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Feasibility Study Team Members

Guidance Team, Function

John DeLaMater, Lands Leader, West Central Region
Tom Hauge, Director, Bureau of Wildlife
Bob Roden, Director, Bureau of Facilities and Lands

Core Team, Function

Kris Belling *Wildlife Management
Dave Gjestson, Facilities and Lands
Mike Johnson, Wildlife Management
Mike Ries *Landscape Architect
Rob Strand, Environmental Analysis
Dave Weitz, Communication and Education

Extended Team, Function

June Dobberpuhl, Endangered Resources
Marty Engel, Fisheries
Harvey Halvorsen, Wildlife Management
Dave Hausman, Law Enforcement
Rich Henderson, Research
Bill Krochmalski, Real Estate
Mark Kubler, Lower Chippewa River Sub GMU Leader
Kathy Nelson, Forestry
Todd Peterson, Wildlife Management
Karen Voss, Water Resources

*Planning Team Co-leaders

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Environmental Impact Statement and Feasibility Study for the Proposed Western Prairie Habitat Restoration Area

INTRODUCTION

To The Reader

This is the Environmental Impact Statement (EIS) and Feasibility Study for the proposed Western Prairie Habitat Restoration Area. This large study area is located within a 350,000-acre portion of St. Croix and Polk counties. This EIS has been prepared to meet the requirements of the Wisconsin Environmental Policy Act (WEPA) and Chapter NR 150 of the Wisconsin Administrative Code. The Habitat Restoration Area (HRA) concept was created by the state law that established the Stewardship Program (ss. 23.092 (1), Stats.).

The purpose of an EIS is to disclose, explain, and evaluate the environmental effects of a proposed government action to the decision makers and the public. To help accomplish this, the EIS document is circulated for public comment for 45 days, and a public informational hearing is conducted. The public review period and formal hearing give interested and/or affected persons a chance to discuss the study area, project alternatives, and potential impacts directly with the study team.

A Feasibility Study is used to determine whether it is feasible for the Department to establish, acquire, develop and manage a new property, or to make a significant change in the boundary of an existing property. The evaluation of feasibility must take into account the physical and biological environment and their capabilities, the view of the public and adjacent landowners, and the availability of funding and staff to adequately accomplish the project purpose. Further, a feasibility study analyzes boundary alternatives and makes a boundary recommendation, recommends a general management purpose for the new property or expansion area, and ensures integrated ecosystem management principles are considered in these decisions.

Following completion of the 45-day public review period for the EIS/Feasibility Study, DNR staff will analyze comments and information received, and modify this document and the project concept accordingly if warranted. Then various DNR program administrators will review the final EIS/Feasibility Study and refer it to Department Secretary Meyer for Natural Resources Board approval. Ultimately the document is presented for the Governor's approval.

Approval of the EIS/Feasibility Study would authorize the DNR to begin land acquisition. The agency would then develop a property Master Plan which would guide future development and management of the project. This would involve another series of public

meetings over approximately an 18-month time frame ending in the same approval steps described above.

The proposed HRA would establish and protect approximately 20,000 acres of grasslands and wetlands within the study area. In cooperation with other agencies and organizations, the Department would use perpetual easements and fee title acquisition to restore and protect habitat for waterfowl, pheasants, non-game birds, and other grassland wildlife on targeted lands. Habitat restoration and enhancement practices would include permanent grassland plantings, grassland maintenance through prescribed burning and other activities, and filling ditches and breaking tiles to restore wetlands.

The result would be an extensive patchwork of croplands, grasslands, and wetlands that would support a diverse grassland wildlife community. This proposal would provide a wide variety of active and passive recreational opportunities for residents and nonresidents. In addition, this project could benefit surface water and groundwater quality, and the aquatic ecosystems in the area.

The project concept and study area location has generated substantial interest and support from various individuals, elected officials, organizations and other agencies.

Comments on this EIS should be submitted to the following address by June 8, 1998:

Robert Strand, Environmental Analyst
Wisconsin Department of Natural Resources
West Central Region
1300 West Clairemont Avenue
Eau Claire, WI 54701
Telephone # (715) 839-1609

Questions about the proposed Western Prairie Habitat Restoration Area should be directed to: Kris Belling, Wildlife Biologist, Wisconsin Department of Natural Resources, 990 Hillcrest St., Suite 104, Baldwin, WI 54002 (Telephone (715)684-2914); Mike Johnson, Wildlife Technician, Wisconsin Department of Natural Resources, 220 Eagle Drive, Room 104, Balsam Lake, WI 54810 (Telephone (715)485-3518; or Mike Ries, Landscape Architect, Wisconsin Department of Natural Resources, 1300 West Clairemont Ave., Eau Claire, WI 54701. (telephone (715)839-3743)

The public informational hearing on this EIS and Feasibility Study will be announced in a separate mailing and noticed in local and statewide media. The hearing will be held at a site in the study area to make it easier for interested persons to attend.

Definitions

For the purposes of this document, the following words and phrases shall be defined as:

- "area-sensitive wildlife" - species that require a large, contiguous block of habitat to meet one or more of their basic life cycle requirements.
- "biological diversity" - the spectrum of life forms and the ecological processes that support and sustain them.
- "CRP" - The Conservation Reserve Program; a federal agricultural land set-aside program.
- "forbs" - non-woody flowering plants
- "grasslands" - an open vegetative community dominated by herbaceous vegetation. Grasslands could include native prairie, oak savanna, and non-native grasslands.
- "landscape scale"- land management across a broad geographic area
- "non-native grasslands" - grasslands dominated by grass and flower species not native to North America, such as hayfields and planted pastures.
- "non-profit conservation organizations (NCOs)" - 501(c)(3) tax exempt, conservation organization which have land acquisition as one of their purposes.
- "oak savanna" - native grasslands with a few scattered trees, primarily oak. Also referred to as oak openings.
- "prairie" - the native grassland community that was present in the project area prior to European settlement. Prairie consisted of a variety of native grasses and flowers as well as other life forms.
- "presettlement" - prior to a significant presence of European settlers (approximately mid-1800's)
- "rare species" - endangered, threatened, or special concern plants or animals.

Project Summary

One of the provisions of the present Knowles-Nelson Stewardship Program is the establishment of "Habitat Areas." These areas are defined in State Statute 29.092 and Administrative Code NR 51.43. The statute states "the Department shall designate habitat areas in order to enhance wildlife-based recreation in the state, including hunting, fishing, nature appreciation, and the viewing of game and nongame species." The Administrative Rule further defines the criteria for establishing habitat restoration areas and gives a priority to "sites suitable for restoring grasslands and wetlands to benefit gamebirds such as pheasants, dabbling ducks, and grassland songbirds" in certain counties, including St. Croix and Polk.

If this Feasibility Study is approved, the project will be named the Western Prairie Habitat Restoration Area (WPHRA). This 350,000-acre study area encompasses 15 townships within St. Croix and Polk counties. It encompasses the townships of Farmington and Alden within Polk County; and the townships of Somerset, Star Prairie, Stanton, St. Joseph, Richmond, Erin Prairie, Hudson, Warren, Hammond, Troy, Kinnickinnic, Pleasant Valley, and Rush River within St. Croix County (Figure 1). These townships contain high quality wetlands and, in presettlement days, were the center of a large area of prairie and oak savanna landscape.

The prairie and savanna have been largely lost or degraded, although they have to a small extent been replaced by other non-native grasslands. While actual losses of wetlands have not been a severe problem locally, many wetlands have been degraded by a variety of land use activities. As such the functional values of these wetlands have been significantly reduced. These wetlands would benefit if protected from surrounding detrimental land management activities. Along with losses and degradation of these habitats have come declines, and in some cases severe loss, of associated native wildlife species.

Restoration of viable grassland and wetland ecological communities including associated wildlife populations is the primary focus of the Western Prairie Habitat Restoration Area project. Additional benefits would be the preservation of public open space and recreational opportunities in this rapidly developing region, and improved water quality that would benefit fish and other aquatic life.

The WPHRA study area contained over 193,000 acres of prairie and oak savanna when European settlers first arrived in the mid-1800's. The WPHRA land management goal is to cooperatively restore and permanently protect 20,000 acres (approximately 10% of the historic acreage) of grasslands and wetlands scattered throughout the study area. Presently, approximately 5,000 acres of permanently protected grassland and wetlands are located within the study area. These acres would count towards the 20,000-acre land control goal.

The WPHRA proposes to use a landscape-scale approach to restore a portion of the former grassland and high quality wetland habitat to the area. The land control objectives would

include an acquisition component (both fee title and easement) as well as a continuation of efforts to work with other agencies, NCOs and with private landowners. The land in fee title or easements would only be purchased from owners willing to sell. Most lands purchased by the Department would be open to public hunting. Areas purchased under this program would continue to provide tax revenue to local towns and counties. Rights acquired by easement would include the right to develop and manage grassland and wetland habitat. The landowner would retain the right to control trespass and public access. Landowners with easements would continue to pay property taxes.

Development of grasslands would include replanting with native grasses and wildflowers. Restored and existing grasslands would be maintained using prescribed burning, mowing, herbicide application, and limited haying and grazing. Management of wetlands would include restoring areas which have been negatively impacted by human activities, protecting biologically sensitive wetland resources and creating wetlands and wetland complexes in areas with suitable soils, watersheds and adjacent grasslands.

Basically, the WPHRA could be defined as a partnering project for land acquisition and management. The WPHRA proposal outlines strategies to provide guidance and assist other entities to help implement the WPHRA's landscape scale vision and establishes the intent to more formally get involved in partnerships with NCOs and private landowners. Fee acquisition and easements by the DNR and partners would ensure long-term protection of the resource. Short-term partnering through programs such as CRP would provide important additional habitat lands on a short-term basis which would not count toward the 20,000-acre goal.

This 20,000-acre proposal was included in the DNR's five-year acquisition plan which was approved by the Natural Resources Board in 1996. Approval to begin this Feasibility Study and Environmental Impact Statement was received from the Board in early 1997. Only one other project has been established statewide under the Habitat Areas authority: the Glacial Habitat Restoration Area in portions of Winnebago, Fond du Lac, Dodge and Columbia counties in east-central Wisconsin. This project was initiated in 1991. The WPHRA study area location and project concept has generated considerable interest and support from a variety of individuals, groups, organizations, and other agencies. A complete summary of public input and comments received thus far is contained in the Public Involvement section (Section 8) elsewhere in this document.

If the Natural Resources Board and Governor approve establishment of the WPHRA, a Master Plan will be completed in the future to identify in greater detail how the project would be implemented, and to establish a process to give the public an opportunity to be involved in those decisions.

PURPOSE AND NEED

Project Need

The proposed HRA is located in western Wisconsin's prairie pothole region which historically supported a prairie and oak savanna landscape with numerous highly productive wetlands. According to the map produced by Robert Finley from the original land surveyors notes (CA. 1847), over one-half of the study area was in grassland vegetation: 44 percent was prairie, (one of the largest blocks in the state) and 11 percent was oak savanna (Figure 2). It is estimated that less than one percent of Wisconsin's original prairies exist today, and the decline is continuing. The losses and declining trend definitely apply to this locale as well. While some small prairie remnants have survived, the majority of this area is now in agricultural and rural residential use. Other former grasslands now support native and planted woodlands which diminish the wide open horizons that are crucial to the life needs of prairie wildlife. The agricultural setting includes some non-native grassland which can provide habitat for grassland wildlife, but this "surrogate" habitat falls short of what is needed to maintain viable, long-term populations. Very little land has been protected in permanent upland grass other than the limited public land that was purchased and has been managed for ducks and pheasants. While the actual acreage of wetlands in the study area that have been lost due to draining or filling is not large compared to other parts of the state, a variety of surrounding land management activities have resulted in degraded fish and wildlife habitat and reduced water quality.

Restoration and protection of grasslands and wetlands would benefit numerous wildlife species, especially grassland birds, and have secondary benefits for water quality, fish, and other aquatic life. Data from Wisconsin Breeding Bird Survey (BBS) routes from 1966-1996 indicate that populations of many of Wisconsin's grassland birds have declined significantly over the past several years. These declines are primarily attributed to the loss, degradation, and fragmentation of their habitat. Table 1 lists 20 grassland bird species of management concern (Sample and Mossman, 1997, "Managing Habitat for Grassland Birds," WDNR Bureau of Integrated Science Services (BISS)) that are likely to be found in the study area. Eleven of these species have experienced a statistically significant statewide population decline, 12 are listed as species of concern, and three are listed as endangered or threatened in Wisconsin.

Table 1. WPHRA grassland birds of management concern¹.

Species	Status ²	Average Annual Population Trend (%) ³
northern harrier	SC	+2.5*
yellow rail	THR	I
upland sandpiper	SC	-2.6*
short-eared owl	SC	I
sedge wren		1.5
dickcissel	SC	-11.4*(I)
vesper sparrow	SC	-4.2*
savannah sparrow		-1.7*
grasshopper sparrow	SC	-9.3*
Henslow's sparrow	THR	-6.1*(I)
LeConte's sparrow	SC	I
bobolink	SC	-2.6*
eastern meadowlark	SC	-2.3*
western meadowlark	SC	-8.3*
blue-winged teal	SC	-2.5*
Wilson's phalarope	SC	I
loggerhead shrike	END	I
clay-colored sparrow		-2.5*(I)
Brewer's blackbird		-0.9
field sparrow		-2.9

¹ birds that are declining, restricted to a rare habitat, or of uncertain status as defined by Sample and Mossman, in press.

² listed in WI as: SC = Special Concern, THR = Threatened, END = Endangered

³ * denotes a statistically significant trend from 1966-1996

I = insufficient information to determine a trend

From David Sample, WDNR Grassland Community Ecologist, personal communication, and Sample and Mossman 1997. Managing Habitat for Grassland Birds. WDNR-BISS.

Similar to what has occurred with grassland bird populations, the species of reptiles and amphibians that require either prairie or prairie associated wetlands have declined more than any other group of herptiles. The Blanding's turtle (State Threatened) and the bullfrog (State Special Concern) are two herptile species that could benefit from this project.

The white-tailed jackrabbit, a mammal listed as Special Concern, would also be expected to benefit from this project. Three State Threatened fish species, the gilt darter, river redhorse, and greater redhorse, occur in the project area. These species, as well as sensitive cold water fish communities in streams such as the Kinnickinnic and Willow rivers, could also benefit from improved water quality and protection of critical wetlands.

Existing prairie remnants are important for a variety of reasons. They are examples of native prairie communities and can serve as models for restoration efforts. They harbor a diversity of native plant species which are adapted to this locale and can serve as a source of local ecotype seed which can be used in prairie plantings. In addition, they may be valuable sites for nature study or scientific research.

Because of the historical vegetation and the open aspect of the region, St. Croix and Polk counties have been identified by the DNR Bureau of Integrated Science Services (formerly Bureau of Research) as having potential for the establishment of a large scale grassland project. The findings were presented in a report entitled, "Potential Landscape Scale Management Opportunities" by John Krause of the Wisconsin Department of Natural Resources BISS, September 1995. The report highlights the natural features of the prairie landscape including a complex mosaic of prairie and oak savanna and former prairie areas overgrown with oak and aspen cover types as well as wetland/grassland complexes.

A second report entitled "Managing Habitat for Grassland Birds: a Guide for Wisconsin" written by David Sample and Michael Mossman (1997, WDNR-BISS) identifies this area as being a high priority for landscape-scale grassland bird habitat management in Wisconsin. In this report, the Star Prairie Pothole Grasslands are described as having large, open landscapes where farming is not dominated by rowcrops, there are still large pasture systems, and much land is currently enrolled in CRP, making it an area with a high potential for providing grassland habitat.

In addition, the USDA Forest Service has identified this area as one of Wisconsin's most significant grassland landscapes, where restoration efforts may focus on grassland birds (USDA General Technical Report NC-178). The majority of the study area is included in the Northwest Pothole Priority Area for the North American Waterfowl Management Plan, and has been selected to receive grants through the North American Wetland Conservation Act because of the potential for, and value to wildlife of, restoring grasslands and wetlands in this area.

Lands acquired through the HRA project would provide opportunities for outdoor recreation and education in addition to ecological benefits. Based on data from the Statewide

Comprehensive Outdoor Recreation Plan 1991-1996, high and medium priority needs in this part of Wisconsin include hiking, walking, fishing, hunting and nature study. These lands could help to meet those needs and could serve a variety of educational roles from providing outdoor classrooms and hands-on management experience for school children to providing sites for scientific study.

The population of St. Croix and Polk counties has increased at a rapid rate in the last 25 years. From 1970 to 1980, the population of St. Croix County increased nearly 26 percent, while the population of Polk County grew 21 percent. In the last 10 to 15 years, the population of St. Croix County has grown approximately 16 percent, while Polk County's population has expanded about 7.5 percent. In the same time period, the rural farm population in these counties has decreased dramatically, while the rural non-farm population has increased substantially. This trend reflects the influence of the rapidly expanding Twin Cities Metropolitan area. In fact, St. Croix County is officially considered to be part of the Twin Cities Metropolitan area. To this point, development pressure has been concentrated in townships in the western part of the project area. However, commercial, urban, and rural residential development is expected to continue expanding eastward over time. As this happens, opportunities to protect and restore critical habitats and to provide lands for public recreation and education will decrease.

Considering the current trends for population growth and rural/suburban development in the project area, and the associated incremental loss of wildlife habitat and open space, a narrow window of opportunity exists to study implementation of this HRA as a viable project. The WPHRA proposal would result in a high degree of protection of critical resources which would benefit current and future generations.

Goal and Objectives

Goal:

The Department proposes to work in partnership with St. Croix and Polk county residents and other cooperators to provide a landscape complex of native and non-native grasslands, oak savanna, and wetlands; increase populations of associated fauna and flora; improve biological diversity; and provide additional land for compatible public recreation and education.

Objectives:

1. Restore and maintain prairie, oak savanna and other grasslands of sufficient size, quality, quantity, and configuration to meet the needs of grassland wildlife species.
2. Protect and enhance prairie and oak savanna remnants and rare natural resources for their value to the biodiversity of this region and the state.

3. Increase and improve the quality and quantity of wetland ecosystems by restoring degraded wetlands, protecting existing wetlands and other surface waters, and creating wetlands.
4. Increase the amount of land available to the public for wildlife based recreation, nature appreciation, and education.
5. Establish and maintain a working relationship with project partners to achieve the project goal and to foster communication, educational opportunities and involvement with the public.

ENVIRONMENTAL DESCRIPTION

Physical Characteristics

The surface geology within the study area in St. Croix and Polk counties has been influenced by several advances of continental glaciation. The glacial land forms in the area include end moraines, ground moraine areas, and outwash plains. The northwest corner of St. Croix County and southwestern Polk County are covered by end and ground moraine deposits from the Superior Lobe of the Late-Wisconsin glacial advance. The moraine landforms consist of irregular hills and depressions formed in unsorted glacial material ranging in size from clay to boulders. Natural lakes, ponds, and "potholes" are numerous in this landform. The surface drainage pattern is discontinuous and poorly defined in many areas.

Areas of outwash material are intermingled within the moraine deposits. Some of the outwash areas are flat or gently undulating plains. Other areas of outwash are pitted with numerous "pothole" or "kettle" depressions that contain lakes, ponds, or wetlands. Narrow terraces of outwash deposits occur along major streams and drainageways. Soils of the outwash areas are generally sandy and gravelly.

Much of the rest of the study area is covered by ground moraine deposits which originated from glacial advances previous to the late Wisconsin stage of glaciation. The ground moraine areas are characterized by gently rolling topography and a well developed drainage pattern with meandering streams and few lakes. The soils tend to be loamy. Near the south boundary of the study area, much of the old glacial debris has been eroded away, leaving exposed bedrock on many hilltops and steep slopes.

The St. Croix River Valley along the western boundary of the study area was a major glacial drainageway as the ancient glacial ice melted and receded. The present river valley has eroded through all of the unconsolidated glacial deposits and some of the softer sandstone and limestone bedrock formations below. In most areas the bottom of the steep-sided river valley is from 150 to 250 feet below the elevation of the adjacent uplands.

The bedrock underlying the study area consists of Cambrian age sandstone formations, and Ordovician age limestone and sandstone formations. Dolomitic limestone formations of the Prairie du Chien group underlies much of the study area. The dolomitic Prairie du Chien formations are overlain by sandstone of the St. Peter formation and, in some areas, thin units of dolomitic limestone of the Platteville formation. Bedrock stratigraphy in the far western portion of the study area is complicated by a northeast to southwest trending fault system. In this area, Cambrian sandstones of the Eau Claire and Wonewoc formations and Tunnel City and Trempealeau Groups occur close to the surface.

Soils within the study area vary widely from heavy and poorly drained to light and droughty. Most areas are overlain by a wind deposited silt cap ranging from 6" to 48" in thickness. Soils which are generally excessively drained and well drained are found in the western half of the project area. Moderately drained and somewhat poorly drained soils are found more in the eastern sections of the study area. However, the entire range of soil conditions are found to varying degrees throughout the study area.

Soil associations within the study area include: Amery-Cromwell, Burkhart-Chetek-Sattre, Sattre-Pillot-Antigo, Plainfield-Boone, Santiago-Otterholt-Arland, Ritchey-Derinda-Whalen, Santiago-Jewett-Magnor, and Vlasaty-Skyberg Associations in St. Croix County; and Magnor-Freeon, Amery-Santiago-Magnor, Antigo-Rosholt, and Rosholt-Menahga in Polk County.

Some wetlands have been lost, and many others degraded, in the study area. The losses have occurred more in the northern and southern portions of the study area where topography has facilitated drainage. Because of the complex topography in the central part of the study area, wetlands in that unit were less likely to be drained. Many remaining wetlands have been degraded by a variety of land use practices such as grazing and elimination of vegetative buffers that have resulted in increased siltation and fertility, and reductions in desirable emergent and submergent aquatic vegetation. While these wetlands still exist, their value for wildlife habitat and water quality protection is limited and would increase if they were protected.

Surface waters within the study area are made up of numerous lakes, ponds, prairie potholes, rivers, streams, and intermittent drainage ways. The majority of the study area is within the St. Croix River watershed with the exception of a small portion in the Rush River watershed. Within the St. Croix River watershed there are the Apple, Willow, and Kinnickinnic river sub-watersheds. Each of these basins contain numerous dry runs and other surface drainage features which carry water during spring runoff or during extreme storm events. All of these features have the ability to transport sediment and pollutants, and are greatly affected by land use practices in their watersheds. The Kinnickinnic River, Bass Lake and Perch Lake are ranked as Outstanding Resource Waters, and the lower portion of the Apple River is classified as an Exceptional Resource Water, in Wisconsin Administrative Code NR 102. The Kinnickinnic and Willow rivers contain regionally important trout fisheries.

The St. Croix River is the region's most significant surface water feature. Upstream from the north boundary of the City of Hudson, the St. Croix is ranked in Wisconsin as an Outstanding Resource Water. Downstream from the south boundary of the City of Hudson, it is ranked as an Exceptional Resource Water.

The principle sources of potable water supplies in the study area are sand and gravel aquifers. In some areas potable water is obtained from the highly fractured dolomite formations and from the upper part of the Cambrian age sandstone formations. The source of all groundwater recharge in the project area is precipitation. Between 1 and 10 inches of precipitation per year infiltrates and recharges groundwater aquifers. The sand and gravel and limestone aquifers are very susceptible to pollution. In general, groundwater in the study area moves slowly through unconsolidated material and bedrock toward discharge points including the St. Croix River and its tributary streams.

Biological Resources

At the time of settlement by European immigrants in the mid-1800s, significant portions of western Wisconsin were covered by expanses of open grassland. The land was called "prairie" by early French settlers who could think of no other way to describe it than the word they used for "meadow." The study area in Polk and St. Croix counties once had nearly 200,000 acres of tall grass prairie and oak savanna (grasslands with scattered oak trees) that were dotted with rich wetlands. Wildlife was abundant. In fact, many of the first visitors to the area reported great numbers of bison, elk and wild fowl.

In addition to the large expanse of native grasslands, nearly 140,000 acres were covered by oak brush, oak forest and aspen. Since all of these vegetative communities depend on periodic disturbance, it is likely that wildfires were a frequent occurrence on the landscape. It is also likely that the actual prairie and savanna acreage fluctuated over time depending on the distribution, frequency and intensity of wildfires. Only about 6,000 acres, less than 2 percent of the study area, were composed of hardwood or mixed hardwood/coniferous forest at the time of the original land survey.

The pre-European settlement landscape has been largely converted to an agricultural landscape with scattered cities and villages and an increasing rural residential component. The study area now consists primarily of corn/oats/hay rotational agriculture along with some areas of cash crop farming and some pastured or fallow grassland. A significant acreage of agricultural land has been idled during the past several years through the federal Conservation Reserve Program (CRP). Some of the previously open grassland and savanna has naturally converted to forest, and additional grasslands have been converted to trees through various government programs. Still, forested land continues to be a relatively small component of the landscape. In recent years a marked increase in the conversion of forested land, cropland and idle land to rural residential uses has occurred.

A survey of prairie remnants in St. Croix County was conducted in 1995 as a cooperative project between the DNR and the USFWS. The survey involved aerial photography interpretation followed by a single visit to each site in late summer to document plant species presence. This means that spring and early summer flowering species may have been missed. Additional surveys would be needed to identify additional sites containing prairie remnants and to better document the presence of species on the remnants.

The survey was not a complete inventory of prairie remnants or species occurrence, but it does provide some valuable information on the status of prairie in St. Croix County. A total of 159 prairie remnants were identified and inventoried within the study area. Of these, 4 were ranked as high-quality, 21 as high-average, 62 as average, 50 as low-average, and 22 as low quality. Over 125 species of plants associated with prairies were identified; this number is a minimum because it is likely that the survey missed some species. While many of the remnants were small and of average quality, the high number of remnants and species found indicate that there is a significant remnant resource on the landscape. These remnants may harbor valuable resources including rare prairie insects and local ecotype seed sources which can be used for grassland restorations at other local sites. They can also provide special educational and research opportunities.

The majority of the existing grassland component is non-native grasslands. These grasslands, especially idle pastures and CRP lands, provide habitat for grassland wildlife. However, a variety of factors make many of them less suitable for wildlife than they could be. Such factors include size, shape, location relative to other habitat, lack of plant diversity within the stand, existence of or potential for disturbance, lack of winter and early spring cover, and lack of permanent protection.

Natural woodlands within the study area are primarily oak/hickory, southern mesic hardwood and aspen forests. Some of these forests are likely former oak savanna or prairie that were allowed to fill in with trees once fire was no longer a frequent occurrence on the landscape. Plantations of pine or oak/pine have been planted as part of the CRP or other land management programs.

The aquatic communities found in the study area include lakes, as well as both coldwater and warmwater streams. The Willow River is a regionally important trout stream, and the Kinnickinnic River contains one of the premiere trout fisheries in the midwest. It supports an exceptionally high-density, self-sustaining population of brown trout throughout the system as well as brook trout populations in the headwaters and tributaries. The Apple River and the St. Croix River are home to a variety of rare fish, mussels and aquatic invertebrates. The numerous inland lakes within the study area contain important game fisheries.

An estimated 143 species of birds, 42 species of mammals, and 32 species of reptiles and amphibians are known or likely to breed in the study area (Tables 2, 3 and 4). Lakes, ponds, rivers and streams support warmwater and coldwater aquatic ecosystems which include numerous species of fish and invertebrates.

Ten species of birds known to occur in the study area are listed as Endangered or Threatened in Wisconsin, and 19 species are listed as Special Concern. Nearly all of these rare birds are species requiring grassland and/or wetland habitat. Regionally and locally these species have declined as a result of the loss, fragmentation or degradation of grasslands and wetlands. As a group, grassland birds have declined more than any other group of birds. Documented examples include statewide declines of over 90% for the western meadowlark, grasshopper sparrow and dickcissel.

Many of the smaller grassland mammals such as the badger and pocket gopher have adapted well to the agricultural setting, but the larger mammals such as bison and elk no longer exist in this area. In Wisconsin there are seven grassland mammals classified as Special Concern in Wisconsin. Two of those mammals, the white-tailed jackrabbit and the prairie vole, are known to occur in the study area.

Many of the reptile and amphibian species present in the study area use or depend on grassland and/or grassland associated wetlands for part of their life cycle. Two rare species, the Blanding's turtle (State Threatened), and the bullfrog (State Special Concern) could benefit from wetland and grassland restoration in the WPHRA.

Little is known about the invertebrates of the study area or of Wisconsin's native prairies but one grassland butterfly, the regal fritillary, which has been found in the study area, is listed as an endangered species. There are probably many other grassland insects which are extinct, no longer found in the state, or have not yet been discovered but which may exist in prairie remnants within the study area.

Table 2. Birds known or likely to be present in the study area during the breeding season.

common loon	common snipe	American robin
red-necked grebe (E)	ring-billed gull	wood thrush
pie-billed grebe	Forster's tern (E)	veery
double-crested cormorant	black tern (SC)	eastern bluebird
great blue heron	rock dove	blue-gray gnatcatcher
green-backed heron	mourning dove	cedar waxwing
great egret (T)	black-billed cuckoo	loggerhead shrike (E)
black-crowned night heron (SC)	screech owl	European starling
American bittern (SC)	great horned owl	common house sparrow
Canada goose	barred owl	red-eyed vireo
mallard	long-eared owl (SC)	warbling vireo
gadwall	short-eared owl (SC)	blue-winged warbler
northern pintail (SC)	whip-poor-will	nashville warbler
green-winged teal	common nighthawk	yellow warbler
blue-winged teal (SC)	chimney swift	chestnut-sided warbler

(Table 2 Cont'd.)

northern shoveler	ruby-throated hummingbird	ovenbird
American wigeon	belted kingfisher	northern waterthrush
woodduck	common flicker	mourning warbler
redhead (SC)	pileated woodpecker	common yellowthroat
lesser scaup	red-bellied woodpecker	American redstart
ring-necked duck	red-headed woodpecker	cerulean warbler (T)
ruddy duck	yellow-bellied sapsucker	bobolink (SC)
hooded merganser	hairy woodpecker	eastern meadowlark (SC)
turkey vulture	downy woodpecker	western meadowlark (SC)
Cooper's hawk	eastern kingbird	yellow-headed blackbird
sharp-shinned hawk	eastern phoebe	red-winged blackbird
red-tailed hawk	least flycatcher	orchard oriole (SC)
red-shouldered hawk (T)	alder flycatcher	northern oriole
broad-winged hawk	willow flycatcher	Brewer's blackbird
bald eagle	eastern wood-pewee	common grackle
northern harrier (SC)	horned lark	brown-headed cowbird
osprey (T)	tree swallow	scarlet tanager
peregrine falcon (E)	bank swallow	northern cardinal
American kestrel	rough winged swallow	rose-breasted grosbeak
ruffed grouse	barn swallow	indigo bunting
ring-necked pheasant	cliff swallow	dickcissel (SC)
gray partridge	purple martin	American goldfinch
sandhill crane	bluejay	rufous-sided towhee
Virginia rail	American crow	savannah sparrow
sora rail	black-capped chickadee	grasshopper sparrow (SC)
yellow rail (T)	tufted titmouse	Henslow's sparrow (T)
American coot	white-breasted nuthatch	LeConte's sparrow (SC)
killdeer	brown creeper	vesper sparrow (SC)
upland sandpiper (SC)	house wren	chipping sparrow
spotted sandpiper	marsh wren	clay colored sparrow
Wilson's phalarope (SC)	sedge wren	field sparrow
woodcock	gray catbird	swamp sparrow
	brown thrasher	song sparrow

E = endangered, T = threatened, SC = special concern

List based on Evrard, J.O. and R.A. Lillie. 1996. The Flora and Fauna of northwest Wisconsin waterfowl production areas. *Trans. Wis. Acad. Sci., Arts and Letters* 84:69-102; and Faanes, C.A. and S.V. Goddard. 1976. The Birds of Pierce and St. Croix Counties, Wisconsin. *The Passenger Pigeon* 38(1):19-39 and 38(2):57-71.

Table 3. Mammals likely to be found in the study area.

opossum	eastern chipmunk	long-tailed weasel
little brown bat	pocket gopher	northern white-footed mouse
big brown bat	woodchuck	prairie deer mouse
red bat	beaver	prairie vole (SC)
hoary bat	muskrat	Norway rat
silver haired bat	black bear	meadow jumping mouse
eastern long-eared bat (SC)	coyote	house mouse
eastern pipistrelle (SC)	red fox	meadow vole
cottontail rabbit	gray fox	short-tailed shrew
white-tailed jackrabbit (SC)	otter	masked shrew
13-lined ground squirrel	badger	star-nosed mole
gray squirrel	mink	prairie mole
fox squirrel	striped skunk	raccoon
southern flying squirrel	short-tailed weasel	white-tailed deer

E = endangered, T = threatened, SC = special concern

From Evrard and Lillie, 1996; and Jackson, H.H.T. 1961. Mammals of Wisconsin. The University of Wisconsin Press.

Table 4. Reptiles and amphibians likely to be found in the study area.

eastern American toad	central newt	northern prairie skink
chorus frog	redback salamander	prairie racerunner
northern spring peeper	blue-spotted salamander	yellow-bellied racer
eastern gray treefrog	eastern tiger salamander	midland brown snake
Cope's gray treefrog	snapping turtle	eastern hognose snake
bullfrog (SC)	wood turtle (T)	western fox snake
green frog	Blanding's turtle (T)	eastern milk snake
northern leopard frog	Painted turtle	common garter snake
wood frog	common map turtle	northern red-bellied snake
pickerel frog (SC)	false map turtle	northern water snake
mudpuppy	spiny softshell turtle	

E = endangered, T = threatened, SC = special concern

From Bob Hay, WDNR Coldblooded Species Manager, personal communication.

Rare^{1*} species and communities

The study area includes rare biotic communities which range from the aforementioned small native prairie remnants that support rare prairie plants, to high quality wetlands that support populations of endangered or threatened birds and reptiles. A review of the Department's Natural Heritage Inventory database indicates the occurrence or probable presence of 54 rare plants and 21 rare animals in or near the study area. The Natural Heritage Inventory also indicates the presence of several aquatic and terrestrial sites that possess features and/or communities that are considered to be unique or rare. The complete list of endangered, threatened, and special concern plant and animal species known to occur in or near the study area is included in Appendix A.

Of the 54 rare plant species documented to occur in or near the study area, 18 are listed as endangered or threatened in Wisconsin. Endangered plants include Carolina anemone, ground plum, brook grass, prairie bush-clover, dotted blazing star, Louisiana broomrape, rough rattlesnake root and small skullcap. Threatened plants include musk-root, dwarf milkweed, kitten tails, Hill's thistle, yellow gentian, silver bladderpod, brittle prickly-pear, bog bluegrass, snowy campion and snow trillium. The remaining rare plants listed are considered Special Concern species. These species are being monitored and may be considered for future listing as endangered or threatened. Some of the species occurrence records are historical and field investigation would be necessary to determine their current status in the study area.

Of the 46 rare animal species documented in the study area, 16 are listed as endangered or threatened in Wisconsin. Endangered species include the American peregrine falcon, red-necked grebe, loggerhead shrike, and regal fritillary. Threatened species include Henslow's sparrow, yellow rail, red-shouldered hawk, great egret, cerulean warbler, osprey, wood turtle, Blanding's turtle, gilt darter, river redhorse, greater redhorse, and the wing snaggletooth. The remaining rare animals are considered Special Concern species whose status is being monitored. These species may be considered for future listing as endangered or threatened. As with the rare plant occurrence records, some of the rare animal occurrences are historical accounts. Field surveys would be necessary to determine the current status of those species.

Three species which occur in or near the study area are also listed as Federally Endangered. These species include two raptors - the bald eagle and the peregrine falcon; and one insect - the Karner blue butterfly.

The study area also contains several natural areas that are considered to possess unique biologic and/or geologic features. These areas contain nearly intact plant and animal communities, and/or significant geologic features that are considered to be relatively unchanged from pre-settlement times. The only dedicated State Natural Area located within

^{1*}note definition of "rare species" on page 3

the study area is the Apple River Canyon. This natural area, located where the Apple River descends through a steep gorge to meet the St. Croix River, contains several unique features including dry and shaded cliff communities, northern dry mesic forest, southern dry forest, and dry prairie. Other natural areas that have been identified, but not formally designated, include Hammond Cemetery prairie, Roberts Railroad prairie, Warrens pothole lakes, Twin Lakes, Willow River gorge, Trout Brook wetlands, Casey Lake wild area, Scout Camp woods, Oak Ridge lake, St. Croix Islands wetland complex, and Cedar Bend Bottoms wetland complex.

Public Land

There are approximately 11,500 acres of federal, state, and local wildlife and fisheries areas and parks within the study area boundary. These areas are managed to provide important feeding, breeding and nesting cover, as well as other habitat values, to a wide variety of plant and animal species. In addition, there are private conservancy areas which provide similar habitat values.

Table 5. Lands permanently protected for conservation purposes

Public land (fee title ownership)

Wisconsin DNR	5,320 acres
U. S. Fish and Wildlife Service	4,607 acres
National Park Service	1,603 acres
Total public:	11,530 acres
Private conservancy groups (primarily fee)	1,470 acres
Total land protected:	13,000 acres

Major state properties in the study area include the Kinnickinnic River State Fisheries Area, Willow River State Park, and St. Croix Island State Wildlife Area. Other public and quasi-public lands include scattered state and federal wildlife properties, the Lower St. Croix National Scenic Riverway and the Standing Cedars Trust property. Several other large state owned or managed properties are located within a short distance of the study area. These include the Cylon Wildlife Area, Cylon Marsh Wildlife Area, Kinnickinnic State Park and Interstate State Park.

Social-Economic Conditions^{2*}

The proximity of the study area to the Twin Cities Metropolitan area, its appealing rural setting, favorable business climate, and well developed highway infrastructure have resulted in significant population and development growth over the past 25 years. In the 1980's, the populations of St. Croix and Polk Counties grew at rates of 16.2 and 7.5 percent, respectively. The fastest growing population segment has been for rural non-farm residents. In 1990, the rural non-farm segment accounted for 43 percent of the total population in St. Croix County, while the rural farm population segment had fallen to less than 10 percent of the total. This data reflects the boom in rural residential development that is occurring in the study area. Townships, cities, and villages along the western edge of the study area have grown the fastest, but these trends are expected to continue eastward. Because of this relationship, St. Croix County is included in the Minneapolis-St. Paul Metropolitan Statistical Area.

Economic indicators such as per capita income, employment rates, and property values are measures of economic growth in the region. These indicators are higher in the western part of the study area, presumably due to the influence of the nearby metropolitan area. On the eastern side of the study area, where agriculture is still a predominant land use, per capita income and property values are somewhat lower. Residential growth has led to a change in the rural character of the study area. Overall, the residential growth within unincorporated areas has begun to transform the previously rural farm areas into rural residential areas.

In 1978 farmland accounted for nearly 80 percent of St. Croix County's total land area, whereas it accounts for only 65 percent today. The number of farms in the study area has also decreased by approximately 20 percent during the past 25 years. In St. Croix County, the number of farm households is presently about 8.5 percent of the total households in the county.

The current trends for growth and development rates and patterns in St. Croix and Polk counties are expected to continue into the foreseeable future. During the 25-year period from 1995 to 2020, the population of St. Croix County is projected to increase 40 percent. Similarly, the population of Polk County is projected to increase by 6 to 7 percent each decade during the same period. Housing units are expected to increase by nearly 55 percent during the next 25 years. The local economic base, supported by increases in manufacturing service sectors, is also expected to increase.

^{2*}From the St. Croix County Draft Development Management Plan - Trends Analysis section, 1997, and "Polk County Population and Economic Profile," 1997.

Cultural-Historic Resources

The abundant game and fertile soils of the study area have made it an attractive place for human habitation since prehistoric times. Evidence of mankind's historic and prehistoric activities remain on the landscape in many locations.

According to the Wisconsin State Historical Society (SHS) archaeological database, there are 104 known archaeological sites in the study area. These sites consist of burial mounds, cemeteries, unmarked burials, prehistoric archaeological sites, and historical-period archaeological sites. According to the SHS architectural-history database, there are 70 known structures in the study area that are potentially eligible for inclusion in the National Register of Historic Places. The types of historic structures present in the study area include houses, churches, bridges, schools, barns, outbuildings, and town halls. It is also reasonable to assume that there are numerous unidentified archaeological sites and historic structures in the project area that could be eligible for inclusion in the National Register of Historic Places.

If the proposed project is approved, and planning progresses to the stage of habitat modelling to identify potential land protection and acquisition focus areas, more detailed inventories and analyses of archaeological and historical resources in the proposed alternative would be conducted.

The northern portion of the study area falls within the Chippewa Tribe's ceded territory. This means that members of the Chippewa Tribe's six bands can hunt, fish and gather on any publicly-owned land and public waters within the ceded territory without being licensed by the state. However, the Tribe requires licenses and permits of their own which enables monitoring of the harvest and participation activities.

PROJECT DESCRIPTION

Preferred Alternative

This alternative is the proposed project. It is a landscape-scale scenario which includes the goal to protect and restore 20,000 acres of wetland and grassland within the 350,000-acre (15 townships) study area.

This site was proposed because it encompasses an area that was grassland prior to European settlement and because it currently contains existing and restorable grasslands, wetlands, and native prairie and savanna remnants. Therefore, it provides a unique opportunity to provide a patchwork of wetland and grassland habitat on the scale needed to maintain and enhance wildlife populations and to restore and preserve local biological diversity.

The goal of 20,000 acres is approximately 10 percent of the presettlement grassland acreage. This is the formula DNR researchers recommend as a *minimum* to maintain a viable grassland

community in this area. It is proposed that the protected lands be selected based on their biological value including value as a remnant of a native grassland community and/or value as potential habitat for grassland wildlife while taking into consideration land values, local land-use planning and agricultural concerns.

DNR researchers recommend that these lands would not be randomly distributed across the project area, but would include some focused grassland landscape areas where the size and concentration of the grasslands would be greater than in other locations. In addition to creating suitable habitat for area-sensitive wildlife species, these focused grassland landscapes would help maximize management efficiency. Valuable prairie remnants that occur outside of the focus areas could still be protected as well. More specific criteria for identifying land to be protected and the location for the focused grassland landscapes would be determined during the Master Planning process.

The preferred alternative also proposes that the 20,000 acres be permanently protected by use of a variety of tools. This would include fee title acquisition or permanent easements held by the DNR or by a variety of partners including other agencies or private conservation organizations. It is hoped that DNR grants to NCOs could increase their ability to contribute to the land protection goal. The Master Planning process would help to determine if certain ways of protecting the land should be used in certain situations. For example, some situations may be more appropriate for DNR fee title acquisition, and others may be more appropriate for an NCO to take an easement with the help of a DNR grant.

Methods:

1. Permanently protect scattered grassland and wetland parcels totalling approximately 10 percent (20,000 acres) of the historic grassland acreage within the HRA area. Lands owned or managed by other agencies or cooperators would count towards this acreage goal.
 - a. The land would be permanently protected by using fee title acquisition or permanent easement. Approximately 5,000 acres of grassland and wetland are currently protected, leaving a goal of 15,000 additional acres to be protected. A portion of this would be protected by other public or private organizations. Lands would only be acquired from willing sellers.
 - b. Additional lands would be protected by short-term contracts such as CRP or private lands management agreements administered by the DNR or other public or private organizations.
 - c. Approximately 1/3 of the protected land would be in focused grassland landscapes. For example, there could be one large grassland landscape (a 1,000-2,000 acre core with an additional 3,000-4,000 acres scattered

with a 10,000-acre area) and three small grassland landscapes (a 250-1,000 acre core within an additional 100-1,500 acres scattered within a 1,000-5,000 acre area). The remaining protected lands could be scattered throughout the HRA.

- d. Most parcels to be acquired by the DNR would be a minimum of 20 acres in size except native prairie or oak savanna remnants which may be smaller. Cumulative parcel size may reach 2,000 acres for the large grassland landscape and 1,000 acres for the small grassland landscapes.
 - e. The highest priority for acquisition would be those parcels which include a native prairie remnant, a restorable oak savanna, an endangered or threatened resource, restorable wetlands or larger parcels (over 80 acres) of existing or potential grasslands in an open landscape context. Wildlife habitat models would be used to guide acquisition to meet the needs of as many species as possible.
 - f. A variety of native and non-native grassland types would be provided consistent with "Managing Habitat for Grassland Birds" (Sample and Mossman, WDNR-BISS, 1997). Priority would be given to using native grasses and forbs in restorations.
 - g. Grassland cover would be provided by maintaining or enhancing existing grasslands and by converting agricultural lands under a cooperative management agreement or DNR/USFWS ownership to grassland.
 - h. Prescribed management for the grasslands would include burning, mowing, herbicide application and limited haying and grazing.
2. Wetlands would be restored, created or protected through acquisition and management of the parcel containing the wetland.
- a. Wetlands degraded by ditching, tiling, filling, grazing, sedimentation or other causes would be restored.
 - b. Wetlands would be created in non-wetland areas using low-head dikes and shallow scrapes.
 - c. Wetland parcels would be protected by fee title acquisition or permanent easement or through a long-term private lands management contract or agreement.
 - d. Except in unique circumstances, wetlands would not be acquired unless a reasonable upland buffer could also be acquired.

3. Partnerships within and outside of the Department would be developed and enhanced to encourage cooperation and assistance in meeting the project goal. Partnership activities could include, but would not be limited to:
 - a. Coordinating land acquisition and habitat management efforts with other Department projects such as priority watersheds, state parks, fisheries areas and natural areas. For example, two state cooperators include Willow River State Park and the Kinnickinnic River Fisheries Area. Both of these properties have existing and potential grasslands and wetlands that could help meet the landscape scale goal.
 - b. Coordinating land acquisition opportunities with the US Fish and Wildlife Service (USFWS).
 - c. Cooperating with the USFWS on public and private lands habitat management projects through sharing of grants, equipment, and personnel.
 - d. Participating in county land-use decisions which could lead to protecting wetlands and grassland habitat.
 - e. Assisting the Natural Resource Conservation Service (NRCS) and Farm Service Agency (FSA) in developing guidelines for implementing farm programs such as CRP, wetland reserve, Wildlife Habitat Incentives Program (WHIP), and Environmental Quality Incentives Program (EQIP) programs.
 - f. Coordinating land protection efforts with local land trusts and other NCOs.
 - g. Working with various agencies, municipalities, civic or conservation organizations, educational institutions, corporations or others to obtain funding and staffing (including volunteers) needed to implement the project.
 - h. Facilitate the establishment of a citizens advisory group to assist in project planning and implementation.
 - i. Coordinating and cooperating with efforts by the DNR or other agencies or organizations to preserve agricultural lands, and therefore the open, rural landscape, in the focused grassland landscape portions of the WPHRA.

Acquisition

The Department proposes to establish an acquisition goal of 15,000 acres within the WPHRA project area (derived by subtracting the 5,000 acres of wetlands and grasslands already under permanent protection from the 20,000 acre total protection goal). The 15,000-acre acquisition goal would ensure that the DNR has enough authority to meet the 20,000-acre goal if other cooperators do not contribute additional lands. However, to the extent possible, the Department would use partners to achieve project acquisition goals. Therefore, the DNR may not, in reality, need to purchase or administer the full 15,000 acres.

Examples of land protection by others that could be counted toward the goal include fee or easement purchases by other agencies, fee or easement purchases by land trusts or NCO's, voluntary permanent deed restriction by individuals, or deed restrictions resulting from implementation of county or township land-use plans. To count toward the goal, each parcel, regardless of who holds the title or easement, would have to meet habitat criteria which would be refined during the master planning process. NCO's acquiring easements with Department grant funds generally must allow public access.

The 15,000-acre DNR acquisition goal would be for lands permanently protected through fee title purchase or purchase of perpetual easements. Which of these tools will be used would depend on landowner interest, value of the land, available funding, and other factors such as type of habitat or location.

The following criteria would be refined and further developed during the Master Planning process to guide prioritization of acquisition efforts. Criteria would likely include factors such as existence of rare species or communities; habitat potential for ducks, pheasants and non-game grassland wildlife; parcel size and location; secondary resource benefits such as water quality; agricultural viability; land prices; and compatibility with local planning and zoning. The Department will carefully select the location of the focused grassland landscapes and work with locally initiated zoning so that an agricultural landscape is maintained and the habitat does not become isolated by incompatible development. Due to high development density and land values, the Department does not anticipate that a significant amount of acquisition would occur in the Towns of Troy, Hudson and St. Joseph. Acquisition would focus on existing or potential grasslands and wetlands in the more rural townships except that remnants would be protected in all locations. Woodlands would not be a focus of acquisition unless they have potential for oak savanna restoration. Small acreages of woodland may be acquired incidental to other purchases.

It is the Department's intent to avoid purchase of Class 1 agricultural land to the extent possible. Class 1 lands may be purchased in situations where they occur as small inclusions within larger parcels of less productive land. If a viable piece of Class I ag land is purchased, the Department would, if possible, sell back the land with easement restrictions or would enter into a farming agreement so that the land would remain in agricultural production and adjacent grasslands would be protected from incompatible development.

Most lands purchased in fee title by the Department under HRA authority would be open to public uses typically allowed on State Wildlife Areas, including hunting and trapping, scientific study, nature study, hiking, cross-country skiing and wildlife viewing. Lands purchased under other authorities could count toward the goal if the appropriate habitat is provided, but might have different uses allowed. Additional discussion of appropriate uses could be undertaken during the master planning process.

Easements purchased by the DNR under HRA authority would include the right to develop and manage the land as wetland and/or grassland habitat. Such easements generally would not include the right for public access. Experience in the Glacial HRA has shown that the value of an easement including both the management and public access rights is so close to the fair market value that it simply makes the most sense to purchase the land outright. Therefore, it is highly unlikely that easements including access rights would be purchased under this program. However, those types of easements could still be taken under other authorities (eg. fisheries habitat and streambank protection projects) and those lands could count toward the acreage goal if the habitat criteria were met.

Land Management

Grassland restoration would generally follow the pattern used in the Glacial HRA, the guidelines proposed by Sample and Mossman, and "Wisconsin's Biodiversity as a Management Issue" (WDNR, 1995). Wildlife habitat models for ducks, pheasants and non-game grassland birds would be used to determine which parcels of land can best meet a variety of wildlife habitat needs. Factors to be considered would include existing cover, size of parcel and proximity to other habitats (eg. grassland habitat near wetlands would be preferred over grassland habitat adjacent to woodlands). Grassland protection and restoration should occur in blocks ranging from 20 acres to 2,000 acres in size. High quality prairie or savanna remnants could be smaller than this, but would ideally be part of a protected parcel of at least 20 acres to increase its value for nesting grassland birds, increase management efficiency, and reduce the potential adverse effects of incompatible land-use on adjacent properties. Grassland blocks larger than 80 acres are preferred both from the habitat and management perspective.

The HRA would attempt to provide a variety of grassland types including short and tall, dense and sparse, and dry, mesic and wet to meet the variety of habitat needs of a variety of wildlife. New grass plantings would use native grasses. Initially, existing non-native grasslands would be maintained, but a long-term goal may be to convert those fields to native grasses. The preference would be to use local ecotype native seed when possible. A forb component in the native grasslands would also be encouraged. The grassland parcels would be scattered throughout the WPHRA, but are proposed to be clustered in some higher priority areas rather than evenly distributed across the entire unit.

Once established, management would be undertaken to maintain the vigor of the grasslands and minimize encroachment by brush and trees. This would be accomplished through use of

prescribed burning as well as chemical treatment and mechanical brush removal. In addition, the potential for the use of limited haying and grazing would be explored. Prescribed burning would occur according to Department policy and would be coordinated with local emergency services and fire departments. Burning would be done in such a manner that it did not create public health or safety controversy. In all likelihood, tree and brush removal on small prairie remnants in developed areas would be by mechanical means rather than burning. Prairie remnants would be used as seed sources and small seed production plots would be established and managed to increase the amount of harvestable, local ecotype seed.

In the focused grassland landscapes, efforts would be made to maintain the openness of the landscape on the privately owned lands around the grasslands. This could include incentives and/or assistance to landowners for things such as removal of trees from fencelines, controlling brush and tree invasion on fallow or set-aside lands, and offering alternatives to planting areas to trees. The goal would be to have no more than 5% of the area in the focused grassland landscapes in woody cover and to minimize linear strips of trees such as fencelines.

In remnant oak savannas, brush and undesirable trees would be removed and prescribed burns would be conducted to restore the species composition and vegetative structure of an oak savanna. Oak trees would be planted in an attempt to restore oak savanna, and wildlife shrub plantings would be done in selected locations to provide winter wildlife food and cover.

Wetlands would be restored wherever possible. Attempts would be made to purchase/ease restored and degraded wetlands within a larger block of land that is or would be converted to grassland. This would protect the wetlands from the potential negative impacts associated with some adjacent land uses such as residential development, farming practices and livestock. The buffer would also provide nesting cover adjacent to the wetland habitat for the species that use both habitat types. Wetlands could also be created/enhanced in selected situations if it was felt that the benefits would justify the effort. Management and restoration of wetlands could include plugging ditches, disabling tile drainage systems, installing water control structures to manipulate water levels, and fencing over-grazed wetlands.

Development on all DNR properties purchased under the authority of the WPHRA would be limited to such things as off-road parking, property boundary identification and fencing, grassland plantings, oak or wildlife shrub plantings and construction of lowhead dikes.

Partnering

This project is different from previous DNR projects in that it is proposed to be carried out in conjunction with several partners, both public and private, within and outside of the DNR. The partners could provide permanent land protection; could cooperatively pool funding for

acquisition, development and management costs through cost-share programs and grants; and could provide labor (paid or volunteer) to help accomplish work needs.

Within the DNR, grassland and wetland habitat protection opportunities could occur on state Parks, Fisheries Areas, Streambank Protection Areas, Natural Areas and Wildlife Areas. The Priority Watershed program, a cooperative state/county program, seeks to improve water quality in selected surface waters through implementation of various "best management practices" on eligible lands within the watershed. This could include practices which could help meet WPHRA goals. Currently there are 4 active priority watershed projects within the study area: the Kinnickinnic River Priority Watershed, the St. Croix County Lakes Cluster Project, The Horse Creek Priority Lake Project, and the Balsam Branch Priority Watershed.

The U.S. Fish and Wildlife Service has a Wetland Management District headquartered within the project area and would be considered a primary external partner. The Department has a long history of partnering with the USFWS, including the actual management of federal Waterfowl Production Areas (WPAs) by the DNR for over 15 years prior to 1993. While those properties are now under USFWS management, the local DNR and FWS field staff have developed a close working relationship managing both public and private lands in the project area including sharing personnel and equipment, and teaming up for grants that will benefit both. It is anticipated that the USFWS will continue to have a strong presence in the area and would be a partner in this project. Other potential governmental partners could include the Chippewa Tribes, Wisconsin Departments of Transportation and Agriculture, and counties, towns, cities, and villages.

In addition, there are several NCOs interested in assisting with land acquisition and wetland and grassland management including, but not limited to; Pheasants Forever, Ducks Unlimited, Wisconsin Waterfowler's Association, The Prairie Enthusiasts, Western Wisconsin Prairie Project, the Wisconsin Farmland Conservancy, the Kinnickinnic Land Trust and the Standing Cedars Land Trust. These groups would probably be an increasing source of funding and volunteer labor to conduct wetland and grassland work in this area.

St. Croix County is currently drafting a Development Management Plan to help plan for the increasing residential, commercial and industrial growth in the county. Polk County has recently initiated a similar land-use planning effort for the same reasons. Some towns are also developing land use plans and ordinances on their own. These municipalities could be partners with the WPHRA if they adopt a goal of preserving open space, wildlife habitat and/or water quality.

The segment of the St. Croix River adjacent to the study area has been designated by Congress as the Lower St. Croix National Scenic Riverway. The Department of the Interior (National Park Service) and the states of Wisconsin and Minnesota work together to manage the Lower Riverway in a manner consistent with the National Wild and Scenic River Act. Presently, a Cooperative Management Plan is being updated by these entities for the Lower St. Croix National Scenic Riverway. The Department is a partner in this planning effort and

will ensure that the proposed WPHRA would complement the Cooperative Management Plan and the values for which the Riverway was established.

The Department recognizes that there would be opportunities for partnering, as well as a need for assistance from partners if the goal of the proposed WPHRA were to be met. Therefore, developing partnerships and finding ways to most effectively meet mutual goals would be a very important component of the WPHRA and would be emphasized in planning for project implementation.

PROJECTED COSTS

Acquisition

Lands within the proposed 20,000-acre WPHRA would be permanently protected by using fee title acquisition and/or permanent easements. Land or easements would only be acquired from willing sellers. Approximately 5,000 acres of grassland and wetland are currently protected.

Land values for agriculture, pasture, and forest land types within the study area were obtained from the Department of Revenue Property Assessment Office for the year 1997. The overall range for agricultural land values in the 15 township study area was \$560 to \$1685 per acre in 1997. Since values of rural land vary dramatically across the study area, weighted average values were determined for agriculture, pasture and forested lands based on the acreage of those cover types that were sold in 1997. The average value for agricultural land and pasture was \$1070 per acre while the average value for forested land was \$1275.

The value of wetland is considered to be relatively insignificant when compared to agricultural land values. Any acreage on a parcel that is not cropland would be pasture, forest, or wetland. Forest and pasture would have a greater impact on value since these cover types contain potential rural residential sites, which are in high demand in western St. Croix County. Wetland values on a per acre basis ranged from \$55 to \$315 per acre with the average approximately \$250 per acre. Typical agricultural parcels with wetlands present would contain 10-20 percent of this type in the total acreage.

Records from the Glacial HRA in eastern Wisconsin were analyzed to determine land acquisition trends that could be applicable to the WPHRA. After 4 years of acquisition in the Glacial HRA, the following trends were noted:

- The average parcel size was 80 acres from both fee and easement purchase.
- The ratio of fee to easement acres acquired was 2/3 fee to 1/3 easement.
- The typical percentage of agricultural land on parcels purchased was 70-80 percent.

Based on this, the following example was formulated to estimate the cost of a "average" parcel that could be acquired for the WPHRA. (It should be emphasized that the following figures are based on a variety of assumptions. As such, the resulting values should be considered as approximate figures, not a firm estimate).

Parcel characteristics:

- Size: 80 acres.
- Agricultural land: 70% (56 acres) at \$1070 per acre = \$59,920.
- Pasture: 20% (16 acres) at \$1070 per acre = \$17,120
- Forest: 5% (4 acres) at \$1275 per acre = \$5100
- Wetland: 5% (4 acres) at \$250 per acre = \$1000

Estimated costs:

- Fee acquisition cost: \$83,140 or approximately \$1040 per acre.
- Easement acquisition cost: 60% of \$1040 = \$625 per acre.

The estimated average price per acre of \$1040 is estimated to rise to \$1200 per acre in 1999 if current market trends continue. Easement values would be affected equally with an estimated 1999 per acre value of \$720. Using these estimated 1999 values, the estimated acquisition costs if the Department were to purchase the entire 15,000 acres is as follows:

- | | |
|--|--------------|
| - All 15,000 acres purchased in fee: | \$18,000,000 |
| - 60 percent fee and 40 percent easement: | \$15,120,000 |
| - All 15,000 acres purchased in easements: | \$10,800,000 |

The most likely scenario would be the combination of both fee and easements. Therefore, the total estimated cost of acquisition beginning in 1999 is estimated to be \$15,000,000. It is important to note that land values are expected to continue to increase for the next 10 years at 6-10% per year. This would result in significantly increased costs over time. However, it is also important to note that the Department hopes external partners will acquire some of the lands, thereby reducing the total cost of land acquisition by the Department to some degree.

Tax Impact

When the DNR buys land, 2 things happen that may impact the local tax base. First, the Department pays a "payment-in-lieu-of-taxes" annually as required by statute (ss.70.113 and 70.114, Stats.). This payment is calculated in the same manner as property taxes are derived for any private landowner. That is, the mill rate is multiplied by the assessed value of the land, except that the assessed value is considered to be the fair market value of the land. This value starts out as the price the DNR paid for the land, and it is then increased as the assessed valuation of the land in the township increases. Because the fair market value of the land is used instead of the assessed value, the payment received is at least equal to if not greater than the taxes that would be paid by a private individual for the same piece of land.

The township receives the payment and must then divide it between the other taxing units (school districts, county, etc.)

The payment-in-lieu-of-taxes is funded by general purpose revenues and therefore the cost is shared by all taxpayers of the state. Based on the average payment-in-lieu payment of \$30/acre currently owned in St. Croix County, if an additional 15,000 acres were owned by the DNR, the payment-in-lieu cost would be \$450,000 in 1998 dollars. This would increase over time as assessed values increase.

Secondly, the land is removed from the tax roll for the purposes of calculating state aid to local governments. How the state aid formula reacts to this change may result in an increase or decrease in local taxes. For example, if aids increase as a result of this change, local property taxes would be decreased to compensate for this increase in revenue.

Normally, the overall impact on local taxes is negligible. (See Appendix B for a more detailed tax impact analysis)

The effect of a perpetual easement on the tax base is somewhat more difficult to predict. State law requires local assessors to consider the effect of conservation easements on the value of property. Despite this, no case where assessed value has changed as a result of the Department easement acquisition within the Glacial HRA is known. However, 1989 Wisconsin Act 74 was passed requiring the Assessors Manual to be rewritten to provide specific guidance to assessors on how to implement this requirement. Theoretically, with the guidance in place, assessed value of land with conservation easements could be reduced by the value of the easement. This has not happened to date in the Glacial HRA.

Land Management

Following approval of the proposed project as outlined in the Feasibility Study, a master plan would be prepared for the project to address development, operations and maintenance, and staffing in detail. Therefore, the following topics are discussed here in broader, generalized terms.

Costs involved with operation and maintenance of the grassland, wetlands, and public use facilities would be dependent on the type of property, its size and the practices needed to meet the objectives for its management. Volunteer agreements with landowners and NCOs could also affect responsibilities for maintaining particular properties. Therefore, the cost estimates below are generalized.

Development:

Development of newly acquired or eased properties would primarily consist of planting cropland to native grass cover. Wetlands would be restored or created as opportunities arise.

Fencing would be limited to what is needed to comply with boundary fence laws, and to protect the land from public abuses such as off-road vehicles. Lands owned in fee by the Department would be posted accordingly. Low maintenance public use facilities such as parking lots would be considered on a case by case basis. No trash containers would be provided, but periodic litter pick-up would be conducted as part of other duties.

Estimated costs for development if the Department would purchase or take easements on the entire 15,000 acres are:

Grassland seeding - \$130 per acre times 15,000 acres max.	\$1,962,000
Wetland restoration - \$500 per acre times 100 acres	50,000
Fencing	100,000
Signing	10,000
Public use facilities i.e., parking lots	50,000
Total:	<u>\$2,172,000</u>

Maintenance:

The primary property maintenance objective would be to keep the grasslands in an open state. Prescribed burning would be the main tool used, but mechanical brush cutting, herbicide treatments, and agreements with farmers for sharecropping or grazing may also be used. Maintenance of parking lots, fences and signs would also be needed.

Estimated annual costs for maintenance if the Department would purchase or take easements on the entire 15,000 acres are:

Prescribed burning: 2000 ac/yr @ \$2/ac	\$ 4,000
Mowing brush: 200 ac/yr @ \$7/ac	1,400
Herbicide: 100 ac/yr @ \$6/ac.	600
Equipment purchase and maintenance:	15,000
Wetland inspection and maintenance:	1,000
Fencing/posting inspection and maintenance:	1,000
Parking area maintenance:	<u>1,000</u>
Total:	<u>\$24,000</u>

Note, this is a total estimate which would apply once the entire 15,000 acres were under Department control. Initially, the costs would be less but would increase as additional lands were purchased. The actual costs to the Department will depend on how much assistance external partners provide.

Staffing

As proposed, the Western Prairie Habitat Restoration Area would clearly be an example of integrated ecosystem management utilizing public partnerships. Both of these principles are goals of the Department, but it is also clearly an ambitious proposal which requires a look at staffing needs to accomplish the project. Due to the workload and staffing changes which have occurred in the DNR and the local USFWS in the last several years (i.e. the addition of USFWS staff to take over management of the WPAs which had previously been managed by DNR staff and the addition of 2 DNR private lands positions), the current permanent staff along with LTE's should be able to handle the initial land management workload associated with the HRA. However, additional real estate staff could be needed to handle an increased volume of land transactions. In addition, once significant acreages of land were acquired and the volume of ongoing management needs had increased, we anticipate that one permanent position would be needed as well as 5-6 additional Limited Term (LTEs) or Project Employees.

Partnering is an essential part of the proposed project, and there will likely be opportunities to work with an increasing number of partners to help accomplish the project goal. A partnership has already been established with the local USFWS district. State and federal personnel and equipment are shared to efficiently accomplish public and private wetlands and grasslands management activities. We anticipate that this partnership will continue and possibly expand, and would be a major contributor to meeting project goals. In addition, several local private conservation organizations have formed that have an interest in wetland and grassland management. These groups have a great potential for providing volunteers to assist the Department with its management efforts.

Adding a traditional position such as a wildlife biologist or technician would be one alternative to meet the future need for an additional DNR position to staff the proposed WPHRA. Another alternative would be to look at a new type of position, such as a "partnership coordinator". This individual could be responsible for developing partnerships with the private sector including recruiting, training, and supervising volunteer crews who could be a significant asset in habitat management and who could also increase the connection of the private sector to the land and the resources that exist on it. Developing such partnerships would take time and effort which the existing biologists and technicians might not be able to absorb, but in the long run, these partnerships could reap large benefits to the Department, the resource and the community.

Estimated annual costs for increased permanent and temporary personnel would be approximately \$50,000 for a new permanent position at the Wildlife Biologist level and \$65,000 for 6 6-month LTE positions (including salary and benefits). The total estimated staffing costs would be \$115,000.

Funding

Funding would come from Department program funds; the Knowles-Nelson Stewardship Program; US Fish and Wildlife Service programs; easement and cost sharing dollars from the priority watershed program; funds from NCOs through the match grant provisions of the Stewardship Program; and gifts and grants from individuals, corporations, foundations, and conservation organizations. To the extent possible, the Department would use partners to achieve project objectives. Establishing the WPHRA project should enhance the ability of the Department and external partners to compete for grants which could help fund habitat development and maintenance.

Initially, limited land acquisition funding would come primarily from the Knowles-Nelson Stewardship Program created by the Wisconsin Legislature and signed into law by Governor Tommy Thompson in 1989. The program provides \$23.1 million statewide each year for land acquisition and development through June 30, 2000. The current Knowles-Nelson Stewardship Program is divided into 12 separate components, each with a separate, segregated budget. The Habitat Area (HA) and Habitat Restoration Area (HRA) categories comprise one component of the program with an annual budget of \$1.5 million (presently \$750,000 - all of which is allotted to the Glacial HRA). The HA program also offers cost sharing grants to NCOs. The HA portion of the component provides 50% cost sharing to NCOs in amounts up to \$500,000 annually. The HRA funding is only available to the DNR. Other potential of funding WPHRA land acquisition could come from the Natural Areas category of the Stewardship program and general purpose revenue. The WPHRA would have to compete with other projects for available dollars and be awarded funds based on its merits compared to other projects.

A Blue Ribbon Task Force has been appointed by Governor Thompson to evaluate the Stewardship Program and propose alternatives for any type of future program beyond the year 2000. If a version of the Stewardship Program is reauthorized, that program would likely continue to be the primary funding source for land acquisition in the WPHRA.

Funds to develop new wildlife habitat would likely come from existing DNR funding accounts such as Pheasant Stamp, Turkey Stamp, Duck Stamp and DU Marsh. Additional funds could come through the North American Waterfowl Conservation Act (NAWCA) grant program, and from contributions from private organizations such as Pheasants Forever, Ducks Unlimited and Wisconsin Waterfowler's Association. Funding for operations and maintenance would be expected to come primarily from the segregated Fish and Wildlife Account. Endangered Resources funding could be used to maintain scattered prairie remnants. Permanent staffing costs would also be likely to be funded through the Fish and Wildlife Account, but LTE funding could come from any of the sources listed.

ENVIRONMENTAL EFFECTS AND THEIR SIGNIFICANCE

Physical Impacts

There would be physical impacts to the landscape as a result of the proposed project. Lands purchased by the Department, and other parcels that would be preserved under easements or volunteer agreements, would be actively managed to create, restore, and maintain grassland cover types. This would involve the conversion of some active cropland parcels to permanent grass cover. Some brushy and wooded areas would also be converted to savanna and grass cover. Degraded wetland areas would be restored to the extent possible by plugging drainage ditches, disabling drain tile systems, and excavating small berms and scrapes. As the proposed project goal is to protect and manage only about 5 percent of the landscape, these changes in cover type and land use would not be expected to adversely alter the overall appearance of the landscape.

Habitat development and restoration activities would likely include grassland tilling and planting, prescribed burning, brush mowing, and some herbicide application. Small scale earth moving would be necessary for ditch plugging, tile obliteration, berm construction and scrape excavation. Some development activities would disturb soils and could temporarily increase the potential for erosion and runoff into waterways and wetlands. These effects could be minimized by limiting the amount of time soils were disturbed and by using appropriate erosion control practices. The use of prescribed burning and herbicides as vegetation management tools could generate some public concern. Prescribed burns would be carefully controlled to minimize the chance of fire spreading to neighboring private lands. Careful control and planning would also be necessary to avoid inconveniencing rural neighbors with smoke. Herbicides would be applied to sites only when necessary, and always by properly authorized personnel in accordance with appropriate safety precautions. Inconvenience and concern related to the use of these management tools is not anticipated to be a significant problem in the rural setting of the project area.

Wetland restoration and conversion of marginal cropland to permanent grass cover would result in benefits to surface and groundwater resources in the project area. The Kinnickinnic River and several lakes in St. Croix County are designated as priority watershed projects. These water resources would experience water quality improvements if the amount of soil erosion and nutrient runoff in their watersheds was reduced as a result of wetland restoration and grassland establishment. Increased infiltration of precipitation due to these activities could lessen the degree of flood events in some areas, and result in increased spring water discharge to lakes and streams. These water quality improvements would in turn benefit the associated fisheries and other aquatic ecosystems.

Overall, physical impacts to the landscape that would result from the proposed project would be distributed across the project area over a period of many years. Dramatic changes in land cover types and distribution in a short period of time would not be likely. Over time, the

cumulative impact of restoring a patchwork of grasslands and wetlands across the landscape is expected to be a positive addition to the rural setting that exists now.

Habitat and Wildlife Impacts

The biotic diversity and relative ecosystem "health" of the former prairie/oak savanna landscape in St. Croix and Polk Counties is rapidly declining as residential, industrial, and agricultural development pressures increase. The proposed landscape scale habitat restoration project would provide an opportunity to stabilize, preserve and enhance natural habitat and biotic diversity in the project area, in balance with social and economic concerns.

A mixture of cropland, grassland, and wetlands has been shown to be beneficial to game and nongame wildlife populations. This project would provide permanently protected grassland and wetland habitat in a predominantly rural area. This would benefit typical game and nongame grassland species alike. Rare, declining grassland species such as the western meadowlark and upland sandpiper would also benefit from an increased abundance of suitable habitat. The wildlife species that are typically responsible for causing crop damage should not be significantly benefitted by the project. Therefore, crop damage would not be expected to increase over existing conditions.

The project would also preserve and protect remnants of native prairie and oak savanna communities. High quality rare plant community examples which exist in the project area would be targeted for purchase or other protection as appropriate. Efforts would be made to enhance existing natural areas or to buffer them from incompatible adjacent uses by protecting surrounding areas. There are also excellent opportunities to restore former oak savannas that have converted to brush or woodland or have been overgrazed.

The proposed HRA project is not a precedent setting action. The Glacial HRA project in southeast Wisconsin was initiated in 1991, and that project has proven successful in terms of accomplishing habitat objectives and in terms of public acceptance. Despite current budget constraints, the apparent project area suitability and public support indicate that the proposed Western Prairie HRA would be successful over time as well. Overall, the result of restoring and protecting approximately 5 percent of the landscape in permanent grassland, wetland, and oak savanna cover is expected to be a significant benefit to wildlife. Biotic diversity in the project area would be maintained and enhanced, and over time a stable, viable grassland type ecosystem would be expected to develop.

Social and Economic Conditions

There would be changes in the social and economic conditions of the project area if the HRA were implemented. As stated previously, the changes would not likely be dramatic or occur in a short time period. However, the cumulative effect of a series of small-scale impacts across a broad geographic area would likely be noticeable over time.

The proposed project would impact the agricultural land base and operations in the project area. The Department, working in conjunction with its partners, proposes to acquire, through fee title or easement purchase, approximately 15,000 acres of grassland and wetland in the project area. This would involve the purchase of some agricultural land which would be subsequently converted or restored to grassland and wetland. The Department would avoid, to the extent possible, purchase of highly developed or class 1 agricultural lands. Where practical, the Department would sell back Class I agricultural lands with easement restrictions or may consider renting back Class I agricultural lands for agricultural purposes. It is Department policy to avoid purchasing properties with significant improvements such as buildings or irrigation systems. Under some circumstances the Department might enter rental or sharecropping agreements with local farmers, which would keep some lands purchased by the Department in short-term agricultural production. The purchase of conservation easements from agricultural landowners is another project option which would allow the Department to fulfill habitat protection objectives while minimizing impact to the agricultural operations.

Converting 15,000 acres of agricultural land to grassland and wetland is not viewed as a positive change to the landscape by some people. However, idling this amount of land would not be considered significant based on the overall abundance of agricultural land in the project area. There are 267,761 acres of cropland in St. Croix County and 203,807 acres of cropland in Polk County. If 15,000 acres of cropland would be converted to grassland, this would be 3% of the total cropland in the 2 counties. The actual percentage will be less since some of the land would be pasture, not cropland. Still, it is possible that agricultural land values and land rental rates would slightly increase over time due to Department land and easement acquisition.

It is expected that conversion of the land to rural residential use, agricultural market fluctuations, and the condition of the national and international agricultural economy will have a far greater effect on the local agricultural economy and land base than the minor effects due to the proposed project. It is also expected that local agricultural related businesses would notice only minor secondary impacts due to some loss of agricultural activity in the project area. Implementation of the project would require purchase of agricultural equipment, seeds and services and would provide business for local agricultural vendors. Further, grassland establishment is not an irreversible action, and idled lands could be converted back to agricultural production if a compelling societal need were to arise in the future.

It is expected that grassland and savanna cover restoration would actually enhance the aesthetic appeal of many sites within the proposed project area. Adding more habitat and cover type diversity would enhance the patchwork of uplands, wetlands, and croplands that many people consider aesthetically desirable. The planting of native prairie grasses and wildflowers would also contribute to the scenic quality of managed areas.

Rural residential development and land values are rapidly increasing in the proposed project area. Department acquisition of scattered parcels of land may compete with development interests. This competition may intensify the increase of land values in the project area. The project would, however, preserve open space, and protect some ecologically sensitive sites from development. It would also provide another option for property owners who were considering selling their land. This would be consistent with, and complementary to, priorities identified by local residents in land use surveys. Preservation of open space and ecologically sensitive sites would also be consistent with the intent of county plans that are in progress.

The Department would make a payment in lieu of taxes in accordance with Section 70.114 of the State Statutes on all lands purchased in fee title. As such, there should be negligible impact on the local tax revenue for local government units within the project area. It is possible that the values (and thus tax rates) of private properties located adjacent to parcels of public land could be indirectly affected. Some private properties may increase in assessed value, while others may decrease in assessed value. At this point, it is not possible to predict where and to what extent these scenarios could occur. However, it is not likely to be a widespread occurrence.

The effect of perpetual conservation easements on the tax base is also difficult to predict. State law requires local assessors to consider the effect of conservation easements on the value of property. In theory, the existence of a perpetual conservation easement would reduce the value of a given property to some degree. If a significant number of these situations developed in a township, the tax base could be reduced to some degree. The tax impacts of lowering the assessed value of land could be perceived as a positive point for individual landowners, but may be a concern to township and county governments. However, based on experiences in the Glacial HRA in southeast Wisconsin, we know of no case where assessed property values have actually changed as the result of Department easement acquisition. This would indicate little, if any, tax impacts based on the only other project of this type (Glacial HRA).

There would be an increase in public land in the project area. This would provide a significant increase in public open space and recreation opportunities. Hunting as well as other compatible educational and recreational pursuits would be allowed on Department-owned lands. Past experience has indicated that the amount of use on newly established public lands is dependent on the quality of hunting and other recreational pursuits available, size and accessibility of particular parcels, and distance from population centers. Given the proximity of the project area to the expanding Twin Cities metropolitan area and the related population growth in western Wisconsin, it can be assumed that recreational use of public lands in the project area will be significant.

Safety issues associated with firearm hunting should not change significantly from existing conditions, as hunting currently takes place on private and public lands within the project area. In addition to hunting, these lands would provide opportunities for other low-impact

recreational activities as well as for education and research. Increased public recreation in the area might bring increased revenues to local businesses that provide goods and services to the visiting public.

Negative impacts of increased public land use in the project area could include insignificant amounts of increased road traffic and noise, and occasional problems with individuals trespassing on private properties adjacent to public lands. Increased public use would be centered around the opening of hunting seasons, with comparatively light use during the rest of the year.

Archaeological and cultural resources in the project area would be benefitted. The Department would coordinate with the State Historical Society to ensure that known sites of archaeological and historical significance in the project area are protected during land disturbance operations. Newly discovered sites would be added to state inventories. When the project progresses to the stage of identifying potential land acquisition and management focus areas, more detailed inventories of archaeological and historical resources in the focus areas would be conducted. New sites of significance may be uncovered. The Department would comply with Section 106 of the National Historic Preservation Act by submitting site development plans as appropriate to the State Historical Society for review. Other educational benefits would also occur.

Summary of Adverse Impacts that Cannot be Avoided

In summary, the adverse impacts that cannot be avoided as a result of this project include:

1. Loss of a small percentage of active agricultural land in the project area that would be converted to grassland and wetland habitat over time.
2. Subsequent and corresponding small decline in agricultural commodity production over time,
3. Potential for possible slight increase in crop land values and rental rates.
4. A potential for slight reduction in local tax bases and tax rates as a result of conservation easements.
5. A small increase in traffic and noise, particularly during hunting seasons, may be noticeable as larger tracts of grassland suitable for hunting are developed.
6. Some small scale soil disturbance would be necessary in the process of plugging ditches and obliterating drain tiles to restore wetlands. Soil disturbance may also be necessary to till fields in preparation for native grass seeding. Minor temporary soil erosion and sedimentation in local wetlands and waterways could result.

OTHER ALTERNATIVES CONSIDERED

In its Five-Year Land Acquisition Plan, the Department outlined its intent to expand the HRA concept to other parts of the state. Western Wisconsin was identified as a priority over most other parts of the state.

In addition to the preferred alternative which is analyzed in detail in the Project Description section, the following range of alternative scenarios have also been evaluated for the proposed project.

No action

This alternative would mean that Department activities in the study area would remain as is. Existing DNR properties and federal Waterfowl Production Areas would be maintained to provide wildlife habitat. Limited acquisition of scattered new parcels from willing sellers would continue under the authority of these existing programs. This would provide some increase in grassland acreage and public land base over the course of many years.

Other efforts such as land trust acquisition and local zoning regulations could result in additional protection. However, with no concerted effort to preserve, protect, and manage grasslands and wetlands on a landscape scale, the Department expects that the documented declining trend in overall habitat and wildlife populations due to rural development would continue. None of the physical and socioeconomic changes directly associated with the project would occur.

Accomplish Through Non-Profit Conservation Organizations

With this alternative, all land protection efforts except for existing approved state and federal projects would be undertaken by NCOs. The size of the WPHRA and acreage goals for protection would not need formal approval by the Natural Resources Board or Governor's Office. The limiting factors would be the NCOs financial resources and capability for land stewardship. A NCO working on this project would be eligible to compete for Stewardship Program dollars to help fund their efforts.

The NCO approach is favored by some people because it is not viewed as additional "government" land buying and reduces the state's financial obligations for land protection. Given the limitation that many NCOs do not have the financial or staff resources needed for large scale land protection efforts, this alternative is not considered viable on its own. However, the NCO land protection approach is consistent with, and would be included in, the overall mix of land protection options that could be part of the WPHRA project.

Enlarging the HRA and Acreage Goal

Some interested parties have asked the Department to consider enlarging the HRA and/or increasing the acreage goal. This would increase opportunities to protect and manage even more acres of grasslands and wetlands on an even larger landscape. Wildlife populations and biological diversity would be further enhanced. Some areas adjacent to the study area are a part of the historic prairie and savanna region and contain opportunities for wildlife habitat protection and restoration. However, it is felt that the proposed boundary includes the geographic area with the best mix of wetlands and grasslands. In addition, expanding the HRA boundary would further stretch the Department's budget and management capabilities. Due to these concerns, this alternative for the WPHRA has not been recommended. Other Department programs would continue to be available to assist landowners and organizations with land protection and habitat management efforts.

Reducing the Project Area and Acreage Goal

Initial scoping for the project identified a smaller HRA which encompassed approximately 206,000 acres, but still had a goal of permanently protecting 20,000 acres of wetlands and grasslands. A reduced HRA would presumably allow management activities to be more efficient and cost effective because the properties would be concentrated in a smaller geographic area. While this may be true to some extent, the preferred alternative is designed to improve efficiency by establishing focused management areas within the larger boundary. A smaller HRA would also limit opportunities to protect native prairie remnants, or to utilize existing grassland and wetland habitat which occurs in the surrounding area as building blocks for additional habitat restoration. Reducing the area size or acreage goal too much would not meet the needs of grassland dependent wildlife species.

Other State Locations

It has always been the Department's intent to establish more than just the initial landscape scale Glacial HRA. The proposed Western Prairie Habitat Restoration Area is one of the high priority projects that was identified for landscape scale habitat management. Trends in wildlife populations in the proposed WPHRA exemplify the serious declines in grassland dependent bird populations. Therefore, there is a very good opportunity to produce an important beneficial HRA in this region of the state within St. Croix and Polk counties.

Department research staff have identified significant landscape-scale needs to guide the establishment of new Department land acquisition projects (Krause 1995). Five other large-scale locations (over 10,000 acres) were identified in addition to the WPHRA vicinity. In addition, Sample and Mossman (1997) ranked the WPHRA study area as 6th statewide in potential for grassland bird habitat.

While each of the other potential locations offer opportunities to manage unique and important resources and is worthy of protection in its own right, the proposed WPHRA is

comparable in resource importance and superior when considering wetland associated birds combined with the concentration of managed public lands and CRP base. In addition, the growth pressure that this region of the state is experiencing means that the window of opportunity to protect this area is more limited than in other areas.

Alternative Land Control Mechanisms and Site Selection Strategies

In addition to the proposed project location, size and acreage alternatives presented above, the Department has also identified various alternatives for habitat protection strategies which apply to any of the action alternatives above including the preferred alternative.

Following are the various types of mechanisms and strategies which could be used by the Department for protection of grassland and wetland habitats. Various combinations of the listed mechanisms and strategies could be used to achieve project objectives.

Land Control Mechanisms:

- Fee title acquisition of lands: The Department would purchase the land and all associated rights.
- Purchase of habitat management easements: the Department would purchase the right to permanently manage the land as grassland and/or wetland habitat, but the land would remain in private ownership. The owner could continue to control public access or the Department could purchase public access rights.
- Fee and easement purchases by other entities using DNR grants and cost sharing.
- Long-term Management Agreements (LTAs) with cooperating landowners. These instruments do not provide permanent protection.
- Purchase of development rights on agricultural lands near grassland habitat areas. This would not provide the grasslands themselves, but would protect the open aspect of the landscape which is also important to grassland wildlife.

Site Selection Strategies:

- Emphasize large grassland habitat blocks (parcels large enough to provide suitable habitat for grassland birds).
- Emphasize small native prairie and savanna remnants (parcels too small to serve as grassland bird habitat, but which are valuable as a native community).

- Focus wildlife habitat protection where there is less land development pressure/more active agriculture (this would be more cost effective because of the lower land values and would better provide the open landscape which is important to many grassland wildlife species).
- Evenly distribute large grassland habitat blocks throughout the project area (this may be more costly and less beneficial to wildlife).

PUBLIC INVOLVEMENT

The public involvement process began in June 1997, when the planning team met and identified potential stakeholders. Since that initial meeting, nearly 300 stakeholders have been identified and contacted through various media.

Two mailings went out to identified stakeholders. The first mailing included a brief summary of the proposed project including a map of the study area as well as requests for comments and a notification of the first two public meetings. The second mailing went out to approximately 250 individuals including previously identified stakeholders and others who had contacted the Department regarding the proposal. The mailing included a list of the alternatives and a questionnaire on the alternatives. It also included a mail back card as well as notification of the two public meetings in River Falls and New Richmond. In addition, numerous presentations and media contacts were made.

Supplemental to the mailings, brochures and study area maps were distributed to libraries, UW Extension and federal agricultural offices, and co-ops and feed mills across the study area. Many presentations were made to a variety of groups and numerous media contacts were made.

Study area concept presentations

- Natural Resources Board; June 24, 1997, meeting in West Central Region.
- The Prairie Enthusiasts; June 26, 1997.
- Star Prairie Fish and Game; June 1997.
- St. Croix Alliance of Sportsmen Clubs; July 1, 1997
- Western Wisconsin Prairie Project; July 9, 1997.
- Polk County Sportsmen's Club; July 14, 1997.
- Pheasants Forever - Kinnickinnic Chapter; August 4, 1997.
- Polk County Fair; August 3, 1997.
- St. Croix County Land Conservation Committee; July 5, 1997, and monthly updates.
- WPHRA open house; River Falls August 20, 1997.
- Polk County Land Conservation Committee; August 21, 1997.
- Steering Committee, St. Croix County Planning Group; August 21, 1997.
- WPHRA open house, New Richmond; August 21, 1997.

- Town of Somerset Planning Commission; September 16, 1997.
- WPHRA open house, New Richmond; October 7, 1997.
- WPHRA open house, River Falls; October 8, 1997.
- Stanton Town Board; October 9, 1997.
- Hudson Rotary (morning group); October 22, 1997.
- Hudson Rotary (lunch group); October 23, 1997.
- Amery Lions; November 10, 1997
- Stillwater Lions; January 13, 1998
- Polk County Board; February 24, 1998.
- Standing Cedars volunteers; February 26, 1998.
- Wisconsin Woodland Owner's Association; March 14, 1998.

Media contacts

General Press Releases:

- Introduction to project; July 16, 1997.
- Announcement for first open house meetings; August 11, 1997.
- Announcement for second set of open house meetings; September 24, 1997.

Newspapers and magazines (reporter):

- St. Paul Pioneer Press (Karl Karlson); August 14, 1997.
- Eau Claire Leader-Telegram (Joe Knight); August 19, 1997.
- The New Richmond News (Terry Zwahlen); August 21, 1997.
- The Country Today (Sam Robbins); August 29, 1997.
- The Country Today (Heidi Clausen), September 24, 1997.
- The New Richmond News (Terry Zwahlen); September 26, 1997.
- Eau Claire Leader-Telegram (Joe Knight); October 3, 1997.
- The Milwaukee Journal (Joe Winter); October 30, 1997
- The River Falls Journal (Jim Bennett); March 5, 1998.
- Wisconsin Trails magazine (Tom Davis); March 12, 1998.

Radio:

- Wisconsin Public Radio (Milwaukee); July 31, 1997.
- WIXK Radio - New Richmond; August 19, 1997.
- WOJB, Hayward; August 20, 1997
- Wisconsin Public Radio (Eau Claire); October 7, 1997.
- WXR, Eau Claire; October 9, 1997.

Television:

- WEAU, Eau Claire (TV-13 Outdoors with Dave Carlson), aired September 17, 1997.

Summary of Contacts with Elected Officials

Federal:

Federal legislators were sent announcements for the open houses.

A representative from Rep. Ron Kind's office attended the October 7, 1997, open house.

State:

Local state legislators were sent a letter introducing the project and letters announcing the open houses.

Letter dated July 23, 1997, received from Senator Alice Clausing.

Shirley Frederickson (aide to Sen. Clausing) attended August 21, 1997, open house.

Rep. Bob Dueholm was present at the July 14, 1997, Polk County Sportsmens Club meeting at which Mike Johnson presented the project background.

Letter dated September 30, 1997, received from Alice Clausing and Rep. Joe Plouff.

Received a call from Joe Plouff to get an update on the Feasibility Study.

Contacted by Rep. Spencer Black's office requesting information for a newsletter article on the WPHRA that they were preparing.

County:

Chairpersons of key county committees are on the mailing list. Planning team members presented the project to the respective Land Conservation Committees.

Townships:

All town chair persons for the 15 townships received an introductory letter and open house announcement. If they did not comment, they received a follow up phone call to inquire about their opinion on the proposal.

Comments Received

Since June 1997, the Department has been conducting this feasibility study and citizen participation effort to find out how stakeholders and other customers feel about the proposed WPHRA concept. Over this period of time, DNR staff have contacted several hundred people in person or through the mail to inform them about the proposal and to get their reaction. The following is a summary of what they said. Over 130 individuals or groups have responded to date. Of those, 80 percent are in favor of the proposal, 5 percent are opposed, 9 percent are neutral, and 5 percent expressed no opinion at all.

Issues:

The WPHRA proposal has stimulated comments on a wide array of issues. These issues have been categorized into 15 general statements to get a sense of which are the most important. While two individuals or groups may express a concern about a particular aspect of the proposal, they may not be on the same side of the issue. As an example, the "concerns about wildlife" category primarily included concerns about declines in wildlife populations, but some felt that there was too much wildlife around.

The following list identifies issues presented in order of how often the topics were expressed by individuals or groups:

1. Interest in preservation of native prairies
2. Concerns about wildlife populations
3. Desire to use partnerships to accomplish goals
4. Need for open space/preservation of natural systems
5. Concerns about increasing rural development
6. Need for more public land and use opportunities
7. The project should be larger
8. Concerns about property tax impacts
9. Preservation of hunting opportunities
10. Concerns regarding surface and ground water quality
11. Concerns about agricultural land conversion
12. Questions about funding for acquisition and development
13. Concerns about property value impacts
14. Concerns about landowner rights.
15. Recommend a Citizen's Advisory Board for project implementation.

Following the initial issue scoping and after formulating project alternatives, all on the mailing list received a review of the alternatives and a form to use to evaluate them. Forty-seven alternatives evaluation forms were returned, including one representing an organization of 250 members. Of these, 46 respondents favored one of the action alternatives, while one favored the no action alternative.

The majority of the 46 respondents who preferred an action alternative preferred to use the proposed project boundary and acreage goal, with some preferring a larger project and a few preferring a smaller one. They preferred an emphasis on grasslands large enough to provide suitable wildlife habitat, but recognized a need to preserve prairie remnants as well. They also felt that the Department should be given the authority and flexibility to use as many land protection options as possible. A more detailed summary of the responses can be found in Appendix C.

Agencies/Organizations Which Have Offered Assistance/Partnerships

During the feasibility study process, DNR staff have also had the opportunity to meet with a number of organizations to inform their members about the WPHRA. Many of these organizations have offered support for the project in the form of money, volunteer labor, equipment and/or cooperative partnerships:

- Ducks Unlimited
- Great Lakes Indian Fish and Wildlife Commission
- US Fish and Wildlife Service
- Northern States Power Company of Wisconsin
- Pheasants Forever - Kinnickinnic Chapter
- Pheasants Forever - Indianhead Chapter
- UW River Falls
- Wisconsin Farmland Conservancy
- Kinnickinnic Land Trust
- Standing Cedars Land Conservancy
- Kinnickinnic River Priority Watershed
- Natural Resources Conservation Service
- Boys Camp of Hudson, Inc.
- Western Wisconsin Prairie Project
- River Valley Gardeners Club
- Polk County Land Conservation Department
- The Prairie Enthusiasts
- Camp St. Croix

In addition, 11 people have offered their land for inclusion in the program and seven individuals have volunteered time and/or money.

Future Efforts:

If the proposed project is approved, a master planning process would be initiated to more specifically address development and long term management of the WPHRA. Public involvement techniques to be used during the master planning process would include mailings, surveys, public meetings and small group presentations. A collaborative approach to decision making, including stakeholder participation, would be used to encourage coordination, cooperation and conflict resolution by all planning participants. This would also encourage information sharing and development of a common knowledge base to enable the comprehensive ecosystem management for this landscape scale project to be realistically balanced with human and environmental interests.

EVALUATION OF FEASIBILITY

There are a number of key issues and challenges which will determine the success of this project. First, the Department's action must be based on sound legal authority, complying with laws, codes, and missions of the agency. Second, it must be ecologically sound. Third, the Department has to have the support of the public and the opportunity to create cooperative agreements and partnerships with other public and private entities in order to meet mutual goals for resource protection, restoration, and enhancement. And finally, the Department must have the financial resources and personnel needed to carry out the project. The WPHRA proposal complies with the state statutes and administrative codes that authorize its creation. The WPHRA as proposed is also consistent with integrated ecosystem management and biodiversity guidelines recommended by the Department.

The number of reports and initiatives within and outside of the DNR promoting the establishment of grassland landscapes gives credence to the overall concept. The fact that the study area has been identified as a potential location for a grassland landscape project in at least three publications gives credence to the WPHRA specifically. The project area's past, present and potential future ecological capacity lends itself to the adoption of this proposal. Presettlement vegetation, soils, and remnant prairie all serve as the basis for proposing habitat restoration. Given the above considerations, landscape-scale ecosystem management and principles of biodiversity such as habitat connectivity and fragmentation, species diversity and resilience, and protection of critical habitat base can all be addressed through this proposal. Therefore the WPHRA proposal is ecologically sound.

Success is also based on meeting the needs and desires of our customers. During the citizen participation element of this planning process, planning staff identified and worked with existing and potential partners and cooperators. There are literally dozens of potential partners ranging from federal and state agencies to county and township governments to utilities to NCOs, local landowners and interest groups. These partners have the potential to help implement all phases of the project from actually buying or easing land to providing volunteer labor, funding or other assistance in conducting habitat management to working with us to obtain grants. It has also been suggested by some members of the public that a

Citizen's Advisory Board, similar to those developed for Priority Watersheds, be established to work with the Department on implementation of the WPHRA project if it is approved. Such a group could help to maintain the support and involvement of the public throughout the life of the project.

Enthusiasm for this project was expressed by the public on a number of different fronts. Hunters appreciate the possibility of significant acreage of public hunting grounds and increases in certain game species. Prairie enthusiasts are excited about maintaining the remnant prairie communities and expanding the grassland ecosystem. They recognize the opportunity these lands can provide for ecological research and education, and the chance for the public to get involved and develop ties to the land. Fishermen recognize the benefits to water quality and the fishery resources by providing permanent cover on uplands within the watershed. Birders and landowners like the idea of increasing populations of meadowlarks and other grassland songbirds. Many individuals have pointed out opportunities to tie this project in with other types of efforts like Priority Watersheds, land trusts and land-use planning, and appreciate what it could do to maintain open space and a rural landscape.

There is sufficient land base to implement this project without causing a significant negative effect on agricultural operations and agri-business in the project area. USDA land idling programs such as the Conservation Reserve Program (CRP) and the former Feed Grain program allow up to 25% of the cropland in a county to be idled. The large amount of agricultural land set aside as CRP currently demonstrates both that landowners are willing to take some land out of production, and that the local agricultural economy should not be impacted by this project. In fact, habitat management activities associated with this project would provide opportunities for agricultural businesses to profit from the sale and maintenance of farming equipment, sale of seed and chemicals, and contracted services. There would also be limited opportunities for individual farmers to develop cooperative farming or grazing agreements with the Department and, therefore, utilize some WPHRA lands for agricultural purposes.

Based on citizen input during the planning process, overwhelming support for this proposed project indicates that the WPHRA proposal is feasible from the standpoint of public partnerships and support.

The largest single concern regarding implementation or adoption of this study has to do with budget and staffing needed to acquire and manage our properties in a timely and effective manner. Concern over funding of new projects, as well as implementation of existing projects, is an issue of public concern. As the lead agency, the Department would need the funding to acquire and manage the new lands as proposed. This is a key issue and challenge, and given the number of unknowns at the current time, one that may not be able to be completely resolved during the course of this feasibility study.

It is anticipated that limited funding would be available from the current Stewardship Program for the first two years of implementation. Based on what we know now, the

Department's ability to acquire significant lands within the proposed project would be heavily dependent on a large, stable, long-term funding source, such as a renewed Stewardship program. Timely acquisition is important to avoid losing opportunities to purchase targeted lands within the rapidly developing project area. This would require sufficient appraisal staff and acquisition dollars to carry out the project goal and objectives in a timely manner.

The land acquisition cost in the existing Glacial HRA located in Dodge, Fond Du Lac, Winnebago and Columbia Counties commits the entire Stewardship Program budget for the HRA component each year. Land acquisition needs for the Glacial HRA are expected to continue for several years. Therefore, significant additional funding from some other source would be needed for the WPHRA to be successful.

While a reauthorized Stewardship Program would be an important asset to the WPHRA project, there are other programs and funding sources that could also help to ensure the success of this project. The Department has been successful at obtaining grants for land acquisition and development in this area, and establishment of this HRA should increase the chance that the DNR and/or its partners continue to be successful in obtaining funding from outside sources. Cooperation with existing or potential projects such as Priority Watersheds, lands trusts, and county or town land-use planning efforts would allow the DNR to work toward its goal while reducing costs to the Department. Corporations or individuals may be willing to donate land rights or funding for habitat work. Further, the tremendous public support shown to date implies that volunteer labor would be available if the agency has staff and funds to take advantage of it.

While a guarantee of long-term funding is not available, alternative funding possibilities for accomplishing the proposal are numerous. If authority is given to implement the WPHRA, it is anticipated that funding sources would become available to allow initial implementation of the project. However, similar to the concern for Stewardship reauthorization, there is significant public interest in the adequacy of funding for fish and wildlife conservation in Wisconsin. The Legislature has requested an analysis of the need for alternative funding. Long term, this funding issue may present a problem maintaining sufficient staff and operating funds to manage this property once significant land purchases are made. Existing staff and funds are expected to be sufficient during the first years of the project.

Based on the information presented above, Department staff believe that the WPHRA project is feasible from the standpoint of legal authority, ecological soundness, public support and availability of initial funding. It is anticipated that long term funding for the project will become available as a result of current efforts focused on exploring funding alternatives. Therefore, Department staff recommend that WPHRA project proceed.

Appendix A

Endangered, Threatened, and Special Concern Species Western Prairie Study Area

Plants

- Adlumia fungosa* (climbing fumitory) SC
Adoxa moschatellina (musk-root) T
Anemone caroliniana (Carolina anemone) E
Arabis shortii (Short's rock-cress) SC
Artemisia drancunculus (dragon wormwood) SC
Artemisia frigida (prairie sagebrush) SC
Asclepias ovalifolia (dwarf milkweed) T
Astragalus crassicaarpus (ground plum) E
Besseyia bullii (kitten tails) T
Calylophus serrulatus (yel. eve. Primrose) SC
Cardamine pratensis v. *palustris* (cuckoo flower) SC
Carex assiniboinensis (assiniboine sedge) SC
C. torreyi (Torrey sedge) SC
Catabrosa aquatica (brook grass) E
Cirsium hillii (Hill's thistle) T
Crotalaria sagittalis (arrow-headed rattle box) SC
Cypripedium parviflorum (sm. yellow lady's slipper) SC
Cypripedium reginae (showy lady's slipper) SC
Dalea villosa (silky prairie clover) SC
Deschampsia cespitosa (tufted hairgrass) SC
Diplazium pycnocarpon (glade fern) SC
Dryopteris fragrans (fragrant fern) SC
Elocharis robbinsii (Robbins spikerush) SC
Gentiana alba (yellow gentian) T
Glycyrrhiza lepidota (wild licorice) SC
Lespedeza leptostachya (prairie bush clover) E
Lesquerella ludoviciana (silver bladderpod) T
Liatris punctata (dotted blazingstar) E
Lithospermum latifolium (American gromwell) SC
Minuartia dawsonensis (rock stitchwort) SC
Napaea dioica (glade mallow) SC
Nothocalais cuspidata (prairie false-dandelion) SC
Onosmodium molle (marbleseed) SC
Opuntia fragilis (brittle prickly-pear) T
Orobanche ludoviciana (Louisiana broomrape) E
Panicum wilcoxianum (Wilson panic grass) SC
Platanthera dilatata (leafy white orchis) SC
P. hookeri (Hooker orchis) SC
P. orbiculata (large roundleaf orchid) SC
Poa paludigena (bog bluegrass) T
Polanisia jamesii (James cristellata) SC
Prenanthes aspera (rough rattlesnake-root) E
Primula mistassinca (birdseye primrose) SC
Psoralea argophylla (silvery scurf pea) SC
P. esculenta (pomme de prairie) SC
Scirpus torreyi (Torrey's bulrush) SC
Scutellaria parvula (smallscullcap) E
Senecia congestus (marsh ragwort) SC
Silene nivea (snowy campion) T
Talinum rugospermum (prairie fame-flower) SC
Thalictrum venulosum (veined meadowrue) SC
Woodsia oregana (Oregon woodsia) SC
Rubus uniformis (uniform bramble) SC

Appendix A (cont.)

Birds

Ammodramus henslowii (Henslow's sparrow) T
A. leconteii (Le Conte's sparrow) SC
A. savannarum (grasshopper sparrow) SC
Anas acuta (northern pintail) SC
Asio flammens (short-eared owl) SC
A. otus (long-eared owl) SC
Aythya americana (redhead) SC
Bartramia longicauda (upland sandpiper) SC
Botaurus lentiginosus (American bittern) SC
Buteo lineatus (red-shouldered hawk) T
Casmerodius alba (great egret) T
Chlidonias niger (black tern) SC
Circus cyaneus (northern harrier) SC
Coturnicops noveboracensis (yellow rail) SC
Cygnus buccinator (trumpeter swan) E
Denroica cerulea (cerulean warbler) T
Dolichonyx oryzivorus (bobolink) SC
Haliaetus leucocephalus (bald eagle) SC
Falco peregrinus anatum (Am. peregrine falcon) E
Lanius ludovicianus (loggerhead shrike) E
Nycticorax nycticorax (black-crowned night heron) SC
Pandion haliaetus (osprey) T
Phalaropus tricolor (Wilson's phalarope) SC
Podiceps grisegna (red-necked grebe) E
Pooecetes gramineus (vesper sparrow) SC
Protonotaria citrea (prothonotary warbler) SC
Seiurus motacilla (Louisiana waterthrush) SC
Spiza americana (dickcissel) SC
Sturnella magna (eastern meadowlark) SC
S. neglecta (western meadowlark) SC

Mammals

Lepus townsendii (whitetailed jackrabbit) SC
Microtus ochrogaster (prairie vole) SC
Myotis septentrionalis (e. long-eared bat) SC
Pipistrellus subflavus (e. pipistrelle) SC

Insects

Gastrocopta procera (wing snaggletooth) T
Lycaeides m. samuelis (Karner blue butterfly) SC
Lycaena xanthoides (great copper) SC
Mitoura grynea (olive hairstreak) SC
Speyeria idalia (regal fritillary) E

Reptiles & Amphibians

Clemmys insculpta (wood turtle) T
Emydoidea blandingii (Blanding's turtle) T
Rana catesbeiana (bullfrog) SC

Fish

Moxostoma carinatum (river redhorse) T
Moxostoma valenciennesi (greater redhorse) T
Notropis texanus (weed shiner) SC
Percina evides (gilt darter) T

KEY

E = WISCONSIN ENDANGERED; T = WISCONSIN THREATENED; SC = WISCONSIN SPECIAL CONCERN
FEDERALLY ENDANGERED/THREATENED SPECIES ARE LISTED IN ITALICS

Appendix B

Tax Impact Study

How is the Tax Impact Determined?

To give an idea of how property values could be affected in a township with the purchase of land by the Department of Natural Resources, a hypothetical example of three townships has been created. Each scenario is based on the following assumptions:

1. The DNR buys 700 acres of land in the specified township in 1996-1997.
2. Tax rates as well as local spending and aids formulas are the same as the previous year.
3. The market value of the acquired land is \$875 per acre.

Using these assumptions the following calculations were made:

1. The market value of those lands to be acquired by the DNR is subtracted from the total market value used in the state aid formula and the DNR's payment in lieu of taxes is added into the formula. Together these changes affect local revenues resulting in a new local tax levy.
2. Because of this change in the levy, local officials set a new mill rate.
3. This mill rate is multiplied by the market value of the average improved residential property for each taxing district (county, town, and school) within each affected township. This yields the "hypothetical" change in taxes paid per year resulting from the acquisition of these lands.

		Change in
		<u>Taxes per year</u>
Town of Warren, St. Croix County		
Avg. market value residential parcel \$107,000	Town	+\$0.00
	County	+\$0.00
	School	<u>+\$0.83</u>
	Total	+\$0.83
Town of Stanton, St. Croix County		
Avg. market value residential parcel \$80,000.	Town	+\$0.00
	County	+\$0.00
	New Richmond District	-\$0.37
	Amery District	<u>-\$0.02</u>
	Total	-\$0.39
Town of Farmington, Polk County		
Avg. market value residential parcel \$80,000.	Town	-\$2.97
	County	+\$0.00
	School	<u>+\$0.27</u>
	Total	-\$2.70
*1996-1997 average market values were used.		

This example is based on many assumptions and, therefore, is only an example. However, under the given assumptions, if the DNR spends \$612,500 (700 acres @\$875 per acre) a resident of the Town of Warren will pay an additional \$0.83 per year in taxes, a citizen of the Town of Stanton will pay \$0.39 less in taxes per year and a resident of the Town of Farmington will pay \$2.70 less in taxes each year.

Appendix C

Summary of Responses to Alternatives Evaluation Form

Forty-seven Alternatives Evaluation Forms were received, including one representing an organization of 250 members. Of these, 46 respondents favored one of the action alternatives, while one favored the No Action Alternative.

The following data summarizes how the 46 respondents who preferred an action alternative answered the remaining questions:

***Project boundary:** Larger boundary - 8
 Boundary as proposed or larger - 2
 Boundary as proposed - 35
 No response - 1

Comments: Suggested additions included areas from Pierce and Dunn Counties up to Crex Meadows.

***Acreage Goal:** Increase goal - 10
 Proposed acreage or more - 4
 Proposed acreage - 28
 Decrease acreage - 3
 No response - 1

Comments: Suggested acreage ranged from 15,000 to 50,000.

***Emphasis on prairie or wildlife habitat:**

On a scale of 1-5 where 1 indicates an emphasis only on blocks of grassland large enough to provide wildlife habitat, and 5 indicates an emphasis on only native prairie remnants, the responses averaged 2.2, indicating a preference for emphasizing wildlife habitat but considering prairie remnants.

Example of comments:

- "Both are important."
- "Both are equally important, the plan should include a mix."
- (Referring to selection of "1" on the scale) "Most likely to be viable over the long-term, assuming these larger blocks contain adequate and genetically viable representative grassland, oak savanna, and wetlands native species and natural communities."

***Distribution of prairie remnants:**

Distribute across the project area as they occur - 32
Focus where there is more residential development - 2
Focus in the more rural, agricultural areas - 8

Example of comments:

- "I believe protection of remnants should be based first on quality i.e. no matter where they are, protect the best quality remnants first."
- "High quality remnant 1st, remnants connected to large grass/CRP areas 2nd."

***Distribution of grassland blocks:**

Distribute across the project area - 26
Focus where there is more residential development - 2
Focus in the more rural, agricultural areas - 15

***Protection Mechanisms:**

***Which mechanisms should be available?**

Fee title acquisition - 37
Acquisition of management easements - 39
Grants to NCOs - 33
Long Term Management Agreements - 31
Purchase of Development Rights on ag. lands - 33
Other - 7

***Which mechanisms are preferred?**

Fee title acquisition - 23
Acquisition of Management Easements - 21
Grants to NCOs - 17
Long Term Management Agreements - 10
Purchase of Development Rights on ag. lands - 9

Examples of Comments:

- "Whatever it takes."
- "We should allow flexibility to use which tool works best for the situation."
- "You should not limit your project by too narrowly defining your tools. Use them all."

- "Use the best method under the existing conditions for each acquisition. Easements for small prairie remnants would make sense."
- "By any means possible."

***Other ideas or comments (examples):**

"I feel that any which way we can find to provide-protect-create grassland and remnant communities for wildlife, is a good one."

"Due to worsening urban sprawl and negative attitudes building towards sport hunting, the WPHRA can achieve many goals at once."

"Super idea, I like the pro-active approach. Try to get the most bang for your buck. Don't spend \$10,000/acre when \$1,000/acre land is available."

"I strongly think that most of the Department resources should concentrate on the rural/agricultural areas. A greater amount of land could be protected this way because it is cheaper than residential area. The small parcels that might be saved in residential areas would have little benefit to wildlife."

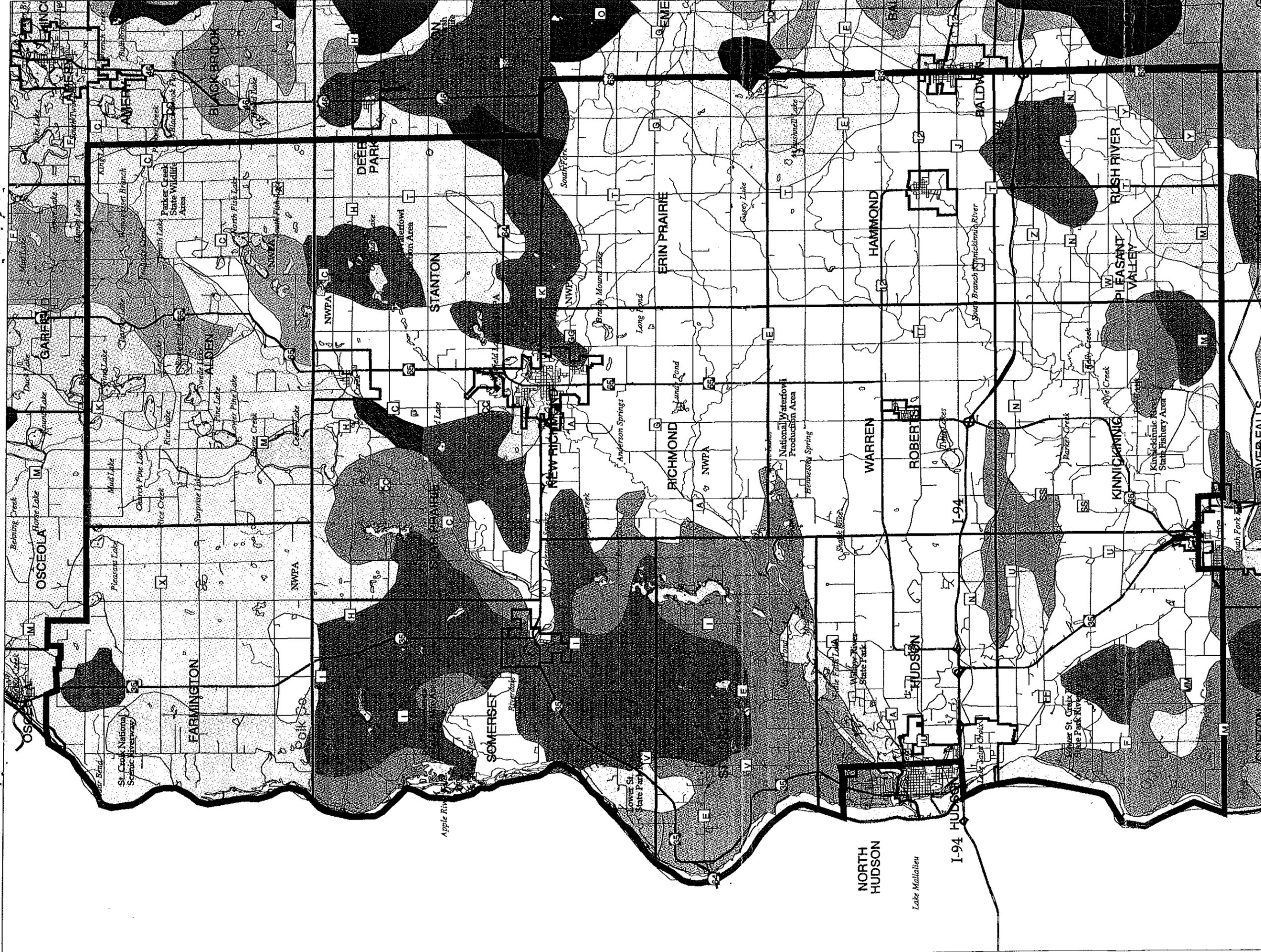
"I think it is a worthwhile project that can work hand in hand with the Kinnickinnic watershed project. The focus of this project falls in line with the mission statement of the Kinnickinnic Steering Committee."

"The fact of burning off these areas is a prime concern of Willow River Rod & Gun Club. We are in strong support of the project but would it be possible to burn earlier before the wildlife (birds) are nesting? Two-three weeks earlier burns would make the world of difference! We appreciate the need to burn but think the timing is off."

"Citizen involvement - need volunteer coordinator. Acquire quickly to preserve."

"I believe the DNR has set aside adequate land in this area. We have the Standing Cedars Conservancy which should be enough to fulfill their goals."

"Thank you and best wishes for every success!"



- Sugar Maple, Y. Birch, W/R Pine
- White / Red Pine
- Jack Pine, Scrub Oak, Barrens
- Aspen, White Birch, Pine
- Sugar Maple, Basswood, R/W/B Oak
- Oak - White/Black/Bur
- Oak Openings
- Prairie
- Brush
- Marsh, Sedge, Wet Prairie
- Water

Western Prairie Habitat Restoration Area Original 1830s Vegetation



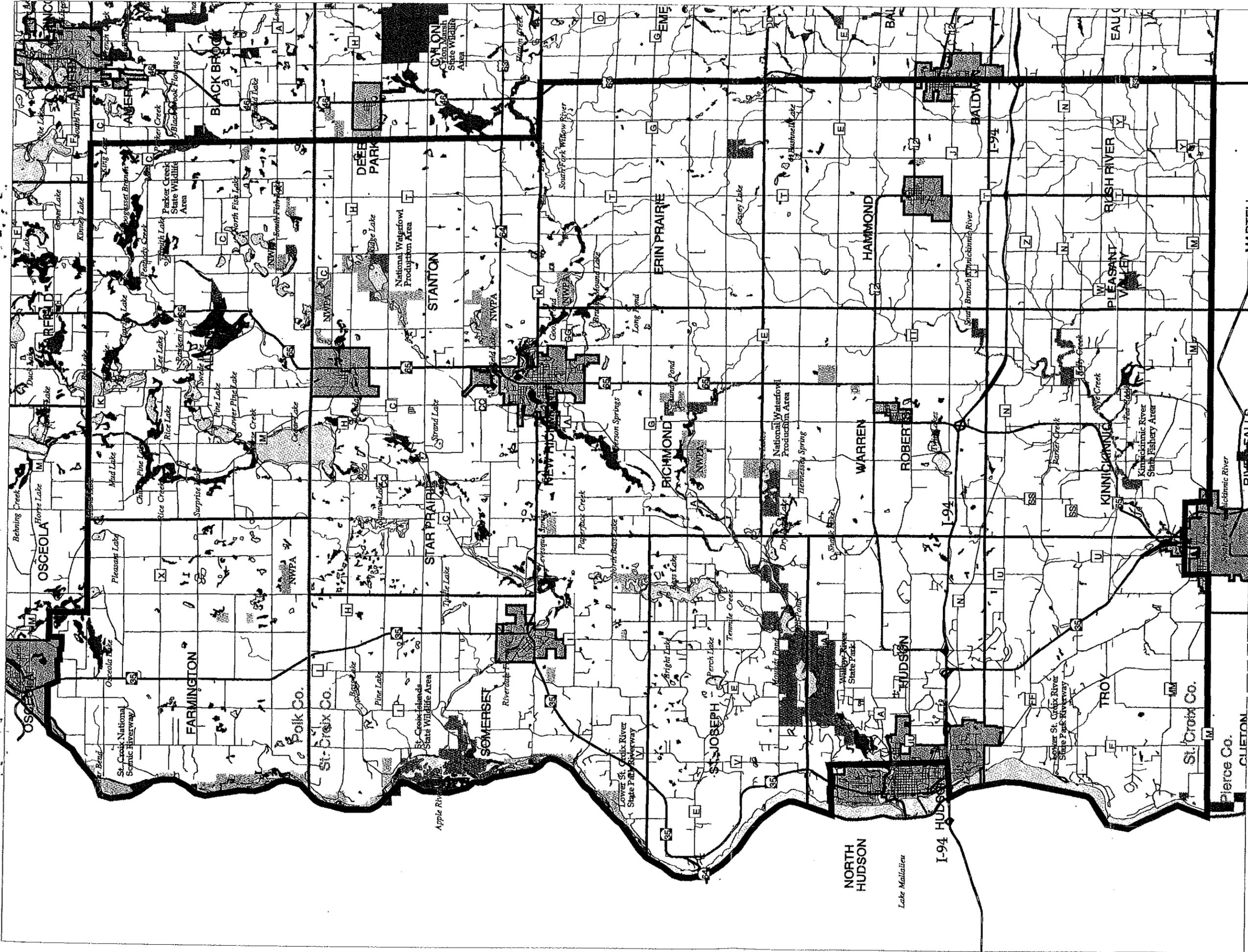
0 1 2 3 4 5 Miles

1:150000



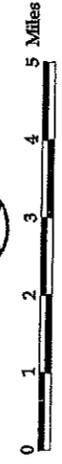
June 1997 v. 1.0

Figure 2



-  State Lands
-  Federal Lands
-  Municipalities
-  Grasslands
-  Wetlands
-  Water

Western Prairie Habitat Restoration Area Public Lands, Grasslands, Wetlands



1:150000



Figure 1