

Columbia County Planning Group

Draft Master Plan and Environmental Assessment



August 2012
Wisconsin Department of Natural Resources
DNR PUB-LF-066



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All Department of Natural Resources properties are required to be covered by a Master Plan describing the scope, purpose and management of the project. This Master Plan complies with Wisconsin Administrative Code, NR 44 - Master Planning for Department Properties.



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Columbia County Property Group_ Master Plan

Wisconsin Department of Natural Resources

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Table of Contents

	Page
EXECUTIVE SUMMARY	6
CHAPTER 1: Overview of the Properties	10
Plan Overview	10
Public Investment in Public Lands	10
Recreational Significance of the CCPG Properties	12
Ecological Significance of the CCPG Properties	14
CHAPTER 2: Management, Development and Use Recommendations	18
SECTION One: General Plan Elements	18
Vision and Goals	18
General Property Management Elements	19
General Authority	19
Land Management Classifications	20
General Wildlife Habitat Objectives and Prescriptions	22
General Fishery Habitat Objectives and Prescriptions	26
General Management Objectives and Prescriptions by Habitat and Forest Type	28
Wetlands (non-forested)	28
Grasslands, Prairies and Savannas	31
Agriculture Crops and Food Plots	32
General Forest Habitats	33
Management Objectives and Prescriptions by Forest Types	34
General Recreation Management and Use	39
Public Use and Recreation Management	39
General Property Administration, Management Policies and Provisions	43
Real Estate Management	47
Plan Monitoring and Public Communications	49
SECTION 2: Individual Property Plans	50
Project Boundary Adjustments	50
Land Acquisition Guidelines	51
Acreage Goal Adjustments	52
Project Boundary Adjustments by Program	52
Individual Wildlife Property Plans	54
Pine Island Wildlife Area	54
French Creek Wildlife Area	59
Mud Lake Wildlife Area	63

Lodi Marsh Wildlife Area	67
Paradise Marsh Wildlife Area	70
Peter Helland Wildlife Area	72
Swan Lake Wildlife Area	76
Grassy Lake Wildlife Area	80
Jennings Creek Wildlife Area	83
Columbus Public Hunting Ground	85
Dekorra Public Hunting Ground	86
Duck Creek Public Hunting Ground	88
Hampden Public Hunting Ground	89
Lewiston Marsh Public Hunting Ground	90
Fishery Property AREAS	91
Rocky Run Creek Fishery Area	91
Rowan Creek Fishery Area	94
Hinkson Creek Fishery Area	97
Lodi Spring Creek Fishery Area	99
Roelke Creek Fishery Area	101
State Natural Areas	102
Rocky Run Oak Savanna Natural Area	102
CHAPTER 3: Supporting Information	104
Findings and Conclusions	104
Ecological Significance	105
Recreational Significance	108
Summary	110
CHAPTER 4: Analysis of Impacts of the Proposed Plan	112
Impacts to Natural Resources	112
Impacts to Recreational Facilities and Opportunities	115
Impacts to Cultural Resources	116
Socio-Economic Impacts	116
Impacts of Boundary Adjustments	120
Impacts of Energy Consumption	121
Cumulative Effects, Risk and Precedent	122
WEPA Sign Off Sheet	124
CHAPTER 5: Analysis of Alternatives	125
Do Nothing Alternative	125
Alternative Boundary and Acquisition Adjustments	125
Land Acquisition Options	127
State Natural Area Alternatives	128
Recreation Management Alternatives	129

CHAPTER 6: Summary of Public Involvement & Comments	131
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Information Sources and References	132
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Tables

Table ES-1	CCPG Properties	6
Table 1-1	Public Lands on Columbia County	14
Table 2-1	Land Management Classifications	21
Table 2-2	Wildlife Area Boundary Adjustments	52
Table 2-3	Fishery Area Boundary Adjustments	53
Table 2-4	Pine Island WA Future Cover Types	55
Table 2-5	French Creek WA Future Cover Types	60
Table 2-6	Mud Lake WA Future Cover Types	64
Table 2-7	Lodi Marsh WA Future Cover Types	68
Table 2-8	Paradise Marsh WA Future Cover Types	70
Table 2-9	Peter Helland WA Future Cover Types	73
Table 2-10	Swan Lake WA Future Cover Types	77
Table 2-11	Grassy Lake WA Future Cover Types	80
Table 2-12	Jennings Creek WA Future Cover Types	83
Table 2-13	Columbus PHG Future Cover Types	85
Table 2-14	Dekorra PHG Future Cover Types	86
Table 2-15	Duck Creek PHG Future Cover Types	88
Table 2-16	Hampden PHG Future Cover Types	89
Table 2-17	(Proposed) Lewiston Marsh PHG Future Cover Types	90
Table 2-18	Rocky Run FA Future Cover Types	91
Table 2-19	Rowan Creek FA Future Cover Types	94
Table 2-20	Hinkson Creek FA Future Cover Types	97
Table 2-21	Lodi Spring Creek FA Future Cover Types	99
Table 2-22	Roelke Creek FA Future Cover Types	101
Table 2-23	Rocky Sun Savanna Natural Area Future Cover Types	102
Table 4-1	Boundary Adjustment Land Uses	118
Table 4-2	Estimated Annual Habitat Management Costs	120
Table 4-3	Estimated Annual Infrastructure Maintenance Costs	120

Appended Maps

Map Series

Regional Locator	Map A
County Map of Properties	Map B
Pine Island Wildlife Area	C-Series
French Creek Wildlife Area	D-Series

Mud Lake Wildlife Area	E- Series
Lodi Marsh Wildlife Area	F-Series
Paradise Marsh Wildlife Area	G-Series
Peter Helland Wildlife Area	H-Series
Swan Lake Wildlife Area	I-Series
Grassy Lake Wildlife Area	J-Series
Jennings Creek Wildlife Area	K-Series
Public Hunting Grounds and Remnant Fishery Area	L-Series
Rocky Run Fishery Area and State Natural Area	M-Series
Rowan Creek and Hinkson Creek Fishery Areas	N-Series
Lodi Spring Creek Fishery Area	O-Series

Each map series consists of the following maps respectively

- 1= current cover types**
- 2= infrastructure**
- 3= land classifications and state natural areas**
- 4= public lands**
- 5= future cover types**
- 6= boundary adjustments (if applicable)**

EXECUTIVE SUMMMARY

Introduction

The Columbia County Planning Group (CCPG) includes nineteen properties totaling 24,107 acres of state owned and easement land (**Map A**) (**Table 1**). The thirteen wildlife properties total 22,229 acres, the five fishery areas total 1,714 acres and the one stand alone state natural area totals 164 acres.

Table ES-1 CCPG properties	
Wildlife Areas	Acres
Pine Island WA	5,499
Peter Helland WA	3,543
French Creek WA	3,506
Swan Lake WA	2,466
Mud Lake WA	2,285
Paradise Marsh WA	1,588
Lodi Marsh WA	1,186
Grassy Lake WA	779
Jennings Creek WA	530
Columbus PHG	248
Hampden PHG	230
Dekorra PHG	210
Duck Creek PHG	159
Fishery Areas	
Rocky Run FA	737
Rowan Creek FA	651
Hinkson Creek FA	233
Lodi Spring Creek FA	53
Roelke Creek FA	40
Natural Areas	
Rocky Run Oak Savanna	164

This plan builds upon the substantial foundation laid by prior master plans, fish and wildlife program guidance, and habitat and biotic inventory work conducted over the last several decades. The planning process considered comments received during the June 6, 2011 public meeting, from the public more broadly, and dialog with partner agencies and local officials. The goals and recommendations in local land use plans were also evaluated.

A significant majority of the current recreation and habitat management activities will be retained. The major changes include expanded project boundaries, improved site accessibility for all users and an increase in the number of state natural areas.

The recreational and habitat goals include:

- Maintaining high quality recreational opportunities for hunting, fishing and other compatible recreation experiences.
- Improving habitat for game and non-game species with an emphasis on enhancing native plant and animal communities, especially imperiled habitats such as oak savanna and species requiring grasslands for all or a critical portion of their life cycle.

The appeal of these properties is expected to grow as our population continues to expand and access to private lands becomes more difficult. All of these wildlife areas and trout streams are within an hour drive of 500,000 to 1,000,000 people.

Nearly 10,000 fishing licenses, 300 trapping licenses and 7,000-8,000 hunting licenses (both resident and non-resident) are sold annually in Columbia County.

The primary recreational activities on all the properties will continue to be hunting, trapping and/or fishing with some specialized uses at specific properties, such as dog trialing at Pine Island. An increase in other outdoor activities such as hiking, wildlife watching, dog walking, berry picking, snow shoeing and cross-country skiing is expected. These other activities are encouraged, but only limited management actions by Department staff will be taken to promote them (e.g., groomed ski trails will not be provided).

These properties have broad regional appeal. About 45% of the deer harvested in Columbia County are taken by hunters who live outside Columbia County. Even though the CCPG properties represent less than 5% of the land base in the county about 12% of the harvested deer come from these public lands. These properties provide 80% of the lands available for public hunting in the county.

Annually, an average of 90 active dog training permits at Pine Island have been issued to residents from at least 16 counties and even some non-resident dog trainers. Pine Island is popular with birders and is recognized as an Important Bird Area. French Creek and Mud Lake are appealing to birders and waterfowl hunting while Rowan Creek and Rocky Run are regionally popular with trout anglers.

Recreational facilities are focused on providing user access (e.g., parking lots and access points) that maintain the rustic character of the properties. The plan recommends adding parking lots, improved access for mobility impaired individuals and enhanced boat access. Additional infrastructure is proposed to improve the accessibility of these properties to all users.

Visitors will have walking access to the properties through the Ice Age trail segment at Lodi Marsh, the Pine Island hiking trail at Rowan Creek, service roads, stocking lanes, dikes and informal paths used by hunters, anglers and others. Seven new parking lots and two new boat access points are proposed to improve public access to the properties and disperse users to reduce congestion.

The management of the state natural areas is and will continue to be focused on protecting and restoring outstanding examples of Wisconsin's native plant and animal communities. These natural areas are open to fishing, hunting, trapping and other traditional outdoor activities.

The habitat management recommendations generally seek to increase the acreage and quality of the pre-settlement native plant communities. Properties will be managed on a landscape scale to create smooth transitions between the plant communities. The upland communities of interest include Oak Savannas, Oak Woodlands, Oak Barrens and Mesic Prairies. The wetlands include Sedge Meadows, Calcareous Fens, Wet Mesic Prairies, Marsh and Tamarack Swamps. An important cover type that will also be emphasized is Surrogate Grasslands for grassland nesting ducks, pheasants and grassland birds.

Prescribed burning is the favored management prescription for many of these communities with mowing and herbicide used as needed to limit brush and invasive species encroachment.

A critical management activity will be improved monitoring and control of invasive species. Controlling invasive species will be a difficult task due to the number of species, the presence of multiple species on the properties, and the limited resources available to address this challenge.

Project Boundary and Acreage Goal Adjustments

Project boundary adjustments are recommended for the following reasons:

1. Improve public access and meet the expected growth in demand for outdoor recreational activities due to population growth in Columbia County and the region.
2. Link isolated upland parcels to improve public access around the shallow water bodies or wetlands that constitute the majority of these properties.
3. Reduce user confusion about property lines and minimize potential trespass issues.
4. Protect current recreational activities from non-compatible land uses. Gun hunting is not allowed within 100 yards of a home unless the resident provides permission. Expanding boundaries to roads will provide greater certainty the lands can be used for all of the intended purposes.
5. Contract boundaries where significant development has occurred or achieving habitat management goals are unlikely.
6. Provide larger contiguous blocks of ownership to improve the efficiency of habitat management activities, especially for prescribed burns and controlling invasive species.
7. Expand permanent upland grassland habitat needed by grassland nesting waterfowl, pheasants and grassland birds. A minimum 1:1 ratio of grassland:wetland is recommended. The current grassland:wetland ratio is 0.4:1 indicating a significant deficiency in grasslands. The proposed habitat management recommendations combined with the proposed boundary and acreage goal adjustments could improve this ratio to about 0.7:1.
8. Add 14,000 feet of public access along trout streams and stream rehabilitation.
9. Acquire land needed for wetland restoration and habitat improvement projects consistent with program strategic plans and inter-agency initiatives.
10. Protect our existing investment in state land and water by sustaining essential inputs, such as surface and groundwater, and reducing the risk of habitat degradation related to erosion, sedimentation and nutrient runoff.
11. Coordinate our acquisition and property management activities with federal agencies and other partners to maximize habitat benefits, improve recreational opportunities, and leverage limited acquisition funds and staff resources to achieve the greatest results.

To meet these goals the following project boundary and acreage goal adjustments are recommended:

- Contract project boundaries by 1,131 acres, primarily on wildlife properties, where significant residential development has occurred, and conservation and public access benefits are minimal.
- Expand the project boundaries at properties where valuable habitat and access land was acquired, but not previously included within the project boundaries (total of 576 acres).
- Expand the wildlife project boundaries by 4,627 acres and the acreage goal by 2,910 acres.
- Expand the fishery project boundaries and the acreage goals by 424 acres.

- Create five state natural area and expand three existing natural areas by a total of 2,759 acres. All would be overlays on existing state owned wildlife and fishery lands, except for 35 acres at the Rocky Run Oak Savanna.

The land uses within the 5,086 acres of proposed project boundary expansions include 53% cropland, 19% forest/shrubs, 22% wetlands, 4% developed lands and 2% grasslands.

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CHAPTER ONE

OVERVIEW OF THE PROPERTIES

Introduction

The Columbia County Planning Group (CCPG) includes nineteen properties totaling 24,107 acres. The regional and county context for these properties are shown on **Maps A and B**. The thirteen wildlife properties contain a significant majority of this acreage at 22,229 acres, the five fishery areas include 1,714 acres and the one stand alone state natural area contains 164 acres. These properties encompass diverse habitats ranging from large open marshes to remnant prairies and oak woodlands and highly productive trout streams.

Plan Overview

This master plan describes the proposed boundary adjustments and property management objectives and prescriptions needed to provide high quality traditional outdoor recreational experiences. Science based management principles and practices will be applied to provide quality habitat for both game and non-game species, and protect the native plant and animal communities.

Habitat management will be focused on protecting and restoring native wetland communities, native grasslands, increasing the acreage of oak savanna and oak woodlands, and improving trout habitat. These activities will also contribute to improved surface and groundwater quality and quantity in the lakes, wetlands, and streams. Cultural and historical elements on these properties will be protected too.

The appeal of these properties is expected to grow as our population continues to expand and access to private lands becomes more difficult. All of these wildlife areas and trout streams are within an hour drive of 500,000 to 1,000,000 people.

This plan includes input from the US Fish and Wildlife Service (FWS), local sporting clubs, National Park Service (NPS), Ice Age Trail Alliance (IATA), local governments, the county land use plan, and citizens. The SCORP report (*WDNR, SCORP (2006a)*) was also consulted and the recreational shortages best addressed by the wildlife and fishery were considered in the planning process. This master plan proposes to improve access by increasing the number and/or quality of the access sites and boat launches for recreational users of all abilities.

Public Investments in Public Land

In Wisconsin, our natural resources are not just a part of our landscape; they are a part of our heritage. Wisconsin residents value their rich traditions of hunting, fishing, trapping, camping and hiking, and our access to our public recreational land and wild places. The state manages about 1.6 million acres of public-owned forests, barrens and savanna, grasslands, wetlands, shrub lands, streams and lakes. Conserving these resources is an investment that pays many dividends, some economic, others social similar to our investments in roads and other infrastructure.

In assessing the economic importance of the Wisconsin State Park System, a study released in 2002 indicated the total visitor expenditures and the “multiplier” effect of new dollars flowing into the state

accounted for roughly \$650 million annually (WDNR, 2002). The National Wildlife Refuge System generated almost \$1.7 billion in total economic activity, almost four times the \$383 million federal appropriation to the refuge system in fiscal 2006 (Greenwire, 2007). A 2006 report for the National Parks Conservation Association showed that for every \$1 appropriated in the annual national parks budget, the national park system generates at least \$4 for state and local economies (Hardner and McKenney, 2006). A University of Minnesota study found that for every \$1 invested in conserving natural areas in Minnesota, there is a return of up to \$4 (Minnesota Environmental Partnership, 2010).

According to the U.S. Fish and Wildlife Service's *National Survey of Fishing, Hunting and Wildlife Report (2006)*, a total of 2.9 million residents and non-residents, 16 years old and older, fished, hunted and/or watched wildlife in Wisconsin spending \$3.7 billion in the process.

According to the 2006 national survey, nearly 1.39 million anglers spent 20.8 million days fishing. That accounted for \$1.66 billion in retail sales, \$2.75 billion in overall economic output, generating \$196 million in state and local taxes and providing 30,000 jobs (Southwick Associates, 2008). Nearly 700 thousand hunters spent 10 million days hunting, accounting for \$1.39 billion in retail sales, \$2.19 billion in overall economic impact, generating \$197 million in state and local tax revenue and providing 25,000 jobs (Southwick Associates, 2007).

Our \$12 billion tourism industry (*Tourism Federation of Wisconsin*) and \$23 billion forest industry (WDNR 2009) are inextricably linked to our abundant natural resources and, in part, to our public lands. All of Wisconsin DNR-managed lands have been certified as sustainable by two third-party audit firms. That means these lands meet the social, ecological, and economic rights and needs of the present generation without compromising those of future generations. Timber harvested on state land also has an enhanced value and can be marketed as sustainably harvested.

There is a growing understanding of the role that natural lands play in filtering pollutants and maintaining water quantity and quality for both surface and groundwater. Wetland protection and restoration can help reduce flood peaks and damage, protect human health and safety, and reduce the need for expensive projects such as levees, detention ponds and the reconstruction of flood-damaged roads.

Ingraham and Foster (2008) estimated the value of basic "ecosystem services" from natural lands. They calculated an economic value for the wildlife habitat, carbon sequestration, disturbance prevention (e.g. flood control), freshwater management and supply, nutrient regulation and waste management provided by USFWS National Wildlife Refuges in the contiguous United States. The value of these services provided by federal lands amounted to \$2900/acre/year. Using the same approach, Wisconsin's public land provides a total return of \$3.33 billion/year or \$2400/acre/year.

Our public lands provide cultural and historical connections. They invoke a sense of place in the landscape and are important habitats for people. The majority of Americans agree that preserving undeveloped land for outdoor recreation is important (*Outdoor Foundation, 2011*). Evidence suggests that children and adults benefit from contact with nature that land conservation can now be viewed as a public health strategy (Frumkin and Louv, 2007). They also play an important role in providing access to the outdoors for people with varied physical abilities, support environmental education, and build a public commitment to environmental conservation.

Investments in public land in Wisconsin need to balance the capital and operational costs with the full range of long-term recreation activities, environmental benefits, connections to nature, land health as well as economic dividends. Expenditures for public land conservation and management are best understood as an investment that will pay dividends, including economic ones, long into the future (Gies, 2009).

Recreational Significance

Wildlife Communities and Habitats

The CCPG properties contain large wetland complexes that are partially surrounded by oak-hickory forests and grasslands that provide excellent habitat for game such as white-tailed deer, wild turkey, ring-necked pheasants, some waterfowl (including the Canada goose and wood ducks), mourning doves, woodcock and other small game. Bobwhite quail and ruffed grouse may still be found on some properties. Common furbearing animals on these properties include raccoon, striped skunk, coyotes, foxes, opossum, muskrat, mink and beaver.

Other wildlife species occasionally reported in Columbia County are otter, bobcat and fisher. Increasingly, black bear and gray wolves are using the Wisconsin River corridor as a dispersal route and have been spotted in the county.

These properties provide quality habitat for a range of needs such as reproduction, cover and forage for deer and turkey, and resting areas during fall and spring migrations. However, the properties are deficient in providing permanent upland grassland habitat for grassland nesting waterfowl (e.g., mallards and blue wing teal), pheasants and native grassland birds.

Several DNR sources (*Wildlife Action Plan, 2006; Addis, 1995; and Sample and Mossman, 1997*) state the importance of creating and enhancing native prairie or surrogate grassland on habitat blocks ranging from 40 to 1,000 acres. Given the configuration, size and amount of wetlands on most of the CCPG properties grassland blocks in the 80 to 150 acres range are most practicable. Pine Island WA is the one exception with a large block of contiguous grasslands in excess of 1,000 acres. Expanding grasslands is also consistent with the wildlife management strategic goals to improve waterfowl habitats within focus areas (such as Columbia County) and across the state and Midwest (US FWS Joint Venture, 1992 and DNR Wildlife Action Plan, 2006).

Hunting and Trapping

The CCPG properties provide important opportunities for hunting and trapping. Hunters from sixty Wisconsin counties harvested deer in Columbia County in 2010 and 2011. About 55% of the deer are harvested by Columbia County residents followed by Dane County (13%), Dodge County (6%) and Sauk County (3%). Non-residents of Wisconsin harvested about 3% of the deer each year.

In 2010, about 12% of the deer harvested came off public lands even though they represent less than 5% of the land area of the county. As a consequence, public lands are heavily used so competition and crowding can detract from the quality of the hunting experience, especially on opening day.

Annual license sales in Columbia County have averaged between 7,000-8,000 hunting licenses and 300 trapping licenses (includes both resident and non-resident licenses).

Many excellent waterfowl hunting opportunities exist on the natural and restored wetlands and flowages on the state wildlife areas. Small game hunting, pheasant hunting in particular, is very popular on the grasslands. The Department supplements the wild pheasant population by stocking game farm raised pheasants on some public lands.

Annually, an average of 90 active dog training permits at Pine Island have been issued to residents and even some non-resident dog trainers. This property has regional appeal with permits issued to residents in 16 counties.

The management of the state natural areas is and will continue to be focused on protecting and restoring outstanding examples of Wisconsin's native plant and animal communities. These natural areas are open to fishing, hunting, trapping and other traditional outdoor activities.

Fish Communities, Fishing and Water-based Activities

The fisheries, especially the trout fisheries at Rowan Creek and Rocky Run, are heavily utilized by local, regional and out of state anglers. Of the eight trout streams in Columbia County portions of seven trout streams run through the CCPG properties. They include four miles of Class 1, fourteen miles of Class 2 and two miles of Class 3 trout waters. These waters sustain both brown and brook trout populations as well as a variety of native forage species.

Several of the wildlife areas also provide access to a variety of warm water sport fish communities including Northern pike, walleye, largemouth and smallmouth bass and panfish in the rivers and lakes.

Nearly 10,000 fishing licenses (both resident and non-resident) are sold annually in Columbia County.

Mud Lake, French Creek and Pine Island are also popular destinations for canoers and kayakers.

Wildlife Viewing

Several of the CCPG properties are well known for birding. The Wisconsin River serves as a major staging area for sandhill crane and hundreds will roost on the sandbars in the fall. Whooping cranes use these state lands and nearby federal properties, especially in or near Schoenenberg Marsh. Large numbers of bald eagle over winter along the Wisconsin River below the Prairie du Sac Dam as the water remains open through the winter. Osprey populations are recovering in Columbia County, with six nests identified and three nests producing young in 2010.

Birding is becoming more popular with people coming long distances to observe tundra swan, pelicans and other waterfowl associated with the Mississippi flyway during migration. Columbia County is included in the Southern Savanna Region of the Great Wisconsin Birding and Nature Trail (*WDNR, 2008*). Two areas within the county have been approved or nominated as Wisconsin Important Bird Areas (IBA), a designation reserved for select areas that have extreme importance to bird life. These sites include the Grassy Lake, Pine Island, Mud Lake and French Creek Wildlife Areas (*Steele, 2007*).

Lands providing Public Access

The CCPG lands provide about 80% of the public access lands for hunting, fishing and trapping in Columbia County (Table 1-1). Importantly, these lands are available year round and provide opportunities for a broad range of outdoor activities in natural settings.

Table 1-1 Public Access Lands	
Property Owner	Acres
Wisconsin DNR (CCPG)	24,107
US Fish and Wildlife Service	3,202
Columbia Power Plant Wisconsin Power and Light	2,420
Audubon Society	629
Total	30,358

Community Involvement

Several of the properties also have important involvement from local citizens and sporting groups. Examples include the Friends of Rowan Creek at the Rowan Creek FA, Friends of Scenic Lodi Valley and the Ice Age Trail (IAT) – Dane County Chapter at Lodi Marsh WA, Trout Unlimited at several of the trout streams, dog trial interests at Pine Island, snowmobile clubs and interested adjacent land owners. The contribution of these groups can be significant as demonstrated by the Dane County IAT group. They are a significant partner in the native community restoration work occurring at Lodi Marsh and have provided as much as 1,000 hours of labor/year plus equipment toward these activities.

Ecological Significance

Landscape and Species Management

The pre-settlement plant communities in Columbia County included savanna, prairie, upland oak forest, marsh, floodplain forest, and tamarack swamp. The savanna and upland oak forests can be further delineated into community types that occurred over droughty sands: black oak savanna, black oak forest, and xeric sand prairie (Tans and Hine, 1976). The amount of prairie and savanna has been significantly diminished and the quality of the remaining plant communities have often been adversely affected by fragmentation, invasive species and past management practices (e.g., wetland draining).

The CCPG properties contain a rich mosaic of these pre-settlement plant communities. The wetland communities include: Calcareous Fens, Southern Sedge Meadow, Wet and Wet-mesic Prairies, Emergent Marsh, Marsh, Submergent Aquatic, Shrub-carr, and Southern Tamarack Swamp (rich). The upland natural communities include: Oak Opening, Southern Dry-mesic Forest, Mesic and Dry mesic Prairie, and Surrogate Grassland (a mix of native and introduced grasses and forbs). These properties continue to offer an opportunity to provide these habitats on a small to moderate landscape scale.

The *Wisconsin Wildlife Action Plan (WDNR, 2006b)* and the *Ecological Landscapes of Wisconsin Handbook (WDNR, in Prep. a)* were used to identify landscape scale conservation opportunities for sustaining various natural communities. Management needs and opportunities for an ecological landscape are often described in terms of “natural communities” - the communities are assemblages of native plants and animals that consistently occur together under similar conditions. “Sustaining natural communities” means ensuring these communities have high potential to maintain their characteristic composition, structure, and ecological function over a long period of time (e.g. 100 years).

The state natural areas embody the best examples of these native communities. A total of 2,545 acres are currently designated as State Natural Areas (SNA) primarily as overlays within the existing properties.

Sites of High Conservation Significance – Primary Sites

Primary Sites are parcels within state lands that offer opportunities to protect rare and representative natural communities, and/or harbor rare species populations. The *Rapid Ecological Assessment for the Columbia County Planning Group (REA) (WDNR, 2010b)* identified sixteen Primary Sites on seven properties. The management recommendations for the Primary Sites are found in Chapter Two. The Endangered Resources program has a GAP analysis that provides guidance on the number of state natural areas needed to meet the critical ecological reference area requirements for forest certification, ecosystem/species preservation, research, and education goals of the program. The Primary Sites selected for state natural area status fill the needs identified in the GAP analysis

Emergent Wetlands and Marshes

The CCPG properties contain a diverse mosaic of Calcareous Fen, Emergent Marsh, Southern Sedge Meadow, Wet Prairie, and Wet-mesic Prairie wetlands. A number of these large, open wetland complexes cover over 1,000 acres. These wetlands occur within a landscape matrix of Surrogate Grasslands and oak dominated savannas and forests.

Wetland quality varies considerably between properties as well as within properties. For example, French Creek and Grassy Lake contain high quality wetlands while many of the wetlands at Peter Helland and Paradise Marsh have been heavily impacted by ditching, grazing and invasive species.

The mixed emergent wetlands and large size of the open wetlands at the French Creek and Swan Lake Wildlife Areas create important shorebird stopover sites (*Grveles et al. In Review*). The open wetlands of the CCPG also provide habitat for breeding grassland birds, breeding marsh birds, rare reptiles and amphibians, and invertebrates. Opportunities exist to enhance or protect black tern, rail and heron habitat too.

Oak Savannas, Openings and Woodlands

Oak savannas are critically imperiled globally because of their extreme rarity (*WDNR, 2009*). Historically, oak savannas covered 5.5 million acres in Wisconsin and were a dominant cover type in Columbia County. Due to clearing for row cropping, grazing, in-growth of trees, invasion by shrubs, and land use development, intact savannas now cover less than 500 acres in Wisconsin. Oak barrens, a type of savanna occurring on dry, sandy soils, are a very rare community. Oak Openings are also a rare community type and worthy of protection and restoration. Oak Woodlands are relatively common and they are an important cover type for many game and non-game species. Regeneration of the existing Oak Woodlands is a priority where practicable.

The *Ecological Landscapes of Wisconsin (WDNR in Prep)* indicates restoration of oak savannas is a critical need in Wisconsin. Although the *Wisconsin Wildlife Action Plan (2006b)* does not list the Central Sand Hills Ecological Landscape as the most critical area for savanna restoration, it is listed as an important area for protection and management of Oak Barrens. Important oak savanna, woodland or barrens restoration and expansion areas are found at Rocky Run, Pine Island, Lodi Marsh and Swan Lake. Restoration of oak savanna remnants, can enhance the habitat for numerous threatened and endangered species and species of greatest conservation need on the CCPG properties.

Species

The *REA* documented numerous rare plant and animal species on these properties. Eight plant and 16 animal species on these properties are designated as threatened or endangered. The Endangered (END) and Threatened (THR) as well as Species of Greatest Conservation Need (SGCN) or Special Concern (SC) species are often associated with the natural communities present on the CCPG properties. Additional information about these species and the natural communities can be found in the *REA* and the *Wisconsin Wildlife Action Plan (WDNR, 2006b)*.

Rare Reptiles and Amphibians

Reptile and amphibian (herptile) populations have declined significantly in Wisconsin. This decline is due in large part to habitat degradation and fragmentation. Threats to herptile populations include the loss of open habitat, invasive plant species reducing habitat quality, road mortality as habitats become increasingly fragmented, and egg predation. Many of these species cannot readily migrate to suitable habitats so there is an urgent need to protect sites where viable populations can be sustained.

The CCPG provides crucial habitat for three state-listed species: Blanding's turtle (THR), slender glass lizard (END) and the ornate box turtle (END). Other herptile species include: American bullfrog (SC), Eastern hog-nosed snake (SC), Eastern massasauga (END), false map turtle (SC), pickerel frog (SC), and smooth softshell (SC).

The CCPG provides an excellent opportunity for the conservation of Blanding's turtles due to an abundance of habitat and dispersal corridors. The CCPG contains one of only seven sites in Wisconsin for the recovery of ornate box turtles and one of a few properties that has the potential to support a viable population of slender glass lizards.

Grassland Birds

Grassland bird species are exhibiting one of the most significant declines of any suite of bird species in Wisconsin and across the Midwest (*Herkert, 1995*). The major cause for this decline is the alteration and loss of breeding habitat (*Robbins et al., 1996*).

Grassland birds of particular interest include the loggerhead shrike (endangered) and Bell's vireo and the Henslow's sparrow (threatened), and several other species are considered of special concern.

The sedge meadows, Dry-mesic Prairie remnants, marshes, and Surrogate Grasslands of Dane and Columbia Counties are recognized by the WDNR as a priority landscape for grassland bird management because of the opportunity for savanna restoration and prairie and Surrogate Grassland expansion (*Sample and Mossman, 1997*).

The Pine Island grasslands, Sand Prairie, Oak Savanna, and river barrens are recognized as a priority landscape for grassland bird management (*Sample and Mossman 1997*). The grasslands at Pine Island Wildlife Area support several conservative grassland obligate species such as the Henslow's sparrow, eastern meadowlark, bobolink, field sparrow, vesper sparrow, and dickcissel. These species have the potential to increase in density and potentially improve nest productivity if the grasslands are maintained and connected to open wetlands.

Other important open habitats on the CCPG include Southern Sedge Meadow, Wet Prairie, Calcareous Fen, and Emergent Marsh. Additional open areas of value include pastures, idle grasslands, prairie plantings, hayfields (cut late summer) and even row crops.

Grasslands and open habitats greater than 250 acres promote the nesting success and populations of these area-sensitive grassland birds. The proposed management activities and property expansions on many of the CCPG properties will increase the amount of large grasslands and open habitats.

Invasive Species

Invasive species are a growing threat to our native plant and animal communities. Over 20 invasive species are found on the CCPG properties and some are well established, especially in disturbed areas. These species can dominate a community to the detriment, and perhaps the exclusion, of native species. Invasive species can alter natural ecological processes by reducing the interactions of many species to only a few species. These infestations can adversely affect the quality of the habitat for wildlife as well.

Reed canary grass is an aggressive invasive species that is found in many of the CCPG wetlands. It is also one of the few invasive species that has been quantitatively assessed on a statewide basis. Satellite imagery analysis indicated almost 500,000 acres (about 10% of all Wisconsin's wetland acres) are dominated by reed canary grass making this species the most extensive wetland plant invader (*Hatch and Bernthal, 2008*). Reed canary grass infestations (i.e., more than 50% of the vegetative cover in a wetland is composed of reed canary grass) on the CCPG properties conservatively range from 25% on the Peter Helland WA to under 5% on the Lodi Marsh WA.

CHAPTER TWO

MANAGEMENT AND USE RECOMMENDATIONS

Section one – General Plan Elements

This chapter is divided into two sections:

Section One covers management elements applicable to all properties in this planning group.

Section Two provides a brief description of the individual properties followed by habitat and recreational management objectives and prescriptions specific to that property.

Factors considered when developing the management objectives and prescriptions included habitat distribution and quality, game species life cycle requirements, habitat needs of species of greatest conservation need, recreation usage and trends, land use patterns and trends, and public input.

Vision

The Columbia County Planning Group properties will provide abundant outdoor recreational opportunities in lightly developed settings for current and future users. These opportunities will be provided in a mosaic of high quality and ecologically diverse aquatic habitats, open wetlands, grasslands, savannas and forests. These natural communities will be managed for user enjoyment consistent with the purpose and ecological capacity of these properties. The most effective and sustainable habitat and game management includes efforts by citizens, private landowners and resource management agencies working together.

Goals

1. Provide abundant recreational opportunities for hunting, fishing, trapping, birding, wildlife viewing, nature enjoyment, natural vistas and other compatible outdoor activities with an emphasis on non-motorized recreation.
2. Promote quality habitat for desirable game and non-game species, including rare and special concern species.
3. Maintain a variety of high-quality open wetlands, wet prairies, fens and floodplain forests.
4. Restore and protect upland oak communities to promote a mosaic of savannas, barrens, openings and mature forests.
5. Provide large grassland areas to promote nesting success and sustainable populations, especially for area sensitive bird species.
6. Promote sustainable game fisheries with an emphasis on enhancing coldwater habitat to encourage natural reproduction of trout species.

GENERAL PROPERTY MANAGEMENT ELEMENTS

Introduction

The extensive prairies, savannas, wetlands, and forests that covered Columbia County prior to European settlement are gone. Today, the remaining native habitats, especially grasslands and upland forests, are severely fragmented by agriculture, highways, and urban and rural development. Fragmentation presents many significant challenges including adverse impacts on wildlife migration and dispersal, insufficient habitat for species of concern, spread of invasive species and optimal management of state properties.

In general, wildlife benefits for a given habitat type increase as patch size increases. While the minimum area required for maintaining viable populations of many species (e.g., grassland nesting birds) is not known, it is largely accepted that the larger a contiguous grassland is, the more benefits it provides to these species. Similarly, larger blocks of forested habitat provide higher quality habitat for interior bird species. Importantly, the ease and efficiency of habitat management increases as patch size increases.

Management objectives focus on restoring larger blocks of pre-settlement vegetation communities and managing on a landscape scale to create smooth transitions between cover types. Protecting rare cover types are also important to the extent practicable and sustainable.

Protecting or rehabilitating cold water (trout) stream habitats is also a high priority.

These properties are within an hour drive of 500,000 to 1,000,000 people and those in eastern Columbia County up to 2,000,000 people.

The goals in this master plan build upon the achievements of past master plans and general program management priorities. Similarly, the objectives and prescriptions in this master plan incorporate the many successful management activities, both active and passive, already used to manage habitats and protect native communities on these properties.

General Authority

The scope of use and management of a state property is governed by its official designation. The CCPG is an assemblage of properties designated as Wildlife Areas, Fishery Areas and State Natural Areas. Wildlife Areas are acquired and managed under the authority of Sec. 23.09 (2) (d) 3 Wis. Statutes and Administrative Code NR 1.51. Wildlife and Fishery Areas are set aside to provide habitat for wildlife and the primary recreational focus is hunting, trapping and fishing. These areas are also open for traditional outdoor uses of hiking, skiing, snow shoeing, nature study and berry picking. As directed by NR 1.51 and NR 1.61, other recreational uses may be allowed by the property's Master Plan if those uses do not detract from the primary purpose of the property.

The Federal Aid in Wildlife Restoration Act (i.e., Pittman-Robertson Act) authorizes an excise tax on sporting arms and ammunition to provide funds for acquiring, developing and managing wildlife areas. This funding prohibits a state fish and wildlife agency from allowing recreational activities and related facilities that would interfere with the primary purposes (e.g., hunting, fishing and trapping) for which the land was acquired, developed, or managed.

Natural Areas are defined and authorized in State Statute 23.27-23.29 and Administrative Code NR 1.32 as “an area of land or water which has educational or scientific value or is important as a reservoir of the state’s genetic or biological diversity and includes any buffer area necessary to protect the area’s natural value”. Section 23.27 (1) defines natural areas as "reserves for native biotic communities...habitat[s] for endangered, threatened, or critical species...or areas with highly significant geological or archaeological features". Section 23.28(1) provides authority to designate areas as State Natural Areas and Section 23.29 provides authority to legally dedicate and protect State Natural Areas in perpetuity.

The State Natural Areas program preserves the best examples of the state’s diverse natural communities. They are valuable for research and educational use, the preservation of genetic and biological diversity, and for providing benchmarks for determining the impact of use on managed lands. They also provide some of the last refuges for rare plants and animals. Traditional recreational uses such as hunting and hiking may be allowed if those uses do not threaten the natural values designated for protection.

Land Management Classifications

Land management classifications (NR 44) describe the general management objectives for a property or a management unit within a property. These classifications are determined during the master planning process and help identify the preferred set of active and/or passive actions to achieve these objectives. Only those management activities or techniques identified or referenced in this master plan and compatible with the site’s ecological capability may be pursued in these management areas.

Properties purchased after the master plan is approved will be classified and managed as Habitat Management Areas unless the objectives and prescriptions warrant another classification. In this case a master plan amendment will be pursued.

The three Land Management Classifications applicable to the CCPG properties are as follows:

Habitat Management Area ((NR 44.06(5)) - A significant majority of the CCPG wildlife and fishery areas (18,520 acres) are classified as Habitat Management Areas. The primary objective for this classification is to provide integrated upland, wetland and/or aquatic habitat management that meets critical life cycle needs for a variety of plant and animal species. Typically the emphasis is to provide an appropriate balance of habitats needed to sustain productive game species populations. However, a portion of these lands may be managed for focused species production and protection (e.g., waterfowl production). Areas that initially do not have desired habitat conditions, but have a high potential to be restored may be included under this classification.

Native Community Management Area (NR 44.06(6)) – All state natural areas and selected management units are classified as Native Community Management on the CCPG properties. In total, about 5,482 acres will be placed in this classification. Native Community Management areas are managed to perpetuate pre-settlement plant and animal communities, whether upland, wetland or aquatic, and protect the biological diversity of the native ecosystems. A Native Community is a distinct and reoccurring assemblage of indigenous flora and fauna associated with similar physical settings. Areas that initially do not have the desired community conditions, but have a reasonable potential to be restored may be included in this classification.

All of the traditional recreational uses, such as hunting, fishing, trapping and nature enjoyment, are allowed on the Native Community Management Areas except if the area needs to be closed during breeding season or to protect a very fragile habitat.

Special Management Area (NR 44.06(7)) - This classification provides and maintains an area and/or facilities for special uses not included in the other land management classifications. The only Special Management Area in the CCPG is the 5 acre headquarters area at the Pine Island WA used by department employees, Learn to Hunt students, and dog trial participants (including self-contained campers during dog trial and training events).

The acreages falling within the recommended management areas by property are shown in Table 2-1 and their spatial relationship on each property can be viewed on the respective land classification maps.

Table 2-1: Land Management Classifications for the CCPG Properties (acres)		
Property Name	Native Community Management	Habitat Management
French Creek WA	1,629	1,877
Lodi Marsh WA	704	482
Mud Lake WA	223	2,062
Paradise Marsh WA	0	1,588
Peter Helland WA	270	3,273
Pine Island WA*	957	4,517
Swan Lake WA	953	1,513
Grassy Lake WA	292	487
Jennings Creek WA	0	530
Columbus PHG	0	248
Dekorra PHG	0	210
Duck Creek PHG	0	159
Hampden PHG	0	230
Rowan Creek FA	0	651
Rocky Run FA	290	447
Hinkson Creek FA	0	233
Lodi Spring Creek FA	0	53
REM Roelke FA	0	40
Rocky Run SNA	164	0
Total	5,482	18,600

* Pine Island WA also has a 5 acre Special Management Area around the headquarters buildings and a 20 acre easement along the Baraboo River that provides public access, but no management privileges.

The objectives and prescriptions used to manage a Native Community Management Area (NCMA) or a Habitat Management Area (HMA) may significantly overlap, but the desired end point may be decidedly different. For example, fallow fields under both classifications can be treated with herbicides, plowed and

replanted. However, in a NCMA the typical objective is to re-establish native plant and animal communities while under HMA the field may be placed under a long-term lease for crop production, used as a wild game food plot, re-seeded to establish surrogate grasslands or perhaps even a native prairie community. Another example is the restoration of savannas and prairies. A NCMA restoration may require the use of local native seed sources to protect genetic diversity while a HMA might use non-local seed sources to achieve restoration objectives.

Active and Passive Management

The master plan refers to both *active* and *passive* habitat management objectives and prescriptions.

Active Management includes the direct manipulation of the plant and animal communities. Habitat examples include seeding a parcel to re-establish grasslands, conducting prescribed burns, harvesting timber, stocking fish or pheasants, or adding structures in trout streams. Active management activities may occur over significantly different time scales. Fish may be stocked every year, prescribed burns may occur every three to five years while timber harvests may occur on 15-50 year cycles or even longer.

Passive Management indicates no or very limited action may be taken to influence a habitat. Passive habitat management may consist of no direct action to manage a property or a unit on a property for one or more of the following reasons:

- Size - habitat management activities would be expensive or difficult to conduct due to the small size
- Location – isolated or difficult to reach habitats (such as small islands),
- Habitat quality - Units with good to excellent habitat may be stable thus requiring little to no intervention, or it may be an infestation (i.e., an expansive reed canary grass infestation in a disturbed wetland) of such size and complexity that the tools and/or resources required for restoration are not currently available.

More commonly, some active management is conducted on a property or habitat unit (e.g., prescribed burns, timber harvests, adjusting water levels on a flowage), but the plant communities are allowed to evolve based on natural succession. For example, grasslands may be burned, but the species composition of the grasslands is allowed to evolve based on the competitiveness of the grasses and forbs naturally occurring at the site. This type of “passive management” seeks to promote stable and productive natural communities while minimizing the need for unnecessary and potentially expensive human intervention.

General Wildlife Habitat Objectives and Prescriptions

The following general wildlife objectives and prescriptions apply to all the properties as appropriate. Property or unit-specific management objectives and prescriptions are described in section 2 of this chapter. These objectives and prescriptions will be applied contingent upon the availability of staff and material resources, or modified as needed to respond to unpredictable or catastrophic events (e.g., storm damage or severe insect/disease infestations).

Waterfowl Habitat Improvements

Protecting and enhancing waterfowl habitat is a wildlife management priority both statewide and on the CCPG properties. Productive habitats help sustain healthy waterfowl populations desired by both hunters and wildlife viewers. A number of the CCPG properties provide high quality breeding and staging area

benefits for waterfowl, but have limited nesting value due to the lack of permanent upland grass cover for grassland nesting ducks like mallards and blue winged teal.

The desirable range for grassland to wetland is 3:1, but a ratio of 1:1 can be productive as well. In contrast, the larger CCPG properties have a grassland:wetland ratio of 0.4:1 indicating a substantial shortage of upland in permanent grass cover. A landscape with wetlands that provide quality breeding habitat adjacent to large blocks of permanent upland grass cover for nesting is highly desirable because it improves nesting success by reducing predation and eliminating losses due to mowing and other human activities.

Waterfowl research conducted in Wisconsin (*R. Gatti WDNR – personal communication*) indicates mallards and blue-winged teal strongly prefer to nest in blocks of permanent grasslands. They prefer to nest in grasslands twice as much as in wet meadows and 5-6 times more than in alfalfa fields. Their nesting success was 28% in larger blocks of permanent upland grass compared to 6% in wet meadows, 4% in linear grasslands and 3% in active alfalfa fields.

General Habitat Management Objectives

- Create larger blocks of habitat and seek to create a mosaic of habitats from lowland to upland.
- Establish and maintain travel corridors for species movement between habitat blocks.
- Enhance and expand native communities at a landscape scale, with an emphasis on Grasslands and Oak Savanna, to benefit game and non-game species.
- Improve the habitat value of surrogate grasslands, sedge meadow, shrub-carr and savanna habitats for area sensitive bird species.
- Increase the wildlife benefits of wetlands and grasslands classified as Habitat Management Areas by improving habitat for waterfowl nesting, brood rearing and migratory stopover, as well as pheasants, grassland birds and shorebirds. Maintain existing shrub-carr wetland in areas that do not have high potential for management as sedge meadow, wet prairie or wet mesic prairie.
- Protect, and enhance as practicable, the quality and extent of the wetland communities classified as Native Community Management Areas with an emphasis on wet and wet-mesic prairie, sedge meadow, calcareous fen, emergent marsh and southern tamarack swamp.
- Protect and enhance habitats and populations of threatened and endangered species and species of greatest conservation need.
- Reduce the threat of invasives species to protect the biodiversity of the CCPG.
- Provide opportunities for habitat and species research and public education consistent with the approved management habitat and species objectives.

General Habitat Management Prescriptions And Authorized Management Actions

The following prescriptions are authorized on all properties, unless restricted by a property-specific management prescription. Manage all habitats using the prescriptions and actions described below and those described in the General Management Objectives and Prescriptions by Habitat and Forest Type section.

- Actively manage old fields and pastures to promote native plant or surrogate grassland communities by removing fence lines, conifer plantations, encroaching brush, and isolated patches of trees to create larger habitat blocks.

- Convert cropped land to native cover types or surrogate grasslands except where plowing, sharecropping and food plots are being used to aid habitat restoration efforts or is being used to enhance wildlife populations, especially doves or pheasants.
- Use water level manipulations at flowages and impoundments to manipulate wetland vegetation and improve wildlife habitat.
- Fill ditches to improve water level management and aid wetland restoration efforts.
- Inventory, monitor and control invasive species.
- Conduct or allow research and educational activities related to habitat or species management and improved understanding of the cultural resources on the properties.

Vegetation Management Actions

Prescribed burns are the most important management prescription used to maintain and enhance these grasslands, savannas, oak woodlands and sedge meadow wetlands. A number of the pre-settlement plant and animal communities are fire dependent communities that were shaped over thousands of years by wildfires caused by lightning or set intentionally by Native Americans.

Prescribed burns mimic natural fire disturbance and help control many woody plants and invasive weeds, improve the quality of wildlife habitat, reduce fuels to lessen fire hazard, and liberate nutrients tied up in dead plant material. Upland nesting cover used by pheasants, waterfowl and songbirds is more productive if periodically burned. Even wetlands, such as sedge meadows, benefit from fire. Burning is also the most cost-effective treatment compared to the other management prescriptions.

Burns typically are conducted in late winter/early spring and in the fall. They may be conducted annually or on an as needed basis. Fire management for a given unit will depend on the plant community present, the habitat restoration or maintenance objectives, the physical characteristics of the site, and most importantly, on safety and fire control conditions.

Prescribed fires may also be used in other plant communities, as deemed appropriate by the property manager in consultation with the Endangered Resources biologists and Forestry staff.

Other management actions that can be used to implement these prescriptions include:

- Mechanically cut (e.g., mowing and brushing), hand cut, pull, bulldoze and/or smother.
- Chemical control of vegetation or pests using approved products and application techniques.
- Bio-control measures may be used as deemed appropriate, safe and effective.
- Grazing.
- Biomass harvests that follow approved Wisconsin Biomass Harvesting Guidelines.
- Seeding or planting native woody and herbaceous species.
- Agricultural activities may be used to achieve proper crop rotations for food patches, hunting cover, brush and invasive species control, and site preparation for native community restoration.
- Forestry practices as described in Department manuals and guidance. This may include salvage of trees after a major natural disturbance if the volume of downed trees inhibits fire or other approved management prescriptions. Endangered Resources shall be consulted before any salvage harvests are planned in state natural areas or primary sites.

Wildlife Management Actions

Additional biotic surveys are needed on the CCPG properties to assess the effectiveness of the habitat and species management efforts and on the health and sustainability of the native plant and animal communities. This need is based on the richness of the natural habitats, the number of rare species on the CCPG properties, and the CCPG Rapid Ecological Assessment report that indicated many biological inventories had not been completed.

Within two years after the approval of this master plan a CCPG Biotic Survey and Monitoring Plan shall be developed. Endangered Resources staff will lead this effort and consult with Wildlife, Fishery and other science experts as needed. This plan shall establish the specific surveys and monitoring to be conducted including their frequency, location and objectives, as well as the parties responsible for conducting the surveys. All post-survey reports shall include habitat and/or species management recommendations for consideration and implementation (as practicable) by Wildlife, Fishery and/or Endangered Resources staff and inclusion in the property master plan as necessary.

Surveys not covered by this master plan or the monitoring plan shall be reviewed and must be approved by the property manager in consultation with the regional ecologist and relevant science experts.

Other wildlife management tools that may be used include:

- Use nest boxes, platforms or similar devices to enhance reproduction of desired wildlife.
- Control beaver and muskrat populations to mitigate dike damage and damming of water control structures, and flooding of neighboring private lands.

Invasive Species Actions

The threat of exotic and/or invasive species, including plants, animals, insects and diseases represent a significant and growing threat to our native plant and animal communities. To address this concern, invasive species inventory, monitoring and control actions shall be included in the annual property planning for each property. The proposed inventory, monitoring and control efforts shall follow the guidance provided in the Department's *Property Managers Handbook*. Key activities include:

- Inventory properties to detect new infestations. Annual property-wide inspections are ideal, but not always practicable. At a minimum, annual inspections should be conducted at entry points such as trails, roads, waterways, rights-of-way, and areas where soil has been disturbed.
- Control new or existing invasive species as practicable. Mowing should be timed to avoid dispersal of invasive plant seeds and mowing equipment should be cleaned as appropriate.
- Monitor control activities to assess effectiveness and determine if follow-up is needed.

Infestations of buckthorn, honeysuckle, garlic mustard, spotted knapweed, wild parsnip, sweet clover, burdock, dewberry, Russian olive, crown vetch, Japanese hedge parsley, Japanese knotweed and other exotic species have been noted on these properties. Reed canary grass is a very common invasive on disturbed wet areas. Other wetland invasives include cattails, purple loosestrife, common reed and phragmites. Native species with invasive habits, such as red cedar, black locust, sumac, prickly ash and box elder, are also a management challenge on several properties.

General Wildlife Outreach Activities

Staff may collaborate with volunteers as well as inform, educate and share information with users and private landowners, especially on parcels adjacent to department properties, as time and resources allow.

Outreach issues of particular concern include:

- Monitoring and controlling invasive species.
- Collaborative habitat management to protect and enhance critical habitat for key game species and endangered, threatened and Species of Greatest Conservation Need.

General Fishery Habitat Objectives and Prescriptions

Coldwater Streams

Coldwater streams are dominated by groundwater inputs and can sustain fish communities adapted to cold, oxygen rich, flowing water conditions. Important coldwater species include the following game fish - brook trout, brown trout, rainbow trout - and other native species such as white sucker, mottled sculpin and various minnow species. Coldwater streams will often support diverse communities of invertebrates as well as environmentally sensitive mayflies, stoneflies and caddis flies.

The physical habitat of a trout stream can be quite variable and is generally determined by watershed and landscape characteristics, specifically soils and geologic parent material as well as watershed size and gradient. Larger, lower gradient streams are often sinuous and have bottom material composed of fine grained sands and silts. Smaller higher gradient streams tend to be defined by riffles and runs with gravel and rock substrate. Habitat enhancements in both stream types can increase the carrying capacity, growth and natural recruitment of desirable fish species, specifically trout.

Coldwater streams often rely on external sources of energy for the aquatic food web. Small streams are often shaded by trees and grasses so the invertebrates are adapted to eating leaves and detritus from terrestrial sources. Management of the streamside vegetation can increase the productivity by allowing sunlight to penetrate directly into the stream to increase the production of algae and phytoplankton. This results in increases in invertebrate and fish populations, while balancing the need to remain sufficiently cold to sustain trout populations.

Management Objectives:

- Manage riparian vegetation along classified trout streams to enhance in-stream habitat quality and productivity of trout.
- Maintain, or increase as practicable, the extent and quality of Class 1 and Class 2 trout streams for brown and brook trout populations.
- Protect rare/endangered species and species of greatest conservation need in the streams and on fishery areas.

Management Prescriptions:

- Install and maintain Department approved stream habitat enhancements, bank stabilization using rock rip rap, bank stabilization using vegetation root systems, lunker and boom cover installations, revetments and current deflectors, and brush bundling to protect or enhance in-stream habitat quality and diversity.

- Remove beaver dams to maintain the free flowing environment coldwater streams required to maintain robust trout populations.
- Consult with Endangered Resources during the planning of in-stream and riparian habitat enhancement projects.
- Follow the Bureau of Fisheries Management guidance on stocking rates of species per acre of surface water.

The following management prescriptions apply to the 132 feet riparian corridor (66 feet on either side of the center line of the stream):

- Fishery Management staff will, as needed, manage vegetation in the streamside corridor to maintain high quality trout habitat and self-sustaining trout populations. Activities to protect in-stream and near stream habitats include the planting of desired native species as needed or removal of understory and young successional vegetation such as tag alder, aspen, box elder, black willow and invasive species to minimize bank erosion, excessive stream shading or degraded habitat quality. Otherwise vegetation on the remaining portions of the fishery areas will follow the Wildlife Management prescriptions.
- Maintain and encourage mature hardwoods in the riparian corridors, specifically swamp white oak, hackberry, hickory, ash, elm and red maple.

Warmwater Streams

The lakes, flowages and larger rivers and streams on or adjacent to the CCPG properties provide an abundant, sustainable warmwater game fishery and habitat for diverse semi-aquatic and aquatic plant and animal communities. Currently, no stocking programs or habitat manipulations are being conducted on these resources. Passive management is recommended for all warmwater fisheries. If circumstances change, this master plan can be amended to address the opportunities or challenges presented.

General Fishery Outreach Activities

Inform and educate landowners, agricultural interests and communities upstream of cold water fisheries about the adverse impacts of excessive nutrient inputs, sedimentation, stormwater runoff and reduced groundwater inputs to surfacewaters. Activities that lead to high summer water temperatures, low winter water temperatures and degraded in-stream habitats diminish efforts to sustain a high quality, self sustaining trout fisheries.

General Management Objectives and Prescriptions by Habitat and Forest Type

A general management objective on all of the CCPG properties is to increase the extent and quality of the remnant pre-settlement vegetation communities. All plant communities will be managed on a landscape scale to create smooth transitions between cover types. Protecting the watersheds of the streams and lakes is important to reduce sedimentation, nutrient inputs and excessive runoff. Maintaining groundwater recharge is critical for protecting cold water springs and seeps feeding trout streams.

Natural processes (e.g., passive management) and active manipulations (e.g. plantings, seeding, controlled burns, brushing and herbicide applications) will be used to manage the structure of the woodlands, prairies and wetlands. Historically, fire played a key role in maintaining many of the plant communities in southern Wisconsin so prescribed fire is the primary management tool used to mimic natural disturbance patterns and promote native communities.

Wetland Habitats (non-forested)

Sedge Meadow, Wet Prairie and Wet-mesic Prairie

Southern Sedge meadow, Wet Prairie, and Wet-mesic Prairie habitats support many rare species such as bobolink, willow flycatcher and rare herptiles. Today, these open wetlands are much less abundant than they once were. Many of these grasslands have been lost or severely degraded by drainage, flooding, lack of fire, or invasive species. Wet Prairie is one of the rarest natural communities in the state with only 300 acres known to be in existence. A statewide GAP analysis of the State Natural Areas Program indicated the need to manage all of the wet prairies for future generations and scientific inquiry.

Degraded Sedge Meadow/Wet Prairies are often dominated by reed canary grass as a result of grazing and/or ditching or are being invaded by woody vegetation due to the lack of disturbance (e.g. fire on the site). Reed canary grass is less desirable for wildlife because it replaces native plant species and creates a monotype with low habitat value. Restoring Sedge Meadows infested with reed canary grass is a difficult task given the tools currently available. Continuing research on cost-effective, environmentally safe methods for removing reed canary grass from Sedge Meadows may provide future tools to accomplish these restorations.

Management Objective:

- Increase the extent and/or quality of the sedge meadow/wet prairie and wet-mesic prairie community types on all sites where they occur.

Management Prescriptions:

- Use prescribed fire, mowing and herbicides, where practicable, to remove or reduce competition from invading woody species and reed canary grass in open sedge meadow/wet prairie and wetlands.
- Restore the original hydrology of disturbed wetlands if compatible with other primary objectives and practicable given adjacent ownership, land uses and agency resources.

Calcareous Fen

Fens have much in common with sedge meadow, wet prairie, and wet-mesic prairie communities. However, fens have attributes such as unique plant species that are supported by the special hydrological conditions that set them apart. Only 87 fens have been identified in Wisconsin and they cover less than 1,000 acres statewide. A statewide GAP analysis of the State Natural Areas Program indicated the need to manage all of the large fens for future generations and scientific inquiry.

The primary threats to calcareous fens are disruption of hydrology and invasion by woody species and reed canary grass. Ditching, damming, dredging, tiling, pumping, and quarrying can all affect the quantity and quality of groundwater needed by fens. Invasive species can be serious threats to calcareous fens, with glossy buckthorn, narrow-leaved cattail, giant reed grass, and purple loosestrife among the potential offenders. Grazing, vehicular traffic, and overuse by hikers or other recreationists can physically damage the surface and destroy sensitive vegetation. The lack of fire in the present landscape has contributed to the encroachment of woody species on open fen habitat, with the consequent suppression or loss of some of the more light-demanding herbs.

Habitat Management Objective:

- Maintain and restore the fen community type on all sites where it occurs.

Habitat Management Prescriptions:

- Manage the surrounding lands and groundwater resources, as practicable, to preserve the fen's hydrologic function.
- Use fire management (and brushing and herbicides as needed) to control encroaching woody species and invasive species, especially reed canary grass, to protect native plant communities. Woody vegetation should be kept short in stature, scattered and toward the periphery of the fen. Prescribed burns should be used to mimic natural disturbance patterns and achieve desired compositional and structural characteristics.
- Routine management should only occur on frozen ground due to the sensitivity of fen's soils.
- Other management activities, such as ground layer augmentation, should only occur after consultation with BER staff and other science experts.
- Where possible, manage fens as an element in wetland complexes that include marsh, wet meadow, low prairie, shrub-carr, and southern tamarack swamp.

Marshes and Submergent Aquatics

Marsh and Submergent Aquatic communities are found in areas with permanent water. These communities are associated with both natural water bodies (e.g., Grassy Lake) and impoundments and ditches where water levels may be controlled by dikes, berms and water control structures (e.g., French Creek, Mud Lake and Swan Lake).

Submergent Aquatics occur in deeper water and may include coon's-tail, common bladderwort, pondweeds, water-shield, water lilies, native water-milfoil, and water-marigold. The invasive curly pondweed is an issue in some deep water marshes. Submergent aquatic communities are typically passively managed.

Marshes are typically dominated by emergent vegetation such as common bur-reed, common reed grass, bulrush, pickerel-weed, and wild rice. The invasive narrow-leaved cattail can be a management challenge in these marshes (i.e., Swan Lake). Marshes can benefit from both active and passive management. For example, periodic water level reductions provide mudflats for shorebirds and increase the amount of submergent and emergent vegetation once water levels are restored.

Marshes and Submergent Aquatics are critical habitats for wildlife species such as ducks, beaver and numerous songbirds, shorebirds and marsh birds. The habitat value of Marshes and Submergent Aquatics can be increased substantially, especially for ducks, if they adjoin uplands that provide vital permanent nesting habitat,

A 50:50 mix of open water (Submergent Aquatics) to emergent vegetation (Marsh) is a desired management objective (*US Fish and Wildlife Service, Waterfowl Management Handbook*). This mix, often called a hemi-marsh, is optimal for breeding migratory birds, including most waterfowl, black and Forster's terns, American coots, and certain blackbirds.

Cattails are prolific and can quickly dominate a hemi-marsh. Monotypic stands of cattails have reduced overall habitat value, but will still provide some benefits for wintering white-tailed deer and ring-necked pheasants and habitat for breeding marsh wrens, least bitterns, and various species of blackbirds.

Habitat Management Objective:

- Maintain the extent and protect or restore the quality and diversity of the marsh and submergent aquatic plant communities.

Habitat Management Prescriptions:

- Maintain or restore the original hydrology of the wetlands to the extent practicable.
- Manipulate water levels to improve and enhance waterfowl use, to improve shorebird habitat, to benefit native wetland floral and faunal communities, and to facilitate vegetative management practices where water control infrastructure exists. As needed, conduct periodic partial and/or complete draw downs to promote the resurgence of desirable wetland species like smartweeds, arrowheads and bidens.
- Maintain health of vegetative community through the use of prescribed fire where practicable.
- Monitor and control invasive plant and animal species that degrade native plant communities and habitat quality to the extent practicable. Species of particular concern include invasive cattails, purple loosestrife, Eurasian milfoil and pondweeds.
- Coordinate water level management with cutting, crushing, shearing and discing in late spring; prescribed fires in winter; grazing in spring; timely herbicide applications; and grading on sites dominated by monotypic stands of invasive species (e.g., cattails) where practicable and desirable,
- Plant native vegetation if the existing seed bank in the wetlands being restored does not provide the desired diversity and density of native species.
- Passively manage the native aquatic communities and allow natural processes to determine the ecological characteristics (i.e., composition and structure of the communities)
- Drawdown impoundments and flowages every five years, or as needed, to promote native plant communities as a food source for wildlife.

Shrub Wetlands (Shrub-carr)

Shrub-carr wetlands provide important wildlife habitat, especially as winter cover for ring-necked pheasants and white-tailed deer. Shrub-carr wetlands often encroach on sedge meadows and wet prairie due to a lack of fire or disturbed hydrology (e.g., lower water levels due to ditching and tiling). This habitat type requires periodic management treatments to maintain the health and vigor of the shrub community and prevent encroachment on other wetland types.

Management Objective:

- Maintain existing shrub-carr wetland in areas that do not have high potential for management as Sedge Meadow, Wet Prairie, or Wet mesic Prairie.

Management Prescription:

- Use prescribed burns, tree cutting, herbicide treatments and mowing to maintain shrub-carr habitat.

Grasslands, Prairies and Oak Savanna

Native Grasslands and Oak Openings are rare communities and native remnant Mesic Prairies are virtually non-existent on the CCPG properties. While prairie restorations provide only a portion of the biodiversity present in a native prairie, they provide important habitat for many wildlife species. Oak Openings and Oak Barrens are two of the most rare habitat types in the CCPG. Almost all of these areas will be classified in the Native Community Management category.

Surrogate Grasslands are the most common type of grassland on the CCPG properties. They are a mixture of native and introduced grasses and forbs that provide important habitat for grassland nesting waterfowl, grassland birds and pheasants.

Management Objectives:

- Maintain and restore prairies and enhance grasslands wherever practicable with an emphasis on control of invasive and woody species.
- Wherever practicable restore or enhance Oak Savanna including Oak Openings and Oak Barrens.

Management Prescriptions:

Management approaches used on individual parcels will vary based on the management potential and opportunities for the site, which in turn are derived from site-based factors such as soils, topography, hydrology, cover type, parcel size and surrounding land uses. The following management practices are to be applied on grassland, prairie restoration and oak savanna restoration sites:

- Remove hedgerows, fence lines, small conifer plantations and small low quality forest and brush patches to increase the size of grassland/prairie blocks. Remove trees in grasslands that may serve as perch trees for raptors. Retain oak when appropriate for savanna restorations and oak may be planted to increase or establish oak opening restoration sites.
- Use prescribed fire to invigorate native grasses and forbs, suppress the encroachment of woody species, control non-native invasive plants and simulate natural disturbances.
- Use grazing, cutting, mowing, brushing and herbicides (when necessary) to remove trees, shrubs and invasive species. Both commercial and non-commercial timber cutting may be used to achieve the desired structural and compositional characteristics.
- Selective biomass harvests may be used if consistent with the management objectives.

- Plant a diversity of native prairie and savanna species on grassland, prairie and savanna restoration sites from local seed sources to maintain genetic diversity, especially on state natural areas and in management units classified as Native Community Management Areas.
- Where preservation of local genetic diversity is not a management priority, a variety of cool season grasses, legumes or forbs may be planted on sites targeted as cool-season grass habitat.
- Endangered Resources staff shall be consulted during the planning phase for any habitat management activities in Native Community Management Areas.
- Follow DNR Grassland/Savanna Protocol to minimize impact on sensitive animal species.

Upland Shrub

Upland shrub communities are a minor component of the cover types found on the CCPG properties. They are typically small, linear or scattered across the properties on former pastures, old fence lines or unmanaged woodlands. Deer, pheasant and other wildlife will use Upland Shrub for cover and browse. These shrub communities may contain desirable native tree and shrub species, but they may also be heavily infested with aggressive, invasive species such as buckthorn, honeysuckle and garlic mustard. Restoring sites heavily infested sites with invasive species can be a difficult and may often not be practicable with current tools and techniques.

Management Objectives:

- Maintain native shrub communities where desired to provide a range of habitats for game species, especially game birds such as pheasants.
- Convert Upland shrub communities dominated by invasive species to grassland, savanna or forest as practicable

Management Prescriptions:

- Use prescribed burns, mowing and other approved techniques to maintain the vigor and diversity of the desirable native shrub communities. Passively manage species composition and allow natural processes to determine the ecological composition and structure of these communities.
- Convert parcels infested with invasive species to adjacent native communities using prescribed burns, cutting, herbicides or other approved technique as practicable. Actively manage species composition to develop the desired composition and structure of these communities.

Agriculture Crops, Farming Practices and Food Plots

Parcels on the wildlife and fishery areas may be temporarily, or permanently, used for agricultural practices compatible with the management purposes of the property. Approximately 350-450 acres of land is cropped every year on the CCPG properties. Most of these lands are farmed for several years and then converted to permanent cover (e.g., upland grassland cover) or used on an extended rotation as food plots for game species. Other farming practices, such as harvesting grassland for hay or using grazing to remove exotic species, may be conducted if they are consistent with the habitat objectives for the management unit.

Management Objectives:

- Provide a food source for game and non-game wildlife species, especially pheasant and doves.
- Provide brush and weed control prior to conversion to grasslands, prairies, savannas or woodlands or when compatible as an ongoing management activity.

Management Prescriptions:

- Plant food plots or leave agricultural crops (share crop acreage) standing to provide winter food for various game species.
- Annually plant 100 to 150 acres of food plots on the CCPG properties. They should be planted in five to twenty acres plots on different CCPG properties. Sunflowers or other agricultural crops can be used and the crops manipulated to attract doves (e.g., when sunflowers are mature, mow portions of the fields to disperse the seeds and create open areas where doves prefer to forage).
- Utilize sharecropping to control weeds and prepare the site for native habitat restoration.

General Forest Habitats

All forest management activities shall follow the guidelines in the DNR Silvicultural and Aesthetic Handbook (2431.5), the Public Forest Lands Handbook (2460.5), the Timber Sale Handbook (2461), and the Old Growth and Old Forest Handbook (2480.5), except for southern tamarack swamp. The prescriptions listed below are for the primary forest types found on the CCPG properties. The prescriptions include an overview of the general management methods and guidance from the Silvicultural Handbook as well as some additional considerations to be applied to this group of properties. Consult the Silvicultural Handbook for additional details and management considerations. Where management prescriptions alter or eliminate harvest rotations, the forest reconnaissance data base (WISFIRS) should be adjusted accordingly.

General Management Objectives for all Forest Types:

- Manage oaks as a large-scale mosaic of patches along a successional gradient that includes Oak Forest, Oak Woodland, Oak Opening and Oak Savannas/Barrens. Enhance and expand mature oak forest patches as an element of the oak continuum.
- Retain aspen where practicable and consistent with management objectives to benefit wildlife, especially for woodcock.
- Maintain the extent and enhance the quality of Central Hardwoods, Bottomland Hardwoods, Swamp Hardwoods, and southern tamarack swamps with an emphasis on providing wildlife habitat and protecting aesthetic values unless there is a property specific objective/prescription.
- Convert all Red and Scots pine and Norway spruce plantations to native grasslands, savannas or desired forest types to increase wildlife values and increase ecosystem diversity.
- Retain patches of white pine and jack pine to provide cover and food for wildlife and aesthetic enjoyment of users.
- Harvest timber using appropriate silvicultural systems including even aged, uneven-aged, selective harvests, shelterwood, improvement and thinning prescriptions, and salvage harvests to achieve the desired native community or species composition and structure.

General Management Prescriptions for all Forest Types:

- Use harvest and thinning prescriptions to regenerate desirable woody and herbaceous species in a manner that reduces the spread of harmful insects, diseases and invasive species.
- Where appropriate, extend the rotation age for some stands of oak and central/northern hardwoods to increase the abundance of older-age forest habitat, which is highly limited in the Central Sand Hills and Southeast Glacial Plains ecological landscapes.

- Leave long-lived reserve trees as individuals or in groups to provide wildlife (e.g., den and nesting sites and as a food source), timber and aesthetic value whenever their retention does not conflict with regeneration and other forest management objectives.
- Use intermediate forest treatments, such as release or crown thinning, as appropriate to develop young stands, improve the species composition of the forest and increase timber quality.
- Phase out conifer (e.g., red pine and Norway spruce) plantations using thinning and sanitation cuts. Convert to cover types that increase wildlife and/or native community habitat values.
- Maintain the native white and jack pine cover type with silvicultural practices that encourage regeneration and enhance wildlife mast and cover values.
- Retain snags and coarse woody habitat if it does not conflict with other management objectives.
- Trees damaged by events such as wind, ice, fire, insects, and disease may be salvaged if it meets the overall property/unit management objectives and the volume of woody debris would inhibit scheduled fire prescriptions.

Management Objectives and Prescriptions by Forest Types

Central and Northern Hardwoods

Central Hardwood tree species, such as black cherry, American elm, black walnut, bitternut hickory, and shagbark hickory tend to grow in partial shade to full sun, whereas Northern Hardwood tree species, such as sugar maple and basswood, tolerate more shady conditions. This variation in shade tolerance means that either even-aged or uneven-aged regeneration systems may be used depending upon the tree species being favored. Even-aged silvicultural methods, such as overstory removal or shelterwood, tend to keep all the trees approximately the same age by harvesting the entire stand at 80-150 year intervals. Uneven-aged methods, such as single-tree or group selection, tend to create a stand with trees of three or more distinct age classes.

Management Objective:

- Maintain the health, vigor and diversity of central and northern hardwood stands to provide wildlife habitat and aesthetic value, and secondarily for forest products.

Management Prescriptions:

- Consider the forest conditions on the surrounding landscape when planning stand level management prescriptions, as a variety of age classes and stand sizes across the landscape is beneficial for wildlife and aesthetics.
- Assess the degree of succession to central or northern hardwoods prior to prescribing regeneration system for stand.
- Natural regeneration systems of central hardwoods can utilize both even and uneven-aged methods, including overstory removal, shelterwood, group selection, single-tree selection, coppice, and clearcut. Follow the DNR Silviculture and Forest Aesthetics Handbook guidance on selecting the appropriate regeneration system based on stand composition, advanced regeneration, site, and other factors.
- Use intermediate treatments, such as release or crown thinning, to develop young stands and improve composition and timber quality.
- Artificial regeneration from seed or seedlings may be used to establish desirable trees where seed source and advanced regeneration is lacking.
- Other management techniques that may be used to help regenerate stands include soil scarification, herbicide treatments, and prescribed fire where feasible and safe.

Oak

Oak woodlands historically developed or regenerated following significant disturbance, such as a prairie or oak savanna fires that were common prior to European settlement. Oak is highly valuable for a wide variety of game and non-game wildlife species because of its mast production, cover and denning/nesting sites. Generally, site disturbance is required to regenerate or maintain oak in mixed stands. Management will typically involve even-aged harvest practices of various types and sizes occurring at intervals depending on the species present at the site. Scrub oak may need to be cut on 40-50 year cycles, northern red oak at 100-150 year cycles and white oak at cycles over 200 years.

Management Objective:

- Enhance and expand, as practicable, oak stands.

Management Prescriptions

- Maintain oak stands through management techniques appropriate for the stand and site conditions. Natural regeneration systems of oak include even-age management techniques, clearcutting, and shelterwood harvesting techniques.
- Artificial regeneration from seed or seedlings may be used to establish oak reproduction prior to or after timber harvests when natural regeneration is not adequate. Other management techniques that may be used to help regenerate oak stands include soil scarification, herbicide treatments, and prescribed fire where feasible and safe. Use intermediate treatments, such as release or crown thinning, to develop young stands and improve composition and timber quality.
- Assess the degree of succession to central hardwood species and advanced regeneration density prior to prescribing oak regeneration harvests. Natural conversion to these species may be prescribed if oak regeneration seems unlikely. If successful regeneration of an existing oak stand is questionable, retain the stand as long as possible and allow the stand to convert, as it may be more feasible to establish an oak stand on a new site through planting.
- On non-forested sites that are naturally succeeding into oak, passively manage the site (use fire where appropriate) and allow it to convert to oak woodland or oak savanna. If a more rapid conversion is desired oak may be planted. Oak acreage may also be expanded by planting suitable sites (e.g., agricultural fields) adjacent to forested uplands.
- Research prescriptions are allowed though they may vary from standard silvicultural practices.
- Manage all oak woodlands in a manner that limits the spread of oak wilt and other pests.
- Encourage regeneration of other cohort trees, such as hickory and black cherry, and other desirable woodland understory species to provide food and habitat.

Aspen

Aspen is a small forest component on these properties. Aspen provides cover for early successional wildlife species, including woodcock and ruffed grouse, which have declined in numbers as woodlands have matured. This early successional forest type requires disturbance and abundant sunlight to regenerate. It is typically managed using complete even-aged harvests at intervals of 45-60 years.

Management Objective:

- Retain aspen stands and aspen as a component of other forest habitat types where practicable, except where it negatively impacts sedge meadow, grassland, prairie and savanna habitats.

Management Prescriptions:

- Regenerate aspen primarily through coppice (i.e., root sprouts) cutting with a management emphasis on its habitat value for ruffed grouse and woodcock populations.
- Where the objective is to develop or maintain a stand of mixed tree species, retain individual longer-lived species, such as oak. These trees can improve stand structure, wildlife habitat, aesthetic beauty, and increase the diversity of the stand.
- Natural conversion to other forest types, such as central hardwoods, may be prescribed if aspen regeneration is unlikely or other hardwood goals take precedence. Harvest aspen and other short-lived species, leaving the long-lived species to develop.

Conifers

A number of coniferous species are found on the CCPG properties. White pine is native to the area, but it has been planted widely to provide wildlife food and cover and contribute to cover type diversity. Limited natural stands of white pine are found on several of the properties, most notably the Pine Island WA. It has also been planted in plantations or mixed with hardwoods at Rocky Run FA, Rowan Creek FA (Pine Island hiking trail) and Grassy Lake WA.

Jack pine may be found in isolated stands and is a very minor species on the properties.

For tamarack please refer to the following Southern Tamarack Swamp section.

Small plantations or shelter belts of red pine, Norway spruce and Scotch pine are found on a number of the properties. These are often monotypic stands with noticeable populations of invasive species in the understory. These small stands offer very little benefit to wildlife species, are a hindrance to managing larger blocks of more desirable cover types and often have insect and disease issues that limit their productivity.

Management Objective:

- Convert conifer plantations and fencerows to another forest or other suitable habitat type.
- Maintain white pine to biological maturity and retain as a component of future mixed hardwood and conifer stands.

Management Prescription:

- Use even-aged management practices (e.g., thinning and improvement cuts) to maximize the stands health, vigor and quality until the plantations are harvested.
- Fencerows should be removed during timber harvests or when doing other habitat improvements such as burning, herbicide application or other approved general techniques.
- White pine should be actively managed by thinning and improvement cuts to attain biological maturity and then harvested. White pine may be retained through natural recruitment.

Forested Wetlands - Bottomland Hardwoods and Swamp Hardwoods

The bottomland hardwood and swamp hardwood forest types are associated with wet soils in flood plains, depressions, and stream/river bottoms. The major commercial bottomland hardwood species are eastern cottonwood, green ash, river birch, swamp white oak, and silver maple. The major components of the swamp hardwood type include black ash, American elm, and red maple. Wildlife that utilizes these habitats includes common species such as raccoon, white-tail deer and turkey and SGCN such as cerulean warbler, red shouldered hawk and yellow-billed cuckoo.

Management Objective:

- Maintain the extent and quality of bottomland hardwood and swamp hardwood stands.

Management Prescription:

Bottomland hardwoods and swamp hardwoods are intricate and variable forest ecosystems due to species richness, flooding, ice movement and internal drainage patterns. The pattern of deposition and development of soils in these stands is complex. Given the variability of these site conditions, as well as the species mix and silvicultural characteristics, no single regeneration prescription will function adequately on most sites.

- Selection of the most appropriate silvicultural system for these forest stands is site-specific and focuses on the wildlife/fishery management needs. Silvicultural management requires consultation between the wildlife/fishery manager and the forester with input from the Endangered Resources biologist if needed.
- Riparian zone management will incorporate relevant BMP's and shall implement measures appropriate to protect the scenic and aesthetic qualities of woodlands bordering waterways.
- Silvicultural and other management activities must avoid as practicable the introduction and/or spread of invasives (especially reed canary grass) in the understory of these communities.

Southern Tamarack Swamp (Rich)

Tamarack is found on moist organic soils, peats and mucks of swamps and muskegs, especially at the southern limits of its range. This is a rare habit and is highly valuable for many species such as American woodcock and black billed cuckoo and provides escape cover for white-tail deer. Like the southwest Wisconsin pine relics, these are remnant northern forests from the post glacial age that have persisted in the fire-prone southern Wisconsin landscape due to the wetness of the swamps. Following the recession of the glaciers, fires transformed the boreal forests on dryer sites to prairies/savannas. It is likely that fire did occasionally reach these areas during drought years and set these generally fire intolerant plant communities back for decades, or perhaps longer. It is also likely that in such a single-species dominated stand of trees, pests or wind-throw occasionally decimated stands.

There are significant challenges to successfully managing southern tamarack swamps. This species does not reproduce under its own shade so some naturally occurring events had to set them back periodically – thus, providing an opportunity for tamarack to regenerate. Importantly, these stands are at the southern fringe of their range so they may be highly susceptible to the effects of changes in critical climate variables. Hydrologic changes can quickly convert this community to a shrub swamp. Altered hydrology caused by ditching and/or soil compaction and the deposition of sediments and nutrients from adjacent uplands can affect this community. Invasive plants also pose a serious threat to the southern tamaracks swamp communities. The diverse factors affecting the health and vigor of this community make it difficult to identify the reason(s) for the decline of a tamarack swamp.

Management Objective:

- Actively maintain the larger and more sustainable tamarack stands to the extent practicable.
- Marginal tamarack stands may be managed to allow a change to other plant communities if the stands are small, low quality and/or on marginal sites where maintaining the stand conflicts with the objectives of a larger, associated wetland community.

Management Prescriptions:

- Where feasible, manage this forest type in conjunction with other complementary forest and wetlands communities. Isolated sites should be buffered from land uses that degrade them.
- Assess the status of the stand to determine its condition and management issues. The assessment should include evaluation of the hydrology of the area (including the impact of ditches, dikes, and runoff from adjacent uplands), impacts from activities on adjacent uplands, invasive species encroachment, development/high capacity wells, and agricultural activities. Develop and implement management recommendations based on this assessment.
- Use management actions such as ditch filling or dike removal as appropriate.
- Use management practices that limit soil damage, erosion, sedimentation, and hydrologic changes on these sites and adjacent lands. Convert adjacent upland crop land to grassland cover whenever possible.
- Management activities following a catastrophic natural event or significant insect/disease infestation shall be determined after consultation between the staff of the Wildlife, Forestry and Endangered Resources programs.
- Use prescribed burning for regeneration purposes, if deemed appropriate by the Wildlife, Forestry and Endangered Resources staff.
- Periodically monitor for and eradicate/control invasive species using mowing, brushing, hand cutting, or herbicides. Exotic species of known concern include glossy buckthorn, purple loosestrife narrow-leaved cattail, giant reed-grass, and reed-canary grass. Red maple, a native species, is a potential concern and has been reported to invade tamarack swamps substantially reducing regeneration potential.
- Bio-control methods may be used for purple loosestrife, or other species as deemed appropriate, safe, and effective.

Additional information about these cover types can be found at the DNR web site and use the following key words – forestry handbooks, forest habitat type classification system, endangered resources, ecological landscapes, natural communities.

General Recreation Management and Use

Introduction

The CCPG properties are popular destinations for deer, turkey, waterfowl and pheasant hunting, trout and warm water sport fishing, and trapping. Several sites also have qualities that make them especially attractive to non-hunting recreational users such as bird watching at the Pine Island WA and hiking the Pine Island trail at the Rowan Creek FA. The CCPG properties, like wildlife, fishery and natural areas statewide, are approved for a wide range of outdoor recreational uses as noted below.

The recreational management objective for these properties is to provide ready access to a variety of high quality recreational experiences in a rustic setting. Recreational facilities are simple, dispersed and provide a modest level of user conveniences while meeting environmental protection needs.

These properties have some (or a number of) limitations that constrain efforts to provide high quality recreational experiences for a broader range of activities. Wetlands and open water are the most common cover types (about 56% of the total) in the CCPG. These wet areas are generally surrounded by small, non-contiguous uplands. This limits the acreage available for upland deer and turkey hunting as well as other recreational pursuits (e.g., hiking). In addition, some of the upland areas are land locked or have limited access. Importantly, the popularity of these properties can result in overcrowding, especially on opening day of the various hunting seasons. This presents both a management challenge as well as detracting from user enjoyment.

Active and passive recreation management activities will occur on these properties. **Active management** includes installing and maintaining buildings, parking lots, boat launches and other infrastructure needed to pursue a recreational activity. **Passive management** indicates an activity can be pursued on the property, but no specific infrastructure or maintenance will be pursued to promote the activity. For example, users may hike, berry pick and bird watch, but designated trails, berry patches and bird watching blinds will not be developed or maintained.

Public Use and Recreation Management

All CCPG properties are open to a wide variety of traditional outdoor recreational uses as required by the state and federal funding sources (e.g., ORAP, LAWCON, Stewardship. etc.) used to purchase and maintain these lands. With a few exceptions (e.g., a waterfowl refuge) the properties are open to hunting, fishing and trapping. Properties closed to the public or closed to specific use are posted. Certain types of hunting opportunities (e.g., dove and pheasant habitat management and hunting) may occur on all properties, but habitat management to increase hunting opportunities may be focused on selected properties as described in the individual property section of this chapter.

Other activities allowed on these lands include wildlife viewing, hiking, cross country skiing, snowshoeing, nature study and canoeing. Edible fruits and nuts, wild mushrooms, wild asparagus, and watercress may be removed by hand without a permit for the purpose of personal consumption by the collector (Note: collection of seeds, roots, or other plant parts is prohibited). These activities are allowed, but except as

noted in the specific property descriptions, no designated infrastructure will be established nor are these activities considered recreational management priorities.

The majority of state natural areas are open to the public though access may vary due to use restrictions for public safety, protection of endangered or threatened species, or unique natural features. Lands may be temporarily closed when specific management activities (e.g., controlled burns) are occurring.

Foot travel is allowed on all service roads, dikes and berms unless restricted during habitat management activities (e.g., temporary closure during a prescribed burn) or safety concerns (e.g., flood periods).

Motorized vehicle access is restricted on all CCPG properties to the designated public access roads and parking lots. Motorized recreational craft (i.e., boats) may be used on flowages and impoundments unless posted, and snowmobiles are allowed on designated snowmobile trails.

Dog trial events at the Pine Island WA are regulated under the Pine Island Field Trial Agreement (*PIFTA, 2010*). It may allow limited use of ATVs and horses for scheduled dog trial events.

There are some allowances for motorized use of the CCPG properties by individuals with mobility impairments under the Power Driven Mobility Device regulations under the American Disability Act. Please refer to the specific language under “Disabled Accessibility” in the General Property Administration, Management Policy and Provisions section.

Prohibited activities include:

- Horseback riding
- Rock climbing
- Mountain biking, ATVs, aircraft and model aircraft and rocketry.
- Snowmobiles except on trails and roadways designated for their use. Snowmobile trails may be allowed at the discretion of the property manager if part of a regional trail system. Snowmobile trails are not allowed on SNA lands with the possible exception of those that are in place at the time of acquisition.
- Collection of animals, fungi, rocks, minerals, fossils, archaeological artifacts, soil, downed wood or any other natural material, alive or dead. Collecting for scientific research requires a permit issued by the DNR.
- Collection of plants including seeds, roots or other parts of herbaceous plants such as wildflowers or grasses.
- Camping and campfires.

Information on rules governing public use of DNR-owned lands is found in Wis. Administrative Code Chapter NR 45.

Recreation Trends

Three important trends will affect future usage, recreational pursuits and infrastructure needs on these properties. These trends include:

1. Aging of the general population. The quality and character of access to our sites will change as our user base changes. For example, there will be an increased need to provide some accommodation to individuals with mobility impairments.

2. There has been a slow decline in the number of hunters, anglers and trappers that could negatively impact program revenues. However, there has been a new cohort of non-traditional, non-revenue generating recreational activities (e.g., walking, pet walking and geocaching). Many of these new uses will probably be compatible with the primary purposes of these properties, but may cause crowding or conflicts during peak use periods.
3. The growth and diversity of outdoor activities will probably result in increasing year round usage of the properties and present additional management opportunities and maintenance challenges.

In addition, ongoing population growth and the non-compatible land uses immediately adjacent to the wildlife/fishing areas (e.g., the addition of housing on the boundaries of state properties) can adversely affect the management, use and enjoyment of these public lands. For example, gun hunting is not allowed within 100 yards of a home unless the resident agrees.

General Recreation and Public Use Objectives:

- Provide high quality hunting, fishing and trapping opportunities consistent with the capacity and character of the natural resources at the respective properties.
- Provide passive management opportunities for wildlife observation, hiking, non-groomed cross country skiing, snow shoeing, nature study, berry picking, canoeing, nature education and other outdoor activities as practicable given the physical characteristics and primary management objectives.
- Promote safe and enjoyable compatible recreational opportunities with an emphasis on off trail, non-motorized activities in a non-congested and rustic setting.
- Improve accessibility and recreational opportunities for mobility impaired individuals.
- Provide opportunities for research and educational activities consistent with the primary management purposes and user safety.

General Recreation and Public Use Management Prescriptions:

- Install, maintain and monitor parking lots, access roads, boat launches and signage consistent with Department policies and rules.
- Access shall be provided appropriate to the management objectives of the property with a focus on providing dispersed access to lower congestion and enhance the experience of users.
- Stock pheasants immediately prior to and during the pheasant hunting season on sites with suitable cover to supplement natural pheasant production and provide improved opportunities for hunting success. Maintain a network of mowed stocking lanes as a means to provide department vehicular access for pheasant stocking and hunter foot access.
- Survey the need for, and construct infrastructure as determined practicable, to provide mobility impaired individuals with access to trout fishing, boating access and wildlife observation opportunities.
- Manage the riparian vegetation along classified trout streams to protect in-stream habitat while also providing improved fishing opportunities for anglers.
- Service roads, non-designated trails and dikes may be walked by hunters, anglers and hikers to access the property unless closed for maintenance or other habitat management activities.
- Stock trout in suitable streams according to Fisheries Management guidelines and criteria.

Shooting Ranges

There is significant demand for a public shooting range in Columbia County. Several parking lots at Swan Lake and French Creek WA's are very heavily used for recreational shooting and target practice by locals and out of county individuals. These activities have generated concerns about public safety, quality of life (e.g., noise and litter) and inquiries by the county sheriff.

The Department recognizes the need for a designated and managed shooting facility. DNR staff will collaborate with the appropriate county and town officials and interested sporting groups to establish a public shooting range that best meets the siting criteria. Several of the CCPG properties have been considered in these siting deliberations. Establishing a shooting range on a CCPG property will require an amendment to this master plan.

If a public shooting range is established, target and recreational shooting in the parking lots of the CCPG properties will be evaluated, and perhaps discontinued to address the safety, litter and noise complaints.

Ice Age Trail Routes

The Ice Age Trail is a Wisconsin State Trail and one of eleven National Scenic Trails in the U.S. It is a long-distance hiking and backpacking trail. A 2.5 mile segment of the Ice Age Trail (IAT) is located at the Lodi Marsh WA and an extension of this popular trail is anticipated in the near future. In addition, the National Park Service will be leading a planning effort in collaboration with DNR Parks and Recreation to consider trail expansion within a multi-county area, including Columbia, Sauk and Marquette Counties. Portions of these trail alignments may pass through the Pine Island WA and the French Creek WA. Relevant DNR programs (e.g., Wildlife Management and Endangered Resources) will be involved with the planning and decision making for the wildlife areas and the associated natural areas and native community management units.

The following criteria will be used to assess the suitability of a CCPG property to host an IAT segment:

- soil suitability
- habitat management priorities
- natural heritage inventory information
- compatibility with other recreational uses
- development and maintenance considerations

Additional routing criteria may be applied during the IAT planning process.

A route through the Pine Island WA will need to consider the following issues:

- 1.) Extensive wetlands and wet soils,
- 2.) Dog training and trial areas are inappropriate as designated trail routes, and
- 3.) The Caledonia Levee within the Pine Island WA is a separate management unit that is the responsibility of the Facilities and Lands program. The levee segments are designated flood control structures with unique safety, maintenance and long-term management considerations that make them unsuitable as a designated IAT route. If the flood control designation is removed or the management responsibility is shifted to a different program this trail routing option may be revisited.

General Property Administration, Management

Policies And Provisions

The following section describes general policies and provisions that apply to all state managed lands, including the CCPG properties.

Funding Constraints

Implementation of the full range of master plan recommendations is dependent upon staffing and funding allocations that are set by processes outside of the master plan. Capitol and operational funding for Department programs are established biannually by the state legislature. Funds are also provided by federal programs and occasionally from private sources. Therefore, a number of legislative and administrative processes outside of the master plan will determine how and when the recommendations in this master plan are implemented.

Facility Management

All infrastructure used for habitat management and public access shall be inspected and maintained as required in program guidance and manual codes. This infrastructure includes, but is not limited to, dikes, spillways, water control devices, roads, gates, parking lots, boat launches and buildings.

The property manager may relocate or temporarily close road and trail segments or other public use facilities as deemed necessary after appropriate authorization by normal Department approval processes. The location and design of new roads or trails must be consistent with the land classification requirements (NR 44) and the management objectives for the area in which they are to be located.

Dikes and water control structures are essential for controlling water levels in flowages and enhancing emergent marsh habitats. The following routine activities will be used to maintain dike and water control structures:

- Conduct dike maintenance and water manipulation activities,
- Maintain dikes to secondarily provide pedestrian access for hunters and trappers,
- Control beaver and muskrat populations to mitigate burrowing and damming,, and
- Plan and implement major maintenance of dikes on approximately 20-year rotations.

Water control structures at dikes or impoundments that cannot provide the range of water fluctuations needed to optimize habitat for wildlife and enhance the native wetland plant communities should be replaced or improved.

NR 17.10(1) authorizes the designation of Department lands for field trials, year-round, except hunting shall have priority.

Public Health and Safety and Emergency Action Plan

All facilities will comply with federal, state, and local health and sanitation codes. The property manager has the authority to close trails and other facilities on the wildlife areas and state natural area when necessary due to health, safety, or environmental damage concerns. Trees and other natural elements deemed public hazards will be removed within designated public use areas (e.g., parking lots and designated trails). Safety inspections of designated public use areas are done at least twice per year.

Refuse Management

Visitors are required to carry out any refuse they produce. Refuse and recycling receptacles are not provided. Burying of refuse is not allowed on the properties.

Road Management Plan and Public Vehicle Access Policy

The wildlife areas have a network of primitive, lightly and moderately developed, roads that are used for management purposes and public walking access. All roads are closed to public vehicle access, except for those that lead to public parking lots or boat access sites. Closed roads are gated or signed.

All Department maintained service roads not open to public vehicles will be maintained as primitive or lightly developed roads (NR 44.07(3)). Primitive roads, such as old farm roads used for management purposes, may not be routinely maintained. Public access roads managed by the Department shall be constructed and maintained as either lightly developed or moderately developed roads. The property manager may determine which of these road standards to apply on a case by case basis.

The following management prescriptions apply to Department managed roads:

- Maintain permanent service roads and public access roads within the wildlife areas in a sustainable condition according to the Wisconsin's Forestry Best Management Practices for Water Quality.
- Regularly inspect active roads (especially after heavy storm events). Clear debris as needed from the road surfaces, culverts and ditches to decrease unsafe conditions and prevent damage.
- Maintain stable road surfaces to facilitate proper drainage and reduce degradation from traffic during wet or soft conditions.
- Minimize the manipulation/removal of vegetation and soil disturbance to the extent practicable to prevent excessive damage
- Design, route and construct roads to minimize habitat fragmentation and impacts to endangered, threatened and species of special concern.
- Restore roads used in timber harvests to non-erosive conditions, in accordance with Wisconsin's Forestry Best Management Practices for Water Quality.
- Roadsides of county and town roads will be managed by county and township staff on their maintenance schedules.

The Department will collaborate with municipal, town and county roadside maintenance crews to protect and enhance the quality of roadside easement areas, especially to control the spread of invasive species.

Public Access on Service Roads, Fire Breaks, Dikes and Paths

The public may hike on service roads, game stocking lanes, fire breaks and dikes to gain access for all of the approved recreational activities. These service routes are not designed, designated or maintained as designated hiking trails, but users are free to hike anywhere unless posted closed to the public. Non-designated primitive paths formed by years of use by hunters or anglers are found on all the properties. Non-hunters are welcome to use these paths as well. Designated hiking trails, such as the Ice Age Trail, may be used by hunters and trappers to gain access to those properties open to hunting.

Snowmobile Trails

A snowmobile trail is allowed to cross wildlife/fishery areas if it provides the most feasible route to maintain a regional snowmobile trail system, does not degrade habitat, is not routed through important winter habitat areas, and is signed and maintained according to applicable state statutes and administrative codes.

Disabled Accessibility

The Department is committed to providing high quality outdoor recreation opportunities for people with mobility impairment. All new construction and renovation of infrastructure will follow guidelines set forth within the Americans with Disabilities Act and be done in a manner consistent with the NR 44 land use classification for the development site.

The property manager has the authority to provide access accommodations for people with disabilities. Users with mobility impairment may be allowed to use power-driven mobility devices (PDMD) with a permit issued by the Department. Approval will depend on factors including (i) the physical characteristics of the device, (ii) the volume of pedestrian traffic at the proposed use location, (iii) the design and operational characteristics of the proposed use site, (iv) safety requirements, and (v) whether the proposed use creates substantial risk of serious harm to environmental, natural or cultural resources.

Endangered, Threatened and Species of Special Concern Protection

Implementation of all management prescriptions in the master plan will be carried out with consideration of the needs of endangered, threatened, and species of special concern and the potential impacts to the species and their habitat. Management actions will be checked against a database of known occurrences of listed species to assure that no department actions results in the direct taking of any known endangered or threatened resource during the plan implementation phase.

Protection of Archaeological Features

Property managers will prevent physical disturbance of the archeological features (e.g., mounds) on properties. This includes controlling woody species invading the mound. Managers will follow DNR guidelines outlined in "Burials, Earthworks and Mounds Preservation Policy and Plan".

Best Management Practices for Water Quality

All forest management and construction activities shall comply with the most recent guidelines for Best Management Practices for Water Quality (BMPs). Natural shorelines will be maintained in vegetative cover to hold the soil from erosive forces. On banks more difficult to vegetate, other forms of protection should be used ranging from bioengineered banks to hard armoring (e.g., riprap)

Forest Certification

In 2004, Wisconsin State Forests gained dual Forest Certification from the Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI). In 2009, State Forests were re-certified under FSC and SFI and the balance of DNR-owned land was added to the certification. Independent, third-party certification means that management of Wisconsin's DNR-owned land meets strict standards for ecological, social, and economic sustainability. Forest certification helps Wisconsin remain competitive in global markets that increasingly demand certified raw materials. Management of multi-use lands involves balancing the goals of conserving forestland, supporting economic activities, protecting wildlife habitat, and providing recreational opportunities. Forests on fish and wildlife properties are managed to meet the Forest certification principles.

Fire Suppression

As stated in Wisconsin Statutes 26.11, "The Department is vested with power, authority and jurisdiction in all matters relating to the prevention, detection and suppression of forest fires outside the limits of incorporated villages and cities in the state except as provided in sub (2), and to do all things necessary in the exercise of such power, authority and jurisdiction." Wildland fire suppression actions will consider the property management goals and the threats of the fire to life and property. Appropriate techniques will be used in each event to provide effective fire suppression while minimizing resource damage.

Forest Pest Control

As stated in Wisconsin Statute 26.30, "It is the public policy of the state to control forest pests on or threatening forests of the state..." Any significant forest pest events will be evaluated with consideration given to the property management goals and the potential threat of the pest to other landowners. Infestations will be managed according to the respective management plan, if they exist. Responses to significant infestations from other pests, including but not limited to the emerald ash borer, may include timber salvage or pesticide treatments. Any response to a significant pest outbreak or threat of a significant pest outbreak will be evaluated by an interdisciplinary team of scientists and communicated through press releases and notices to interested parties. If necessary, an immediate emergency response to prevent a major outbreak may be authorized by the State Forester.

Authorized Response to Catastrophic Events

Catastrophic events are rare, but allowances must be made to provide management flexibility when such events occur. These events may include severe flooding, ice and wind storms, insect and disease infestations, wildfires or other catastrophic occurrences. The immediate management responses to these events will follow existing Department protocols. If the management objectives and prescriptions need to be revised a variance to the master plan must be approved by the Natural Resources Board.

Wildfires, tree diseases and insect infestations shall be controlled to the degree appropriate to protect the values of each management area. However, emergency actions may be taken to protect public health and safety, or as directed by the State Forester to prevent a catastrophic incident from spreading to adjacent forest lands.

Management responses to catastrophic events are determined on a case-by-case basis. Salvage of trees damaged by wind, fire, ice, disease, or insects may occur if consistent with the objectives and prescriptions for the management area. Salvage may also occur as part of an emergency response plan authorized by the State Forester.

Control of Invasive Species

Invasive species have the potential to significantly harm the habitat value and recreational potential of the CCPG habitats so property managers should follow the guidance regarding control of invasive species in the Department's *Property Managers Handbook*. Proper management will require the inventory, control and monitoring of invasive species on the properties. If detected, invasive species may be controlled using any or all of the following methods, including but not limited to bio-control, herbicides, grazing, cutting, smothering, hand removal or fire, unless restricted to protect sensitive resources. Best Management Practices (BMPs) for Invasive Species and the guidance in the Property Managers Handbook shall be used to direct management practices on these properties.

Administrative rules and voluntary actions taken by informed users will help slow the spread of aquatic and terrestrial invasive species. Examples include cleaning and disinfecting boats and equipment; not transporting live fish or spawn away from their indigenous waters; not transporting bait species between waterbodies, and hunters/hikers cleaning boots and clothing to reduce the spread of seed.

Chemical Use

Herbicides and pesticides may be used on these properties, such as controlling invasive plants, limiting plant competition in restoration areas, and controlling insects, except as restricted in the property specific management prescriptions in this master plan. All chemical applications shall follow applicable department procedures and herbicide and pesticides label requirements.

Non-Metallic Mining Policy

The Department may use gravel, sand, fill dirt, or other fill material from department-owned lands for Department use. Under certain circumstances other government bodies or agencies may also have access to these materials. Section 23.20 of the Wisconsin Statutes states, “the department may permit any town, county, or state agency to obtain gravel, sand, fill dirt or other fill material needed for road purposes from any department-owned gravel pit or similar facility if this material is unavailable from private vendors within a reasonable distance of the worksite. The department shall charge a fee for this material commensurate with the fee charged by private vendors.”

Any nonmetallic mining is regulated under the requirements of NR 135 Nonmetallic Mining Reclamation, Wis. Adm. Code, except for sites that do not exceed one acre in total for the life of the mining operation. Site reclamation under NR 135 is administered by the county. NR 135 requires mining sites to be located appropriately, operated in a sound environmental manner, and that all disturbed areas be reclaimed according to a reclamation plan. New sites will not be considered if they will impact significant geological or ecological feature or sites within any designated State Natural Area.

Department of Transportation (DOT) projects are exempt because DOT projects have their own reclamation requirements.

Real Estate Management

Acquisition Policies

It is the policy of the Natural Resources Board and the DNR to acquire lands from willing sellers only. As required by state and federal laws, the Department pays just compensation for property, which is the estimated market value based on an appraisal. Staff may periodically contact landowners within the property boundary to explain the Department’s land acquisition program and determine if they have an interest in selling their property. Acquisition priorities for the properties vary from year to year and are based on a number of factors, such as resource management or recreation needs and the availability of funds from a various government, non-profit and private sources.

It may be in the interest of the landowner and the Department to acquire only part of the rights to a property, or an easement. The Department has a number of easement options available to address these situations. Fisheries easements provide access for anglers, protection of riparian habitat and control of land to conduct habitat development or management projects. This option should be pursued on streams and rivers to protect critical or unique habitat when fee acquisition is not feasible due to costs, local concerns, or an owner’s desire to retain fee title to the land.

Aides in Lieu of Taxes

State law requires the Department of Natural Resources to make payments in lieu of property taxes (PILT). The Department uses an automated process for collecting information and calculating PILT payments. The process is determined by statute with little room for interpretation or calculation by the Department. There are two separate statutes and several formulas under each statute the dictate the amount of each individual payment.

Wisconsin statute s. 70.113 Stats. applies to land acquired by the Department prior to January 1, 1992. Payments under this statute are made directly to the taxation district in which the land is located. Schools, VTAE and counties do not receive any payment under this law.

Wisconsin statute s. 70.114 Stats. governs payments in lieu of property taxes for all lands purchased by the Department after January 1st, 1992. This law has been amended several times so the specific formula used by the Department to determine each specific payment varies depending on when the property was acquired and how. Payments are made to each taxing district in January, similar to the way a private citizen would pay their property taxes and each taxing district then makes payments to all taxing jurisdictions in the taxing district.

For detailed information on how the Department pays property taxes, visit dnr.wi.gov and search "PILT".

Future Boundary Adjustment Process

From time to time adjustments in property boundaries are needed. In some cases parcels of land are removed from the boundary to allow alternative uses with public benefits. In other cases it may be desirable to add small parcels adjacent to the property so they can be purchased for resource protection or to meet expanding recreational needs. Property boundary changes of 40 acres or more require approval by the Natural Resources Board. Wisconsin Administrative Code Ch. NR 44 provides a plan amendment process that may be used to make adjustments in the property boundary after the master plan is approved.

Where land purchase or easements are being considered the Department can acquire land under the various authorities in State Statute 23.09.

Conveyed Easements and Other Land Use Agreements

There are about 535 acres of conveyed easements on the CCPG properties as of April 2012. Conveyed easements provide access across state property for utilities, roads and other infrastructure. A landholder surrounded by state property may have an Access Permit providing access to their property.

Easements, access permits, land use agreements and leases across Department land require consultation and joint action by the affected program and the Bureau of Facilities and Lands Real Estate staff. While these agreements/easement may serve a broader public purpose (e.g., a utility corridor or a road) they can adversely affect a management unit by:

- restricting the Department's future management options,
- limiting the public's full use and enjoyment of a property,
- preventing natural succession of cover types,
- introducing exotic and invasive species to the property,
- introducing additional herbicides and other contaminants to the property, and
- presenting liability concerns.

The conveyance of easements and other agreements is subject to sections NR 1.48 and NR 1.485, Wis. Adm. Code. Before any rights are conveyed, the Bureau of Facilities and Lands Real Estate staff must determine if federal funds were used to acquire the land and, if so, obtain the appropriate approvals.

Plan Monitoring and Public Communications

Progress on implementing the habitat and recreation management objectives will be reported annually. These annual report will be available to the public on the WDNR Internet Web site and linked to the respective property descriptions. The report will provide information on how the public can become involved in master plan implementation and when significant, new property management issues arise.

The annual report will summarize the following:

- Management and development activities completed,
- Significant issues addressed,
- Planned management and development activities for the upcoming year, and
- Potential changes to management actions or approaches.

The annual report may also include information on topics related to property management and uses. Examples include: the status of forest insect or disease problems, storm damage, updates on endangered or threatened species, recreation management issues, and recreational use trends.

In the event the Department considers a substantive change to the master plan (i.e., a plan variance or amendment) the public will be informed of the proposal and the review and comment process. As appropriate, news releases will be used to announce master plan amendment/variance proposals and review procedures. The Department will also maintain a contact list of persons, groups, and governments who have requested to be notified of potential plan changes.

The following Department staff may be contacted regarding questions about the Columbia County Planning Group fish and wildlife properties. At the time of this publication, the contact information is:

Sara Kehrli	608-635-8123	saras.kehrli@wisconsin.gov	Columbia County wildlife areas
Nancy Frost	608-275-3250	nancy.frost@wisconsin.gov	Lodi Marsh Wildlife Area
Nate Nye	608-635-8122	nathan.nye@wisconsin.gov	Columbia County fishery areas

CHAPTER TWO - SECTION TWO:

INDIVIDUAL PROPERTY PLANS

Project Boundary Adjustments

The Department currently owns 24,107 acres at nineteen CCPG properties. The proposed adjustments include 1,131 acres of project boundary contractions and 5,086 acres of project boundary expansions yielding a net expansion of 3,955 acres. In addition, the plan recommends the 576 acres of Department owned land that lies outside of the current project boundaries be included within the new boundaries. The acreage adjustments for specific wildlife, fishery and natural area properties are described in the following section.

Over the last two decades, the department has acquired approximately 150 acres/year in Columbia County from willing sellers at fair market value. These expansions have allowed the Department to protect critical habitat and provide high quality recreational experiences to the growing populations in Columbia County and the south central Wisconsin.

The principal reasons for adjusting the project boundaries and acreage goals include:

1. Improve access and recreational opportunities at our wildlife, fishery and state natural areas. Several adjustments are intended to reduce user confusion about property lines and minimize trespass issues. Others are intended to link non-contiguous uplands to improve upland access and recreational opportunities around the water bodies and wetlands. Importantly, the adjustments seek to maintain or improve the quality of the users experience by reducing crowding and improving the aesthetic value of the properties. For example, the proposed fishery purchases and easements would provide nearly 14,000 feet of additional stream frontage for trout fishing.
2. Provide larger contiguous blocks of ownership to improve the efficiency of our habitat management activities, especially for prescribed burn management.
3. Increase upland grassland habitat acreage for grassland nesting waterfowl, pheasants and grassland birds. The desired grassland to wetland ratio for grassland nesting waterfowl ranges between 1:1 and 3:1. The current grassland to wetland ratio is 0.4:1 indicating a significant deficiency in grasslands on the larger wildlife properties. The proposed project boundary adjustments could potentially improve this ratio to 0.7:1.
4. Protect high quality remnant native plant communities and improve the monitoring and control of invasive species by moving project boundaries out to the roads.
5. Protect current properties and uses from encroachment by non-compatible land uses. Hunting regulations state that gun hunting is not allowed within a 100 yard radius of homes unless the resident provides permission. Expanding boundaries as proposed provides greater certainty that Department lands can be fully used for all of the intended purposes.

6. Protect our existing investment in wildlife and fishery lands by sustaining essential inputs, such as surface and groundwater, and reducing the risk of habitat degradation related to erosion, sedimentation and nutrient enrichment.
7. Coordinate boundary and property management activities with the US Fish and Wildlife Service and other partners to maximize habitat and recreation benefits, and optimize the use of limited management and acquisition funds. For example, the DNR-US FWS property groupings include the Pine Island WA and Baraboo River/Fairfield Marsh WPAs; the Mud Lake WA and Rowe WPA; the Grassy Lake WA and Manthey/Doylestown WPAs; and the Hinkson Creek FA and Hinkson Creek WPA respectively.

Land Acquisition Guidelines

Criteria, such as the following, have been used to assess the conservation and recreation merits of property being offered by willing sellers.

1. Lands greater than 40 acres with no or low-value improvements.
2. Lands that could provide high quality wildlife habitats or contain critical habitat for Species of Greatest Conservation Need and/or contain Natural Communities identified as rare within the Central Sand Hills and Southeast Glacial Plains Ecological Landscapes.
3. Lands that can provide high-quality hunting, trapping, and fishing experiences as well as opportunities for other compatible nature-based outdoor activities.
4. Lands adjacent to current state lands or other protected lands, particularly if they can provide a buffer from existing or future incompatible land uses.
5. Lands that currently affect the hydrology of important conservation lands.
6. Lands affected by the restoration of wetlands (e.g., restoration efforts are constrained by flooding impacts on surrounding private lands).

Portions of properties not needed for conservation purposes may be sold/leased back for agricultural or other compatible uses though the state may retain development and public access rights.

The adjusted project boundaries often follow roads or natural features (e.g., streams or rivers). This approach ensures adequate access is available for lands that may be acquired in the future and it is easier to portray where the boundaries are located. Nearly all of the project boundaries encompass more land than their respective acreage goals. This provides the Department and partners with flexibility when negotiating the purchase, sale or trade of land for recreation and conservation purposes.

Using roads as boundaries will bring developed parcels (e.g., homes, farmsteads and other improvements) into the project boundary. The Department does not seek to acquire parcels with improvements. Acquisition criteria reduce the scores of parcels with substantial improvements. When buildings are purchased as part of a larger land holding, the buildings are typically split from the larger parcel and sold according to and consistent with local ordinances. An occasional purchase/easement may be needed for public access (e.g., upland parking area on a wetland dominated property).

Project boundary changes of 40 acres or more require approval by the Natural Resources Board. Wisconsin Administrative Code NR 44 provides a plan amendment process that may be used to make adjustments in the project boundary after the master plan is approved. Where land purchase or easements are being considered the Department can acquire land under the various authorities in State Statute 23.09.

Funding for land acquisition can come from a variety of federal (e.g., Pittman-Robertson and others), state (e.g., Stewardship), local and private (e.g., land trusts) sources as well as land donations.

Acreage Goal Adjustments

Wildlife - This master planning process has identified hunting, fishing and other traditional outdoor recreational and habitat needs for Columbia County from both a county and regional perspective. The plan recommends an increase in the acreage goal for the wildlife properties of 2,910 acres. The plan further recommends the acreage goal for the wildlife properties be considered on a collective basis so those parcels with the greatest public benefit for recreation and conservation uses may be purchased. This approach is consistent with the approach used in other DNR county and regional master plans (e.g., Glacial Heritage Area, 2010).

Fishery – The plan recommends the acreage goal be increased by 424 acres to improve public access and increase stream and riparian zone habitat available for trout management. About 20 acres of this goal is access easement rather than fee title purchase for portions of Hinkson and Lodi Spring Creeks.

Natural Areas – The plan recommends the project boundary and the acreage goal be increased by 35 acres to improve access and protect wetlands at the Rocky Run Oak Savanna Natural Area (MAP M-6).

Project Boundary Adjustments by Program

Wildlife Areas

The plan recommends a net expansion of wildlife boundaries of 3,520 acres. Table 2-2 and see map series MAP C-6 through K-6.

Wildlife Areas	Proposed Expansions	Proposed Contractions
French Creek	987	0
Lodi Marsh	719	0
Mud Lake	918	2
Paradise Marsh	429	0
Peter Helland	782	0
Pine Island	231	655*
Swan Lake	119	450
Grassy Lake	204	0
Jennings Creek	238	0
Columbus PHG**	0	0
Dekorra PHG**	0	0
Duck Creek PHG**	0	0
Hampden PHG**	0	0
Totals	4,627	1,107

¹ This table does not include land currently owned by the Department, but outside of the current project boundaries.

* The Lewiston Marsh PHG is created from the Pine Island WA contraction (i.e., 808 acres - 153 acres = 655 acres)

** Public Hunting Grounds (PHG) do not have individual project boundaries and acreage goals.

Fishery Areas

This master plan recommends adjusting the project boundaries with a net expansion of 400 acres (i.e., 424 acres of expansion – 24 acres of contraction). Table 2-3 contains the proposed project boundaries (also see maps M-6, N-6 and O-6).

Fishery Areas	Proposed Expansions	Proposed Contractions
Rowan Creek	0	0
Rocky Run Creek	94	0
Hinkson Creek	227²	0
Lodi Spring Creek	103²	24
Roelke Creek*	0	0
Totals	424	24

¹ Acreage does not include land currently owned by the Department but outside of the project boundaries

² 10 acres of easements is included in this adjustment (proposed public and management access).

*Remnant Fishery Areas do not have project boundaries and acreage goals.

Natural Areas

The plan recommends 2,724 acres of existing state owned wildlife and fishery lands be included in new or expanded state natural areas to protect rare or imperiled ecosystems and species. All of these expansions will be overlays within existing properties. This recommendation will bring added resources for the management of native plant and animal communities and will improve habitat quality. This change would have no to minimal impact on the recreational activities on these properties.

An additional 35 acre expansion at Rocky Run Oak Savanna is recommended to provide improved access to the state natural area, protect wetlands and enhance habitat management efforts.

The *Rapid Ecological Assessment (June 2010b)* identified 16 Primary Sites with high conservation value on the CCPG properties. This plan recommends five of the Primary Sites be designated as state natural areas and two be added to existing state natural areas at French Creek and Lodi Marsh. The project boundary of the existing Grassy Lake state natural area should be expanded to include the lake portion of the Briggs conservation easement.

Individual Wildlife Property Plans

A variety of DNR, federal and county sources were used to estimate the cover types and land uses on or adjacent to the CCPG properties. They include existing DNR Wildlife, Fisheries, and Facilities and Lands records, Forestry WISFIRS data base, Water Division Wetland acreages and WISCLAND cover types. These data sources use different criteria for assessing habitat types and land uses so different estimates may be developed depending on the source(s) used. Also small inclusions of different cover types may be embedded within a more dominant cover type in the following acreage descriptions and related maps.

Pine Island Wildlife Area

Pine Island, at 5,499 acres, is the largest of the CCPG properties. It straddles both Columbia and Sauk Counties and lies in the floodplains of the Wisconsin River and the Baraboo River. This wildlife area stretches for nearly seven miles along the Wisconsin River and contains many natural sloughs, seasonal ponds and several large islands. All of the Pine Island maps can be found in Map Series C-1 through C-6.

Pine Island also offers significant opportunities to maintain and restore oak savannas and floodplain forests. It contains the largest tract (about 1,000 acres) of contiguous public grassland in the county.

This property is very popular property for hunting, dog trialing and other recreational activities, especially bird watching. Public hunting is the most significant type of recreation and Pine Island is the most heavily used CCPG property for deer, pheasant and dove hunting. This property is also used for waterfowl, turkey and small game hunting.

Pine Island hosts a Class 1 dog training ground and a Class I dog trial ground (one of five state training /trial grounds) (**Map C-2**). The trial/training grounds are open year round, but are most heavily used from March through September. Dog trialing activities are regulated by the *Pine Island Wildlife Area Class I Field Trial Grounds & Dog Training Grounds Management Plan*. This plan permits the use of horses and ATVs during approved dog trial events and overnight camping in self-contained units by participants

Pine Island is part of the Leopold-Pine Island Important Bird Area that covers over 11,000 acres of marsh, grassland, savannas and forest straddling the Wisconsin River in Sauk and Columbia counties west of Portage. Bird watching is an increasingly popular activity on this property. It is also used seasonally for mushroom hunting, berry picking, hiking, cross country skiing and snowshoeing. Fishing and nature enjoyment by power boats and/or paddle craft are popular on the Wisconsin and Baraboo Rivers.

Camping is not allowed on the property, but unauthorized camping is occurring on the state-owned islands, sandbars, and shorelines of the Wisconsin River. Camping is a persistent, but not a significant management problem. Littering and crowding are occasional complaints on this property.

A study assessing flooding impacts on the regional transportation network could have implications for the Pine Island WA. This issue was beyond the scope of this master plan and can be addressed as needed at a later date. This master plan also did not consider the potential impacts of any changes related to the long-term status and maintenance of the Caledonia levees.

Property Goals

- Contract the project boundary (655 acres) to the north bank of the Wisconsin River to remove properties no longer needed for goose management purposes and significant residential development
- Establish the Lewiston Marsh PHG (153 acres) separate from the Pine Island WA (see page 90).
- Increase the project boundary by 231 acres to improve blocking for habitat management activities, improve public access and reduce trespass on private lands.
- Substantially increase the acreage of grassland and oak savanna.
- The PIFTA management plan shall direct the habitat and recreational management objectives and prescriptions for the 1,195 acre dog trial and training area.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-4 details the existing and desired cover types for current state owned land (MAPS C-1 and C-5).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acreage Objective	% Cover
Agriculture	50	1	75	1
Grassland	820	15	1,015	19
Aspen	450	8	295	5
Oak	865	16	735	13
Oak Savanna	445	8	700	13
Central Hardwood	470	9	345	6
Upland shrub	185	3	95	2
Bottomland Hardwood	914	17	939	17
Emergent Wetland	760	14	760	14
Shrub Wetland	340	6	340	6
Developed	130	2	130	2
Water	50	1	50	1
Total	5,479	100	5,479	100

* 20 acres of public access easement land not managed by DNR is not included in the acreages.

Grassland, Forests, Wetlands and Agricultural Lands (3,327 acres): Habitat Management Area

Management Objectives

- Increase the extent and the quality of the pre-settlement cover types.
- Increase the amount of open grassland for grassland birds.
- Protect the habitat and scenic character of the Baraboo and Wisconsin River corridors.
- Phase out red pine plantings and reduce acreage of shrub wetland. Convert to oak savanna, grassland or adjacent cover types.

Management Prescriptions

- Conduct harvests in the Bottomland Hardwoods to enhance wildlife habitat, but protect aesthetic values and minimize reed canary grass invasion. Allow natural processes to shape the character and composition of the Bottomland Hardwoods.
- Expand and manage prairies and grasslands to maintain open landscape favoring grassland birds and secondarily for grassland nesting ducks and pheasants.
- Actively manage the oak savanna to favor oaks and retain some native shrubs at low densities as cover for game species.
- Actively manage aspen and adjacent shrub communities to provide nesting and breeding habitat for woodcock.
- Follow general habitat objectives and prescriptions for all wetlands and other woodlands.
- Monitor and control invasive species as practicable.
- Plant 10-40 acres of scattered food plots, e.g., sunflower or other suitable food crop, on the agriculture lands to encourage dove populations.
- Manage the Lewiston Marsh PHG as a Habitat Management Area.

Pine Island Oak Savanna State Natural Area (798 acre): Native Community Management Area**Management Objectives**

- Protect the swamp white oak savanna communities including remnant Pine Barrens and Sand Prairie.
- Manage this natural area as an ecological reference site.

Management Prescriptions

- Actively manage the canopy to favor swamp white, white and bur oak and some white pine.
- Actively manage understory and shrub layers to enhance native species and if understory augmentation is desired use local genetic material.

Floodplain Forest (159 acres): Native Community Management Area**Management Objective:**

- Maintain the diversity and ecological quality of the Floodplain Forest.

Management Prescriptions:

- Use thinning and improvements cuts to improve stand vigor and structure as needed. Timber harvest management should not create conditions favorable to the introduction or spread of reed canary grass.
- Use passive management (e.g., natural recruitment) to shape the species composition and diversity of the forest.

Pine Island Grassland and Field Trial Area (1,195 acres): Habitat Management Area

The Pine Island Field Trial Agreement plan (*PIFTA, 2010*) controls the habitat management objectives and prescriptions for the 1,190 acre dog trial area. The habitat management objectives and prescriptions may be supplemented with the General Habitat Management practices as needed.

Management Objectives:

- Increase the acreage and improve the quality of the grasslands to enhance habitat for game and non-game grassland birds.
- Increase the acreage and quality of the oak savanna.

Management Prescriptions:

- Use timber harvests, fire wood sales and controlled burns to selectively remove non-oak and less desirable oak specimens to promote oak savanna and grassland restoration.
- Protect the native violet (*Viola* spp.) populations used by the Regal Fritillary butterflies for feedings and egg laying as practicable.
- Consult the Important Bird Area management suggestions prior to conducting habitat management activities.
- Monitor and control invasive species as practicable.
- Actively manage aspen to provide breeding and nesting habitat for woodcock.
- Manage the fishery to provide walleye and largemouth bass fishing opportunities as time and resources allow.

Pine Island Headquarters and Field Trial facilities (5 acres) – Special Use Area**Management Objectives:**

- Retain the current complement of buildings and roadways.
- Continue to host dog trial activities (including self-contained camping units), Learn to Hunt and other educational activities.

Management Prescriptions:

- Maintain the five headquarter buildings (office, maintenance garage and other outbuildings) and roadways per Department policy.
- The Pine Island Field Trial Agreement plan shall be the controlling agreement in regards to the management of the field trial activities, schedules and infrastructure use.

Habitat Management Infrastructure

The following objectives and prescriptions supplement the Universal Plan Section infrastructure objectives and prescriptions at the beginning of this chapter.

Management Objectives

- Retain the existing buildings, service roads, gates, culverts water control structure and dike.

Management Prescriptions

- Maintain the Warden cabin, storage sheds, two miles of service road, 11 gates and water control structure.
- Update and renew infrastructure recommendations in the Pine Island Field Trial Agreement in 2016 as needed.

Public Use Management

The following supplement the general public use objectives and prescriptions presented in the Universal Plan Section at the beginning of this chapter.

Management Objectives

- Promote quality hunting and traditional outdoor recreational activities and experiences.
- Provide high quality dog trial and training opportunities.
- Support Learn to Hunt programs and other educational efforts as practicable.
- Evaluate Ice Age National Scenic Trail route options on the property.

Management Prescriptions

- Maintain the current complement of access roads and 24 native surface or gravel parking lots.

- Improve the boat ramp and expand the parking area at the Wisconsin River access site along Levee Road.
- Retain existing dog trial infrastructure and manage dog trial activities under the Pine Island Field Trial Agreement. Update and renew the habitat and recreation elements of the Field Trial Agreement plan in 2016 as needed.
- Add a carry-in canoe launch and 3-5 car parking lot off Tritz Road at the Baraboo River. As practicable, install handicapped accessible shore fishing infrastructure on the Baraboo River in coordination with the Fish Management program.
- Maintain and improve the existing nature interpretation kiosks at the grasslands as practicable.
- Monitor sand bar and island camping to assess impacts on habitat quality, trash, sanitary concerns or other management and law enforcement issues. Take action as needed.
- Collaborate with DNR Parks and Recreation, National Park Service and Ice Age Trail Alliance staff to assess trail route options at the property. Take follow-up action as appropriate.
- Collaborate with relevant state, federal and county recreational experts to assess the potential impacts of changes in flooding and levee management on recreation and habitat opportunities.
- Consult with local officials on maintenance needs of the town roads, including Levee Road.
- Add a 5-10 car parking lot to improve public access if the parcel along Highway 33 on the southeast corner of the property is acquired.
- Coordinate habitat and recreation management as well as land purchases with the US FWS Baraboo River property as appropriate.
- See Lewiston Marsh PHG (page 90).

French Creek Wildlife Area

The French Creek Wildlife Area (WA) at 3,506 acres is the second largest CCPG property. This wildlife area straddles the Columbia County and Marquette County border and is recognized for its' large, diverse wetlands dominated by sedge meadows, fens and tamaracks. The uplands are a mix of old field grasslands and oak forests. All of the French Creek maps can be found in Map Series D-1 through D-6.

Waterfowl, deer and turkey hunting are the primary recreational uses of the property. Small game and mourning dove hunting and trapping furbearing animals are also common pursuits. Pheasant hunting is popular and is primarily supported through the pheasant stocking program.

This site offers conservation opportunities of both statewide and Upper Midwest significance. It is also an important shorebird stopover site during migration periods.

French Creek is also used by hikers and birders, and especially by canoeists who enjoy exploring the marshes and waterways. Fishing is a popular activity, particularly below the dam of the French Creek impoundment. Bow fishing is also gaining in popularity on this flowage.

The heavy use also creates crowding during waterfowl, deer, and pheasant hunting seasons, littering problems, unauthorized horseback riding, and occasional sign/gate vandalism. Littering is a particular problem associated with firearm target shooting on the property, especially off of Wilcox Road. Off-road Vehicles (ORV) use is not allowed on this property, but soil erosion caused by ORV use is evident in the gravel pit off of Wilcox Road.

Property Recommendations

- Designate the French Creek North Primary Site (1,389 acres) a state natural area. No land purchases or wildlife boundary expansion is required.
- Expand the French Creek Fen natural area from 196 acres to 240 acres by adding high quality sedge meadows, fens, spring runs and white oak stand from the French Creek Fen Primary Site.
- Increase the acreage of Oak Savanna and Grasslands.
- Expand the project boundary by 987 acres to expand grassland habitat for nesting ducks and pheasants.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-5 details the existing and desired cover types for current state owned lands (**MAPS D-1 and D-5**).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acres	% Cover
Agriculture	51	1	40	1
Grassland	545	16	556	16
Aspen	50	1	50	1
Oak	490	14	360	10
Oak Savanna	0	0	170	5
Central Hardwood	10	<1	10	<1
Upland Conifer	25	<1	0	0
Upland shrub	15	<1	0	0
Tamarack	140	4	140	4
Forested Wetland	36	1	36	1
Shrub Wetland	650	19	650	19
Sedge Meadows	850	24	850	24
Marsh	490	14	490	14
Water	150	4	150	4
Developed	4	<1	4	<1
Total	3,506	100	3,506	100

Wetlands, Sedge Meadows, Forests, Grasslands and Agricultural Lands (1,877 acres): Habitat Management Areas

Management Objectives

- Enhance the quality of the oak savannas and dry prairie units for threatened and endangered species habitat.
- Improve the habitat quality of the waterfowl refuge for dabbling ducks.
- Improve navigation for hunters around the refuge.
- Provide improved habitat for woodcock.
- Increase the acreage of upland grass to improve cover and nesting success of grassland nesting ducks and provide habitat for pheasants and grassland birds.

Management Prescriptions

- Conduct thinning/improvement cuts in red pine plantations with the goal of eventual removal and conversion to grassland or oak savanna.
- Create surrogate grasslands on upland expansions to develop permanent grassy cover for grassland nesting ducks, pheasants and grassland birds.
- Manage aspen and adjacent shrub stands to provide woodcock habitat.
- Assess whether the current 240 acre waterfowl refuge in the French Creek impoundment is of sufficient size and location, and of desired habitat quality to provide the desired resting and feeding benefit for waterfowl. Complete a study by December 2017 and take actions based on study recommendations regarding habitat changes and altering the boundaries of the refuge.
- Plant food plots on a portion of the agricultural lands to enhance dove hunting.
- Monitor and control invasive species as practicable.

French Creek Fen (240 acres): Native Community Management Area, Expanded State Natural Area**Management Objectives:**

- Manage this natural area as a calcareous fen preserve and an ecological reference area.

Management Prescriptions

- Avoid late fall/winter draw downs of the Spring Creek impoundment to prevent mortality to hibernating turtles.
- Maintain open fens and sedge meadows. Woody vegetation should be kept at low densities and to the periphery of the fens.
- Develop and maintain a closed canopy to protect amphibians nears springs and ephemeral pools.
- Increase the amount of permanent water as practicable to enhance habitat for herptile species.
- Monitor and control invasive species as practicable.

French Creek North (1,389 acres): Native Community Management, Proposed State Natural Area**Management Objectives:**

- Protect the quality of the diverse wetland communities including Southern Sedge Meadow, Calcareous Fen, Southern Tamarack Swamp (rich), Shrub-carr, Emergent Marsh and springs.
- Increase the quality of herptile habitat by 200 acres.
- Protect the Southern Tamarack Swamp (rich) forest habitat.
- Restore degraded oak openings and promote native understory species.

Management Prescriptions:

- Manage the grassland and savanna habitats for endangered herptiles and grassland birds.
- Convert oak to Oak Savanna
- Remove tree lines and pine plantations and convert to oak savanna and grassland habitat.
- Consult with ER staff to establish a maintenance regime to protect the tamarack swamps.
- Enhance oak woods with thinning and improvement cuts and seed tree harvests.
- Manage water levels to maintain and enhance native wetland communities, especially open sedge meadows used by threatened species.
- Monitor and control invasive species.

Habitat Management Infrastructure

The following objectives and prescriptions supplement the Universal Plan Section infrastructure objectives and prescriptions at the beginning of this chapter.

Management Objective

- Retain the majority of the existing service roads, gates, building, dams, dikes and water control structures

Management Prescriptions

- Maintain the existing 5.5 miles of service roads and 11 gates. Remove one gate.
- Maintain the three dikes (collectively about 0.82 miles long) and three water control structures, one dam/spillway at the outlet of the French Creek Flowage, one dam maintenance building, and the electrical carp barrier system located on the dam.

Public Use Management

The following supplement the general public use objectives and prescriptions presented in the Universal Plan Section at the beginning of this chapter.

Management Objectives

- Provide opportunities for high quality hunting experiences.
- Provide high quality experiences for non-consumptive users with an emphasis on bird observations, non-motorized boating and hiking.
- Assess the feasibility of adding handicapped accessible fishing and boat access infrastructure.
- Evaluate Ice Age National Scenic Trail route options on the property.

Management Prescriptions

- Maintain the current public access provided by 12 parking lots, and two boat landings.
- Collaborate with DNR Parks and Recreation, National Park Service Ice Age Trail and Ice Age Trail Alliance staff on assessing trail route options through the property. Take action as appropriate.
- Monitor and document unauthorized horseback riding and off-road vehicle use to assess impacts on habitat quality, trash, sanitary concerns or other management and law enforcement issues. Take action as needed.
- Monitor the problematic target practice activities and develop a short report with recommended actions by December 2014 to address the nuisance impacts of litter and potential safety issue at Wilcox the wildlife area and neighbors.
- Monitor problematic target practice activities. Report on trends with recommended actions needed to address the nuisance impacts of litter and noise on the wildlife area and neighbors.
- Assess the feasibility of developing a mobility impaired accessible boat launch and fishing pier at the parking lot west of the County F bridge and a wildlife observation blind at a suitable site on the property. Develop recommendations by December 2015. Take action as appropriate.
- Assess the feasibility of offering nature interpretation material at French Creek landings, parking lots or wildlife observation areas by 2015. Take action as appropriate.

Mud Lake Wildlife Area

The Mud Lake Wildlife Area has a diverse mix of open water, marsh and emergent wetlands partially surrounded by scattered oak woodlands and grassy uplands. The wildlife area has three flowages – Mud Lake (800 acres), Hagen Road Flowage (120 acres) and Tollefson Road Flowage (110 acres). This wildlife area is the headwaters for Rocky Run Creek. Dikes and water control structures are used to enhance wildlife habitat and control water levels established for the flowages to minimize flooding on adjacent lands.

Mud Lake WA provides excellent hunting opportunities for waterfowl, white-tailed deer, wild turkey, pheasant and other species of small game. Pheasants are stocked on the property to supplement the upland hunting opportunities. This property is heavily used and crowding can be an issue during opening weekends for waterfowl, pheasants and the nine day deer gun hunting season.

Other uses on the property include trapping of beaver, muskrat and other furbearers, and fishing for northern pike, perch and various pan fish.

Mud Lake WA is part of the larger Northern Empire Prairie Wetlands Important Bird Area (IBA) and is popular with birders during the spring migration. Madison Audubon Society and the Rio Conservation Club have erected and maintain kestrel boxes, bluebird houses, and wood duck houses on the property. Watching waterfowl is enhanced by the 160-acre closed area.

The impoundments are used by canoers, anglers and bird watchers. Other seasonal activities include mushroom hunting and berry picking in spring/summer/fall and snowshoeing and cross country skiing during the winter. Geocaching is an increasingly popular use on the wildlife area.

This property has the most extensive invasive species challenges of the CCPG properties. Many upland areas are infested with multiple exotic species including buckthorn, honeysuckle, Russian olive, garlic mustard and particularly Japanese hedge parsley and wild parsnip. The native, but aggressive box elder, is also present in large quantities in the woodlands. In the wetlands, cattails are often dominant with smaller areas infested with reed canary and common reed grass.

Horseback riding is not authorized on the property, but continues to present a management challenge.

All of the maps for Mud Lake can be found in Map Series E-1 through E-6.

Property Goals

- Designate Mud Lake Forest and Ponds unit as a State Natural Area (130 acres).
- Expand the project boundary by 918 acres to increase habitat for grassland nesting ducks, pheasants and grassland birds.
- Rebuild dikes and replace the water control structures, as needed, to allow better control of water levels in the flowages to enhance the wetland habitat for waterfowl.
- Expand oak savanna and grassland habitats for grassland songbirds and game birds.

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-6 details the existing and desired cover types for current state owned lands (MAPS E-1 and E-5).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acreage Objective	% Cover
Agriculture	94	4	35	2
Grassland	495	22	524	23
Prairie	43	2	93	4
Oak	460	20	443	20
Oak Savanna	0	0	65	3
Central Hardwood	10	<1	0	0
Upland Conifer	10	<1	0	0
Upland shrub	40	2	20	<1
Swamp Hardwood	50	2	50	2
Bottomland Hardwood	28	1	0	0
Forested Wetland	30	1	30	1
Sedge Meadow	160	7	160	7
Marsh	438	20	438	19
Shrub Wetland	70	3	70	3
Developed	10	<1	10	<1
Water	330	15	330	15
Total	2,268	100	2,268	100

**Wetlands, Sedge Meadows, Woods, Grasslands, Upland Shrub and Agriculture (1,635 acres):
Habitat Management Area**

Management Objective:

- Manage for pre-settlement plant communities to enhance habitat value for game and native non-game species.
- Improve the productivity of grassland nesting waterfowl.

Management Prescriptions:

- Create larger blocks of open sedge meadows, grasslands, oak woodlands and oak savanna.
- Increase the amount of permanent upland grass to improve cover and nesting success of grassland nesting ducks, pheasants and grassland birds.
- Convert all or portions of the upland shrub, central hardwoods, upland conifers, bottomland hardwoods and oak woodlands to oak savanna and grasslands.
- Plant food plots for dove and pheasant.
- Monitor and control invasive species as practicable.

Mud Lake Forest and Ponds (130 acres): Native Community Management Area, Proposed State Natural Area

Management Objectives:

- Manage for closed canopy mature oak woodland and as an ecological reference site.
- Maintain ephemeral ponds and protect their habitat value for herptiles.

Management Prescriptions:

- Use single tree and group selection harvest as needed to maintain older age closed canopy white oak woodland; leave some hickory and black cherry while removing non-oak species (red maple and other central hardwoods).
- Use prescribed fire, mechanical brushing, chemical application to develop desired native understory and foster oak regeneration.
- Protect ephemeral ponds during management activities.
- Monitor and control invasive species as practicable.

Empire Prairie State Natural Area – Hagen Prairie Unit (80 acres): Native Community Management

Management Objectives:

- Protect existing dry-mesic prairie remnant and convert current row crop land to dry-mesic prairie.
- Manage Hagen Prairie is an ecological reference area.

Management Prescriptions:

- Sow former row crop lands with local seed sources to promote local genetic material and create a diverse prairie community.
- Conduct prescribed burns as time and resources allow.
- Manage the wetlands according to the General Habitat management prescriptions.
- Allow agricultural activities prior to initiating phased prairie restoration.

Empire Prairie State Natural Area - Mud Lake Prairie Unit (13 acres): Native Community Management

Management Objectives:

- Protect the mesic prairie and manage as an ecological reference area.
- Manage oaks along the western periphery of the prairie to develop a oak savanna.

Management Prescriptions:

- Conduct prescribed burns as the principal habitat management tool and use mowing or herbicide application as needed to control woody species encroachment of the prairie.
- Develop an oak savanna by removing non-oaks and thinning oaks west of the prairie.
- Monitor and control invasive species as practicable.

Mud Lake Woods (70 acres): Habitat Management Area

Management Objective:

- Protect and expand the semi-open canopy of mature Southern Dry-mesic Forest.

Management Prescriptions:

- Regenerate white oak and retain mast producing species (e.g., hickory and black cherry).
- Remove maple and other undesirable woody species.
- Endangered Resources and Wildlife Management staff shall consult after pre-harvest invasive species removal, but prior to timber sale activities to assess the need for additional rare plant or animal surveys by Endangered Resources staff.
- Monitor and control invasive species as practicable.

Field Areas 5a, 6a and 8c (180 acres): Habitat Management Area**Management Objective:**

- Improve habitat quality and natural regeneration of the oak woodlands.

Management Prescriptions:

- Use approved habitat management techniques to encourage oak regeneration.
- Use prescribed fire and brushing to maintain a mosaic of smaller grass and brush openings within the oak woodlands.

Field Areas 2 and 8 (160 acres): Habitat Management Area**Management Objective:**

- Create a large contiguous block of surrogate grassland.

Management Prescriptions:

- Cut and prevent regeneration of all bottomland hardwood species.
- Sow area with native and introduced forbs and grasses to develop a surrogate grassland.
- Utilize prescribed burns, and brushing and herbicides as needed, to achieve the desired species composition and to control the regeneration of woody and weed species.

Habitat Management Infrastructure

The following objectives and prescriptions supplement the Universal Plan Section infrastructure objectives and prescriptions at the beginning of this chapter.

Management Objectives

- Retain the existing service roads, gates, dikes and water control structures

Management Prescriptions

- Maintain the current 2.25 miles of primitive and lightly developed gravel service roads, nine gates, three dikes (collectively about 0.14 miles long) and five water control structures.
- Replace the water control structure for the Mud Lake Flowage to allow greater range of water level fluctuations to improve waterfowl habitat management activities.

Public Use Management

The following objectives and prescriptions supplement the general public use objectives and prescriptions presented in the Universal Plan Section at the beginning of this chapter.

Management Objectives

- Retain the current complement of public access roads, parking lots and boat launches
- Improve recreational opportunities for mobility impaired individuals.

Management Prescriptions

- Maintain the current 13 parking lots, approximately 1.75 miles of primitive and lightly developed gravel public access roads, and two boat landings while replacing the parking lot and carry in access boat landing on Traut Road with an improved site further east on Traut Road.
- Evaluate the feasibility of adding an accessible hunting/observation blind and ancillary access infrastructure. Report on the feasibility of adding an accessible site by December, 2015. Take action as appropriate

Lodi Marsh Wildlife Area

The Lodi Marsh Wildlife Area is located about one mile southwest of the City of Lodi and straddles the Dane County and Columbia County border. This property contains an intact and diverse mix of wetland and upland ecosystems in a very scenic setting. The Lodi Marsh State Natural Area is a large wetland complex with numerous springs and spring runs, Southern Sedge Meadow, fen, shallow marsh, Shrub-carr with some cattail marsh and disturbed-low prairie. The principal upland habitat types are Oak Woodlands, Oak Openings, Surrogate Grasslands and a small remnant Dry Prairie. The approved, but not completed, Hawk Hill State Natural Area project is located directly across county highway Y from the wildlife area. Additional discussion of this natural area is found in the Alternatives section (Chapter 5).

The wildlife area provides excellent hunting opportunities for turkey, deer, squirrel, and rabbit. Pheasant hunting opportunities are supported by the Department pheasant stocking program. The ongoing grassland restoration efforts are improving the quality of the habitat for grassland birds and pheasants. Trapping for muskrat, beaver and otter is also popular at Lodi Marsh.

A 2.5-mile segment of the 1,000-mile Ice Age Trail (IAT) crosses the property and is regularly used by hikers and birders who enjoy the scenic vistas and natural setting. Other activities include morel hunting in the spring, enjoying the spring water, the occasional hearty canoe paddlers willing to portage fallen trees in the wetland and winter activities such as cross country skiing and snowshoeing.

This property has an active volunteer group that is assisting with invasive species control and native plant community restoration.

A snowmobile trail enters the property from Coyle Road and traverses the hills and marsh two miles north-west to State Highway 60. The snowmobile trail and associated wooden bridge are maintained by local snowmobile clubs.

All of the maps for Lodi Marsh can be found in Map Series F-1 through F-6. Map F-3 shows the approved project boundary for the Hawk Hill State Natural Area and it's proximity to the Lodi Marsh Wildlife Area. No land acquisition has occurred at this natural area to date.

Property Goals

- Add state owned portions of the Lodi Marsh Primary Site and marsh west of the existing Lodi Marsh State Natural Area to protect fens and other desirable wetlands. The expanded state natural area (638 acres) would lie entirely within the existing wildlife area.
- Increase oak savannas and grasslands cover types while decreasing upland shrub acreage.
- Expand the project boundary by 719 acres to improve public access and protect habitat.
- Collaborate with partners on future Ice Age Trail route options.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-7 details the existing and desired cover types for current state owned lands (**MAPS F-1 and F-5**).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acreage Objective	% Cover
Grassland	155	13	160	13
Dry Prairie	10	<1	15	<1
Aspen	20	2	15	1
Oak	215	18	175	14
Oak Savanna	15	1	115	10
Central Hardwood	65	5	55	5
Upland shrub	75	6	20	2
Forested Wetland	5	<1	5	<1
Emergent Wetland	405	34	405	34
Shrub Wetland	210	18	210	18
Developed	10	<1	10	<1
Total	1,186	100	1,186	100

Lodi Marsh State Natural Area (635 acres): Native Community Management Area

Management Objectives

- Maintain the Southern Sedge Meadow, Emergent Marsh, Wet to Wet-mesic Prairie, Shrub Carr, springs, and Fen communities as a diverse wetland mosaic and an ecological reference area.
- Increase the extent and quality of the oak savannas and dry prairie ecological reference areas.

Management Prescriptions

- Maintain open wetlands using prescribed burns and other approved techniques to achieve desired community structure and composition. Retain some native wetland shrubs at low densities for wildlife food and cover.
- Augment ground layer with species that historically would have been found on the site using seeds or plugs from local genetic material.
- Remove selected non-oak and oaks to promote Oak Savanna and Dry Prairie restoration.
- Monitor and control invasive species as practicable.

Woodlands, Grasslands and Wetlands (482 acres): Habitat Management Area

Management Objectives:

- Expand the Oak Savanna and decrease Upland Shrub and Oak.
- Provide habitat for woodcock.
- Increase the acreage and amount of permanent upland grass to improve cover and nesting success for grassland birds and pheasants.

Management Prescriptions:

- Actively manage the plant community's structure and extent using the General Management Prescriptions, but passively manage the species composition unless cover type conversion is desired.
- Manage selected aspen stands and other critical cover types in younger age classes to provide woodcock habitat.

- Maintain pheasant habitat by providing undisturbed low- to medium-high grasses near wetlands as cover and winter food supply.
- Monitor and control invasive species (e.g., buckthorn and garlic mustard) as practicable. Continue collaboration with local partners (i.e., Ice Age Trail Alliance, Friends of Greater Scenic Lodi) to control invasives and expand desired native habitats.
- Continue vegetative restoration efforts to reclaim gullies left from past agricultural practices.
- Ice Age Trail segments will be routed to meet Department sustainability guidelines for trails.

Habitat Management Infrastructure

The following objectives and prescriptions supplement the Universal Plan Section infrastructure objectives and prescriptions in Section One of this chapter.

Management Objectives

- Retain the existing service road and gates.

Management Prescriptions

- Maintain the 0.75 mile primitive service road and four gates.

Public Use Management

The following public use objectives and prescriptions supplement those presented in the Universal Plan Section at the beginning of this chapter.

Management Objectives

- Provide high quality recreational experience for hunters, anglers, hikers and other users.
- Maintain the existing public access parking lots and trails.
- Involve community partners in ecological restoration and IAT management activities

Management Prescriptions

- Maintain the four existing native surface and gravel parking lots.
- Continue the ongoing collaboration with community partners on invasive species control, native community restorations and property planning efforts.
- Continue to host the IAT segment (currently 2.5 mile in length). Collaborate with staff from DNR Parks, National Park Service and Ice Age Trail Alliance as well as community partners on assessing, developing and maintaining a route through this property.

Paradise Marsh Wildlife Area

Paradise Marsh provides excellent habitat for a variety of wildlife and migratory waterfowl. This marsh is considered a satellite wetland for the Horicon Marsh. During migration periods, large numbers of waterfowl and other wetland birds feed and rest in the marsh.

This property has been extensively modified by drainage ditches, stream straightening and agricultural activities. The wildlife area was created to reduce further drainage and improve habitat conditions for waterfowl and pheasant. A 30 acre wetland flowage is maintained by a dike and water levels are managed with a water control structure.

The main recreational activities on this property include deer, waterfowl and small game hunting. It is heavily used during the gun deer seasons and overcrowding can be an issue. A population of wild pheasants provides opportunity for pheasant hunting (this property does not receive supplemental pheasants from the state game farm). Mourning dove hunting is enhanced through the establishment of sunflower food plots. Trapping of furbearing animals, such as mink and muskrat, is also popular.

Hiking and bird/wildlife watching are popular activities. Mushroom and berry picking are common seasonal activities too. Geocaching has become an increasingly popular activity at Paradise Marsh. All of the maps for Paradise Marsh are located in Map Series G-1 through G-6.

Property Goals

- Assess the feasibility of adding a mobility impaired wildlife viewing area/parking area.
- Expand the project boundary by 429 acres to improve public access and habitat management.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-8 details the existing and desired cover types for current state owned lands (**MAPS G-1** and **G-5**).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acreage Objective	% Cover
Agriculture	30	<1	60	4
Grassland	382	25	370	23
Oak	70	4	70	4
Oak Savanna	0	0	40	3
Central Hardwood	90	6	105	7
Upland shrub	80	5	10	<1
Shrub Wetland	220	14	220	14
Emergent Wetland	400	25	400	25
Marsh	280	18	280	18
Water	30	2	30	2
Developed	3	<1	3	<1
Total	1,588	100	1,588	100

Grasslands, Woods, Wetlands and Agriculture (1,588 acres): Habitat Management Areas

Management Objectives:

- Improve the quality of the existing Oak Woodlands.
- Expand Oak Savanna and Central Hardwood by reducing Upland Shrub cover type.
- Expand food plots for doves and birds in grasslands.
- Improve the productivity of grassland nesting waterfowl.
- Improve the quality of the shrub wetlands and emergent wetlands.
- Increase open water acreage in the wetlands.

Management Prescriptions:

- Expand the Surrogate Grasslands by seeding former agricultural areas with a combination of native grasses and forbs and introduced grasses.
- Enhance upland grassland habitat value for grassland nesting ducks, especially for nesting.
- Use thinning and improvement cuts to improve the habitat value of Oak Woodlands and promote regeneration of oak, hickory and native understory.
- Restore two small overgrown Oak Savannas and promote regeneration of oak and native understory.
- Improve and expand Central Hardwoods stands using single tree selection, thinning and improvement cuts.
- Use a combination of fire, chemical, mowing or other approved method to control cattail expansion and increase the open water acreage in the wetlands surrounding Beaver Creek and the small impoundment.
- Monitor and control invasive species as practicable.
- Provide 10-25 acres of wildlife food plots for doves and other wildlife.

Habitat Management Infrastructure

The following objectives and prescriptions supplement the Universal Plan Section infrastructure objectives and prescriptions at the beginning of this chapter.

Management Objectives

- Retain the existing service roads, gates, dike and water control structure.

Management Prescriptions

- Maintain the existing 2.0 miles of primitive and lightly developed gravel surface service roads, six gates, and 0.08 miles of dike and one water control structure.

Public Use Management

The following supplement the general public use objectives/prescription presented in the General Habitat Management Section at the beginning of this chapter.

Management Objectives:

- Provide access to high quality big game, waterfowl and dove hunting, and wildlife observation.
- Maintain current public access infrastructure.

Management Prescriptions:

- Maintain the existing eight surfaced and native surfaced parking lots.

Peter Helland Wildlife Area

Peter Helland Wildlife Area (WA) consists of small patches of uplands embedded in extensive wetlands that surround the North Branch of Duck Creek. Wetlands cover about 75% of the property. The desirable wetlands include Wet Prairie, Southern Sedge Meadow, Shrub carr and forested wetlands. However, there are significant acreages of disturbed wetlands dominated by reed canary grass and cattails. The remaining 25% of this property consists of former agricultural fields planted to native and introduced grasses, scattered oak and aspen woodlots, and small fields planted to wildlife food plots or as row crops.

The Springvale State Natural Area (271 acres) is located in the north east corner of this wildlife area. It contains one of the largest Wet Prairie and Calcareous Fen complexes in the state and contains 20% (about 60 acres) of the state's known Wet Prairie.

These wetlands have been extensively disturbed by ditching, drainage and farming so this property has been the focus of large and ongoing wetland restoration projects.

Crystal Lake, located on the west side of this wildlife area, is the only natural lake on the CCPG properties. This lake is a popular fishing spot and is noted for having an over abundant bluegill population.

The property is used extensively for deer, turkey, pheasant and waterfowl hunting with the heaviest use during the nine day deer gun season. This property supports a small population of wild pheasants that is supplemented with game farm raised birds to improve hunting opportunities. Mourning dove hunting is becoming popular and food plots are planted to increase dove population and hunting success. Small game hunting is also common. Trapping is very common, especially for muskrat, mink and beaver.

Bird watching is popular due to the significant usage of this property by birds and waterfowl during migration periods. Fishing is popular at Crystal Lake and a rustic experience is provided by the current carry-in boat access and non-motorized policy at the lake.

All of the maps for Peter Helland Wildlife Area are located in Map Series H-1 through H-6.

Property Recommendations

- Expand project boundary by 782 acres to improve public access and allow more efficient habitat management (**MAP H-6**).
- Purchase critical parcels along Highway SS for ongoing wetland restoration and water level management activities.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-9 details the existing and desired cover types for current state owned lands (**MAPS H-1 and H-5**).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acres	% Cover
Agriculture	30	2	60	2
Grassland	520	14	490	14
Aspen	10	<1	10	<1
Oak	170	5	160	5
Oak Savanna	0	0	20	<1
Central Hardwood	30	<1	30	<1
Upland shrub	50	1	50	1
Upland Conifer	30	<1	20	<1
Forested Wetland	50	1	50	1
Emergent Wetland	1,698	49	1,698	49
Marsh	300	9	300	9
Shrub Wetland	550	16	550	16
Water	40	1	40	1
Developed	2	<1	2	<1
Total	3,480	100	3,480	100

Wetlands, Grasslands and Woods (3,273 acres): Habitat Management Areas

Management Objectives:

- Expand food plots for doves and bird species.
- Restore Oak Savanna.
- Improve the productivity of grassland nesting waterfowl.
- Improve the quality of the existing forest habitats and wetlands.
- Restore and maintain Open Wetlands.

Management Prescriptions:

- Expand the amount of permanent upland grass with a combination of native grasses and forbs and introduced grasses to improve cover and nesting success of grassland nesting ducks and enhance the quantity and quality of habitat for grassland birds and pheasants.
- Restore Oak Savannas (20 acres) east of Crystal Lake.
- Improve the habitat value of Oak Woodlands and promote the regeneration of oak, hickory, desired mast species and native understory species.
- Improve the Central Hardwoods stands and their habitat value using single tree selection, non-commercial thinning and improvement cuts as appropriate.
- Remove red pine plantations and fence rows. Retain white pine component for wildlife cover/food (20 acres).
- Manage Upland Shrub and Wetlands using the General Habitat prescriptions.
- Conduct wetland restoration west of County Highway SS and continue the ongoing wetland restorations the east and west sides of Sawyer Road.
- Continue to use limited acreage for agricultural production and as wildlife food plots
- Monitor and control invasive species as practicable.

Springvale Wet Prairie State Natural Area (271 acres): Native Community Management Area

Management Objectives:

- Maintain as a open (treeless) wet-prairie and calcareous fen reserve and manage as an ecological reference area.

Management Prescriptions:

- Use prescribed fire and other approved techniques as needed to maintain a treeless wet prairie and fen. Allow natural processes to determine the species composition of the wetland community.
- Monitor and control the invasive species as practicable. Infestations of reed canary grass and cattails have been noted along the drainage ditches in and adjacent to the natural area.

Warmwater Aquatic Habitats: Habitat Management Areas

Management Objectives

- Protect the Duck Creek watershed and manage as a warmwater creek.
- Maintain the panfish fishery at Crystal Lake.

Management Prescriptions

- Consult with Fish Management staff and other experts as needed to manage and maintain the habitats along the riparian corridor of Duck Creek. Take action as practicable.
- Passively manage the warmwater fishery in Crystal Lake.

Habitat Management Infrastructure

The following objectives and prescriptions supplement the Universal Plan Section infrastructure objectives and prescriptions at the beginning of this chapter.

Management Objective

- Retain the existing service roads, gates, culverts, dikes and water control structure.

Management Prescriptions

- Maintain the existing two miles of primitive surface service roads, eight gates, one culvert, one dike and two water control structure to Department standards.
- Construct a new dike and water control structure off County Highway SS for the ongoing wetland restoration efforts.
- Reconstruct the berms and spillways, and replace the water control structures as needed for the wetland restorations off Sawyer Road.

Public Use Management

The following objectives and prescriptions supplement the general public use objectives and prescriptions presented in the Universal Plan Section at the beginning of this chapter.

Management Objectives

- Provide high quality hunting opportunities for deer, turkey, waterfowl, pheasant, dove and other small game and trapping opportunities.
- Continue to provide a rustic fishing and non-motorized recreational experience on Crystal Lake.
- Provide opportunities for bird watching and other non-consumptive uses.
- Retain existing and add additional public access and accessible wildlife viewing infrastructure.

Management Prescriptions

- Maintain the existing 11 gravel and native surfaced parking lots for public access.

- Passively manage large and small game populations except for the stocking of farm raised pheasants and providing food plots for doves to enhance hunting opportunities.
- Retain the walk in boat access and non-motorized boating policy at Crystal Lake.
- Add two small parking lots off Highway P on the northwest and north central portion of the wildlife area.
- Assess the feasibility of adding a mobility impaired wildlife viewing area and parking lot on the south side of Hwy P overlooking the Springvale State Natural Area. Present findings and recommendations of this assessment by December 2015. Take action as appropriate (**MAP H-2**).

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Swan Lake Wildlife Area

The Swan Lake Wildlife Area (WA) is nearly 80% wetland habitat with sizeable portions dominated by cattail marshes. The uplands consist of scattered forests (oak woodlands and aspen) and grasslands (both native grasses/forbs and introduced grass species). This wildlife area is an important shorebird stopover site during migration periods.

This wildlife area is most frequently used by deer and waterfowl hunters. Opportunities for turkey, small game hunting and trapping also exist at the property. Canoeing and fishing are popular activities along the Fox River portion of the property. The natural setting of the property provides hiking and wildlife viewing opportunities, especially for neighbors on the southeastern side of the property.

This property also has several management challenges. Target shooting is a popular activity particularly in the parking area off County Highway P. This activity generates frequent complaints from other property users and adjacent residential developments. A sizeable number of the surrounding upland parcels have been developed and this presents a potential conflict (100 yard no hunting buffer near homes) with one of the primary uses of the property (e.g., gun hunting). Off-road Vehicle (ORV) use is not allowed on this property, but soil erosion caused by ORVs is evident in the gravel pit off County Highway P. Littering is a major issue at the County Highway P parking lot and the parking lot at the end of Ontario Street.

An abandoned dike and water control structure is located in the southwest portion of the marsh. Muskrat damage has rendered the dike non-functional, but it does provide foot access to the marsh. Access to this property is limited due to the expansive wetlands and limited public uplands.

All of the maps for Swan Lake can be found in Map Series I-1 through I-6.

Property Goals

- Designate three new state natural areas:
 - Swan Lake Sedge Meadow and Barrens – 702 acres
 - Swan Lake Tamaracks – 205 acres
 - Swan Lake Wet-mesic Prairie – 46 acres
- Contract the project boundary at four locations by 450 acres to remove properties that have significant residential development.
- Expand the project boundary at two locations by a total of 119 acres to increase grassland habitat for duck nesting and grassland birds.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-10 details the existing and desired cover types for current state owned lands (**MAPS I-1 and I-5**).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acreage Objective	% Cover
Grassland	90	4	109	4
Aspen	150	6	130	5
Oak	190	7	90	4
Oak Barrens	0	0	106	4
Upland Conifer	5	<1	0	0
Tamarack	20	1	20	1
Bottomland Hardwood	50	2	50	2
Emergent Wetland	1,227	50	1,227	50
Shrub Wetland	230	9	230	9
Marsh	500	20	500	20
Developed	4	<1	4	<1
Total	2,466	100	2,466	100

Grassland, Oak Woodlands and Wetland (1,419 acres): Habitat Management Areas

Management Objective

- Protect the quality and expand the extent of pre-settlement grasslands, savannas and sedge meadows.
- Improve nesting success of grassland nesting ducks.
- Provide improved grassland habitat for grassland birds.
- Improve the open water to vegetation ratio to improve habitat quality for waterfowl.

Management Prescriptions

- Actively manage Oak Woodlands to regenerate oak, hickory and other desirable native species.
- Increase the acreage of permanent upland grass.
- Manage Aspen for woodcock and as early successional wildlife habitat.
- Remove red pine plantations and fence rows to expand aspen.
- Passively manage the small units of bottomland hardwoods along the Wisconsin River.
- Create a hemi-marsh condition (50:50 ratio of emergent vegetation to open water) by removing monotypic stands of invasive cattails as practicable. Passively manage wetland communities' species composition. Limit disturbance to minimize the spread of invasive species.
- Monitor and control invasive species as practicable.

Sedge Meadow and Oak Barrens (702 acres): Native Community Management Area, Proposed State Natural Area

Management Objectives

- Restore and expand the Oak Barrens and the Southern Sedge Meadow with Calcareous Fen.
- Manage as an ecological reference area.

Management Prescriptions

- Restore and maintain oak barrens and oak openings. Use prescribed burning as the major treatment activity with mowing, herbicides and non-commercial thinning as needed to limit brush encroachment, promote oak regeneration, and achieve desired canopy structure.
- Manage Aspen for woodcock and wildlife habitat unless the goal is to remove Aspen to expand Grassland and Oak Barrens.
- Protect and expand Sand Prairie and Dry Prairie remnants. Remove brush and encroaching trees, and re-seed remnant prairies as needed to augment populations of native species. Protect and expand habitat for endangered and threatened herptiles.
- Monitor and control invasive species as practicable.

Tamaracks (205 acres): Native Community Management Area, Proposed State Natural Area**Management Objectives**

- Protect the quality and expand the extent of the Tamarack Swamp and Southern Sedge Meadow.
- Manage as an ecological reference area.

Management Prescriptions

- Consult with ER, Forestry and other science experts as appropriate on appropriate management prescriptions and assess the effectiveness of these treatments.

Wet-mesic Prairie (46 acres): Native Community Management Area, Proposed State Natural Area**Management Objectives**

- Protect the quality and expand the extent of the Wet-mesic Prairie and Southern Sedge Meadow.
- Manage as an ecological reference area.

Management Prescriptions

- Maintain an open wet-mesic prairie and sedge meadow using prescribed burns and other techniques as needed to regenerate native species.
- Protect and expand habitat for threatened herptile species.
- Remove aspen and eliminate regeneration as practicable.
- Monitor and control invasive species. Reed canary grass infestations exist on this property.

Southern Sedge Meadow Wetlands (94 acres): Habitat Management Area**Management Objective**

- Protect the quality and expand the extent of the Southern Sedge Meadow.

Management Prescriptions

- Control encroaching shrubs.
- Protect and expand habitat for threatened herptiles.

Habitat Management Infrastructure

The following objectives and prescriptions supplement the Universal Plan Section infrastructure objectives and prescriptions at the beginning of this chapter.

Management Objective

- Retain the existing service roads and gates.

Management Prescriptions

- Maintain the existing two miles of primitive and lightly developed service roads and five gates.
- Assess moving the gate at Ontario Street closer to the property boundary to deter littering. Take action as necessary.

Public Use Management

The following objectives and prescriptions supplement the Universal Plan Section measures at the beginning of this chapter.

Management Objectives

- Promote high quality hunting and traditional outdoor recreational activities and experiences.
- Reduce or eliminate littering and other activities that are generating complaints or may affect user/neighbor safety and enjoyment.

Management Prescriptions

- Maintain the three existing gravel parking areas for public access.
- Add one small parking lot on county highway G (see MAP I-2).
- Monitor the abandoned gravel pit at the County Highway P parking area and the parking lot off Ontario Street for littering and other activities. Assess potential management options to reduce or eliminate the target shooting littering, noise and user/neighbor conflict issues and report findings and recommendations by December 2013. Take action as appropriate.

Grassy Lake Wildlife Area

Grassy Lake lies on the western boundary of the Village of Doylestown and is 3 miles southeast of the Village of Rio. The most prominent feature of the wildlife area is the shallow, hardwater seepage lake that supports dense stands of emergent and submergent aquatic vegetation. The wetlands and surrounding uplands provide good habitat for waterfowl and birds, including one of the largest nesting colonies of black terns in Wisconsin.

The property is heavily used for deer, waterfowl, and pheasant hunting. Trapping muskrats and other furbearing animals is significant too. Other recreational activities include hiking, cross country skiing, berry picking, wildlife viewing and canoeing. This property is considered part of an Important Birding Area.

All of the maps for Grassy Lake can be found in Map Series J-1 through J-6.

Property Goals

- Expand the project boundary by 214 acres to provide more savanna and grassland habitats.
- Improve habitat quality and wildlife corridors, especially between the state and federal lands.
- Coordinate land purchase activities with the adjacent US FWS properties.
- Significantly increase the acreage of Oak Savanna habitat and improve the grassland habitat quality for grassland nesting ducks, pheasants and game birds.

Habitat Management

The following habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-11 details the existing and desired cover types for current state owned lands (**MAPS J-1 and J-5**).

Cover Type	Current		Desired 50 year Objective	
	Acres	% Cover	Acres	% Cover
Agriculture	33	4	33	4
Grassland	192	22	192	25
Aspen	20	3	10	1
Oak	150	19	20	3
Oak Savanna	10	1	175	22
Upland Conifer	25	3	15	2
Upland shrub	15	2	0	0
Sedge Meadow	120	15	120	15
Marsh and Open Water	215	28	215	28
Developed	9	<1	9	<1
Total	789	100	789	100

Note: Acreages include cover types for the 84 acre Briggs conservation easement.

Grassy Lake State Natural Area (292 acre): Native Community Management Area

Management Objective

- Passively manage the marsh and sedge meadows as an ecological reference area.
- Protect and promote the population of black tern nesting at Grassy Lake

Management Prescriptions

- Allow natural processes to determine the ecological characteristics of the marsh and aquatic communities with the exceptions of controlling invasive plants and animals.
- Actively manage the aspen stands to promote wood cock habitat as practicable.
- Consult with ER on the need for installing and maintaining nesting platforms or other management activities to promote black tern nesting. Take action as appropriate.

Oak Savanna, Oak Woodlands and Grasslands (492 acres): Habitat Management Area

Management Objective

- Expand the Grasslands and Oak Savanna
- Improve the quality of the Oak Woodlands
- Improve the habitat quality for grassland nesting ducks pheasants and grassland birds.

Management Prescriptions

- Expand oak savanna habitat and retain best examples of Oak Woodlands. Retain some hickory, black cherry and other desirable native species in the Oak Woodlands (see Map J-5).
- Thin as appropriate and eventually harvest all red pine plantations with a gradual conversion to a mixed oak and white pine community.
- Conduct thinning and improvement cuts on white pine and allow natural regeneration and retain in a mixed oak and white pine community.
- Convert Upland shrub infested with black locust to grassland and oak savanna as practicable.
- Promote grasslands and control brush encroachment, but retain some native brush as food and cover for game species (e.g., pheasant). Improve the habitat quality for nesting ducks and other game birds by removing raptor perches and predator habitat (e.g., fence rows and rock piles).
- Monitor and control invasive species as practicable.
- Manage the 9 acre potential residential building site on the Briggs Conservation Easement as Surrogate Grassland.

Habitat Management Infrastructure

The following objectives and prescriptions supplement the Universal Plan Section infrastructure objectives and prescriptions at the beginning of this chapter.

Management Objectives

- Retain the current service roads and gates.

Management Prescriptions

- Maintain the existing 900 feet of primitive and lightly developed gravel service roads, two gates and pheasant stocking trails.

Public Use Management

The following prescriptions supplement the general public use objectives and prescriptions presented in the Universal Plan Section at the beginning of this chapter.

Management Objectives

- Promote high quality opportunities for public hunting and wildlife viewing, except on the Briggs conservation easement.
- Evaluate the feasibility of adding a handicapped accessible wildlife viewing platform.

Management Prescriptions

- Maintain the existing three gravel and native surface parking lots and boat launch.
- Continue pheasant stocking as game farm production allows.
- Monitor unauthorized horseback riding activity on the property to assess trends and environmental impacts. Take action as appropriate.
- Sign the Briggs conservation easement to indicate this easement area is not open to the public.
- Assess the feasibility of developing a wildlife viewing structure (e.g., platform, blind) with interpretive material. Develop recommendations by December 2015. Take action as appropriate.
- Take action as appropriate.

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Jennings Creek Wildlife Area

Jennings Creek Wildlife Area is located approximately 3 miles northeast of Rio and provides opportunities for hunting, trout fishing and other traditional outdoor activities.

All of the maps for Jennings Creek can be found in Map Series K-1 through K-6.

Property Goals

- Expand the project boundaries and acquisition authority by 238 acres to increase public access to the trout stream, improve wetland quality and increase grassland habitat.
- Significantly increase the acreage of Oak Savanna habitat.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-12 details the existing and desired cover types for current state owned lands (**MAPS K-1 and K-5**).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acres	% Cover
Grassland	5	<1	5	<1
Oak	210	40	165	31
Oak Savanna	0	0	60	11
Central Hardwood	10	1	10	1
Upland Conifer	25	5	10	2
Upland shrub	5	<1	5	<1
Forested Wetland	80	15	80	15
Bottomland Hardwood	30	5	30	5
Sedge Meadow	50	9	50	9
Shrub Wetland	114	22	114	22
Developed	1	<1	1	<1
Total	530	100	530	100

In-Stream and Riparian Zone Management: Habitat Management Area

Management Objectives

- Protect the Class 2 trout stream designation and the native brook trout stream population.
- Enhance riparian zone vegetation to improve trout habitat and woodcock habitat with secondary benefits for furbearers.

Management Prescriptions

- Conduct riparian zone vegetation management in the shrub wetlands to improve sunlight reaching the stream and protect stream banks from erosion.

Woodlands and Wetlands (530 acres): Habitat Management Area

Management Objectives

- Promote the quality of pre-settlement wetland and forest communities and expand the extent of the Oak Savanna.

Management Prescriptions

- Use Oak Savanna and Oak Woodlands management prescriptions to improve the quality of the habitat and enhance the natural regeneration of oak, hickory and other desirable native species.
- Conduct thinning and improvement cuts on red pine to increase value with eventual removal and conversion to Oak Woodlands.
- Conduct thinning and improvement cuts on white pine and central hardwoods stands to improve habitat value and encourage natural regeneration.
- Monitor and control invasive species as practicable.

Habitat Management Infrastructure

The following objectives and prescriptions supplement the Universal Plan Section infrastructure objectives and prescriptions at the beginning of this chapter.

Management Objectives

- Retain the existing service/access roads.

Management Prescriptions

- Maintain the existing 1,900 feet of lightly developed gravel roads that serve as both service roads for habitat management and public access.

Public Use Management

The following prescriptions supplement the general public use objectives and prescriptions presented in the Universal Plan Section at the beginning of this chapter.

Management Objective

- Provide high quality deer and waterfowl hunting, and outdoor recreation opportunities.

Management Prescriptions

- Maintain the existing two gravel surface parking lots.
- Manage riparian vegetation to improve angling access along Jennings Creek.

Columbus Wetlands Public Hunting Grounds

Columbus Wetland Public Hunting Grounds (PHG) is located approximately one mile west of the City of Columbus along the Crawfish River. This 248 acre property primarily consists of wetlands and floodplain forests with limited oak woods and brushy uplands.

All of the maps for Columbus Wetlands PHG can be found in Map Series L-1 through L-5.

Property Goals

- No boundary adjustments are proposed for this property.
- Improve Oak Woods and Upland shrub communities as practicable.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-13 details the existing and desired cover types for current state owned lands (MAPS L-1 and L-5).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acres	% Cover
Grassland	35	14	0	0
Oak	35	14	35	14
Upland Shrub	40	16	75	30
Sedge Meadow	10	4	10	4
Forested Wetlands	14	6	14	6
Shrub Wetland	100	40	100	40
Marsh	14	6	14	6
Total	248	100	248	100

Oak Woodlands and Wetlands (248 acres): Habitat Management Area

Management Objectives

- Promote pre-settlement plant communities and improve habitat for pheasant and waterfowl.

Management Prescriptions

- Regenerate Oak Woodlands and retain desirable mast species, such as hickory and black cherry.
- Passively convert grassland to Upland Shrub.
- Passively manage the wetlands.
- Monitor and control invasive species as practicable.

Public Use Management

Management Objective

- Provide deer and waterfowl hunting options and outdoor recreation opportunities.

Management Prescriptions

- Maintain the existing gravel surface parking lot for public access.

Dekorra Public Hunting Grounds

The Dekorra PHG is located eight miles northwest of Poynette off County Trunk Highway V just west of Interstate 90/94. The property is primarily a mix of woods and grasslands.

All of the maps for Dekorra PHG can be found in Map Series L-1 through L-5.

Property Goals

- No boundary adjustments are proposed.
- Enhance habitat value of Oak Woodlands and expand the quality and extent of Oak Savanna.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-14 details the existing and desired cover types for current state owned lands (**MAPS L-1 and L-5**).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acres	% Cover
Grassland	40	19	50	23
Oak	150	72	90	43
Oak Savanna			50	24
Wetlands (emergent/forested)	20	9	20	10
Total	210	100	210	100

Oak Woodlands and Grasslands (210 acres): Habitat Management Area

Management Objectives

- Promote pre-settlement plant communities with a significant increase in Oak Savanna.
- Improve habitat quality for turkey and other game species.

Management Prescriptions

- Follow Oak Woodlands and Oak Savanna management prescriptions to improve habitat quality. Regenerate oak, hickory and other desirable native species
- Passively manage the wetlands.
- Actively manage the grasslands to expand the extent and improve habitat quality for grassland birds and game species.
- Monitor and control invasive species to the extent practicable.

Habitat Management Infrastructure

The following objectives and prescriptions supplement the Universal Plan Section infrastructure objectives and prescriptions at the beginning of this chapter.

Management Objectives

- Retain the existing service road and gates.

Management Prescriptions

- Maintain the 3,500 feet of lightly developed gravel service roads and two gates.
- Allow continued access for the Town of Dekorra and DOT to access the wastewater treatment plant and conveyed easement through gate and service road.

Public Use Management**Management Objective**

- Provide high quality deer and upland game and nature enjoyment opportunities.

Management Prescriptions

- Maintain the existing gravel surface parking lot for public access.

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Duck Creek Public Hunting Grounds

The Duck Creek Public Hunting Grounds (PHG) is located four miles east of Wyocena on County Hwy. G. It is a 159 acre property of primarily open habitat with woods shrub wetlands along Duck Creek.

All of the maps for Duck Creek PHG can be found in Map Series L-1 through L-6.

Property Goals

- No Boundary Expansions/Contractions are proposed.

Habitat Management

These habitats will be managed in accordance with the Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-15 details the existing and desired cover types for current state owned lands (**MAPS L-1 and L-5**).

Cover Type	Current		Desired 50 Year Objective	
	Acres	% Cover	Acres	% Cover
Agriculture	55	35	40	25
Grassland	54	34	72	45
Aspen	3	2	3	2
Central Hardwood	17	10	14	9
Shrub Wetland	30	19	30	19
Total	159	100	159	100

Woods, Grasslands and Wetlands (159 acres): Habitat Management Area

Management Objective

- Protect the Duck Creek watershed and manage for pre-settlement plant communities.
- Improve habitat for game species and dove management.

Management Prescriptions

- Actively manage and increase the extent of grassland habitats.
- Manage Aspen for woodcock.
- Passively manage the Central Hardwoods and shrub wetland for wildlife habitat.
- Utilize a portion of the agriculture lands as food plots to enhance dove populations.
- Monitor and control invasive species to the extent practicable.

Infrastructure and Public Use Management

Management Objective

- Promote hunting, fishing and other outdoor recreation opportunities including use as a Class 2 dog training grounds.

Management Prescriptions

- Maintain the existing gravel surface parking lot for public access
- Establish a Class II dog training area of approximately 50 acres. This dog training area will be closed to training during the nesting season (April 15-July 31).

Hampden Wetlands Public Hunting Grounds

The Hampden Wetland Public Hunting Grounds (PHG) is located 7 miles southwest of Columbus. This hunting ground is 230 acres and primarily consists of marshy potholes surrounded by shrub wetlands.

All of the maps for the Hampden Wetlands PHG can be found in Map Series L-1 through L-5.

Property Goals

- No boundary adjustments are proposed.
- Enhance habitat value of pre-settlement plant communities, particularly pheasant habitat.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-16 details the existing and desired cover types for current state owned lands (**MAPS L-1 and L-5**).

Cover Type	Current		Desired 50 year Objective	
	Acres	% Cover	Acres	% Cover
Grassland	11	5	11	5
Oak	8	3	8	3
Sedge Meadow	59	26	59	26
Shrub Wetland	152	66	152	66
Total	230	100	230	100

Hampden Wetlands and Grasslands (230 acres): Habitat Management Area

Management Objective

- Promote pre-settlement plant communities and improve habitat quality for game species.

Management Prescriptions

- Actively manage grasslands and shrub wetlands habitat.
- Monitor and control invasive species as practicable.

Public Use Management

Management Objective

- Provide quality opportunities for hunting and wildlife observation.

Management Prescriptions

- Maintain the existing native surface parking lot for public access.

(Proposed) Lewiston Marsh Public Hunting Grounds

This property is located 2 miles west of the City of Portage on County Road O. This 153 acre property consists of shrub wetlands, central hardwoods and young aspen.

All of the maps for Lewiston Marsh PHG can be found in Map Series C-1 through 6 for Pine Island WA.

Property Goals

- Create this property from the contraction of the Pine Island WA northern project boundary.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-17 details the existing and desired cover types for current state owned lands (**MAPS C-1 and C-5**).

Cover Type	Current		Desired 50 year Objective	
	Acres	% Cover	Acres	% Cover
Aspen	30	20	30	20
Central Hardwoods	30	20	30	20
Shrub Wetland	33	22	33	22
Sedge Meadow	60	38	60	38
Total	153	100	153	100

Wetlands and Grasslands (153 acres): Habitat Management Area

Management Objectives

- Promote pre-settlement plant communities and improve the quality of the wildlife habitat.

Management Prescriptions

- Follow the General Habitat Management Prescriptions for the respective cover types. Allow natural processes (passive management) to guide plant succession.
- Passively manage the species composition of the shrub wetlands, but actively manage the extent and structure using prescribed burns, mowing and herbicides as resources allow.
- Manage aspen for woodcock habitat.
- Monitor and control current populations of invasive species to the extent practicable.
- Assess the potential for creating an emergent marsh by building a dike to create a small impoundment. If pursued obtain a plan variance and take action as necessary.
- Assess access easement off STH 16 for habitat management purposes (for DNR access only).

Public Use Management

Management Objective

- Provide quality hunting and wildlife observation opportunities.

Management Prescriptions

- Maintain parking lot for public access on County Road O.

FISHERY AREAS

Rocky Run Fishery Area

Rocky Run Creek originates in the Mud Lake Wildlife Area and flows 19.5 miles to the Wisconsin River. The fishery area is located between U.S. Highway 51 and State Highway 22 in a broad valley bordered by steep slopes that provides a semi-wild setting for users. The uplands primarily consist of oak forests and grasslands with extensive brushy wetlands dominated by alder and willow along the stream. The Rocky Run Oak Savanna state natural area is located adjacent to and partially overlies this fishery area.

About eight miles of the creek flow through the project area with the upper six miles designated as Class 2 trout water and the lower two miles Class 3 trout water. Brown trout is the dominant trout species in the creek, but brook and rainbow trout as well as many other native fish species are found in the stream. Over 90 springs enter this stretch of creek increasing base flow and stabilizing water temperatures. Rocky Run Creek is a low-gradient stream and substrate for spawning limits natural reproduction of trout.

The primary recreational uses of the property are deer, turkey and small game hunting and trout fishing. Birding is popular, especially in the Oak Savanna portions of the property. Hiking, cross country skiing and snowshoeing are also enjoyed on the property. Mountain bike and horseback riding are not allowed on this property, but there is continuing evidence of these activities occurring at this fishery area.

Maps for the Rocky Run Fishery Area can be found in Map Series M-1 through M-6.

Property Goals

- Increase the project boundary and acreage goal by 94 acres. (Map M-6).
- Expand acreage and enhance quality of the Oak Savanna and Grassland habitats.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-18 details the existing and desired cover types for current state owned lands (**MAPS M-1 and M-5**).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acres	% Cover
Grassland	190	26	200	27
Oak	185	25	175	24
Oak Savanna	65	9	95	13
Upland Conifer	30	4	0	0
Upland shrub	5	1	5	1
Forested Wetland	85	12	85	12
Shrub Wetland	111	15	111	15
Sedge Meadow	60	7	60	7
Water	5	<1	5	<1
Developed	1	<1	1	<1
Total	737	100	737	100

In-Stream and Riparian Zone Management: Habitat Management Area**Management Objective**

- Protect and expand the quality and extent of the Class 2 and Class 3 trout waters.

Management Prescriptions

- Install new and maintain existing bank rip rap, bank stabilization and fencing, as well as in-stream habitat structures such as boom covers and brush deflectors as resources allow.
- Remove willow and tag alder along a minimum of 1,500 linear feet of riparian habitat.

Oak Woodlands, Grasslands and Wetlands (276 acres): Habitat Management Area**Management Objective**

- Promote pre-settlement plant communities to improve the habitat value of grasslands, oak forests, savannas and wetlands.

Management Prescriptions

- Use prescribed burning and other approved techniques to limit brush encroachment and improve habitat quality.
- Manage the oak cover types to regenerate oak, hickory, desired mast species and desirable understory species.
- Monitor and control invasive species as practicable.
- Remove red pine plantations and convert to oak savanna and grassland.
- Manage the dry, sandy areas as grasslands to mimic Dry Prairie and Sand Prairie as practicable.

Rocky Run West Oak Savanna and Wetlands (160 acres): Native Community Management Area**Management Objectives**

- Improve habitat quality and extent of the Oak Savanna and grasslands to provide high quality habitat for herptiles.
- Improve the quality and character of the Oak Woodlands.
- Protect the mosaic of Southern Sedge Meadow, Shrub Carr and Calcareous Fen.

Management Prescriptions

- Conduct prescribed burns and timber harvests to expand the oak savanna and grasslands.
- Actively manage the Oak Woodlands to regenerate oak, hickory, desired mast trees and understory.
- Conduct thinning and improvement cuts to reduce the extent of white pine plantation, but allow natural regeneration of white pine to provide wildlife cover and food.
- Augment ground layer vegetation with locally sourced seeds to achieve the desired native species composition and structure.
- Harvest red pine plantations and convert to oak savanna and grasslands.
- Passively manage the species composition of wetlands and limit disturbance to prevent the spread of invasive species, especially reed canary grass.
- Monitor and control invasive species with a priority on this unit.

Rocky Run Oak Savanna (301 acres) – Native Community Management, State Natural Area

Management Objectives and Prescriptions – See Rocky Run Oak Savanna State Natural Area

Habitat Management Infrastructure

The following infrastructure objectives and prescription supplement the Universal Plan Section elements at the beginning of this chapter. The existing and proposed infrastructure is shown on **Map M-2**.

Management Objective

- Retain the existing habitat management infrastructure.

Management Prescriptions

- Maintain the existing 4.4 miles of primitive service roads for trout stocking, habitat management purposes and fire management.
- Maintain the dike and water control structure at the 25 acre impoundment on the western portion of the property.

Public Use Management

The following public use objectives and prescription supplement the Universal Plan Section elements at the beginning of this chapter.

Management Objective

- Promote high quality trout fishing, hunting and traditional outdoor recreational experiences.
- Improve access to the property.

Management Prescriptions

- Maintain the existing five gravel and native surface parking lots.
- Allow continued use of the existing snowmobile trail segment that traverses the property from east to west between State Highway 22 and Dunning Road.
- Monitor mountain bike and horseback riding usage trends.
- Add additional access parking if property expansion occurs as recommended including a five car parking lot off of Phillips Road if the recommended land purchase occurs.

Rowan Creek Fishery Area

Rowan Creek is a 16.8 mile stream that flows westward through the Village of Poynette to the Wisconsin River. The four miles of creek upstream from Poynette are classified as Class 1 trout waters and the lower eight miles (Poynette downstream to County Trunk Highway J) are designated Class 2 trout waters. Natural brown and brook trout reproduction is occurring in Rowan Creek, but to sustain the current fishery and meet angling pressure stocking is necessary.

Significant efforts to protect and improve trout habitat have occurred over the last 30 years. These efforts include extensive efforts to control riparian vegetation, rip rap and stabilize banks, fence the fish area and install in-stream habitat structures such as boom covers and brush deflectors.

The recreational management priority for Rowan Creek is protecting and enhancing the trout fishing experience. This fishery area also provides opportunities to hunt, trap, hike, cross country ski, berry pick, and view wildlife.

Maps for the Rowan Creek Fishery Area can be found in Map Series N-1 through N-6.

Property Goals

- Enhance up to 2,000 linear feet of stream habitat.
- Increase Oak Savanna and Grassland habitat and remove all red pine plantations.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-19 details the existing and desired cover types for current state owned lands (**MAPS N-1 and N-5**).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acreage Objective	% Cover
Grassland	40	5	40	5
Oak	105	16	105	16
Oak Savanna	20	3	40	6
Upland Conifer	27	4	7	1
Upland shrub	18	3	18	3
Bottomland Hardwood	130	20	130	20
Swamp Hardwood	24	4	24	4
Forested Wetlands	25	4	25	4
Shrub Wetland	80	12	80	12
Sedge Meadow	180	28	180	28
Water	1	<1	1	<1
Developed	1	<1	1	<1
Total	651	100	651	100

In-Stream and Riparian Zone Management: Habitat Management Area

Management Objective

- Maintain the Class 1 and Class 2 trout stream designation for Rowan Creek.

Management Prescriptions

- Enhance and improve 2,000 linear feet of stream with standard riparian and in-stream habitat development practices.

Wetlands, Woodlands and Grassland Management (651 acres): Habitat Management Area

Management Objectives

- Expand the extent and quality of Oak Savanna.
- Improve the quality of the Oak Woodlands.

Management Prescriptions

- Maintain and restore Oak Woodlands and Oak Savanna using prescribed burns and other approved techniques to limit brush encroachment.
- Conduct thinning and improvement cuts in both white and red pine with complete harvest of red pines within next 15 years. Convert red pine to Oak Savanna or Oak Woodlands as practicable.
- Retain the aesthetic of a mature white pine canopy along the Pine Island loop trail.
- Conduct thinning or improvement cuts as needed to enhance the wildlife and aesthetic value of Swamp and Bottomland Hardwoods.
- Monitor and control invasive species. Existing infestations of buckthorn, garlic mustard and reed canary grass have been recorded on the property.

Habitat Management Infrastructure

The following infrastructure objectives and prescription supplement the Universal Plan Section elements at the beginning of this chapter. The existing and proposed infrastructure is shown on **Map N-2**.

Management Objectives

- Maintain existing infrastructure for trout stocking, habitat and fire management activities.

Management Prescriptions

- Maintain the existing 1.75 miles of primitive service roads, two bridges and six gates.

Public Use Management

The following support the general public use objectives and prescriptions presented in the Universal Plan Section at the beginning of this chapter.

Management Objectives

- Maintain current service roads, trails and public access points.
- Improve handicap accessible fishing opportunities.

Management Prescriptions

- Maintain the existing six gravel surface parking lots and allow foot access for the public along the 1.75 miles of primitive service roads.
- Maintain the 1.75 mile Pine Island trail as a lightly developed trail. Collaborate with the Village of Poynette on maintaining the connection between the Village and the Department's trail.
- Continue to host the existing north/south snowmobile trail on the eastern part of this property. Additional segments or route changes must meet the trail routing criteria in the Universal Plan Section of this plan.

- Monitor unauthorized mountain biking activity on the property to assess trends and environmental impacts.
- Collaborate with community partners and the Village of Poynette to assess the feasibility of adding mobility impaired fishing access infrastructure for trout fishing. Initiate a master plan variance if a handicap accessible fishing structure is recommended on Department managed land.

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Hinkson Creek Fishery Area

Hinkson Creek Fishery Area is located about two miles northwest of the Village of Poynette. Hinkson Creek is about six miles long and is a tributary of Rowan Creek. An abundance of springs maintains water temperatures capable of supporting a high quality brook trout fishery. Over 600 acres of marsh adjacent to the creek protect the stream from direct runoff coming from the bordering agricultural fields. The property is used for trout fishing, and deer and turkey hunting.

Maps for the Hinkson Creek Fishery Area can be found in Map Series N-1 through N-6.

Property Goals

- Maintain the Class Two trout stream classification.
- Expand the project boundary and acreage goal by 227 acres along the stream to increase public access (i.e., add 8,000 feet of stream frontage), maintain a wildlife corridor, and improve habitat management coordination with the US FWS property upstream of this property (**MAP N-6**).
- Obtain 20 acres of stream easement to provide fishing access (**MAP N-6**)

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-20 details the existing and desired cover types for current state owned lands (**MAPS N-1 and N-5**).

Cover Type	Current			Desired 50 year	
	Acres	% Cover		Acres	% Cover
Agriculture	6	3		6	3
Grassland	31	13		31	13
Aspen	46	20		44	20
Oak	20	9		22	9
Central Hardwood	5	2		5	2
Sedge Meadow	12	5		12	5
Shrub Wetland	68	29		68	29
Marsh	12	5		12	5
Forested Wetland	32	14		32	14
Developed	1	<1		1	<1
Total	233	100		233	100

In-Stream and Riparian Zone Management - Habitat Management Area

Management Objective

- Maintain the Class 2 trout stream designation and the high quality brook trout fishery.

Management Prescriptions

- Enhance 1,500 feet of stream with standard riparian and in-stream habitat practices for trout.

Wetlands, Woods and Grasslands – (233 acres) Habitat Management Area

Management Objectives

- Manage for pre-settlement cover types.
- Improve habitat quality for game and non-game species.

Management Prescriptions

- Follow the General Habitat Management Prescriptions for the respective cover types. Allow natural processes (passive management) to guide plant succession.
- Manage aspen stands for woodcock habitat.
- Conduct thinning and improvement cuts in red pine plantations with goal of removal and conversion to Oak Woodlands as practicable.
- Monitor and control invasive species as practicable.

Habitat Management Infrastructure

The following infrastructure objectives and prescription supplement the Universal Plan Section elements at the beginning of this chapter. The existing and proposed infrastructure is shown on **Map N-2**.

Management Objectives

- Maintain existing infrastructure needed for habitat management activities.

Management Prescriptions

- Maintain the existing 2,600 feet of primitive and lightly developed gravel service roads and one gate to provide access for trout stocking, habitat management and fire management purposes.

Public Use Management

The following infrastructure objectives and prescription supplement the Universal Plan Section elements at the beginning of this chapter.

Management Objective

- Maintain a high-quality experience for trout anglers.

Management Prescription

- Enhance fishing opportunities by adding in-stream habitat, stocking fish and brushing banks to improve angler access.
- Maintain current access provided by the two graveled parking areas.

Lodi Spring Creek Fishery Area

The Lodi Spring Creek Fishery Area consists of scattered parcels totaling about 53 acres of fee purchase land and 6 acres of easements. The fishery area stretches along Lodi Spring Creek from Goeres Park in the City of Lodi to about 2.5 miles downstream. A 21 acre parcel of this property provides access to Bohlmann Branch Creek, a tributary of Lodi Spring Creek. The property is used for trout fishing as hunting opportunities are extremely limited due to the small size of the scattered parcels and proximity to homes.

Maps for the Lodi Spring Creek Fishery Area can be found in Map Series **O-1** through **O-6**.

Property Goals

- Maintain the Class Two Trout Stream classification.
- Expand the project boundary and acreage goal by 103 acres to provide an additional 8,200 feet of public access and improved trout habitat. (**MAP O-6**).
- Contract the boundary by 24 acres within the City of Lodi (**MAP O-6**).
- Install a mobility impaired accessible fishing platform with path if practicable.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-21 details the existing and desired cover types for current state owned lands (**MAPS O-1** and **O-5**).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acres	% Cover
Upland Brush	11	21	0	0
Mixed Central Hardwood & Oak	0	0	11	21
Forested Wetland	6	11	6	11
Sedge Meadow	36	68	36	68
Total	53	100	53	100

In-Stream and Riparian Zone (Lodi Spring Creek/Bohlmann Branch): Habitat Management Area

Management Objectives

- Protect and maintain the Class 2 trout stream designation and native brook trout populations.
- Enhance riparian zone vegetation to improve trout habitat.

Management Prescriptions

- Improve trout habitat by adding in-stream habitat improvement structures, protecting streambanks, reconfiguring stream sections affected by channelization, protecting buffer lands adjacent to the stream to limit surface runoff, and protecting near stream groundwater recharge zones as resources allow.
- Conduct riparian zone vegetation management to improve sunlight penetration and limit bank erosion as needed.

Wetlands and Woodlands (53 acres): Habitat Management Area

Management Objectives

- Manage for pre-settlement plant communities.

Management Prescriptions

- Follow the General Habitat Management Prescriptions for the respective cover types. Allow natural processes (passive management) to guide plant succession.
- Monitor and control invasive species as practicable.

Habitat Management Infrastructure

The following infrastructure objectives and prescription supplement the Universal Plan Section elements at the beginning of this chapter. The existing and proposed infrastructure is shown on **Map O-2**.

Management Objectives

- Maintain existing infrastructure for trout stocking and habitat management activities.

Management Prescriptions

- Maintain the existing service bridge (Bohlmann Branch), 300 feet of access road and one gate.

Public Use Management

The following prescription supplement the general public use objectives presented in Universal Plan Section at the beginning of this chapter.

Management Objectives

- Provide a high-quality experience for trout anglers.
- Improve public access to the scattered units of this property, particularly for trout fishing .
- Assess the potential for a mobility impaired trout fishing site on the fishery area.

Management Prescriptions

- Maintain the existing gravel parking lot at CTH J and the one bridge.
- Add a small parking lot at Hwy 60 access road for public access to Bohlmann Branch.
- Manage riparian vegetation to improve angling access along Lodi Spring Creek and Bohlmann Branch.
- Collaborate with community partners and City of Lodi to assess the feasibility of siting a mobility impaired fishing access. Potential sites include Goeres Park or at the parking area off County Highway J. Initiate a master plan variance if a handicap accessible fishing structure is recommended on Department managed land.
- Continue to host a segment of the existing regional snowmobile trail.

Roelke Creek Fishery Area

Roelke Creek (Class I trout stream) and Middle Branch Duck Creek (Class 3 trout stream) flow through this 40 acre fishery area in the Town of Wycocena. No fishery habitat infrastructure has been added and public access is provided by parking on the side of the road along Waters Road or Schleismann Road. All of the maps for the Roelke Creek Fishery Area can be found in Map Series L-1 through L-5.

Property Goals

- Maintain the existing trout stream classifications.
- No project boundary adjustments or infrastructure changes are proposed.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-22 details the existing and desired cover types for current state owned lands (MAPS L-1 and L-5).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acres	% Cover
Grassland (powerline ROW)	5	12	5	12
Oak	8	20	8	20
Upland shrub	6	15	6	15
Bottomland Hardwood	11	28	11	28
Shrub Wetland	10	25	10	25
Total	40	100	40	100

In-Stream and Riparian Zone Management – Habitat Management Area

Management Objective

- Retain the Class 1 (Roelke Creek) and Class 3 (Duck Creek) trout stream designations.

Management Prescriptions

- Protect and improve in-stream and riparian habitats as resources allow. Stock fish as per Fish Management guidelines.

Wetlands and Woodlands (40 acres) – Habitat Management Area

Management Objective

- Promote pre-settlement plant communities and improved habitat quality for wildlife.

Management Prescriptions

- Follow the General Habitat Management Prescriptions for the respective cover types. Allow natural processes (passive management) to guide plant succession.

Public Use Management

Management Objective - Maintain current uses and access to the property.

Management Prescription - Follow general public use management guidelines.

State Natural Areas

Rocky Run Oak Savanna State Natural Area

This natural area is located about 2.5 miles south of Wycocena on State Highway 22. This property consists of a 164 acre stand alone state natural area and 301 acres as an overlay within the adjacent Rocky Run Fishery Area.

The property cover types include oak savanna and grasslands with important opportunities for Oak Barrens and Dry Prairie management and restoration. More than 100 species with prairie affinities, including many rare species, have been recorded at this site. The variations in topography, shading and soils create a mosaic of habitats for many ground layer species.

Rocky Run supports notable concentrations of rare species and one of only seven sites in the state that provide the needed habitat for herptile restoration efforts.

This state natural area is used for hunting, hiking, skiing, nature enjoyment and berry picking. Mountain biking and horseback riding are not allowed on this property, but these uses are occurring. They are a concern because of the potential impacts to fragile soils, steep slopes and sensitive lichen species.

All of the maps for the Rocky Run Oak Savanna can be found in Map Series M-1 through M-6.

Property Goals

- Expand the project boundary by 35 acres.

Habitat Management

These habitats will be managed in accordance with the General Habitat Management Objectives and Prescriptions described in Section One of this Chapter or as supplemented below. Table 2-23 details the existing and desired cover types for current state owned lands (MAPS M-1 and M-5).

Cover Type	Current		Desired 50 year	
	Acres	% Cover	Acres	% Cover
Grassland	210	45	180	39
Prairie	0	0	35	7
Oak Woodland	60	13	60	13
Oak Savanna	105	23	130	28
Central Hardwood	10	2	0	0
Upland Conifer	20	4	0	0
Shrub Wetland	60	13	60	13
Total	465	100	465	100

Oak Savanna (465 acres) – Native Community Management and State Natural Area

Management Objectives

- Manage the site as an oak savanna reserve and as an ecological reference area.
- Protect and expand habitat for herptile species on remnant Dry and Sand Prairies, and Oak Savannas and Woodlands.

Management Prescriptions

- Actively manage the oak savanna habitats using prescribed burns and other prescriptions identified in the general habitat management section. Oak overstory management activities should be adjusted to account for the density and quality of the oak overstory and focus on regenerating oak, hickory, desired mast trees and other desirable canopy and understory species.
- Augment ground layer vegetation with seeds or plugs from local sources to achieve the desired native species composition and structure.
- Manage dry, sandy habitats to support endangered and threatened herptile populations.
- Remove the 20 acres of red pine plantations and 10 acres of central hardwoods and convert to oak savanna and grasslands to create larger habitat blocks.
- Monitor and control invasive species as practicable.

Habitat Management Infrastructure

The following infrastructure objectives and prescription supplement the Universal Plan Section elements at the beginning of this chapter. Also see the Habitat Management Infrastructure recommendations in the Rocky Run Fishery Area. The existing and proposed infrastructure is shown on **Map M-2**.

Management Objectives

- Maintain existing infrastructure needed for habitat management activities.

Management Prescriptions

- Maintain the existing 2,400 feet of primitive service road for trout stocking, habitat management purposes and fire management.

Public Use Management

The following infrastructure objective and prescriptions supplement the Universal Plan Section elements at the beginning of this chapter. Also see the Public Use Management recommendations in the Rocky Run Fishery Area.

Management Objective

- Maintain a high-quality experience for property users.

Management Prescription

- Maintain current access provided by the two graveled parking areas.
- Maintain the existing snowmobile alignment unless biotic surveys indicate realignment is warranted.

CHAPTER THREE

Supporting Information

The background and supporting materials for the Columbia County Property Group (CCPG) master plan are incorporated by reference and can be viewed on the web at dnr.wi.gov key words “master planning” or a paper copy is available by request. This chapter contains an updated version of the FINDINGS AND CONCLUSIONS from the CCPG Regional & Property Analysis.

Individuals interested in learning more about the CCPG properties and the underlying ecological and socio-economic context are encouraged to read the supporting material found in the *Rapid Ecological Assessment for the Columbia County Planning Group Second Version* (WDNR ER-810, June 2010) and the *Regional & Property Analysis for the Columbia County Planning Group* (WDNR Pub #059).

The *Regional & Property Analysis* and the FINDINGS AND CONCLUSIONS found below focused on the seven largest wildlife areas, the two largest fishery areas and the Rocky Run State Natural Area. To expedite the master planning process of state properties an additional two smaller wildlife areas, four public hunting grounds and three small fishery areas were added to the master plan. As a result, the acreage figures in the *Regional & Property Analysis* and the other sections of this master plan may differ. Importantly, the major ecological management and public use trends, goals and management objectives and prescriptions are similar regardless of the size of the property.

Findings and Conclusions

This section summarizes the major findings and conclusions from the Columbia County Planning Group's (CCPG) Regional and Property Analysis. These Findings and Conclusions identified key issues and helped guide the development of this master plan by highlighting significant opportunities and limitations on the property.

The CCPG Properties

The CCPG properties consist of thirteen wildlife areas (22,229 acres), five fishery areas (1,714 acres) and one stand alone state natural area (164 acres). Six existing state natural areas consisting of 2,545 acres are overlays within the boundaries of these wildlife and fishery areas. These properties are primarily located in Columbia County, but three properties cross county borders into Dane (Lodi Marsh), Sauk (Pine Island), and Marquette (French Creek) Counties.

Ecological Significance and Capability

Regional Context

The CCPG properties are representative of the Central Sand Hills Ecological Landscape, which is comprised of glacial moraines covered by glacial outwash. The region is characterized by fire-adapted ecosystems consisting of scattered forests, savannas, prairies, wetlands and Surrogate Grasslands populated with diverse game, non-game and rare species. Wetlands, such as fens, sedge meadows, and tamarack swamps, are well-represented here and harbor many sensitive plant and animal species. The CCPG lies at a transition between an agriculture-dominated landscape with large population centers to the south and east and sparsely populated, forested landscapes to the north and west.

The Central Sand Hills present unique opportunities to preserve and manage extensive wetlands composed of Marsh, Wet-mesic Prairie, Wet Prairie, Calcareous Fen and Southern Tamarack Swamps. Significant opportunities exist to restore degraded wetlands by re-establishing pre-settlement water levels where feasible and managing for species that prefer a matrix of Surrogate Grasslands, Sedge Meadow, Shrub-carr and Savanna habitats. In addition, the region is a priority area for identifying, restoring, expanding and connecting remnant Oak Barrens and Oak Openings. The goal is to manage for a mosaic of Oak Forest, Oak Woodland, Oak Opening, and native or Surrogate Grassland patches along a successional gradient. Preserving mature oak forest patches within this matrix is desired too.

The continental divide separating the Mississippi and Great Lakes Basins runs through Columbia County. Surface waters in the central and southern portion of the county drain to the Mississippi Basin primarily through the Wisconsin River. Surface waters in the northern portion of the county drain to Lake Michigan through the Fox River. The county has a diverse mix of surface waters including large rivers, smaller warmwater rivers and streams, coldwater streams, natural lakes and large impoundments on the river systems. The CCPG fishery areas provide an important opportunity to protect and enhance several high quality, coldwater trout streams.

Property Opportunities and Limitations

The CCPG properties have significant high quality cold and warmwater fisheries, large open wetlands, upland and lowland forests, savannas, prairies, grasslands, and populations of rare species situated in the diverse landscape of this region. The major threats to the biodiversity of these properties include ecological simplification, habitat fragmentation, altered ecological processes, changes in surface and groundwater systems, and a growing array of aquatic and terrestrial invasive species.

This section focuses on the most significant opportunities for protecting high quality and/or rare ecological landscapes, many of which are fire-adapted natural communities. Protecting and restoring the habitats at the landscape level promotes the widest variety of plant and animal species. The following discussion describes the major ecological attributes of the CCPG landscapes, the opportunities for threatened, rare and endangered species, and closes with the threats posed by invasive species.

Open Wetlands

The CCPG has a diverse array of high-quality wetlands including: Calcareous Fen, Emergent Marsh, Southern Sedge Meadow, Wet Prairie and Wet-mesic Prairie. It is rare to have such large, intact wetlands in the southern part of the state that are not dominated by invasive species. Several of these wetland complexes cover more than 1,000 acres. They provide regionally important shorebird stopover sites and habitat for breeding grassland birds, breeding marsh birds, rare reptiles and amphibians, and invertebrates. The mixed emergent wetlands and large size make the open wetlands, such as those at French Creek and Swan Lake Wildlife Areas, important shorebird stopover sites. Further, opportunities exist to protect and enhance many of these wetlands and to provide more extensive habitat connections with the upland grassland communities. Of the sixteen ecologically significant Primary Sites found on the CCPG properties, eight contain high-quality wetlands and sedge meadows.

While many of the CCPG wetlands remain high-quality due to a lack of invasive species and minimal impacts from draining (e.g., French Creek), others have been heavily impacted by ditching and grazing (e.g., Peter Helland). Opportunities exist to improve these sites through invasive species management and limiting further disturbances.

Oak Savannas

The CCPG properties offer significant management opportunities for the restoration and expansion of oak savanna remnants to enhance the habitat for numerous threatened and endangered species and Species of Greatest Conservation Need (SGCN). Specifically, major opportunities are present at Pine Island, French Creek, Swan Lake and Lodi Marsh Wildlife Areas to restore and/or maintain oak savanna communities. Restoration opportunities also exist on other CCPG properties, but they are limited from an ecological landscape perspective due to the limited size of the areas suitable for restoration and the management effort needed to maintain the savannas.

Wildlife Habitat

The CCPG properties provide a variety of high-quality habitat for both common wildlife species as well as rare and sensitive species. Primary game species include white-tailed deer, eastern wild turkey, and ring-necked pheasants. These properties also have significant potential for improved habitat quality and increased capacity to support common wildlife species.

In addition to the wetland, savanna and grassland habitats, preserving the mosaic of oak communities (e.g., ranging from savanna, barrens, openings, open woodlands to closed canopy forests) and flood plain forests will enhance wildlife habitat at several CCPG properties, including Pine Island, French Creek and Mud Lake Wildlife Areas. In particular, the oak communities provide valuable mast, nesting and foraging habitat for game and non-game species.

Grasslands and Sensitive Bird and Wildlife Habitat

Grassland bird species are exhibiting the most significant declines of any suite of bird species in Wisconsin and across the Midwest. The CCPG presents opportunities to support viable populations of several bird species that require large grasslands with high quality nesting habitat. Grassland birds would benefit by expanding Surrogate Grasslands (a mix of native and introduced grass species) and conducting fire management through ecotones.

Several of the CCPG properties and Primary Sites have quality grasslands that support several conservative grassland obligate species. These species have the potential to increase in density and potentially improve nest productivity if the open grasslands are maintained and connected to open wetlands.

The Pine Island Wildlife Area Grassland Primary Site offers management opportunities for providing a mosaic of large open grasslands for birds with small pockets of shrubby habitats and early successional forests for game species. Acoustical surveys indicate good quality bat habitat is present on this site and throughout the Pine Island Wildlife Area. Maintaining existing cover types (prairie, savanna, and wetland) can help to protect the six species of bats that were identified during the REA (WDNR, 2010b) spring/fall movement and summer residency period surveys.

Fish Communities

Rowan Creek and Rocky Run Creek Fishery Areas protect critical coldwater habitat and provide fishing access to native brook trout and naturalized brown trout. These streams sustain viable populations because of significant groundwater inputs that maintain the coldwater temperature regimes needed by trout. Supplemental stocking of trout occurs where the in-stream habitat may limit trout natural reproduction or fishing pressure may affect populations. Significant opportunities for enhancing and rehabilitating disturbed stream habitat to improve trout habitat exist on these properties.

Long-term concerns include nutrient loading to both cold and warm water fisheries and groundwater pumping that may reduce groundwater inputs to these streams. Protecting wetlands, spawning habitat and minimizing impacts from invasive species, such as carp, zebra mussels and Eurasian milfoil, will be needed to maintain desired game and native species abundance and diversity in the warmwater fisheries.

Reptile and Amphibian Habitat

Reptile and amphibian populations have declined significantly in Wisconsin over the last few decades due in large part to habitat modification and fragmentation. There are significant opportunities on the CCPG to protect and sustain populations of certain species. In particular, management opportunities exist at the French Creek Wildlife Area to provide the shaded environment and protect the springs that provide key habitat for a variety of reptiles and amphibians. There are also management opportunities to increase quality reptile habitat at Rocky Run Fishery Area. In addition, the CCPG provides crucial habitat for three threatened and endangered reptile species and presents an excellent opportunity for the conservation of one of these species, the Blanding's turtle, due to an abundance of habitat and the presence of dispersal corridors between areas suitable for habitation.

Invasive Species

Invasive species are a current and growing threat to native communities. If not controlled, they have the potential to significantly harm the general value and fitness of the habitats on all of the CCPG properties. Future plans should place a priority on the inventory, monitoring and control of invasive species.

The major invasive species currently on the CCPG properties include: buckthorn, garlic mustard, honeysuckle, spotted knapweed, Japanese hedge parsley, black locust, and reed canary grass. The Peter Helland WA wetlands are significantly infested with reed canary grass.

Recreational Significance and Capability

Regional Context

The CCPG properties are centrally located and readily accessible to several of the largest metro areas within Wisconsin and the Midwest (e.g., Milwaukee, Madison, Chicago and the Twin Cities). All of the properties are within a one hour drive of 500,000 to 1,000,000 people and those in the eastern third of Columbia County are within an hour drive of 1,000,000 to 2,000,000 people.

The CCPG is close to high population growth areas in southern and southeastern Wisconsin. In Columbia County alone the population is projected to grow by 21% over the next 30 years. This population growth could significantly affect the recreational use on these properties. Population growth and water consumption could also impact land uses and resource utilization (e.g., greater use of groundwater could decrease discharge to local trout streams). The goal of the master planning process is to manage the CCPG so they will continue to provide high-quality, traditional outdoor experiences in an increasingly developed, fragmented and populated landscape.

These properties currently provide excellent hunting opportunities for upland game and waterfowl as well as wildlife observation. Regional demand for these wildlife-related activities is likely to increase usage on these properties. As the user population shifts toward an older demographic over the next 10-20 years, it is anticipated improved accessibility will be needed to accommodate the expected growth in outdoor activities such as walking and wildlife viewing.

Hunting

The CCPG properties provide a significant opportunity for an increasing number of users to enjoy a quality hunting or recreational experience in an area with quality habitat and abundant wildlife. These wildlife areas are heavily used for upland game and waterfowl hunting and trapping. All properties are heavily used for deer hunting, especially during the nine day gun season.

While overcrowding does not tend to be an issue during the spring turkey season, it can be an issue during the fall deer and waterfowl seasons. Pine Island is the most heavily used property for deer, pheasant and dove hunting, with Mud Lake seeing heavy use for pheasant and deer hunting as well. French Creek has the most waterfowl hunters, followed closely by Mud Lake. Peter Helland also has many hunters during the different hunting seasons. Conflicts between hunters and non-hunters are not frequent as most non-hunters are aware of the hunting seasons.

Requests have been made by neighbors near Rowan Creek to limit hunting to archery only.

Target shooting at the Swan Lake WA and French Creek WA is extremely popular, but extensive littering and noise issues and some safety concerns are serious and ongoing concerns.

Fishing

The surface water resources in the CCPG offer both high quality warmwater and coldwater sportfishing opportunities. Pine Island provides access to the Wisconsin River and has an improved boat ramp suitable for launching small paddle craft to motorized craft. The Wisconsin River has an excellent fishery for walleye, sauger, smallmouth bass, channel and flathead catfish.

The two major Fishery Areas (Rocky Run and Rowan Creek) and four smaller properties (Lodi Spring Creek FA, Hinkson Creek FA and Roelke Creek FA and Jennings Creek WA) all contain coldwater streams that support trout fisheries. These trout streams range from Class 1 (natural reproduction), Class 2 (supplemental stocking) to Class 3 (totally supported by stocked fish). Recent changes to wild source stocked fish have improved the populations and encouraged natural reproduction.

Boating and Water-based Activities

The region is a popular destination for water-based activities and many CCPG properties offer good opportunities for fishing and non-motorized boating. Canoeing is popular at Mud Lake, French Creek and Pine Island. There is a need to increase the number of access points for non-motorized boating on the CCPG properties and to improve the Pine Island trailer boat launch on the Wisconsin River.

Birding

Birding and wildlife viewing are popular activities on the extensive open wetlands that are regionally significant and the diverse grasslands and oak woodlands of the CCPG properties. Columbia County is included in the Southern Savanna Region of the Great Wisconsin Birding and Nature Trail (WDNR 2008) as having many exceptional birding sites. In addition, the Northern Empire Prairie wetlands, Pine Island savanna, and French Creek marsh/grasslands have been recognized as Wisconsin Important Bird Areas (IBAs), a designation reserved for select areas that are extremely important to bird life.

Hiking, Cross country Skiing and Snowshoeing

Regionally, hiking, walking for pleasure and sightseeing are among the activities of highest demand by recreational users. All CCPG properties see some hiking use throughout the year. Rowan Creek and Lodi Marsh are the only properties with designated hiking trails and these trails are heavily used year round.

The Ice Age National Scenic Trail (IAT) is the premier hiking venue in the region. A 2.5 mile section of the IAT is located in Lodi Marsh and IAT planners will be looking at Pine Island and French Creek as potential sites for future trail segments. Currently, an active habitat management partnership has been developed between the DNR and volunteers associated with the Ice Age Trail Alliance and the Friends of Greater Scenic Lodi. Opportunities exist to connect and enhance trail infrastructure within the CCPG, but any expansion will need to consider ecologically sensitive sites, compatibility with other major users, the potential to spread invasive species, soil suitability and long-term maintenance issues.

Cross country skiing and snowshoeing also occur on most properties and are likely to increase in usage.

Many of the CCPG properties offer limited potential to develop longer loop trails (e.g., greater than 3 miles) because the upland parcels are often small and non-contiguous.

Dog Training and Trials

The Pine Island Class 1 dog training and Class I dog trial grounds are open year round. Increasingly, local residents are bringing their dogs to Pine Island to run or walk their pets. Complaints of dog trial participants forcing others (dog walkers, dog trainers) to leave the area persist. There has been little request to provide dog training opportunities on other CCPG properties.

Requests have been made for dog sled training trails on the CCPG properties.

Comment on proposed new Class II grounds on Duck Creek PHG?

Motorized Sports

Segments of regional snowmobile trails cross the following wildlife areas (Lodi Marsh, Peter Helland and Duck Creek) and fishery areas (Rowan Creek, Hinkson Creek and Rocky Run). The trails and associated wooden bridges that cross Rocky Run, Lodi Marsh and Rowan Creek are maintained by local snowmobile clubs. Requests have been made to add a snowmobile trail through the western portion of Rowan Creek. Issues that require coordination between department staff and snowmobile clubs include soil erosion and damage to vegetation along snowmobile trails.

ATV use is currently prohibited on all properties due to the combination of wet or erodible soils and sensitive ecological communities, except at the Pine Island Class I dog trial area during events. ATV and other off-road vehicle uses are generally not compatible with the primary purpose of these wildlife and fishery areas.

Horseback Riding and Mountain Biking

Horseback riding and mountain biking are not authorized uses on the CCPG properties with the exception of horses being allowed at the Class 1 Dog Training and Trial Grounds at Pine Island for the express purpose of dog training and dog trials. Despite this prohibition there is evidence of horseback riding at Mud Lake, French Creek and Rocky Run, and mountain bike usage at Rocky Run and Rowan Creek. These activities are occurring in state natural areas and there is concern about damage to sensitive resources. Regional recreation studies show a need for additional trails, but the potential for trails on the CCPG properties is limited because of the predominance of wet soils and limited contiguous uplands. Opportunities for providing horse and bike use on the properties are further limited by the requirement (NR 1.51) that non-primary uses not significantly detract from the primary purposes of the property.

Camping

Overnight camping in self-contained units is allowed at Pine Island by permit for participants at the dog trial grounds as stated in the Pine Island Field Trial Agreement.

There is also evidence of camping, though prohibited, at Pine Island WA and other islands and seasonal sandbars in the Wisconsin River. Campers may assume the practice is acceptable because it is allowed downstream on islands in the Lower Wisconsin State Riverway.

Other Recreation Activities

Pine Island, Mud Lake, Paradise Marsh and Rowan Creek are popular with geocachers and many properties are heavily searched for morels each spring and berries throughout the summer.

Summary

The CCPG properties contain many ecologically significant communities including diverse cold and warmwater fisheries, open wetlands, upland and lowland forests, savannas, prairies, grasslands, and populations of rare species, all situated in the diverse landscape of the region.

From a regional perspective, the CCPG can continue to provide diverse natural communities containing high quality habitat for common wildlife species and critical habitat for many rare and special concern species. These habitats range from large open wetlands and grasslands needed for nesting success and

sustaining viable wildlife populations to forest types ranging from Floodplain Forests to upland Oak Woodlands and imperiled Oak Savanna communities.

These habitats provide regionally significant opportunities for outdoor recreation, particularly deer, turkey, waterfowl and pheasant hunting. Wildlife-viewing will continue to be a popular activity with rich opportunities for watching waterfowl, shorebirds and grassland birds. Many of the CCPG properties are well suited to provide lightly developed, non-motorized recreation experiences such as hiking, cross country skiing, and canoeing.

All of the CCPG properties are within one hour drive of between 500,000 to 1,000,000 people. This population is continuing to grow and current trends in outdoor recreation indicate there will be increased pressure to provide for a growing and diverse spectrum of users with quality recreational experiences. This pressure could increase even further depending on factors such as population and economic growth as well as transportation energy prices.

The use and management of these fish and wildlife properties is governed by their official designation which can limit or exclude certain recreational pursuits. Thoughtful planning and management will be needed to maintain high quality wildlife and fishery habitat while also providing for increased demand for a broader array of recreational experiences from an increasing number of users.

CHAPTER FOUR

ANALYSIS OF IMPACTS OF THE PROPOSED PLAN

Introduction

This chapter, in combination with Chapters Two, Three and Five collectively constitute the Environmental Assessment (EA) for the Columbia County Planning Group (CCPG) Master Plan. The intent of the EA is to disclose the environmental effects of an action (the master plan) to decision-makers and the public. Chapter Two of this document describes the elements of the proposed action or preferred management alternative. Chapter Five describes and evaluates the various alternatives that were considered in the planning process, but not selected.

The EA meets the requirements of the Wisconsin Environmental Policy Act (WEPA) and Chapter NR 150 of Wisconsin Administrative Code. Based on information presented in this chapter, the proposed master plan is not anticipated to cause significant adverse environmental effects.

Impacts to Natural Resources

Soils

The probability of significant short-term and long-term cumulative impacts due to soil erosion is low for the management activities prescribed in the CCPG Master Plan. The more disruptive management activities (e.g., logging) may affect 50-100 acres/year) while those with a lighter impact (e.g., prescribed burns) may affect hundreds to several thousand acres/year. Small acreages (about 2-3% of the CCPG) may be plowed in preparation for restoration activities or managed as wildlife food plots or share cropped land. Soil erosion on these farmed parcels and on parcels during forest harvesting operation will be minimized by the use of the Best Management Practices (BMPs) for Water Quality guidelines. BMPs contain strict standards for road construction, water crossings, skid trails and logging landings. All trails and primitive roads will be monitored for signs of excessive soil erosion caused by management activities or recreational use and actions will be taken (e.g., BMPs or trail closings) to minimize the erosion potential. Soil erosion on newly acquired row crop land will eventually be reduced or eliminated as most of it will be converted to permanent cover as described in this master plan.

Geological Resources and Landforms

Sand and rock material will continue to be acquired from existing sand pits on CCPG properties for a variety of DNR management projects. Best management practices will continue to be used to prevent off-site erosion. Reclamation (shaping, re-vegetation, etc.) at the site will be done as needed to minimize the extent of site disturbance.

Other surface mining is not anticipated so no impacts are expected. If unforeseen circumstances would require surface mining in the future, site specific environmental impacts would be evaluated.

Air Quality

Potential impacts to air quality would come primarily from prescribed burns. Local landowners and units of government will be notified prior to management burns. Prescribed burns will occur seasonally (typically spring and fall) on various grassland, prairie, oak savanna and certain wetland management units.

Controlled burns may occur on a property every year though the area burned may be rotated between different management units. The burn plan contains best management practices and procedures to safely manage the fire and includes smoke management.

Construction activities that might generate dust include road and parking lot construction and maintenance. Water is the most common dust suppression practice used during road construction. Impacts on air quality from fugitive dust particles and engine exhaust emissions from construction equipment will be small and transitory in nature. When construction is complete no residual impacts to air quality would be detectable.

Vehicle emissions generated by Department motor vehicles, property users and certain management activities, such as logging, will be relatively insignificant compared to adjacent roadways and other economic activities (e.g., plowing for row cropping) in the area.

Water Resources

Sanitary Systems and Vault Toilets – All of the CCPG properties, except at the Pine Island WA headquarters building, do not provide fixed sanitary disposal facilities and none are proposed in this master plan. The facilities at Pine Island WA receive limited use by the public during educational events, such as Learn to Hunt programs or when the office is used during dog trial events.

Springs and Seeps - State ownership and management will have the effect of helping to safeguard water quality and biological diversity of any springs and seeps. Best management practices for protecting water quality will be implemented around all springs and seeps.

Water Quality of Surface Waters and Wetlands – Providing permanent vegetative cover and the use of BMPs during management activities will have an overall positive impact on both surface waters and wetlands. No increase in impervious surface area is being proposed. Trail/road construction will avoid changing watercourse direction and flow, volume and velocity. Pervious road and pathway surfaces will be used where impervious surfaces are not needed. Runoff from roadways and other impervious surfaces will not drain directly into nearby streams and lakes to minimize water pollution risks. The impacts of stormwater runoff during timber harvesting will be mitigated by implementing appropriate best management practices. These practices are described in the “Wisconsin’s Forestry Best Management Practices (BMPs) for Water Quality” field manual and are a part of every timber harvest on the CCPG.

Water Control Structures and Dikes - Several properties have shallow impoundments or flowages to provide enhanced waterfowl habitat in the marshes and adjacent wetlands. Maintenance, repair, and/or removal of dikes and water control structures will be evaluated and conducted on a case-by-case basis, based on cost-effectiveness, property needs, anticipated benefits, and benefits to water quality and wildlife. Several water control structures (e.g., Mud Lake) do not provide adequate drawdown capabilities and should be replaced to provide the needed capacity. These activities will be conducted according to established BMPs to minimize any potential environmental impacts.

Upland Vegetation and Habitats

The plant community management strategies (described in Chapter Two) will improve the quality of all pre-settlement habitats and increase the acreage of grasslands, prairies and oak woodlands. The goal is to create larger habitat blocks with smooth transitions between the grasslands, woodlands and wetlands, especially in the savanna areas. These management practices will maintain and promote a variety of native vegetative cover types in the flowages/wetlands, prairie/savanna and forest communities. The Department will consult with and seek to coordinate management strategies with US Fish and Wildlife Service and other partners when the boundaries of our respective managed lands abut each other.

Important vegetation management objectives outlined for the CCPG plan include:

- Increasing the percentage of grasslands, prairies and oak opening/barren communities,
- maintaining large open wetlands/flowages,
- improving the composition and structure of the oak forests,
- preserving the health and ecological integrity of the floodplain and lowland forests,
- maintaining early successional in certain forest types, such as aspen, for woodcock and grouse,
- increasing the acreage of woodlands with mature forest characteristics, and
- monitoring and controlling invasive species as practicable.

Most of the planned changes to the composition and structure will occur slowly over the next 50 years so impacts are minimized. The changes to vegetative cover types will generally be slow and heavily influenced by natural succession. Dramatic changes will be limited to areas where red pine/spruce plantations are harvested and converted to native communities that are better adapted to local conditions.

Department policies that address the monitoring, inspection and control threat of invasive species will be followed. Some current common invasive exotics that will be monitored are spotted knapweed, garlic mustard, Japanese hedge parsley, honeysuckle, buckthorn and purple loosestrife. These may include manual harvesting, use of herbicides or biological agents, fire and natural predators. The effect would be the maintenance of native biotic communities and protection from future invasions.

Wildlife and Fisheries - The actions in this master plan, if enacted, will have positive impacts on the resident and migratory wildlife and fishery populations for decades to come. The habitat activities and boundary adjustments will enhance the quality and extent of the habitat and should improve the population status of important game and non-game species. The management objectives and prescriptions outlined in Chapter Two will create or maintain the diverse wetlands, grasslands, savannas, forests and aquatic habitats needed by the game and non-game wildlife and fishery populations found on the CCPG properties. The larger habitat blocks are generally more favorable to a wider array of species than the current matrix of smaller blocks. The proposed management activities will be especially beneficial to grass nesting waterfowl, pheasants and grassland birds. The in-stream and riparian zone management will enhance coldwater communities to support self-sustaining trout populations.

Land purchases and management activities that reduce runoff volume, improve runoff quality and help sustain groundwater inputs will help protect the game fisheries, especially in the trout streams.

The existing closed areas and wildlife refuges are considered functional though some changes to the French Creek closed areas will be studied following this master plan process. Potential changes at French Creek include adding several open water pools to enhance the habitat value for waterfowl and

modifying the boundary to improve hunter boat movement around the southern perimeter of the refuge. The size, scope and potential impacts of these potential actions are not deemed significant relative to the size or purpose of the refuge.

Endangered, Threatened and Rare Species, Native Communities and Scarce Ecological Resources

The *Rapid Ecological Assessment* (WDNR June 2010 PUBL ER-819 2010) identified specific native communities and rare species occurrences on the CCPG. It also references supporting studies and documents describing the ecological assets found in the Ecological Landscapes where these properties are located. The management plans as described in Chapter Two are designed to help protect and enhance the native communities that harbor known rare species. All management prescriptions in the proposed master plan consider the needs of endangered, threatened, and rare species and the potential impacts to the species and their habitat.

The management objectives and prescriptions are expected to cause few, if any, negative impacts to endangered, threatened and rare species while yielding significant medium to long-term benefits. Implementation of the proposed master plan would ensure continued safeguarding of these species and under represented ecological communities. These actions also are compatible with Department obligations to protect threatened and endangered species and plant communities.

Impacts to Recreational Facilities and Opportunities

Visual/Scenic Resources - Small changes in the visual qualities and aesthetics of the plant communities will occur over time. This will be most noticeable where open wetlands, grasslands and oak savanna are expanded or forests are managed to maintain early successional stages or recreate closed canopy mature forest stands. Road and trail signs, informational signs, boundary markers and property identification signs consistent in appearance with other state-owned properties will be the main identifying markers for the property. The proposed purchase of additional lands will also help protect the visual and auditory quality of the recreational experiences.

Land Management - The suite of land management objectives and prescriptions will have medium to long-term positive benefits on recreational activities occurring on the CCPG. These actions are designed to benefit wildlife and fishery populations and improve the vitality and abundance of under represented plant communities (e.g., oak savanna/barrens). In turn, these habitat management activities will enhance both the primary recreational management objectives of hunting, fishing and trapping, as well as the increasing interest in accommodating wildlife viewing and other nature-based outdoor activities.

Temporary disruption to recreational activities will occur during management actions such as prescribed burns and timber harvests. These disruptions are short-term and negative impacts can be minimized by the timing and screening of the management actions. Forest and habitat management near more heavily used sites such as parking lots will be designed to improve the aesthetic quality of these sites and to time management activities to avoid conflict with primary recreational uses when possible.

Recreational Use and Nature Interpretation – The CCPG is well known for hunting (particularly deer, waterfowl, turkey and pheasants), trout fishing, trapping and bird watching. The proposed habitat management recommendations and boundary adjustments will improve the quality of the habitat and

expand the acreage available for these and other outdoor recreation activities. Most of the habitat management activities, such as prescribed burns and logging to attain the vegetation management goals, will take place during off-peak recreational seasons thus substantially reducing potential conflicts with recreational users.

The master plan proposes to continue the existing nature interpretation opportunities offered at Pine Island with the potential for the addition of education and interpretation materials at one or more of the wildlife and fisheries areas near proposed observation areas as resources allow.

Lands acquired with Stewardship funds may be closed to one or more of the typical recreational activities in order to: (a) protect public safety, or (b) protect a unique animal or plant community. Administrative Code NR 52 describes the factors to be addressed and the process to be followed for restricting or prohibiting one or more recreational activities.

Impacts to Cultural Resources

The CCPG properties contain a variety of Native American and Euro-American sites. There are no recorded historic structures on the properties. Management policy requires that any activities with potential to disturb archaeological sites will only be undertaken after consultation with the Departmental Archaeologist. Any sites with cultural or historical value identified on the CCPG or acquired with future land purchases will be managed in accordance with Department guidance and statutory requirements (see Wis. Stats. 44.40 and Manual Code 1810.10). The following federal cultural resource regulations should be referenced as applicable:

National Historic Preservation Act of 1966, as amended (16 U.S.C. 470-470t) - This act establishes as policy that the Federal Government is to provide leadership in the preservation of the Nation's prehistoric and historic resources. Historic preservation is defined in the Act as the protection, rehabilitation, restoration, and reconstruction of sites, buildings, structures, and objects significant in American history, architecture, engineering, and archaeology. Sections 106 and 110 of the Act define the primary requirements Federal agencies will follow to identify, evaluate and protect significant cultural resources.

Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469-469c) - This Act directs the preservation of historic and archaeological data in Federal construction projects. The Act authorizes Federal agencies to seek future appropriations, to obligate available funding, or to reprogram existing appropriations to provide for the identification and preservation of data.

Archaeological Resources Protection Act of 1979, as amended - This Act protects materials of archaeological interest from unauthorized removal or destruction, and requires Federal managers to develop plans and schedules to locate archaeological resources.

Socio-Economic Impacts

Timber Products – The primary purpose of forest land on wildlife, fishery and state natural areas is wildlife food and cover habitat, protecting native communities and providing diverse hunting habitats. Timber harvests can be an important management tool for meeting habitat objectives, but it is a secondary purpose of the forest habitats. Though timber harvests will continue under this plan, the total forest acreage will decrease as some forests habitats are converted primarily to savanna and secondarily

to grassland. Oak woodland acreage will decrease by about 600 acres, aspen by 200 acres, Central Hardwoods by 150 acres and Conifer plantations by 150 acres. Long-term harvests may decrease slightly due to the loss of forest cover, but timber quality may improve if adequate management can be provided.

Timber harvests have been limited during the master planning deferral process. During the last three years (2009-2011) the average harvest has been 108 acres/year and the average receipts have been about \$19,000 year. Once the master plan is approved the average harvest may reach 240 acres/year with a potential value of ~\$62,000/year. However, the actual harvest will depend on the specific prescriptions selected and the timing of the harvests.

Cropland - Existing state land - A small portion of the arable lands on Department land will be cultivated for a variety of reasons. Typically, 350-450 acres (about 2% of the wildlife lands) are cropped annually either for rental purposes, wildlife food plots or in preparation for a plant restoration initiative. This practice is expected to continue so no significant change in total agricultural output or environmental impact is expected from Department lands. However, the parcels used for agricultural production will change over time. Thus agricultural related impacts will be diffuse and are expected to be short-lived. Best management practices will be required on all croplands to minimize the environmental impacts.

Cropland - Proposed expansion areas – About 1% of the current agricultural lands in Columbia County are located within the proposed project boundary and acquisition authority expansions. The cropland acreage in the expansion areas amounts to about 2,800 acres in total. All acquisitions would be from willing sellers only and at a fair market value. Based on past experience; it would require decades to purchase some of these lands. Given the willing seller requirement, the acquisition of all the parcels within the project boundaries may never occur, thus the related beneficial and adverse impacts would be diminished accordingly and would stretch out over decades.

If the Department were to acquire all of the cropland acreage the change in the agricultural production of Columbia County would be expected to decrease by about 1%. These impacts may be partially offset by leaving a fraction of these parcels in a sharecrop agreement or when used as wildlife food plots. Increasing farm productivity will also play a factor in minimizing the impact on crop production.

The economic loss associated with decreased crop production would be partially offset by the economic gains related to revenues generated by hunters, trappers and nature enjoyment activities.

Finally, any lands purchased could potentially be brought back into production with renewed fertility and improved organic matter content unlike cropland converted to roadways or residential and commercial developments.

Infrastructure and Transportation - Recreational use on the CCPG is heaviest during the fall hunting seasons, spring turkey hunting and spring fishing. While participation and use on the properties is expected to grow, the increase in the level of utilization is not anticipated to be significant over the next 10-20 years. Therefore, there will be no expected significant impact to local traffic or corresponding local road maintenance levels.

A slight increase in heavy truck traffic may be noted while timber sales are being conducted but the impact of the logging trucks on local roads will be ephemeral and of limited impact.

Operation and maintenance of the CCPG generate minimal solid waste. The management philosophy of the Department is to reduce, reuse and recycle to diminish the use and disposal of non-recyclable materials. All debris from illegal dumping will be disposed of or recycled properly through the appropriate solid waste program or a licensed sanitary waste contractor.

Noise - Noise impacts from management activities and the expected recreational uses are anticipated to be minimal on CCPG neighbors and users. Wildlife use patterns may be temporarily impacted by these noises, but chronic impacts are not expected. The noise would be primarily generated from land management, forestry and road/trail/dike construction and maintenance activities. The noise will be generated by chainsaws, skidders, harvesting machinery and trucks. The noise will primarily occur during daylight hours and would have peak (high level, short duration) characteristics. The noise will often be seasonal in nature and transient (i.e., once the project is completed the noise source will be eliminated).

The noise related neighbor complaints from the informal target shooting range at the parking lot off County Highway P at the Swan Lake WA will be addressed by Department staff as noted in the Public Use Management property description.

Public Safety - There are no elements of the CCPG master plan that are anticipated to have a negative effect on public safety. Designated use areas (such as parking lots) are inspected semi-annually to locate and remove hazardous trees. In addition, public safety precautions are taken when using herbicides, pesticides, fire, and in other property management activities. Prescribed fires will be used in forest and native community management. All prescribed fires will follow department safety and burn procedures.

Land Use – The land uses and cover types on the lands surrounding the CCPG properties will be minimally affected by the implementation of this master plan. The proposed expansion areas outside of the existing project boundaries contain about 5,096 acres. The land uses are primarily cropland, woods and wetlands (Table 4-1). Most of the developed acreage would be split off from the undeveloped portion of the property and retained by the willing seller or resold. The uplands are typically in row crop, hay land or pasture land. Most of these uplands would be converted to grasslands with some acreage converted to forest or shrub communities. A portion may be retained in crop/hay land or used as wildlife food plots.

Land Uses	crop/grass	woods/shrubs	wetlands	developed	Totals
Acreages (estimated)	2,812	961	1.096	227	5,096

The land uses within the proposed boundary contractions areas would primarily eliminate areas with substantial residential developments.

Economic Effects and Their Significance – There will be some economic benefits for the local economy, primarily in the form of day visit tourist activities (purchases for meals, gasoline, sporting equipment, etc.) from visitors using the CCPG properties. Several of the properties will draw hunting, angling and birding interests from the region including out of state users. No quantitative surveys have been conducted on the economic benefits of outdoor recreational activities specific to Columbia County. For a qualitative discussion of the general economic impacts please refer to the Economic Significance of Wildlife Lands discussion in Chapter One.

Implementation of the master plan's forest management elements are expected to have minimal impact on the local logging industry. These properties have limited forested area and the timber harvests that do occur will contribute to the local supply of wood products. These harvests will add to the local economy through cash to the landowners and wages for laborers in the field, and primary and secondary forest products industries.

The Department also contracts with local vendors and/or parts suppliers to rebuild dikes, haul road material, and service building infrastructure as shown below.

Fiscal Effects on Local Government - State law requires the Department make payments in lieu of property taxes (PILT) to ensure the affected town's property base is not adversely affected. There are two separate statutes and several formulas under each statute that dictate the amount of these payments.

Wisconsin statute s. 70.113 Stats. applies to land acquired by the Department prior to January 1, 1992. Payments under this statute are made directly to the taxation district in which the land is located. Schools, VTAE and counties do not receive any payment under this law.

Wisconsin statute s. 70.114 Stats., governs payments in lieu of property taxes for all lands purchased by the Department after January 1st, 1992. This law has been amended several times so the specific formula used by the Department to determine individual payments varies depending on when the property was acquired and how it was acquired.

The Department uses an automated process for collecting information and calculating PILT payments. The process is determined by statute with little room for interpretation or calculation by the Department. For further details, please refer to Wisconsin State Statutes or to the Department of Natural Resources web site at <http://dnr.wi.gov/> and perform a search for "Payment in Lieu of Taxes".

Fiscal Effects on State Government - Recurring annual management expenses on these properties have local fiscal effects. Annual costs for the wildlife, fisheries and endangered resources habitat management activities currently range between \$65,000-\$90,000 and the fiscal effects of the proposed habitat changes and potential boundary indicate these costs may range between \$75,000-\$100,000/year over the life of the plan. The habitat management cost estimates are based on conducting a significant fraction of the required prescriptions within a 10-15 year period.

In reality, these management activities will range in frequency from annual to several years (e.g., grassland establishment/restoration) to every 15-20 years or longer (e.g., thinning harvests) to many decades for replacement of water control structures (cost \$6,000-11,000 apiece). Large infrastructure, such as dikes, have significantly longer life spans and their associated installation or renovation costs are much higher too. Four or five water control structures on the CCPG properties will need to be replaced over the next 10-15 years at a total cost of \$24,000 to \$55,000. Dike renovations may cost \$80,000 or more per mile, but no dike renovation is anticipated over the life of this plan.

Tables 4.2 and 4.3 provides estimates of average costs for typical habitat and infrastructure management activities some of which may occur on an annual basis while others are far less frequent.

Table 4-2: Estimated Habitat Management Costs

Habitat	Units	Unit/Cost	Total Cost
Prairie Establishment	10 acres	\$500-2,000/acre	\$5,000-20,000
Oak Savanna Establishment	100 acres	\$250/acre	\$25,000
Oak Savanna Maintenance	600 acres	\$80/acre	\$48,000
Grassland Establishment	100 acres	\$250/acre	\$25,000
Grassland Maintenance	1200 acres	\$75/acre	\$90,000
Woodland Establishment	10 acres	\$250/acre	\$2,500
Woodland Management	50 acres	\$300/acre	\$15,000
Beaver Control	5 sites	\$300/site	\$1,500
In-stream habitat restoration	500 feet	\$20-50/foot	\$10,000-\$25,000
Riparian Zone vegetation mgmt.	500 feet	\$5/foot	\$2,500

Table 4-3: Estimated Infrastructure Maintenance Costs

Infrastructure	Units	Unit/Cost	Total Cost
Dike Mowing and Brush Cutting	2 miles	\$200/mile	\$400
Primitive Road Maintenance	22 miles	\$200/mile	\$4,400
Primitive Road Re-surfacing	1 mile	\$15,000/mile	\$15,000
Boundary Monitoring/Posting	3 miles	\$200/mile	\$600
Parking lot Installation	1 lot	\$7,500/lot	\$750
Parking Lot Resurfacing	5 lots	\$3,500/lot	\$17,500
Parking Lot Maintenance	80 lots	\$75/lot	\$6,000
Buildings			\$7,500

Department staff will be assessing the feasibility of adding one or more mobility impaired fishing structures and wildlife viewing/hunting blinds. The cost of adding a handicapped accessible fishing bulkhead is estimated between \$5,000-\$10,000 not including the accessible path. A path 100 feet long by 5 feet wide made of crushed aggregate is estimated to cost \$500 (\$5 per linear foot).

Costs for any infrastructure will vary based on soil conditions, grade/steepness, special conditions, shoreline configuration, infrastructure requirements and labor costs (e.g., seasonal labor, volunteers or contractor). Development costs will vary with inflation and competitive bidding.

Impacts of Boundary Adjustments

Estimated Costs of Land Acquisition - As required by state and federal laws, the Department pays just compensation to willing sellers for property. The compensation is the estimated fair market value based on an appraisal, unless the seller chooses to make a gift or partial donation of the land. This master plan recommends 5,086 acres of project boundary expansions for the wildlife, fishery and natural areas. Acquisition from willing sellers would primarily occur as fee simple purchases. Easements for public access and/or management rights are being proposed on two fishery areas (10 acres each at Hinkson Creek and Lodi Spring Creek-Bohlmann Branch).

The land uses in the expansion areas include about 2,686 acres of agricultural lands, 961 acres of forests/shrubs, 1,096 acres of wetlands, 222 acres of developed lands and 121 acres of grasslands.

The estimated purchase prices used in this analysis are \$4,800/acre for agricultural lands, \$3,600/acre for forests and \$2,800 for wetlands and floodplains. Using these values the total cost for the purchase of all the undeveloped parcels in the expansion areas is valued at approximately \$20 million. Wildlife has the largest share at \$18.2 million, Fish Management has \$1.4 million and Natural Areas only \$0.17 million.

Typically, parcels become available from willing sellers over a period of decades so the required expenditures would be spread over a considerable span of time. It is also assumed that some of these undeveloped parcels will never be available from a willing seller.

Developed lands are not included in this analysis because they are not sought by the Department for conservation purposes. Developed acres may come into the Department's ownership if they are part of a large land acquisition (e.g., purchase of a farm). Parcels with improvements may follow one of three tracks:

- improvements may be split off and re-sold,
- improvements may be auctioned and moved off the site, or
- improvements may be torn down if their value is not significant.

Changes in Land Use – About 2,200 acres within the proposed expansion areas are undeveloped parcels covered by wetlands, woods, shrub or grasslands. If these parcels were purchased by the Department they would be kept in an undeveloped state though some habitat changes (e.g., conversion to oak savanna or more expansive grasslands) would occur over a period of years. About 2,700 acres are in agricultural use and a portion may be kept in production through sharecropping agreements or used as food plots. A significant majority of the agricultural acres would probably be converted to permanent grassland with a much smaller portion converted to woodlands or wetlands.

The 1,107 acres of proposed contractions on several of the wildlife areas primarily contain residential developments. These contractions would remove the developed parcels from future acquisition. Developed parcels significantly compromise the intended purpose of the wildlife and fishery areas, especially for landscape scale habitat management and hunting with firearms. Portions of the contractions at Pine Island WA and Lodi Spring Creek FA are floodplain wetlands or lie within areas that are zoned conservancy, respectively and are at low risk of future development.

Impacts on Energy Consumption

Due to the limited amount of facility development proposed, no significant impacts to energy consumption are expected. Any new facilities, which are primarily replacing existing facilities, will be designed to meet current energy efficiency requirements.

Cumulative Effects, Risk and Precedent

Significance of Cumulative Effects - The proposed actions are anticipated to have positive long-term effects on the quality of the natural environment and recreational users. The habitat changes and the proposed acquisition of additional lands are expected to provide the following cumulative benefits to users of these properties and the natural environment:

- More recreational land to meet the needs of a growing population.
- Quality recreational experiences for users through improved access facilities and sustainable wildlife and fisheries for harvest and observation.
- Improved habitat for game and non-game species, including endangered, threatened and species of concern species.
- Improving the quality of surface water runoff reaching trout streams and wetlands.
- Better protection of the critical groundwater resources needed to sustain the trout streams.
- Increased use of sustainable forestry practices.

These benefits are consistent with the Department's mission and responsibilities, and the recognized need to provide and protect public lands for future generations.

The purchase of active cropland is the one action that would have mixed results for the human environment. As mentioned above, there will be improved recreational experiences for local and regional users. The proposed acquisitions are consistent with many of the Columbia County Comprehensive Plan 2030 goals and objectives to protect natural resources and environmental corridors, provide natural buffers, and protect scenic views and unique natural features. However, willing sellers may offer cropland for sale or easement that would convert active farmlands to a conservation use, such as grassland or forest. The cumulative impact would be small compared to other land conversion activities such as residential, commercial and infrastructure developments.

Significance of Risk - Management of the CCPG properties poses a low overall potential for risk to the environment. The management activities will be similar to those used over the last several decades so no precedents are being set and the activities typically have less impact than the surrounding residential and agricultural lands. Only a small percentage of the total CCPG land and water base will be actively managed (e.g., logged or prescribed burns) in any given year. No new, high-risk actions are proposed, nor are any actions which involve an irretrievable commitment of resources, or actions that could not be reversed in the future.

The presence of motor vehicles and other equipment during construction and logging may pose a slight but insignificant risk from spills and erosion. These risks would be mitigated by best management practice requirements and at preconstruction meetings with contractors. The proposed construction activities consist of one boat launch on the Wisconsin River, about ten small parking lots (3-5 car each), and the possible installation of two or three handicapped accessible fishing stations and one handicapped accessible boat launch.

Fire has been identified as the most important vegetative management tool, particularly for prairie/savanna management. Necessary precautions and Department procedures are always followed during prescribed burns, including having an approved burn plan and adequate fire-fighting equipment and personnel present on site. During periods of high fire danger, burning restrictions are put into effect

and a complete burning ban may be implemented. Herbicide/pesticide use will strictly follow label instructions to protect the environment and public safety.

Risk of introduction of invasive exotic species may increase due to public entry and use of the property. Actions will be taken to control infestations as practicable. Off road vehicles and horses as a vector for the introduction of invasive species is extremely limited because they are prohibited at all properties except Pine Island. At Pine Island their use is limited to those identified in the Pine Island Field Trial Agreement plan.

Significance of Precedent - Approval of this management plan would not directly influence future decisions on other Department property master plans. However, this plan or portions of it may serve as reference or guidance material to aid in the preparation of master plans for similar properties elsewhere. Implementation of the objectives contained in the master plan would not be precedent-setting, primarily because the proposed habitat management, development activities and recreation actions are not unique and regularly occur on state wildlife, fishery and natural areas lands in Wisconsin.

WEPA SIGN OFF SHEET

To be signed after Review of the Public Comments and final edits completed

Project Name: _____ County: _____

DECISION (This decision is not final until certified by the appropriate authority)

In accordance with s. 1.11, Stats., and Ch. NR 150, Adm. Code, the Department is authorized and required to determine whether it has complied with s.1.11, Stats., and Ch. NR 150, Wis. Adm. Code. Complete either A or B below:

A. EIS Process Not Required

The attached analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action which would significantly affect the quality of the human environment. In my opinion, therefore, an environmental impact statement is not required prior to final action by the Department.

B. Major Action Requiring the Full EIS Process

The proposal is of such magnitude and complexity with such considerable and important impacts on the quality of the human environment that it constitutes a major action significantly affecting the quality of the human environment.

Signature of Evaluator	Date Signed

Number of responses to news release or other notice: _____

Certified to be in compliance with WEPA	
Environmental Analysis and Liaison Program Staff	Date Signed

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the Department, you should know that Wisconsin statutes, administrative codes and case law establish time periods and requirements for reviewing Department decisions.

To seek judicial review of the Department's decision, ss. 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. Such a petition shall be filed with the appropriate circuit court and shall be served on the Department. The petition shall name the Department of Natural Resources as the respondent.

CHAPTER FIVE

ANALYSIS OF ALTERNATIVES

This chapter describes the alternatives and anticipated impacts of alternatives *considered, but not selected* during the development of this master plan.

Do Nothing Alternative

Under this alternative the master plan would not recommend any boundary adjustments, no new natural areas, no revised habitat management objectives/prescriptions or improve public access. Existing management practices would continue to be applied within the existing boundaries. Such a plan might arguably meet the bare minimum needed for master planning, forest certification and other program needs. However, it would result in staff continuing to address problems on an ad hoc basis rather than integrating and prioritizing the challenges and opportunities that increasing populations, changing land uses, emerging recreation trends and technological advances have to offer.

This option was not pursued because it would not meet the needs of the resources being managed, would continue management inefficiencies related to the poor blocking of some management units, and would miss opportunities to provide the public with improved access. Importantly, such a master plan would not create the long-term improvement in property management the process is intended to promote.

The potential impacts of this approach would continue to be similar to those presently occurring on the property.

Alternative Project Boundary and Acreage Goal Adjustments

Each property was evaluated for a range of boundary adjustments, ranging from no change to significant expansions or contractions. The following factors were used to evaluate potential boundary adjustments:

- Habitat needs of game and special concern species,
- Native community management at the small to moderate landscape scale,
- Recreation, population and development trends in the region,
- Improvements to operational efficiency,
- Public comments requesting boundary changes,
- Public access, and
- Land acquisition guidelines (see page 45 Chapter Two, Section Two).

After this analysis, only three wildlife properties (Mud Lake, Peter Helland and Grassy Lake) warranted consideration of additional project boundary expansions. The proposed boundary changes and the alternative boundary adjustments are shown on the respective property map series (e.g., **MAP E-6, MAP H-6 and J-6**).

The additional project boundary expansions would provide some, or all, of the following benefits:

- More upland grassland habitat for grassland nesting ducks, pheasants and grassland birds.
- More land for public hunting and outdoor recreation in urbanizing areas of southern Wisconsin.

- Larger buffers around the properties would minimize land development around the perimeter of the property thus eliminating conflicts with gun hunting (i.e., 100 yard buffer rule around homes).
- Provide opportunities to keep land in agricultural use as share crop lands or wildlife food plots.
- Reduce soil erosion and minimize nutrient and chemical contaminants from reaching water bodies, wetlands and state natural areas.
- Create larger corridors for wildlife movement and habitat management.
- Improve the feasibility of collaborating with the US Fish Wildlife Service on land purchases/easements from willing sellers.

The following alternatives are offered for consideration and comment.

Mud Lake (MAP E-6) – An additional 240 acre expansion, bordered by Anderson, King and Hagen Roads, would provide an opportunity to create a second large landscape scale grasslands in Columbia County. It would be similar to the Pine Island WA grassland in size, but would provide a unique mesic upland grassland within the range of the former Empire Prairie. It would provide significantly improved upland hunting and recreation opportunities in a setting that has expansive vistas of Mud Lake. This expansion includes about 210 acres of active farmland (mostly prime agricultural soils). The anticipated acquisition cost of the undeveloped parcels is estimated at slightly over \$1.0 million.

Peter Helland (MAP H-6) – An additional 242 acre expansion, bordered by Zunker, Pardeeville, Raddatz and Rohrbeck Road, offers an opportunity to create a medium landscape scale grassland on a property and in a portion of the county with limited upland grasslands. Similar to the Mud Lake addition, this expansion would provide substantial habitat for improved upland hunting and recreation experiences. This expansion includes several farmsteads and about 220 acres of active farm land (mostly prime agricultural soils). The anticipated acquisition cost of the undeveloped parcels is estimated at \$1.1 million.

The short as well as long-term cumulative impacts of these additional expansions would be expected to be beneficial to the environment and wildlife. The socio-economic impacts would be similar in type to those discussed in the Boundary Adjustments sections of Chapter 4 but much reduced in scale. The additional 492 acres being considered in this alternative would affect about 435 acres of cropland (mostly prime farm soils) and minor amounts of wetlands and woods. The total increased cost of land acquisition would be approximately \$2.2 million. The addition of these properties would be expected to marginally increase operational costs at their respective properties by about 2-4%/year. The department would also pay a fair share of aid on the lands so there is no loss of property tax revenue in the taxation district due to state ownership.

Boundary Adjustments Considered but Not Selected

The following options were considered, but not selected because they did not meet the land acquisition guidelines or are addressed in other Department initiatives.

Lodi Marsh - Public comments recommended the wildlife area project boundary be expanded to include Hawk Hill (north of County Highway Y in Dane County) to protect the ecological, visual and auditory character of the wildlife area. This option was not selected because Hawk Hill is already within the boundary of the approved Hawk Hill state natural area project (**MAP F-6**). No land acquisition at this natural area has occurred to date.

An even larger boundary adjustment (1,230 acres) was evaluated at Lodi Marsh, but not pursued. This option would have expanded the Lodi Marsh WA boundaries south to Lee Road, east to State Highway 113 and include a 40 acre parcel west of County Highway Y along Spring Creek. The goal was to expand out to roads as the management boundaries and protect more of the Spring Creek watershed. However, this option would have substantially increased the acreage of active farm land (most of it prime soils), substantially increase the number of developed parcels within the boundary and significantly increase acquisition costs.

Public Hunting Grounds - Several of the smaller wildlife properties have very limited access. Boundary expansions out to roads would improve access and could increase public usage and user safety while reducing trespass issues. Due to their small size and lower management priority under the criteria used for ranking land purchases these properties have limited potential for funding.

Alternative boundary adjustments considered, but not selected for the public hunting grounds included:

- **Columbus Wetlands PHG** – Provide access off Columbus-Fall River Road to reduce inappropriate access to the property via the U.S. Hwy. 151 right-of-way or along the railroad tracks.
- **Dekorra PHG** - Provide access from the west or south to improve access for habitat management activities and public hunting.
- **Hampden PHG** - Provide access from the west or north to improve access for habitat management activities and public hunting.

The short as well as long-term cumulative impacts of the Lodi Marsh and Public Hunting Grounds alternatives would be expected to be similar to those discussed in the Boundary Adjustments sections of Chapter 4. These expansions could occur through land purchase, easement or, less likely, by land donation. The potential capital and maintenance costs would be similar in nature to those previously described. Costs could vary widely depending on whether easement access is pursued compared to fee title purchase and what infrastructure (if any) would be added.

Land Acquisition Options

Except for the 20 acres of easements on two of the fishery areas, acquisitions would focus on fee simple purchases. Easements have the following operational or funding characteristics that make them more or less suitable as an option for providing conservation opportunities and public access:

- Conservation easements can be used to protect valuable habitat or create buffers around conservation lands. Emphasis is often placed on purchasing and retaining the development rights with improved public access typically a secondary benefit. Portions of conservation easements may be sold or leased back for other open space or agricultural uses.
- Scenic easements to protect critical visual buffers may not provide public access due to non-compatible land uses, lack of access and/or other physical constraints (e.g., steep slopes).
- Agricultural easements can purchase development rights while allowing the continued use of the land for farming or other suitable activities. An agricultural easement could include limited public access (e.g., hunting after crops have been harvested or in the spring prior to planting). Providing public access is not necessarily required to meet the goals of protecting farmland under some state and federal farm programs.

- Fishing easements provide public access and may be used to improve fishery habitat. Easements corridors are narrow (132 feet width) and do not readily accommodate hunting activities.
- Stewardship does not require public access on lands protected through an easement. However, the Department has a strong preference to secure public access for nature-based recreation (e.g., cross-country skiing, fishing, hiking, hunting, and trapping).
- Easements can be relatively expensive relative to outright land purchase and the potential for limited to no public access and/or management opportunities can make easements a less attractive option.

Landscape Protection Areas - The Glacial Heritage Area master plan for Jefferson County (2010) developed a Rural Landscape Protection Areas (RLPA) model similar to the agricultural easement option mentioned above. A RLPA is similar to another Department initiative (i.e., a Forest Legacy project) that protects traditional land uses and prevents further land use fragmentation by purchasing development rights. From an agricultural perspective, the RLPA would protect farm interests by reducing development pressure and buffering farm operations from potentially non-compatible land uses. It can also promote coordination between non-profit land trusts and local, state and federal initiatives that seek to preserve working farms. Such easements could protect wildlife habitat by providing environmental buffers and wildlife travel corridors. They could also provide additional access points for recreational activities and reduce encroachment of housing on the periphery of wildlife areas.

Importantly, the cost of purchasing development rights is high relative to fee simple purchases because there is no certainty that the desired habitat management and public access benefits will be obtained. The RLPA/easement approach was not pursued because it would not provide the needed upland habitat enhancements and improved public access recommended in Chapter Two of this master plan.

If desired, the RLPA approach can be pursued for properties outside of the project boundaries at a later date independent of this master planning process.

State Natural Area Alternatives

This master plan recommends five of the Primary Sites be designated new state natural areas and two of the Primary Sites be added to existing natural areas. This would increase the acreage in state natural areas by 2,759 acres. This would more than double the acreage of natural areas on the CCPG properties.

An alternative would be to not designate these properties as natural areas. Instead they could be managed for their unique values (e.g., native communities or rare species) as current/future resources allow. However, the natural area designation provides the following benefits:

- Recognition that the resource has unique value and fulfills the GAP analysis to strategically obtain parcels that contain rare ecosystems.
- Overlays of natural areas within a fishery or wildlife area provide greater opportunities for collaboration between these programs and Endangered Resources staff. It can also bring added fiscal resources to assist with habitat management and field surveys.
- Permanent protection is provided for remnant native communities, native species,
- Traditional recreational uses are still allowed in the vast majority of cases.
- Habitat restoration provides unique recreational experiences for users not found on other properties.

Impacts on usage will depend on more than just the natural areas designation. The land management classification, and the habitat management objectives and prescriptions developed will also be important factors. For example, a natural area designation may draw more visitors and encourage future study of the unit. However, there may be some reduction in forestry harvests (i.e., if savanna is selected over another forest type) and there may be some seasonal use restrictions to protect the rare and unique resources on the unit.

Recreation Management Alternatives

Improved Public Access

One of the most important reasons for seeking boundary adjustments is improving public access to the properties. An additional 15 to 20 small parking lots (typically 3-5 cars) might be added if all of the proposed boundary adjustments are approved and the land is purchased. This would result in additional capital expenditures ranging from \$110,000 to \$150,000 (installation cost of \$7,500/parking lot) and maintenance costs of \$1,000-\$1,500/year.

Canoe Camping

Allowing canoe camping on the sandbars in the Wisconsin River along the Pine Island WA is not recommended for the following reasons:

- Substantial acreage along the river is in state natural area designation,
- Camping occasionally occurs on the property now and though it has not generated significant problems opening a small stretch of river to camping could lead to confusion about acceptable camping sites, trespass on private lands, and management issues that do not exist today.
- Canoe campers have the option of putting in further downstream and utilizing the Lower Wisconsin State Riverway.

Trails and Trail Infrastructure

No new designated trails beyond those already existing at Lodi Marsh (Ice Age Trail) and Rowan Creek (Pine Island trail) are recommended in this master plan. The CCPG property managers will consult with partner organizations, such as the Ice Age Trail Alliance, the National Park Service, a local unit of government or a snowmobile group, if future trail routes are proposed to pass through one of the CCPG properties. A master plan amendment can be made as needed in the future.

A significant consideration is the desire to continue to provide a rustic outdoor experience on the CCPG properties. Mowed trails would not necessarily add to the stated recreational purpose of the properties. A critical practical factor is most of the state owned uplands are relatively small and non contiguous. This makes trail placement more difficult because it could reduce the quality of the user experience for both consumptive and non-consumptive users. Conversely, the abundant lowlands are wet and the soils are often poorly suited for trail development. In addition, a strictly lowland trail would offer limited views of these diverse properties and on a seasonal basis may be of limited appeal (e.g., mosquitoes).

If the proposed project boundary expansions are approved and adjacent upland parcels are obtained property users can utilize these areas along non-designated paths or off trail hiking. If a trail is warranted due to heavy usage than the need for a designated trail can be revisited in the future. The relevant

Department programs will collaborate on assessing the environmental impacts and determining if a route is approvable. For example, DNR guidance indicates trails should utilize existing upland travel corridors as much as possible to avoid fragmentation of properties and habitat, and should be located away from identified sensitive areas such as high-quality natural communities, wetlands, nesting areas, wild resources, and unique aquatic or terrestrial habitat.

Any trail would need to provide quality experiences for users and be sustainable. A sustainable trail is defined as having minimal ecological impact, is stable over time, requires only periodic routine maintenance and is accepted and/or substantially supported by affected parties.

An additional challenge at several of the properties is the difficulty in crossing the drainage ditches and channelized stream sections. These ditches may have steep sides and have standing water depending on the wetness of the year. Hunters have been known to cut fences and trespass on private lands when hauling out large game from properties that are difficult to traverse due to the ditches.

Adding board walks or foot bridges was not selected because the demand for this type of infrastructure is small relative to the number of other high priority recreational access issues. The capital costs would depend on the size, design, labor and material costs of the boardwalk/bridge. Maintenance costs would depend on factors such as animal damage, flooding, dislodgement, vandalism and other routine maintenance issues. The environmental impacts would probably be minimal if placement avoided areas with high flood frequency and sensitive resources.

Accessible Infrastructure

This plan recommends several sites be evaluated to assess suitability for handicapped accessible recreational activities. The activities and the properties include:

- trout fishing - Lodi Spring Creek FA and Rowan Creek FA
- warm water fishing and a boat launch - French Creek WA
- warm water fishing – Pine Island
- wildlife observation - Mud Lake, Peter Helland, French Creek and Grassy Lake.

Site and infrastructure selections will depend on the following variables: capital and maintenance costs, need for ancillary facilities, site conditions and the anticipated quality of the user experience.

The impacts of these alternatives are anticipated to run into the \$5,000-30,000 range for infrastructure construction costs plus access path and parking lot improvements. Maintenance costs would be modest at less than \$1,000/year. The environmental impacts would be minimal as the footprint of the infrastructure is quite small and several of the sites can utilize existing infrastructure.

An additional consideration in site selection is determining if the Village of Poynette (Rowan Creek FA) and the City of Lodi (Lodi Spring Creek FA) are interested in pursuing collaborative accessibility projects. Joint project could provide a broader array of accessible infrastructure and amenities to mobility impaired users (e.g, accessible bathrooms, other trail segments, picnic tables, etc.).

CHAPTER SIX

SUMMARY OF PUBLIC INVOLVEMENT & COMMENTS ON DRAFT MASTER PLAN

To be completed after the Draft Master Plan public meeting and close of the comment period in April.

DRAFT

Information Sources and References

Acres estimates in this master plan were generated from several web based intranet data systems. All acreages for existing Department properties were derived from the Department's Bureau of Facilities and Lands Land Records system.

Boundary adjustments and cover type acreages were derived from several data bases including the DNR Lands Division Land Records system, DNR Forestry Division WisFIRS, DNR Water Division surface water and fisheries data, and Endangered Resources state natural areas. Soils information was taken from the NRCS Web Soil Survey. The Columbia County Interactive Web Tool was referenced repeatedly for information about land ownership and prime agricultural soils.

This master plan analyzed many attributes including land use patterns and trends, habitat distribution and quality, life history requirements of species of greatest conservation need, recreation needs and trends, and factors that provide for high quality outdoor experiences, and public input.

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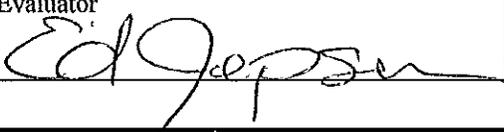
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 Wildlife Areas - www.dnr.org key words wildlife areas
 Fishery Areas – www.dnr.org key words fishery areas
 State Natural Areas - www.dnr.org key words natural areas
 Forestry - www.dnr.org key words forestry and best management practices and biomass
 Handicapped accessible recreation www.dnr.org key words Open The Outdoors
 Bureau of Facilities and Lands files - former master plans for the Rocky Run, Rowan Creek and Hinkson Creek Fishery Areas
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PRELIMINARY DECISION

In accordance with s. 1.11, Wis. Stats., and Ch. NR 150, Wis. Adm. Code, the Department is authorized and required to determine whether it has complied with s. 1.11, Wis. Stats., and ch. NR 150, Wis. Adm. Code.

The Department has made a preliminary determination that the Environmental Impact Statement process will not be required for this action/project. This recommendation does not represent approval from other DNR sections which may also require a review of the action/project.

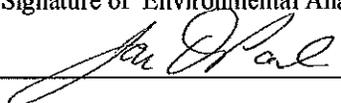
Signature of Evaluator 	Date Signed 11-2-2012
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FINAL DECISION

The public review process has been completed. The Department received and fully considered 31 responses to the news release or other notice.

Pursuant to s. NR 150.22(2)a., Wis. Adm. Code, the attached analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action, and therefore the environmental impact statement process is not required prior to final action by the Department.

The Department has determined that it has complied with s. 1.11, Wis. Stats., and ch. NR 150, Wis. Adm. Code. This decision does not represent approval from other DNR sections which may also require a review of the action/project.

Signature of Environmental Analysis Program Staff 	Date Signed 11/2/2012
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NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to sections 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to section 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with section NR 2.05(5), Wis. Adm. Code, and served on the Secretary in accordance with section NR 2.03, Wis. Adm. Code. The filing of a request for a contested case hearing does not extend the 30 day period for filing a petition for judicial review.

Response to Public Comments Columbia County Planning Group Draft Master Plan October 23, 2012

Background

On August 21, 2012 the draft master plan for the Columbia County Planning Group was released to the public.

An open house was held on September 5, 2012 at the MacKenzie Environmental Center to receive public comments on the draft plan. Fifty four individuals attended the meeting with interests ranging from elected officials, local agency staff, sporting interests, snowmobile enthusiasts, interested citizens and land owners within the proposed boundary adjustment areas.

The comment period closed on September 21, 2012 and 31 individuals or groups submitted comments.

Overview of the Master Plan Comments

Thirty one comments were received on the comment form or as letters, emails, phone calls or verbal comments provided at the public meeting.

Groups that submitted comments favorable to the plan recommendations include:

Pheasants Forever

Wisconsin Wildlife Federation

Arlington Prairie Drifters (snowmobile club)

Audubon Society

Dane County Ice Age Trail

Wisconsin Friends of John Muir

No comments were received from groups opposed to the plan recommendations.

Twenty one comments supported the broad range of recommendations contained in the plan. Four of the comments were from property owners within the project boundaries of the fishery areas and they indicated they would consider selling their properties to the Department. Six commenters were from snowmobile interests and they were supportive of the draft plan recommendations, but requested the plan included language indicating future snowmobile routes would be given due consideration and access to the existing state owned and proposed boundary adjustment areas.

Two opposing comments were received from local elected officials on the target shooting occurring at the Swan Lake Wildlife Area parking lot off county highway P. The county board supervisor for this district supported improving the parking lot area for target shooting. The Town of Pacific board chairman wants the same area closed to target shooting. The town chair also expressed concern about target shooting on fish and wildlife areas that may occur throughout the year.

Three commenters opposed the plan recommendations with particular emphasis on the Peter Helland Wildlife Area and the boundary adjustment areas bounded by Rohrbeck, Raddatz and Zunker Roads. These commenters lived on property within the proposed boundary adjustment area and were not

interested in selling land to the Department. These commenters were also critical of management on existing wildlife lands, did not support pheasant stocking programs, suggested wildlife was less abundant on state lands compared to private lands and believed PILT payments were too low.

One commenter did not want the Rowan Creek Fishery Area project boundary extended eastward and wanted these fish and wildlife properties open to snowmobile use. This commenter also believes PILT payments to local communities are too low.

One commenter supported the Pine Island Wildlife Area class 1 dog trial and training area and the proposed Class 2 dog training area at the Duck Creek PHG.

One commenter supported a larger hiking trail network in and around the Village of Poynette. The commenter serves on a village committee addressing park and recreation issues and wanted to explore trail route options that would connect the Pine Island hiking trail at the Rowan Creek Fishery Area with Jamieson Park and existing village trails.

One commenter supported better parking and bridges across water courses at Hampden Public Hunting Grounds. He also requested better boundary signage to identify the public lands.

One commenter raised a number issues regarding property naming policy, logging revenues and fencing.

Response to Comments

Comments – Two-thirds of the comments received were supportive of the draft plan recommendations. A number of landowners within the boundary adjustment areas indicated they would consider the potential sale of their land to the Department.

Response – If the draft plan is approved by the Natural Resources Board, the relevant Department programs will seek to implement the management and recreation recommendations on the timelines as noted in the plan or as time, staff and resources allow.

Comments – Two commenters favorable to the plan requested the Department seek substantially larger expansion of the boundary adjustments. For example, Ice Age Trail interests recommended the proposed project boundaries at Lodi Marsh be increased by at least 300 acres more than what the plan recommends. They also requested the Department work with other agencies and local units of government to protect the Lodi Spring Creek watershed and the “viewsheds” from the hilltops in and around Lodi Marsh Wildlife Area. The Audubon Society did not specify a property or acreage goal, but supported boundaries that could provide the full 3:1 upland grassland to lowland habitat ratio for duck nesting habitat as recommended in US Fish and Wildlife Service-Wi DNR joint agreements.

Response – The Department is requesting boundary adjustments on several properties, including Lodi Marsh, that balance management efficiency, habitat management goals and recreation priorities consistent with the anticipated staff and fiscal resources over the next 15-20 years. For example, to meet the 3:1 upland grassland to wetland ratio would require the Department expand the property boundaries by 15,000 to 20,000 acres on acreage suitable for grassland habitat. Protecting the Lodi Spring Creek watershed and the “viewsheds” could potentially add several thousand more acres. Meeting the habitat and landscape scale goals requested in these comments can be accomplished in part by DNR boundary expansions, but more importantly by collaboration and joint leadership with

private landowners, non-governmental organizations (e.g., sporting groups and land trusts), state and federal agencies, and other units of government. Tools that could be used to meet these goals include zoning, conservation easements, land trust acquisitions, funding programs (e.g., federal Conservation Reserve Program) and private land owners applying management practices consistent with the land ethic espoused by Aldo Leopold.

Comments – The snowmobile interests were well represented at the public meeting and in the comments. They specifically requested language be added to the master plan indicating snowmobile trails will be given consideration if route adjustments are needed. The commenters indicated snowmobile trail networks can be affected by changes in land ownership, land developments and land owner interests.

Response – Snowmobile trails currently pass through or along the edge of four wildlife areas, three fishery areas and one state natural area within the CCPG. The following language will be added to the draft master plan on Page 40 in Chapter Two - Public Use and Recreation Management Section. “Requests to route snowmobile trails through all existing and future lands acquired for the fish and wildlife properties included in the Columbia County Planning Group will be duly considered and responded to by the appropriate program staff within a reasonable time frame.” Approval of the request will depend on the trail route meeting the criteria outlined on pages 40 and 44 of the draft plan.

Comments – Three commenters near the Peter Helland Wildlife Area did not want to be included within the proposed boundary adjustments, to be surrounded by wildlife lands and do not want to sell their land to the state. Another commenter did not want the Rowan Creek Fishery Area boundaries expanded.

Response – Inclusion of a parcel within a project boundary does not affect a land owner’s uses, management or sale of their lands to other parties. The purchase of lands for fish, wildlife and natural areas is only done on a willing seller basis. Pages 47-48, 50-53 and 125-128 of the draft master plan describe the considerations related to state purchase of fish and wildlife lands. All offers must be at fair market value and the land must possess characteristics valuable for conservation or traditional outdoor recreational purposes. Land purchase criteria are described on page 51 of the draft master plan. The Department is not recommending any expansion of the Rowan Creek Fishery Area boundaries.

Comments – Three commenters had concerns about issues ranging from perceived inadequacies in the state Payment In Lieu of Taxes (PILT) program, to inappropriate disposal of materials and wastes on state properties, to perceptions that habitat management and hunting pressure have led to diminished wildlife populations on state lands and the naming policy for state wildlife lands.

Response – Several of these issues are common concerns about state properties, but they are policy or behavioral issues that are beyond the scope of master planning. For example, PILT rates are set by formulas approved by the state legislature (see pages 47-48). Naming of state properties is a procedure governed by manual codes.

WDNR staff share the frustration of users and nearby land owners who are adversely impacted by the dumping of carcasses, garbage and other wastes on state property or by individuals or groups that engage in behaviors inconsiderate of other users, neighbors and the intended use of the properties. Removing wastes and responding to inappropriate behavior consumes valuable staff time and resources better spent on productive habitat and recreation management activities. The Department seeks responsible behavior from all users and encourages all property users to model a strong land ethic. Despite these nuisances, the Department has an obligation to provide reasonable access to state lands for the general public. The Department’s goal is to provide safe, convenient access and quality

recreation opportunities to the significant majority of users who are responsible and truly enjoy these properties.

Comments – Several comments sought expanded hiking opportunities for regional (i.e., the Ice Age Trail) and local (Village of Poynette and the Rowan Creek Pine Island trail) trail networks.

Response – Property managers are open to discussing opportunities for expanded trail systems consistent with the habitat and recreation objectives for the properties under consideration. Staff will apply design, construction, and maintenance standards to ensure the sustainability and compatibility of all trail segments. Trail routing issues can be assessed in future discussions between the property managers and the appropriate parties.

Comments – There are safety and management concerns about the current target shooting, particularly at the County P parking area, at the Swan Lake Wildlife Area. There is also a desire to provide free or inexpensive target shooting on public lands.

Response – The master plan indicates several properties are being considered as potential host sites for a public shooting range. Outside of this master planning process, WDNR staff are working closely with Columbia County and other local interest groups to design and develop an established shooting range within Columbia county to provide recreational shooters with an opportunity for target shooting. Following the development of an established range, the WDNR will evaluate additional options to address issues where undesirable target shooting occurs outside of the established range. Under current state law target shooting on state fish and wildlife lands is an allowable activity on the properties in Columbia County.