

# NORTH BRANCH MILWAUKEE RIVER WILDLIFE AND FARMING HERITAGE AREA

## FEASIBILITY STUDY



Wisconsin Department of Natural Resources  
Southeast Region  
March 2003

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The Environmental Assessment was certified on August 1, 2002.

The North Branch Milwaukee River Wildlife and Farming Heritage Area feasibility study was approved by the Natural Resources Board on August 14, 2002 and by Governor Scott McCallum on September 16, 2002.

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## EXECUTIVE SUMMARY

With the August 2002 Natural Resources Board and the September 2002 Governor approvals, the Department of Natural Resources established the 19,487-acre North Branch Milwaukee River Wildlife and Farming Heritage Area. This project encompasses river and stream corridors, large wetland complexes, agricultural lands, and three small lakes. The core area of wetlands and agricultural lands make up 16,549 acres and corridors along five tributary streams make up an additional 2,938 acres. The entire study area lies within the Milwaukee River basin in northeastern Washington, northwestern Ozaukee, and southwestern Sheboygan counties.

A locally based citizen advisory committee (CAC) will help to guide the purchase, use and management of these lands. The Department anticipates using a variety of real estate tools, including fee title, easements and purchase of development rights to help protect the natural features and rural/agricultural landscape in the area. The CAC will help identify agricultural lands where the purchase of development rights may be used to protect agricultural lands adjacent to other natural resources.

Approximately 9,000 acres of cropland, 6,000 acres of wetlands, and 700 acres of upland occur within the boundary. Large wetland complexes of expansive lowland forests are associated with the nine miles of the North Branch Milwaukee River, portions of five tributary streams, and three small lakes within the boundary. Also identified within the boundary are 20 potential natural areas, including one area of statewide significance. Within this area, there are two special concern, three threatened, and one endangered fish species, and four special concern plant species.

This is one of the largest blocks of open space remaining in southeastern Wisconsin, and one that is still predominately rural with agriculture dominating the landscape. This project area is within 20 miles of the Milwaukee metropolitan area. Because of its location and natural resource features, this area has great potential for preserving farmland while providing low impact compatible outdoor recreational opportunities.

In addition to protecting the natural resource features, one of the primary goals is to help maintain farming as a viable land use in this area. Agriculture and natural resource protection efforts have a common interest in "stabilizing the rural landscape". American Farmland Trust, a nationwide organization working for farmland preservation, identified southeastern Wisconsin as the third most threatened agricultural landscape in the country (behind California's Central Valley and the area around Seattle).

The 2000 Statewide Comprehensive Outdoor Recreation Plan (SCORP) reported lower participation rates for some outdoor activities including hunting (17%), canoeing (25%), and nature study (42%), in the southeast region. This may in part be based on a lack of access to sites suitable for those activities in southeast Wisconsin. Although 15.5 percent of the land in Wisconsin is publicly owned, only four percent of southeast Wisconsin is publicly owned. With 40 percent of the state's population residing in the southeast, there is an increasing need for wildlife areas in this region.

The 2000 SCORP identified some effects of rural subdivisions and farm conversions on recreation resources, including:

- “Intensified waterfront development leads to adverse effects on water resources and recreational values.
- As rural land becomes divided and owned by larger numbers of landowners, recreation opportunities become more “privatized” and access to these lands for hunting and other recreation pursuits decreases.
- As rural development intensifies, the scenic qualities of Wisconsin’s farm and forest declines.”

This area is also rich in cultural and archeological resources. Many sites have been identified as historically important features for both Native Americans and European settlers. The stone buildings reflect the strong agrarian heritage of the early settlers and provide testimony to the hard work of our ancestors. These features provide added incentives to protect land uses and resources in the study area.

Department policy under Administrative Code NR 1.40 declares an “emphasis on the acquisition of lands in the heavily populated areas of the state”. The *Joint Venture – Wisconsin Plan*, which is part of the *North American Waterfowl Management Plan*, includes all the townships within the boundary as critical habitat for waterfowl projects. The major thrusts of these efforts are consistent with the plan’s objectives and also with the actions recommended in the Department’s 1995 *Biodiversity Report*.

The Department began a feasibility study of the North Branch Milwaukee River area in July of 1999. An extensive amount of public involvement was employed over the three-year period of this study. We held two sets of open houses (six individual open forums), and met with the four local town boards, state legislators representing the area, and local farmers and landowners in the proposed project area. Local farm bureau representatives provided assistance in setting up a local committee to review concerns related to land acquisition and farming issues.

The first public review in 1999 was generally supportive but many suggestions were made relative to boundary changes. Based on this public input and Department review of the natural resources, changes were made to the boundary – including adding an 1,800-acre area on the south side of the study area. The draft report, with the new boundary, was released for public review in the fall of 2000. There were strong objections to the 1,800-acre addition, but general support for preserving open space and farmland. After meeting with local and state officials, and local landowners, this 1,800-acre addition was removed from the boundary and the proposal to protect farmland was strengthened.

The study area remains primarily open with agriculture and wetlands dominating the landscape but development pressure is increasing in the area. The proximity of this area to urban centers, and the recent expansion of nearby State Highway 57 from two to four lanes will increase residential development pressure. Considering the current trends in rural/suburban development in the project area, a narrow window of opportunity exists to initiate this project.

The estimated acquisition cost for all 19,487 acres is \$43,294,000. The estimated cost for establishing grassland and woodland areas, and restoring approximately 1,500 acres of wetlands on some of the acquired lands is \$2,100,000. The development of limited and primitive parking and access sites would cost about \$130,000. The Department will work with

other government agencies, private conservation groups, and land trusts to preserve the important natural features and rural/agricultural heritage of the area.

The North Branch Milwaukee River Wildlife and Farming Heritage Area is a feasible project from the standpoint of legal authority, ecological soundness, public support, and availability of initial staffing and funding. The project could proceed with existing permanent and limited term staff but will require additional staff to fully implement. It is recommended that the project proceed, especially given the information in the needs analysis. It is anticipated that long-term acquisition funding will be available as a result of the stewardship program reauthorization.



The Environmental Assessment was certified on August 1, 2002.

The North Branch Milwaukee River Wildlife and Farming Heritage Area feasibility study was approved by the Natural Resources Board on August 14, 2002 and by Governor Scott McCallum on September 16, 2002.

# **NORTH BRANCH MILWAUKEE RIVER WILDLIFE AND FARMING HERITAGE AREA FEASIBILITY STUDY**

## **Project Overview**

The North Branch Milwaukee River Wildlife and Farming Heritage Area project boundary encompasses 19,487 acres. The core area of wetlands and agricultural upland near the North Branch of the Milwaukee River makes up 16,549 acres and corridors along the five tributary streams make up an additional 2,938 acres. The project area encompasses river and stream corridors, large wetland complexes, three lakes, and rural/agricultural lands. The entire study area lies within the Milwaukee River basin in northeastern Washington, northwestern Ozaukee, and southwestern Sheboygan counties (Map 1).

Approximately 9,100 acres of cropland and pasture, 5,900 acres of wetlands, and 700 acres of forest occur within the boundary. In addition to protecting the forests and wetlands, one of the primary goals of the project is to help maintain farming as a viable land use in the area. To achieve this goal, the Department will offer to purchase development rights on farms. This technique allows landowners to sell the value of the right to develop their property while retaining underlying ownership. The Department will set up a locally-based citizen advisory committee to both guide the purchase of land and development rights in the area as well as advise the Department on how lands that it does purchase are used and managed. By doing so, the Department hopes to ensure that its actions positively affect farming's future in the North Branch area.

The Department anticipates that as lands are acquired over time, a variety of low-impact, nature-based, outdoor activities could be supported and available to the public. The Department anticipates developing only limited facilities (primarily parking and trails) to accommodate expected uses such as wildlife watching, fishing, hiking, and hunting. The use of the property will be determined through the development of a master plan for the property. Public involvement and input is a key component to the success of the master plan.

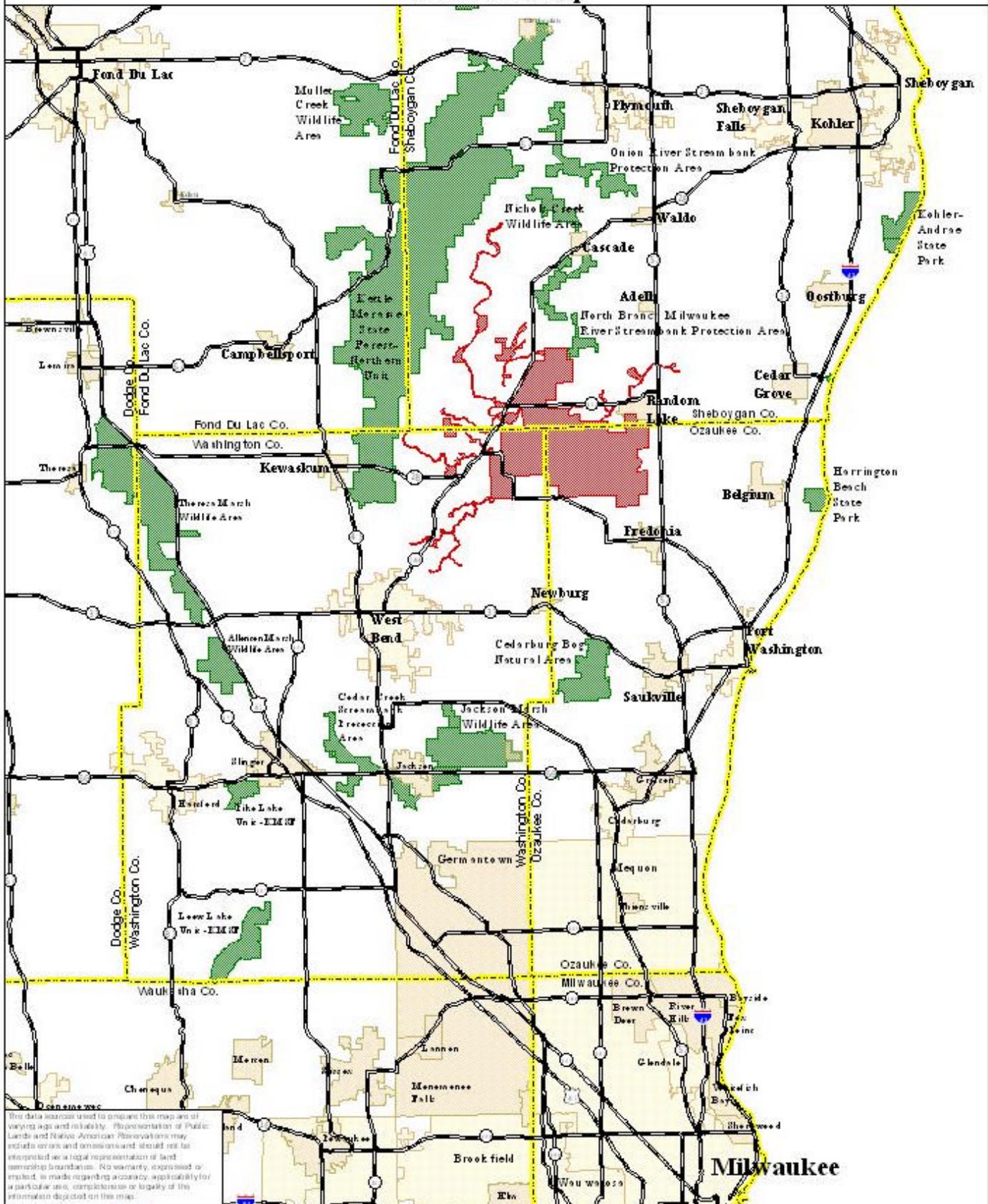
## **Purpose**

The purpose of the project is for the Department of Natural Resources, in partnership with local, state and national governmental units, the farming community, conservation groups and citizens to provide land and water areas to:

- maintain the rural-agricultural character
- maintain and enhance existing natural resources
- restore plant communities and wetlands to improve wildlife habitat and water quality, and
- provide nature-based outdoor recreation and education opportunities

within the project boundary of the North Branch Milwaukee River Wildlife and Farming Heritage Area.

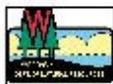
# North Branch Milwaukee River Wildlife and Farming Heritage Area Locator Map



The data sources used to produce this map are of varying age and reliability. Representation of Public Lands and Native American Reservations may include errors and omissions and should not be interpreted as a legal representation of land ownership boundaries. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness or legality of the information depicted on the map.

	<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: red; border: 1px solid black; margin-right: 5px;"></span> Study Area</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: green; border: 1px solid black; margin-right: 5px;"></span> DNR Projects</li> </ul>	<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></span> Cities</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: lightyellow; border: 1px solid black; margin-right: 5px;"></span> Villages</li> <li> Major Highways</li> <li> County Boundaries</li> </ul>	 <p>2 0 2 4 Miles</p>
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**MAP 1 - Regional Location**



## **Projected Acquisition and Management Costs**

### Estimated Acquisition Costs and Tax Impacts

*Acquisition:* The boundary identifies an area where the Department and its partners will employ fee title, easement acquisition, development rights, or other types of agreements with landowners to help preserve and protect natural resources and provide for outdoor recreational and educational opportunities. Existence of a project boundary does not limit a landowner's use or the sale or other disposition of his/her property. The landowner maintains the right to use and develop his/her property in accordance with existing state and local regulations.

Land acquisition occurs with willing sellers, so the pace of land acquisition and subsequent management activities is difficult to predict. These types of projects typically require decades to acquire a significant portion of the land within the boundary.

It is recommended that a variety of real estate tools be used to protect the natural resources of the 19,487-acre boundary. These include the purchase of development rights, fee simple acquisition, conservation easements, donations, public-private partnership/cost-shared acquisitions, and landowner participation in other state and federal land conservation programs (ie, Conservation Reserve, Wildlife Habitat Improvement, and Wetland Reserve programs). Landowner interest, location and potential use of the land, and available funding will help determine which of these tools will be used.

It is anticipated that the acquisition of streambank corridors will primarily be through conservation easements. Where there is potential for habitat restoration or where significant natural features exist fee simple will be employed. The identified streambank corridor is 100 feet on both sides of the streams but the actual area of interest will need to comply with future laws (administrative rules) related to the non-point program.

*Acquisition of Agricultural Lands:* As stated previously, protecting and sustaining the conservation and recreation values of the North Branch area will likely be most effective if farming operations remain viable over time. A primary concern of landowners in the area is that the North Branch project should not conflict with the viability of existing and future farming operations. The Department shares this concern and, as a result, intends to use the following approach in its acquisition efforts:

- focus acquisition efforts on lands with high conservation or recreation value
- avoid the purchase of tillable agricultural land
- purchase the "development rights" on lands where maintaining undeveloped open spaces would serve conservation or recreation purposes; lands where this less-than-fee-simple ownership may be appropriate include cropland, forests, and grasslands
- establish a Citizen Advisory Committee (CAC) to both guide the acquisition of land and development rights and advise the Department on how those lands are used and managed

If tillable land were acquired, such as tilled or ditched agricultural land, the Citizen Advisory Committee would advise the Department on which lands are most suitable for continued agricultural production and which are most suitable for conversion or restoration to natural vegetation. If the CAC advises the Department that certain lands it has purchased are most

appropriately continued in agriculture, then the Department may consult with the CAC on options including:

- selling the land with easement restrictions sufficient to allow farming operations while protecting adjacent natural resource features, or
- renting or leasing the land for agricultural purposes as long as doing so meets a conservation or recreation purpose.

The CAC will be comprised of citizens and local officials from the project area that represent the major interests in the area, especially agriculture and natural resources. Because a key purpose of the CAC is to advise the Department on agricultural lands, 51 percent or more of the committee will be comprised of active farmers. It is anticipated that the CAC will assist the Department in developing a model for use in assessing the suitability of lands for purchase by development rights, easement or fee title. The committee could also be helpful as a liaison group to organizations and the general public, in recommending strategies for using other groups (partners) to help meet the goals of the plan, and to identify future public involvement needs.

*Estimated Acquisition Costs:* The land uses in the project boundary range from rural agricultural to rural residential and recreational. For purposes of determining estimated acquisition costs, the land was divided into three general categories – upland, wetland and streambank corridors. The following estimates are based on fee simple acquisitions and were derived using 1999 sales. Average land values can be expected to increase over time due to inflation and market conditions. Easement acquisitions can be expected to be less than fee simple and could reduce the estimated acquisition costs. Department policy calls for avoiding the acquisition of high-value improvements, where possible. The improvements included in the acquisition of large key parcels may be carved out in lot sizes that comply with local zoning regulations and resold. Estimated improvement acquisition costs are not reflected in the numbers below.

Upland: 11,954 acres = \$29,885,000  
Wetland: 4,595 acres = \$4,595,000  
Streambank: 2938 acres = \$8,814,000

Total estimated acquisition costs: \$43,294,000

*Tax Impact.* The Department makes an annual payment-in-lieu-of-taxes, as required by State Statute 70.114, on lands acquired. The payment is calculated in the same manner that property taxes are derived at for any private landowner – the mill rate is multiplied by the assessed value of the land, except that the assessed value is considered the fair market value of the land. The initial assessed value is set at the price the Department paid for the land, which is based on the appraised market value. The value is adjusted to reflect changes in the assessed value of land in the taxation district.

The total estimated tax, based on the estimated acquisition cost of \$43,294,000, and a mean mill rate of \$19.00 is \$822,586.00.

#### Land and Water Management and Associated Costs

The Department will add the North Branch Milwaukee River Wildlife and Farming Heritage Area to the statewide master planning schedule as lands are acquired. The Department's master planning process addresses which activities are compatible with the purpose of the North Branch Milwaukee River Wildlife and Farming Heritage Area, as well as the management

necessary for developing and managing its resources. The Department, with public involvement, would develop the master plan. Through the management of resources described below, the Department could realize the protection and restoration of the following Southeast Glacial Plains landscape types:

- restoration and management of wetlands and grasslands
- management of shallow water lakes
- protection and management of glacial features
- restoration of riparian zones, and
- creation of corridors between scattered woodlots.

*Wildlife Maintenance and Enhancement:* Land acquired over time will require land management activities to preserve, restore, or improve habitat for wildlife; reduce soil erosion or nutrient runoff; maintain scenic vistas; or provide recreational or educational opportunities. As lands are acquired or eased, general management activities will take place to monitor wildlife use, recreational uses, and environmental benefits. Limited recreational facilities will be developed to provide off-road parking, hiking trails, and access points. Internal access roads for management purposes will be maintained, boundaries will be posted and inspected, and facilities maintained. Estimated costs for development and maintenance if the Department were to purchase or take easements on the entire 19,487 acres are:

- Signing/posting: \$1,000/ year
- Gravel parking lot development: \$75,000
- Gravel access road development: \$25,000
- Road and parking lot maintenance: \$5,000/year
- Trail development: \$30,000
- Trail maintenance: \$3,000/year
- Monitoring Costs: \$1,000/year
- Informational materials: \$1,000/year

Annual Maintenance Total: \$11,000

Development Total: \$130,000

A goal of the North Branch project is to preserve and protect existing community types, and enhance or restore the degraded areas. The protection of a mixture of woodlands, wetlands, grasslands and cropland would result in the largest diversity of game and nongame wildlife populations.

A policy of “passive” or non-management will be used in some self-sustaining community types such as lowland forest and tamarack swamps. An exception will be where exotic species control is needed to control invasive plants such as garlic mustard, European buckthorn, and honeysuckle. For most other community types, some management is needed that mimics natural processes (such as burning a prairie, or thinning an oak woodlot) to maintain the community type.

In those areas where an open aspect will be maintained, without trees, several management methods will be used -- prescribed burning, mechanical brush cutting, herbicide treatments, and agreements with farmers for sharecropping or grazing. To improve forest habitat for interior bird species, small areas surrounded by woodlands could be planted with trees or left idle to grow into trees through succession. New grass plantings will primarily be done with “warm season” native grasses and forbs. The potential for use of delayed haying and grazing will also

be explored. Recommended planting and maintenance items and their respective costs are:

- Obtain and monitor sharecrop contracts: \$2,000/year
- Grassland seeding (cost would likely be lowered by use of sharecrop agreements): \$140/acre with an estimated acreage of 2,000 = \$280,000
- Prescribe burning: 200 acres/year @ \$4.00/acre = \$800.00
- Herbicide/mowing: 200 acres/year @ \$7.00/acre = \$1,400.00
- Tree planting: cost of \$300/acre with an estimated acreage of 1,000 = \$300,000

Annual Total: \$4,200

General Planting Total: \$580,000

Many of the wetlands in the study area have been tilled, ditched, filled or otherwise destroyed. Some remaining wetlands have been degraded by land use practices such as over-grazing, or the elimination of vegetative buffers. Management and restoration of purchased or eased wetlands includes plugging ditches, disabling tile systems, scraping out silt-filled basins, and fencing over-grazed wetlands. Once restored, wetlands have a higher value for wildlife habitat and improved water quality benefits. Recommended wetland projects and their respective costs are:

- Wetland restoration: 1,500 acres @ \$1000/acre = \$1,500,000
- Wetland inspection and maintenance: \$2,000/year

Annual Maintenance Total: \$2,000

Restoration/Development Total: \$1,500,000

All townships in the North Branch study area are identified as critical habitat within the Southeast Focus Area of the Upper Mississippi River and Great Lakes Region Joint Venture of the North American Waterfowl Management Plan (1992). As such, the area 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 and because some of the highest waterfowl breeding densities come from this area of the state.

Ponds, lakes, rivers and streams will be managed to improve water quality and wildlife habitat through the use of vegetative buffer strips, "best management" forestry practices, "conservation" farming practices, and reduced grazing in rivers and streams. These programs are typically administered by the farm service agency of county and federal governments.

*Facilities Management:* The Department recommends that the existing private recreational facilities (camping and day-use areas) continue under private group operation. If they become available the Department would be interested in acquiring them for both protection of the resources and to provide recreational facilities.

*Forestry Management:* Of the existing forested areas within the project boundary, approximately 1800 acres are enrolled in forest tax incentive programs. There are approximately 1200 acres enrolled in the Managed Forest Law program (MFL), about 500 acres in the Woodland Tax Law program (WTL), and 100 acres in the Forest Crop Law program (FCL). Some of the cover types associated with the forestry tax law programs include northern hardwoods, central hardwoods, bottomland hardwoods, swamp hardwoods, oak, white ash, aspen, red pine, white pine, fir/spruce, white spruce, herbaceous vegetation, grass, upland brush, minor lake, keg, emergent vegetation, lowland brush, dogwood, and willow. For more information about the forest tax incentive programs, refer to "Managed Forest Law" in the glossary.

### Staffing

The North Branch of the Milwaukee River Wildlife Area will require additional personnel to develop and manage. Initially, the current wildlife staff at Pike Lake and Plymouth will manage the project area. As public ownership increases, additional staff will be required to adequately maintain and manage the area.

An additional wildlife biologist could be stationed in Ozaukee County to manage this property, along with other management responsibilities in the county. In the future, an additional technician would also be considered for this area. Assistance for planning and real estate transactions will be provided by the region, and, if necessary, by private contract.

Partnerships with local units of government, land conservation organizations and other non-profit organizations will be pursued to help accomplish the project goal.

Estimated annual costs for increased permanent personnel would be approximately \$50,000 including salary and benefits.

### Funding

Funding for the acquisition of land and the development of facilities will come from the Department of Natural Resources Stewardship 2000 Program, cost-share grant programs, priority watershed program easement funds, funds from non-profit conservation organizations, and grants from individuals, corporations, and foundations. Primary land acquisition and facility development funds will come from the Stewardship 2000 program that was signed into law by Governor Tommy G. Thompson in 1999.

Funding to develop and restore wildlife habitat will likely come from the existing Department Fish and Wildlife account (fishing and hunting license sales, and sales from pheasant, turkey and waterfowl stamp accounts). Additional funds will be sought from federal grants (e.g., North American Waterfowl Management Act), and from nonprofit conservation organizations such as Pheasants Forever, Ducks Unlimited, farming conservation organizations, and Wisconsin Waterfowl Association. Funding for operations and maintenance will primarily come from the Department segregated Fish and Wildlife account.

### **Need**

#### Ecological Considerations

*Landscape:* The project area is one of the largest blocks of undeveloped open space remaining in southeastern Wisconsin. Although located just outside of the largest urban area in the state, the project area is predominantly open and rural with large wetlands and agriculture dominating the landscape. It is within the ecological landscape termed "southeast glacial plains" and is characterized as the Wisconsin landscape that has the highest wetland and river productivity for plants, insects, and invertebrates (Ecological Landscapes of Wisconsin, WDNR, 1999).

There are numerous significant natural features in this area. The study area contains a large and diverse land and water complex that includes about nine miles of the North Branch of the Milwaukee River, five tributary streams, three lakes, large expanses of lowland forests, wetlands, upland forests, and agricultural lands (Table 1).

*Natural Areas:* A total of 20 potential and existing natural areas have been identified within the boundaries of the study area. The Natural Heritage Inventory (NHI) records (records kept by the

Wisconsin Department of Natural Resources) show two special concern, three threatened, and one endangered fish species, four special concern plant species, and 13 plant communities as natural areas (Map 5, Table 3). Most of the natural areas are also described in the 1997 SEWRPC report, *A Regional Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin*.

*Plant Communities:* At the time of European settlement, deciduous forests of beech, sugar maple, basswood, red oak, white oak, and black oak dominated the uplands. Most of the upland forests were converted to agricultural uses and few upland forests remain. Current trends of increasing development indicate that these upland areas will be converted to commercial and residential uses. This project should help maintain the agricultural and rural land uses in this area.

The lowland woods were classified as coniferous swamps where white cedar and tamarack were more common than they are today. Silver maple, green ash, cottonwood, and willow were also present, similar to the remaining lowland forests of today. Large blocks of hardwood and floodplain forests remain, but there are also large blocks and smaller pockets of wetlands that have been converted to agriculture (Map 2). Over time these areas could be restored to original wetland conditions, along with their biological and hydrological functions. Restorations will result in improved wildlife habitats, water quality, and reduction in downstream flooding.

The existing areas of lowland forests and shrubs provide extensive, relatively unbroken blocks of cover for wildlife. These areas are connected by corridors of cover associated with the tributary streams and associated wetlands that flow into the North Branch Milwaukee River. The size of the floodplain forests is significant because most of them have been converted to other uses in southeastern Wisconsin (1995 Biodiversity Report) and they are important for neo-tropical migrant birds that require large blocks of cover for secure nesting.

In summary, the North Branch Milwaukee River Wildlife and Farming Heritage Area is important ecologically because it contains:

- nine miles of the North Branch Milwaukee River, five streams, and three lakes
- large expanses of lowland forests, wetlands, and upland forests
- 20 potential and existing natural areas
- several threatened, endangered or special concern plant and animal species, and
- the potential for restoration of converted wetland and upland habitats.

#### Socio-Economic Considerations

*Access to Recreation:* The 2000 Statewide Comprehensive Outdoor Recreation Plan (SCORP) reported lower participation rates for some outdoor activities including hunting (17%), canoeing (25%), and nature study (42%) in the southeast region. This may in part be based on a lack of access to sites suitable for those activities in southeast Wisconsin. Although 15.5 percent of the land in Wisconsin is publicly owned, only four percent of southeast Wisconsin is publicly owned. With 40 percent of the state's population residing in the southeast, there is an increasing need for wildlife areas in this region.

**Table 1 – Acres by Land Category in the North Branch Milwaukee River  
Wildlife and Farming Heritage Area**

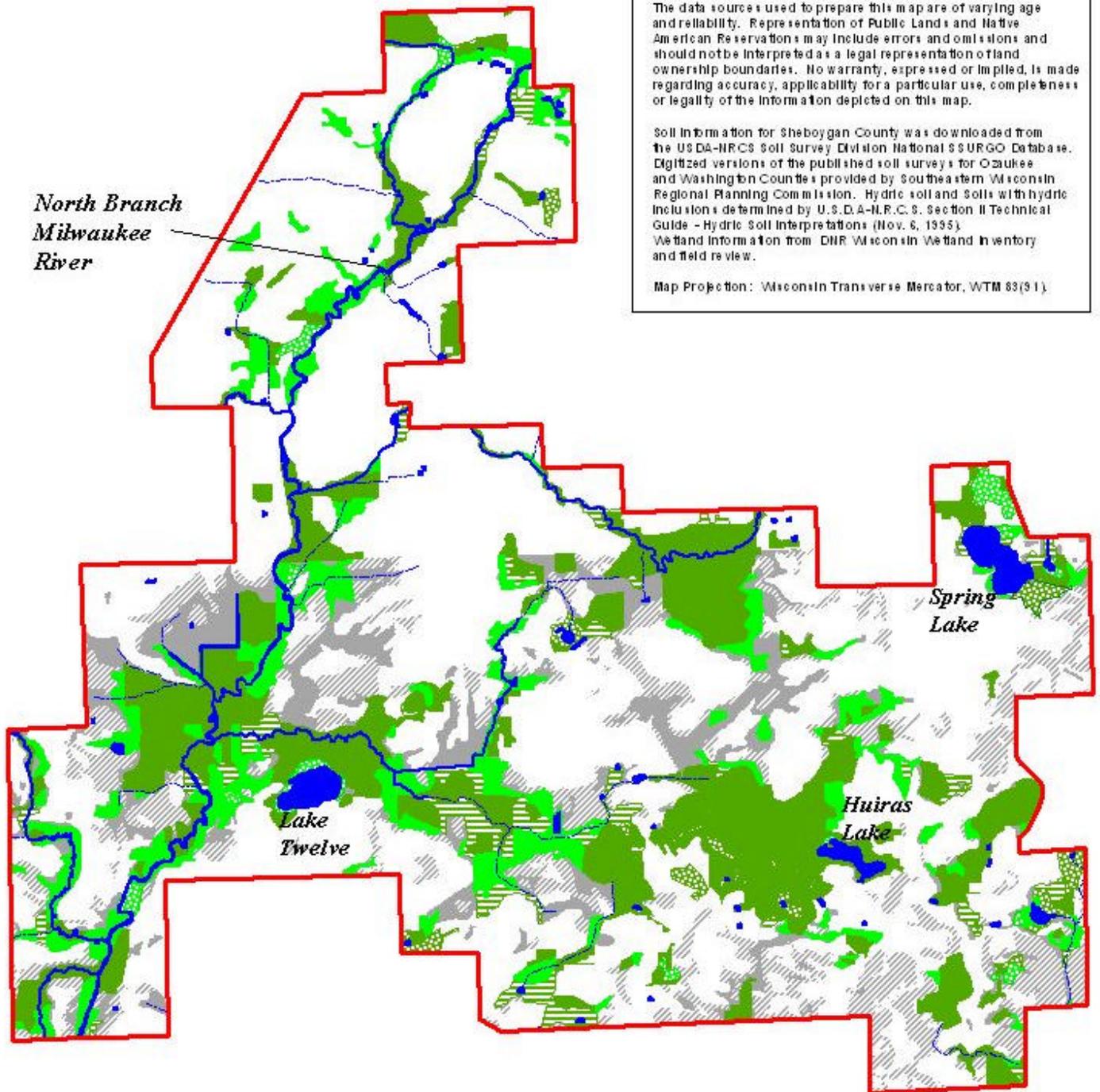
<b>Land Category</b>	<b>Core Area</b>		<b>Streambank Area</b>		<b>Entire Study Area</b>	<b>Comments</b>
	<b>Acres</b>	<b>%</b>	<b>Acres</b>	<b>%</b>		
<b>Total Area</b>	<b>16,549</b>		<b>2,938</b>		<b>19,487</b>	
<b>Wetlands*</b>	<b>4,595</b>	<b>28%</b>	<b>1,352</b>	<b>46%</b>	<b>5,947</b>	
Lowland Hardwood Forest	2,736		638		3,374	
Coniferous Swamp	51		16		67	
Wet Meadow	1,184		335		1,519	
Marsh	157		50		207	
Shrub Swamp	435		280		715	
Ponds	32		33		65	
<b>Lakes*</b>	<b>122</b>	<b>0.7%</b>	<b>0</b>		<b>122</b>	
<b>Forests*</b>	<b>714</b>	<b>4%</b>	<b>n/c**</b>			
Upland Hardwood Forests	544		n/c**			
Pine Plantations	110		n/c**			
Upland Shrubs	60		n/c**			
<b>Cropland*</b>	<b>9,091</b>	<b>55%</b>	<b>n/c**</b>			
Sheboygan County	2,560		n/c**			
Washington County	1,723		n/c**			
Ozaukee County	4,808		n/c**			
<b>Soils*</b>						
Hydric Soils	5,263	32%	1,752	60%	7,015	Overlaps wetland and cropland acres.
Soils with Hydric Inclusions	2,788	17%	365	12%	3,153	Overlaps wetland and cropland acres.
<p>* categories do not add up to the total due to acres in home sites, transportation corridors, gravel mines, etc.  ** n/c indicates not calculated</p>						

# North Branch Milwaukee River Wildlife and Farming Heritage Area Core Area Wetland Classes and Hydric Soils

The data sources used to prepare this map are of varying age and reliability. Representation of Public Lands and Native American Reservations may include errors and omissions and should not be interpreted as a legal representation of land ownership boundaries. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness or legality of the information depicted on this map.

Soil information for Sheboygan County was downloaded from the USDA-NRCS Soil Survey Division National SSURGO Database. Digitized versions of the published soil surveys for Ozaukee and Washington Counties provided by Southeastern Wisconsin Regional Planning Commission. Hydric soil and soils with hydric inclusions determined by U.S.D.A.-NRCS Section II Technical Guide - Hydric Soil Interpretations (Nov. 6, 1995). Wetland information from DNR Wisconsin Wetland Inventory and field review.

Map Projection: Wisconsin Transverse Mercator, WTM 83(31)



- |                            |                         |
|----------------------------|-------------------------|
| Core Study Area Boundary   | coniferous swamp        |
| Rivers & Streams           | lowland hardwood forest |
| Lakes & Ponds              | marsh                   |
| Hydric Soils               | shrub swamp             |
| Soils w/ Hydric Inclusions | wet meadow              |

0.5 0 0.5 1 1.5 Miles



**MAP 2 - Core Area Wetland Classes And Hydric Soils**

Several surveys show that people like to recreate close to home. The 1991-96 SCORP and the 1985 National Survey of Hunting, Fishing, and Wildlife-Associated Recreation found that 65 to 70 percent of outdoor recreation occurs within 50 miles of home. The 1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation found that more than 1.6 million residents, 16 years and older, actively participated in wildlife watching activities – more than any other outdoor activity.

The attractiveness of the North Branch Milwaukee River Wildlife and Farming Heritage Area for outdoor recreation is evident by the existence of two private campgrounds within the study area. The economic impacts of the project to the local and state economy will depend on the progress of land acquisition over time. If land were acquired and habitat restored, it is anticipated that wildlife-associated recreation would increase in the area. Wildlife-associated recreation would complement a viable agricultural economy in the area, and should benefit the local economy. There is tremendous potential for people to use this area for pleasure driving and wildlife watching.

*Land Use Changes:* The study area remains primarily open with agriculture and wetlands dominating the landscape. The 2000 Wisconsin SCORP identified changing land uses, ownership and regulations as reducing recreational opportunities and diminishing resource quality in the state. Higher density residential development exists on the southwest side of Lake Twelve, otherwise the area is relatively undeveloped. Other than for agriculture, the only commercial activity in the area is gravel mines.

However, the study area is experiencing rural residential development. The proximity of this area to urban centers -- including the Milwaukee Metro area -- along with the State Department of Transportation Highway 57 widening project, will undoubtedly increase the pressure to sell farmland and the few remaining upland woods for residential and commercial development.

The population of the three counties involved has increased at a rapid pace over the last 10 years. In the same time period the rural farm population in these counties has decreased dramatically. Urban and residential development is expected to continue to expand. As this happens, opportunities to preserve open space and wildlife habitat, and to restore wetlands and critical wildlife habitat will decrease. Considering the current trends for population growth and rural/suburban development in the project area, and the associated loss of wildlife habitat and open space, a narrow window of opportunity exists to initiate the project. The wildlife and farming heritage project should result in the preservation and restoration of critical natural resources, which will benefit current and future generations.

*Agriculture.* Agriculture and natural resource protection efforts have a common interest in “stabilizing the agricultural landscape”. American Farmland Trust, a nationwide organization working for farmland preservation, identified southeastern Wisconsin as the third most threatened agricultural landscape in the country (behind California’s Central Valley and the area around Seattle). Local farmers and the Wisconsin Farm Bureau met with Department staff on several occasions because of their concern for preserving agriculture in this area.

The 2000 SCORP identified some of the following “effects of rural subdivisions and farm conversions on recreation resources”:

- “Intensified waterfront development leads to adverse effects on water resources and recreational activities.

- As rural land becomes divided and owned by larger numbers of landowners, recreation opportunities become more “privatized” and access to these lands for hunting and other recreation pursuits decreases.
- As rural development intensifies, the scenic qualities of Wisconsin’s farm and forest declines.”

*Cultural Resources:* This area is also rich in cultural and archeological resources. Many sites have been identified as historically important features from both Native Americans and European settlers. These resources provide added incentives to preserve existing land uses and resources in the study area.

*Role of Partners:* Other government agencies and private groups have recognized the need to preserve the natural and cultural resources in this area of the state. The Ozaukee Washington Land Trust has been active in protecting natural resources. Sheboygan County’s Outdoor Recreation Plan identifies the study area as important for protection and public acquisition. SEWRPC’s Natural Area and Critical Species Habitat Protection Plan calls for preservation of these areas by local and state governments. Local landowners and citizens noted the need to preserve the rural character of this area during the public informational meetings on the study.

#### Institutional Considerations

*Department Policy:* Administrative Code **NR 1.40 Acquisition of recreational land** describes the Natural Resources Board’s (NRB) general policy related to land acquisition. Sections that apply to this study area include the following: **(1)** In the acquisition of recreational lands, the department shall place principal emphasis on the acquisition of lands in the heavily populated areas of the state and in places readily accessible to such areas. **(2)** (b) New acquisition projects based on the following criteria listed in descending order of priority (applicable criteria listed only):

1. Land to protect rare and threatened natural resources; to protect genetic and biological diversity; and to protect, manage or restore critical fish and wildlife habitat.
2. Water-based resources that include land important to protect and improve the quality of the state’s surface and groundwater; and land for recreation and management along streams, rivers, lakes and flowages.
5. Land within 40 miles of Wisconsin’s 12 largest cities. If funding limits the ability to purchase available lands within existing urban areas, preference will be given to rural lands near population centers.

*Plans and Reports.* All of the townships encompassed in the project boundary were designated as critical habitat for projects under the *Joint Venture – Wisconsin Plan* which is part of the *North American Waterfowl Management Plan* developed in cooperation with the United States Fish and Wildlife Service. Major thrusts of these efforts, in order of priority, include:

1. “Restore or enhance wetland-upland complexes and protect existing complexes, using fee title and perpetual easement.
2. Enhance and manage existing or newly acquired public lands and waters to increase waterfowl production and other wildlife and wetland values, including soil and watershed protection.”

Within the “southeast focus area” and specifically within the three counties involved in this project, the *Joint Venture Plan* identified as initiatives an emphasis on “habitat improvement and development in the vicinity of the major river systems...”

Our Department’s 1995 *Biodiversity Report* emphasized the importance of floodplain forest for flood control and water quality, along with the importance of larger tracts for neotropical migrant bird conservation. Possible actions listed in the wetland communities section of that report included:

- “State, federal, and local land acquisition of wetlands needs to occur in an ecoregion context. Wetland complexes, rather than individual wetlands, have been and should continue to be the focus of acquisition.
- Wetland restoration, development, and enhancement projects should consider the full range of biodiversity concerns.
- Riverine-floodplain wetlands along large rivers in the state should receive additional attention.”

The Department’s *SCORP 2000* plan identified several strategies consistent with the goals of this project including:

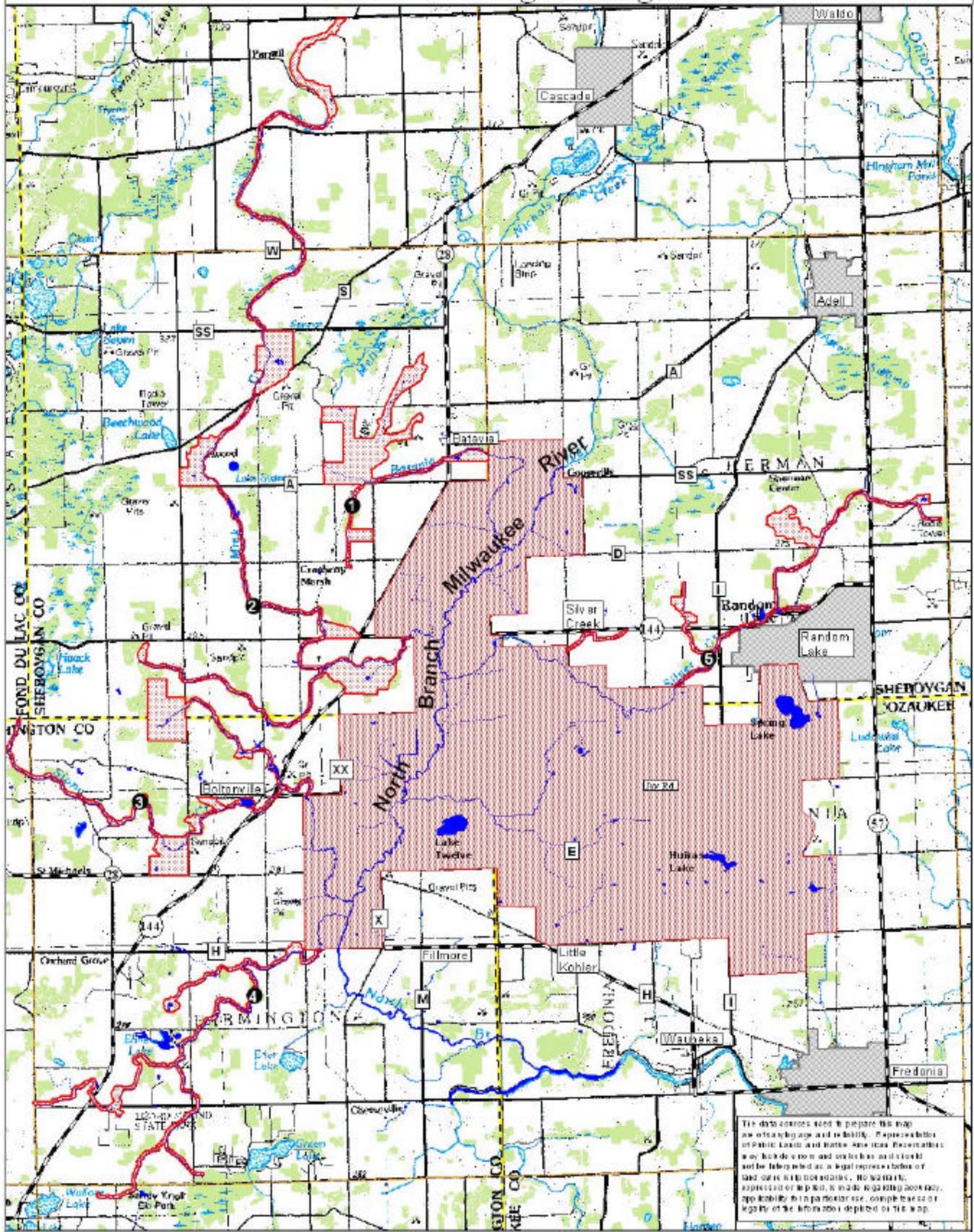
- “Prioritize funding to favor land purchases that protect those resources most threatened by land use changes. Lands that offer the greatest potential for providing recreation should be preserved now, especially those near urban centers...”

### **Name and Acquisition Authority**

The size of the project incorporates landscape-scale considerations for maintaining the rural-agricultural character, maintaining and enhancing the existing natural resources of the area, restoring plant communities and wetlands to improve wildlife habitat and water quality, and providing nature-based outdoor recreation and education opportunities. The study area contains habitat components ideal for wildlife, and its potential recreational use is consistent with the type of recreation accommodated by other state wildlife areas. As a result, the name for the property is the **North Branch Milwaukee River Wildlife and Farming Heritage Area** (Map 3). Land will be acquired under the authority of sections 23.09 (2)(d) 3 and 23.09 (2)(d) 15, State Statutes.

In addition, stream corridors along the five tributary streams outside of the core area meet the requirements of the streambank protection program, and land will be acquired under the authority of sections 23.094 (2m), (3), (3g), (3r), (4), and 23.096, State Statutes.

# North Branch Milwaukee River Wildlife and Farming Heritage Area



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- Study Area Boundary
- Cities & Villages
- Major Highways
- Rivers & Streams
- County Boundaries
- Township Boundaries
- 1 - Batavia Creek
- 2 - Mink Creek
- 3 - Stony Creek
- 4 - Wallace Creek
- 5 - Silver Creek

The study area boundary includes at least 100 feet of land from the streambank or associated wetland area on both sides of North Branch Milwaukee River tributaries (Batavia Creek, Mink Creek, Stony Creek, and Wallace Creek). Study area boundary shall be 1:100,000 scale scaled U.S.G.S. maps. Study area boundary proposed as of 2008. Map projection: Wisconsin Transverse Mercator, NAD 83(01).



MAP 3 - Proposed Project Boundary

## **Regional Analysis**

The North Branch Milwaukee River Wildlife and Farming Heritage Area boundary lies in the southeast corner of Wisconsin. The surrounding landscape is predominantly agricultural and rural residential land uses (Map 4). The city of West Bend, a Washington County metropolitan area (estimated population of 41,000) is within one mile of the study area; the city of Sheboygan, a Sheboygan County metropolitan area (estimated population of 69,000) is within eight miles of the study area; and the Ozaukee County metro areas of the villages of Fredonia, Saukville, Grafton, Cedarburg and Mequon (estimated population of 70,000) are within six miles of the study area. Milwaukee County (estimated population of 957,000), the most densely populated county in the state of Wisconsin, is within 20 miles of the study area. Each of these communities has experienced an increase in population, up to a 32% increase, over the past decade.

### Parks and Open Space

There are several parks and recreational lands within Sheboygan, Washington and Ozaukee counties, none of which fulfill the same need or offer the same recreational opportunities as the North Branch Milwaukee River Wildlife and Farming Heritage Area.

Each unit of government in these counties provides recreational sites, ranging from playgrounds and sports fields to golf courses and town parks. The counties have a mix of small and large properties, including Ozaukee County's 42-acre Waubedonia Park along the Milwaukee River, the 267-acre Sandy Knoll Park in Washington County, and Sheboygan County's 7,329-acre Sheboygan Marsh Park and Wildlife Area. The county lands offer a wide variety of recreational opportunities including hiking, biking and ski trails, fishing, camping, and hunting in addition to the more typical athletic fields, playgrounds, and picnic areas.

Several state-owned lands are within 10 to 26 miles of the project area. They include Harrington Beach and Kohler-Andrae state parks; the Kettle Moraine State Forest Northern Unit, Pike Lake, and Loew Lake units; the Cedarburg Bog Natural Area; and the Theresa Marsh, Allenton Marsh, Jackson Marsh, and Nichols Creek wildlife areas. These properties are very different in size and landscape from the North Branch Milwaukee River Wildlife and Farming Heritage Area.

The two state parks have beaches along Lake Michigan and trails for hiking, cross-country skiing and nature interpretation. There is limited bow and muzzleloader hunting for deer at Harrington Beach State Park. Most of the Kettle Moraine Forest Units offer hunting and also provide for a multitude of other uses including camping, picnicking, hiking, biking, skiing, and forest production. Upland forest and fields are the primary habitats. The 1,430-acre Cedarburg Bog is a natural area, set aside for habitat protection and scientific study. Except for waterfowl hunting on Mud Lake and fishing on the small lakes on the north end, wildlife recreation is limited by difficult access to most of the property. The four wildlife areas offer recreational opportunities similar to that for the North Branch Milwaukee River Wildlife and Farming Heritage Area -- hunting, fishing, hiking, and wildlife observation. However, these areas are much smaller, ranging in size from 650 to 5,800 acres, only 3 to 27% the size of the North Branch Milwaukee River Wildlife and Farming Heritage Area. In the Southeast Region there is no wildlife area greater than 6,000 acres that offers recreational opportunities, maintains open space, and protects wetlands, streams, and wildlife habitat on a landscape scale. Existing state properties in Sheboygan, Ozaukee, and Washington counties form a ring around the study area, leaving a large gap in the middle. The North Branch Milwaukee River Wildlife and Farming Heritage Area fills in that gap.

### Wildlife Recreation

The North Branch Milwaukee River Wildlife and Farming Heritage Area has great potential for providing a variety of active and passive outdoor recreation activities. Increased public access will expand wildlife recreational opportunities for hiking, hunting, trapping, fishing, canoeing, bird watching and wildlife viewing.

Wildlife recreation is very important to Wisconsin's citizens and its economy. The 1998 Department publication "Preserving Wisconsin's Outdoor Legacy", reports that 50% of Wisconsin adults participated in fish- and wildlife-associated recreation including fishing, hunting, and wildlife watching in 1996. On average, from 1992-1996, more Wisconsinites participated in hunting, fishing, and wildlife watching than played baseball, softball, basketball, football, golf, and soccer combined. As the population continues to grow, the number of people participating in outdoor recreation is also expected to increase.

The strong interest in recreating in Wisconsin's outdoors is reflected in the economy. This same report notes that fish- and wildlife-associated recreation supported 85,700 jobs, produced \$6.4 million in economic output, and generated \$146 million in Wisconsin state sales tax in 1996. More people using the North Branch Milwaukee River area on a transient, day-use basis should benefit the local economy. Recent studies indicate that of the total dollars spent on various recreation activities, 25% to 50% is spent locally -- within 25 miles of the recreation site. Visitors to an area buy gasoline, food, beverages, fishing tackle, and other supplies.

In discussions with the Department warden for Sheboygan County, deer and waterfowl hunters who live in and near the study area expressed concern about large tracts of privately owned land being closed to hunting. More public ownership of lands here in southeast Wisconsin, the most densely populated part of the state, will provide additional hunting opportunities for Wisconsin sportsmen and women. The increase in access to public hunting could also help the Department better manage deer populations.

Trappers expressed a similar concern. The project, with its diverse habitats, could provide excellent trapping opportunities. Landowners could also experience a reduction in the number of nuisance wildlife encounters (primarily raccoon) on their land.

There is very limited public access to the shoreline of the North Branch of the Milwaukee River. Public ownership of land within the North Branch study area will open miles of shoreline and many acres of wetlands to anglers, canoeists, hikers, and wildlife watchers. The diversity of communities -- wetlands, forest, open field, and farmland -- found along the river provides a unique range of opportunities for the wildlife viewer.

By acquiring public land in the study area, the Department will be providing the public access to a variety of wildlife related activities that are now enjoyed by a comparatively few individuals in the area. The creation of this area will help serve the growing demand for outdoor recreation such as hunting, hiking, and wildlife watching, and will add to the local and statewide economy as well.

### Stream Protection Programs

The upper four miles of the North Branch Milwaukee River is a Class I trout stream that supports naturally reproducing populations of both brown and brook trout. The approximately 640-acre Nichols Creek State Wildlife Area protects the uppermost portions of the trout stream. Nine miles of the North Branch Milwaukee River, upstream of the study area, was approved in 1993

for fee acquisition as part of the “Streambank Protection Program”. The focus of that program is to protect critically threatened streams that are high quality waters, as well as purchasing property along degraded streams to rehabilitate them. The southern boundary of that project meets the northern boundary of the this project area. Below the boundary of this project, there is also authority for purchase of easements to protect and rehabilitate cover along the Milwaukee River in Ozaukee and Washington counties.

## **Property Analysis**

### Geology and Soils

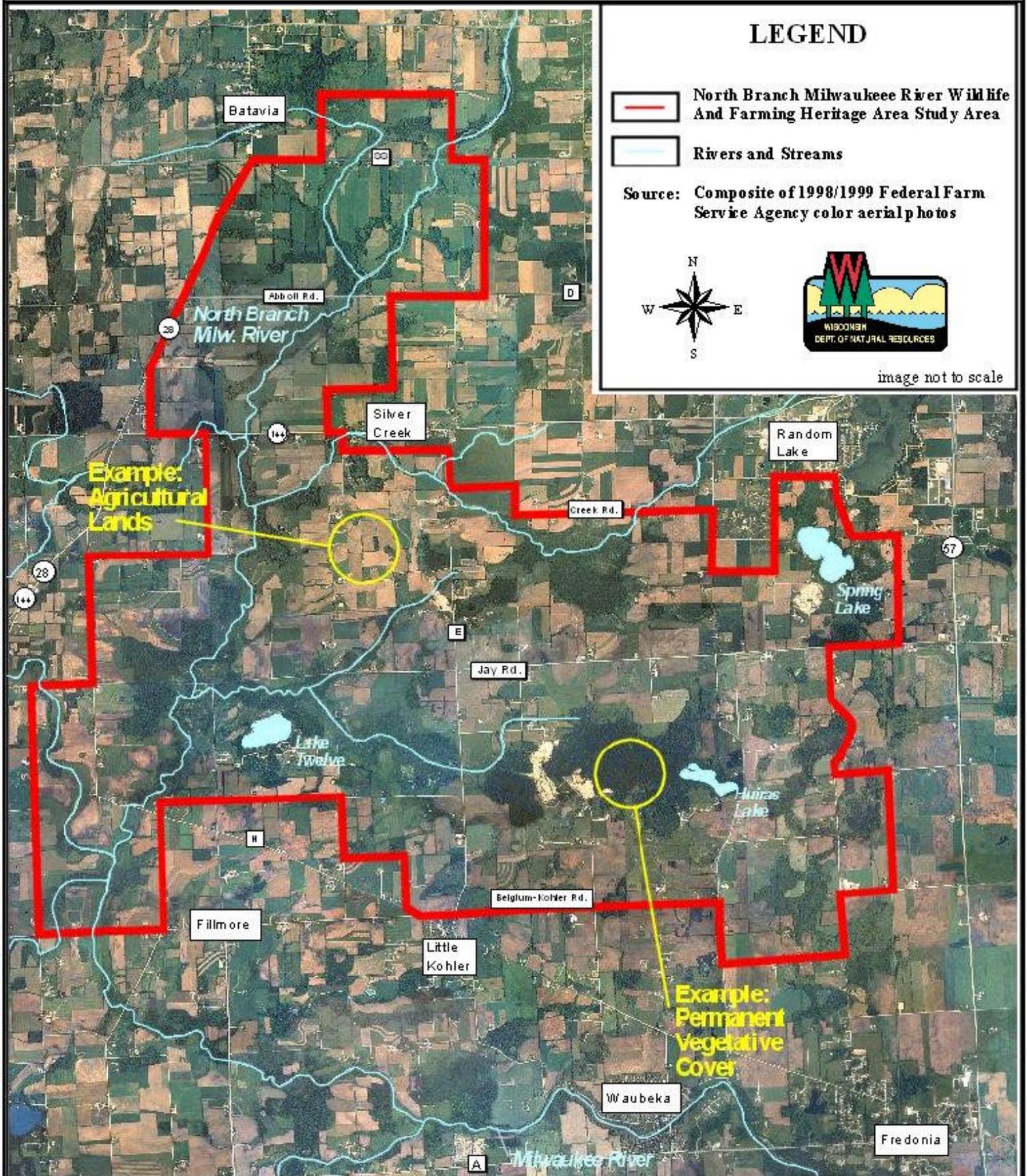
*Geology.* The study area has an Eastern Ridges and Lowlands geographical designation, characterized as being a smooth, low, fertile and easy to traverse landscape. It is the most densely populated geographical area in Wisconsin. The Wisconsinian glacial advance had the most dramatic effect on the landscape in this area, with ice masses from Hudson Bay pushing their way southward approximately 11,000 years ago. The Milwaukee River formed along the junction of the Green Bay and Lake Michigan lobes during the Wisconsin Glaciation. The seam between the two glacial lobes acted as a spillway for the meltwater. The soils of the study area are a result of this glacial action, which buried the underlying Niagara dolomite bedrock with deposits. The study area has a distinct kettle moraine relief that varies from nearly level to very steep and irregular.

The North Branch Milwaukee River begins in Section 12 of Mitchell Township, Sheboygan County at an elevation of 950 feet above sea level. It flows southward and is joined by three creeks --Chambers, Melius, and Gooseville -- to the north of the study area. Inside the study area, the North Branch Milwaukee River is joined by five more tributaries -- Batavia, Mink, Silver, Stony, and Wallace creeks. The river then meanders south until it flows into the main branch of the Milwaukee River in Section 30 of Fredonia Township, Ozaukee County at an elevation of 790 feet above sea level. The North Branch is 23 miles in length, 9 miles of which are inside the study area.

*Soils and Agriculture.* The soils of the study area can be generalized based upon their ability to hold water. The soils of Sheboygan County and a large percentage of Ozaukee and Washington counties are typically well-drained soils that have a subsoil of clay loam. These areas are underlain by gravely sandy glacial till. Other soils found within the study area are generally very poorly drained soils. These highly organic soils are located in the basins, depressions, and lake beds. Examples of the poorly drained soils can be found in the wetland complexes surrounding Lake Twelve in Washington County and the large wetland complexes scattered across Fredonia Township. Of the 16,549 acres inside the core study area (not including the streambank study areas), 28% is classified as wetland. This wetland acreage represents the very poorly drained soils essential to plant and animal communities in the study area.

According to the Natural Resource Conservation Service (NRCS), a division of the U.S. Department of Agriculture (USDA), a hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soils are developed under wet conditions that support the growth and existence of hydrophytic, or water-loving, vegetation. Using the corresponding hydric soils list for each county, there are approximately 8,050 acres of soils with the probability of being hydric, or soils with hydric inclusions, within the core North Branch study area (~49% of main study area) (Table 1, Map 2). Additionally, there are approximately 2,100 acres of soils

# North Branch Milwaukee River Wildlife and Farming Heritage Area



Map 4 - Aerial Composite: Above image is a composite of aerial section slides from 1998 and 1999 taken by the Federal Farm Service Agency. Composite intended to more clearly express the vegetative cover types and agricultural lands of the North Branch Milwaukee River Wildlife and Farming Heritage Area.

with the probability of being hydric, or soils with hydric inclusions, within the streambank study area (~72% of the streambank study area).

#### Agricultural Land Use and Acquisition

*Land Use:* Land use surrounding the large wetland areas in the North Branch Milwaukee River study area is primarily agriculture. Most of the livestock raised are dairy and beef cattle. After cattle, horses are the next most common livestock. Some horse farms are small hobby farms, while others raise and sell the animals as their primary business. There are also a few sheep and llama farms in the area.

A variety of crops are grown in the study area. The primary ones include alfalfa, corn, soybeans, winter wheat, and oats. Sweet corn, peas, and sod are also produced. Crops are grown for both livestock feed and cash crops. Approximately 9,100 acres of cropland occurs within the core area of the project boundary. There are 121 acres of Class 1 agricultural land in the core study area and four acres in the streambank corridors.

Approximately 1500 acres in the project boundary are enrolled in the Conservation Reserve Program (CRP) and therefore have grass and/or tree cover. Some of the CRP practices are: filter strips, riparian buffer (trees or grass), establishment of permanent native grasses or introduced grasses and legumes, permanent wildlife habitat, vegetative cover, already established (grass or trees), tree planting, hardwood tree planting, shallow water areas for wildlife, and wildlife food plots.

*Purchase of Development Rights:* Landowners in the study area have expressed an interest in the Department using the Purchase of Development Rights (PDR) as an option to fee simple when acquiring agricultural lands. The main advantage of using PDRs is that agriculture still remains a possible use on lands from which development rights have been removed. The purchase of development rights can also provide farmers with working capital that can be reinvested in their farming operations. Development rights can be acquired by any government or private entity. PDRs can provide the following advantages:

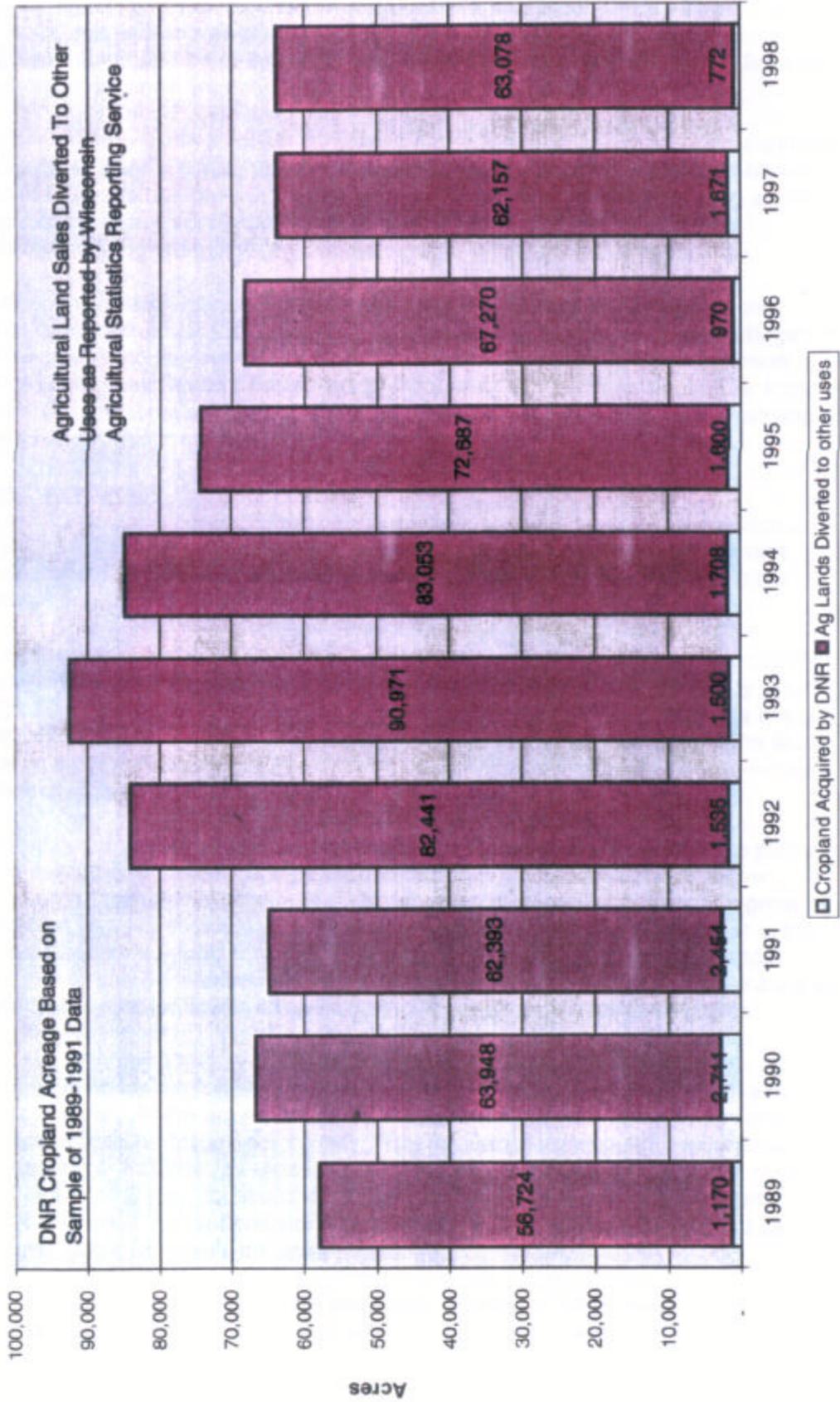
- working capital to reinvest in farm
- does not restrict the farmer from making improvements for the farming operation, and
- provides an economically viable undeveloped buffer to important natural resources.

The Town of Dunn in Dane County, Wisconsin is an example of an effective use of the PDR tool. On April 22, 1997 the town protected its first property, the Sinaiko Farm, using their own PDR program. Working with a resident farmer, the Dane County Parks Department and two local land trusts, the town played a key role in protecting a 240-acre farm with parcels in the City of Madison, and the towns of Blooming Grove and Dunn. The Town of Dunn purchased the development rights to 174 acres of the farm located within the town's borders.

Data from the Wisconsin Agricultural Statistics Reporting Service shows that cropland acquired by the Department is responsible for less than three percent of all croplands diverted to other uses in Wisconsin (1989-1998) (Table 2).

*Citizen Advisory Committee:* During the course of the feasibility study for the North Branch Milwaukee River Wildlife and Farming Heritage Area, we used an extensive citizen participation process to identify concerns and inform the public about the project. We added "Farming

### Agricultural Land Sale Acreage Diverted to Other Uses VS Estimated Acres Cropland Acquired by DNR



Heritage” to the name to reflect the importance of agriculture, and a commitment was made to the farmers and farm representatives during the study to form a citizen advisory committee (CAC) to both guide the acquisition of land and development rights in the area, and advise the Department on how those lands are used and managed.

*Century Farms:* An ongoing family tradition in the study area is the presence of farms that have been in the family for at least 100 year and some over 150 years. Richard and Judith Mowry’s farm in the town of Fredonia has been in the family since 1848. The remarkable thing about century farms is that they have survived an ever-changing farming economy with new technologies while remaining productive and viable.

Every year the Wisconsin State Fair awards landowners that have had continuous family ownership of their farm for the last 100 years. The Wisconsin Century Farm Program began in 1948 as part of the state’s centennial celebration. Since then more than 7,400 farms have been awarded the prestigious Century Farm Award. According to Wisconsin State Fair Park, 168 century properties and 21 sesquicentennial properties were honored in 2001 for carrying on Wisconsin’s rich family farming tradition.

### Plant and Animal Communities

“Communities” usually bear the name of their dominant plant species; however, the community includes all the plants living in association with the dominant species plus all of the animals present at a given time. The following communities are the main communities found in the study area (relative abundance can be determined by looking at Table 1 and maps).

*Lowland Forests (Southern Hardwood Swamps, Southern Wet-mesic Forests, and Floodplain Forests):* Lowland forests are the major component of natural habitat found in the study area (Map 3, Table 1). This type of plant community dominates the large blocks of wetlands along the North Branch of the Milwaukee River, its tributary streams, and old lake basins in the study area. Two major types of lowland forests — hardwood swamps and floodplain forests — make up these large blocks of forests in the study area.

Lowland forests that occur in river valleys are floodplain forests, whereas those on lake plains or old oxbows are hardwood swamps. The difference between these communities is that floodplain forests receive frequent additions of silt from spring floodwaters and show a great fluctuation in water supply. Hardwood swamps have a higher amount of organic matter in the soil and have a more constant supply of water. Floodplain forests and hardwood swamps adjacent to rivers and streams are extremely important for floodwater storage. They also act as reservoirs to help maintain water flow in streams during dry periods and for groundwater recharge.

Common trees found in floodplain forests include silver maple, green ash, cottonwood, elm, black willow, and box elder. There are more species of trees in floodplain forests than any other Wisconsin Ecological Landscape community. The frequent flooding limits undergrowth, and common ground cover includes jewelweed and nettles. There is an unusually high number of vines and low number of shrubs present in floodplain forests. The area along the North Branch in the town of Scott is characteristic of floodplain forests and has been identified as potential natural area called Boehlke’s floodplain forest (Map 5, Table 3).

Common trees found in hardwood swamps are black ash, red maple, silver maple, yellow birch, and elm. There is a more developed shrub layer with seedlings of the dominant tree species,

dogwoods, and alder. Groundlayer plants include ferns, sedges, grasses and forbs similar to wet meadows, and characteristic plants like skunk cabbage and marsh marigold.

The large blocks of lowland forests interconnected by corridors of similar cover along the North Branch Milwaukee River and its tributary streams enhances this habitat type for some species of migratory songbirds that require larger blocks of cover. Large blocks of forest contiguous with other wetland cover types increases the diversity of plants and animals in this area.

The relatively open canopy and variety of moisture regimes make lowland forests an extremely diverse habitat for reptiles and amphibians (Appendix B). The annual flooding regime benefits amphibians by creating temporary breeding ponds, and the general abundance of large woody debris provides both cover and prey. Amphibians that occur in lowland forests include American toads, eastern gray tree frogs, spring peepers, wood frogs, blue-spotted salamanders, central newt, redbacked salamanders, and spotted salamanders. Reptiles that are commonly found in lowland forests include eastern garter, northern water, northern ringneck, brown and red-bellied snakes. Common turtle species include painted and snapping turtles.

A rather distinct group of birds, some classified as endangered or threatened (Appendix C), inhabit floodplain forests, including prothonotary warbler, cerulean warbler, acadian flycatcher, and cardinal. Water-associated birds include belted kingfishers, green herons, spotted sandpipers, wood ducks and mallards. Woodpeckers such as the flicker, red-bellied, red-headed, and pileated are present as well as many other cavity nesters such as barred owls, hooded mergansers, great-crested flycatchers, and house wrens. Another state-threatened bird that is likely nesting in these large blocks of lowland forests is the red-shouldered hawk.

Most mammals (Appendix D) common to southern Wisconsin make use of the lowland forests in this area. The stream and river corridors allow movement between cover types and increase the value of blocks of cover. The riverine and wetland areas provide ideal habitat for aquatic animals such as muskrat, mink, and raccoons. White-tailed deer make extensive use of lowland forests as cover areas during both fall and winter.

*Coniferous Swamps:* Coniferous swamps are white cedar or tamarack wetlands that are usually associated with lowland hardwoods. They may be inundated in spring and saturated for most of the growing season. Soils are organic peat or muck with tamarack more common in the acidic soils and white cedar where soils are alkaline.

While coniferous swamps are common in northern Wisconsin, they are rare in the southern half of the state and are home to many rare plants, such as lady-slipper orchids. Other groundlayer plants include ferns, jack-in-the-pulpit, and sedge. Shrub species include alder and sumac.

Many of the same species found in lowland hardwood forests are also found in the coniferous swamps because of their close association and size. They provide habitat for birds such as saw-whet owl, veery, hermit thrush, cedar waxwing, and many species of sparrows and warblers. Many northern bird species such as northern water thrush and veery are found in southern coniferous swamps. Mammals that use coniferous swamps year-round, or seasonally for winter cover, include deer, fox, coyote, and small mammals. White cedar provides both food and cover for wintering deer. Coniferous swamps are important to maintaining a limited population of ruffed grouse in this area of the state as well.

*Shrub Swamps or Shrub-carr Wetlands:* Shrub swamps are dominated by woody vegetation like small willows, red-osier and silky dogwoods. They occur on saturated or seasonally flooded

muck soils and on the mineral soils of floodplains. Wet meadows may become shrub swamps after drainage and fire suppression.

Shrub swamps provide excellent winter cover for pheasants, deer, and cottontail rabbits. Common birds found in these areas include northern harrier, snipe, woodcock, downy woodpecker, willow flycatcher, eastern phoebe, eastern kingbird and catbird.

*Marshes:* Marshes have aquatic plants like cattails, sedges and arrowhead growing in permanent to seasonal shallow water. Marshes are the most productive wetlands for waterbirds and furbearers and they also provide spawning and nursery habitat for fish such as northern pike. Ducks, rails, herons, and songbirds use marshes for breeding and feeding. Upland wildlife such as pheasant and rabbit use marshes as winter habitat. Marshes also store floodwater, protect shorelines from erosion and improve water quality.

*Wet Meadows or Sedge Meadows:* Wet meadows are vegetated with grasses, sedges and showy flowering plants like marsh milkweed, goldenrod and asters. Woody plants are absent and standing water is present only after heavy rains or spring runoff. Wet meadows are especially important for water quality protection since they are generally buffers between uplands and waterways where their dense vegetation traps sediments and takes up nutrients. They also retain floodwater. Some of these areas were previously deeper-water wetlands that were partially drained for agriculture or are kept open by pasturing cattle on them.

Wet meadows provide habitat for a variety of wildlife species including sandhill cranes, pheasants, and many small mammals that provide food for mink, fox, coyote, and raptors. Sedge meadows provide particularly important habitat for reptiles, amphibians and invertebrate species. They are important as feeding areas for shorebirds and waterfowls, especially during seasonal flood events.

*Ponds:* Ponds in the study area range in size from very small, seasonally flooded ponds, to large, permanent ponds. Many amphibians (chorus frogs, gray tree frogs, wood frogs, and salamanders) and birds (mallards and blue-winged teal) depend on ponds for breeding. Larger ponds and lakes support a wide variety of mammals, birds (all inland migratory waterfowl species, grebes, coots, egrets, herons, terns, kingfishers, swallows, and songbirds), amphibians and reptiles along the shorelines, fish and invertebrates. Common mammals along lakes and rivers include muskrats, mink, raccoons, deer and otter.

*Grasslands (including croplands, conservation reserve lands (CRP lands), and open pastures):* Grasslands provide habitat for a variety of wildlife species, especially birds and invertebrates. Sample and Mossman's (1997) "Managing Habitat for Grassland Birds" lists 105 species of birds that use grasslands for some part of their breeding cycle. Hayfields can provide nesting habitat for ground nesting birds like pheasants and ducks, if mowing is delayed until after the nesting season. Crop fields provide seasonal food and cover for deer, turkeys, Canada geese, raccoons and other species. Sod farms in the area provide important feeding areas for shorebirds and waterfowl during flood events.

*Southern Mesic Forests (Sugar Maple-Basswood Forests):* Southern mesic forests are closed canopy maple forests with ground layers composed primarily of species of low stature (less than 18 inches tall), including high densities of very shade-tolerant maple seedlings. Canopy coverage is essentially continuous from late spring to late fall so that very little light reaches the forest floor. As a result, the conspicuous herbs are spring ephemerals (short-lived plants) and

other spring blooming plants. Shrubs and woody vines are not abundant and thus contribute little to the forest structure in mature stands. Near Lake Michigan, and in the study area, American beech is a co-dominant tree species.

Historically southeastern Wisconsin was a stronghold of this forest type but most remaining forests are small and fragmented. Many contain residential developments, further fragmenting this forest type. Southern mesic forests generally provide less cover and food in the lower layers but do provide habitat for a wide variety of songbirds and mammals such as deer and raccoons.

*Southern Dry-mesic Forests (Oak Forests):*. Red and white oaks dominate southern dry-mesic forests. Oak forests are less shady and internally less humid than mesic forests. The open branching and leaf pattern enable considerable light penetration and therefore a more developed shrub and herbaceous layer.

These forests occur on well-drained sites of sandy, porous flat lands on either south or west slopes or in thin soils on hilltops and ridges. Leaves of bur, red and white oaks decay slowly and form thick, accumulating layers on the ground.

Oak forests are important habitat types for wildlife because of the more developed shrub layer that produces food and cover, along with the importance of acorn production. This forest type provides habitat for birds such as turkey, wood thrush, least flycatcher, redstart, blue-gray gnatcatcher, yellow-throated vireo, ruby-throated hummingbird, and red-bellied woodpecker. These areas are the richest in forest mammal species and include gray, fox, and southern flying squirrels, chipmunks, cottontail rabbits, woodchucks, raccoons, opossums, red and gray fox, coyotes, deer, and many small mammal species.

#### Natural Communities and Rare & Endangered Species

Upland woodlots within the study area are primarily sugar maple/beech or aspen. Except for the upland forest communities identified as potential natural areas, most of the woods remaining in the study area are small in acreage and usually isolated from other upland wooded sites.

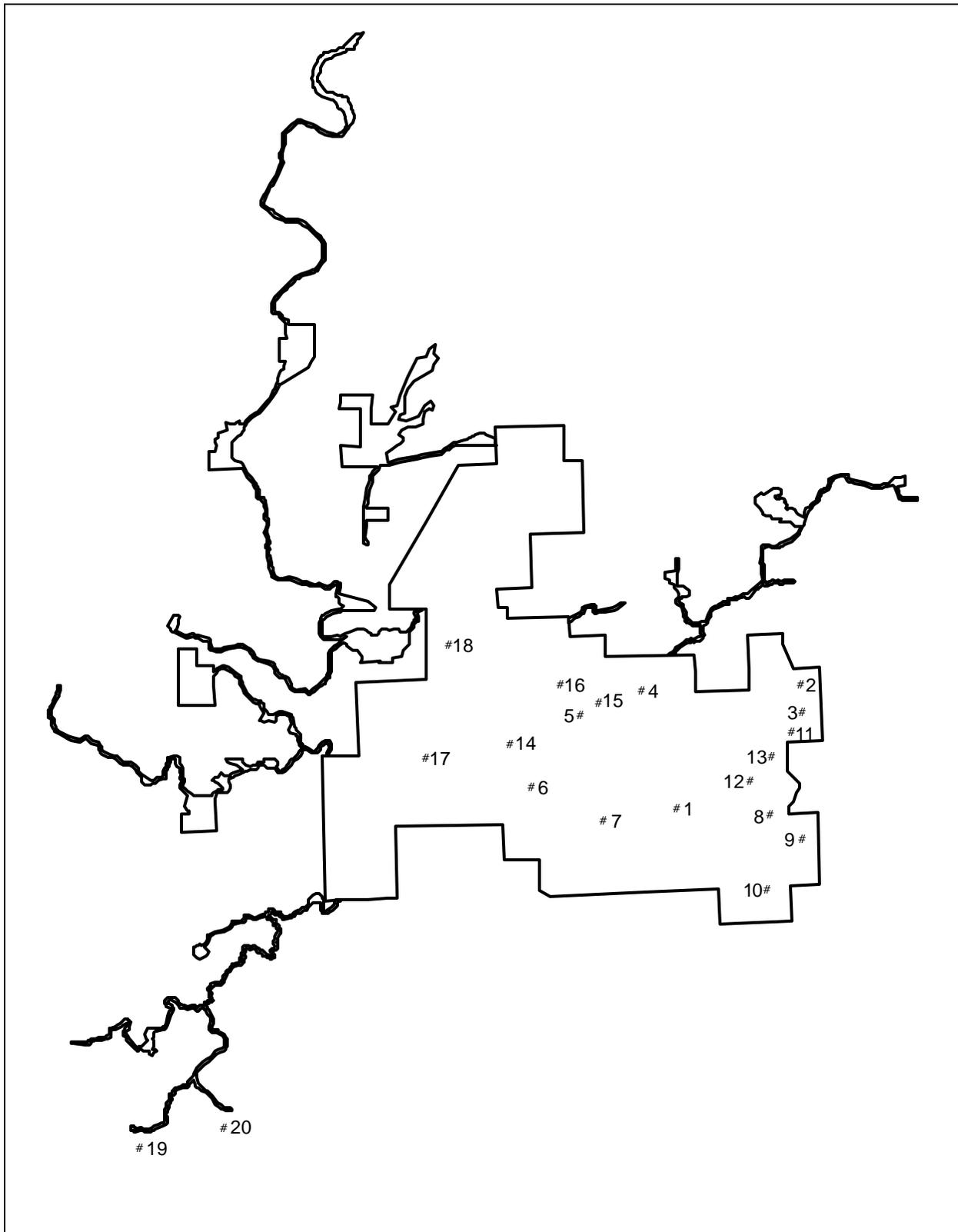
The aquatic communities are much more extensive and intact than the upland forest. Included in the study area are forested wetlands of red maple, black ash and silver maple, and white cedar remnants from the past glacial period. Other areas have extensive woody growth forming a shrub-carr, or shrub marsh community. Open sedge meadows are found scattered along the streams and the shores of Silver Lake and Lake Twelve. Huiras Lake has a remnant bog community and cattail marsh along the shore. The rivers in the study area have several rare fish species living in their waters.

Natural Areas are remnants of the landscape that retain the character of pre-settlement conditions, and have not been significantly altered by agriculture, logging or other development. These areas are the last refuges for rare plants and animals. Natural areas also maintain the full complement of the area's ecologically intact communities, plants, animals and genetic composition -- the area's biological diversity.

Natural Areas within the study area boundary were selected based on the diversity, quality and uniqueness of species and community types; the extent of disturbance or human impact; size; unusual natural features; and scientific or educational values. Natural Areas in the study area are shown on Map 5 and also described in Table 3.

Four species of plants known to occur in the study area are listed as of special concern in Wisconsin. They are the cuckoo flower, small yellow lady's-slipper, American gromwell, and Christmas fern. Six species of fish listed as state-threatened or special concern are found in the waters within the study area. Little is known about the invertebrates in the area, although the aquatic invertebrates are assumed to be diverse and plentiful because the rivers harbor many rare fish, which indicates a diverse aquatic community. Endangered, threatened, and special concern reptile, amphibian, bird, mammal, and fish species known to occur in the study area are listed in Appendices B - E.

Map 5 – Relative Locations of Natural Areas



**Table 3 – Natural Areas in the North Branch Milwaukee River  
Wildlife and Farming Heritage Area**

<b>Map Number</b>	<b>Natural Area</b>	<b>Ownership</b>	<b>Acres</b>	<b>Description</b>
1	Huiras Lake Woods and Bog	Private	435	Large lowland and upland forested area that has been relatively undisturbed since the last cut. A bog is located in the southern portion. Good diversity of tree and ground-layer species. The small land-locked seepage lake is valuable for waterfowl migration and nesting. A number of northern relict species are present.
2	Spring Lake Marsh	Private	19	Good quality wetland complex bordering a clear, shallow lake. Good habitat diversity includes shrub-carr, sedge meadow, shallow marsh and cedar-tamarack swamp.
3	Spring Lake Beech Forest	Private	65	Small mesic hardwood forest dominated by small- to medium-sized beech, sugar maple, basswood, and white ash, with a long history of selective cutting.
4	County Line Low Woods	Private	272	Large, but mostly young, lowland hardwoods of mixed composition and having a history of disturbance. Many openings in the canopy allow dense undergrowth.
5	Beekeeper Bog	Ozaukee County & Private	15	A good example of a typical kettle-hole bog with shallow water, shrub-carr, and northern wet-mesic white cedar forest. The southeast portion has been ditched. Contains many species typical of northern areas.
6	Little Kohler Lowland Hardwoods	DNR & Private	186	A disturbed lowland hardwood forest with streams and shrub undergrowth. Two ponds have been dredged in the east half.
7	Pioneer Road Lowlands	Private	94	A low, wet woodlot with a history of disturbance. North half contains a dense stand of tamarack, cedar, and black ash. South half has large, scattered trees and thick undergrowth.
8	Cedar Valley Swamp	Private	141	An irregularly shaped lowland area disturbed by Dutch elm disease, logging, and water level changes. Dominated by black ash, red maple, and white cedar with areas of tamarack. An upland island in the center contains mature trees.
9	Evergreen Road Tamarack Bog	Private	44	Good quality cedar-tamarack bog with a large sedge-shrub area to the north and upland hardwoods to the southeast.
10	Kohler Road Woods	Private	124	A low, wet woods of medium-aged red and silver maples, yellow birch and black ash. The south half is younger with many cut stumps.
11	Jay Road Woodlot	Private	40	Hilly upland woods dominated by beech, sugar maple, white ash, oaks and ironwood.
12	CTH I-Jay Road Woodlot	Private	35	A young forest on steep slopes with a sedge understory.
13	Pond Woodlot	Private	10	A shallow pond, marsh and upland woods dominated by basswood.
14	Camp Awana Road Lowlands	Private	20	Two woodlots dominated by red and silver maple, black ash and cedar, and separated by pasture.
15	CTH E Lowland Hardwoods	Private	30	A lowland hardwood forest dominated by black ash, and red and silver maples with windfalls and decayed stumps. The south and east are open with a grassy understory.
16	CTH T – Top Road Woodlot	Private	25	Lowland hardwood forest dominated by red and silver maples with large openings in the canopy.
17	Jay Road Swamp Hardwoods	Private	546	A large but disturbed wetland complex of lowland hardwoods, northern wet-mesic forest, shrub-carr, and sedge meadow bordering the Milwaukee River.
18	Boehlke's Floodplain Forest	Private	80	Mixed lowland hardwoods, conifers and floodplain forest with many large silver maples.
19	Sandy Knoll Wetlands	Washington County & Private	47	A small but good quality wetland complex containing tamaracks, lowland hardwoods, shrub-carr, shallow marsh, and sedge fen associated with a spring-fed stream.
20	Sandy Knoll Swamp	Washington County & Private	339	A large, patchy lowland hardwood forest with areas of tamarack. Some portions contain good-quality wet-mesic forest ground flora. Past disturbances include selective cutting and clearcutting, and water-level changes due to ditching.

### Aquatic Communities (Streams & Lakes)

*Mink Creek:* Mink Creek is a four-mile long tributary to the North Branch Milwaukee River that emerges from a series of wetlands. The land use surrounding Mink Creek is primarily agricultural. Cropping occurs along most of the stream's corridor, but some wooded areas along the corridor provide shading and wildlife habitat.

The creek supports a variety of fish species including mottled sculpin, northern redbelly dace, blacknose dace, and white sucker as well as a limited trout fishery (Appendix E). Although trout had been stocked in the creek in the past, warm water temperatures from lack of stream shading limit trout production.

Water quality and physical habitat in Mink Creek are considered fair to good, but are limited by channel straightening, lack of riparian cover, excess nutrients and bacteria from adjacent barnyards, and sedimentation from soil and streambank erosion. The effects of these limiting factors can be abated, and Mink Creek's potential can be enhanced by establishing a riparian buffer throughout the creek's length with a variety of cover types to filter nutrients, bacteria and soil runoff from adjacent lands, and by providing stream shading.

*Batavia Creek:* Batavia Creek is a 1.5-mile long tributary to the North Branch Milwaukee River. The creek and its three tributaries have been extensively ditched for agricultural purposes. Very little stream-side buffer is located along the creek and its tributaries. Channelization, runoff and lack of buffer contribute to the degraded conditions in Batavia Creek. Portions of the creek have thick silt deposits overlying gravel and rubble.

The creek supports a variety of mostly tolerant fish species including central mudminnow, creek chub, white sucker, bluntnose minnow, brook stickleback and blacknose dace. Extensive ditching, sedimentation and poor habitat are factors limiting fisheries potential. Establishing a riparian buffer throughout the creek's length with a variety of cover types will reduce these impacts and enhance Batavia Creek's resources by reducing soil erosion, filtering nutrients and bacteria, and providing stream shading.

*Stony Creek.* Stony Creek is a 12.8-mile long tributary to the North Branch Milwaukee River that originates in wetlands and receives flow from four tributaries. Upstream sections of Stony Creek have been channelized for agricultural purposes. A low-head dam about four miles upstream of Stony Creek's confluence with the North Branch Milwaukee River created the Boltonville Millpond. Agriculture is the primary land use adjacent to Stony Creek, but there are some areas containing woodlands, wetlands and grasslands throughout the length of the creek.

Stony Creek supports a variety of coldwater and warmwater fish species including johnny darter, white sucker, common shiner, fantail darter, bluntnose minnow, southern redbelly dace, blacknose dace, hornyhead chub, and fathead minnow. Brook trout are reproducing upstream of the Boltonville Millpond. Northern pike, pumpkinseed and largemouth bass have also been found in Stony Creek. The headwater wetlands provide important spawning habitat for northern pike. The pumpkinseed and largemouth bass found in Stony Creek are probably resident to Haack Lake, which outlets to Stony Creek on the upstream end.

Nonpoint sources of pollution, combined with fragmented riparian buffers, are the main factors keeping Stony Creek from meeting its full potential. High water temperatures, siltation and lack of in-stream habitat appear to be the major factors limiting fish productivity. Stony Creek has the

potential to support more coolwater and coldwater fish species in some areas but is limited by lack of shading and in-stream habitat.

Protecting the high quality riparian woodlands and wetlands found in segments along Stony Creek and its tributaries, combined with establishing buffers with a variety of cover types to connect these areas, will be important for keeping nutrients and soil from entering Stony Creek and the North Branch Milwaukee River. This will also provide an important wildlife corridor and help enhance aquatic life in the creek.

*Silver Creek:* Silver Creek originates in the Adell swamp and flows in a generally southwesterly direction for 10 miles to its confluence with the North Branch Milwaukee River. Land uses adjacent to Silver Creek range from urban (Village of Random Lake) to rural (agriculture, wetlands, grasslands and woodlands). Along the length of the creek, farm fields up to the stream edge are interspersed with wooded areas of varying widths and lengths. Water quality problems documented in Silver Creek include sedimentation, high bacteria during summer months, and lack of high-quality in-stream cover.

Nonpoint sources of pollution to Silver Creek include runoff from livestock operations, upland erosion, streambank erosion, and urban runoff. The Village of Random Lake wastewater treatment plant discharges to Silver Creek. A review of files indicates the plant is operating within its permitted limits.

Fish species documented in Silver Creek include blacknose dace, northern pike, creek chub, Iowa darter, johnny darter, white sucker, common shiner, central mudminnow, black crappie, bluegill, black bullhead, and fathead minnow. Wildlife habitat is very good along intermittent stretches of the creek. Connecting the wooded areas along the creek with vegetated buffers will improve wildlife habitat and filter runoff from adjacent land uses. In addition to providing needed filtering of nonpoint pollution sources and shading of the creek, a contiguous buffer will provide needed nesting cover and migration routes for wildlife species, and contribute woody debris to the creek, thereby enhancing habitat for aquatic life.

*Wallace Creek:* Wallace Creek is a 9.2-mile long river originating from wetlands and flowing northeast before entering the North Branch Milwaukee River just south of Stony Creek. Wallace Creek receives cold water from springs found along its length. Surrounding land use is primarily agricultural, with some significant areas of woodlands, grasslands and wetlands. Habitat for fish and wildlife in some areas along the creek is very good, while other areas lack shading, bank cover and are affected by siltation.

Wallace Creek supports a wide variety of fish species including sensitive species such as mottled sculpin and Iowa darter. Providing more streamside shading, stabilizing streambanks, protecting springs and other wetlands, and allowing meanders to establish in channelized stretches will enhance fisheries conditions, including a potential trout fishery. Agricultural practices along Wallace Creek have altered streamside habitat along more than half the creek's length. Installing buffer strips in agricultural areas to connect with the high quality wooded areas along the creek will increase nesting habitat and provide travel routes for wildlife, as well as providing streambank stabilization and filtering capabilities to reduce nonpoint source pollution.

*North Branch Milwaukee River:* The North Branch Milwaukee River begins in the Nichols Creek State Wildlife Area in Sheboygan County and runs in a southerly direction for 28 miles to its junction with the Milwaukee River in Ozaukee County. The upper four miles of the North Branch

Milwaukee River were formerly officially known as Nichols Creek. The stretch that runs through the Nichols Creek State Wildlife Area is designated as an Outstanding Resource Water in Wisconsin Administrative Code NR 102. Outstanding resource waters are those that are of such outstanding quality that discharges from municipal and industrial wastewater treatment plants must be of the same or better quality as the receiving water. This designation is based on the quality of the fisheries, protection of recreational uses, water quality and pollution sources. Only about two percent of the surface waters in the state are designated as outstanding or exceptional resource waters.

A dam in the Village of Cascade creates a barrier to fish migration and slows the flow of water, allowing it to warm. As a result, the river reach below the dam cannot support trout. Dams also allow for depositing large amounts of sediment, and collecting nutrients leading to nuisance algae and plant blooms. The remainder of the North Branch Milwaukee River south of the trout stream portion is capable of supporting a diverse warmwater sport fishery. Other fish species found in the North Branch include blacknose dace, hornyhead chub, creek chub, bluntnose minnow, southern redbelly dace, mottled sculpin, white sucker, brown trout, greater redhorse, black bullhead, common shiner, spotfin shiner, northern pike, golden redhorse, rock bass, green sunfish, pumpkinseed, bluegill, johnny darter, yellow perch, spotfin shiner, sand shiner, common carp, and logperch.

Agriculture is the major land use along the North Branch with some urban/residential. Many areas along the North Branch exhibit high quality streamside corridor and aquatic habitat interspersed with agricultural uses up to the streambanks, especially in the mid to lower reaches of the North Branch system. Water quality in the North Branch Milwaukee River is considered fair to good. The Nichols Creek portion exhibits the best habitat and water quality in the North Branch. As the river flows downstream, the effects of nonpoint sources of pollution become more apparent. The Cascade and Gooseville dams also contribute to degraded water quality by slowing the flow of the river. Instead, the water warms, and sediment and nutrients build up, leading to degraded water quality. Carp are abundant in these areas and contribute to turbidity problems in certain stretches by rooting up vegetation, and thereby stirring up the collected sediments. Carp are not a problem in the areas with high quality habitat and stable water temperatures where more sensitive species can successfully compete.

The North Branch Milwaukee River has many areas of high quality terrestrial and aquatic habitat. Protecting these areas, including wetlands, while developing buffers to connect the high quality habitats and reduce the effects of nonpoint source pollution will help the North Branch to be even better than it is today.

*Lake Twelve:* Lake Twelve is located within the Huiras Lake subwatershed. This lake has a surface water area of 53 acres and a maximum depth of 19 feet. Until recently, the lake had no public access, so information about the fishery and the lake was rather limited. Water quality in Lake Twelve is considered good, supporting a diverse warmwater fish community. An electrofishing survey of the lake on November 3, 1997 found bluegill, yellow perch, largemouth bass, northern pike, black crappie, common carp and bluntnose minnow. Nutrient levels are at an acceptable level and nonpoint sources of pollution are not notably affecting the lake. Land uses on Lake Twelve include a small residential subdivision and a youth camp. The Ozaukee Washington Land Trust recently acquired a 12-acre site on the southwest shore.

*Huiras Lake:* Huiras Lake is a 26-acre lake with a maximum depth of seven feet. The lake, because of its shallow nature and high productivity experiences periodic winterkills of fish

species. Although not noted for its fishery potential, the lake and surrounding land provides important habitat for nesting and migrating waterfowl. The 450-acre area surrounding Huiras Lake, designated a natural area of statewide significance by the Southeastern Wisconsin Regional Planning Commission (SEWRPC), contains very high quality wetlands and upland forests, and supports very high biodiversity of species. Although portions of the upland and wetland forest have been logged in the past, there has been no recent disturbance to the natural area. This natural area is very unusual for southeastern Wisconsin because it has not been colonized by the invasive exotic species plaguing other natural areas. The wetland communities are excellent examples of vegetation typical of northern Wisconsin, but are very uncommon in the southern part of the state.

Although no listed endangered or threatened plants have been found in the flora surveys of this natural area, at least 18 species documented are extremely uncommon to the southeastern part of Wisconsin. A few examples include blue bead lily, a plant very abundant and typical of wetlands in the far north; members of the blueberry family such as leatherleaf, huckleberry, velvet-leaf blueberry and small cranberry, each found in only one or two other locations in Ozaukee County; and the insectivorous pitcher plant and round-leaved sundew. The Huiras Lake natural area population of white pine may be the southernmost natural population of white pine in Wisconsin. In 1999 the Ozaukee Washington Land Trust acquired approximately 120 acres along the southern, western, and part of the northern shores.

*Spring Lake:* Spring Lake is located within the Spring Lake subwatershed. The lake has a surface water area of 57 acres and a maximum depth of 22 feet. The lake is mostly undeveloped, with a shoreline consisting of wooded wetlands. Public access along the shoreline is not available, but boat access is provided for a fee along the west shore of the lake. The limited fish survey information on the lake suggests that largemouth bass and northern pike are the only gamefish found in the lake. Other species found in the surveys include bluegill, yellow perch, pumpkinseed, green sunfish, white sucker, and bluntnose minnow. Carp are present but do not cause serious management problems. Water quality is generally good and the water is very clear. The marl and sand bottom supports generally sparse, but well-balanced, aquatic plant populations in most shallow areas of the lake. The northwest corner of the lake is bordered by wetland vegetation. The lake outlets to Random Lake in the southeast corner, near the railroad tracks.

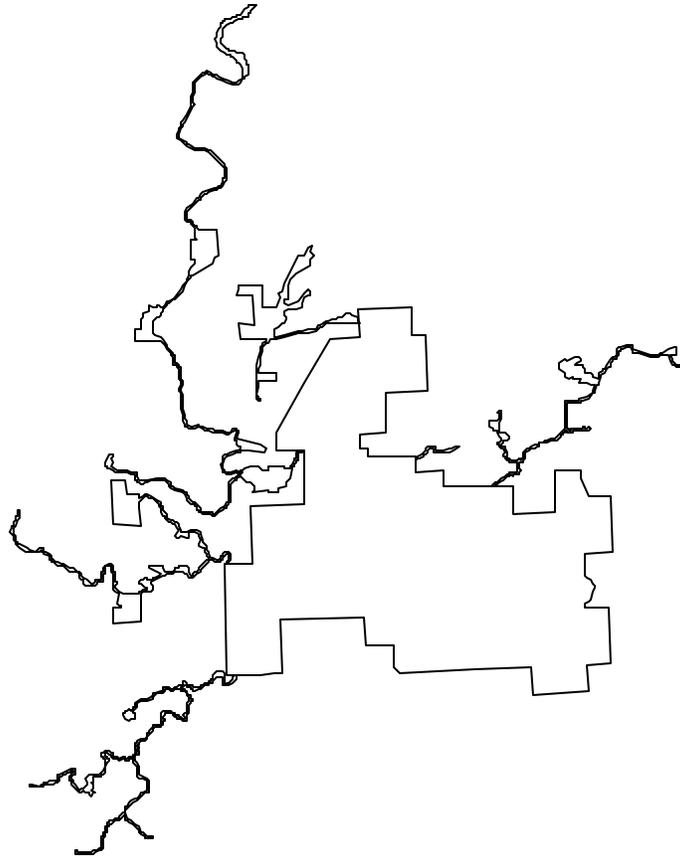
#### Cultural and Historical Resources

Many cultural and historical resources are in and adjacent to the project area. Twenty-five archaeological sites have been identified and recorded by the State Historical Society of Wisconsin. The archaeological sites include 12 Indian campsites and more than 24 mounds. Two historic/modern cemeteries and 21 historic structures (including a mill, church, houses, and barns) are found in the study area. Several buildings in and around the study area are listed on the National Register of Historic Places. Other buildings have historical significance in the local community, linking the present generation with the past generations that settled here and established farms and communities.

Detailed inventories of cultural and historical resources on the Department-owned land will be conducted as land is acquired. Any management activities that would disturb potential archeological or historical sites require an assessment of those locations. The protection of the rich cultural resources found here will complement the protection of the area natural features.

#### **Analysis of Alternatives**

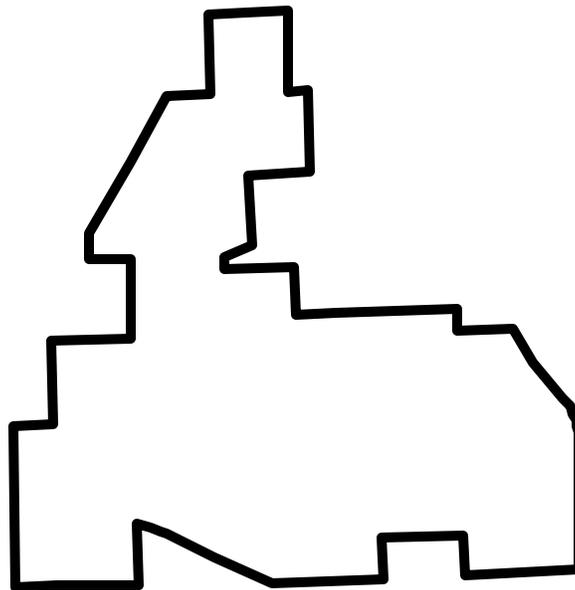
Recommended Alternative. Create a 19,487-acre state Wildlife and Farming Heritage Area on the North Branch Milwaukee River to meet the purpose of the project. Use a variety of real estate tools including fee title, purchase of development rights, easement and donation to protect the natural resources and provide recreational opportunities. Partner with local units of government and private non-profit conservation groups to acquire and to manage the resource.



No Action. The Department of Natural Resources would not participate in protecting the resources in the study area through land acquisition or management activities. The primary protection efforts would fall under the authority of county, township and private conservation efforts. Without a comprehensive effort only small portions of this area would likely be preserved and managed for resource protection and outdoor-recreational purposes. It is likely that the remaining open space would be lost to development and urban sprawl. Increased development would increase privatization, which would result in the loss of recreational opportunities including fishing, hunting, hiking, and trapping. Increased development would likely increase the rate of farmland loss through loss of agricultural based economy and associated farm services in the area.

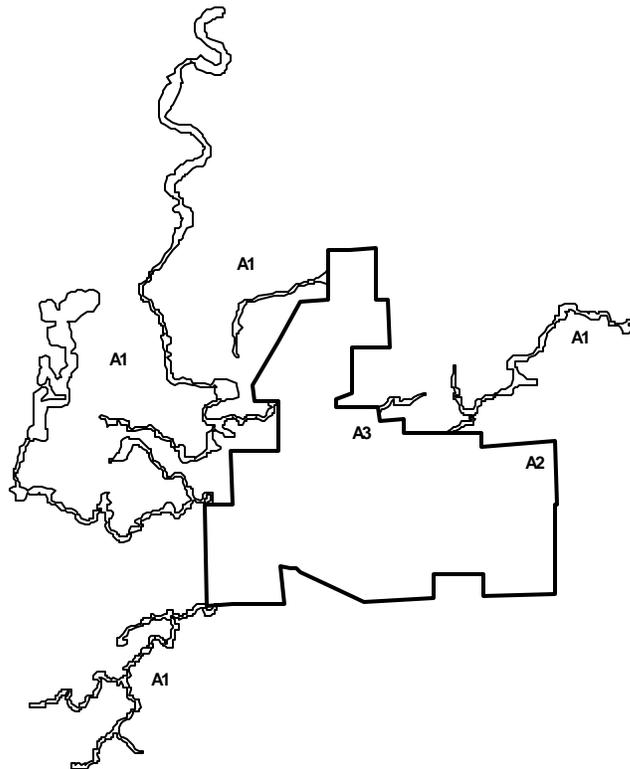
Smaller Boundary. This alternative boundary was first proposed in a 1990 request to conduct a feasibility study and ultimately approved for conducting a study in the Department's five-year land acquisition plan in 1995. This alternative included less acreage (16,805) surrounding the major wetland complexes associated with the North Branch Milwaukee River. A smaller boundary would mean lower costs for acquisition and management.

Although this boundary included prime habitat and critical habitat for rare species, it did not include nearby natural areas (SEWRPC) and access or habitat associated with Spring Lake immediately adjacent to the boundary. The boundary included wetlands associated with the confluence of five tributary streams with the Milwaukee River and about six miles of the North Branch itself but provided little opportunity to influence water quality of those streams or to protect resources along those streams. Because the natural resources of this area are associated with water resources, this boundary was expanded to include opportunities and resources associated with the lakes and streams of the area.



**1995:** Boundary approved under five-year land acquisition plan.  
Total acreage = 16,805

**Larger Boundary.** The guidance team recommended expanding the initial study area to include a more holistic approach to the water based resources of the study area. The boundary was expanded on the northeast side (A2) to include access to Spring Lake and two SEWRPC recommended natural areas. An area in section 32, Town of Sherman, was included to block in a portion of Silver Creek (A3). The biggest increase to the study area was to include corridors along the five tributary streams (A1). The boundary included 200 feet on both sides of the stream and adjacent wetlands (4,262 acres). These corridors were included in the study area to provide the opportunity to protect and improve water quality and wildlife habitat in the subwatershed.



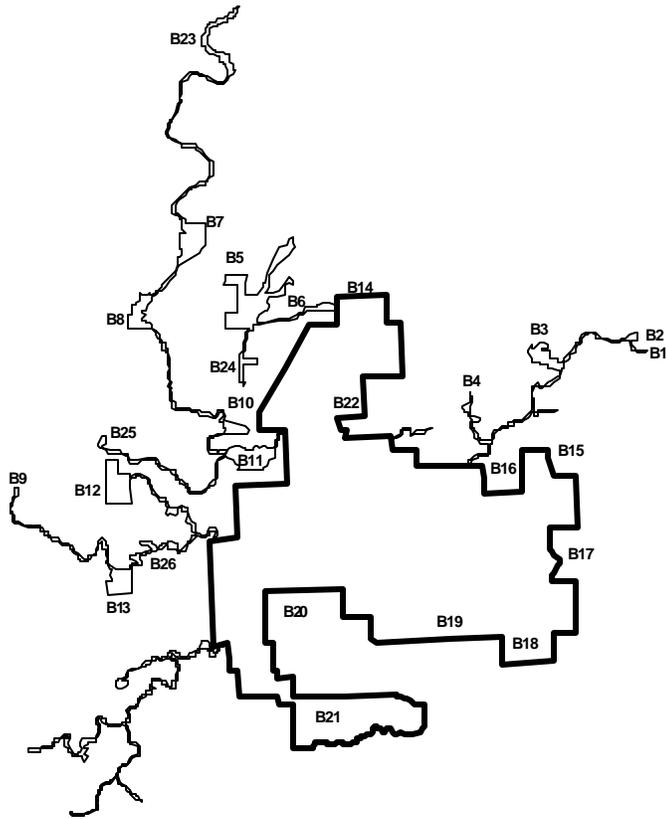
**Larger Boundary:** **A1** = Stream corridors added. Boundary drawn at 200' on each side of streams and adjacent wetlands. **A2** = Moved northeast boundary east from RR grade to middle of Section 2 to include 2 SEWRPC natural areas. **A3** = Moved boundary north to 1/4 section line in Section 32, Town of Sherman to include a portion of Silver Creek. **Acres** = 17,244 in core study area; 4,262 in streambank study area; 21,506 in entire study area.

Another alternative that was considered by the study teams was to set an acquisition goal within the whole Milwaukee River basin without establishing distinct boundaries. This would allow protection of many important areas that exist throughout the whole watershed. This alternative was rejected in favor of concentrating efforts to preserve the large block of open space associated with the rural/agricultural land uses and wetlands in the study area. Also, some

acquisition authority already exists through Stewardship Streambank Protection programs above and below the study area, and in other approved-Department projects in the basin.

The “larger boundary” alternative was presented at a series of public informational meetings in the fall of 2000 and through the media. As a result of input received at these public meetings and from personal contacts, the following revisions were made to the study area boundary (see Recommended Boundary Map):

- reduced boundaries along the five tributary streams to 100 feet on either side of the streams
- eliminated sections of wetlands already adequately protected by environmental laws (B1, B9, B10)
- modified boundary, where possible, to reduce the acreage of agricultural land and/or residential developments (B14, B16, B17, B20, B22)
- expanded boundary along the North Branch down to its confluence with the mainstem of the Milwaukee River, including lowlands along the main stem (B21)\*. This expansion was suggested by citizens attending the public forums, and the area includes two important natural areas.
- expanded the boundary along tributary streams in several areas to include significant natural features or opportunities to restore wetland functions (B2-B8, B11-B13, B23-B26)
- expanded the boundary on the north side of Spring Lake and associated wetlands (B15)
- added the north ½ of section 22 in the Town of Fredonia to block in the lower portion of a SEWRPC-designated natural areas (B18)
- added the south ½ of section 16 in the Town of Fredonia to include an area with restorable wetlands (B19).

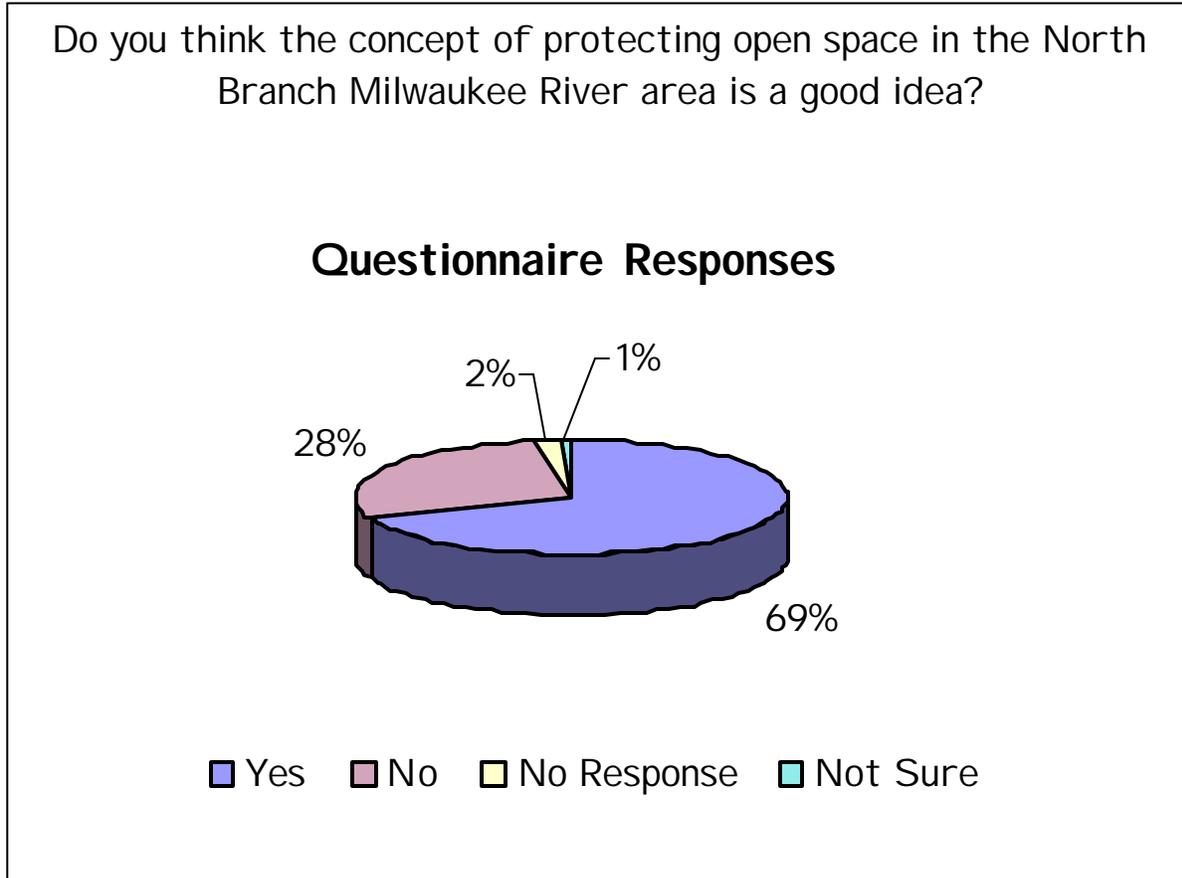


\*After another series of public informational meetings, the boundary was reduced by removing the B21 area. Most of the local landowners and citizens that appeared at the meetings after its inclusion were opposed to including this area in the boundary. Because of the opposition and because there is some potential for protecting natural resources in the area through other conservation programs, the area was removed from the final boundary recommendation.

## Public Involvement

Public input was sought from the very beginning of conducting this feasibility study. Since June of 1999 Department staff wrote a public participation plan (Appendix F), met with local, county and state elected officials; held two series of public forums; met with the Land Conservation Committees and Wisconsin Farm Bureau representatives of Sheboygan, Ozaukee and Washington counties; developed two newsletters on the proposed project; and made presentations at town board meetings. Department staff kept landowners and residents of the study area and beyond informed of the study and meetings through an extensive mailing list of more than 2800 households.

The first series of public forums were held in October and November of 1999. The nearly 300 people who attended the forums were encouraged to discuss the proposed project with staff, provide input, and fill out a questionnaire. Comments received at the forums and summaries of the questionnaires were included in the newsletter. The following pie chart summarizes the responses to a question regarding the importance of protecting open space in the study area.



The agricultural community has been particularly interested in how this project would affect them. The Wisconsin Farm Bureau area representatives formed a committee of three representatives from each of the three counties in the project boundary to meet with Department

staff about their concerns. Staff and Farm Bureau representatives are discussing issues such as how to keep agricultural land in production and what real estate tools are available that could be used to both keep farmland in production and protect the resource.

There have been a number of newspaper articles about the feasibility study, including a front page article with numerous photographs in the Ozaukee County section of the Sunday, November 7, 1999 Milwaukee Journal Sentinel. Additionally, the Sheboygan Press conducted a poll of readers in July, 1999 with 90 percent of 405 respondents favoring the proposed project.

The first draft of the feasibility study was released for a 30-day public review and comment period in November, 2000. More than 300 people attended a second series of public forums held during the review and comment period. Significant concerns were expressed by local residents over the "B21" boundary expansion from Fillmore south to the confluence of the mainstem and North Branch of the Milwaukee River. Staff addressed the concerns that were raised at the forums by meeting with individual landowners in the "B21" area, attending town board meetings, attending farm bureau meetings, and meeting with state and local elected officials. We subsequently removed the 1,800 acre addition and strengthened the proposal to work with a citizen advisory board to preserve farmland and natural resources in the area.

A second public review and comment period of the updated feasibility study report took place in June and July of 2002. See Appendix F for additional information on this review period.

## APPENDIX A

### GLOSSARY

**Coniferous Swamp** -- White cedar or tamarack wetlands that may be inundated in spring and saturated for most of the growing season. Soils are organic peat or muck with tamarack more common in acidic soils and white cedar where soils are alkaline. While coniferous swamps are common in northern Wisconsin, they are rare in the southern half of the state and home to many rare plants such as lady-slipper orchids.

**Conservation Easement** -- The purchase of partial rights to property. Common rights purchased include *wetland easements*, which prohibit some or all building construction on the property.

**Conservation Reserve Program (CRP)** -- Established in 1985, CRP encourages landowners to voluntarily plant permanent areas of grass and trees on land that needs protection from erosion, to act as windbreaks, or in places where vegetation can improve water quality or provide food and habitat for wildlife. Contracts are 10 to 15 years long. In return, the landowner receives an annual rental payment, incentive payments for certain activities and cost-share assistance to establish the protective vegetation. There is no public access. The landowner's permission is needed to access the land.

**Endangered Species** -- State designated endangered species include any species native to the State of Wisconsin whose continued existence as a viable component of the State's wild animals or wild plants, is determined by the Wisconsin Department of Natural Resources, on the basis of scientific evidence, to be in jeopardy. [Wis. Stats., Section 29.604(2)(a)].

**Farmed wetlands** -- Wetlands that were drained, dredged, filled, leveled or otherwise manipulated before December 23, 1985, for the purpose of, or to have the effect of, making the production of an agricultural commodity possible, and continue to meet specific wetland hydrology criteria.

**Feasibility Study** -- A study used to determine whether it is feasible for the Department of Natural Resources to establish, acquire, develop and manage a new property. The study considers the physical and biological environment and its capability, the view of the landowners and general public, and the availability of funding and staff to adequately accomplish the project purpose.

**Floodplain** -- Land which may be covered by flood water during the regional flood. The flood frequency of the regional flood is once in every 100 years. This means that in any given year there is a 1% chance that the regional flood may occur or be exceeded.

**Floodplain Forests** -- Wetlands dominated by deciduous hardwood trees that grow on mineral soil adjacent to streams. The soils are inundated during flood events but are usually well drained for much of the growing season. Common trees are silver maple, green ash, cottonwood, elm, black willow and box elder. The frequent flooding typically keeps shrubs from growing and the ground cover is commonly jewelweed and nettles. Floodplain forests are important for flood storage and have a high diversity of animal species since they are migration corridors. Animals commonly found are wood ducks, barred owls, herons, songbirds and amphibians.

**Hardwood Swamps** -- Wetlands dominated by deciduous hardwood trees on organic or muck soils of old lake basins or oxbows. They have standing water in the spring and saturated soils or ponded water for much of the growing season. Black ash, red maple, silver maple, yellow birch and elm are common in hardwood swamps. They also have a shrub layer and ground cover of species from the wet meadow plant community. Hardwood swamps retain floodwater and provide habitat for deer and furbearers, grouse, songbirds and amphibians.

**Hydric soil** -- Soil saturated or flooded long enough during the growing season to develop anaerobic conditions that favor growth of hydrophytic vegetation.

**Hydrophytes** --Plants that can tolerate long periods of inundation or saturated soil conditions.

**Managed Forest Law (MFL)** -- Established in 1986, MFL combined 2 earlier state forestry incentive programs – Forest Crop Law (FCL) and Woodland Tax Law (WTL). Any landowner of 10 contiguous acres of forestland can apply for MFL. Contracts are 25 or 50 years long and the landowner must follow a forest management plan. At least 80% of the enrolled property must be forested and used for no other purpose except growing trees. The landowner can choose to have the property opened or closed to the public. Tax payments paid by the landowner are dependent upon if the land is opened or closed to the public. If the land is open to the public, the landowner's permission is not needed to access the land. If the land is closed to the public, the landowner's permission is needed to access the land. In southeast Wisconsin, most MFL lands are closed to the public.

**Marshes** -- Wetlands with aquatic plants like cattails, sedges and arrowhead growing in permanent to seasonal shallow water. Marshes are the most productive wetlands for water birds and furbearers and they also provide spawning and nursery habitat for fish like northern pike. Ducks, rails, herons and songbirds use marshes for breeding and feeding. Upland wildlife like pheasant and rabbit use marshes as winter habitat. Marshes also store floodwater, protect shorelines from erosion and improve water quality

**Natural Areas** --Tracts of land or water so little modified by human activity, or which have recovered from effects of such activity, that they contain intact native plant and animal communities believed to be representative of the pre-European settlement landscape.

**Natural Heritage Inventory (NHI)** – A Department of Natural Resources' program responsible for maintaining data on the locations and status of rare species, natural communities and natural features in Wisconsin. The Wisconsin NHI is part of an international network of inventory programs that collect, process, and manage data on the occurrences of natural biological diversity using standard methodology.

**Prior Converted Cropland (PCC, or PC)** -- Cropland that contains converted wetland where the conversion occurred prior to December 23, 1985, an agricultural commodity was produced at least once prior to December 23, 1985, the site does not have wetland hydrology and remains in agricultural use.

**Shrub Swamps** -- Wetlands dominated by woody vegetation like small willows, red-osier and silky dogwoods. They occur on saturated or seasonally flooded muck soils and on the mineral soils of floodplains. Wet meadows may become shrub swamps after drainage and fire

suppression. Shrub swamps provide habitat for many songbirds, grouse, woodcock, and small mammals as well as winter habitat for upland game.

**Special Concern Species** -- Species for which some problem of abundance or distribution is suspected but not yet proven.

**Study Area** -- An area identified on a map, through the feasibility study process, as having significant natural and cultural resources. The boundary is open to revisions during the feasibility study process.

**Threatened Species** -- State designated threatened species include any species of wild animals or plants native to the State of Wisconsin which appear likely, within the foreseeable future and on the basis of scientific evidence, to become endangered [Wis. Stats., Section 29.604(2)(b)].

**Trout Streams** -- Streams that are typically cold, well oxygenated and low in siltation. Class I trout streams contain high-quality habitat for trout including spawning ground, adequate food resources, and excellent water quality so that no stocking is required. Class II trout streams have adequate food resources and living space, but lack sufficient natural reproduction so that some stocking is required. Class III trout streams have marginal trout habitat and require stocking annually.

**Wet Meadows** -- Wetlands vegetated with grasses, sedges and showy flowering plants like marsh milkweed, goldenrods and asters. Woody plants are absent and standing water is present only after heavy rains. Wet meadows are especially important for water quality protection since they are generally the buffers between uplands and waterways where their dense vegetation traps sediments and takes up nutrients. They also retain floodwater and provide wildlife habitat for many species including cranes, pheasants, and many small mammals that provide food for mink, fox and raptors.

**Wetlands** -- Areas where "water is at, near or above the land surface long enough to support aquatic or hydrophytic vegetation, and which has soils indicative of wet conditions" [s. 23.32(1) Wis. Stats.]

## APPENDIX B

### AMPHIBIANS AND REPTILES LIKELY TO BE FOUND IN THE STUDY AREA AND THEIR STATUS IN WISCONSIN

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
American toad	<i>Bufo americanus</i>	
Spring peeper	<i>Pseudacris crucifer</i>	
Western chorus frog	<i>Pseudacris triseriata triseriata</i>	
Green frog	<i>Rana clamitans melanota</i>	
Northern leopard frog	<i>Rana pipiens</i>	
Pickerel frog	<i>Rana palustris</i>	
Wood frog	<i>Rana sylvatica</i>	
<b>Blanchard's cricket frog</b>	<b><i>Acris crepitans blanchardi</i></b>	<b>Endangered</b>
Gray treefrog	<i>Hyla species</i>	
<b>Bullfrog</b>	<b><i>Rana catesbeiana</i></b>	<b>Special Concern</b>
Eastern spiny softshell turtle	<i>Apalone spinifera spinifera</i>	
Snapping turtle	<i>Chelydra serpentina</i>	
Painted turtle	<i>Chrysemys picta</i>	
<b>Blanding's turtle</b>	<b><i>Emydoidea blandingii</i></b>	<b>Threatened</b>
Common musk turtle	<i>Sternotherus odoratus</i>	
Central newt	<i>Notophthalmus viridescens louisianensis</i>	
Redback salamander	<i>Plethodon cinereus</i>	
<b>Four-toed salamander</b>	<b><i>Hemidactylium scutatum</i></b>	<b>Special Concern</b>
Spotted salamander	<i>Ambystoma maculatum</i>	
Blue-spotted salamander	<i>Ambystoma laterale</i>	
Eastern tiger salamander	<i>Ambystoma tigrinum tigrinum</i>	
<b>Northern ringneck snake</b>	<b><i>Diadophis punctatus edwardsii</i></b>	<b>Special Concern</b>
<b>Queen snake</b>	<b><i>Regina septemvittata</i></b>	<b>Endangered</b>
Eastern milk snake	<i>Lampropeltis triangulum triangulum</i>	
Eastern garter snake	<i>Thamnophis sirtalis sirtalis</i>	
<b>Butler's garter snake</b>	<b><i>Thamnophis butleri</i></b>	<b>Threatened</b>
<b>Northern ribbon snake</b>	<b><i>Thamnophis sauritus septentrionalis</i></b>	<b>Endangered</b>
Northern redbelly snake	<i>Storeria occipitomaculata occipitomaculata</i>	
Midland brown snake	<i>Storeria dekayi wrightorum</i>	
Northern water snake	<i>Nerodia sipedon sipedon</i>	
Fox snake	<i>Elaphe vulpina</i>	

#### Sources

Field observations

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Natural Heritage Inventory

## APPENDIX C

### BIRD SPECIES IN THE STUDY AREA DURING THE BREEDING SEASON AND THEIR STATUS IN WISCONSIN\*

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
<b><u>Confirmed Nesting</u></b>		
Wood duck	<i>Aix sponsa</i>	
Mallard	<i>Anas platyrhynchos</i>	
Blue-winged teal	<i>Anas discors</i>	
Canada goose	<i>Branta canadensis</i>	
<b>Great blue heron</b>	<b><i>Ardea herodias</i></b>	<b>Special Concern</b>
Ring-necked pheasant	<i>Phasianus colchicus</i>	
Wild turkey	<i>Meleagris gallopavo</i>	
Killdeer	<i>Charadrius vociferus</i>	
Mourning dove	<i>Zenaida macroura</i>	
Chimney swift	<i>Chaetura pelagica</i>	
Downy woodpecker	<i>Picoides pubescens</i>	
Hairy woodpecker	<i>Picoides villosus</i>	
Common flicker	<i>Colaptes auratus</i>	
Eastern wood-pewee	<i>Contopus virens</i>	
Willow flycatcher	<i>Empidonax traillii</i>	
Least flycatcher	<i>Empidonax minimus</i>	
Great crested flycatcher	<i>Myiarchus crinitus</i>	
Eastern phoebe	<i>Sayornis phoebe</i>	
Tree swallow	<i>Tachycineta bicolor</i>	
Cliff swallow	<i>Hirundo pyrrhonota</i>	
Barn swallow	<i>Hirundo rustica</i>	
Blue jay	<i>Cyanocitta cristata</i>	
Black-capped chickadee	<i>Parus atricapillus</i>	
White-breasted nuthatch	<i>Sitta carolinensis</i>	
House wren	<i>Troglodytes aedon</i>	
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>	
American robin	<i>Turdus migratorius</i>	
Gray catbird	<i>Dumetella carolinensis</i>	
European starling	<i>Sturnus vulgaris</i>	
Yellow-throated vireo	<i>Vireo flavifrons</i>	
Red-eyed vireo	<i>Vireo olivaceus</i>	
Yellow warbler	<i>Dendroica petechia</i>	
Mourning warbler	<i>Oporornis philadelphia</i>	
American redstart	<i>Setophaga ruticilla</i>	
Northern waterthrush	<i>Seiurus noveboracensis</i>	
Common yellowthroat	<i>Geothlypis trichas</i>	
Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	
Vesper sparrow	<i>Pooecetes gramineus</i>	
Song sparrow	<i>Melospiza melodia</i>	
Swamp sparrow	<i>Melospiza georgiana</i>	
House sparrow	<i>Passer domesticus</i>	
Red-winged blackbird	<i>Agelaius phoeniceus</i>	
Common grackle	<i>Quiscalus quiscula</i>	

Brown-headed cowbird  
Northern oriole  
American goldfinch

*Molothrus ater*  
*Icterus galbula*  
*Carduelis tristis*

**Probably Nesting**

American coot  
Pied-billed grebe  
Green heron  
Hooded merganser  
Green-winged teal  
Virginia rail

*Fulica americana*  
*Podilymbus podiceps*  
*Butorides striatus*  
*Lophodytes cucullatus*  
*Anas crecca*  
*Rallus limicola*

Sora  
Spotted sandpiper  
Sandhill crane  
Black-billed cuckoo

*Porzana carolina*  
*Actitis macularia*  
*Grus canadensis*  
*Coccyzus erythrophthalmus*

**Yellow-billed cuckoo**  
**Red-headed woodpecker**

***Coccyzus americanus*** Special Concern  
***Melanerpes erythrocephalus*** Special Concern

Red-bellied woodpecker  
Alder flycatcher

*Melanerpes carolinus*  
*Empidonax alnorum*

**Acadian flycatcher**

***Empidonax virescens*** Threatened

Eastern kingbird  
American crow  
Brown creeper  
Marsh wren

*Tyrannus tyrannus*  
*Corvus brachyrhynchos*  
*Certhia americana*  
*Cistothorus palustris*

Eastern bluebird

*Sialia sialis*

Veery

*Catharus fuscescens*

Wood thrush

*Hylocichla mustelina*

Cedar waxwing

*Bombycilla cedrorum*

Warbling vireo

*Vireo gilvus*

Blue-winged warbler

*Vermivora pinus*

Golden-winged warbler

*Vermivora chrysoptera*

**Cerulean warbler**

***Dendroica cerulea*** Threatened

**Prothonotary warbler**

***Protonotaria citrea*** Special Concern

Northern cardinal

*Cardinalis cardinalis*

Indigo bunting

*Passerina cyanea*

Chipping sparrow

*Spizella passerina*

Savannah sparrow

*Passerculus sandwichensis*

Eastern meadowlark

*Sturnella magna*

House finch

*Carpodacus mexicanus*

American kestrel

*Falco sparverius*

Rock dove

*Columba livia*

Cooper's hawk

*Accipiter cooperii*

Red-tailed hawk

*Buteo jamaicensis*

Broad-winged hawk

*Buteo platypterus*

**Northern harrier**

***Circus cyaneus*** Special Concern

**Red-shouldered hawk**

***Buteo lineatus*** Threatened

Ruffed grouse

*Bonasa umbellus*

Great horned owl

*Bubo virginianus*

Barred owl

*Strix varia*

Eastern screech owl

*Otus asio*

Belted kingfisher

*Ceryle alcyon*

Bobolink

*Dolichonyx oryzivorus*

Turkey vulture	<i>Cathartes aura</i>	
Solitary sandpiper	<i>Tringa solitaria</i>	
Sharp-shinned hawk	<i>Accipiter striatus</i>	
Red-breasted nuthatch	<i>Sitta canadensis</i>	
American woodcock	<i>Scolopax minor</i>	
Common snipe	<i>Gallinago gallinago</i>	
Brown thrasher	<i>Toxostoma rufum</i>	
Ovenbird	<i>Seiurus aurocapillus</i>	
Rufous-sided towhee	<i>Pipilo erythrophthalmus</i>	
Field sparrow	<i>Spizella pusilla</i>	
<b>Least bittern</b>	<b><i>Ixobrychus exilis</i></b>	<b>Special Concern</b>
<b>American bittern</b>	<b><i>Botaurus lentiginosus</i></b>	<b>Special Concern</b>
<b>Black tern</b>	<b><i>Chlidonias niger</i></b>	<b>Special Concern</b>
Sedge wren	<i>Cistothorus platensis</i>	
<b>Upland sandpiper</b>	<b><i>Bartramia longicauda</i></b>	<b>Special Concern</b>
Bank swallow	<i>Riparia riparia</i>	
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	
Purple martin	<i>Progne subis</i>	
Ruby-throated hummingbird	<i>Archilochus colubris</i>	
Scarlet tanager	<i>Piranga olivacea</i>	
Common nighthawk	<i>Chordeiles minor</i>	
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	

\*Note: This list does not include non-breeding species or species that may utilize the area outside of the breeding season. Many other bird species use the study area during migration and the winter months.

#### Sources

Wisconsin Breeding Bird Atlas Survey Data

Field Observations

Robbins, C.S., B. Bruun, and H. Zim. A Guide to Field Identification--  
Birds of North America. Golden Press, 1983.

Natural Heritage Inventory

## APPENDIX D

### MAMMALS LIKELY TO BE FOUND IN THE STUDY AREA\*

<u>Common Name</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Scientific Name</u>
Badger	<i>Taxidea taxus</i>	Mink	<i>Mustela vison</i>
Beaver	<i>Castor canadensis</i>	Muskrat	<i>Ondatra zibethica</i>
Big brown bat	<i>Eptesicus fuscus</i>	Norway rat	<i>Rattus norvegicus</i>
Boreal red-backed vole	<i>Clethrionomys gapperi</i>	Opossum	<i>Didelphis marsupialis</i>
Coyote	<i>Canis latrans</i>	Raccoon	<i>Procyon lotor</i>
Deer mouse	<i>Peromyscus maniculatus</i>	Red bat	<i>Lasiurus borealis</i>
Eastern chipmunk	<i>Tamias striatus</i>	Red fox	<i>Vulpes fulva</i>
Eastern cottontail rabbit	<i>Sylvilagus floridanus</i>	Red squirrel	<i>Tamiasciurus hudsonicus</i>
Eastern fox squirrel	<i>Sciurus niger</i>	River otter	<i>Lutra canadensis</i>
Eastern gray squirrel	<i>Sciurus carolinensis</i>	Short-tailed shrew	<i>Blarina brevicauda</i>
Eastern mole	<i>Scalopus aquaticus</i>	Short-tailed weasel	<i>Mustela erminea</i>
Gray fox	<i>Urocyon cinereoargenteus</i>	Silver-haired bat	<i>Lasionycteris noctivagans</i>
House mouse	<i>Mus musculus</i>	Southern flying squirrel	<i>Glaucomys volans</i>
Least weasel	<i>Mustela rixosa</i>	Star-nosed mole	<i>Condylura cristata</i>
Little brown bat	<i>Myotis lucifugus</i>	Striped skunk	<i>Mephitis mephitis</i>
Long-tailed weasel	<i>Mustela frenata</i>	Thirteen-lined ground squirrel	<i>Citellus tridecemlineatus</i>
Masked shrew	<i>Sorex cinereus</i>	White-footed mouse	<i>Peromyscus leucopus</i>
Meadow jumping mouse	<i>Zapus hudsonius</i>	White-tailed deer	<i>Odocoileus virginianus</i>
Meadow vole	<i>Microtus pennsylvanicus</i>	Woodchuck	<i>Marmota monax</i>

\*Note: None of these mammals are classified as endangered, threatened, or special concern in Wisconsin.  
This list does not include domestic animals.

#### Sources

Field observations

Reinartz, J.A. A Guide to the Natural History of the Cedarburg Bog Part II. The University of Wisconsin-Milwaukee Field Station bulletin. 19-1. 1986.

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Jackson, H.H.T. Mammals of Wisconsin. The University of Wisconsin Press, 1961.

Burt, W.H. and R.P. Grossenheider. A Field Guide to the Mammals. Houghton Mifflin Co., 1964, 1980.

Natural Heritage Inventory

## APPENDIX E

### FISH OF THE NORTH BRANCH MILWAUKEE RIVER STUDY AREA AND THEIR STATUS IN WISCONSIN

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
<b><u>Minnows (22 species)</u></b>		
Largescale stoneroller	<i>Campostoma oligolepis</i>	
Central stoneroller	<i>Campostoma anomalum</i>	
Spotfin shiner	<i>Cyprinella spiloptera</i>	
<b>Striped shiner</b>	<b><i>Luxilus chrysocephalus</i></b>	<b>Endangered</b>
Common shiner	<i>Luxilus cornutus</i>	
<b>Redfin shiner</b>	<b><i>Lythrurus umbratilis</i></b>	<b>Threatened</b>
Golden shiner	<i>Notemigonus crysoleucas</i>	
Emerald shiner	<i>Notropis atherinoides</i>	
Bigmouth shiner	<i>Notropis dorsalis</i>	
Blackchin shiner	<i>Notropis heterodon</i>	
Blacknose shiner	<i>Notropis heterolepis</i>	
Sand shiner	<i>Notropis ludibundus</i>	
Mimic shiner	<i>Notropis volucellus</i>	
Pearl dace	<i>Margariscus margarita</i>	
Northern redbelly dace	<i>Phoxinus eos</i>	
Southern redbelly dace	<i>Phoxinus erythrogaster</i>	
Blacknose dace	<i>Rhinichthys atratulus</i>	
Hornyhead chub	<i>Nocomis biguttatus</i>	
Creek chub	<i>Semotilus atromaculatus</i>	
Bluntnose minnow	<i>Pimephales notatus</i>	
Fathead minnow	<i>Pimephales promelas</i>	
Common carp	<i>Cyprinus carpio</i>	
<b><u>Suckers (4 species)</u></b>		
White sucker	<i>Catostomus commersoni</i>	
Silver redhorse	<i>Moxostoma anisurum</i>	
Golden redhorse	<i>Moxostoma erythrurum</i>	
<b>Greater redhorse</b>	<b><i>Moxostoma valenciennesi</i></b>	<b>Threatened</b>
<b><u>Catfishes (5 species)</u></b>		
Black bullhead	<i>Ameiurus melas</i>	
Yellow bullhead	<i>Ameiurus natalis</i>	
Brown bullhead	<i>Ameiurus nebulosus</i>	
Stonecat	<i>Noturus flavus</i>	
Tadpole madtom	<i>Noturus gyrinus</i>	

## APPENDIX F

### PUBLIC PARTICIPATION PLAN and TIMELINE

#### PUBLIC PARTICIPATION PLAN

1. Meetings with Public Officials – The state legislators, four county board chairs, seven township chairs, and the board presidents for the Villages of Fredonia and Random Lake will be contacted by phone and asked to meet with one of the co-leaders. These meetings will be held prior to letters being sent to public officials, landowners and other interested citizens and organizations announcing the feasibility study.
2. Informational Mailings – Develop and maintain a mailing list of landowners, local, state and federal officials, interested citizens, and interested organizations. At least two mailings will be sent regarding the project, and two open forums will be held to present information and seek public input.
3. Handouts – Develop fact sheets to introduce the study (why we are conducting the study and the importance of the study area), explain the significant resource value of the study area, explain the status of the study, explain state land acquisition tools, describe comments received during different stages of the study. Develop a feasibility study questionnaire to solicit input on public views in regard to support for the protection of land, management options, and issues such as residential development, recreation, and the preservation of farmland in the study area. We will also ask in the questionnaire how the public would like up to reach out to them on this project.
4. Development of an Informational Slide Show or Video – Develop a slide or video presentation to describe the study area, goals of the feasibility study, and the significant cultural, geological and natural resources.
5. Public Meetings – Conduct at least two open house events to inform the public about the study and to obtain their input into the study boundary, issues to be addressed, and potential partners for protecting and managing natural resources.
6. Report Availability – Submit draft feasibility study and environmental analysis draft reports to libraries, government officials and other public entities for public review. Reports will be made available to all interested persons and organizations.
7. News Media – Submit news releases to announce the feasibility study. Submit news releases for each of the public forum events.
8. Contact with Basin Teams – Provide status reports on the project to the basin teams, partnership teams and GMU leaders during the course of the study.
9. Web Page – Develop a web page for the project if it is determined needed after the first public meeting.

## PUBLIC PARTICIPATION TIMELINE

**1999**

**AUG/SEPT**

CONTACTED PUBLIC OFFICIALS  
(state, county, and towns)

**OCT/NOV**

PUBLIC FORUMS (3 w/ ~ 300 for attendance)  
(announced via direct mailing to ~ 2,500 + news releases/stories)

**NOV/DEC**

MET WITH FARM BUREAU REPRESENTATIVES AND COUNTY  
LAND CONSERVATION DEPARTMENTS (3 counties)

**2000**

**MARCH 6**

MET WITH LOCAL FARMERS AT THE INVITATION OF FARM  
BUREAU

**MARCH 9**

TOWN OF FREDONIA MEETING @ THE INVITATION OF THE  
TOWN BOARD

**MARCH 9**

NEWSLETTER MAILED TO 2,600 INDIVIDUALS, PRIMARILY  
LOCAL LANDOWNERS

**JUNE 15**

MET WITH FARM BUREAU REPRESENTATIVES

**NOV**

HELD 30-DAY PUBLIC REVIEW AND COMMENT PERIOD OF  
DRAFT FEASIBILITY STUDY REPORT

HELD PUBLIC FORUMS (3 w/ ~ 300 total attendance)

**2001**

**MAY/JUNE**

MET WITH LOCAL LEGISLATORS IN MADISON

**MAY/JUNE**

MET WITH 4 TOWN BOARDS + PUBLIC  
(Fredonia, Sherman, Scott, Farmington)

**JUNE 25**

MET WITH LOCAL FARMERS AT THE INVITATION OF FARM  
BUREAU AND AMERICAN FARMLAND TRUST REPRESENTATIVE

**JULY**

DOOR-TO-DOOR VISITS WITH LOCAL LANDOWNERS IN  
LOWER PORTION OF STUDY AREA (B21)

**2002**

**JUNE**

NEWSLETTER MAILED TO 3,188 INDIVIDUALS

HELD 2-WEEK PUBLIC REVIEW AND COMMENT PERIOD OF  
FINAL DRAFT FEASIBILITY STUDY REPORT

**HOTLINE:** AVAILABLE DURING JUNE/JULY 2002 PUBLIC REVIEW PERIOD

**WEB SITE:** INCLUDED INFORMATION RELATED TO UPCOMING MEETINGS, COPY OF THE NEWSLETTER, AND COPY OF THE PLAN AVAILABLE  
(<http://www.dnr.state.wi.us/org/gmu/milw/nbranch.htm>)

**PRESS COVERAGE:** 7+ STORIES IN OZAUKEE SECTION OF JOURNAL SENTINEL, 15+ STORIES IN LOCAL PRESS, 8+ EDITORIALS (ALL POSITIVE), 5+ STORIES IN FARM MAGAZINES, 1 public radio interview, 1 public television story

**APPENDIX G**

**SUMMARY OF COMMENTS RECEIVED DURING  
THE JUNE/JULY 2002 PUBLIC REVIEW PERIOD**

<b>Comment *</b>	<b>Name and Address</b>	<b>Comments in Support</b>
<b>H</b>	Mary Kohl, Sierra Club Sheboygan, WI	Agrees w/ plan; tillable ag should not be purchased; 51% of CAC should be farmers
<b>H</b>	Julie Hanus Milwaukee, WI	Supports NB; fantastic opportunity
<b>H</b>	Sandra Mesacoter Plymouth	Tillable ag should not be purchased; only acquire easements; 51% of CAC should be farmers
<b>H</b>	Dave Torrison Adell, WI Land owner w/in boundary	Interested in easements; send examples of how easement program works; wants DNR to contact him; add his land to boundary
<b>H</b>	Brian Huiras Own section 5,6 & 8	He supports the NB project; rents over 100 acres; is a dairy farmer; he does support PDR; 51% of CAC should be farmers
<b>H</b>	William Olmstead Milwaukee, WI	Approves of the NB and has comments on county grounds
<b>H</b>	Tom Freidrick Sheboygan Falls, WI	Supports the NB even though it is tillable land that would be purchase; CAC should be 51% conservation minded
<b>H</b>	John Harbeck	Supports the NB
<b>H</b>	Larry Laux Batavia Creek area	Supports the NB, previously included but no longer is, still interested in including his land
<b>H</b>	Ed Ritger Sherman	Supports the NB
<b>H</b>	Fran Beech Sheboygan	Supports the NB for wildlife and recreation
<b>H</b>	Janet Limbert Plymouth, WI	Supports the NB; owns land in Plymouth
<b>H</b>	Jim Soksolowski	Supports the NB; wants to be sure that we don't force people from their homes.
<b>H</b>	Adam Gerol Cedarburg, WI	Strongly supports the NB
<b>H</b>	Megan Horse (?)	Supports the NB

<b>H</b>	Farmington resident	Not opposed to preservation but is opposed to public recreation; concerned about trespassing
<b>H</b>	Kathleen Ryan Bayside, WI	Supports the NB
<b>E</b>	Patricia Bialzik	Supports the NB; project has great potential; good way to preserve rural ag character
<b>E</b>	Richard and Lois Finch Land owner w/l boundary	Supports the NB; offered to help in any way
<b>E</b>	Dick and Diane Schneider West Bend, WI 53090	Supports project; wants to be on the CAC; property owner w/l boundary
<b>E</b>	Nicole Hodkiewicz Town of Farmington	Supports the NB project; would like 1,800 acres added
<b>H</b>	Vonier	Supports the NB; requested copy of report via phone call
<b>E</b>	Rick White Fillmore, WI	Most people do not oppose the NB project if it prevents further development
<b>E</b>	Richard Snow Former Chair of the Milwaukee River Revitalization Council	Supports the NB
<b>E</b>	Ann Trumble Mequon, WI	Supports the NB
<b>E</b>	Bonnie and Jim Zwickel Fredonia, WI	Supports the NB; will bring economic development from recreation
<b>L</b>	Paul and Mary Jo Kuenning	Supports the NB; food security and habitat protection
<b>F H</b>	Melody Narr Hartford, WI	Supports the NB and the preservation of rural landscapes; conserve our natural resources and farms
<b>L</b>	Shannon Haydin Sheboygan, WI	Supports the NB on behalf of the Sheboygan County Planning and Resources Department; "Farmland preservation is at the core of Wisconsin Heritage"
<b>H</b>	Bob Klabetter	Supports the NB and want his 170 acre parcel included in the boundary. Lynn Rd. around Hwy SS; wants to show DNR his land
<b>H</b>	Jean Lord	Supports the NB project; volunteers to be part of the CAC

<b>H</b>	Mark Marchelle	Supports NB project
<b>E</b>	Jane Wong Sheboygan, WI	Supports NB project
<b>L</b>	Michael and Terry DeMaster Sheboygan, WI	Supports NB project; protect area for future generations
<b>H</b>	Sheboygan County Conservation Association Sheboygan, WI	Supports project; preserve open space for future
<b>L</b>	Phil Evenson, SEWRPC P.O Box 1607 Waukesha, WI 53187	Consistent with SEWRPC plans prepared for this area (NAs, County Park & Open Space plan)
<b>E</b>	Troy Kuphal Washington County LCD	How can they help protect?
<b>E</b>	Alice Reynolds Cedar Grove, WI	We support NB Project; Good Luck!
<b>E</b>	Lori and Scott Walker	Support NB project; with all of the urban sprawl occurring north of Milwaukee, something needs to be done to protect wild areas, especially wetlands and riparian zones
<b>H</b>		Against the NB; DNR has lowered the value of land taken out of production in the Greenbush area
<b>H</b>	Jerome Shamberger	90% of land owners are against the NB; every time the DNR purchase land it goes to hell
<b>H</b>	Warren Luft	Wants his property out of the NB
<b>H</b>	Mrs. Andrew Schneider Fredonia, WI	Is against the NB
<b>H</b>	Silver Creek landowner	Against NB due to the cost and past dealing with the DNR
<b>H</b>	Dan Bushard landowner w/in boundary Random Lake, WI	Against the NB; already plenty of state land
<b>H</b>	Norman Preder Land owner w/in boundary Sherman	Opposed to NB; plenty of land
<b>H</b>		Opposed to NB

<b>H</b>	Cathy Stern	Against the NB
<b>H</b>	Tom Biernbaum Landowner w/in the boundary	Opposes the NB
<b>H</b>		Against the NB; taxes will increase
<b>H</b>	Property owner	Against the NB
<b>H</b>	Ken McKee Owns land in Wallace Lake area	Against the NB; would probably never sell to DNR
<b>H</b>	Landowner w/in boundary	Against the NB
<b>H</b>	Landowner	Opposed to NB
<b>F</b>	Dennis Harting Town of Sherman	Opposed to NB
<b>L</b>	Richard and Evelyn Rathke Hartmann Sand and Gravel Co., Inc. Fredonia, WI	Wants his land removed from the boundary; concerned about DNR actually making payment-in-lieu of taxes; concerned about being able to access mineral reserves and obtain mining rezones; (he sent letter on 7-1-02)
<b>L</b>	David Tillotson Lake Mills, WI	Against DNR ownership of land; concerned about residential and commercial development of land
<b>H</b>		Opposed to NB; tax burden; existing wetlands are "scum-holes and who knows what disease will come out of them"
<b>E</b>	Thomas Schneider	Opposes project; budget concerns; landowners can take care of the land
<b>E</b>	Tony Schneider Fredonia, WI	Opposed; budget concerns; doesn't like DNR
<b>L</b>	Richard and Colleen Schumaker Kewaskum, WI	Opposes project; may be afraid to sell
<b>L</b>	Sierra Club	Supports NB project
<b>H</b>	Wilford Turba Elkhart Lake, WI	Does not support NB; no guarantee farmers will get to lease land back; DNR should not buy ag land; he does support PDR; 51% of CAC should be farmers
<b>H</b>	Carl Birkholz	DNR has no right to purchase or govern ag land.
<b>H</b>	Ken Turba Elkhart Lake, WI	Not satisfied with the DNR using tillable land for recreation only PDR; 51% of CAC

		should be farmers
<b>E</b>	Scott Densow West Bend, WI	Requested copy of report via e-mail; no comments received
<b>E</b>	Dean Larson	Called; Wants call back
<b>H</b>	Tim Preder Silver Creek landowner	Against the NB; 51% of CAC should be farmers
<b>H</b>		DNR should stop buy land until the state budget is balanced
<b>L</b>	Jean Linton Adell, WI 53001	Concerned about public trespass and litter

\* Comments by citizens made by the following:

- **F** – Fax
- **E** – E-mail
- **L** – Letter
- **H** – Hotline