# Door Creek Wetlands Resource Protection Plan

April, 2000

Dane County, Wisconsin

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## Steering Committee
## Door Creek Wetlands Resource Protection Plan

| Name | Representing |
|---|---|
| Dave Borsecnik | Lake Kegonsa State Park |
| Kevin Connors | Dane County Land Conservation Department |
| Paula Downing | Riparian Landowner |
| Vicki Elkin | Gathering Waters |
| Philana Friede | Riparian Landowner |
| Jay Hoel | Town of Dunn |
| Susan Jones | Dane County Lakes & Watershed Commission |
| Chuck Nahn | Mead & Hunt, Inc. |
| Jim Mueller | Dane County Parks Department |
| Ken Schuck | Town of Pleasant Springs |
| Ray Sherman | Friends of Lake Kegonsa (FOLKS) |
| Gene Skaar | Dane County Farm Drainage Board/Town of Cottage Grove |
| Mike Vogelsang | DNR, Fisheries Management |
| LaVonne Wandschneider | Village of Cottage Grove |
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# The Door Creek Wetlands Resource Protection Plan

## I. INTRODUCTION

**Restoring natural resources of the Door Creek Wetlands and Lake Kegonsa**

The restoration and protection of the Door Creek Wetlands is a priority in Dane County. An important element of the *Dane County Parks and Open Space* plan is promoting existing, as well as establishing new "Resource Areas," including Upper Black Earth Creek, Cherokee Marsh, the Nine Springs E-Way, Lower Mud Lake, as well as the Door Creek Wetlands. Resource Areas are generalized study areas in which project plans are prepared which identify the specific resources to be protected, establish boundaries for acquisition efforts, and provide a framework for focusing management activities. This plan amends the county *Parks and Open Space Plan* specific to the Door Creek Wetlands.

In 1998, Dane County was awarded a DNR Lake Management Planning grant to develop a *Door Creek Wetlands Resource Protection Plan*, coordinated by staff from the Dane County Regional Planning Commission. The purpose of the *Door Creek Wetlands Resource Protection Plan* is to conduct an evaluation of the Door Creek wetlands and to develop a comprehensive framework for protecting and restoring the significant natural resources associated with the Door Creek wetlands, and also Lake Kegonsa. The plan was developed under the direction of a project Steering Committee representing a cross-section of professionals, local government officials and private landowners; and builds on previous efforts by the Friends of Lake Kegonsa (FOLKS), Dane County, the towns of Dunn and Pleasant Springs, and the Department of Natural Resources. The Steering Committee plays an important role in forming the necessary partnerships among state, county and local units of government, and also private groups and local landowners.

The principal goal for this project has been to develop a comprehensive resource protection plan and associated management strategies with special emphasis placed on restoring and enhancing wetland functions and promoting water quality improvements in Lake Kegonsa. The project ties directly to the adjacent Lower Mud Lake Resource Area, as well as other public use/natural resource opportunities that exist between Fish Camp Launch County Park and Lake Kegonsa State Park, and Lake Kegonsa.

After several public meetings, and review and analysis of existing information, the Steering Committee focused on four principal objectives:

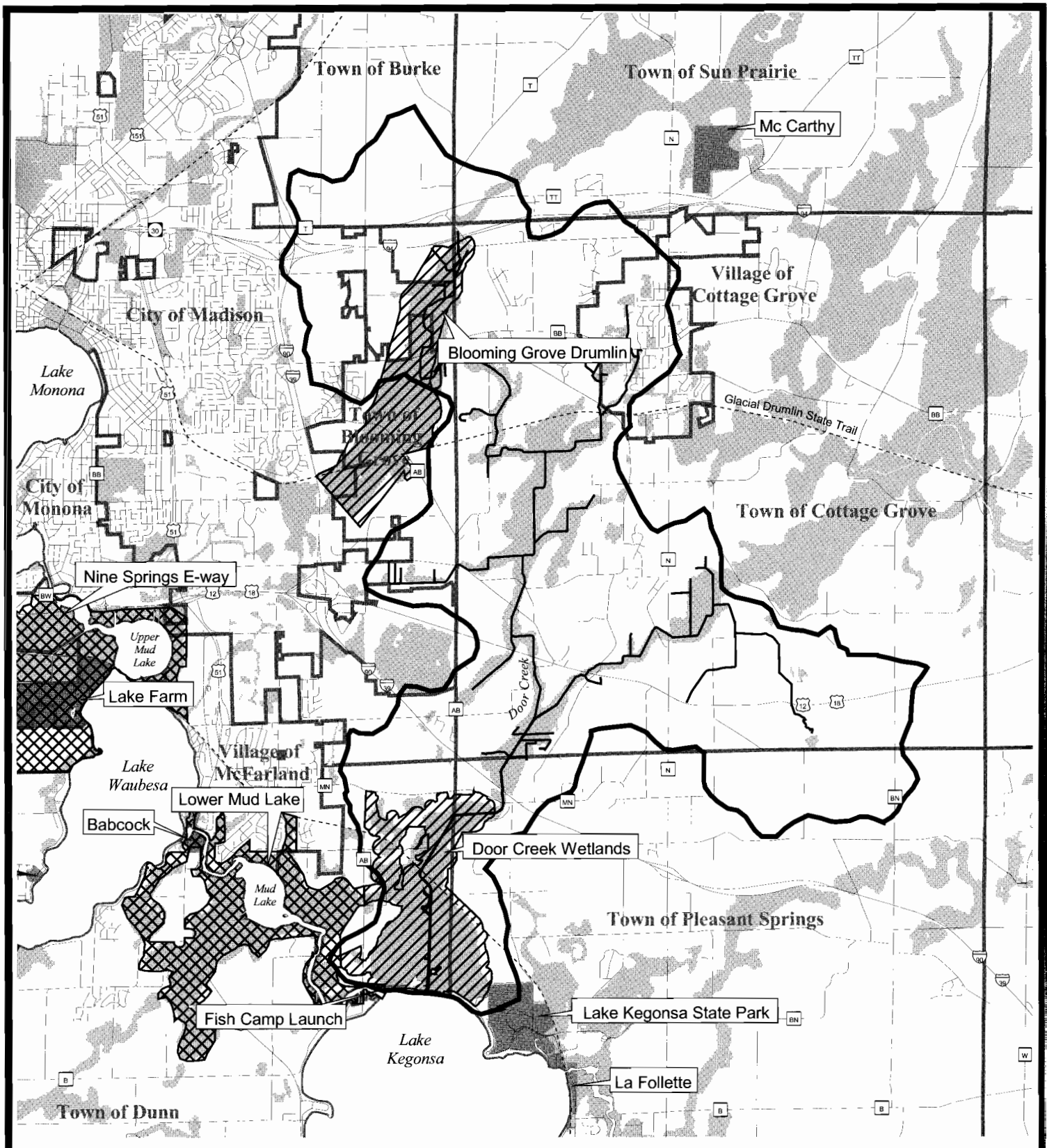
1) **Establish a Door Creek Wetlands Resource Area**

2) **Provide Northern Pike Spawning Habitat**

3) **Promote Wetlands Restoration**

4) **Encourage Stormwater Management**

The following sections build upon the discussion and recommendations by the Committee members, including an evaluation of the resource, the principal concerns, management objectives and recommended actions to achieve those objectives.




# Map 1: Door Creek Watershed

Source: Dane County Parks and Open Space Plan 2000, DCRPC, 9/96.

- Door Creek Watershed Boundary
- Proposed County Resource Area
- Existing County Resource Area
- State and County Park Land
- Open Space Corridor

9/9/99

N

0 1 1/2

Miles

(original RF scale 1:95,040)

Prepared by staff to the DCRPC.

## II. THE DOOR CREEK WETLANDS

**Door Creek flows south 12.7 miles into Lake Kegonsa**

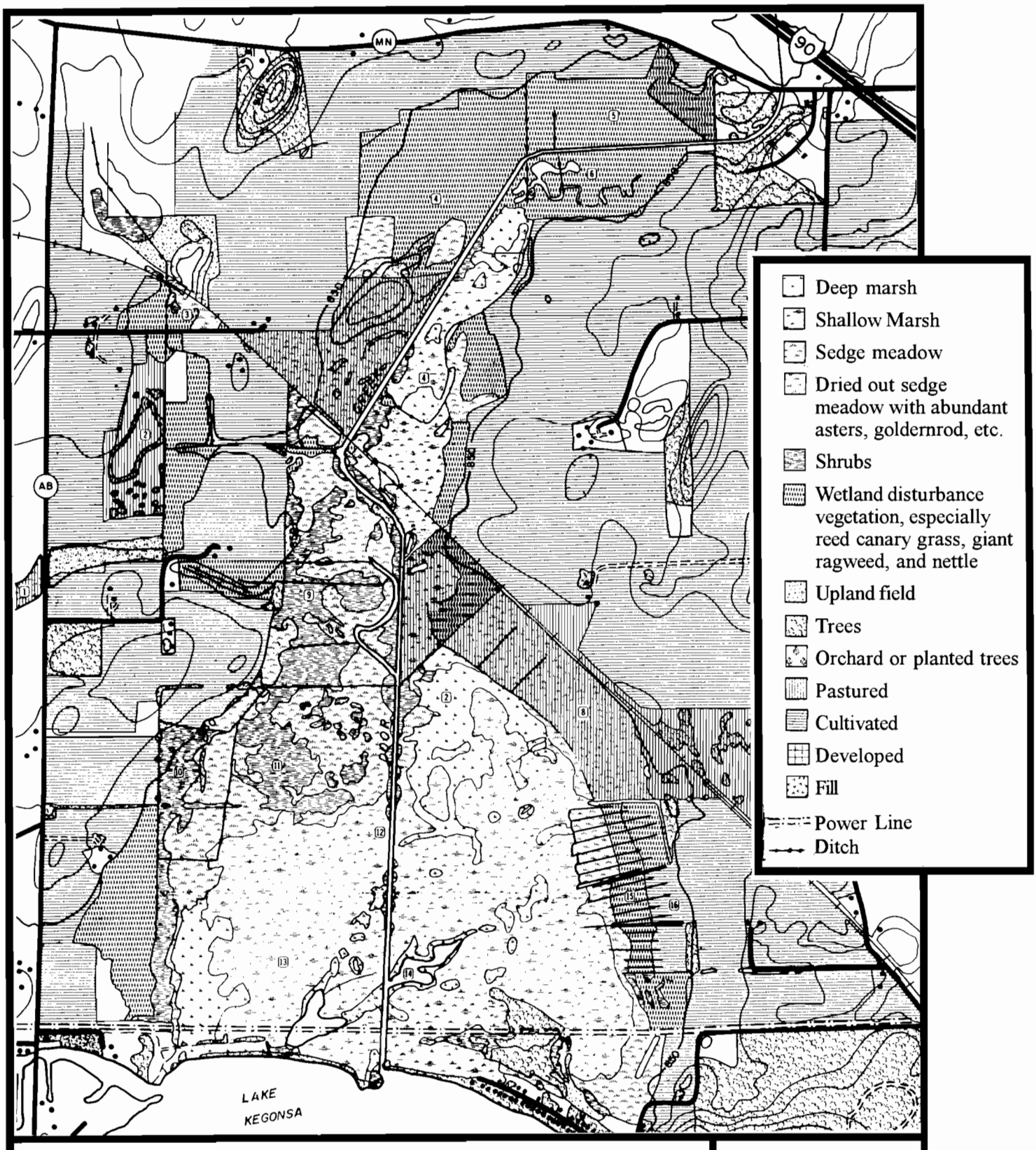
The land in the Door Creek watershed is almost entirely agricultural except for a few small groups of houses. Beginning around 1920, much of Door Creek was straightened and ditched to facilitate drainage and provide more agricultural land. Ditching and straightening of the stream channel, and draining of adjacent wetlands has essentially short-circuited flow through the Door Creek Wetlands. More recently, the northern and western portions of the watershed are rapidly becoming urbanized. Then and now, the sediment and nutrient loading to Lake Kegonsa is very high.

The wetland resources of Door Creek are significant and well documented. Door Creek begins as a tributary stream in the southeast corner of the Town of Burke, and flows south 12.7 miles to Lake Kegonsa (Map 1). Little Door Creek begins in the south central portion of the Town of Cottage Grove and joins the mainstem just south of U.S. Hwy 12/18. Door Creek and its tributaries drain 29.5 square miles of rolling agricultural land in the drumlin-marsh area of eastern Dane County. Map 1 shows the Door Creek Wetlands in relation to other resource features in the county including county and state parks, existing and proposed resource areas, and open space corridors. Open space corridors include critical natural areas and environmental resources identified in the *Dane County Land Use and Transportation Plan, Water Quality Plan,* and *Parks and Open Space Plan* as needing protection from development throughout Dane County.

Door Creek has many water quality problems, both natural and human-influenced. The creek has a low natural baseflow and velocity and is subject to high summer temperatures. Cottage Grove's wastewater discharge to the creek was discontinued in 1982 when it hooked up to the Madison Metropolitan Sewerage District, removing a significant point source of pollution, but also reducing baseflow. Nonpoint source pollution associated with urban development and agricultural practices continues to threaten the resource.

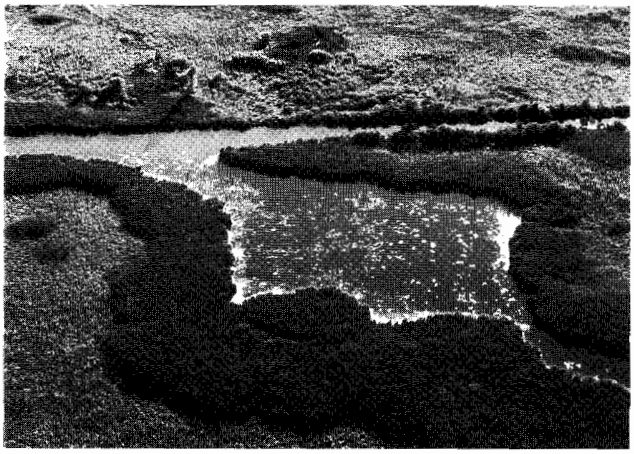
According to a detailed 1974 wetland inventory by Bedford and Zimmerman in *Wetlands of Dane County, Wisconsin,* the Door Creek wetlands rest on one of the major peat deposits of the Yahara River system, immediately north of Lake Kegonsa. The vegetation consists mainly of shallow marsh, with stands of cattail (Map 2). At the north end of the peat deposit, the surface is drier with sedge meadow and shrubs. Still farther north, the ditched watercourse of Door Creek (evident through the

**Vegetation consist mainly of sedge meadow and shallow marsh**




# Map2: Door Creek Marsh

Source: *The Wetlands of Dane County*, Wisconsin. B. Bedford, et. al. 1974



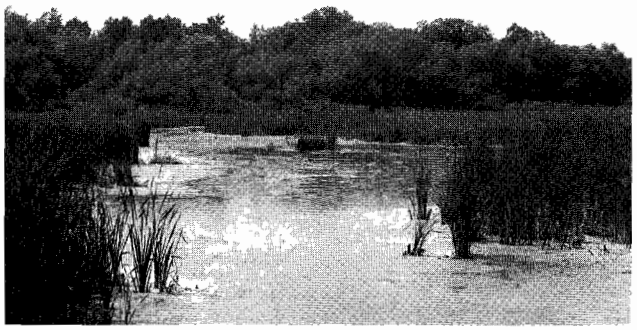
**Wetlands act as large biological filters**

center of the wetland) is lined with sedge meadow and disturbance vegetation. In 1993, a field review conducted by Mead & Hunt, Inc. found the vegetation had changed little from that described by Bedford and Zimmerman in 1974, save for the appearance of small patches of giant reed (*Phragmites communis*) distributed through the shallow marsh. Also, some areas which were formerly grazed have been taken out of pasture. From a drainage standpoint, the ditching of the wetland has had virtually no effect because of the extremely low gradient between the railroad tracks and the mouth, and the proximity of Lake Kegonsa which serves to maintain levels. Suggestions have been made to return flow back into the wetland and to restore some of the natural stream channels.

Wetlands are particularly important for maintaining and improving water quality. Wetlands act as large biological filters which intercept nutrients and other pollutants through deposition and uptake by plants and animals. Wetlands are also important for delaying the timing and release of phosphorus to lakes. For example, research in Lake Mendota suggests that phosphorus captured by wetlands in the spring may actually be released later in the winter where it can be tied up by lake sediments and, therefore, be less available for summer algae blooms the following year. It is primarily the spring loading of phosphorus that results in summer algal blooms. In this manner, wetlands play a critical role in the filtering and release of phosphorus that is an important factor for maintaining or improving water quality in lakes.

In addition to water quality, it is also important to note the relationship between wetlands, wildlife and fisheries management. Wildlife use of the wetland is substantial. Wetlands are important food production areas for both fish and wildlife species. By increasing the available habitat, species diversity increases which leads to healthier, more vibrant ecological communities.

Wetlands also provide important spawning areas and act as nurseries for young fish. In its channeled condition, however, Door Creek supports only a warm water fishery composed primarily of forage species. Where portions of the ditch have collapsed, however, especially in the extreme southern part, an important spawning area does exist for northern pike—a prized sport fish. In other areas of the wetland the reproductive potential is significantly limited by the ditch—especially in the spring when the floodwaters subside, the eggs and small fry become trapped behind the ditch berms. The natural reproduction of northern pike in Door Creek and Lake Kegonsa could be substantially improved by providing more access into (and escape from) the interior marsh areas through lateral connections with the ditch. Although northern pike have been observed spawning as far upstream as Hwy. N on Little Door Creek, lateral access is severely limited.



**Filtering by wetlands provides improved water quality**

In addition, because of a large population of rough and forage fish, the quality of fishing in Lake Kegonsa is not as high as in neighboring Lake Waubesa. A larger northern pike population would help establish a more vigorous sport fishery by preying upon less desirable fish species. In either case, both wildlife and spawning habitat would be substantially improved by restoring the stream's natural drainage pattern and diverting flow through the marsh.

Wetlands also provide important flood control benefits. Wetlands can store tremendous amounts of water (326,000 gallons per wetland acre-foot), releasing the water more slowly and helping alleviate some of the flash flooding experienced downstream. Wetlands throughout the Door Creek watershed have been substantially altered over the last century by dredging, ditching, tiling, filling, and road and utility construction. As a result, many of their functions, like flood control, have been diminished.

Wetland functions of the Door Creek wetlands were documented in a study associated with the Town of Dunn *Open Space Handbook*. Many typical wetland functions are present here, including flood control, aesthetic qualities, wildlife habitat, water quality protection and recreational opportunities. Many of the parcels in the Door Creek marsh have been owned for hunting purposes for many years, and in the survey hunting and trapping were rated very important. Other functions such as preservation of natural habitat, plant and animal diversity, and water quality protection through nutrient and sediment control are also present, but rehabilitation is needed. The wetlands also provide significant opportunity to substantially improve the northern pike spawning habitat in the area. Future potential also exists for scientific research, nature study and appreciation.

**Lake Kegonsa offers recreation for county residents and visitors**

**Habitat and wildlife diversity is important to wetlands**

***Outstanding features of the Door Creek wetlands include:***

- **An extensive, relatively diverse vegetation base that supports a wide array of associated wildlife**
- **A streamside location with marsh edges and openings that provide important spawning habitat for game and forage fishes**
- **A lakeside location that offers aesthetic and recreational resources for residents and visitors to enjoy**
- **Buffering and storage of agricultural and urban stormwater runoff**
- **Environmental greenspace which offers refuge for wildlife and preserves a large segment of the Lake Kegonsa shoreline from development**

## III. DOOR CREEK WETLANDS RESOURCE MANAGEMENT OBJECTIVES

Wetland restoration, protection and enhancement activities are top priorities in Dane County, as well as throughout Wisconsin and the United States. Various federal, state and local programs have been developed to work with landowners and to offer incentives to restore "prior-converted" wetlands back to their natural state, protect existing wetlands from future harm, and to enhance the functions and values of degraded wetlands. These programs are becoming increasingly popular with landowners, which offer incentives and compensation to landowners to restore or leave the land in its natural condition, which is often marginal to begin with because it may be too wet.

Previously ditched and tiled wetlands offer important restoration opportunities since they are relatively easy to restore to their natural condition by restoring the natural hydrology, such as by plugging

**Natural vegetation buffer strips protect streams and wetlands**

ditches and breaking tiles. Natural vegetated buffer strips also are important for protecting wetlands from sediment and waterborne pollutants from surface runoff. Finally, wetlands can be restored through activities such as selective burning and reintroduction of native vegetation. The Door Creek wetlands could provide more of the original resource benefits that have been lost or diminished over the last century.

The Door Creek Wetlands Steering Committee met several times to evaluate information about the wetlands and formulate management objectives. Generally, the Door Creek wetlands are not realizing their full potential. They also need to be protected from upstream land use impacts.

Concerns were explicit that the plan not result in increased flooding of productive pasture or cropland without the landowner's consent, and that every effort should be made to reduce flooding. A review of the history of lake levels on Lake Kegonsa is relevant to this concern.

Under s.31.02, Wis. Stats., DNR may regulate and control the level and flow of water in all navigable waters. According to the *Findings of Fact* contained in the DNR order issued October 5, 1972, the Lake Kegonsa dam and locks were constructed in 1938, pursuant to a permit granted by the Public Service Commission on January 21, 1937 (docket #2-WP-290). From 1950-1970 summer lake levels were held higher than the normal levels of 842.6 feet, established by #2-WP-290. In 1970, the operator was instructed to maintain a summer level of 842.6 feet. During the summer of 1970, lack of rainfall resulted in lower lake levels. Riparian landowners found it difficult to bring their boats in to the piers, and experienced difficulties transporting aquatic plants to shore for disposal. On October 5, 1972, DNR issued an order establishing a minimum summer level on Lake Kegonsa at 842.6 feet, and a maximum summer lake level at 843.1 feet.

In 1979, the Dane County Park Commission and DNR discovered errors in the benchmark reference used in maintaining water levels for Lake Kegonsa. According to the findings of fact contained in the DNR order issued April 11, 1979, prior to 1975 the lake level of Lake Kegonsa was monitored by reading a staff gauge on the railroad bridge upstream from the dam on the east side of the Lake Kegonsa. After 1975, it was more convenient to read a staff gauge on a bridge on the west side of lake. The fact that the gauge on the west side refers to USGS mean sea level datum corrected to 1929, while the railroad gauge refers to USGS datum corrected to 1903, resulted in confusion and two years of lake levels managed four tenths of a foot below the intended levels. On April 11, 1979, DNR issued an order establishing a corrected minimum

**Enrolling farmland in Conservation and Wetlands Reserve programs promote control of agricultural run-off**

summer level on Lake Kegonsa at 843.0 feet, and a maximum summer level at 843.5 feet. While the corrected datum has caused an addition of four tenths of a foot to all the elevations referenced in the 1972 order, **the absolute (or intended) elevations remain unchanged.**

Any person may petition DNR to investigate and establish water level or flow requirements. This may be accomplished by a letter, usually in the form of a complaint. The Committee could not reach consensus on lake levels that would be better than those already established by DNR. A tenuous balance currently exists between competing user groups, with neither group benefiting except at the expense of the other. This is, and will continue to be, a very contentious issue.

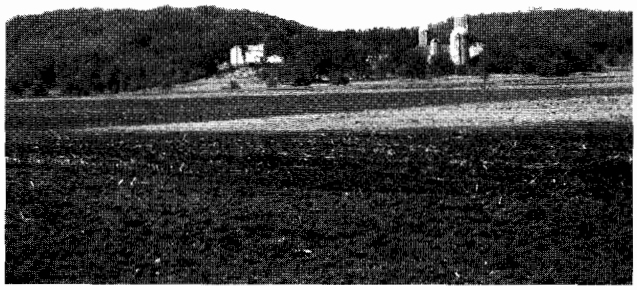
Another concern was that erosion and sediment from upstream construction and development sites can be a significant source of sediment and nutrient loading (on a per acre basis). Also, as cash cropping and the size of farm machinery has increased in recent years, more runoff and sediment is finding its way into the wetland from these sources as well. Effective construction site erosion and stormwater runoff controls should be considered, and programs also promoted to encourage control of agricultural runoff.

Landowners were also concerned that if land acquisition were included in the plan it may open up new areas for public recreation, and that activity invites abuse such as littering, increased traffic and trespassing. Although Resource Areas identified in the *Dane County Parks and Open Space Plan* often provide for limited access, the Dane County Parks Department is experienced in working with local communities and landowners in establishing passive trail systems and less intrusive ways the public can appreciate and enjoy the resource, while at the same time avoiding these other kinds of problems. Access to the marsh is already quite limited by the deep muck, and it is unlikely anyone would stray very far from a footpath or trail that might be located along the edge of the marsh.

A proposed trail has been recommended in the *Parks and Open Space Plan* along the north shore of Lake Kegonsa, which would link Fish Camp Launch with Lake Kegonsa State Park—although, this is planned over the long-term, and as opportunity permits. Land could be acquired through easements or outright purchase, depending on agreements that can be reached with the property owners. DNR has also considered purchase of easements in this area to increase spawning habitat for northern pike. In this manner, county and state agencies become equal partners with landowners who share similar interest and concern for the wetlands, and that access would be controlled.

Based on ideas and concerns, the Committee focused on the following management objectives as the principal underpinnings for the *Door Creek Wetlands Resource Protection Plan*. The plan is voluntary and does not prescribe what landowners can or cannot do on their own land. Rather, the plan establishes a goal or basis for bringing in, coordinating, and focusing outside resources to help restore, protect and enhance the Door Creek Wetlands. In this manner, the state, county, and local governments, local conservation organizations, and private property owners share in promoting mutually agreed upon objectives, and becoming partners, through acquisition or other agreements, described more fully in the sections found below.

**Fish Camp Launch offers recreation and resource appreciation opportunities**



**There are concerns with erosion and runoff from cropland**

## 1. Establish a Door Creek Wetlands Resource Area

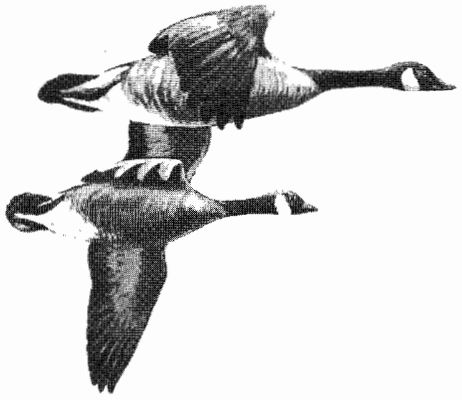
Realizing there are currently not enough resources to develop and implement a detailed plan for the entire watershed, efforts need to be initially targeted to the Door Creek Wetlands. This will also need to be coordinated with, and tie into other ongoing, more comprehensive state and local programs for habitat improvement, wetland restoration, land use and development, and erosion and stormwater runoff controls.

Map 3 is of the Door Creek Wetlands Resource Area (DCWRA ), which has been developed to indicate public intent for focusing limited financial and technical resources where they will have the most beneficial impact. The basis for the DCWRA is outlined in the *Dane County Parks and Open Space Plan* and presented here using the official delineated DNR Wetland Inventory as the base resource of concern. This is a more detailed or refined Resource Area than the one presented in the *Parks and Open Space Plan*, which could only be approximated at time of publication since the base resource had not yet been defined.

DNR wetlands are presented here as the base resource of concern or area of focus mainly because they have protective federal, state and local regulatory status (e.g., wetland permits, zoning restrictions, etc.), they represent a critical natural resource element, and because they are relatively easy to identify in the field. Note, the DCWRA is voluntary in both design and intent, and provides no additional legal effect other than that which already exists under current law (such as local wetland and shoreland zoning). The DCWRA is used primarily to help justify and procure federal, state and local funding, as well as target resource protection, restoration and management efforts where they will have the most beneficial impact.

The DCWRA also includes an upland buffer area of focused management emphasis and activity—approximated on Map 3 by a dashed line. Again, this boundary is voluntary and flexible, depending on the specific characteristics of the site and the desired management practices that can be negotiated with the landowner. This determination is far too site-specific and variable to be included here for each property; rather, the DCWRA establishes a general basis or framework where these agreements can be developed. For example, important concerns might be improving water quality, providing wildlife habitat and spawning areas, protecting archaeological sites, etc.—or combinations thereof. The buffer area establishes these in relation to the base resource so that restoration or protection efforts do not become overly dispersed or disconnected to be effective. A few landowners have requested their property be specifically excluded from the buffer area, which was done.

Upland buffer areas along wetlands, streams and drainageways are important natural features which provide for protection of the resource as well as opportunities for water quality protection, wildlife habitat, scenic beauty, and resource education/appreciation opportunities. Most protection and resource management activities can usually be accomplished within an upland buffer area of about 300 feet from the wetland edge (as shown on the



**Wetlands offer protection for wildlife habitat**


# Map 3: Door Creek Wetland Resource Area

DNR Wetland Boundary

Upland Buffer Area (approximate)

Lower Mud Lake Resource Area

Source: Derived from the Wisconsin DNR Wetland Inventory, 1986.

11/15/99

N

0 2000

Feet

(original RF scale 1:24,000)

Prepared by staff to the DCRPC.