staff.

- b. Protect, manage, and enhance native prairie remnants as refuges for flora, fauna and ecological processes.

- Protection of these areas is an ongoing priority, particularly for BER staff and natural area crews.

- c. Protect and manage significant blocks of sedge meadow not currently afforded management or protection.

- Ongoing; we have added some acreage but not in significant blocks.

- d. Explore perennial bio-fuel options for wildlife values on private lands.

- Wildlife and research staff have been doing work on this issue with private industry and the university. There is now a non-woody biomass committee that is developing guidelines.

- e. Regularly use disturbances such as fire, mowing, disking, or herbicide to prevent established grasslands from succeeding to woody habitats.

- This continues to be a significant priority workload for wildlife staff across the state. Staff will need to prioritize fields for disturbance as the acreage to staff ratio grows on public lands.

A.7. Oak Savanna

- a. Establish savanna habitat at several landscape scales to meet area requirements for a wide range of species.

- As most savanna species are not area sensitive, wildlife staff are working to create blocks of various sizes as opportunities, funding and staff are available.

- b. Work with partners to restore large blocks of degraded oak savanna on private land.

- Ongoing. We have made progress through the Landowner Incentive Program (LIP) but it is limited by the amount of funding we have. It should be noted that LIP will be ending after 2011 due to no federal appropriation to continue the program

- c. Continue oak savanna restoration across its historical range on several Department-owned properties.

- See a. above.

- d. Use the “use-value” tax incentives to promote use of grazing land for private savanna restoration.

- Limited use.

- e. Educate wildlife biologists, foresters, and landowners on the value of prescribed fire for savanna restoration.

- Staff have been made aware. Some landowners have been made aware.

- f. Work with the resurging grazing industry to facilitate savanna preservation and restoration.

- Ongoing.

- g. Work with local zoning administrators to preserve important grasslands.
 - *Various staff have discussed this subject with municipalities.*
- h. Work with farm agencies, organizations and landowners to convert row crops to grazing lands with practices to benefit grassland birds.
 - *Ongoing.*
- i. Work within the Department to identify areas where grassland will be a higher priority than trees (and vice versa).
 - *This has been an ongoing issue of discussion. Staff has modeling information that will help identify such areas. An ad hoc committee is in the process of being established to deal with this issue.*
- j. Work to provide corridors between major grassland areas, e.g., Killsnake and Brillion Wildlife Areas.
 - *Staff continue to look for such opportunities using acquisition, easements, and federal farm programs, particularly in important grassland/barrens areas of northwest, west-central, southwest and east-central Wisconsin. A new Southwest Grasslands Area has been established for acquisition and partner contributions toward grassland core and corridor 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.
 - *An ongoing priority for Northern Forest wildlife managers.*
- b. Work with foresters to plan for and increase the number of large blocks of various forest components.
 - *Ongoing on state, county and national forests.*
- c. Continue to incorporate wildlife needs through the private tax law.
 - *Limited progress other than the Managed Forest Law.*
- d. Work with counties to implement 15-year county forest plans.
 - *Wildlife staff have worked with county forests on their 15-year plans.*
- e. Maintain large, contiguous forests for ecological, economic and social reasons.

- Ongoing, especially through acquisition and easements or industrial forest lands.

- 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.

- Ongoing. Separate appropriations have not been made, but the Stewardship Fund has been reauthorized at a higher funding level for 10 more years.

- g. Restore under-represented elements of northern forests, e.g., flora, fauna, forest structure and ecological processes.

- Continuing through opportunities identified by Ecosystem Management Team and the Wildlife Action Plan. An EcoSummit will be held in the Northern Region this fall to further identify the best opportunities to make a difference from a regional and global perspective.

- h. Provide department input on national forest plans.

- Ongoing through the Division of Forestry.

- i. Work with industrial forests to protect and enhance wildlife habitats; embrace working forests for the wildlife values they provide.

- Ongoing. Purchasing these forests in some cases.

- j. Manage forest openings in early successional habitats.

- This continues at a limited level, recognizing the impacts of these openings on edge sensitive species.

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.

- Wildlife staff have provided a critical role in farm bill policy and implementation through work with WMI, AFWA, legislators, MAFWA committees, USDA State Technical Committee, and contributions toward 5 farm bill biologists co-funded by Pheasants Forever and USDA NRCS. Priority programs have included CRP, CREP, WRP, SAFE, and WHIP.

- 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.

- Wildlife staff have contracted for the evaluation of SAFE impacts on wildlife.

- c. Build a coalition of partners, including Wisconsin Bird Conservation Initiative partners, to lobby for farm bill policy that benefits wildlife habitat and populations.

- Wildlife staff have routinely given presentations and information to partners on farm bill policy. Many partners are very active in advocating for farm bill policy that benefits wildlife. A national coalition of partners developed a publication that outlined desired policies.

- d. Work with the U.S. Department of Agriculture on Wetland Reserve Program implementation through shared project positions.

- WDNR co-funds 5 farm bill biologists to do this work and is looking for additional funds to accelerate WRP implementation in Wisconsin.

- e. Field staff will work with landowners to improve habitat directly or through federal farm programs.

- Some staff have assisted landowners with labor, equipment and cost-sharing (e.g. Pheasant Stamp), but most support occurs through farm bill biologists and policy work.

- f. Use waterfowl, turkey and pheasant stamp funds for private lands habitat projects.

- All 3 stamp accounts have been used each year to fund 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.

- Wildlife staff work of note in this area is the central Wisconsin Grasslands partnership coordinated through the Golden Sands RC&D and provision of a liaison to WWOA for improving wildlife benefits on private lands, particularly through MFL.

- h. Update the educational Wildlife and Your Land series.

- Although limited funding and staffing have prevented this update, a series of seminars were developed for use with landowners.

- i. Seek ways to increase wildlife management considerations on lands under Managed Forest Law and in the Wisconsin Forest Landowner Grant Program.

- Ongoing through Wildlife Implementation Team and liaison to WWOA.

- j. Provide information that will cause consideration of wildlife needs in land use planning discussions of local governments.

- Various staff have provided information to local municipalities.

- k. Seek ways to bridge the gap between inadequately staffed agencies with habitat improvement funds and landowners who may be interested in programs.

- This is being done through the farm bill biologists program and partnerships with conservation organizations such as Pheasants Forever, Ducks Unlimited, The Nature Conservancy, the Wisconsin Waterfowl Association, and others. The Private Lands Committee is working on a recommendation regarding the niche of WDNR WM, considering staffing and funding limitations and the efforts of partners.

- 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.

- No political will to have a tax-based incentive program on this issue

- n. Promote recognition of statewide habitat plans in local planning and zoning decisions.

- *Various staff provide such information to some municipalities.*
- o. Creatively work with partners to enhance delivery of wildlife management practices on private lands.
 - *See objectives above.*
- 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.
 - *There are both department and wildlife management teams working on this objective. Field staff routinely work on invasives control.*
- b. Identify invasive species that will be a priority for Department control and then identify priority sites for invasive control in each administrative area.
 - *The new Wildlife Management Invasives Committee is working on a plan for identifying priority invasives to control.*
- c. Develop and implement statewide invasive species management plans, including education, research and control.
 - *The Invasives Committee has begun work on this objective.*
- d. Develop guidelines for field biologists to use in controlling invasive species.
 - *Guidelines for a number of invasive species have been developed.*
- e. Communicate with landscaping companies and nurseries on invasive species that are particularly hazardous for Wisconsin.
 - *A recent law was developed to address some of these nursery species.*
- f. Continue to support and evaluate bio-control efforts, e.g., purple loosestrife, garlic mustard, spotted knapweed.
 - *Use of insects for control have been evaluated for purple loosestrife and spotted knapweed.*
- g. Secure funding for programs that would have significant impact on invasive species, particularly terrestrial species.

- *Additional funding will be made available in 2010 using the increased PR allocation.*
- h. Work toward control of harmful, non-native animal species.
- *There is a new law that seeks to reduce impacts of some of these species such as feral hogs.*
- i. Continue to use management tools to control mute swan populations according to the Natural Resources Board's approved mute swan management policy.
- *Mute swan control work continues, but not without significant controversy.*
- j. Ensure the Aquatic Nuisance Species Plan is implemented.
- k. Develop and implement a feral pig control plan.
- *Feral pig control has occurred in many areas of the state through hunters, biologists and USDA-WS. Information has been made available on the DNR website. Hunters have been encouraged to shoot feral pigs. Progress has been made.*
- l. Continue to work to minimize carp populations in wetland habitats important for waterfowl production and migration.
- *Drawdowns and control structures have been used to control carp on numerous flowages.*
- 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.
- *Little progress. The Wisconsin Bird Conservation Initiative has developed educational materials about the effects of feral cats.*
- n. Work to prevent the introduction and manage the impacts of priority high-risk foreign fish and wildlife disease agents.
- *There has been work on protocols for reducing ballast water introductions and on policies to address the Asian carp threat.*
- o. Assess the potential risk to Wisconsin species from emerging continental and global diseases.
- *WDNR has been actively sampling for Avian Influenza and other emerging diseases.*

p. Develop tools to prevent and monitor for the introduction of high risk disease agents.

- *Ongoing.*

q. Develop and implement tools for the control and/or containment of priority emerging diseases.

- *Ongoing.*

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.

- *Ongoing with surveys and response to conflicts. Plan being updated with scientists and partners. Continued listed status as a result of lawsuits limits options.*

b. Continue rare mammal tracking and reporting.

- *Ongoing.*

c. Assess location, population characteristics, and movements of bats along the Niagara Escarpment. Develop a Wisconsin bat management plan by 2013.

- *Planning in progress. White-nose syndrome response plan in progress. State wildlife grant being used for bat assessment.*

d. Incorporate small mammal inventories into master planning inventories and other inventories on public lands.

- *Some inventories are occurring.*

e. Prepare a Pine Marten Plan update by 2009 and explore opportunities for enhancing the pine marten populations in northern Wisconsin.

- *Plan is near completion with draft under review.*

f. Inventory Wildlife Management Areas for wild mammalian species of greatest conservation need.

- Limited surveys are occurring.

- g. Implement components of the Wildlife Action Plan the benefit wild mammals.

- WAP implementation plan focuses on priority communities around the state. By protecting and enhancing communities, mammals are benefited.

B.2. Non-game Birds

- a. Continue eagle and osprey population monitoring and productivity surveys.

- Ongoing survey.

- 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.

- Trumpeter swan population continues to grow and expand its distribution; they are now delisted.

- 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.

- These plans have been incorporated into the UMRGLR Joint Venture All Bird Plan and the WBCI All Bird Plan. Efforts are underway to try to meet objectives for the various community types (e.g. Jack Pine, Barrens, Wetlands, Grasslands, Southern Forests).

- 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.

- Wildlife staff have been provided a workshop on shorebird needs and made aware of the Joint Venture shorebird plan. Many flowages have been partially drawn down with benefits for shorebirds.

- f. Continue population monitoring and management efforts for colonial water birds, e.g., herons, gulls, terns, cormorants, egrets, and piping plover.

- Ongoing.

- g. Develop and implement a cormorant management policy.
- A cormorant management policy has been developed and implemented in the Northeast Region. Staff have worked with other great lakes wildlife agencies on a regional 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.
- Wisconsin has been a regional leader in implementing statewide marshbird surveys. A survey coordinator has been hired, who works with volunteers and staff to complete the surveys.*
- 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.
- Staff continue to work with field staff and partners to increase acreage of grasslands in these important areas through acquisition, management, easements, and federal farm programs (e.g. CRP, SAFE). The SWG Feasibility Study was completed and approved by the Natural Resources Board.*
- j. Serve as a partner in the recovery of whooping cranes. Implement the state management plan.
- WDNR has been an active partner in this effort. While the number of nesting pairs increase, nest success has been extremely limited.*
- 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.
- Ongoing. Eagles delisted in Wisconsin. A red-shouldered hawk survey has been initiated.*
- l. Participate in the Mississippi Flyway Council non-game technical section to develop policy, plans, and regulations.
- Ongoing.*
- m. Inventory wildlife management areas for wild bird species of greatest conservation need.

- Surveys have occurred on many areas, particularly Important Bird Areas.

- n. Implement components of the Wildlife Action Plan that benefit wild birds.

- Wildlife staff are doing this, with added emphasis on the WAP in the regional EcoSummits

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 minimize the impact of chronic wasting disease (CWD) in our deer herd, and monitor environmental contaminants in wildlife.

C.1. Wildlife Health

- a. Continue active CWD management with the goal of minimizing the impact of CWD on the state's deer herd, economy, hunters, and landowners. Management will include components for surveillance, research, herd reduction, education and outreach, and disease prevention.
- b. Continue statewide surveillance for CWD.
- c. Use a "learn and adapt" approach by incorporating new scientific information into CWD management.
- d. Conduct and assist CWD research efforts to develop greater knowledge on disease ecology, testing diagnostics, control strategies, and human dimensions.
- e. Provide information, education, and opportunities for public involvement on CWD management, surveillance, and research to major stakeholders
- f. Work cooperatively with the Department of Agriculture, Trade, and Consumer Protection on minimizing the potential for CWD transmission between wild and captive deer.
- g. Seek authority to ban deer baiting and feeding statewide, perhaps beginning with public lands.
- h. 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.

The WDNR Wildlife Health Program continues to maintain a strong wildlife necropsy program to monitor WI wildlife disease occurrence, patterns, and trends. In each of the past three years, 300-400 wildlife necropsies were

performed to investigate cause of death, to contribute to specific disease surveillance programs (such as West Nile virus and the National Highly Pathogenic Avian Influenza Surveillance), and to monitor for new and existing wildlife diseases. These necropsies included investigating 20-30 die-offs (>5 animals sick/dead in one area over a short time frame) each year. During these 3 years, over 160 wolves and 180 bald eagles were necropsied. In addition, all loons found dead in WI were necropsied to contribute to the information available on lead impacts on wildlife. Since the discovery of White-nose Syndrome in bats in the east, the Wildlife Health Program also increased the number of bats requested for necropsy in order to monitor for the presence of this disease. The Wildlife Health Program continues to support the state Dead Bird Hotline which provides an efficient way for citizens to report sick or dead birds. This information is relayed to local Wildlife Biologists and the Wildlife Health staff as needed to ensure timely response to events of concern to WI wildlife health.

- i. 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.

The creation of an Oracle wildlife health data model with a web-based user-interface was started in 2007. This application went live at the beginning of 2009. The first phase includes the development of dictionaries of standardized terms; the ability to enter all case information including background, samples, storage, diagnoses, etc; necropsy reports; and simple queries. Some of the enhancements for future phases include mapping abilities, additional reports and queries, field submissions, and automated results from laboratories.

Since the wildlife health database went “live” in early 2009, we have migrated 4 years (2005-2008) of historic necropsy records and results into it. All necropsy data collected since early 2009 have been entered directly into the database. To date there are over 1600 necropsy records, including cause of death and all disease diagnostic results, in the database and available for query and analysis. In addition, 5 years of avian influenza surveillance results and 8 years of WNV surveillance results have been entered into the database. Spreadsheets for 6 years of whooping crane health screening data and gray wolf health screening data from 1982 to present are in process of being migrated into the database. Health screening data collected during capture events for elk, greater prairie chicken, sharp-tail grouse, trumpeter swan, and whooping cranes are now entered directly into the database.

- j. 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.

- k. Provide health management for reintroduction and conservation programs for endangered, threatened, extirpated and rare species.

During the past 3 years, the Wildlife Health Program provided health management advice and conducted or participated in disease surveillance programs for reintroduction or translocation programs for elk, American marten, whooping cranes, greater prairie chickens, and sharp-tailed grouse. Health management advice was provided and disease surveillance was conducted as part of gray wolf and trumpeter swan capture and marking programs.

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.

We continue to follow-up on individual complaints regarding licensed captive wildlife facilities to ensure animal welfare, human health and safety and compliance with associated regulations.

- 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.

We continue to educate and license wildlife rehabilitators across the state. Part of our education efforts include speaking at conferences, writing articles for veterinary and rehabilitation publications, and participating in youth group activities related to wildlife welfare and disease risk management. Over the last 3 years, we have created an annual report database, allowing us to monitor trends in wildlife populations, improve surveillance capability for emerging diseases, and tailor public education messages to address relevant issues. In the last year, these data have provided us with valuable information used in the development of a campaign to prevent people from unnecessarily taking healthy, baby animals from the wild.

- d. Ensure that the falconry license and education system provides appropriate disease risk management, humane care and treatment of birds.
- e. Provide 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 minimize the impact of chronic wasting disease (CWD) in our deer herd, and monitor environmental contaminants in wildlife.

A.1. Wildlife Diseases

- a. Monitor birds for avian influenza.

The WDNR Wildlife Health Program contributed over 2000 samples to the National HPAI Program during the 3 year time period, including over 450 samples collected from morbidity/mortality investigations. In addition, over 190 of the state's ring-necked pheasant game farm birds were sampled either after on-site natural mortality or prior to release for hunting.

- b. Monitor birds for West Nile virus.

During the 3 year reporting period, the Wildlife Health Program collected tissue samples during necropsies from over 160 birds and mammals for WNV PCR testing. In addition, over 60 elk, greater prairie chickens, and whooping cranes were screened for antibodies to WNV as part of routine health screening done during capture events.

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.

A project was started in 2007 investigating mercury levels in swamp sparrows from different wetland habitats in WI. An extension of this project initiated in 2009 involves trying to determine mercury accumulation rates in swamp sparrows. Similarly, we collaborated with USGS to sample tree swallows in different wetland habitats. We also collaborated with the Biodiversity Research Institute, (Gorham, Maine) to sample verios and thrushes from different forest ecosystems in WI.

- b. Conduct surveillance on newly emerging contaminants of concern, e.g., polybrominated diphenyl ethers (PBDEs), nanomaterials, perfluorooctane sulfonate (PFOs), pharmaceuticals and endocrine disrupting compounds.

We are currently collaborating with a researcher from the University of Michigan to evaluate neurochemical biomarkers in both river otter and bald eagles. We will examine the relationship between biomarker response and several different contaminants.

- c. Monitor contaminant levels in urban goose populations to facilitate harvest for consumption as a population management alternative.

This is an annual program in cooperation with USDA-Wildlife Services.

- 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.

We are continuing to monitor lead levels in eagles, swans and loons. We are also working with MN-DNR to necropsy loons from MN in order to build the dataset regarding lead exposure in MN loons.

- 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.

We consulted with the WI Conservation Congress on a Congress advisory question regarding the phase out of the use of lead fishing tackle. A Lead Action Plan was created for the Department with input from staff from several different programs. The purpose of this plan is to help reduce the amount of lead discharged into the environment.

- f. Assess impacts of pesticides on wildlife populations.

- g. Initiate contaminant monitoring of wildlife species regularly consumed by humans.

We are currently consulting with the WI-Dept. of Health Services and the Center for Disease Control regarding a potential study investigating the blood lead levels of wild game consumers in WI.

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.

We have successfully awarded grants each year matching the \$25,000 allocated to the program annually.

- 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.

The Department, USDA-Wildlife Services, and UW-Extension has formed a partnership to create a series of nuisance wildlife fact sheets that help landowners deal with some of the more common nuisance wildlife species. Several of species sheets have been developed and we are now designing a website where all the information can be accessed by each agency and the public.

- d. Update policies on abatement for nuisance and agriculture damage bears and turkeys by 2008.

There have been several policies approved by the policy team, specifically, a policy on bear management at captive cervid farms, the nuisance bear landowner cost share program, and more recently guidelines for DNR staff dealing with nuisance bears. General guidelines were also developed for the issuance of turkey shooting permits which received support from the DNR Turkey Committee.

- 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.

Wildlife Services continues to conduct DNA research to determine if bears captured at corn depredation sites tend to depredation again after relocation. Preliminary results (ATTACHMENT) seem to indicate that trapping and relocation is an effective damage abatement techniques and captured bears tend not to be re-captured at corn depredation sites.

- f. Clarify existing rules and consider promulgation of regulations and certification for the nuisance wildlife control industry.

We have met with the Wisconsin Wildlife Control Operators Association several times to discuss the implementation of a certification/licensing requirement for businesses that conduct animal damage control activities. WWOCA is currently pursuing legislative support to create a bill that would require animal damage control activities to complete a certification/licensing process.

- g. Continue to implement the Endangered and Threatened Species and Gray Wolf damage program.

Wildlife Management staff continue to actively participate on the Department's Wolf Science Committee as the wolf delisting battles continue between the U.S. Fish and Wildlife Service and wolf advocates, specifically the HSUS.

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.

Ongoing. While the objective continues to be to develop 1.5 sites per year, during this review period the Department has developed on average one boat access site per year. These are located on generally small lakes previously without access. The Department intends to develop three major lake access points with two located in southeastern Wisconsin and the other in the Turtle-Flambeau Scenic Water Area. One of the access sites is located at North Lake. This access has not developed due to litigation by property owners on the lake. The Turtle-Flambeau site at Lake of the Pines is in the engineering stage and will be constructed before October 2011.

- b. Renovate approximately six to ten access sites per year.

Ongoing. In the past three years, the Department renovated between five and six major sites per year through the SFR development program. The sites are selected by the State's BOAT Team. The SFR development program focuses on high use sites and improvements that extend beyond simple launch repairs to include expansion of parking facilities, accessibility improvements, storm water management and facility enhancements (ie vault toilets, fish cleaning stations, etc.). The SFR maintenance program is utilized for smaller sites requiring minor improvements that may include parking lot resurfacing, launch replacement or boarding dock replacement. The SFR maintenance program alone improves at least 10 access sites throughout the State.

- c. Utilize 15% of the available SFR-grant funds to acquire, develop and improve motor boat access sites.

Ongoing.

- 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.

Ongoing. The Department annually allocates \$200,000 for statewide access and \$100,000 for southeast access sites. The statewide allocation when combined with the southeast allocation can provide up to \$300,000 annually for southeast Wisconsin sites. This allocation is used as the State match for the SFR fund.

- 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.

Ongoing. The State has utilized over \$1,950,000 in Recreational Boating Facility funding to maximize SFR program effectiveness since FY 2007. The State's Stewardship program is used for land purchases and site improvements that have and can be used for boat access development.

- 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.

Ongoing.

- 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.

Ongoing. The Department through the BOAT Team identifies boat access projects for placement in the Department's six-year facilities plan. Projects not listed on the plan through the BOAT Team are not considered for SFR development funding. SFR maintenance funds are used to fund minor project improvements that the BOAT Team considers but not competitive against major boat access redevelopment.

- h. Provide training, technical assistance or consultation and design services to achieve compliance with the Americans with Disabilities Act.

Ongoing. SFR funding is used to fund a portion of the Department's accessibility coordinator. The accessibility coordinator serves with the Department's BOAT Team.

- 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.

Not yet completed. Will be on the agenda for the BOAT Team in May, 2010. The Department has initiated a continuous project submittal process for the identification of projects in the Department's six-year facilities plan. Each region of the State completes annually a ranking sheet of priority projects for

consideration by the BOAT Team. The BOAT Team did not meet in 2009 for the 2008 ranking encumbered funding through the 2009 and 2010 fiscal years.

- 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.

Ongoing. The BOAT Team identifies the project priorities and those priorities are placed in the SFR development plan based on available funding.

- k. Maintain and update the Department's six-year facilities plan for boat access sites to prioritize development, and renovation projects.

Ongoing.

- l. Collect data from all public access sites, enter the data into the inventory system, and continue to support and manage the data.

Ongoing. The Department continually updates the public access site inventory system. The data collected is incorporated in the Department's boat access website for public consumption.

- m. Add and verify additional data elements (target: October 2008) to blend into the Department's inventory system.

The Department has incorporated a comprehensive data collection system and has continually updated the inventory system.

- n. Use part of the 15% available SFR grant funds to complete the overall statewide boat access information system.

In progress and continually updated.

- o. Place priority on local partnerships for the development and maintenance of state owned or funded boat access sites.

Ongoing. The Department has leveraged over \$1,950,000 since 2007 for the development and maintenance of state-owned or funded boat access sites. The Department also contracts with local units of government for the maintenance of sites throughout the state.

- 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.

Ongoing DNR staff have attended training sessions and conferences sponsored by the Fish and Wildlife Services.

- q. Meet with fishing clubs, conservation organizations, and other interested parties to discuss boat access related issues.

Ongoing. Department staff continually meet with local governments and interested parties through the State's community financial assistance and fisheries employees. The Department also engages the public through public hearings in the creation site specific master plans.

- r. Use existing Department publications and the Department's Web site to highlight the boat access program.

Ongoing. The Department maintains a website identifying statewide access sites and services available.

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.

Ongoing. This has been challenging to do effectively due to shortages in permanent staff because of retirements and the hiring freeze in the state, as well as a shortage of trucks in the field due to state budget problems. Despite these challenges, the properties are being well maintained thanks in large part to the SFR funding.

- b. Improve access to sport fishing opportunities.

Ongoing.

- c. Perform management activities needed for the protection and enhancement of aquatic resources.

Ongoing.

- 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.

Ongoing. Additionally, a Department wide "Acquisition Plan" is being worked on to continue to ensure that we are targeting the most important parcels/properties.

- 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.

Ongoing. Master planning priorities are set and there is at least one grouping of properties being planned per region. Biotic inventory work is being completed in advance, and timed well with the planning priorities.

- 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.

Ongoing. Major progress has been made in this area. Many fishery areas (primarily the larger, more heavily used areas) now have individual write-ups with property descriptions, objectives, directions, and public use maps on the internet. Hard copy maps have not yet been provided to the Service Centers, and this part of the objective will be evaluated to balance need/demand against costs. Many Service Centers have closed or had hours and staffing reduced due to budget realities, so more and more people are relying on the internet for information.

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, and respond to and inform our customers on the status of fishery resources.

We recognize that fish populations naturally vary from year to year. Our fishery management surveys are designed to detect fish populations that are below comparable lakes and streams. In some of 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. All important (generally 100-acre or larger) fisheries in lakes with public access at least once every 12 years.
 - b. 1st order trout streams and all 2nd order or greater streams at least once every 12 years.
 - c. All major river sites at least once every 4 years.
 - *We conducted an annual survey schedule on all major river sites for five years to obtain trend data to use to evaluate how often surveys are needed to adequately assess the status of riverine fish populations. The five year survey period has been completed and the data indicates that surveying major river sites at least once every 4 years will be sufficient; thus the change in objective.*
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 in lakes with natural reproduction.
- b. 25% of all adult walleye longer than 10 inches are 15 inches or larger in northern lakes
- c. 50% of all adult walleye longer than 10 inches are 15 inches or larger in the southern lakes where the growing season is longer.
- d. 25% of all walleye longer than 10 inches are 18 inches or larger on stocked lakes.
- e. Survey all walleye lakes larger than 100 acres with public access at least once 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"
- Evaluations have been completed for both the 14-18 inch protected slot and one walleye over 14 inches regulations. The evaluation of the three walleye over 18 inches regulations has not been completed to date due to the lack of sufficient data. Additional data related to this regulation should become available as standardized surveys continue to occur in the coming years and may provide the opportunity to evaluate this regulation at a later date.

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 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 – This intermediate class consists of waters providing good fishing. In general, angler success and catch rates may be somewhat less than in prime Class A waters (222 waters; 115,452 acres).

Class C – These waters have muskellunge present 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 every two years.

-This objective was completed and is revised to read “every two years”.

- c. Complete a comprehensive survey of musky genetics to identify stock boundaries by 2008.

-This objective is essentially completed via the Cooperative Fishery Research Unit at UW-Stevens Point. Some follow up work is necessary and this should be done by 2012.

- 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. 50% of spring electrofishing surveys find at least 13 largemouth bass greater than 8 inches per mile of shoreline and 1.5 largemouth bass larger than 15 inches per mile of shoreline.
- b. 50% of spring electrofishing surveys find at least 2 smallmouth bass greater than 8 inches per mile of shoreline and 0.5 smallmouth bass greater than 15 inches 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.

- The restoration of lake sturgeon populations has been severely hampered by the propagation policies and biosecurity measures implemented at the Wild Rose State Fish Hatchery in response to the Viral Hemorrhagic Septicemia (VHS) fish virus. It is unclear, at the present time, if we will be able to continue to meet this goal.

- e. Revise Wisconsin's Lake Sturgeon Management Plan by 2008 with the involvement of stakeholders.

- This goal was not met due to workload issues that resulted from the change in team membership brought on by the implementation of Fisheries standing team procedures. The revision of the Lake Sturgeon Management Plan is now scheduled for late 2010.

- 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.

- The funds in the dedicated lake sturgeon account, collected from the sales of the hook and line lake sturgeon harvest tag, have allowed fisheries biologists to conduct a variety of important sturgeon projects:

- *Sturgeon populations continue to be rehabilitated with a multi-state approach on Lake Superior.*
- *Streamside rearing stations have been developed to help bring back lake sturgeon populations to major Lake Michigan tributaries.*

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-capacity 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 2nd, through 5th order streams on a one, three, six or twelve-year rotation and sample 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 designated 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 including conducting assessments, creating and revising sport and commercial fishing regulations and stocking. Broad goals include supporting recreational fisheries, sustaining viable commercial fisheries and restoring native species (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. Devote resources for the building of a new research vessel, the RV Coregonus for Lake Michigan, replacing the 73 year-old RV Barney Devine and retrofit the RV Hack Noyes on Lake Superior.
- d. 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.
- e. 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.

- f. Work with the Lake Michigan Committee to finalize and implement a new lakewide lake trout restoration plan.
- g. Sustain long-term assessment data bases on both lakes.
- h. Continue to develop and improve statistical catch-at-age population models for lake trout in Lake Superior, yellow perch in Green Bay and Lake Michigan, and lake whitefish in Lake Michigan.
- i. Continue to develop and enhance our human and technological capabilities for science-based fisheries management.
- j. 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.]
- k. Continue management of Lake Michigan strain lake sturgeon in the Menominee, Peshtigo, and Oconto rivers as source populations for Green Bay and Lake Michigan in cooperation with other states and the USFWS.
- l. Reintroduce Lake Michigan strain lake sturgeon into suitable former river habitats, including the Milwaukee and Kewaunee Rivers using streamside rearing facilities.
- m. 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.
- n. 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 land in the northern one-third of Wisconsin to the U.S. Government in Treaties of 1837 and 1842, but reserved off-reservation rights to hunt, fish and gather within the Ceded Territory. These rights were affirmed in a 1983 Appellate 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 the Wisconsin 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 15 to 25 walleye and musky population surveys, 100 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 and maintain 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.
 - Completed and ongoing. Revisions are made as needed to the statewide stocking guidelines and applied to the current year's stocking requests.
- 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.

- A University of Wisconsin-Green Bay production cost analysis of all hatchery products was completed late 2009. The FM Board will plan to release this information internally and to the public and develop recommendations from the evaluation after 2010.

- 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 online 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.

- Phase I was completed in 2008 and Phase II began in 2009. Progress is being made according to plan.

- 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.

- The statewide propagation facilities study will be completed in 2010.

- c. Gain Department, Governor, and Legislative support for a propagation system redevelopment plan by 2009-2010.

- The department will proceed with securing support once the statewide propagation facilities study is completed in 2010.

H. Fish Health

This program function includes fish health monitoring and fish health management at the state hatcheries, rearing stations, coop ponds, and spawning weirs. The fish health program

also assists regional staff with investigating the cause of fish kills in lakes, streams, and rivers and participates with national and regional surveillance programs for fish pathogens such as viral hemorrhagic septicemia virus (VHS). The fish health program also collaborates on research studies focused on certain fish pathogens.

- Science Services reviewed the state of the science associated with VHS and freshwater fisheries. A Technical Bulletin with the findings is available at http://dnr.wi.gov/org/es/science/publications/PUB_SS_196_2009.pdf

- a. Ensure the fish stocked in Wisconsin are healthy. Health is measured by results from diagnostic testing and annual health inspections at state hatcheries. The fish health specialist or contracted veterinarians issue fish health certificates to comply with Department of Agriculture, Trade, and Consumer Protection regulations for fish stocked in Wisconsin.
- b. Use the best techniques available, including vaccination, high quality diet, good water quality, and improved aquaculture techniques, to prevent the introduction and transmission of fish pathogens and the occurrence of fish diseases.
- c. Ensure biosecurity practices are developed and implemented at state hatcheries.
- d. Participates with USFWS' Aquatic Animal Drug Approval Partnership program specifically to gain drug approval for LHRH, which is a hormone used to synchronize ovulation in fish.

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.

-We have been investing on average \$100,000/year and developing approximately five facilities per year. The program is currently on temporary hold due to a shortfall of staff to manage the program.

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.

-Due to staff workload and vacancies, no site visit verification has occurred and limited updates of information on the website have been completed.

- 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 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.

Fisheries Outreach is focused on: (1) communicating with anglers to better ensure their understanding of fisheries issues (e.g. aquatic invasive species) and regulations (e.g. the impact and value of regulations to ensure a quality fishery and quality habitat), and habitat restoration to benefit sport fish ; (2) retaining anglers who have purchased fishing licenses; and (3) recruiting new anglers to the sport.

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. Since the aquatic resources education program lacks the funding to adequately cover teacher stipends at for-credit workshops, we seek to partner with programs and teacher academies that do. Once trained, we expect each teacher to reach 30 to 60 students each year.
- b. Attend a minimum of five professional statewide educator conferences each year to demonstrate and market the angler education program. Recruit teacher candidates

and other youth professionals to attend training workshops that they might implement our programs in their classrooms or youth centers.

- c. Provide school district-wide in-service workshops upon demand as schedule allows.
- d. Provide PDF versions of all written and visual information where appropriate 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 52 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: Strategic Vision: We provide real-time, high-impact, credible information to customers who share our information within their diverse communities of interest.

- a. Grow our customer base by 25% per year within social networks in the media, tourism, local and tribal government, recreational and environmental NGOs, and user communities. Connect those communities to real-time information on our FH website for fishing regulations, education (where to fish, how to fish, about fish and their habitat), fish viewing (e.g. sturgeon, steelhead & salmon runs), fish contaminant, fishing news, and other information. (current base is 800 users including 80 media outlets and outdoor writers).
- b. Increase use of the web for aquatic education and other published information at the same rate as we decrease production and distribution of printed material.
- c. Promote both Take Me Fishing and Angler Legacy (RBFF) programs to increase retention and recruitment of anglers. Maintain retention at 50% of resident anglers over 5 years and increase the recruitment of anglers to increase sales by 50,000 license buyers above 2008 levels.

- d. 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.
- e. 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.
- f. 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. The Department has dedicated one full-time employee and additional engineering staff to provide construction oversight and engineering staff services for the development and maintenance of all Department sites. The amount of projects worked on varies from year to year. Phase 2 of the Wild Rose Hatchery is complete.
- b. Provide necessary engineering services for wetland wildlife habitat projects.

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

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.

Ongoing with mandatory surveys for staff to conduct each year.

- 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.

Ongoing with mandatory surveys for staff to conduct each year. Modeling conducted annually to determine population status and harvest quotas.

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.

Ongoing. A new study using tetracycline marking has suggested that there are significantly more bears than formerly estimated. Permit levels have been adjusted upwards, but conservatively so. Another tetracycline marking study is planned to occur in the near future.

- 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.

Staff routinely communicate with staff from other Midwest states. The new structure population reconstruction method is being investigated in addition to use of the tetracycline study.

- c. Provide bear management training for new wildlife biologists or those who recently began to see bears in their area.

This has been completed for new recruits.

- d. Conduct research to improve population monitoring procedures.

See a. above.

- e. Complete a statewide bear management plan by 2008.

Deer management priorities have prevented the bear plan from being completed, but a draft is being worked on. The public will be engaged on new bear goals considering the new population estimates.

- f. Develop operational guidelines on bears in urban environments and on translocating nuisance bears.

Translocation guidance has been developed including policy on landowner cost-share for repeat problems. Guidelines for responding to nuisance and safety issues was recently developed and approved by the Wildlife Policy Team.

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.

Ongoing. Elk herd growth has slowed. The first elk season is at least a couple years off.

- b. Develop an elk hunter education program.

Planned for coming year in anticipation of first elk season, modeling the program after the State of Michigan's 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.

While a request has been made, CWD in Wisconsin and prion diseases in Canada have limited options for getting additional elk to date.

- d. Implement strategies to reduce elk mortality caused by vehicle collisions and diseases.

A warning light system was installed on highways with the greatest elk collision problems.

- e. Encourage landowners, including the U.S. Forest Service (FS), to provide critical habitat for elk in the elk management area near Clam Lake. *Ongoing.*

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.

Ongoing using turkey stamp application and project selection process.

- b. Improve habitat to benefit turkeys on private land.

Ongoing through turkey stamp funding of projects, cooperation with NWTF, and discussions with foresters.

- c. Develop partnerships to fund farm bill biologists to increase landowner use of beneficial farm bill programs.

Five farm bill biologists have been co-funded by DNR, USDA NRCS and Pheasants Forever.

- d. Update priorities for the use of turkey stamp funds.

A new application scoring system was enacted.

- e. Consolidate turkey management zones and explore additional regulation simplifications for turkey hunting.

The greater than 40 turkey hunting zones are now seven. Use of dogs has been allowed. Registration through web or phone is being developed.

- f. Administer fall and spring seasons and permit numbers that maximize quality hunting opportunities without adversely affecting turkey populations.

Ongoing with the help of results of hunter surveys, which show continued high satisfaction and low interference.

- g. Update the Turkey Management Plan by 2013.

The turkey plan update has been initiated with a public input phase.

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.

WDNR staff have been working with partners to increase wetland and grassland acreage and quality through pheasant and duck stamp projects and partner projects and funds. In addition, federal GLFWRA Act and NAWCA grants have been secured to do the same in primary pheasant range in westcentral and southeast Wisconsin. Five farm bill biologists have been hired to increase landowner participation in farm bill programs that benefit pheasants. Primary partners have included USFWS, USDA, Pheasants Forever, Ducks Unlimited, Wings Over Wisconsin, and Wisconsin Waterfowlers Association. Crowing cock surveys in project areas have been conducted each year.

- b. Develop partnerships to fund farm bill biologists to increase landowner use of beneficial farm bill programs.

See a. above.

- c. Revise and update the pheasant plan by 2013.

Work on this plan is awaiting completion of work on the sharp-tailed grouse and turkey plans.

B.5. Ruffed Grouse:

- a. Encourage high hunter participation in ruffed grouse and woodcock hunting in Wisconsin.

WDNR regularly provides information on ruffed grouse populations to hunters through news releases and our web page. In some areas, maps of 10-20 year aspen and alder stands have been developed to aid hunters.

- 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.

Staff are working with the Wildlife Management Institute, foresters, federal landowners, county landowners, and other partners on implementation of the Young Forest Initiative.

- c. Implement the North American Ruffed Grouse/Woodcock Plan.

Staff are working through EcoSummits with each region to build awareness of the recommendations of these plans and identify best sites for implementing practices beneficial for these birds.

- d. Evaluate the need for a grouse/woodcock stamp.

This funding mechanism has been proposed a couple of times but does not generate enough support to get in the Governor's budget or into legislative budget proposals.

- e. Implement State Lands Forestry Initiative.

Ongoing with wildlife managers and foresters.

- f. Continue wildlife habitat improvement grants for county forests, e.g., Dime an Acre Program. Establish wildlife habitat priorities for this program.

WDNR's wildlife liaison to county forest administrators has implemented this recommendation.

- g. Revise and update the Ruffed Grouse Management Plan by 2013.

Work on this plan is awaiting completion of the Sharp-tailed Grouse plan and the Wild Turkey plan.

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.

This work is being carried out on core properties across northwest Wisconsin, particularly on Crex Meadows, Moquah Barrens, Douglas County Wildlife Area, Fish Lake, Riley Lake, Kimberly Clark Wildlife Area, Pershing Wildlife Area, Namekagon Barrens and other county and private lands.

- b. Continue to manage sharp-tail harvests at safe levels through a permit system; evaluate whether sharp-tailed grouse should continue to be hunted.

The permit system continues to be used with conservative harvest quotas and permit levels. Sharptail harvest rates have been very low. The draft sharp-tailed grouse plan suggests that harvest impacts are minimal and that hunting under the current system could be continued.

- c. Revise and update the Sharp-tailed Grouse Management Plan by 2008.

A draft of the sharp-tailed Grouse plan is out for public review and will be presented to the Natural Resources Board for approval in 2010.

- d. Investigate the need and priorities for sharp-tailed grouse translocations for range expansion or genetic restoration.

Genetic evaluation shows problems for sharptails as a result of isolation and low numbers. A translocation program is under way. In addition, a telemetry project is under way to better understand limiting factors on sharptails.

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.

WDNR staff continue to use duck stamp, pheasant stamp and federal NAWCA and GLFWRA grants to increase the quantity and quality of wetland and grassland acres for ducks. The wetland staff specialist has worked to identify solutions to obstacles for getting more wetland work done. This work has resulted in the expenditure of carryover duck stamp funds for important waterfowl habitat. An interagency team is working toward this objective. Primary partners have been USFWS, USDA, Ducks Unlimited, Wisconsin Waterfowlers Association, and Pheasants Forever. One-third of duck stamp funds continues to go to wetland and grassland projects in Manitoba through Ducks Unlimited as required by state law.

- 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.

WDNR staff continue to be active at the national and Mississippi Flyway levels, including hosting two flyway meetings. Staff have also been active in extra MFC committee level work such as the MVP Canada Goose Committee, updating a plan for this population. Staff meet regularly with waterfowl interest groups to consider regulation changes such as refuges, open water hunting, zone lines, season dates, bag limits, concealment requirements, etc. An annual March waterfowlers meeting is held to bring hunters up to speed and offer them an opportunity for input.

- c. We will initiate species research to address critical information needs.

Research on blue-winged teal limiting factors has been underway for a couple years now.

- d. We will continue our spring breeding waterfowl survey and waterfowl banding and enhance procedures as needed.

Surveys and banding have been done each year.

- e. Complete the update to Wisconsin's Waterfowl Management Plan by 2008.

This plan has been completed.

- f. Reinvigorate the Wisconsin Steering Committee of the Joint Venture.

The Wildlife Policy Team will consider a specific proposal to do so at their May 2010 meeting. In the meantime, there are 2 teams that have similar function...the Migratory Gamebird Committee and the Reversing the Loss Team.

- g. Explore the potential for an increased fee for the waterfowl stamp.

WDNR staff have been talking with waterfowl hunters and interest groups about this option, and there is substantial support for a fee increase considering wetland restoration and maintenance needs and Joint Venture All Bird Plan habitat goals.

- h. Increase the marketing of waterfowl stamps.

Staff occasionally have the opportunity to promote the purchase of stamps to non-traditional audiences who value wildlife.

- i. Support annual winter waterfowl workshop with waterfowl conservation partners and enthusiasts.

We have supported and participated in this workshop each year.

- j. Apply for and administer North American Wetlands Conservation Act grants for waterfowl habitat management and acquisition.

WDNR has been one of the most successful states in applying for these federal grants with our partners, having received around \$24 million in grants so far. We have an LTE who is coordinating this program nearly full time.

- k. Conduct wetland restoration and management activities using state waterfowl stamp funds.

Ongoing. The large number of flowages requires a substantial portion of these funds to be used for flowage maintenance activities, with less spent on restoration of wetlands recently. The large amount of carryover funds from past years has now been spent on valuable projects.

- l. Evaluate the need and support for limiting hunter numbers for some public hunting grounds.

This idea is described in the completed waterfowl management plan, but there has been little public interest in this practice.

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.

Surveys continue to be used to monitor the resident goose population. Mandatory reporting is used to monitor harvest. Liberal opportunities are provided for harvesting resident Canada geese. Resident geese make up an increasing percentage of total goose harvest. Regulations have been simplified in the Horicon Zone, and a few refuge delineations are being removed elsewhere.

- b. Implement goose a hunting season structure approved by the Mississippi Flyway Council and the FWS.

We are now under a stable regulations period adopted by the MFC and USFWS.

- c. Evaluate and implement new federal resident goose regulations.

Ongoing.

- d. Continue critical banding programs.

We continue to band geese each year.

B.9. Mourning Dove

- a. Continue to enhance habitats for doves, monitor their populations and adjust hunting regulations consistent with those populations.

Harvest surveys and population data show that harvest rates are acceptable. An increasing number of sunflower fields have been planted on state lands to provide food and hunting opportunities.

- b. Participate in the national banding program for doves.

Staff continue to band doves to meet banding quotas.

- c. Evaluate dove management potential and develop habitat management guidelines.

Work to date has included guidelines for sunflower fields on state lands.

- d. Participate in non-toxic shot evaluation; evaluate whether non-toxic shot regulations are prudent for doves and other small game.

A proposal to hunt doves on state lands with non-toxic shot only received public support and has become a hunting regulation.

- e. Evaluate the need and support for limiting hunter numbers for some public hunting grounds.

This proposal has been discussed by staff and stakeholders, but enabling legislation is not present.

- f. Establish food patches through sharecropping on some public hunting grounds.

This practice has increased substantially over the last 3 years. These food patches are valued by hunters.

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.

Aerial surveys have been conducted every 3 years in these zones.

- b. Secure funding for and develop a similar survey for the remainder of the state.
- c. Develop zone specific population goals by 2011.

Stakeholders and staff will begin meeting in June 2010 to discuss beaver management issues and initiate an update to the beaver management plan. Population goals will be one of the objectives.

- d. Continue our beaver harvest survey with a focus on obtaining additional information about densities, harvest pressure and pelt value trends.

The furbearer harvest survey has continued to be conducted.

- e. Explore funding opportunities for municipalities for beaver damage control.

Beaver control has continued to be done primarily by licensed trappers and USDA WS personnel.

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.

Harvest management strategies together with winter impacts have reduced deer populations to or below goals in much of the northern and central forests. Herd control strategies continue to be implemented in the farmland regions and CWD zone as populations remain above goals in most of those deer management units. Public controversy and declining deer numbers in some areas have led to the suspension of use of the earn-a-buck rule in all but the CWD zone. A stakeholder panel developed alternative regulation proposals for herd control, but this effort was tabled when deer harvests declined substantially over a two-year period.

- b. Conduct deer management unit reviews as required by administrative code and treaty rights.

A deer management unit review was completed during the last year with much public input and use of a diverse stakeholder panel. Population goals were changed in 45 units.

- 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.

Populations continue to be monitored through the SAK model, an accounting style model, and aerial surveys (CWD zone). Recommendations of a SAK audit are being fully implemented. Major new research is being initiated to answer questions that staff and the public have about the use of the model. A plan call "Investing in Wisconsin Whitetails" provides the details. We have and will secure partnerships with agencies, organizations and individuals.

- d. Implement SAK audit recommendation as feasible.

See c. above.

- e. Complete a two-year review and evaluation of alternative deer seasons for years 2006 and 2007.

The review was completed. A herd control season without the October gun hunt was not effective in meeting harvest objectives, so the October hunt was added again for units with herd control seasons.

- f. Collaborate with the Governor's Council on Forestry on strategies to reduce forestry deer impacts.

Wildlife staff have given presentations and had discussions with the Council. The council has been supportive of herd control strategies.

- g. Involve diverse stakeholder groups in deer management discussions.

WDNR has had a great deal of diverse stakeholder input through public meetings and stakeholder panels for setting harvest objectives, population goals, and regulations.

- h. Create a 20-minute video on the deer management program.

A video was produced as a lead in for public meetings held around the state.

- i. Continue the deer hunt TV show.

The deer hunt show has been discontinued. Other methods of communicating and engaging the public have been pursued.

- j. Explore additional deer hunting rule simplifications.

Ongoing discussions. Suspension of earn-a-buck outside of the CWD zone has simplified regulations.

- k. Explore the use of deer population levels in forest certification as an incentive to manage deer.

Deer management is a concern of forest certification, but this objective has not been implemented.

B.12. Fishers, Otters and Bobcats

- a. Administer the permit system to limit harvest in consideration of population levels relative to population goals.

Ongoing. A new bobcat goal range was adopted.

- b. Continue to examine carcasses from harvested animals for modeling data.

Ongoing with a different schedule for different species.

- c. Conduct aerial surveys of otters.

Otter aerial surveys have been conducted with help of the Wisconsin Trappers Association initially. This survey is now a standard and funded survey.

B.13. Prairie Chickens

- a. Continue to transplant prairie chickens from outside Wisconsin to central Wisconsin to improve the genetics of our population.

Prairie chickens have been transplanted from Minnesota each of the last several years. Initial research indicates that survival of their young has been poor. Coming genetics evaluations will determine impacts on population genetics from the translocation.

- b. Expand the acreage of grassland habitat as described in the prairie chicken management plan.

Addition properties have been purchased for prairie chickens. The area was also established as a USDA SAFE area with an acreage allocation for landowner enrollment of grassland acreage.

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.

There has been limited attention to this objective as Wisconsin is on the edge of the range of quail and recent winters have decimated remnant quail populations. Only a few counties in Southeast Wisconsin have had these practices available.

B.15. Sandhill Crane

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

WDNR staff chaired an effort to write the sandhill plan. It was completed and approved by both the Mississippi and Atlantic Flyway Councils this past spring.

B.16. Woodcock

- a. Implement the North American Woodcock Management Plan.

WDNR staff have been working with the WMI, USFS and other partners to find focus areas to implement this plan and the Young Forest Initiative.

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 involves the establishment of administrative rules and annual regulations publications.

- a. Evaluate options for rule simplification with hunters and trappers.

Combined three regulatory publications, small game, spring turkey and fall turkey, into one. This resulted in cost savings and simplification by locating more information in one publication.

Established consistent, statewide opening dates, resident and nonresident opening dates, and consolidated management zones. Affected seasons were for fox hunting and trapping, coyote trapping, raccoon hunting and trapping, and wild turkeys.

- 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

Promulgated wildlife management rules related to natural resources board policy, license and permit procedures, game and hunting, wildlife damage and nuisance control, captive wildlife, miscellaneous fur, fish, game and outdoor recreation, and the use of department properties.

In promulgating these rules, public outreach activities included 90 public hearings, at least one in each Wisconsin county, that were conducted by the department.

Hearings were attended by more than 8,000 citizens – an increase in participation of at least 3,000 people over the previous year.

Additional hearings or meetings regarding these regulatory policies were held with the secretary’s office, natural resources board, legislature, division administrator and Wildlife Policy Team.

Annual outreach on hunting and trapping seasons included preparation and distribution of the following publications:

Regulation Pamphlet	Publication Type	Pages and/or size	Paper	Number Published
2009 Small Game, Fall 2009 Turkey, Spring 2010 Turkey (combined into one pamphlet)	booklet	32 pages/ 5 ³ / ₈ x 8 ³ / ₈	newsprint	625,000
Early Goose	Complex fold	11x 17	50 # white offset	60,000
Trapping	booklet	32 pages/ 3 ⁵ / ₈ x 6 ¹ / ₄	45# white offset text	54,500
Deer	booklet	72 pages/ 5 ³ / ₈ x 8 ³ / ₈	newsprint	840,000
Migratory Bird	Booklet	32 pages/ 3 ⁵ / ₈ x 6 ¹ / ₄	45# white offset text	270,000
2009 Spring Turkey	double half fold	8.5 x 14	50 # white	175,000
Bear	complex fold	11x 17	50 # white	80,000
Hunting & Trapping Season Fact Sheet	double sided	8.5 x 11	50 # color varies yearly	190,000

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.

Surveys of gun deer hunters and non-hunter visitors to the Kettle Moraine State Forest (KMSF) were conducted during the October 2008 gun deer hunt in the KMSF. The surveys were initiated to enhance the anecdotal information surrounding user conflicts between gun deer hunters and other visitors to the Forest. A total of 811 questionnaires were returned usable; 88 from gun deer hunters and 723 from other visitors.

*To anticipate the findings, the golden nugget in the data pertains to visitor awareness of the hunt. **Across numerous variables, visitors that were aware of the hunt prior to their visit were more positive about their visit, were more likely to wear blaze orange, and less likely to be bothered by the hunt than were visitors who did not know of the hunt until they arrived.** This is a good finding – it is an action-able finding, meaning it is something we can work on and improve. Based on the findings, we could hypothesize that if awareness of the hunt increased (awareness in advance of a potential visit) the likelihood of hunter – non-hunter conflicts should decrease and visit satisfaction for all users should increase. (NOTE: This is not to suggest that increased awareness will completely eliminate user conflicts and feelings of personal risk.)*

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.

In progress, but not complete. Infrastructure inventories are part of the regional and property analysis component of our master planning process. Michele Woodford has been put on special assignment to assist in trying to standardize as well as accelerate this effort.

- b. Repair or replace habitat management equipment as needed.

Ongoing, but limited by available funding

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.

WDNR continues to lease a significant amount of private lands for public hunting, primarily in southeast and south-central Wisconsin.

- b. Expand and promote tools for locating public hunting lands.

Maps are available with many data layers on the DNR website. A recently approved statute requires greater posting for public awareness of public lands locations and boundaries. A significant increase in funding has been made available for posting efforts. The DNR website is being revamped to give the public easier access to information on opportunities for recreation across the state.

- c. Develop GIS mapping for wildlife areas and make it available to the public.

A GIS Committee has been established to improve GIS mapping abilities for public lands and management practices on them. A GIS position is proposed to be created using the increase in PR allocations. Maps of wildlife areas are now available to the public on the DNR website.

- d. Explore the opportunity for a private lands access program for hunting.

The WDNR has developed a preliminary proposal in anticipation of a federal grant funding opportunity called the Voluntary Public Access Program.

- 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.

The Land Legacy Plan is being used to guide land acquisition. The Stewardship Fund was reauthorized to fund acquisition for another 10 years. In addition, a policy is being developed to further guide future acquisition in a manner that would be most strategic both for conservation and 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.

ATTACHMENT 2 (new in 2010):

Genetic Identification of Bears in Wisconsin Status Summary—February 2009

Karen Mock, Utah State University, and John Shivik Wildlife Services, National Wildlife Research Center

Background

We analyzed a total of 295 bear tissue samples from the August through September 2006 trapping season. We extracted DNA and genotyped each sample to determine the identity of the sampled bear. The first set of samples (which were analyzed in fall of 2007) genotyped well, and there were only 4 samples that failed to genotype. However, the next set of samples (analyzed in spring of 2008) did not genotype well and we were unable to analyze 92 of the samples. A total of 190 individuals were genotyped using a set of 6 microsatellite loci (plus two duplicate samples for quality control, and including 4 duplicate samples of recaptured individuals). Our objective was to determine the rate of recapture at corn-damage sites (recidivism) and to determine if there was evidence that bears who damage corn tend to be related.

Bear Recidivism After Translocation

Of the useful samples there were four instances of the same bear being recaptured (Figures 1 through 4).

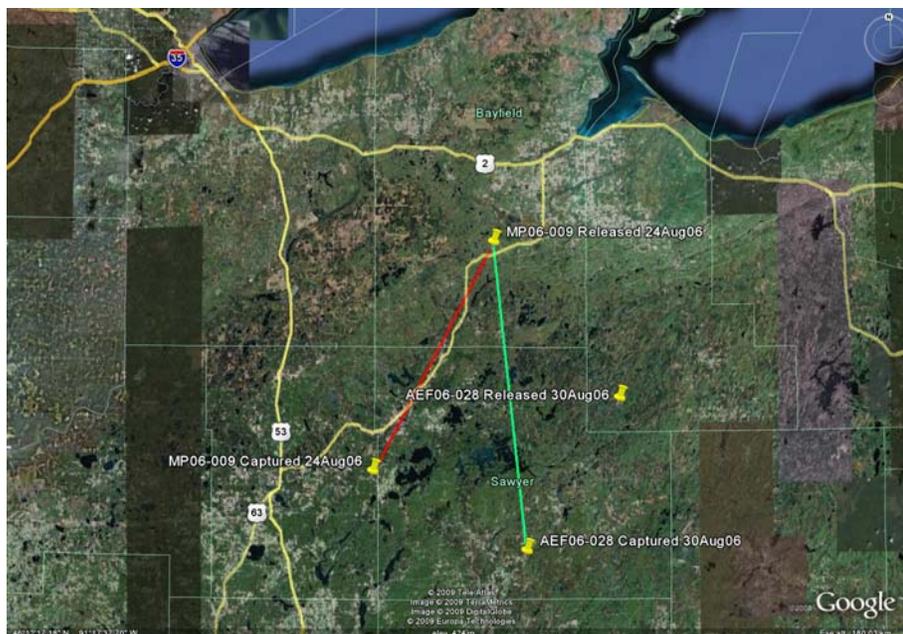


Figure 1. This adult female bear was captured on 24 August 2006, released 59 km away from the original capture site (red line), then recaptured 30 August 2006 (6 days later) 70 km away

from the release site (green line). The travel direction was south, and the recapture site was 40 km away from the original capture site.



Figure 2. This adult male bear was captured on 31 August 2006, released the same day 47 km away from the original capture site (red line), then recaptured on 8 September 2006 (8 days later) 36 km away from the release site (green line). The travel direction was southwest, generally the same direction as the original capture site but 16 km away).

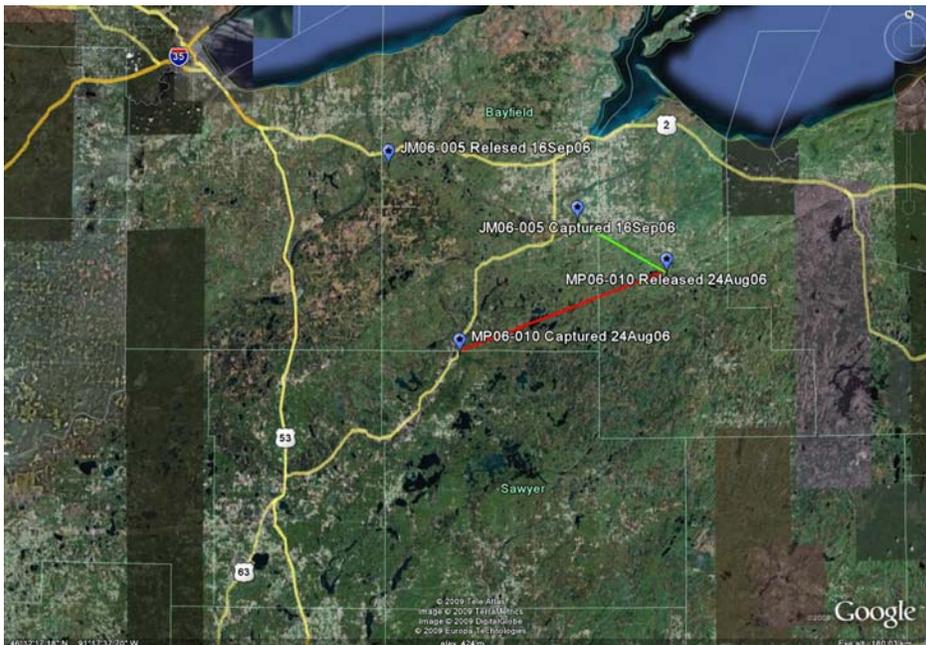


Figure 3. This young male bear was captured on 24 August 2006, released the same day 49 km away from the original capture site (red line), then recaptured on 16 September 2006 (23 days later) 23 km away from the release site (green line). The travel direction was northwest, and the recapture site was 39 km away from the original capture site.

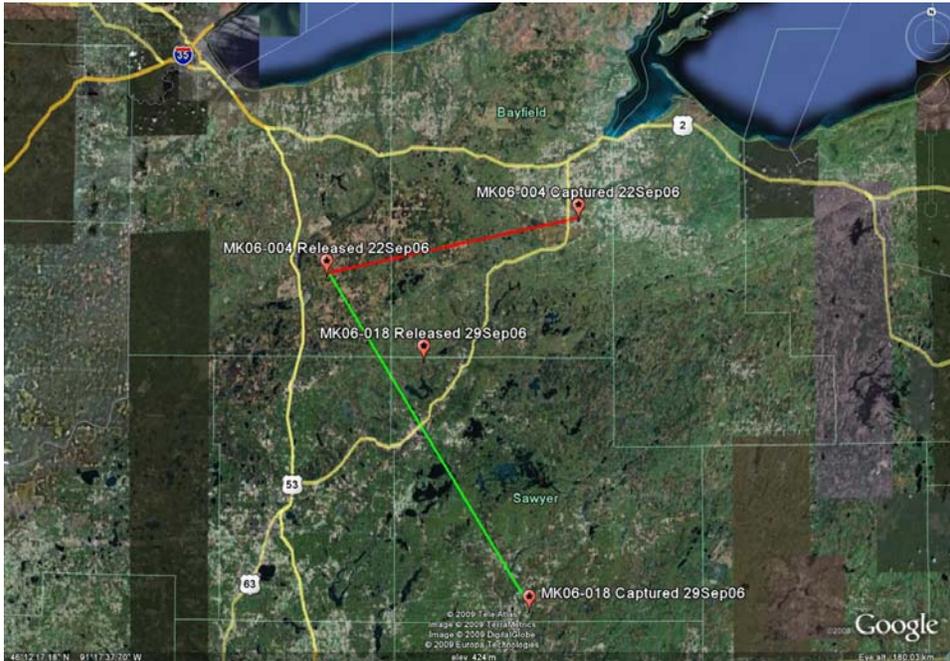


Figure 4. This adult male bear was captured on 22 September 2006, released on the same day 55 km away from the original capture site (red line), then recaptured on 29 September 2006 (7 days later) 85 km away from the release site (green line). The travel direction was south-southeast, and the recapture site was 86 km away from the original capture site.

Relatedness of Bears Damaging Corn

We also sought to determine whether bears that were captured in spatially proximal locations tended to be more genetically related. We performed an analysis of spatial autocorrelation on all genotypes, comparing spatial proximity with genetic similarity at different scales. We used GenAlEx software for this analysis (Peakall & Smouse 2006). We found no evidence of spatial autocorrelation, which indicates that there is no tendency for bears captured in similar locations to be genetically more similar than bears captured at distant geographic distances (Figure 5).

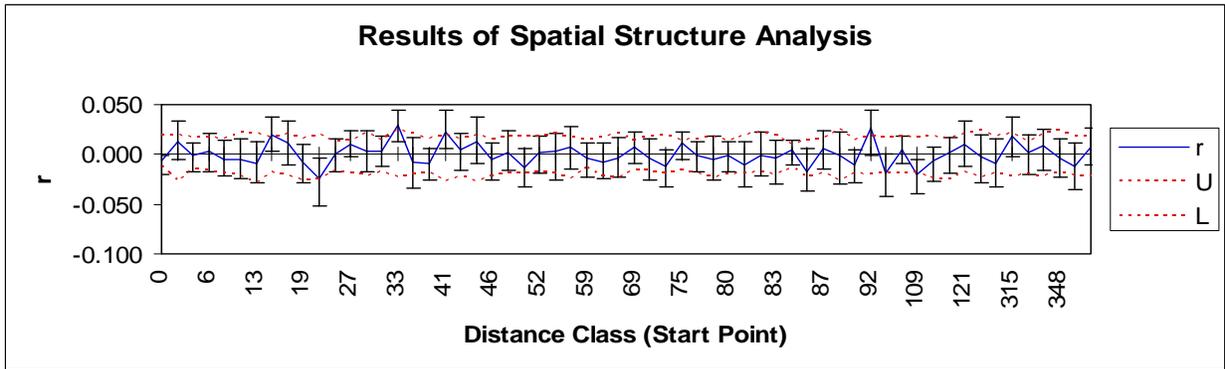


Figure 5. Results of spatial autocorrelation analysis. The solid blue line (r) represents the correlation between genetic distance and geographic distance and the dotted red lines represent the 95% confidence interval based on bootstrap re-sampling of the dataset. Although accurate estimates of relatedness may require additional loci, we used a maximum likelihood approach (Kalinowski et al 2006) to evaluate specific relationships among individuals. By far most bears were unrelated (Table 1).

Maximum Likelihood Relationship	Number of Pairs of Individuals	Proportion of Total Pairs of Individuals
Full siblings	302	1.7%
Half siblings	2871	16.0%
Parent/offspring	243	1.3%
Unrelated	14,539	81%

Table 1. Summary of maximum likelihood estimates of relationships among all possible pairs of genotyped individuals based on 6-locus genotypes.

Conclusions:

There appears to be a low rate of recidivism in this population of bears, as well as a very large number of different, unrelated individuals. Analysis of additional samples could confirm this pattern and strengthen results and the precision of the estimates. Because very few bears immediately return to capture sites, the translocation work is a successful method of minimizing damage by moving problem bears away from damage sites. However, because so many different bears cause damage, it is clear that the magnitude of the problem is quite large.

Recommendations for Future work:

We plan to extract DNA from the additional set of samples that were collected during the second year (2007) of the study. Simultaneously, we will re-extract and re-genotype all questionable or failed samples from the 2006 samples; we believe that the failures were due to errors in the

extraction process as was performed by a student volunteer. In re-analyses, however, we expect fewer problems because extractions and analyses will be performed by a professional lab technician with a great deal of microsatellite experience.

Upon completing analyses of the greater numbers of samples and the second season's samples, we will finalize this work and write a manuscript, expecting publication in 2010.

Citations:

Kalinowski ST, AP Wagner, ML Taper. 2006. ML-Relate: Software for estimating relatedness and relationship from multilocus genotypes. *Molecular Ecology Notes* 6:576-579.

Peakall ., PE Smouse. 2006. GENALEX 6: genetic analysis in Excel. Population genetic software for teaching and research. *Molecular Ecology Notes* 6, 288-295.

ATTACHMENT 3 (new in 2010):

2007-2010 Fisheries Major Accomplishments

1) In 2007, the Wisconsin Department of Natural Resources Fisheries Management program analyzed available data and revised its standardized sampling program to collect data on relatively temporally stable fisheries metrics that most directly relate to management decisions. In addition, summaries of the data were compiled to provide a statewide frame of reference for the interpretation of fisheries metrics from individual waterbodies or groups of similar waterbodies. We evaluated our data needs for individual fish populations and established sampling rotations that focused more of our resources on populations determined to be of high value or importance. More intensive sampling frequency provides the opportunity for more precise management which may be warranted for some populations of high value or importance. For smallmouth bass and largemouth bass, the fisheries metrics of interest were relative density, PSD/length frequency, and growth. To obtain information on these metrics we determined that spring electrofishing was the most precise and temporally stable measure of relative density, length frequency, and growth. The revised sampling and data collection methodology will enhance the ability of the WDNR to assess the relative status of largemouth bass and smallmouth bass populations and the efficacy of management actions.

2) In the first full year of the revised monitoring program (Spring 2008), 121 (80%) of the 151 scheduled lakes were sampled. During the second year (spring 2009), current progress is 104 (71%) of 147 lakes scheduled for surveys. This project is ongoing and we expect data entry to be completed prior to July 1, 2010. In addition, 1st order trout streams and all 2nd order or greater streams are scheduled to be sampled at least once every 12 years. During 2008, 71% of planned work was completed. Several vacancies, as well as low water conditions and poor access at some randomly selected stations prevented 100% completion.

Trout Rotation and Trend Streams - 2008

Region	Fish Team	Planned	Completed	
NER	Lake Shore	2	2	100%
	Lower Fox/Upper Green Bay	46	19	41%
	Upper Fox/Wolf	68	63	93%
	NER Total	116	84	72%
NOR	Headwaters	85	61	72%
	Lake Superior	16	13	81%
	St. Croix	61	50	82%
	Upper Chippewa	50	35	70%
NOR Total	212	159	75%	
SCR	East	44	21	48%
	West	157	103	66%
SCR Total		201	124	62%

SER	Inland	24	16	67%
SER Total		24	16	67%
WCR	Central Wisconsin	50	28	56%
	La Crosse/Bad Axe	185	124	67%
	Lower Chippewa	93	87	94%
WCR Total		328	239	73%
Grand Total		881	622	71%

Finally, about 70-80% of the sites proposed to be sampled in non-wadeable rivers were completed. Primary reasons for not achieving the workplan included extreme water levels, staff vacancies, and equipment malfunctions.

3) The department's walleye standing team reviewed the state's walleye stocking strategies and made recommendations for adjustments to maximize the effectiveness of the state's walleye hatcheries as a tool to restore walleye fisheries. The team also regularly reviews walleye management proposals and activities and judges their effectiveness in helping the department achieve its stated goals for walleye fisheries. The department is currently proposing management action in 21 lakes in northwest Wisconsin where natural reproduction of walleye has been poor in recent years after being consistently successful in the past. The Department hopes to restore naturally-sustained walleye fisheries in these lakes through conservative harvest regulations and targeted stocking. In 2010 the department will also consider broad walleye management actions in the southern half of Wisconsin.

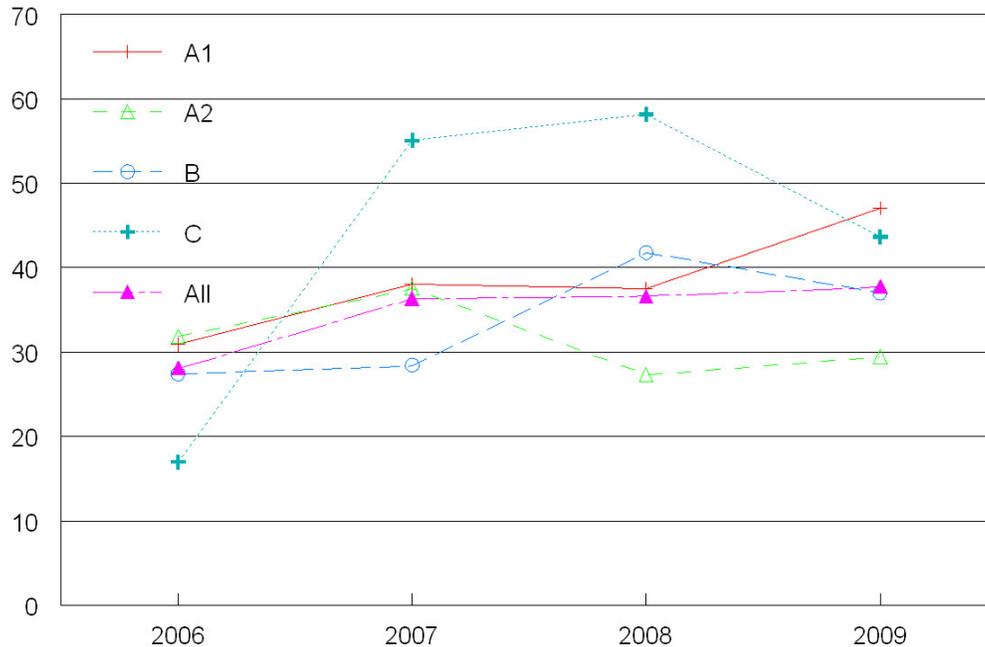
4) Evaluations have been completed for both the 14-18 inch protected slot and one walleye over 14 inches regulations. The evaluation of the three walleye over 18 inches regulations has not been completed to date due to the lack of sufficient data. Additional data related to this regulation should become available as standardized surveys continue to occur in the coming years and may provide the opportunity to evaluate this regulation at a later date.

The 14-18 inch protected slot evaluation suggested that the lakes that received this regulation were correctly identified as having relatively slow growing and dense walleye populations. The slot limit regulation did not appear to alter walleye population densities but additional harvest occurred despite declines in angler effort.

Similarly, the one over 14 inches regulation evaluation suggested that while many of the goals for this regulation were not met due to lake selection issues and declining angler effort, additional harvest opportunities were available with no apparent negative impact on walleye population abundance.

5) Since 2007, the WDNR has attempted to increase the number of trophy musky fishing opportunities and the number of larger musky. The average PSD38 for muskellunge waters has ranged from 36 to 38%, well above our target of 30%. In addition, the WDNR has provided seven additional waters with a trophy regulation of 50 inches minimum

Average PSD-38 values for Wisconsin Muskellunge waters,
by Class (A1=Trophy; A2=Action; B=Intermediate; C=Minor)



6) The Lake Winnebago sturgeon assessment program has uncovered new information on sturgeon age at maturity that will help make statewide management of sturgeon populations more effective.

7) A large amount of data collection, analysis, and infrastructure development has provided the framework for the continued success of the Great Lakes fisheries program. We developed and used statistical catch at age (SCAA) models for Green Bay yellow perch, Lake Michigan whitefish, and Lake Superior lake trout and collected monitoring data on Green Bay yellow perch, Lake Michigan yellow perch, Lake Michigan lake whitefish, Lake Michigan bloater chubs, Lake Superior lake trout, and Lake Superior lake herring.

We sustained the Lake Michigan salmon and trout program by spawning salmonine species returning to our weirs and collected data associated with these runs.

We sustained and expanded both the stream-side rearing program for restoring Lake Sturgeon in Lake Michigan and the Great Lakes spotted musky program.

We tracked commercial harvests by all licensed fishers on both Lake Michigan and Lake Superior and began implementation of electronic reporting by commercial fishers.

Finally, we completed design and bidding for a new research vessel, the R/V Coregonus for Lake Michigan <Note: The construction costs are not SFR and not part of the grant>.

8) The Wisconsin DNR's treaty fisheries unit completed 28 in-water walleye population estimates since July, 2007 along with angler creel surveys on each of those lakes and lake chains, and has initiated work in another 15 lakes and lake chains. In its assessment of walleye recruitment, the Department completed 244 fall young-of-year surveys in the same period. All of these data have been compiled in the Wisconsin DNR statewide fisheries database and used by the treaty fisheries unit to establish safe harvest goals for the joint tribal-recreational fishery and to measure the effectiveness of the joint fisheries management system. The data are also available in a series of annual reports complete through 2007-08. The 2008-09 report will be available in late June, 2010. Three research projects based on treaty fisheries data have been completed in this time period and shared at regional professional fisheries conferences. At least one will be submitted to a major fisheries journal for publication consideration. Data compilation, analysis, and report-writing have been completed by a staff specialist funded through this project. The Department also funded a graduate research project under the direction of Dr. Michael Hansen, University of Wisconsin- Stevens Point in which muskellunge recruitment variables were analyzed. Treaty fisheries assessment data have also been used by area fisheries managers to adjust walleye angling regulations in attempts to enhance, restore, or better allocate the fishery in individual lakes.

9) The WDNR continued its successful trout restoration program. In FY08 we restored 17.8 miles of trout stream and maintained 25.4 miles; in FY09 we restored 15.5 miles of trout stream and maintained 6.0 miles. High priority trout streams in the NOR were kept free of beaver dams.

10) The propagation program is a significant component of the WDNR Fisheries Management program. It is important to maximize the return on our investment in terms of meeting population expectations and maximizing our cost/benefit ratios. In this light, the WDNR contracted with the University of Wisconsin-Green Bay for a production cost analysis of all hatchery products which was completed late 2009. This information will provide the essential basis for making qualitative assessments of the success of our stocking products. The results will be released internally and to the public to develop recommendations from the evaluation after 2010.

In addition, significant progress was made on the Wild Rose State Fish Hatchery. Phase I was completed in 2008 and Phase II began in 2009. Progress is being made according to plan.

11) Fish health inspections and fish health certificates were completed for 303 lots of fish at DNR hatcheries, coop ponds, spawning weirs and wild trout streams. Eight diagnostic cases from state hatcheries were processed. Ovarian fluids from 68 lots of fish were tested for viruses.

Approximately 1,000,000 brown trout, 328,000 brook trout and 200,000 rainbow trout were vaccinated against *Aeromonas salmonicida*. This is a very successful part of our preventative fish health program.

Approximately 10 million eggs were treated with thiamine to prevent thiamine deficiency.

In addition, WDNR fish health collaborated with fish health researchers at four laboratories: Continuing studies on bacterial kidney disease (USGS Western Fisheries Research Center, Seattle WA); new research to develop a molecular diagnostic test for Epizootic Epitheliotropic Disease virus (EEDv), (University of California-Davis School of Veterinary Medicine) and a molecular diagnostic test for bluegill virus (USFWS La Crosse Fish Health Center and University of Wisconsin-La Crosse), and studying the effects of VHS at the population level for freshwater drum, walleye and yellow perch in Lake Winnebago (University of Wisconsin-Stevens Point).

We responded to 15 fish kills and provided diagnostic services for 96 cases of angler-caught fish. We conducted VHS surveillance monitoring on hundreds of populations of fish in the Great Lakes basin and selected inland waters.

12) Providing public fishing opportunities is a key goal for the WDNR. We continue to be successful in this regard. Between July 1, 2007 and June 30, 2010 thirteen shore fishing projects will have been completed in 12 different counties throughout the state. Five more projects are currently in progress and will be completed no later than June 30, 2011.

13) Each year we conduct between 10 and 15 Angler Education training workshops around the state. Audiences vary from fishing club members and other non-formal educators to college students training to become teachers to veteran school teachers at their professional conferences or in-services. Agendas and presentation styles are tailored accordingly. These adults implement the Angler Education program to over 17,000 youth in formal education settings and at informal dry-land and on-the-water clinics each year, including Urban Fishing Clinics and Free Fishing Weekend. The statewide Tackle Loaner Program serves more than 8,000 additional people. Our field staffs also serve over 5,000 students during school visits and field days.

The 20-year-old “Master Angler” program for high school students underwent a major revision and emerged as “Hook, Line, & Thinker” to reflect the fact that beginning high school students are no more masters of the sport than more experienced elementary students who receive the Junior Angler program. Both are posted online along with all our other core educational pieces.

Exhibits at the Wild Rose Hatchery Education Center garnered the 2008 Federal Sport Fish Restoration Award for Aquatic Education from the American Fisheries Society. Those exhibits include two freshwater aquaria, an explanation of viral hemorrhagic septicemia (VHS) as it relates to hatchery biosecurity, a children’s play area where they can experience “A Day at the Hatchery,” interactive fish life cycle displays, and outdoor signage in the Historic Village. We produced an exhibit commemorating the role that the fish rail car *Badger #2* played in our history and displayed it at the Mid-Continent Railway Museum.

The *Badger #2* exhibit debuted at the Wisconsin State Fair. Other State Fair exhibit topics during this time included Climate Change, Viral Hemorrhagic Septicemia, Muskellunge – Wisconsin’s State Fish, and Take Me Fishing!

We have increased our presence on the Web with timely reporting on issues such as Asian carp, VHS, and learn-to-fish events to name a few.