

Appendix A

Portage County Lake Management Menu

Choosing Management Strategies for Portage County Lakes

Once you've set goals for the condition of your lake through the lake management planning process, you'll want to choose the strategies most likely to help you achieve those goals. Each lake is unique in its physical characteristics, assemblage of living and non-living things, location on the landscape, and human uses. However, all lakes fall into certain categories or groups according to key characteristics. Choosing the proper management strategies for the type of lake you're trying to protect will mean the difference between the success or failure of your lake management efforts. Start with this list of "good housekeeping practices" that will benefit all lakes:

Nutrients (including nitrogen and phosphorus) are a major source of lake water quality problems, so:

- ✔ Eliminate applications of fertilizer containing nitrogen or phosphorus, or limit them based on soil test results. (Beginning in 2010, application of lawn fertilizer containing phosphorus will be allowed only for new lawns or lawns shown to be phosphorus-poor.)
- ✔ Choose phosphorus-free automatic dishwasher detergent and other household cleaning products if your wastewater reenters the soil through a septic system.
- ✔ Don't wash your dog or yourself in the lake. Clean up and properly dispose of pet waste.
- ✔ Don't burn leaves near the lake or rake yard waste into the lake.
- ✔ Use natural vegetation, rain gardens, or landscaping to keep runoff out of the lake.
- ✔ If you are a farmer, request help from the Portage County Land Conservation Department to develop water quality-based best management practices for farmland that may impact the lake through surface runoff or groundwater inputs. These plans may include comprehensive farm planning, nutrient management planning, animal waste management planning, manure incorporation after spreading, and planting winter cover crops.
- ✔ Join other landowners and lake users to establish a water quality monitoring program for your lake.

Fish and other aquatic life depend on natural vegetation near and on the lake's shore, so:

- ✔ Maintain a natural vegetation buffer, including grasses/forbs, shrubs, and trees, of at least 35 feet from the lake, as required by state and Portage County shoreland zoning ordinances. 
- ✔ Don't remove any more aquatic plants, logs, or brush than absolutely necessary for lake access and recreational activities in front of your property. Native aquatic plants help stop harmful aquatic invasive plants from becoming established. Follow state aquatic plant removal regulations and obtain permits when needed. 
- ✔ Learn to identify aquatic invasive plant species, watch for them near your property and public landings, and help stop their spread. Check with WDNR for aquatic invasive plant removal rules. 

Septic systems do contribute nutrients and other chemicals to groundwater and lakes, even if they are working properly, so:

- ✔ Locate your drainfield as far from the lake shore as possible.
- ✔ Pump your septic tank at least once every three years.
- ✔ Consider installing an alternative or additional wastewater treatment system that can remove nitrogen and phosphorus, or explore community or other group wastewater treatment options.
- ✔ Use household chemicals sparingly, try to choose less harmful ("green") products, and be mindful that chemicals put into a septic system could end up in the lake or your drinking water.

 Check Wisconsin Department of Natural Resources (WDNR) regulations at <http://dnr.wi.gov/org/water/fhp/waterway/>, or contact a resource person from page 12 of this publication

Appendix A

Portage County Lake Management Menu

Lake water originates from precipitation, groundwater, runoff, and stream flow from the entire lake watershed, and each lake is different, so:

- ✓ Become familiar with your watershed and major water sources for your lake.
- ✓ Help educate and encourage others in the watershed to be good land managers to protect all sources of water to the lake. Create or join a lake district, homeowners' association, or other lake stewardship group.

For more general lake protection practices, see the publication

“Owning Waterfront Property – A Checklist” at

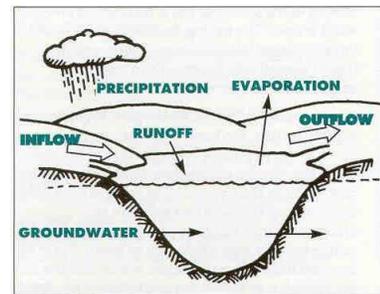
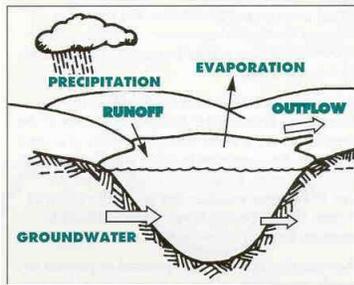
http://www.co.portage.wi.us/Planning&Zoning/PCL/Online_Informational_Materials/online_resources.htm.

Portage County Lake Types

Lakes are divided into four main types – drainage lakes, groundwater drainage lakes, seepage lakes, and impoundments – depending on the sources of the water in them. Successful management strategies for each lake type need to target all the sources of the lake's water.

Drainage lakes (Collins, Fountain, Spring, and Tree Lakes)

- receive much of their water from an inlet stream
- have a stream outlet that allows water to leave the lake
- may have a dam to increase water depth



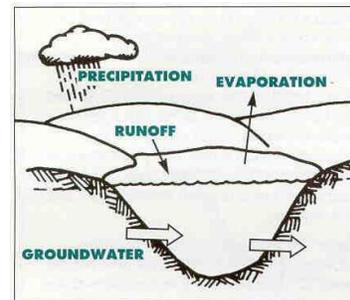
Groundwater drainage lakes

(Adams, Boelter, Ebert, Helen, Lions, and Rinehart Lakes)

- receive much of their water from groundwater
- have a stream outlet that allows water to leave the lake

Seepage lakes (Bear, Becker, Emily, Jacqueline, Joanis, Lime, Onland, Pickerel, Severson, Skunk, South Twin, Sunset, Thomas, and Wolf Lakes)

- receive most of their water from groundwater, mainly at one end
- have an outlet only through groundwater, mainly at the opposite end
- retain water longer than other lake types.



To protect and manage drainage, groundwater drainage, and seepage lakes, you must consider land uses in the surface water and groundwater watersheds and human activities on the water and shore. Each lake is unique in the proportion of water and contaminants it receives from these three sources. If you live in a groundwater inflow area on your lake, your personal practices that may affect groundwater are especially significant.



Check Wisconsin Department of Natural Resources (WDNR) regulations at

<http://dnr.wi.gov/org/water/fhp/waterway/>, or contact a resource person from page 12 of this publication

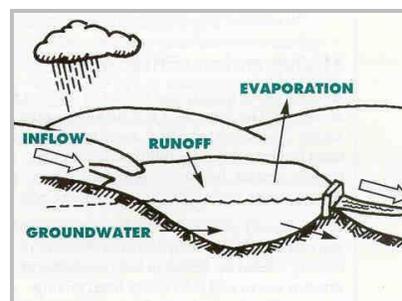
Appendix A

Portage County Lake Management Menu

Impoundments (Amherst Millpond, Bently Pond, Jordan Pond, McDill Pond, Rosholt Millpond, and Springville Pond)

- are created by damming a stream
- receive most of their water from an inlet stream
- retain water for a shorter time than other lake types

To protect and manage an impoundment, you must consider land uses upstream. Shoreline activities are still important to water quality.



Lake Morphometry

Some lakes are shallow and others are deep; some occur in flat terrain and others are nestled into hills; some are round “bowls” while others have complicated shorelines with many bays and wetlands. Deep lakes hold more water than shallow lakes of the same surface area, allowing more dilution of water contaminants and decreasing the chance of winter fish kills. Shallow lakes have more areas where sediment can be disturbed, but habitat is abundant in these fragile shallow water areas. All these factors are part of lake morphometry – the physical structure of a lake – and have effects on lake water quality and lake management strategies. Check which of these conditions apply to your lake.

Does your lake have areas less than 8 feet deep? These areas	
may have these problems	and may benefit from
sediment disturbance from boat motors	✓ no-wake speeds or electric motors only
wind disturbance of sediments	✓ moderate growth of aquatic plants to hold sediments in place
high density of aquatic plants	✓ strategies to improve recreational access ✓ tools from the phosphorus management toolbox
Shallow lakes may suffer from lack of dissolved oxygen in winter (see the Lake Water Chemistry section).	

Does your lake have a high percentage of its area more than 18 feet deep? Deep lakes	
may have these problems	and may benefit from
few aquatic plants; biomass dominated by algae; lack of oxygen at depth; release of phosphorus from sediments during low oxygen periods	✓ tools from the phosphorus management toolbox ✓ minimizing nearshore vegetation disturbance to provide habitat and protect water quality ♻️
The two storied fisheries of deep lakes, which include trout and walleye in cool, deep waters as well as panfish and bass in shallow waters, require management to stay in balance.	

Is your lake a deep bowl protected from the wind? Lakes in deep bowls	
may have these problems	and may benefit from
runoff from steep shoreline areas	✓ houses being set back from steep slopes ✓ meandering, not direct, access to the lake ✓ vegetative buffers to prevent erosion along slopes ✓ shoreline buffers to intercept erosion and runoff ✓ additional tools from the runoff management toolbox



Check Wisconsin Department of Natural Resources (WDNR) regulations at <http://dnr.wi.gov/org/water/fhp/waterway/>, or contact a resource person from page 12 of this publication

Appendix A

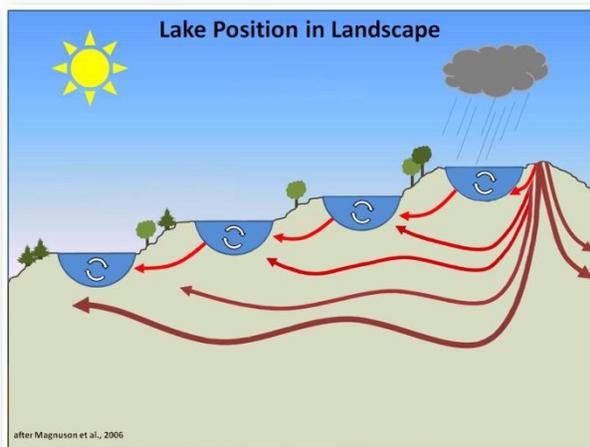
Portage County Lake Management Menu

Is your lake a deep bowl protected from the wind (continued)? Lakes in deep bowls	
may have these problems	and may benefit from
lack of mixing and oxygenation	✔ monitoring dissolved oxygen concentrations and using mechanical aeration when necessary
Homes built on hills may have a greater depth of soil available to adsorb phosphorus from septic systems.	

Does your lake have wetlands along its shore? Lakes with adjacent wetlands	
may have these problems	and may benefit from
nutrient addition when water levels rise	✔ retaining natural wetland vegetation and minimizing nutrient flow to the wetlands
natural limit to residential growth and development	✔ appropriate zoning ordinances to avoid developing wetland areas ✔ maintaining vegetative buffers around wetlands
wet soils and wetland vegetation in areas that people cross to access the lake	✔ avoiding wet areas or installing a boardwalk over them to reduce disturbance
Compared to lakes without wetlands, these lakes may have more water quality fluctuations and more diverse wildlife habitat.	

Lake Water Levels and Lake Location in Watershed

Water levels are a very important subject to people who live on or use lakes. High water levels can flood property, septic systems, roads, and even homes. Low water levels can create smelly, unsightly strips of mud between the former shoreline and the new waterline, and can create difficulties in launching boats and doing other types of water recreation. Some lake fluctuations are natural, caused by seasonal changes in precipitation, evaporation, and groundwater discharge. Two Portage County lakes are home to an endangered plant (Fassett's locoweed) that has adapted to such water level fluctuations.



Natural lake level fluctuations are sometimes enhanced by human activities. Others are human-induced when water that would otherwise enter the lake is diverted to other uses. Still others are deliberately created by managing the flow of water through a dam.

Lake type plays a role in water levels; seepage lakes tend to experience large water level fluctuations. The closer your lake is to the watershed divide (the ridge that separates two watersheds), the more likely it is to naturally experience large fluctuations in lake level. The illustration to the left shows that lakes farther

from the top of the watershed receive more groundwater inputs; they may receive more surface water as well.



Check Wisconsin Department of Natural Resources (WDNR) regulations at <http://dnr.wi.gov/org/water/fhp/waterway/>, or contact a resource person from page 12 of this publication

Appendix A

Portage County Lake Management Menu

Of lakes included in the 2003 Portage County study, those closest to, and most influenced by, the watershed divide are Bear, Boelter, Emily, Jacqueline, Pickerel, Skunk, South Twin, Sunset, Thomas, and Wolf Lakes. Check below for some actions you can take to manage lakes with water level fluctuations.

Does your lake experience natural water level fluctuations? Such lakes:	
may have these problems	and may benefit from
aquatic invasive plant species that become established on bare sediments or in shallower, warmer water	✔ looking for and removing aquatic invasive plants during low water periods. Check with WDNR for aquatic invasive plant removal rules 
damage to unique habitats by human use during low water periods	✔ establishing barriers to prevent vehicle access to the dry lake bed during low water periods
sensitivity to changes in groundwater recharge	✔ use of swales, rain gardens, and other management tools to encourage infiltration of rainwater and snowmelt
a large area less than 8 feet deep during some parts of the year	✔ no-wake speeds or electric-motor-only zoning
winter fish kills	✔ adding oxygen when necessary by mechanical aeration or by plowing snow off the lake surface to encourage plant growth
flooding of septic systems during high water periods	✔ as great a septic system setback from the lake as possible ✔ use of mound systems
shoreline erosion during high water periods	✔ maintaining native vegetation and unmowed/uncropped buffer strips near the water's edge
removal of woody material, leading to loss of potential habitat for fish during periods of high water	✔ leaving fallen trees, logs, or branches in place or adding them to the exposed lake bed during low water periods

Does your lake experience water level fluctuations because of water withdrawals in the watershed?

In addition to the strategies above, such lakes may benefit from:

- ✔ additional groundwater study to delineate groundwater inputs and outputs
- ✔ voluntary limitations on pumping or withdrawals by farmers, irrigators, municipalities, or other high-volume users
- ✔ introduction of suitably treated wastewater, clean snow, or clean water into the upper part of the watershed
- ✔ water conservation measures by users of the withdrawn water to minimize the amount withdrawn

Lake Water Chemistry

Lake water chemistry affects the appearance of your lake as well as the types of plants and animals that survive and thrive in it. The natural water chemistry of your lake is influenced by its water source, soil and bedrock type, and location in its watershed. Some lakes in Portage County have hard water and experience marl formation, while others have soft water and are susceptible to acid rain. Lake water chemistry is also affected by human activities in the lake and land use practices on the shore and in the watershed. Check to see which water chemistry conditions occur on your lake.



Check Wisconsin Department of Natural Resources (WDNR) regulations at <http://dnr.wi.gov/org/water/fhp/waterway/>, or contact a resource person from page 12 of this publication

Appendix A

Portage County Lake Management Menu

Does your lake have hardness of more than 150 parts per million as CaCO ₃ ? If so, marl may form. Marl lakes	
may have these problems	and may benefit from
high density of aquatic plants in shallow sediments	✔ strategies to improve recreational access
decreased water clarity caused by resuspension of marl by wind and boats	✔ slow no wake zones at water depths of less than 8 feet (Municipal rules may apply)
gradual filling with marl	✔ dredging to deepen parts of the lake. (Check with WDNR for permit requirements )
These lakes usually have good water clarity because marl formation removes phosphorus that would otherwise be used by algae.	

Does your lake have water hardness of less than 90 parts per million as CaCO ₃ ? These lakes	
may have these problems	and may benefit from
low calcium concentrations, leading to greater response by algae to phosphorus additions	✔ tools from the phosphorus management toolbox

Does your lake have water hardness of less than 25 parts per million as CaCO ₃ ? Soft water lakes	
may have these problems	and may benefit from
higher mercury, aluminum, and zinc solubility when rainfall is acidic	✔ efforts at personal, regional, and national scales to reduce electricity use and fossil fuel consumption
These lakes usually are less productive than other lakes, but often have the most diverse aquatic macrophyte communities.	

Does your lake have dissolved oxygen concentrations less than 5 parts per million in the upper one-third of the water column during winter? These lakes	
may have these problems	and may benefit from
winter fish kills	✔ monitoring dissolved oxygen concentrations ✔ adding oxygen when necessary by mechanical aeration or by plowing snow off the lake surface to encourage plant growth

Nitrogen and phosphorus, which are found in human and animal wastes and fertilizers, are the two major nutrients that can lead to excessive algae and rooted aquatic plant growth in Portage County lakes. All Portage County lakes have either sufficient or excessive nutrients for plant growth, so all lakes will benefit from limiting nutrient additions. However, when nitrogen and phosphorus reach certain concentrations, it is especially critical to act to prevent further water quality degradation.

To help lake residents, users, and planners understand the status of lakes relative to their phosphorus concentrations, WDNR has proposed a two-tiered set of numerical standards called “flag values” and “criteria values.” Reaching the “flag value” for phosphorus indicates that a lake needs attention to prevent phosphorus concentrations from rising further and degrading water quality. Reaching the “criteria value” means that phosphorus concentrations are likely to cause a variety of water quality problems and should be reduced. At this time, there are no “flag values” for nitrogen.



Check Wisconsin Department of Natural Resources (WDNR) regulations at <http://dnr.wi.gov/org/water/fhp/waterway/>, or contact a resource person from page 12 of this publication

Appendix A

Portage County Lake Management Menu

**Do the inorganic forms of nitrogen in your lake exceed 0.3 parts per million (as N) in spring?
Lakes with these high nitrogen loads**

may have these problems	and will benefit from
excessive nearshore aquatic plants and attached algae, and toxicity to some aquatic animals	<ul style="list-style-type: none"> ✓ eliminating nitrogen fertilizer applications by farmers and homeowners or limiting them based on soil test results ✓ alternative or additional wastewater treatment systems designed to remove nitrogen

**What is the total phosphorus (TP) concentration* in your lake between June 1 and September 15?
(*defined as the average of at least three surface samples during the season)**

Consult the following table

to compare this value to proposed flag and criteria values for your lake type:

Lake Type	Total Phosphorus (parts per billion)	
	Flag Value	Criteria Value
Shallow – Drainage	28	40
Deep – Drainage	20	30
Deep – 2-Story Fishery	15	15
Shallow – Seepage	15	40
Deep – Seepage	15	20
Shallow – Impoundment	No flag value	40
Deep – Impoundment	No flag value	30

Has your lake reached the proposed “flag value” for total phosphorus (TP)? Such lakes:
will benefit from

- ✓ preventing phosphorus concentrations from increasing by implementing tools from the phosphorus toolbox
- ✓ establishing a water quality monitoring program

Has your lake reached the proposed “criteria value” for total phosphorus (TP)? Such lakes:

may have these problems	and will benefit from
excessive weeds and algae, including some algae that are toxic to animals winter fish kills, and poor aesthetics (green, turbid, smelly water)	<ul style="list-style-type: none"> ✓ reducing phosphorus concentrations by implementing tools from the phosphorus toolbox ✓ conducting an in-depth study of lake management and rehabilitation alternatives to control internal and external nutrient loading. ✓ establishing a water quality monitoring program



Check Wisconsin Department of Natural Resources (WDNR) regulations at <http://dnr.wi.gov/org/water/fhp/waterway/>, or contact a resource person from page 12 of this publication

Appendix A

Portage County Lake Management Menu

Phosphorus Management Toolbox

Implement one or more of the following tools to lower total phosphorus (TP) concentrations, or to keep concentrations from increasing:

- ✔ Eliminate phosphorus fertilizer use on your lawn or farm fields, or limit it based on soil test results. (Beginning in 2010, application of lawn fertilizer containing phosphorus will be allowed only for new lawns or lawns shown to be phosphorus-poor.)
- ✔ Don't burn leaves near the lake or rake yard waste into the lake.
- ✔ Implement agricultural best land management practices based on water quality.
- ✔ Install and maintain vegetative buffers, raingardens, and filter strips that cause stormwater to infiltrate and to limit runoff to the lake.
- ✔ Choose phosphorus-free automatic dishwasher detergent and other "green" household cleaning products if your wastewater reenters the soil through a septic system.
- ✔ Install alternative or additional wastewater treatment systems designed to remove phosphorus, or consider options for connection to a community or other group wastewater treatment system, especially in areas where groundwater discharges to the lake.
- ✔ Check the runoff management toolbox and protection tools in the lake management toolbox for more community-based actions and solutions.

Aquatic Invasive Species

Aquatic invasive species are non-native plants, animals, and sometimes disease-causing organisms. They may displace native species, disrupt ecosystems, and harm recreational activities such as fishing and boating. Because they lack the predators and competitors they faced in their homelands, invasive species can spread rapidly and aggressively. Controlling invasive species is difficult, and getting rid of them is often impossible. People play a major role in spreading invasive species and can also help keep them from spreading.

Is your lake currently free of aquatic invasive species? Such lakes will benefit from:

- ✔ protecting and maintaining native plant and animal communities
- ✔ knowing how to identify invasive species and actively monitoring for them
- ✔ using signs, newsletters, or more active methods to educate boaters and anglers and to encourage them to clean boats and trailers before launch

Does your lake already have aquatic invasive species? Such lakes will benefit from:

- ✔ using the tools from the box above
- ✔ encouraging boaters and anglers to clean boats and trailers after use to prevent the spread of the invasive species to other lakes
- ✔ developing and following an aquatic plant management plan that contains and controls the invasive species



Check Wisconsin Department of Natural Resources (WDNR) regulations at <http://dnr.wi.gov/org/water/fhp/waterway/>, or contact a resource person from page 12 of this publication

Appendix A

Portage County Lake Management Menu

Lake and Watershed Management

Probably not surprisingly, the number of people who use a lake for recreation, live on a lake, or live in a lake's watershed has an influence on its water quality, as does the amount of agricultural land and types of land management practices in its watershed. Check which land use and development practices exist in your watershed.

Are there signs that your lake's ecosystem is out of its natural balance? Such lakes:	
may have these problems	and may benefit from
geese on shoreline	<ul style="list-style-type: none"> ✔ maintaining a natural vegetation buffer onshore; avoiding mowing or cropping to the water's edge
eroding shorelines	<ul style="list-style-type: none"> ✔ vegetative buffers to prevent erosion on slopes ✔ shoreline buffers to intercept erosion and runoff ✔ other shoreline stabilization methods such as rock  ✔ maintaining in-lake aquatic plants to act as baffles and reduce the influence of waves ✔ creating meanders rather than direct paths to the lake
nuisance-level aquatic plant growth	<ul style="list-style-type: none"> ✔ creating an aquatic plant management plan

Is your lake's fishery dependent on stocking? Such lakes:	
may have these problems	and may benefit from
lack of fish habitat	<ul style="list-style-type: none"> ✔ addition of woody material to the nearshore lake bottom
lack of fish spawning areas or amphibian habitat	<ul style="list-style-type: none"> ✔ protection of native aquatic vegetation; avoid raking of the lake bottom or removal of vegetation ✔ knowing critical habitat locations and actively protecting them from disturbance
stunted fish, rough fish, dominance of non-game fish	<ul style="list-style-type: none"> ✔ catch and release fishing ✔ consulting a WDNR or other professional fishery manager

Are motorized watercraft used on your lake? Such lakes:	
may have these problems	and may benefit from
conflicts between uses	<ul style="list-style-type: none"> ✔ placing limits on motorized watercraft use by time of day, no-wake zones, and/or motor type ✔ spatial/local boating ordinances to protect critical habitat
lake sediment disturbances in shallow water during high-use periods, disturbance of plant beds and littoral vegetation, decreased water clarity	<ul style="list-style-type: none"> ✔ selecting a boat launch area and parking lot appropriate to the lake's carrying capacity and meeting WDNR standards for access ✔ using no-wake speeds or zoning for electric motors only ✔ protecting shallow water vegetation and natural materials that keep sediments in place
increased risk of invasive species introduction	<ul style="list-style-type: none"> ✔ using signs or more active methods to educate boaters and anglers and to encourage them to clean boats and trailers before launch ✔ monitoring areas near boat landings to identify and control aquatic invasive species that do get established



Check Wisconsin Department of Natural Resources (WDNR) regulations at <http://dnr.wi.gov/org/water/fhp/waterway/>, or contact a resource person from page 12 of this publication

Appendix A

Portage County Lake Management Menu

Does your lake have a public park or boat landing? Such lakes:	
may have these problems	and may benefit from
increased nutrient runoff linked to vegetation disturbance	<ul style="list-style-type: none"> ✔ enhancing infiltration by use of native vegetation, including unmowed buffer strips
water runoff from roofs, parking areas, and other paved, compacted, or impervious areas	<ul style="list-style-type: none"> ✔ directing runoff from these areas into a vegetated strip or rain garden away from the lake
septic systems that experience heavy use	<ul style="list-style-type: none"> ✔ constructing these systems with as great a setback as feasible, on the soils that have the greatest capacity to adsorb nitrogen and phosphorus, and regularly inspecting, monitoring, and maintaining them ✔ installing additional or alternative wastewater treatment systems that remove nitrogen and phosphorus, or exploring community or other group wastewater treatment options ✔ installing water and energy-conserving plumbing fixtures and devices

Does your lake currently have residential development on it, or is residential development likely in the future?, Such lakes:	
may have these problems	and will benefit from
nitrogen and phosphorus loading from fertilized lawns	<ul style="list-style-type: none"> ✔ eliminating fertilizer applications or limiting them based on soil test results ✔ using natural buffers that include native vegetation between the lawn and the lake ✔ minimizing amount of manicured lawn ✔ using tools from the runoff toolbox
nutrient loading from septic systems	<ul style="list-style-type: none"> ✔ using greater system setbacks from the lake whenever possible ✔ encouraging or requiring the use of alternative or additional wastewater treatment systems that remove nutrients whenever systems are installed or replaced, or exploring community or other group wastewater treatment options
destruction of shoreline vegetation and habitat	<ul style="list-style-type: none"> ✔ providing education for new landowners on keeping vegetated shorelines intact ✔ restoring natural shoreline buffers and protecting critical habitat areas
runoff that carries nutrients to the lake	<ul style="list-style-type: none"> ✔ using tools from the runoff toolbox ✔ using protection tools from the lake management toolbox

Does your lake's watershed have off-lake residential development, or is such development likely in the future? Such lakes may benefit from:
<ul style="list-style-type: none"> ✔ using tools from the runoff management tool box ✔ using protection tools from the lake management toolbox



Check Wisconsin Department of Natural Resources (WDNR) regulations at <http://dnr.wi.gov/org/water/fhp/waterway/>, or contact a resource person from page 12 of this publication

Appendix A

Portage County Lake Management Menu

Does your lake have agricultural land uses near the shore or in the watershed? Such lakes:	
may have these problems	and may benefit from
sediment and nutrient runoff inputs of nitrate or pesticides through groundwater increases in algae decreases in dissolved oxygen, and other water quality impacts	<ul style="list-style-type: none"> ✔ crops that require little nitrogen input ✔ development and implementation of livestock grazing and manure spreading and storage plans and practices that protect water quality ✔ vegetative filter strips along lakes, streams, and wetlands to limit runoff inputs and channelized flow to the lake ✔ public support for county efforts to educate farmers and develop nutrient management plans based on water quality goals ✔ public support for farmers who implement practices to protect water quality

Runoff Management Toolbox for Lake Watersheds

Implement one or more of the following tools to minimize the amount of surface runoff that carries nutrients and sediments to lakes:

- ✔ Implement road and building construction practices that meet Portage County erosion standards.
- ✔ Implement agricultural best land management practices to minimize runoff.
- ✔ Use the local zoning ordinance to limit impervious surfaces that create runoff.
- ✔ Install and maintain vegetative buffers and filter strips that cause stormwater to infiltrate and to limit runoff to the lake.
- ✔ Use stormwater management practices, which may include rain gardens, streets without curb and gutter, and retention basins.

Protection Tools in the Lake Management Toolbox

Implement one or more of the following tools to manage land to protect lakes:

Use legal tools, including:

- ✔ Zoning that limits potentially damaging land uses and implements the overall density provided for in the land use plan.
- ✔ Overlay zoning that identifies special protections beyond those in the basic zoning ordinance, including shoreland setbacks, impervious surface limits, shoreland buffers, and mitigation measures.
- ✔ Zoning standards adjusted for specific lakes or groups of lakes with similar physical characteristics.
- ✔ Subdivision ordinances.

Use voluntary tools, including:

- ✔ Purchase of development rights that permanently protect landscapes while retaining private ownership.
- ✔ Conservation easements to restrict development or uses of land.
- ✔ Purchase of land by state and local governments or not-for-profit organizations.
- ✔ Conservation design which modifies subdivision ordinances to require protection of open space.



Check Wisconsin Department of Natural Resources (WDNR) regulations at <http://dnr.wi.gov/org/water/fhp/waterway/>, or contact a resource person from page 12 of this publication

Appendix A

Portage County Lake Management Menu

For Additional Information

Many publications are available on the Portage County Lakes page of the Portage County website. Go to www.co.portage.wi.us, choose Portage County Lakes from the County Information drop-down menu, and choose “Learn More about Lakes” from the Portage County Lakes main page.

Other information and resources are available at the Wisconsin Department of Natural Resources Lakes website (www.dnr.state.wi.us/lakes/) and the University of Wisconsin –Extension Lakes Partnership website (www.uwsp.edu/cnr/uwexlakes/)

Lake Management and State Lake Rules

Buzz (Patrick) Sorge, Program and Planning Analyst
Wisconsin Department of Natural Resources
1300 W Clairemont Avenue
Eau Claire WI 54701
Phone 715-839-3794, Fax 715-839-6076
patrick.sorge@wisconsin.gov

Aquatic Plants and Aquatic Invasive Species

Scott Provost, Water Resources Management Specialist
Wisconsin Department of Natural Resources
473 Griffith Avenue
Wisconsin Rapids WI 54494
Phone 715-421-7881, Fax 920-787-2477
Scott.Provost@wisconsin.gov

Fisheries

Tom Meronek, Fisheries Biologist
Wisconsin Department of Natural Resources
5301 Rib Mountain Drive
Wausau WI 54401
Phone 715-359-7582
thomas.meronek@wisconsin.gov

Agricultural Best Management Practices

Steve Bradley, County Conservationist
Portage County Land Conservation
1462 Strongs Avenue
Stevens Point, WI 54481
Phone 715-346-1334, Fax 715-346-1677
Bradleys@co.portage.wi.us

Lake Management

Nancy Turyk, Water Resource Scientist
Center for Watershed Science and Education
University of Wisconsin-Stevens Point
800 Reserve St, TNR 216
Stevens Point WI 54481
Phone 715-346-4155, Fax 715-346-3624
nturyk@uwsp.edu

Shorelands and Land Use

Lynn Markham, Shoreland and Land Use Specialist
Center for Land Use Education
University of Wisconsin-Stevens Point
800 Reserve Street
Stevens Point, WI 54481
Phone 715-346-3879, Fax 715-346-4038
lmarkham@uwsp.edu

Portage County Plants

Dr. Robert Freckmann
Robert W. Freckmann Herbarium
University of Wisconsin-Stevens Point
800 Reserve Street, TNR 310
Stevens Point, WI 54481
Phone 715 346-2637
rfreckma@uwsp.edu

Portage County Shoreland Zoning

Steve Brazzale
Portage County Planning and Zoning
1462 Strongs Avenue
Stevens Point, WI 54481
Phone 715-346-1334, Fax 715-346-1677
Brazzals@co.portage.wi.us

This publication was produced through a Wisconsin Department of Natural Resources Lake Management grant to Portage County, WI by the team of Dr. Byron Shaw, Nancy Turyk, Jen McNelly, Buzz Sorge, and Chris Mechenich Center for Watershed Science and Education College of Natural Resources University of Wisconsin-Stevens Point Stevens Point, WI 54481

<http://www.uwsp.edu/cnr/watersheds/>



July, 2009

Appendix B

Example of Citizen Survey used in Portage County Lake Management Planning

CITIZEN SURVEY OF THE SPRINGVILLE POND WATERSHED 2009

1. **How long have you lived in the watershed, visited or recreated on Springville Pond?**
 - Less than a year
 - 1-5 years
 - 6-10 years
 - 11-20 years
 - More than 20 years
2. **Where is your property or rental nearest to Springville Pond located?**
(See map attached to cover letter to locate your property)
 - On the pond
 - Outside the watershed but in Portage Co.
 - Not on the pond but in the pond watershed
 - Outside of Portage Co.
3. **What time of the year do you generally use Springville Pond?**
(Check all that apply)
 - March - April
 - May – August
 - September – November
 - December – February
 - Don't use the pond (go to question 26)
4. **When you use Springville Pond, are you typically ... (Check all that apply)**
 - Alone
 - With family members
 - With friends
 - With members of a club
 - Other _____

◆◆RECREATION◆◆

5. **What activities do you enjoy at or near the Springville Pond? (Check all that apply)**
 - Swimming
 - Canoeing / kayaking
 - Fishing
 - Ice fishing
 - Other _____
 - Enjoying wildlife
 - Nature photography
 - Enjoying scenery
 - Solitude
 - Picnicking
 - Walking
 - Biking
 - X-country skiing, snowshoeing
6. **Which statement best describes your experience in or on the pond?**
 - Rarely see and hear another person
 - I see others but they do not bother me
 - Sometimes the noise and activities of others disturb me
 - Often the noise and activities of others disturb me
 - I have to regularly plan around the noise and activities of others
 - There is so much noise and activity that I normally can't enjoy the lake
7. **What could be done to maintain or improve your recreation experience on Springville Pond?**

Appendix B

Example of Citizen Survey used in Portage County Lake Management Planning

◆◆WILDLIFE◆◆

8. How important is it for you to see wildlife (ducks, geese, squirrels, songbirds, frogs, turtles, etc) when you use Springville Pond?

- Very important Somewhat important Not too important Not at all important

9. What type of wildlife do you currently see in and around Springville Pond?

10. How has the quality of the wildlife habitat near Springville Pond changed since you began using it?

- Improved Stayed the same Declined Not sure

If it has changed, what factors do you feel have contributed to this change?

◆◆FISHING◆◆

11. How many years of fishing experience do you have on Springville Pond?

- Less than a year 1-5 years 6-10 years 11-20 years More than 20 years
 I don't fish on the pond (go to question 17)

12. In 2009, how often did you fish Springville Pond?

Open water:

- Daily Weekly Once or twice a month A few times a year Didn't fish

Ice fishing:

- Daily Weekly Once or twice a month A few times a year Didn't fish

13. How would you rate your fishing experiences on Springville Pond?

- Excellent Very Good Average Fair Poor

14. In general, how would you describe your fishing experiences on Springville Pond?

Frequency of catch:

- I catch fish every time I go out
 I catch fish most times I go out
 I sometimes catch fish
 I rarely catch fish

Fish size:

- Most fish are big enough to keep
 Some fish are big enough to keep
 Most fish are too small to keep

16. What type of fish do you catch?

- Largemouth Bass Rainbow Trout I haven't caught any
 Bluegill Brown trout Other _____
 Sunfish Brook trout

16. In general, would you say the quality of fishing on Springville Pond has ...

- Improved Stayed the same Declined Not Sure

Appendix B

Example of Citizen Survey used in Portage County Lake Management Planning

If you indicated that fishing quality has declined, what do you believe has contributed to the decline? (Check all that apply)

- | | | |
|--|---|---|
| <input type="radio"/> Loss of habitat | <input type="radio"/> Development pressure | <input type="radio"/> Livestock agriculture |
| <input type="radio"/> Shoreline damage | <input type="radio"/> Heavy recreation use | <input type="radio"/> Aquatic plants |
| <input type="radio"/> Over fishing | <input type="radio"/> Septic system seepage | <input type="radio"/> Algae |
| <input type="radio"/> Fertilizer use | <input type="radio"/> Herbicide use | <input type="radio"/> Air pollution |
| <input type="radio"/> Soil erosion | <input type="radio"/> Vegetable agriculture | <input type="radio"/> Low water level/low in-flow |
| <input type="radio"/> Other _____ | | |

Comments:

◆◆ AQUATIC PLANTS ◆◆

17. In your opinion, which statement best describes the amount of aquatic plant growth in Springville Pond in 2009?

- Very little, less than optimum for fish and wildlife
- Just the right amount for fish and wildlife and doesn't affect my use of the pond.
- Heavy growth, the plants may limit my use of some parts of the lake and diminish attractiveness
- Dense growth, more than optimum for fish and wildlife and the plants limit my use of most of the pond
- Choked with growth, the plants ruin fishing and my ability to enjoy the lake
- Not Sure

18. In 2009, did the amount of aquatic plant growth impact your enjoyment of the pond?

- Yes No

If yes, where in the pond did this occur? (check all that apply)

- East end West end Other _____

If yes, when did this occur? (check all that apply)

- May June July August Other _____

If yes, how long was the duration of excessive growth for the worst episode?

- Number of days _____ for which month _____?

19. In the summer of 2009, did the amount of aquatic plant growth impede your access to the pond from your dock?

- Yes No Don't live on the pond

20. Do you hand-harvest invasive aquatic plants from Springville Pond?

- No Yes,

If yes, how frequently do you hand harvest? _____

If yes, how/where do you dispose of the harvested plants? _____

21. In your opinion, how has the amount of aquatic plants in Springville Pond changed since 2006?

- Improved Stayed the same Declined Not Sure

22. After you have been in another lake or pond, do you clean your boat, and fishing equipment before using them in the Springville Pond?

- Yes, all of the time Yes, some of the time No, never No, only boat on this pond
 Don't use a boat in the pond

Appendix B

Example of Citizen Survey used in Portage County Lake Management Planning

♦♦WATER QUALITY♦♦

23. In your opinion, which statement best describes the current water quality in Springville Pond?

- Excellent (Clear most days, no scum present)
- Good (Clear most days, some scum present)
- Fair (Clear on some days, scum frequently present)
- Poor (Murky or scummy most of the time)
- Not Sure

24. In general, the water quality of the Springville Pond has...?

- Improved
- Stayed the same
- Declined
- Not Sure

If it has improved, what do you feel has contributed to this?

If it has declined, what in your opinion are the primary causes? (Check all that apply)

- Loss of aquatic plants
- Septic system seepage
- Vegetable agriculture
- Shoreline damage
- Fertilizer use
- Livestock agriculture
- Over fishing
- Soil erosion
- Excess algae
- Development pressure
- Herbicide use
- Other: _____
- Air pollution
- Less water entering the pond

25. How much impact does the water quality have on your perceived value of Springville Pond?

Personal enjoyment

- Major impact
- Some impact
- Little or no impact
- Not sure

Economic Value

- Major impact
- Some impact
- Little or no impact
- Not sure

♦♦WATERSHED LAND MANAGEMENT♦♦

Please answer only if you live or own property anywhere in the Springville Pond watershed (see included map), otherwise go to Question 34.

26. Do you use fertilizer on your property?

- Yes
- No (if no, go to Question 27)

If yes, where?

- Lawn
- Garden
- Agricultural fields
- Other _____

What is the size of the total area that is fertilized? _____ acres or _____ square feet

How many times per year do you apply fertilizer? _____

What is the closest distance from the pond or the Little Plover River to the area that is fertilized?
_____ feet

Do you use fertilizer which contains phosphorus?

- Yes
- No
- Not sure

Do you test your soil or follow your nutrient management plan before applying fertilizer?

- Yes, all of the time
- Yes, some of the time
- No, never

Appendix B

Example of Citizen Survey used in Portage County Lake Management Planning

27. When it rains do you:

- Try to route the water off your property as quickly as possible
- Try to retain the water on your property

If you try and retain the water on your property, please check all of the methods used:

- Rain Barrels
- Rain Gardens
- Gutter drains to vegetated area
- Other _____

28. What does your household typically do with grass clippings and/or leaves? (Check all that apply)

- Leave them on the lawn/mulch them
- Compost them in your yard
- Curbside pickup by community
- Sweep into street
- Place in field
- Take to village compost site
- Other _____

29. Where does your household typically dispose of household waste materials, such as used oils/fluid, pesticides, paints, etc. (Check all that apply)

- Recycle them
- On the ground
- With my regular trash
- Down a storm drain or in a roadside ditch
- In a container at home
- Other _____

30. What might motivate you to change how you manage your land? (Check all that apply)

- Improving water quality
- Improving water quantity or saving water
- Providing better habitat for fish and wildlife
- Increasing the natural beauty of my property
- Displaying a commitment to the environment
- Available financial assistance
- Available technical assistance
- Benefit my children/grandchildren
- Setting an example for community members
- Savings on landscaping/maintenance costs
- Increasing my privacy
- Increasing my property value
- Saving money
- Changes to municipal ordinances
- Other _____

◆◆SHORELAND MANAGEMENT◆◆

Please answer only if you own shoreland property on Springville Pond, otherwise go to Question 34

31. How many feet of pond frontage do you own? _____ feet

32. What best describes where your property meets the pond? (Check all that apply)

- Undeveloped natural landscape
- Landscaped trees and shrubs not mowed
- Lawn
- Rock Riprap
- Other _____

If you have a natural landscape or a combination of un-mowed vegetation with trees and shrubs, how far from the shoreline on to the property does it extend? _____ feet

33. Since 2006, have you made any changes to the shoreline of your property?

- No
- Yes, If yes, what did you do? _____

If yes, why did you make these changes? _____

Appendix B

Example Citizen Survey from Portage County Lakes

♦♦ GENERAL ♦♦

34. How does the pond, as it presently exists, impact

Your quality of life?

- Major impact Some impact Little or no impact Not sure

You economically? (for example recreation business, property values, tourism)

- Major impact Some impact Little or no impact Not sure

Comments:

35. To what extent does publicly owned land around or near the pond enhance the overall quality of your pond experience?

- Greatly enhances Somewhat enhances Little or no effect
 Somewhat detracts Greatly detracts

36. How adequately do you feel the present land use regulations protect habitat and water quality in the pond?

- Very adequate Fairly adequate Not too adequate Not at all adequate Not sure

37. How would you like to receive information on planning and management activities for the Springville Pond? (Check all that apply)

- Special Meetings Workshops Newspaper
 Website Events like lake fairs, celebrations, etc E-mail
 Information in municipal mailings Other _____

(Optional: Please provide an e-mail address on the separate sheet included in this mailing if you want information in this manner)

38. What do you value most about Springville Pond?

39. In your opinion, what should be done to restore, maintain, or improve Springville Pond?

Please use the backside of this survey if you need more space.

Appendix C

Lake Management Plan Template

Draft Lake Management Plan

Overall Vision for the Lake:

Aquatic Plants

Vision:

Goal:

Objectives:

Actions	Lead person/group	Start/end dates	Resources

Aquatic Invasive Species

Vision:

Goal:

Objectives:

Action	Lead person/group	Start/end dates	Resources

Fisheries

Vision:

Goal:

Objectives:

Actions	Lead person/group	Start/end dates	Resources

Appendix C

Lake Management Plan Template

Critical Habitat

Vision:

Goal:

Objectives:

Actions	Lead person/group	Start/end dates	Resources

Shorelands

Vision:

Goal:

Objectives:

Actions	Lead person/group	Start/end dates	Resources

Watershed Land Use

Vision:

Goal:

Objectives:

Actions	Lead person/group	Start/end dates	Resources

Appendix C

Lake Management Plan Template

Water Quality

Vision:

Goal:

Objectives:

Action	Lead person/group	Start/end dates	Resources

Recreation

Vision:

Goal:

Objectives:

Action	Lead person/group	Start/end dates	Resources

Communication/Organizations

Vision:

Goals:

Objectives:

Action	Lead person/group	Start/end dates	Resources

Appendix D

Glossary of Terms used in Lake Management Plans

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 (N₂) 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 (CaCO₃), 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".

Appendix D

Glossary of Terms used in Lake Management Plans

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.

Appendix D

Glossary of Terms used in Lake Management Plans

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 E

Invasive Species Rapid Response Plans

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).

APPENDIX E

Invasive Species Rapid Response Plans

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

The town in which the waterbody is situated

Town of: Sharon
Contact: Chairperson – Patrick Wanserski
Address: 7315 State Hwy. 66 Custer, WI54423
Phone: 715-592-5085
Who will contact them: Portage County AIS Coordinator

The town in which the waterbody is situated

Town of: Alban
Contact: Chairperson – Michael Zdroik
Address: 10250 State Hwy 66 Rosholt, WI 54473
Phone: 715-677-3873
Who will contact them: Portage County AIS Coordinator

APPENDIX E

Invasive Species Rapid Response Plans

First	Address	City	Zip	Phone	E-mail
<p>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: <u>Portage County AIS Coordinator</u></p>					
<p>Newspapers Who will contact them: <u>Portage County AIS Coordinator</u> Rosholt Record Portage County Gazette Stevens Point Journal</p>					
<p>Post notice at the access points to the waterbody</p>					

