2011

McDill Pond Management Plan

McDill Pond Management Planning Committee

5/5/2011

Plan approved by the McDill Pond Management Planning Committee on May 19, 2011

Plan approved by the McDill Pond Protection and Rehabilitation District on May 19, 2011

Adopted by Village of Whiting on

Adopted by the City of Stevens Point on

Adopted by Portage County on

A special thanks to all those who helped to create the McDill Pond Management Plan and provided the necessary data in the Portage County Lake Study.

McDill Pond Management Planning Committee Members and Resources

McDill Pond Management Planning Committee

Chris Beum
Jim Canales
Michael Derer
Dave and Pam Everson
Steve and Mary Gonske
Gail Gordon
Gordon Hamilton
Ken Lepak
Nannette Martineau
Gordy and July Mouw
Chad Murphy
Chris Okray
Krista Olson
Gary and Amy Oudenhoven
Harry Rice
Henry and Marita Shaw
Diane Shufelt
Sam and Grace Skibicki
Melba Sullivan
Jim Tanguay
Dino Tlachac
Jerome and Robyn Van Laanen
John Vollrath
Mary Zurawski

Wisconsin Department of Natural Resources

Tom Meronek – Fisheries Biologist
Scott Provost – Water Resources Management Specialist

Portage County

Randy Slagg – Conservation Technician

University of Wisconsin –Stevens Point

Nancy Turyk, Jen McNelly– Center for Watershed Science and Education
Linda Stoll – Center for Land Use Education
Dr. Katherine Clancy

Golden Sands RC&D

Paul Skawinski – Regional Aquatic Invasive Species Coordinator

Portage County Lake Study Researchers/Authors

Becky Cook – Water Quality/Watersheds
Dr. Paul McGinley – Water Quality/Watersheds
Dr. Byron Shaw - Water Quality/Watersheds and Upland Sensitive Areas
Dick Stephens – Water Quality/Watersheds and Upland Sensitive Areas
Nancy Turyk – Water Quality/Watersheds/Final Report
Dr. Glenn Bowles – Near Shore Summary
Dr. Alan Haney – Upland Sensitive Areas
Dr. Vince Heig – Upland Sensitive Areas
Dr. Kent Hall – Upland Sensitive Areas
Dr. Bob Bell – Algae
Dr. Robert Freckmann – Aquatic Plants and Upland Sensitive Areas
Dr. Tim Ginnett – Birds
Brad Bulin (Graduate Student) – Birds
Dr. Ron Crunkilton – Fishery and In-lake Habitat
Steve Bradley (Portage County Conservationist) – Land Use Coverages/Watersheds
Lynn Markham – Planning Assistance
Mike Hansen – Portage County Planning Assistance
Dr. Erik Wild – Reptiles and Amphibians/Near Shore Habitat
Rori Paloski (Graduate Student) – Reptiles and Amphibians/Near Shore Habitat

Introduction

The McDill Pond is located in the City of Stevens Point and the Village of Whiting in Portage County, WI. It is valued by those who use and enjoy the pond for its natural beauty, peace and tranquility, wildlife viewing, and recreational opportunities including fishing, enjoying scenery, and boating.

The purpose of this management plan is to provide guidance to protect current good conditions, address existing problems and prevent future problems that may be detrimental to the McDill Pond ecosystem. This management plan was written as part of the second phase of the Portage County Lakes Project. The first phase of the Portage County Lakes Study involved data collection from McDill Pond and 28 other lakes throughout the county. The study provided information on water quality, shoreline development, amphibian habitat, fisheries, aquatic plants, and other parameters.

The purpose of this plan is to provide guidance to protect current good conditions, address existing problems and prevent future problems that may be detrimental to the McDill Pond ecosystem.

This plan was developed by a committee of interested citizens, local organizations, and professionals. Prior to the current plan development a citizen survey was conducted to gather information on citizens' values, opinions, and perceived issues with McDill Pond. A survey was sent to 146 residences within the McDill Pond Protection and Rehabilitation District, 283 residences outside of the district but still within the watershed, and was available online where any interested person could take the survey. Fifty-four citizen surveys from within the District were returned, with a response rate of 37% and forty-five surveys from outside the district but within the watershed were returned, with a response rate of 16%. The members of the McDill Pond management planning committee met monthly over four months to learn about topics related to the pond and to develop this pond management plan.

Background Information

Information in this section was taken from the Portage County Lakes Study and the citizen surveys. The complete lake study document and summarized survey results can be found at: http://www.co.portage.wi.us/planningzoning/PCL/Main%20Page/Main%20Page.shtml

The background information provided from the Portage County Lakes Study helps to give us a good understanding of McDill Pond and its ecosystem. A healthy pond ecosystem is comprised of many components that include in-pond habitat and vegetated shorelands that support aquatic plants, fish, wildlife, good water quality and quantity, absence of aquatic invasive species and more. These components are not only found in McDill Pond but also extend to where the water meets the land and beyond into the watershed. McDill Pond is a reflection of the health and activities that occur in the pond, near the shore, and in the watershed.

McDill Pond is a 261 acre impoundment of the Plover River located in the city of Stevens Point and the Village of Whiting. The pond has a maximum depth of 14 feet (WDNR 2005). This urban pond has a small park below the dam that serves an abundance of waterfowl and an osprey near the northern tip. A public boat launch is present on the east shore of the pond. The dam was first constructed in 1853 for logging purposes. The original dam was replaced in 1959 and is owned and operated by the Village of Whiting.

Watershed

A surface watershed is an area of land where water from precipitation drains from higher elevations towards the pond. McDill Pond's surface watershed is approximately 120,992 acres, going north up the Plover River through Portage County, Marathon County, and into Langlade county. The Portage County portion of the watershed is displayed in Figure 1.

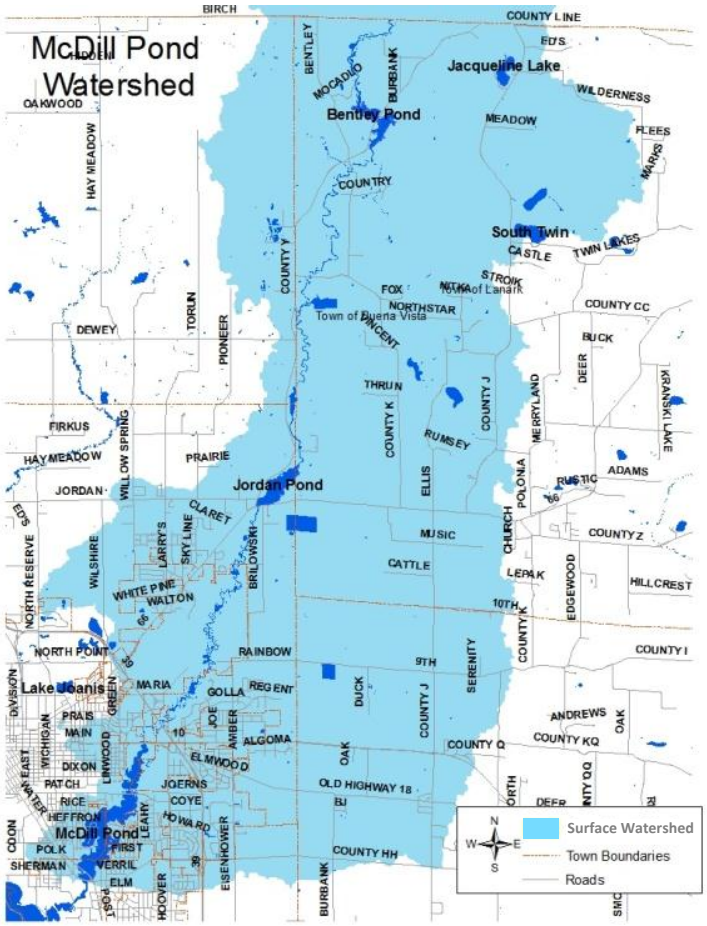


Figure 1. The McDill Pond surface watershed in Portage County.

As water moves across the landscape, the quality can either improve or degrade depending upon what it comes in contact with en route to the pond. Land use types and associated management practices can have a significant impact on water quality. **Though land uses may not easily be changed, land management practices can be modified to improve water quality.**

Land uses within the surface watershed are predominantly forested areas (34%) followed by agriculture (23%). Wetlands (20%) and grasslands (18%) also make up a large area of the watershed. The areas near shore have the most direct impact on habitat and water quality. Around McDill Pond these areas have heavy residential development (See Appendix A).

A groundwater watershed is similar to a surface watershed, except that it is an area of land where the groundwater drains to McDill Pond. Within the groundwater watershed, precipitation soaks into the ground and recharges the groundwater. The groundwater slowly moves towards the pond, and enters it via springs and seeps. In the case of McDill Pond the groundwater watershed is very similar to the surface watershed.

Survey respondents indicated a willingness to change how they manage their land to protect/improve the McDill Pond ecosystem. The top motivators included improving water quality, increasing property value, improving water quantity, providing fish/wildlife habitat, and saving money.

Sensitive Areas

The sensitive areas associated with McDill Pond are defined by lands adjacent to the pond that are particularly valuable to the pond's ecosystem or that would be significantly impacted by most disturbances or development. These areas include undeveloped urban areas

adjacent to the pond that are important locations for migratory birds (See Appendix B). There is also a good-sized wetland north of the pond that follows the course of the Plover River. Currently it is included in Iverson Park.

The habitats of amphibians and reptiles are of importance because they utilize both aquatic and terrestrial habitats and the shoreline interface between the two. These areas of habitat are not only important for reptiles and amphibians but also other aquatic and terrestrial species. **Ideally, much of the shoreland around McDill would be maintained by landowners in a way that provides habitat for wildlife and accommodate their uses.**

The primary amphibian habitat on McDill Pond is located in several areas around the pond. Key features of this habitat include protected areas of marsh with submergent, emergent, and floating-leaf vegetation, as well as downed trees. The good news about the amphibian populations in McDill Pond is that several frog species are present, along with a number of large sections of natural shoreline. However, there is also a high level of shoreline development that has significantly altered the shoreline habitat (See Appendix C).

Shoreline

Portions of the shoreland around McDill Pond are considered disturbed. According to the latest shoreland vegetation survey conducted in 2010 19% of the shorelands around McDill Pond lack vegetation, 8% have vegetation less than a foot deep, 19% have vegetation 1-5 feet deep, 16% have vegetation 5-15 feet deep, 13% have vegetation 15-30 feet deep, and 24% have vegetation that is greater than 30 feet deep. Protecting the existing shoreland vegetation and restoring the disturbed shoreland would improve near shore habitat along with the water quality in the growth, growth of algae and aquatic plants, and the fish and other species that currently comprise the pond's ecosystem. In order to provide habitat and cleanse some runoff, in unincorporated areas in Wisconsin, vegetation from 35 feet from water's edge onto shore is required (with a 30 foot wide access corridor). Even if some landowners don't want to re-vegetate their shorelines to this extent, some restoration is better than none.

Surfaces such as roofs, driveways, roads, patios, and compacted soils increase the amount of runoff moving across the landscape towards McDill Pond, especially where steeper shorelines occur. Runoff that enters the pond can carry a variety of pollutants into the water. Some of the negative impacts in the pond due to additional runoff may include: increased nutrients (such as phosphorus), which can cause algae blooms and excessive plant growth, and increased amounts or changes in the type of sediment. This in turn can lead to cloudy or turbid water, sediment burying critical habitat, and sediment transporting additional contaminants such as bacteria, debris, metals, and pesticides.

According to the citizen survey, 39 of the 54 respondents from within the district owned shoreline property. Of the shoreline property owners, 21 indicated they had shoreland buffers that were greater than 35 feet deep, which meets the county and state shoreland zoning ordinances. These special rules, the shoreland zoning ordinances, apply to the near shore area of the lake. These rules were developed to help protect water quality and habitat of lakes while allowing for access to a lake.

Aquatic Plants

Aquatic plants play many important roles in aquatic ecosystems including providing habitat for aquatic and semi-aquatic organisms; food for fish, waterfowl, and other animals; use of nutrients that would otherwise be used by algae; and modifying/cooling water temperatures on hot days.

According to R. Freckmann (UWSP), in 2003 there were **65** species of aquatic macrophytes or plants that have been identified in McDill Pond or on the wet areas of shore. Many of these species are found in the back bays which provide unique habitat. This number of species is above average when compared to other Portage County lakes. The increase in the abundance of curly leaf pondweed and the recent arrival of Eurasian water-milfoil and some of the techniques that are used to control these species threaten the quality and diversity of the native aquatic plants of McDill Pond. Although much of the shoreline consists of houses and lots, with considerable lawn areas, some areas of native vegetation have been left. Especially notable for diverse, mostly native vegetation is the area in the vicinity of Koziczkowski Park and the Godfrey-Maybelle Erickson Natural Area. This area should be monitored for non-native invasive species of aquatic and terrestrial plants.

When asked about the abundance of aquatic plants in McDill Pond, respondents indicated that they were unsure or felt that the growth was dense or choked. When asked if plant growth affected a respondents enjoyment of the pond, respondents were virtually tied between yes and no. Respondents also indicated that July was the month with the densest plant growth, which is typical for most Wisconsin lakes.

Water Quality and Land Use

When asked about McDill Pond's water quality, the majority of survey respondents felt the water quality was good or fair and felt the water quality hadn't changed during the period that they were familiar with it. Survey respondents also indicated the quality of pond water had some impact both economically and on their personal enjoyment of the pond.

The assessment of water quality in a pond involves a number of measures including temperature, dissolved oxygen, water chemistry, chlorophyll *a*, and algae. Each of these measures plays a part in the ponds overall water quality.

Chloride concentrations, and to a lesser degree sodium and potassium concentrations, are commonly used as indicators of how strongly a pond is being impacted by human activity. In McDill Pond potassium levels measured in 2002/03 were low, but sulfate, chloride, and sodium were all elevated. Although these constituents are not detrimental to the aquatic ecosystem, they indicate that sources of contaminants (road salt, fertilizer, and/or animal waste) are entering the pond from either surface runoff or via groundwater.

Atrazine, an agricultural herbicide, was also detected in McDill Pond. Some toxicity studies have indicated that even at low levels reproductive system abnormalities can occur in frogs. The presence of atrazine indicates that other agri-chemicals may also be entering and present in McDill Pond.

The temperature in McDill Pond was generally mixed throughout much of the year. Dissolved oxygen was plentiful enough to support many species of aquatic biota through the year.

Water clarity is a measure of how deep light can penetrate the water. It is an aesthetic measure and is related to the depth that rooted aquatic plants can grow. Water clarity can be affected by sediment, algae, and color in water. Clarity measurements in McDill Pond ranged from 4.5 to 9 feet, with a 2002/2003 average of about 6 feet. June had the best water clarity and May had the poorest. Fluctuations in water clarity throughout the summer are normal as algae and aquatic plant populations and sedimentation increase and decrease; however, changes in water quality are best determined with long-term records. These measurements are currently made by citizen volunteers and should be continued.

Chlorophyll *a* is a measure of algae in McDill Pond. Chlorophyll *a* concentrations in the pond ranged from 2.6 to 16.18 mg/L. Any reading over five is considered to be high and is indicative of algae blooms.

The27 algal genera identified during the sample periods were relatively common and none of those associated with toxins or health issues. The algal community relative to the chlorophyll *a*, phosphorus, and nitrogen values for McDill Pond presents a picture of a mesotrophic (middle aged) lake (B. Bell).

Nutrients (nitrogen and phosphorus) are important measures of water quality in lakes and ponds because they are used for growth by algae and aquatic plants. In McDill Pond the phosphorus concentrations are variable throughout the year, with some being high. Nitrogen concentrations, especially in the form of nitrate, were also elevated which can enhance the growth the plants and support algae blooms throughout the summer.

Nitrogen concentrations, especially nitrate in McDill Pond were elevated, which is easily used for growth by aquatic plants and algae. Concentrations in 2002/03 ranged from 1.5 to 3.17 mg/L and all readings were well above the spring concentrations of 0.3 mg/L needed to fuel algae growth throughout the summer.

Phosphorus is an element that is essential to most living organisms including plants. Sources of phosphorus can include naturally occurring phosphorus in soils, wetlands, and small amounts in groundwater. Sources from human influence include fertilizers, soil erosion, agricultural and residential runoff, septic systems, and animal waste.

In McDill Pond the aquatic plant and algae growth is most responsive to phosphorus due to its relative limited supply with respect to other elements necessary for growth. Increases of small amounts of phosphorus can result in increased abundance of aquatic plants and algae. Phosphorus concentrations in McDill Pond were variable throughout the year and ranged from 12 to 59 ug/L. Average total phosphorus (TP) concentrations in spring/fall for 2002/2003 were 29.2 ug/L.

The Wisconsin DNR's phosphorus criteria value for an impoundment is 40 ug/L. Average summer concentrations at or above this value would result in noticeably degraded water quality. The average summer total phosphorus concentrations in McDill Pond was 34.2 ug/L in 2002/03 which is below the DNR's criteria. Total phosphorus is currently monitored in McDill Pond by citizen volunteers. This monitoring should be continued so that any changes are noted before additional problems occur.

Managing phosphorus in the McDill Pond watershed is key to protecting the pond itself. All landowners throughout the watershed should make changes that reduce phosphorus and sediment movement from the land to the water. This is particularly important for properties near shore or that drain directly to the Plover River or McDill Pond. **Positive land management practices and land uses can result in good water quality in the pond.** Phosphorus inputs to the pond can be controlled through the use of many different best management practices (BMP's) that minimize the movement of runoff, sediments, nutrients, and pesticides to the pond. BMPs that should be used near shore and throughout the watershed include the development of water quality-based nutrient management plans for agricultural land, only applying phosphorus and nitrogen from fertilizer or manure based on soil tests for turf or specific crops, providing cover on the landscape and/or appropriate mitigation when open soils are necessary during construction or cropping, use of cover crops, properly storing manure, and manure application only when the ground is not frozen. Some of the near shore land use practices that can decrease the inputs of

phosphorus to the pond include leaving native vegetation (trees, bushes, flowers and native grasses), eliminating the use of fertilizer, minimizing runoff/increasing infiltration, and minimizing and securing exposed soil. Reducing stormwater runoff can and should be accomplished by all landowners in the District through the use of rain gardens, swales, and other depressions on the landscape, rain barrels, and when possible, minimizing impervious surfaces. Municipalities should design road ditches to infiltrate water into the ground rather than move it quickly to the Plover River and McDill Pond. This is relatively easy to accomplish with the sandy soils found in Portage County in the McDill Pond watershed. The Portage County Land Conservation Department is a local organization that can provide assistance to landowners that want to reduce impacts to McDill Pond from their property.

Future degradation of water quality in McDill Pond can be minimized with thoughtful land use planning throughout the watershed. This includes locating roads away from the pond, diverting runoff to areas where it can infiltrate rather than runoff to the lake, limiting withdrawal of groundwater, and controlling runoff, nutrient, and chemical inputs from new and existing developments and agriculture.

The goal for this plan is to keep it as it is or to better then it is.

Recreation

According to respondents of the citizen survey, the **most popular activities on McDill Pond include canoeing/kayaking, walking, biking, enjoying wildlife, solitude, and enjoying scenery.**

Conflicts between users do not appear to be of concern on McDill Pond as the majority of respondents indicated that while they saw others on the pond they were not disturbed by them.

Fishing is a popular recreational activity that is enjoyed by many on the pond. McDill supports a fishery of panfish, bass, and northern pike. The fisheries populations in McDill Pond are still recovering from the water level manipulation that was done in 2009. The area WDNR fisheries biologist has expressed some concern over the high number of carp present in the pond. The carp population should be monitored to see if it becomes a nuisance.

When survey respondents were asked to rate their fishing experiences on McDill Pond, the majority of respondents felt that the quality of fishing was poor and indicated they rarely caught fish.

Goals, Objectives, and Actions

The overall goal for McDill Pond is to keep it as it is or to better then it is.

The following goals, objectives, and actions were derived from the values and concerns of the members of the McDill Pond Planning Committee including representatives from the McDill Pond Protection and Rehabilitation District and local citizens and are based on the science used to assess McDill Pond and its ecosystem. Implementing the goals, objectives, and actions of the McDill Pond Management Plan should protect the scenic beauty, peacefulness, recreational opportunities, and water quality for current and future generations. These goals are intended to be met through education, actions, encouragement, and incentives.

Resources that are listed within the plan include primary organizations or individuals that would be able to provide information, suggestions, services and/or support to accomplish an action.

A management plan is a living document that changes over time to meet the current needs, challenges, and desires. **The goals, objectives, and actions listed in this plan will be reviewed and updated with any**

necessary changes by the McDill Pond planning committee, the McDill Pond Protection and Rehabilitation District, interested citizens, and representatives from municipalities and agencies annually in the fall with the assistance of UWSP and Portage County staff. Updates will be provided to the McDill Protection and Rehabilitation District, Village of Whiting, the City of Stevens Point, Portage County, the Wisconsin Department of Natural Resources, and any other entity adopting the plan.

The McDill Pond Inland Lake Protection and Rehabilitation District is the holder and responsible party for the McDill Pond Management Plan.

Shorelands and Critical Habitat

Shorelines are some of the most important habitat near lakes and ponds for aquatic and terrestrial wildlife, such as turtles, frogs, birds, and many other creatures. Shoreland vegetation helps to slow runoff moving to the pond which allows some of the sediment and pollutants to settle on to the landscape before it enters the pond. Restoring and protecting shorelines can also help to provide scenery, solitude, and privacy, as well as natural space for pond residents to enjoy nature, which was valued by citizens in the survey. This important region around the lake is the primary area where shoreland owners can make the decision to positively or negatively impact the pond's water quality and ecosystem, depending on the way they manage their property. There many landscaping options that landowners can employ that comprise good land management practices that result in improved habitat and water quality.

Critical habitat areas or sensitive areas are important places in and near McDill Pond that are essential to keeping a healthy sustainable ecosystem. These sensitive areas within McDill Pond may offer critical or unique fish and wildlife habitat or offer water quality or erosion control benefits to the millpond (See Appendix D).

Vision: McDill Pond will have healthy shoreland vegetation that supports healthy wildlife, fisheries, and ecosystems intact that also allows for access and visual enjoyment by shore landowners.

Goal 1: Healthy shoreland vegetation will be protected and disturbed shoreland vegetation will be restored.

Objective 1.1: Shore landowners around McDill Pond will understand why this land is important and their roles in protecting these areas. They will make informed land management decisions that minimize their water quality and habitat impacts.

Actions	Lead person/group	Start/end dates	Resources
Monitor the shoreland vegetation around McDill Pond annually and share the results with property owners.	McDill Pond Inland Lake Protection & Rehabilitation District		Portage County Land Cons Dept UWEX Lakes
Continue explore financial incentives for people that have large (greater than 35 ft deep) vegetative buffers.	McDill Pond Inland Lake Protection & Rehabilitation District	Has already been started	UWEX Lakes UWSP
Provide education material about the phosphorus fertilizer ban.	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes UWSP
Put restrictive covenants on undeveloped lots to maintain vegetative buffers when lots are eventually developed	McDill Pond Inland Lake Protection & Rehabilitation District		City of Stevens Point UWEX Lakes
Host shoreland vegetation demo sites around McDill Pond	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes Portage County Land Cons Dept

Objective 1.2: Ninety three percent of the shore around McDill Pond will be vegetated.

Actions	Lead person/group	Start/end dates	Resources
Protect existing healthy shoreland vegetative buffers through shoreline credits (discount on district fees) and continued education.	McDill Pond Inland Lake Protection & Rehabilitation District		Portage County Land Cons Dept UWEX Lakes
Work with school groups, scout groups, and others to restore shorelines	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes Portage County Land Cons Dept Portage Co. Master Gardners
Restore disturbed shoreland by providing education, technical, and financial assistance for shore landowners.	McDill Pond Inland Lake Protection & Rehabilitation District		
Increase shoreland buffers by 10% in the next three years	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes Portage County Land Cons Dept
When the boat landing is redone encourage the use of native vegetation along the shoreland buffer	McDill Pond Inland Lake Protection & Rehabilitation District		

Objective 1.3: Work to ensure that shoreland zoning ordinances are developed and implemented to protect the health of McDill Pond.

Actions	Lead person/group	Start/end dates	Resources
Work with proper officials to develop a shoreland zoning ordinance for McDill Pond.	McDill Pond Inland Lake Protection & Rehabilitation District		City of Stevens Point UWEX Lakes UWSP
Ensure that landowners and local officials understand the shoreland zoning ordinance and how to implement it.	McDill Pond Inland Lake Protection & Rehabilitation District		

Objective 1.4: Protect undeveloped and vegetated areas around McDill Pond.

Actions	Lead person/group	Start/end dates	Resources
Encourage the continued protection of undeveloped city owned property	McDill Pond Inland Lake Protection & Rehabilitation District		City of Stevens Point UWEX Lakes UWSP
Support conservation easement for willing landowners to protect their land	McDill Pond Inland Lake Protection & Rehabilitation District		

Water Quality and Land Use

McDill Pond is host to a variety of plants, insects, fish, amphibians, and a variety of other animals that all depend on good water quality in the pond. Survey respondents indicated they felt the water quality in the pond was good or fair and that water quality had stayed the same over time. Respondents also indicated that water quality influenced their enjoyment of the pond and impacted their perceived aesthetic value. The results from the Portage County Lakes Study indicate that McDill Pond has fair water quality and could use some improvement. Currently, the pond occasionally has high concentrations of phosphorus during parts of the year and nitrogen that could fuel excess plant and algae growth.

Vision: A clear, easily navigable, beautiful lake without excessive maintenance. Supports a healthy fishery, wildlife, recreational uses, healthy ecosystem.

Goal 2: Water quality in McDill Pond will be below problematic concentrations. Phosphorus will be at 2002/03 concentrations of 35 ug/L, Nitrate at or below 0.3 mg/L in spring, and have Secchi Disk readings of 10 ft.

Objective 2.1: Continue monitoring to determine if we are meeting the phosphorus and nitrogen goals

Action	Lead person/group	Start/end dates	Resources
Continue monitoring phosphorus and chlorophyll *a* in McDill Pond during the summer following CLMN methods.	McDill Pond Inland Lake Protection & Rehabilitation District		UWSP WDNR
Continue water clarity monitoring on McDill Pond and sharing results with the state CLMN program.	McDill Pond Inland Lake Protection & Rehabilitation District		WDNR
Add additional water quality monitoring sites at the channels on the McDill Pond	McDill Pond Inland Lake Protection & Rehabilitation District		UWSP WDNR
Develop flow monitoring sites on the channels in McDill Pond	McDill Pond Inland Lake Protection & Rehabilitation District		UWSP

Objective 2.2: Shoreland and watershed landowners will minimize their impacts to McDill Pond through land management practices that reduce runoff and minimize the use of fertilizers and chemicals.

Action	Lead person/group	Start/end dates	Resources
Educate shoreland owners on how to implement best management practices on their property related to stormwater management including installation of rain gardens, swales, rain barrels, reducing impervious pavement, etc. Host Demo sites and workshops	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes Portage County Land Cons Dept
Host a shoreland soil testing program to show the actual needs for phosphorus and nitrogen on lawns	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Portage County Land Cons Dept
Educate shoreland owners on changes they could make on their property related to nutrients and chemical use.	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes Portage County Land Cons Dept
In channel areas, work with non-riparian nearby landowners on special education efforts about nutrients from runoff	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes UWSP
Support re-directing runoff away from the pond during road reconstruction	McDill Pond Inland Lake Protection & Rehabilitation District		City of Stevens Point DOT
Ask that when boat landing is redone runoff from parking lot boat landing is reduced/non-exsitent	McDill Pond Inland Lake Protection & Rehabilitation District		WDNR
Encourage the Portage County Land Conservation Dept. to work with watershed residents on developing water quality based nutrient management plans	McDill Pond Inland Lake Protection & Rehabilitation District		Portage County Land Cons Dept
Continue to work with city to divert storm sewer drainage from old fleet farm to drainage ponds.	McDill Pond Inland Lake Protection & Rehabilitation District		Portage County Land Cons Dept City of Stevens Point Plan Commission
Encourage landowners to take advantage of Portage County Land Conservation Department Programs and Staff on advising and installing BMP's	McDill Pond Inland Lake Protection & Rehabilitation District		Portage County Land Cons Dept

Objective 2.3: The City of Stevens Point and the Village of Whiting will understand how their decisions impact the water quality of McDill Pond and will make good decisions.

Action	Lead person/group	Start/end dates	Resources
The city plan commission and village board will be knowledgeable about the impact their decisions have on the pond and will seek to minimize negative impacts.	McDill Pond Inland Lake Protection & Rehabilitation District		City of Stevens Point Plan Commission Village of Whiting
Work with the city as it develops its stormwater management plan to choose strategies that protect McDill Pond water quality. Invite a city representative to attend a meeting and explain what is being developed	McDill Pond Inland Lake Protection & Rehabilitation District		CLUE City of Stevens Point

Aquatic Plants and Aquatic Invasive Species

Aquatic plants comprise an essential part of McDill Pond's ecosystem; some fish and other aquatic biota and water dependent terrestrial life depend on aquatic plants for habitat, food, and spawning areas. Aquatic plants help to baffle waves thus reducing shoreline erosion, and some species of plants (water lilies) help to keep the water cool in the summer. Healthy aquatic plant communities, along with a vigilant watch, will help to limit any new aquatic invasive species from becoming established in McDill Pond. The majority of citizen survey respondents indicated that the amount of plant growth in McDill Pond was dense or that the pond was choked with plant growth. This can negatively affect recreation on the pond, enjoyment by users, and economic benefits.

Vision: McDill Pond will have healthy native vegetation present in the pond, while reducing current and preventing new aquatic invasive species.

Goal 3: Aquatic plants in McDill pond will be managed in a way that considers a healthy aquatic ecosystem balanced with realistic recreational opportunities.

Objective 3.1: The McDill Pond aquatic plant management plan (APM) will provide guidance for management activities.

Actions	Lead person/group	Start/end dates	Resources
Refer to the McDill Pond APM for guidance on management options and work with regional AIS coordinator and WDNR aquatic plant specialist.	McDill Pond Inland Lake Protection & Rehabilitation District		WDNR Portage County Invasive Species Coordinator
Update McDill Pond APM as needed.	McDill Pond Inland Lake Protection & Rehabilitation District		UWSP UWEX Lakes
Continue harvesting aquatic plants in the channels on McDill Pond	McDill Pond Inland Lake Protection & Rehabilitation District		UWSP
Update Rapid Response Plan (in this document) annually.	McDill Pond Inland Lake Protection & Rehabilitation District		UWSP
Annually measure the truckloads of aquatic plants removed during harvesting.	McDill Pond Inland Lake Protection & Rehabilitation District		

Goal 4: District board/members will be informed about aquatic plants to help them make appropriate decisions about aquatic plant management.

Objective 4.1: Manage the amount of Eurasian watermilfoil and curlyleaf pondweed in Mcdill Pond so that no more than 20% of McDill Pond is infested.

Actions	Lead person/group	Start/end dates	Resources
Share information about the importance and maintenance of native aquatic plants in the pond through lake meetings, e-mails, welcome packet, newsletter, website	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes WI DNR Lakes Specialist UWSP
Continue Clean Boats Clean Waters	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes
Maintain signage at boat landing about invasive species	McDill Pond Inland Lake Protection & Rehabilitation District		WDNR
Continue with AIS grant funding to actively and aggressively manage the Eurasian watermilfoil in McDill Pond	McDill Pond Inland Lake Protection & Rehabilitation District		WDNR Portage County Invasive Species Coordinator

Goal 5: New aquatic invasive species will be prevented from becoming established and the current aquatic invasive species present in McDill Pond will be controlled.

Objective 5.1: Prevent any new aquatic invasive species from entering McDill Pond. If a species is professionally identified in the pond, quickly identify its presence and remove it using proper procedures and techniques.

Actions	Lead person/group	Start/end dates	Resources
Learn about native and invasive aquatic plants in the pond through plant identification workshops.	McDill Pond Inland Lake Protection & Rehabilitation District		Golden Sands RC&D Invasive Species Coordinator
Form a group of citizens to routinely monitor for new aquatic invasive species.	McDill Pond Inland Lake Protection & Rehabilitation District		Golden Sands RC&D Invasive Species Coordinator UWEX Lakes
Utilize the aquatic invasive species Rapid Response Plan if new invasive species are found.	McDill Pond Inland Lake Protection & Rehabilitation District		UWSP
Continue monitoring in the area in the vicinity of Koziczkowski Park and the Godfrey-Maybelle Erickson Natural Area for non-native invasive species	Dr. Kent Hall		

Fishing and Recreation

McDill Pond provides many recreational opportunities that can be enjoyed by residents and local citizens. Iverson Park is located just upstream of McDill Pond, providing habitat and home for fish and wildlife and walking trails and picnic grounds for people. Based on survey results, the most popular recreational activities on McDill Pond include canoeing/kayaking, walking biking, enjoying wildlife, solitude, and enjoying scenery. Although a number of people use McDill Pond each day, since these are quiet activities we would anticipate few user conflicts. Should uses change in the future to include noisier activities, the District would need to be aware of the potential for conflicting activities.

The urban setting of McDill Pond provides easy access to fishing opportunities right in town. Angling is enjoyed by individuals and families living on or near McDill Pond. Management of the shorelands, the lake bed, aquatic plants, and stormwater runoff can all affect the fishery in positive or negative ways.

Vision: *The McDill Pond Planning Committee envisions maintaining navigable waters for recreational purposes on McDill Pond.*

Goal 6: Still offer a variety of recreational opportunities on McDill Pond that protect the healthy ecosystem and safety of lake users.

Objective 6.1: Continue and create additional silent sports/ low impact recreational opportunities on McDill Pond that promote the scenic nature of the pond.

Actions	Lead person/group	Start/end dates	Resources
Ask Tom M. (WDNR) if he could notify the Lake District about when they will pull out the dock and then notify lake residents through the newsletter.	McDill Pond Inland Lake Protection & Rehabilitation District		WDNR
Make sure the waters of McDill Pond are navigable for recreational use.	McDill Pond Inland Lake Protection & Rehabilitation District		
Maintain the silt trap as needed	McDill Pond Inland Lake Protection & Rehabilitation District		UWSP
Don't install dock at Heffron St. due to lack of parking space for existing neighbors	McDill Pond Inland Lake Protection & Rehabilitation District		
Provide information to lake residents and lake users about the no-wake zone 100 ft. from shore through courtesy code, sign, and newsletter	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes WDNR UWSP
Maintain a no-wake zone in Spring Slough due to the sensitive areas there.	McDill Pond Inland Lake Protection & Rehabilitation District		City of Stevens Point
Work with the sheriff's department on having a boat patrol on McDill Pond	McDill Pond Inland Lake Protection & Rehabilitation District		Portage County Sherrifs department

Vision: The McDill Pond planning committee envisions a healthy fishery that is comprised of quality-sized fish that are edible.

Goal 7: The fishery in McDill Pond resemble pre-draw down 2008/2009 ratios.

Objective 7.1: Work with the WDNR to create management strategies to reach 2008/2009 ratios.

Action	Lead person/group	Start/end dates	Resources
Request regular fish sampling/surveys to monitor/evaluate fish populations.	McDill Pond Inland Lake Protection & Rehabilitation District		WDNR UWSP
Request the results of the fish survey from the DNR	McDill Pond Inland Lake Protection & Rehabilitation District		WDNR
Check on the health/quality of the fish annually.	McDill Pond Inland Lake Protection & Rehabilitation District		
Work with WDNR to explore using a creel survey to collect data on catch rates. Explore having water craft inspector do creel surveys – check with Tom M.	McDill Pond Inland Lake Protection & Rehabilitation District		WDNR
Continue to monitor the carp situation to determine if it becomes more serious – Explore taking some type of action if the situation becomes more serious.	McDill Pond Inland Lake Protection & Rehabilitation District		WDNR
Survey the Isaac Walton League Fisheree about their annual catches.	McDill Pond Inland Lake Protection & Rehabilitation District		Isaac Walton League
Provide education about using catch and release for larger size fish in McDill Pond – Ask watercraft inspector(s) to remind people about it.	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes UWSP

Organization/Communication

Many of the goals outlined in this plan are focused on disseminating information to pond and watershed residents and pond users, ultimately to help them make informed decisions that will result in a healthy ecosystem in McDill Pond that is enjoyed by many people. There is no single best way to distribute information to those that enjoy and/or affect McDill Pond, so the planning committee has identified a variety of options to communicate with one another and in the community. Working together on common values will help to achieve the goals that have been outlined in this plan.

Goal 8: Every riparian or watershed resident is able to access/obtain information regarding McDill Pond and the actions outlined in the management plan

Objective 8.1: Reach out to McDill Pond landowners and the community using a variety of communication methods.

Action	Lead person/group	Start/end dates	Resources
Work with Marathon County Lakes on management strategies for the Plover River	McDill Pond Inland Lake Protection & Rehabilitation District		UWSP
Meet with other businesses (such as the Stevens Point Country Club) and other organizations (Lake associations, etc) to discuss management strategies	McDill Pond Inland Lake Protection & Rehabilitation District		UWEX Lakes
Keep in touch with other landowners along the entire Plover River through e-mail and mailings	McDill Pond Inland Lake Protection & Rehabilitation District		UWSP
Support a group formation for the Plover River	McDill Pond Inland Lake Protection & Rehabilitation District		
Continue to utilize welcome packet to distribute information to landowners	McDill Pond Inland Lake Protection & Rehabilitation District		
Host social opportunities for McDill Pond Riparian landowners (parties, cookouts, etc)	McDill Pond Inland Lake Protection & Rehabilitation District		
Continue to use the newsletter via e-mail and mail drops	McDill Pond Inland Lake Protection & Rehabilitation District		
Continue the use of the website	McDill Pond Inland Lake Protection & Rehabilitation District		
Be sure to update officer contacts with UWEX Lakes	McDill Pond Inland Lake Protection		UWEX Lakes

	& Rehabilitation District		
Send lake district representative to annual lakes convention	McDill Pond Inland Lake Protection & Rehabilitation District		
Send lake district representative to lake leaders institute	McDill Pond Inland Lake Protection & Rehabilitation District		

McDill Pond Aquatic Invasive Species Rapid Response Plan 2011

Survey/Monitor

1. **Learn to survey/monitor the lake** from:

   Water Resources Management Specialist
   Wisconsin Dept. of Natural Resources
   Scott Provost
   473 Griffith Ave.
   Wisconsin Rapids, WI, 54494
   Phone: 715-421-7881
   E-Mail: Scott.provost@wisconsin.gov

   Portage County Aquatic Invasive Species (AIS) Coordinator
   Golden Sands RC&D
   1462 Strongs Ave.
   Stevens Point, WI 54481
   Phone: 715-343-6278
   E-Mail: skawinsp@co.portage.wi.us

2. **Survey the Lake monthly/seasonally/annually**

What to Do When You Find a Suspected Invasive Species

1. **Collect Specimens or Take Pictures**

   - Collect, press, and dry a complete sample. This method is best because a plant expert can then examine the specimen.

   Or --

   - Collect a fresh sample. Enclose in a plastic bag with a moist paper towel and refrigerate.

   Or --

   - Take detailed photos (digital or film) and send them by mail or e-mail.

   Regardless of method used, provide as much information as possible. Try to include flowers, seeds or fruit, buds, full leaves, stems, roots, and other distinctive features. In photos, place a coin, pencil, or ruler for scale. Deliver or send specimen ASAP.

   Note Location
   (Provide one or more of the following)

   - Latitude & Longitude
   - UTM (Universal Transverse Mercator) coordinates
   - County, Township, Range, Section, Part-section
   - Precise written site description, noting nearest city & road names, landmarks, local topography

   If possible, give the exact geographic location using a GPS (global positioning system) unit, topographic map, or the Wisconsin Gazetteer map book. If using a map, include a photocopy with a dot showing the plant's location. You can use TopoZone.com to find the precise location on a digital topographic map. Click the cursor on the exact collection site and note the coordinates (choose UTM or Latitude/Longitude).

McDill Pond Aquatic Invasive Species Rapid Response Plan 2011

2. **To Positively I.D. the species send or bring specimen and additional information**
    - Collection date & county
    - Your name, address, phone, email
    - Exact location (Latitude/Longitude or UTM preferred, or Township/Range/Section)
    - Plant name (common or scientific)
    - Land ownership (if known)
    - Population description (estimate number of plants, area covered)
    - Habitat type(s) where found (forest, field, prairie, wetland, open water)

    Send or bring specimen to:

Portage County AIS Coordinator
Golden Sands RC& D
1462 Strongs Ave.
Stevens Point, WI 54481

Wisconsin Dept. Natural Resources
Invasive Plant Education, Early Detection, and Mapping Specialist
Brendon Panke
WI Dept. of Natural Resources
P.O. Box 7921
Madison, WI 53707-7921
Phone: (608) 267-7438
E-Mail: invasiveplants@mailplus.wisc.edu

UW-Stevens Point Herbarium
301 Daniel O. Trainer Natural Resources Building
Stevens Point, WI 54481
Phone: 715-346-4248
E-Mail: ejudziew@uwsp.edu

3. **Once the specimen is dropped off or sent for confirmation, make sure to contact:**
Portage County AIS Coordinator
Golden Sands RC& D
Contact: Paul Skawinski
Address: 1462 Strongs Ave. Stevens Point, WI 54481
Phone: 715-343-6214
E-Mail : skawinsp@co.portage.wi.us

4. **If an invasive species is confirmed, Paul Skawinski will contact the following people along with the contact list of citizens.**

Wisconsin Department of Natural Resources
Water Resources Management Specialist
Scott Provost
473 Griffith Ave.
Wisconsin Rapids, WI, 54494
Phone: 715-421-7881
E-Mail: Scott.provost@wisconsin.gov
Who will contact them: Portage County AIS Coordinator

McDill Pond Protection and Rehabilitation District
Contact: Krista Olson – Board Member
E-mail: McDillPond@charter.net
Who will contact them: Portage County AIS Coordinator

McDill Pond Aquatic Invasive Species Rapid Response Plan 2011

The Village in which the waterbody is situated
Village of: Whiting
Contact: Paul Stroik- Village President
Address: 3600 Water St. Stevens Point, WI 54481
Phone: 715-341-2742
Who will contact them: McDill Protection & Rehabilitation District

The City in which the waterbody is situated
City of: City of Stevens Point Planning Commission and Parks Dept.
Contact: Alderman Jeremy Slowinski
Address: 4501 Pleasant View Dr.
Phone:
Who will contact them: McDill Protection & Rehabilitation District

The City of Stevens Point Parks Department
Contact: Tom Schrader - Director
Address: 2442 Sims Ave. Stevens Point, WI
Phone: 715-346-1531
Who will contact them: McDill Protection & Rehabilitation District

University of Wisconsin-Stevens Point – Water Resource Scientist
Contact: Nancy Turyk
Address: 216 TNR 800 Reserve St. Stevens Point, WI 54481
Telephone: 715-346-4155
E-mail: pclakes@uwsp.edu
Who will contact them: McDill Protection & Rehabilitation District

Newspapers
Who will contact them: McDill Protection & Rehabilitation District

Portage County Gazette
Stevens Point Journal

Post notice at the access points to the waterbody

Literature Cited

Fassbender, R.L., and L.M. Nelson. 1971. Surface Water Resources of Portage County. Wisconsin Department of Natural Resources, Madison, Wisconsin.

Turyk, N; R. Bell; R. Cook; T. Ginnett; R. Crunkilton; L. Markham; P. McGinley; B. Shaw; and E. Wild; 2006. Final report to Portage County and Wisconsin DNR. http://www.co.portage.wi.us/plzo/lakes.html

Glossary

Algae:

One-celled (phytoplankton) or multi-cellular plants either suspended in water (Plankton) or attached to rocks and other substrates (periphyton). Their abundance, as measured by the amount of chlorophyll *a* (green pigment) in an open water sample, is commonly used to classify the trophic status of a lake. Numerous species occur. Algae are an essential part of the lake ecosystem and provide the food base for most lake organisms, including fish. Phytoplankton populations vary widely from day to day, as life cycles are short.

Atrazine:

A widely used herbicide.

Blue-Green Algae:

Algae often associated with problem blooms in lakes. Some produce chemicals toxic to other organisms, including humans. They often form floating scum as they die. Many can fix nitrogen (N_2) from the air to provide their own nutrient.

Calcium (Ca++):

The most abundant cation found in Wisconsin lakes. Its abundance is related to the presence of calcium-bearing minerals in the lake watershed. Reported as milligrams per liter (mg/l) as calcium carbonate ($CaCO_3$), or milligrams per liter as calcium ion (Ca++).

Chloride (Cl-):

Chlorine in the chloride ion (Cl-) form has very different properties from chlorine gas (Cl2), which is used for disinfecting. The chloride ion (Cl-) in lake water is commonly considered an indicator of human activity. Agricultural chemicals, human and animal wastes, and road salt are the major sources of chloride in lake water.

Chlorophyll *a*:

Green pigment present in all plant life and necessary for photosynthesis. The amount present in lake water depends on the amount of algae and is therefore used as a common indicator of algae and water quality.

Clarity:

See "Secchi disc".

Color:

Measured in color units that relate to a standard. A yellow-brown natural color is associated with lakes or rivers receiving wetland drainage. The average color value for Wisconsin lakes is 39 units, with the color of state lakes ranging from zero to 320 units. Color also affects light penetration and therefore the depth at which plants can grow.

Concentration units:

Express the amount of a chemical dissolved in water. The most common ways chemical data is expressed is in milligrams per liter (mg/l) and micrograms per liter (ug/L). One milligram per liter is equal to one part per million (ppm). To convert micrograms per liter (ug/l) to milligrams per liter (mg/l), divide by 1000 (e.g. 30 ug/l = 0.03 mg/l). To convert milligrams per liter (mg/l) to micrograms per liter (ug/l), multiply by 1000 (e.g. 0.5 mg/l = 500 ug/l). Microequivalents per liter (ueq/l) is also sometimes used, especially for alkalinity; it is calculated by dividing the weight of the compound by 1000 and then dividing that number into the milligrams per liter.

Cyanobacteria:

See “Blue-Green Algae”.

Dissolved Oxygen:

The amount of oxygen dissolved or carried in the water.

Drainage Basin:

The total land area that drains towards a lake.

Drainage lakes:

Lakes fed primarily by streams and with outlets into streams or rivers. They are more subject to surface runoff problems but generally have shorter residence times than seepage lakes. Watershed protection is usually needed to manage lake water quality.

Emergent:

A plant rooted in shallow water that has most of its vegetative growth above water.

Eutrophication:

The process by which lakes and streams are enriched by nutrients, and the resulting increase in plants and algae. The extent to which this process has occurred is reflected in a lake's trophic classification: oligotrophic (nutrient poor), mesotrophic (moderately productive), and eutrophic (very productive and fertile).

Groundwater Drainage Lake:

Often referred to as a spring-fed lake, has large amounts of groundwater as its source, and a surface outlet. Areas of high groundwater in-flow may be visible as springs or sand boils. Groundwater drainage lakes often have intermediate retention times with water quality dependent on groundwater quality.

Hardness:

The quantity of multivalent cations (cations with more than one +), primarily calcium (Ca++) and magnesium (Mg++), in the water expressed as milligrams per liter of CaCO3. Amount of hardness relates to the presence of soluble minerals, especially limestone, in the lake watershed.

Intermittent:

Coming and going at intervals, not continuous.

Macrophytes:

See "Rooted aquatic plants."

Marl:

White to gray accumulation on lake bottoms caused by precipitation of calcium carbonate (CaCO3) in hard-water lakes. Marl may contain many snail and clam shells, which are also calcium carbonate. While it gradually fills in lakes, marl also precipitates phosphorus, resulting in low algae populations and good water clarity. In the past, marl was recovered and used to lime agricultural fields.

Mesotrophic:

A lake with an intermediate level of productivity. Commonly clear water lakes and ponds with beds of submerged aquatic plants and medium levels of nutrients. See also “eutrophication”.

Nitrate (NO3-):

An inorganic form of nitrogen important for plant growth. Nitrate often contaminates groundwater when water originates from manure, fertilized fields, lawns, or septic systems. High levels of nitrate-nitrogen (over 10 mg/L) are dangerous to infants and expectant mothers. A concentration of nitrate-nitrogen (NO3-N) plus ammonium-nitrogen (NH4-N) of 0.3 mg/L in spring will support summer algae blooms if enough phosphorus is present.

Oligotrophic:

Lakes with low productivity, the result of low nutrients. Often these lakes have very clear waters with lots of oxygen and little vegetative growth. See also “eutrophication”.

Overturn:

Fall cooling and spring warming of surface water increases density, and gradually makes temperature and density uniform from top to bottom. This allows wind and wave action to mix the entire lake. Mixing allows bottom waters to contact the atmosphere, raising the water's oxygen content. However, warming may occur too rapidly in the spring for mixing to be effective, especially in small, sheltered kettle lakes.

Phosphorus:

Key nutrient influencing plant growth in more than 80% of Wisconsin lakes. Soluble reactive phosphorus is the amount of phosphorus in solution that is available to plants. Total phosphorus includes the amount of phosphorus in solution (reactive) and in particulate form.

Rooted Aquatic Plants: (macrophytes)

Refers to multi-celled plants growing in or near water. Macrophytes are beneficial to lakes because they produce oxygen and provide substrate for fish habitat and aquatic insects. Overabundance of such plants, especially problem species, is related to shallow water depth and high nutrient levels.

Secchi Disc (Secchi Disk):

An 8-inch diameter plate with alternating quadrants painted black and white that is used to measure water clarity (light penetration). The disc is lowered into water until it disappears from view. It is then raised until just visible. An average of the two depths, taken from the shaded side of the boat, is recorded as the Secchi disc reading. For best results, the readings should be taken on sunny, calm days.

Sedimentation:

Materials that are deposited after settling out of the water.

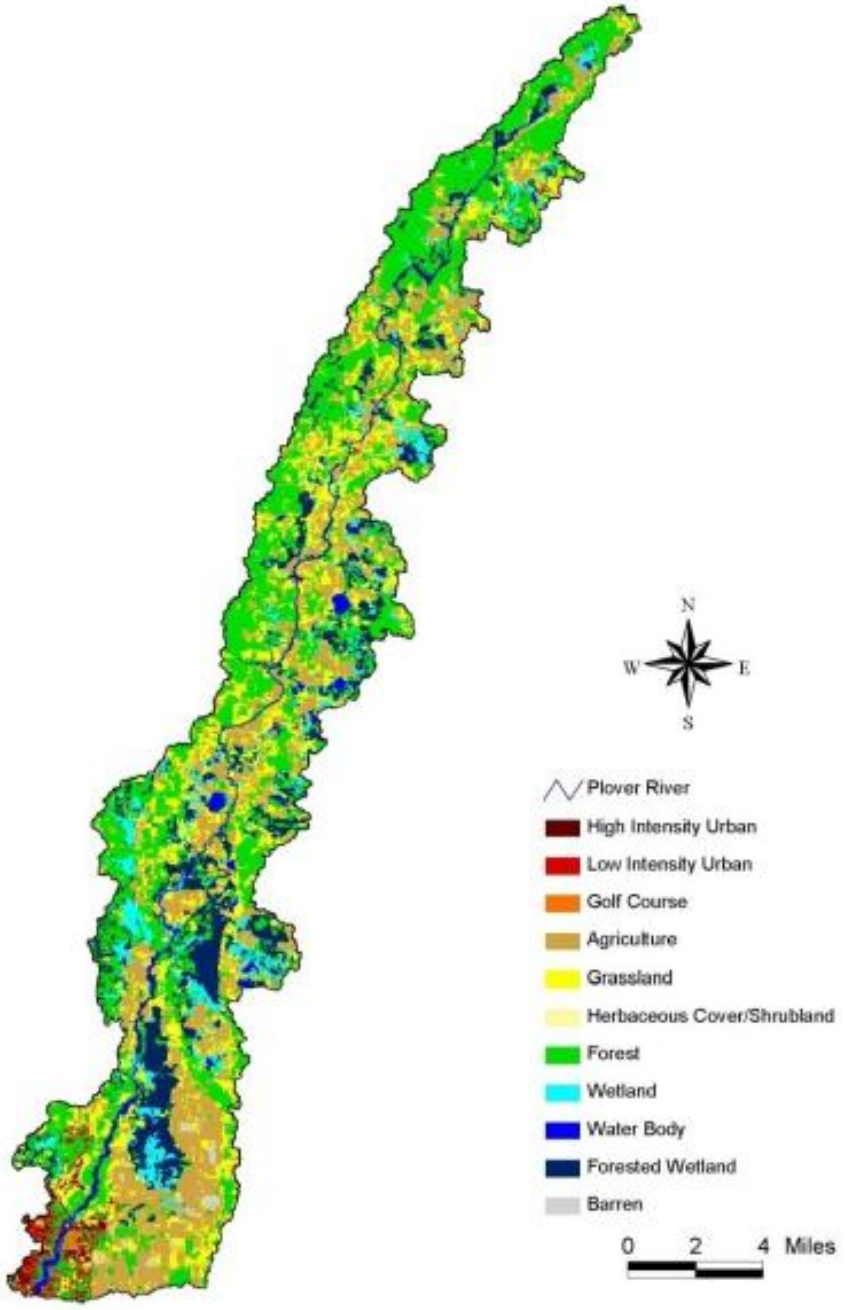
Stratification:

The layering of water due to differences in density. Water's greatest density occurs at 39 Deg.F (4 Deg.C). As water warms during the summer, it remains near the surface while colder water remains near the bottom. Wind mixing determines the thickness of the warm surface water layer (epilimnion), which usually extends to a depth of about 20 ft. The narrow transition zone between the epilimnion and cold bottom water (hypolimnion) is called the metalimnion or thermocline.

Watershed: See “drainage basin”.

Appendix A

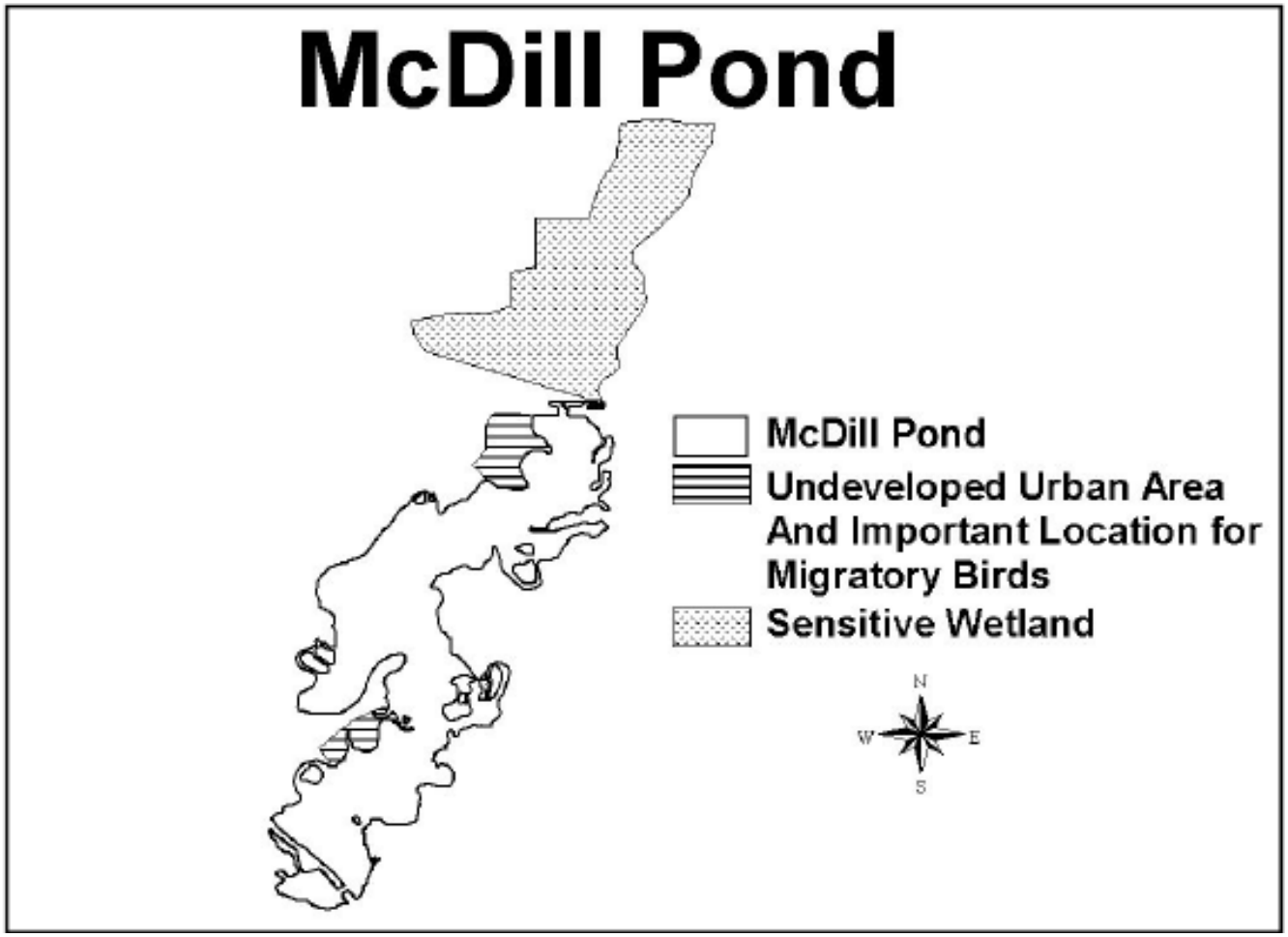
McDill Pond Watershed Land Uses



Surface Water Watershed

Appendix B

McDill Pond Sensitive Areas.



Appendix C

McDill Pond Amphibian Habitat (highlighted in red).