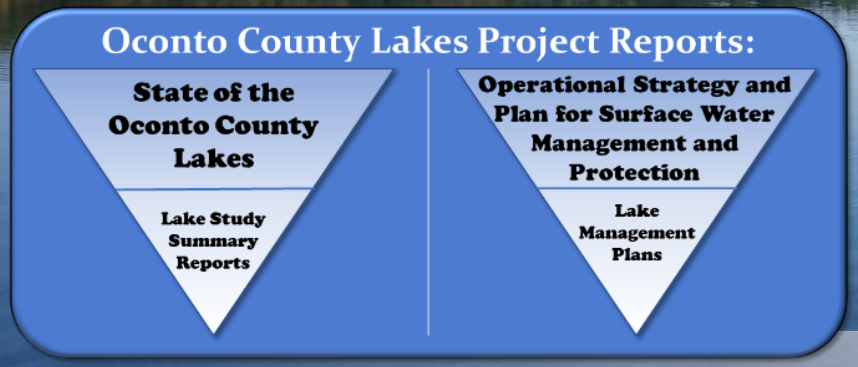
Oconto County Lakes Project

PAYA LAKE MANAGEMENT PLAN

2018



VISION

Paya Lake will remain a peaceful natural setting with beautiful clear water, great swimming and fishing, where people gather to enjoy nature and each other.

Paya Lake Management Plan

The authors would like to acknowledge the commitment and enthusiasm of the Paya Lake Association, Oconto County Lakes & Waterways Association, Oconto County Land and Water Conservation Department, UW Extension – Oconto County, Wisconsin Department of Natural Resources, UW-Stevens Point Water and Environmental Analysis Laboratory, landowners in the Paya Lake watershed, and participants in the Oconto County Lakes Project.

This plan was prepared by the Center for Watershed Science and Education at University of Wisconsin – Stevens Point.

Along with the Oconto County Lakes Project participants, the following individuals and organizations contributed to the content of this plan.

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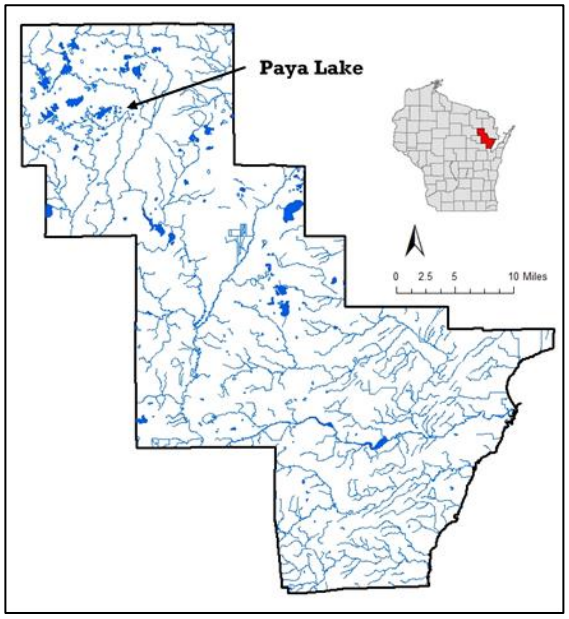
Resource	Acronym or Truncated Name
Citizen Lake Monitoring Network	CLMN
Clean Boats Clean Waters	CBCW
Lumberjack Resource Conservation & Development Council	LRCD
Oconto County Land Conservation Dept.	OC LCD
Oconto County Board of Supervisors	OC Board
Oconto County Lakes and Waterways Association	OCLAWA
Paya Lake Association	PLA
Town of Riverview	TOR
University of Wisconsin - Extension	UWEX
UWSP Water & Environmental Analysis Laboratory	WEAL
UWSP Center for Watershed Science and Education	CWSE
USDA Natural Resources Conservation Service	NRCS
Wisconsin Department of Natural Resources	WDNR
Wisconsin Department of Transportation	WDOT

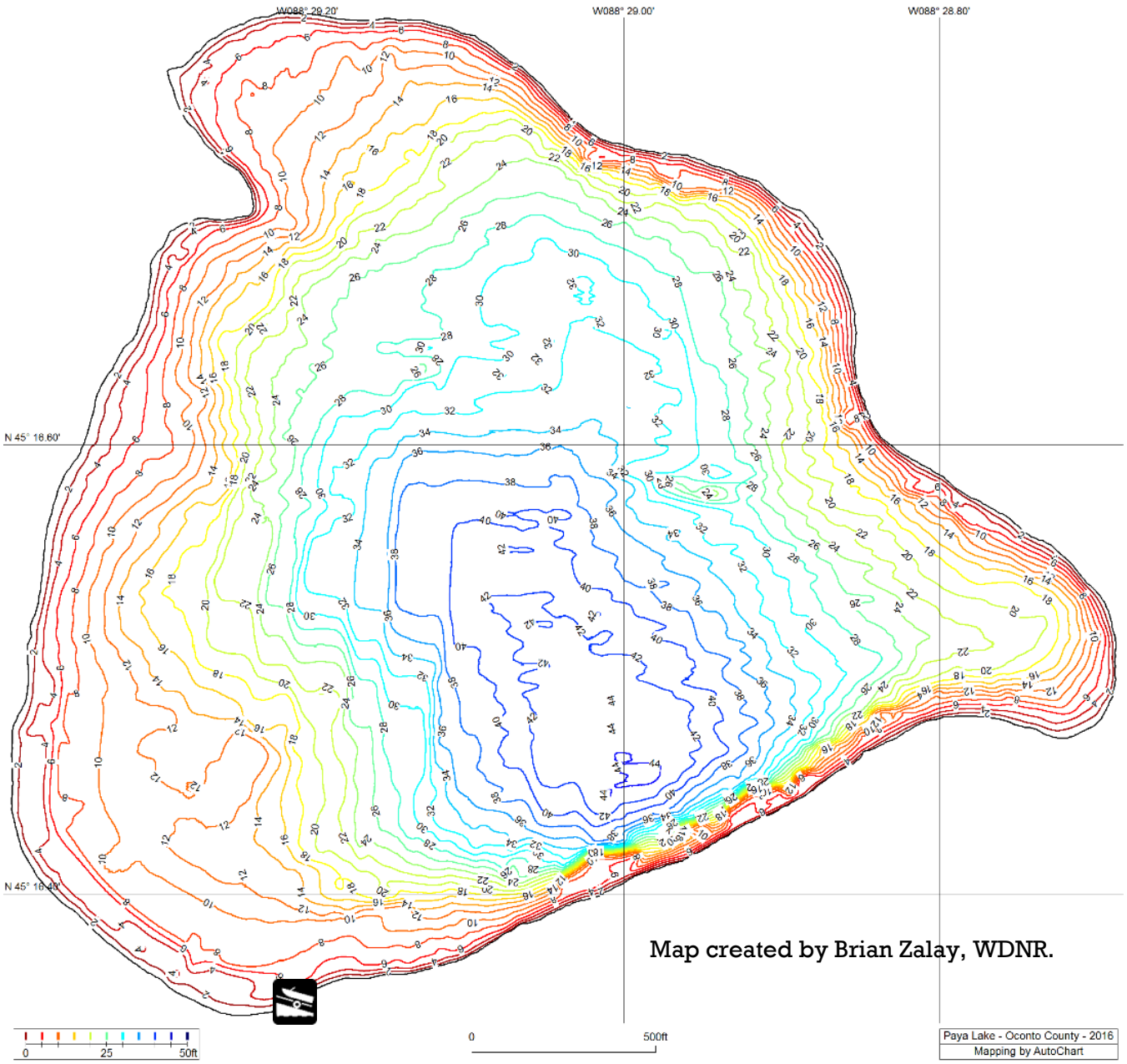
Background

ABOUT PAYA LAKE

Paya Lake is located in the Town of Riverview. This 105-acre seepage lake has a maximum depth of 40 feet with clear water. Its bottom sediments are primarily muck and sand. Visitors have access to the lake from one public boat landing located on the south side which is owned by the Town of Riverview.

Most water enters Paya Lake via groundwater. Surface water runoff, direct precipitation and groundwater also contribute water to lesser extents.





Map created by Brian Zalay, WDNR.

What Is A Lake Management Plan?

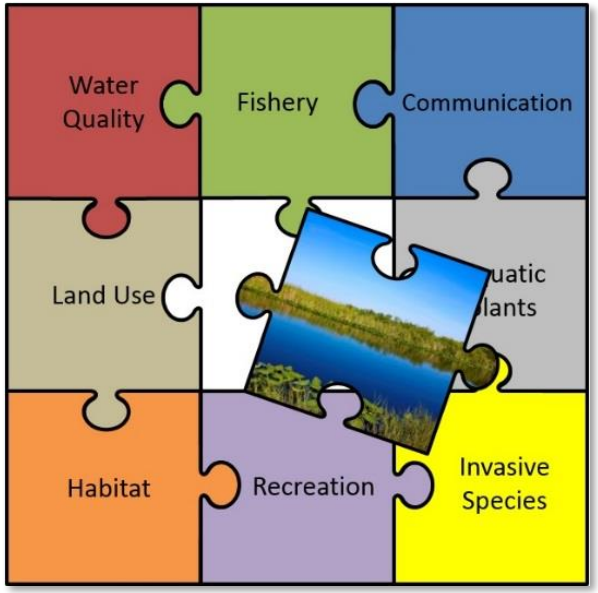
LAKE MANAGEMENT PLANS (LMP)

What is an LMP?

A management plan is a living document that changes over time to meet the current needs, challenges and desires of the lake and its community. Although each lake is different, the WDNR requires that each comprehensive lake management plan address a specific list of topics affecting the character of the lake, whether each topic has been identified as a priority, or as simply something to consider. In this way, every LMP considers the many aspects associated with lakes.

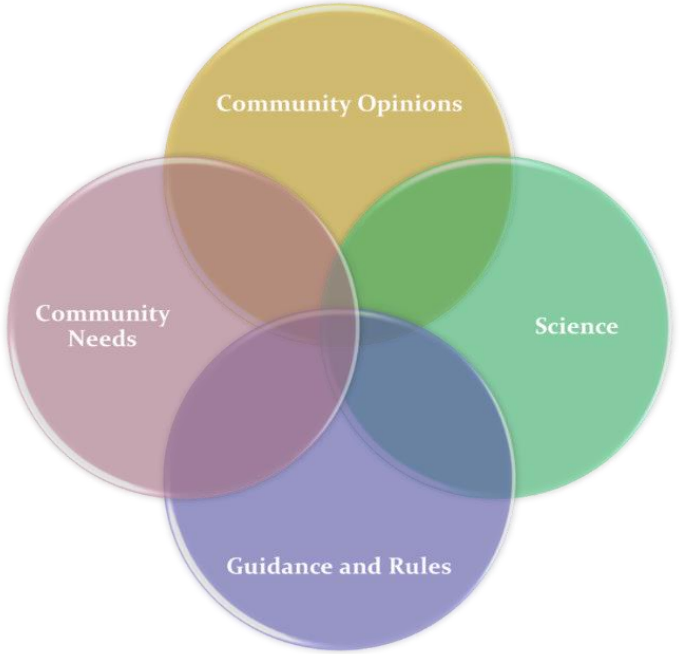
What is the purpose of this LMP?

This plan was created to ensure that Paya Lake is a healthy now and for future generations. It was designed to learn about Paya Lake and identify features important to the Paya Lake community, in order to provide a framework for the protection and improvement of the lake.



Implementing the content of this LMP will enable citizens and others to work together to achieve the vision for Paya Lake now and in the years to come. It is a dynamic document that identifies goals and action items for the purpose of maintaining, protecting and/or creating desired conditions in the lake and identifies steps to correct past problems, improve on current conditions, and provide guidance for future boards, lake users, and technical experts.

Because many entities are involved in lake and land management, it can be challenging to navigate the roles, partnerships and resources that are available. The planning process and content of this plan have been designed to identify where some key assistance exists. The actions identified in this LMP can serve as a gateway for obtaining grant funding and other resources to help implement activities outlined in the plan.



How Was This Plan Created?

ABOUT THIS PLAN

One of the first steps in creating this plan was to gather and compile data about the lake and its ecosystem to understand past and current conditions. This was done in 2016-2017 alongside 8 other lakes as part of the Oconto County Lakes Project. The project was initiated by citizens in the Oconto County Lakes and Waterways Association who encouraged Oconto County to prioritize lake interests. This effort led to funding from the WDNR Lake Protection Grant Program. There was insufficient data available for many of the lakes to evaluate current water quality, aquatic plant communities, invasive species, and shorelands. The data that were available had been collected at differing frequencies or periods of time, making it difficult to compare lake conditions. Professionals and students from UW-Stevens Point, Oconto County Land Conservation Department, UW Extension, Oconto County citizens and WDNR staff collected the data for use in the development of lake management plans. Sources of information used in the planning process are listed at the end of this document.

Reports from the Paya Lake Study and the materials associated with the planning process and reports can be found on the Oconto County website: **www.co.oconto.wi.us** and navigating to Departments>Land Conservation>County Waterways>County-wide Lake Study.

THE PLANNING PROCESS

Who created the strategic plan?

This plan is the result of a stakeholder-driven effort which involved many partners combining insight, knowledge, and expertise throughout the process. Members of the lake association, area residents, lake users, and representatives of local municipalities gathered at a public meeting held on August 25, 2018 at the Town of Lakewood Community Center to learn from one another and make decisions about the fishery, water quality, habitat, and land management in the Paya Lake watershed. Technical assistance during the planning process was provided by the Oconto County Conservationist, and staff from WDNR, UWEX, and the CWSE.

How were various opinions incorporated?

Participation in the planning process was open to everyone and was encouraged by letters mailed to Paya Lake waterfront property owners and by press releases in local newspapers. In addition, those individuals and organizations who provided their information were provided with emails about upcoming meetings, which could be forwarded to additional contact lists. To involve and collect input from as many people as possible, including those who might not be able to attend the public meetings, an online survey was conducted. Property owners and interested lake users were notified about the survey and how to access it via direct mailings to waterfront property owners and associated lake organizations and press releases in local newspapers. The surveys could be filled out anonymously online, or paper copies were available upon request. Survey questions and responses were shared at the planning sessions and can be found in the Appendix.

How Is This Management Plan Used?

Who will use this plan?

- **Individuals:** Individuals can use this plan to learn about the lake they love and their connection to it. People living near Paya Lake can have the greatest influence on the lake by understanding and choosing lake-friendly options to manage their land and the lake.
- **Paya Lake Association:** This plan provides the Association with guidance for the whole lake and lists options that can easily be prioritized. Resources and funding opportunities for lake management activities are made more available by placement of goals into the lake management plan, and the Association can identify partners to help achieve their goals for the lake.
- **Neighboring lake groups, sporting and conservation clubs:** Groups with similar goals for lake stewardship can combine their efforts and provide each other with support, improve competitiveness for funding opportunities, and make efforts more fun.
- **The Town of Riverview:** Municipalities can utilize the visions, objectives, and goals documented in this lake management plan when considering town-level planning or decisions within the watershed that may affect the lake.
- **Oconto County:** County professionals will better know how to identify needs, provide support, base decisions, and allocate resources to assist in lake-related efforts documented in this plan. This plan can also inform county board supervisors in decisions related to Oconto County lakes, streams, wetlands, and groundwater.
- **Wisconsin Department of Natural Resources (WDNR):** Professionals working with lakes in Oconto County can use this plan as guidance for management activities and decisions related to the management of the resource, including the fishery, and invasive species. LMPs help them to identify and prioritize needs, and where to apply resources. A well thought out lake management plan increases an application's competitiveness for funding from the State.

Who can help implement this plan?

Lead persons and resources are identified under each action in this plan. These individuals and organizations are able to provide information, suggestions, or services to achieve goals. The following table lists organization names and their common acronyms used in this plan. This list should not be considered all-inclusive – assistance may also be provided by other entities, consultants, and organizations.

Management Plan Structure

GOALS FOR PAYA LAKE

The foundation of any effective strategic plan is clear identification of goals and the steps needed to achieve the goals. The selected goals should achieve the overall vision for Paya Lake. This plan also identifies available resources within each objective.

The topics comprise the chapters in this plan and have been grouped as follows:

In-Lake Habitat and a Healthy Lake

Fish Community—fish species, abundance, size, important habitat and other needs

Aquatic Plant Community—habitat, food, health, native species, and invasive species

Critical Habitat—areas of special importance to the wildlife, fish, water quality, and aesthetics of the lake

Landscapes and the Lake

Water Quality—water chemistry, clarity, contaminants, lake levels

Shorelands—habitat, erosion, contaminant filtering, water quality, vegetation, access

Watershed—land use, management practices, conservation programs

People and the Lake

Recreation—access, sharing the lake, informing lake users, rules

Communication and Organization—maintaining connections for partnerships, implementation, community involvement

Updates & Revisions—plan for maintaining a living document

Paya Lake Management Plan Goals

Goals for Paya Lake

The following goals and actions were derived from the values and concerns of citizens interested in Paya Lake and members of the planning committee, as well as the known science about Paya Lake, its ecosystem and the landscape within its watershed.

Implementing and regularly updating the goals and actions in this plan will ensure that the vision is supported and that changes are incorporated into the plan.

LIST OF GOALS

Goal 1	**Paya Lake will have a healthy and well-balanced fishery.**
Goal 2	**Paya Lake will continue to have a healthy and diverse aquatic plant community that provides good habitat and water quality while minimizing impacts to recreation and remaining free of invasive species.**
Goal 3	**Sensitive areas in Paya Lake, which provide essential habitat and/or water quality benefits, will be protected.**
Goal 4	**Watershed and shoreland property owners will know about and utilize resources for healthy land management practices.**
Goal 5	**Paya Lake's shorelands will become increasingly healthy over time, providing good habitat and water quality benefits for the lake.**
Goal 6	**Maintain or improve water quality in Paya Lake.**
Goal 7	**Lake users will be informed and respectful of Paya Lake.**
Goal 8	**Increase participation in lake stewardship.**
Goal 9	**Review plan annually and update as needed.**

Fish Community

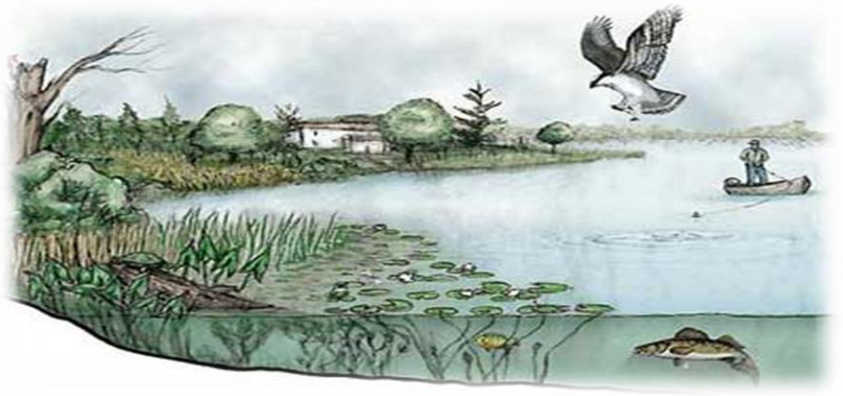
IN-LAKE HABITAT AND A HEALTHY LAKE

The health of one part of the lake system affects the health of the rest of the plant and animal community, the experiences of the people seeking pleasure at the lake, and the quality and quantity of water in the lake. Habitat is the structure for a healthy fishery and wildlife community. It can provide shelter for some animals and food for others. Many animals that live in and near the lake are only successful if their habitat needs are met.

What is lake-habitat?

Healthy lake-habitat in Paya Lake includes native aquatic plants and shoreland vegetation, as well as tree branches/limbs above and below the water.

Habitat exists within the lake, along the shoreland, and even extends into its watershed for some wildlife species. Native vegetation (including wetlands) along the shoreline and connected to the lake provides shelter and food for waterfowl, small mammals, turtles, frogs, and fish. Native plants in and near the lake can also improve water quality and balance water quantity. Aquatic plants infuse oxygen into the water, which is essential for the fish community. Some lake visitors such as birds, frogs, and turtles use limbs from trees that are sticking out of the



water for perches or to warm themselves in the sun. The types and abundance of plants and animals that comprise the lake community also vary based on the water quality, and the health and characteristics of the shoreland and watershed.

The Fish Community

A balanced fish community has a mix of predator and prey species, each with different food, habitat, nesting substrate, and water quality needs to flourish.

What can affect the fishery?

Activities in and around a lake that can affect a fishery include:

- disturbances to the native aquatic plant community or substrate,
- excessive additions of nutrients or harmful chemicals,
- removal of woody habitat,
- shoreline alterations,
- shoreland erosion can cause sediment to settle onto the substrate, causing the degradation of spawning habitat.

What People Value about Paya Lake

Natural setting
Beauty of the lake
Clear water and not very crowded
Small lake with clear water with good fishing and swimming
Time with family while spending time near nature (forest, birds, animals, etc.)

Habitat provides shelter and food for fish and wildlife.

Fish Community

Can the fishery be improved?

Habitat can be improved by allowing shoreland vegetation to grow, minimizing the removal of aquatic plants, providing fallen trees or limbs in suitable areas, and protecting wetlands and other areas of critical habitat.

Managing a lake for a balanced fishery can result in fewer expenses to lake stewards and the public. While some efforts may be required to provide a more suitable environment to meet the needs of the fish, they usually do not have to be repeated on a frequent basis. Ideally, a lake contains the habitat, water quality, and food necessary to support the fish communities present within the lake and provide fishing opportunities for people without a lot of supplemental effort and associated expenses to maintain these conditions.

- Protecting existing habitat such as emergent, aquatic, and shoreland vegetation, and allowing trees that naturally fall into the lake to remain in the lake, are free of cost.
- Restoring habitat in and around a lake can have an up-front cost, but the effects will often continue for decades.
- Costs in time, travel, and other expenses are associated with routine efforts such as fish stocking and aeration.

Stocking Date	Species	# Stocked	Avg. Length (in)
Pre 1960s	Walleye	-	-
Pre 1960s	Northern pike	-	-
2003	Walleye	1,000	4.9

Paya Lake 2015 Fish Survey Highlights

- ✓ The most recent previous survey was conducted in 2004.
- ✓ The five most abundant species were largemouth bass (36%), bluegill (34%), green sunfish (13%), smallmouth bass (8%), and rock bass (6%).
- ✓ Largemouth bass averaged 11.6” with average growth.
- ✓ Bluegill averaged 6.1” with average growth.
- ✓ Smallmouth bass averaged 9” with average growth.
- ✓ Rock bass averaged 7.6” with a well-balanced population.
- ✓ The following change to fishing regulations is recommended: slot limit from 14-18” for largemouth bass, 10 bag limit for panfish, keep 14” minimum for smallmouth bass.
- ✓ The next fish survey is scheduled for 2025.

The WDNR fishery biologist reported impressive organization and vigilance in getting 20 property owners to install fish sticks adjacent to their shore during the winter of 2018. The current permit does not expire until 2022 in case others are interested. No stocking is recommended until after the 2025 survey to assess the impact of the increased coarse woody habitat (CWH).

Fish Community

Goal 1. Paya Lake will have a healthy and well-balanced fishery.

Objective 1.1 Continue to manage for a healthy balance of predator and panfish populations.

Actions	Lead person/group	Resources	Timeline
Establish slot limit from 14-18" for largemouth bass.	PLA	WDNR-Chip Long	2019
Establish 10-bag limit for panfish.	PLA	WDNR-Chip Long	2019
Discontinue any stocking until after 2025 fish survey.	PLA	WDNR-Chip Long	2018-2025

Objective 1.2 Continue to enhance fish and wildlife habitat in and around the lake. At least 25 more fish stick clusters will be installed in the next 5 years.

Actions	Lead person/group	Resources	Timeline
Identify landowners for fish stick installations. Trees can be sourced by identifying other landowners who need a tree removed.	PLA	WDNR-Chip Long	2019-2022
Educate and encourage landowners to leave logs, tree branches and limbs in place in the water, whenever possible.	PLA	WDNR-Chip Long UWEX-Pat Goggin	Ongoing
Continue to protect and restore shoreland areas and avoid shoreland alterations to improve fish habitat.	PLA	Shoreland property owners	Ongoing

Aquatic Plant Community

Native plants provide essential food and habitat for fish and wildlife.

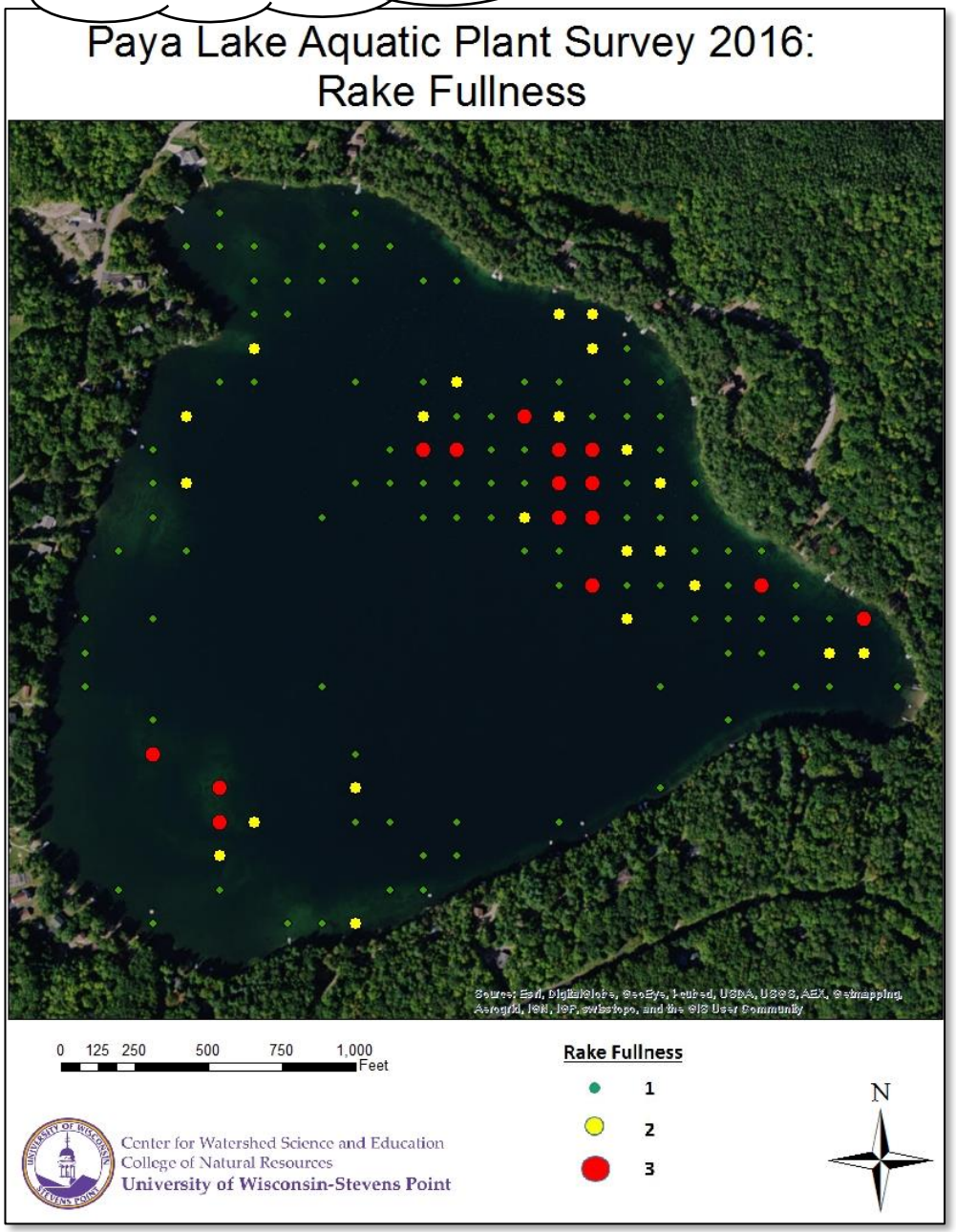
Aquatic Plants

Aquatic plants provide the forested landscape within Paya Lake. They provide food and habitat for spawning, breeding, and survival for a wide range of inhabitants and lake visitors including fish, waterfowl, turtles, amphibians, as well as invertebrates and other animals. They improve water quality by releasing oxygen into the water and utilizing nutrients that would otherwise be used by algae. A healthy lake typically has a variety of aquatic plant species, which makes the aquatic plant community more resilient and can help to prevent the establishment of non-native aquatic species. Additionally, they stabilize the bottom sediment and help filter out the suspended sediment from the water column.

Aquatic plants near shore and in shallows provide food, shelter, and nesting material for shoreland mammals, shorebirds and waterfowl. It is not unusual for otters, beavers, muskrats, weasels, mink and deer to be seen along a shoreline in their search for food, water or nesting material. The aquatic plants that attract the animals to these areas contribute to the beauty of the shoreland and lake. Aquatic plants also serve as indicator species for environmental stressors that could be occurring in a lake or river, such as a runoff event.

Paya Lake 2016 Aquatic Plant Survey Highlights

- ✓ 40% (134 of 343) of the sites visited had vegetative growth.
- ✓ Greatest depth aquatic plants were found was 35 feet.
- ✓ 6 species of aquatic plants were identified. This is well below the North Central Hardwood average of 16.2.
- ✓ The species were chara (54%), nitella sp. (37%), slender naiad (11%), variable pondweed (2%), large-leaf pondweed (2%), and southern naiad (1.5%).
- ✓ The Floristic Quality Index (FQI) was 17.15. The North Central Hardwood average is 23.3.



Aquatic Plant Community

Chara is a type of macro-algae that grows attached to muddy lake bottoms and has a musky odor. Muskgrass, as it is known, filters the lake water, helps prevent the establishment of invasive species, and provides excellent habitat for small fish and other organisms.

Nitella, or stonewort, is similar to chara in that it is a type of algae that looks like a plant. The branches are arranged in whorls around the stem, but unlike chara, are smooth and translucent green. Nitella also lacks the skunky smell of chara.

Slender naiad has glossy, finely toothed leaves appearing as whorls near the end of stems. Also known as the water-nymph, the whole plant is eaten by waterfowl and provides shelter for small fish and insects.

Aquatic Invasive Species (AIS)

Aquatic invasive species are non-native aquatic plants and animals that are most often unintentionally introduced into lakes by lake users. This commonly occurs on trailers, boats, equipment, and from the release of bait. In some lakes, aquatic invasive plant species can exist as a part of the plant community, while in other lakes populations explode, creating dense beds that can damage boat motors, make areas non-navigable, inhibit activities like swimming and fishing, and disrupt the lakes' ecosystems.

Rusty crayfish is the only AIS that has been observed in Paya Lake. They are known to displace native crayfish and reduce aquatic plant abundance and diversity. In some lakes, they have eaten most of the plants in the lake, eliminating habitat, forage and increasing erosion. There are no effective ways to eradicate these populations once established.

Aquatic Plant Management in Paya Lake

Management strategies in Paya Lake were designed to achieve a balance between healthy aquatic habitat, good water quality, and recreation. A variety of management options were discussed during the development of this plan. No invasive species were observed during the 2016 aquatic plant survey.

Management Options for Excessive Native Aquatic Plants

Management options that offer the most practical and effective approaches for managing native plants, while minimizing impacts to Paya Lake as a whole, were identified. Depending upon conditions, the following options may be used alone or in combination with others.

Hand-pulling. No permit required.

Lakefront property owners are allowed to manually remove aquatic plants from an area no more than 30 feet wide without a permit for swimming and boat access. Any denuded lakebed is prime real estate for invasive species, however, and close monitoring is necessary to ensure no populations are established.

Mechanical Harvesting. Permit required.

While harvesting, operators should take care (by raising and lowering the harvesting bar) to minimize the impact on habitat and to reduce sediment disturbance. Harvesting in depths less than 3 feet should be avoided, keeping in mind sediment resuspension can lead to additional plant growth and algae blooms. A second pass should be made on harvested areas to remove plant fragments and floaters. **Areas with EWM should be avoided to prevent its fragmentation and spread** unless it is specifically mentioned in the plan as part of an integrated plant management program. In some lakes the EWM can't be target for control due to flow or location. This is when the harvester is recommended. It is another tool in the toolbox and works when used properly.

Mechanical Harvesting Plan for Navigation: Harvesting of dense plant beds that are not comprised of EWM/HWM may be conducted as needed to provide navigation. Paths from piers to open water may be cut to improve navigation and the fishery. Lanes should be no wider than 15 yards. To minimize disturbances to sediment and important fish habitat, harvesting should be avoided in water depths less than 3 feet. A depth finder on the cutter end of the harvester can aid in evaluating water depths.

Skimming, target: dense floating plant material, filamentous algae. Permit required.

This mechanical removal method would be applied when targeting uprooted aquatic plants that have accumulated in parts of Paya Lake. Skimming of floating plant material can be conducted by mechanical or non-mechanical means in areas where sediment and emergent plants would not be disturbed by this activity.

The surface of the lake is skimmed to collect plant material for removal from the lake. When skimming with a harvester, aquatic plants are not cut.

Be part of the solution!

- ✓ Learn to identify invasive species and routinely look for them when on the lake.
- ✓ Do not remove native aquatic vegetation beyond what is necessary to access the lake. Any denuded areas should be monitored closely for invasive species.

Aquatic Plant Management Plan Review

A good aquatic plant management plan strategy should reduce the amount of management activity needed as time goes on. In Paya Lake, a series of successful strategies should lead to a balance between healthy aquatic habitat, water quality, and recreation with minimal annual management. To evaluate if management strategies are succeeding, updates to aquatic plant point-intercept surveys should be conducted at least every five years. If chemical treatments are pursued, more frequent (pre- and post-treatment) surveys are necessary. It is important that that the person doing the control and person conducting the survey are different to ensure and unbiased assessment. Assistance in updating surveys can be provided by the WDNR Aquatic Plant Specialist and/or consultants.

Aquatic Plant Community

Goal 2. Paya Lake will continue to have a healthy and diverse aquatic plant community that provides good habitat and water quality while minimizing impacts to recreation and remaining free of invasive species.

Objective 2.1 Minimize disturbance to native aquatic plants.

Actions	Lead person/group	Resources	Timeline
Inform property owners of the importance of native aquatic vegetation to impede the establishment of additional AIS, provide food and habitat for wildlife, and protect the shoreline via educational materials provided at the annual meeting and in a newsletter.	PLA	WDNR-Brenda Nordin	Ongoing
Encourage landowners to limit plant removal to invasive species or skimming off those that have become unrooted and free-floating. If plants severely impede recreation, consider hand-pulling small areas around private docks (within WDNR guidelines). Cleared lakebed is ideal habitat for AIS to become established, so be vigilant about watching for AIS in these areas.	PLA	WDNR-Brenda Nordin	Ongoing
Regularly monitor aquatic plant community to detect any changes in lake conditions and ensure stable populations. A point-intercept survey is recommended.	PLA	WDNR-Brenda Nordin Consultants	Every 10 years if no active plant management taking place.
Reduce nutrient and sediment loading to lake (to limit abundance of plants and algae) by improving shoreland buffers (see **Shorelands** section) and implementing BMPs in the watershed (see **Watershed** section).	PLA	WDNR-Brenda Nordin OCLCD	Ongoing

Objective 2.1 Protect against establishment of aquatic invasive species.

Actions	Lead person/group	Resources	Timeline
Encourage or host training to identify and look for invasive species, particularly EWM.	PLA	WDNR-Brenda Nordin LRCD	Summer 2019
Identify Clean Boats Clean Waters volunteers or hire someone to staff boat launch on busy days. This can be paid for with a CBCW grant. OCLWA could sponsor a grant and share the inspectors amongst several lakes.	PLA	CBCW	Summers
Educate landowners on importance of native aquatic plants for preventing AIS. Bring in speaker for annual meeting, mail literature to property owners, etc.	PLA	WDNR-Brenda Nordin	Ongoing

If new AIS is suspected or observed, follow the guidance in **Appendix B**.	PLA	WDNR-Brenda Nordin	Ongoing

Critical Habitat

Every waterbody has areas that are most important to the overall health of the lake.

Critical Habitat

Special areas harbor habitat that is essential to the health of a lake and its inhabitants. In Wisconsin, critical habitat areas are identified by biologists and other lake professionals from the WDNR in order to protect features that are important to the overall health and integrity of the lake, including aquatic plants and animals. While every lake contains important natural features, not all lakes have official critical habitat designations. Designating areas of the lake as critical habitat enables these areas to be located on maps and information about their importance to be shared. Having a critical habitat designation on a lake can help lake groups and landowners plan waterfront projects that will minimize impact to important habitat, ultimately helping to ensure the long-term health of the lake.

Although Paya Lake does not have an official critical habitat area designation, there are areas within Paya Lake that are important for fish and wildlife. Natural, minimally-impacted areas with woody habitat such as logs, branches, and stumps; areas with emergent and other forms of aquatic vegetation; areas with overhanging vegetation; and wetlands are elements of good quality habitat. Identifying other important areas around the lake that are important habitat and informing lake users of their value can help raise awareness for the protection of these areas.

Goal 3. Sensitive areas in Paya Lake, which provide essential habitat and/or water quality benefits, will be protected.

Objective 3.1 Identify and protect high quality areas in and around Paya Lake.

Actions	Lead person/group	Resources	Timeline
Request a Critical Habitat Designation from WDNR.	PLA	WDNR-Brenda Nordin	2019
If critical habitat is designated on Paya Lake, communicate to property owners, visitors, and Town Board as to why these areas are important.	PLA		TBD

Watershed

LANDSCAPES AND THE LAKE

Paya Lake Watershed

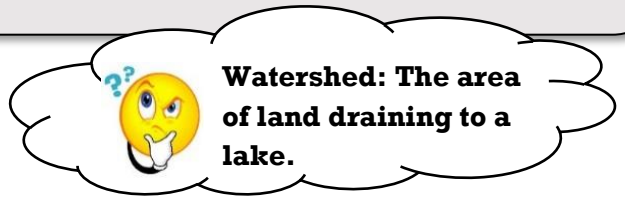
A Lake is a Reflection of its Watershed…

Understanding where Paya Lake's water originates is important to understanding lake health. During snowmelt or rainstorms, water moves across the surface of the landscape (runoff) towards lower elevations such as lakes, streams, and wetlands. This area is called the watershed. Groundwater also feeds Paya Lake; its land area may be slightly different than the surface watershed.

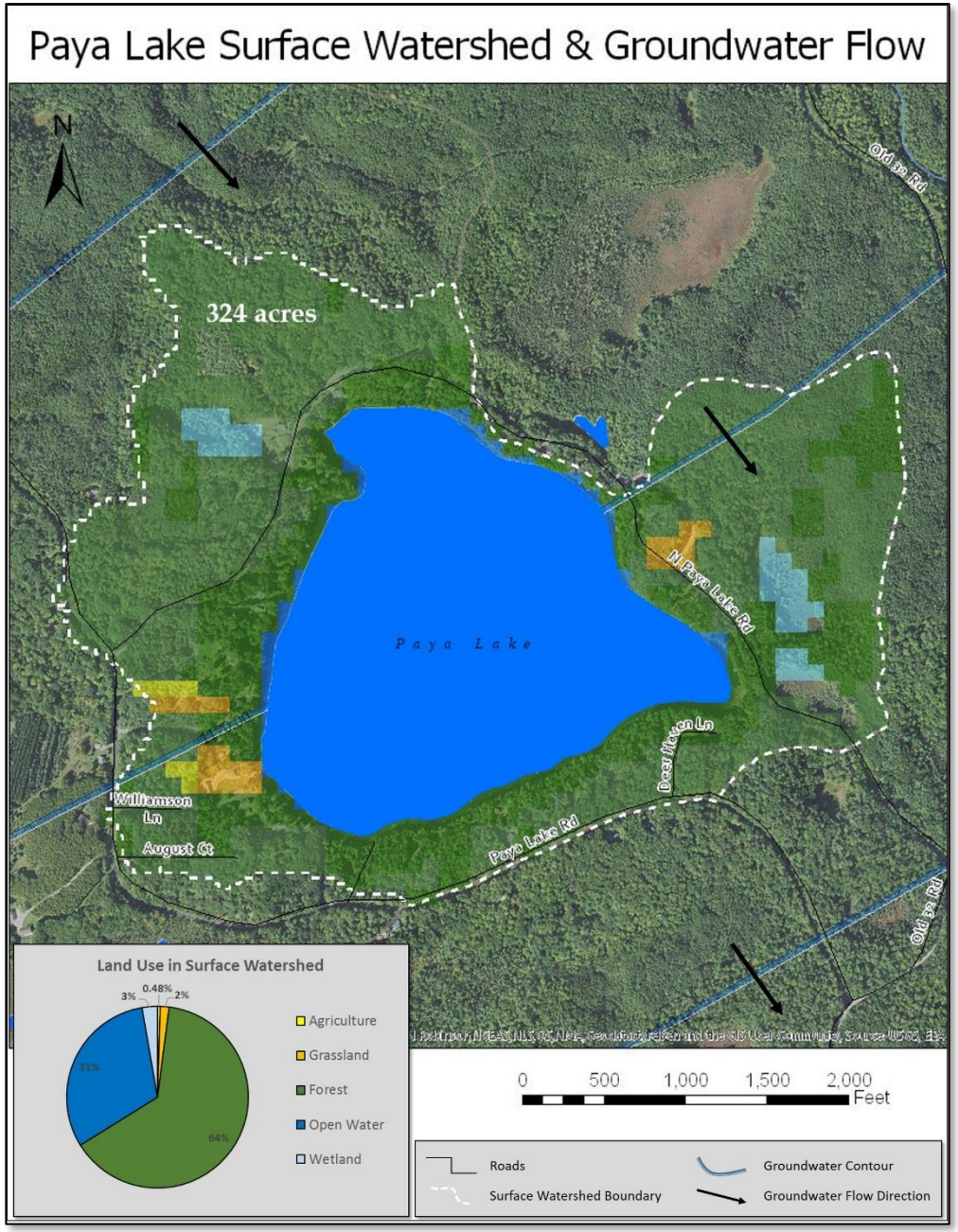
Less runoff is desirable because it allows more water to recharge the groundwater, which feeds the lake year-round - even during dry periods or when the lake is covered with ice. The capacity of the landscape to shed or hold water and contribute or filter particles determines the amount of erosion that may occur, the amount of groundwater feeding a lake, and the lake's water quality and quantity. Landscapes with greater capacities to hold water during rain events and snowmelt slow the delivery of the water to the lake.

Paya Lake's Watershed

The Paya Lake watershed is 324 acres. Primary land use is forest and residential. The lake's shoreland is surrounded primarily by developed residential lots. In general, the land closest to the lake has the greatest immediate impact on water quality.



Watershed: The area of land draining to a lake.



Watershed

Why does land matter?

Land use and land management practices within the watershed can affect both its water quantity and quality. While forests, grasslands, and wetlands allow a fair amount of precipitation to soak into the ground, resulting in more groundwater and good water quality, other types of land uses may result in increased runoff and less groundwater recharge, and may also be sources of pollutants that can impact the lake and its inhabitants.

Soil and Erosion

Areas of land with exposed soil can produce soil erosion. Soil entering the lake can make the water cloudy and cover fish spawning beds. Soil also contains nutrients that increase the growth of algae and aquatic plants.

Development

Development on the land may result in changes to natural drainage patterns, alterations to vegetation on the landscape, and may be a source of pollutants. Impervious (hard) surfaces such as roads, rooftops, and compacted soil prevent rainfall from soaking into the ground, which may result in more runoff that carries pollutants to the lake. Wastewater, animal waste, and fertilizers used on lawns, gardens and crops can contribute nutrients that enhance the growth of algae and aquatic plants in our lakes.

What can be done?

Land management practices can be put into place that mimic some of the natural processes, and reduction or elimination of nutrients added to the landscape will help prevent the nutrients from reaching the water. In general, the land nearest the lake has the greatest impact on the lake water quality and habitat.

Be Part of the Solution!

Practices designed to reduce runoff include:

- protecting/restoring wetlands,
- installing rain gardens, swales, rain barrels, and other practices that increase infiltration
- routing drainage from pavement and roofs away from the lake
- meandering lake access paths to minimize direct flow to the lake.

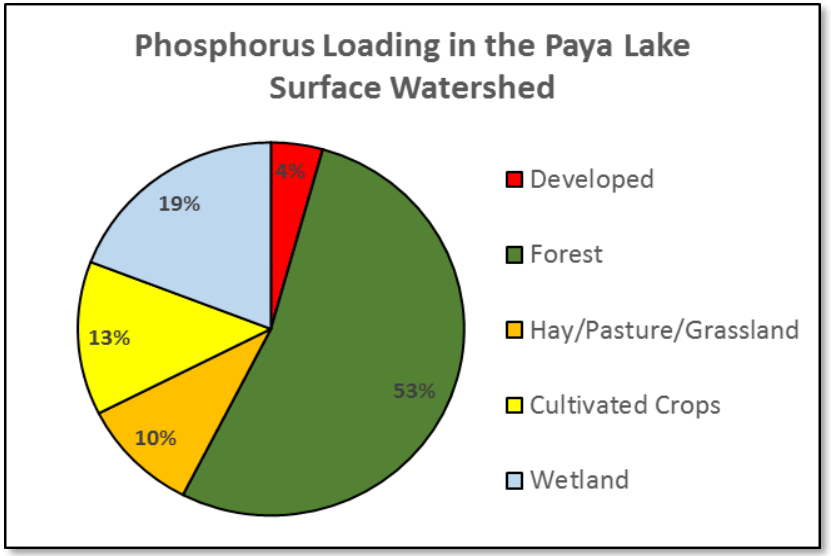
Practices used to help reduce nutrients from moving across the landscape towards the lake include:

- eliminating/reducing the use of fertilizers,
- increasing the distance between the lake and a septic drainfield,
- protecting/restoring wetlands and native vegetation in the shoreland,
- controlling erosion,
- manure management and cropping practices.

Most of these activities are eligible for cost share and grant assistance!

Phosphorus Modeling

Estimates of phosphorus from the landscape can help to understand the phosphorus sources to Paya Lake. Land use in the surface watershed was evaluated and used to populate the Wisconsin Lakes Modeling Suite (WILMS) model. In general, each type of land use contributes different amounts of phosphorus in runoff and groundwater. The types of land management practices that are used and their distances from the lake also affect the contributions to the lake from a parcel of land. The phosphorus contributions by land use category, called phosphorus export coefficients, have been obtained from studies throughout Wisconsin (Panuska and Lillie, 1995).



Phosphorus Loading in Paya Lake Watershed

Based on modeling results, forest had the greatest percentage of phosphorus contributions from the watershed. Efforts to reduce nutrient inputs to the lake must be focused on land uses that we have some control over such as agriculture and developed areas.

Goal 4. Watershed and shoreland property owners will know about and utilize resources for healthy land management practices.

Objective 4.1 Support healthy land management activities in the Paya Lake watershed to reduce sediment/nutrient loading.

Actions	Lead person/group	Resources	Timeline
Encourage the County to support and follow-up with water quality-based best management practices (BMPs) within the watershed. Include BMPs that reduce application of excess nitrogen and pesticides that leach to groundwater.	PLA	NRCS DATCP County Board Supervisors	Ongoing

Support landowners interested in the protection of their land via a land conservation program (i.e. Conservation Easement, Purchase of Development Rights, or sale of land for protection).	PLA	WDNR Lake Protection Grants Knowles-Nelson Stewardship Fund NWLT	As needed
Encourage any new developments to manage runoff on site and consider ways to minimize impacts from septic systems on Paya Lake.	PLA	Town of Riverview Developers/Builders	As needed
Protect wetlands to maintain the water budget of Paya Lake. Any altered wetlands should be mitigated within the lake's watershed.	PLA	WDNR	As needed
Encourage design of road and construction projects that will minimize impacts to the lake.	PLA	Town of Riverview OC Highway Department/WDOT	As needed
Encourage forested landowners to contact the WDNR forester for information on BMPs to reduce runoff from forest land.	PLA	WDNR-Chris Duncan	2019

Shorelands

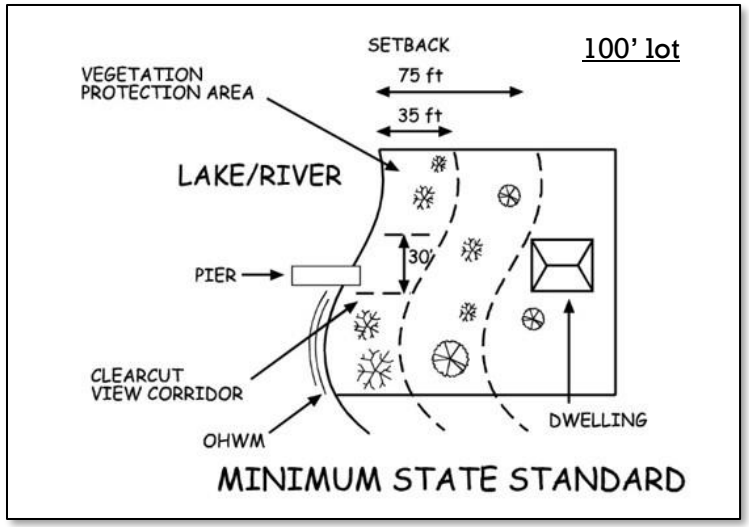
90% of lake life spends all or part of their life in the near shore zone.

Shorelands

Shoreland vegetation is critical to a healthy lake ecosystem. It provides habitat for many aquatic and terrestrial animals including birds, frogs, turtles, and small and large mammals. It also helps to improve the quality of the runoff that is flowing across the landscape towards the lake.

Healthy shoreland vegetation includes a mix of unmowed grasses/flowers, shrubs, trees, and wetlands which extends at least 35 feet landward from the water's edge.

Shoreland ordinances have been in place since 1964 to improve water quality and habitat, and to protect our lakes. To protect our lakes, county and state (NR 115) shoreland ordinances state that vegetation should extend at least 35 feet inland from the water's edge, with the exception of an optional 30-foot wide view corridor for each shoreland lot. Although some properties were grandfathered in when the ordinance was initiated in 1966, following this guidance will benefit the health of the lake and its inhabitants.



Be Part of the Solution!

Follow Healthy Shoreland Practices

- Mow Less: The simplest, most affordable way to improve your shoreland is to reduce mowing near shore. Native vegetation will re-establish itself over time.
- Leave natural shoreland vegetation in place.
- Restore native shoreland vegetation where it is lacking.
- Plant attractive native species of grasses/flowers, shrubs and trees that will add interest and beauty to your property.
- Don't use fertilizers or herbicides, they may run into the lake. Test your soil to determine if fertilizer is warranted.
- Add or leave woody habitat near the shore. Turtles, birds, and fish love it!
- Never transplant water garden plants or aquarium plants into lakes, streams, or wetlands.
- Visit **www.healthylakeswi.com** for additional resources.

State Shoreland Zoning Ordinance

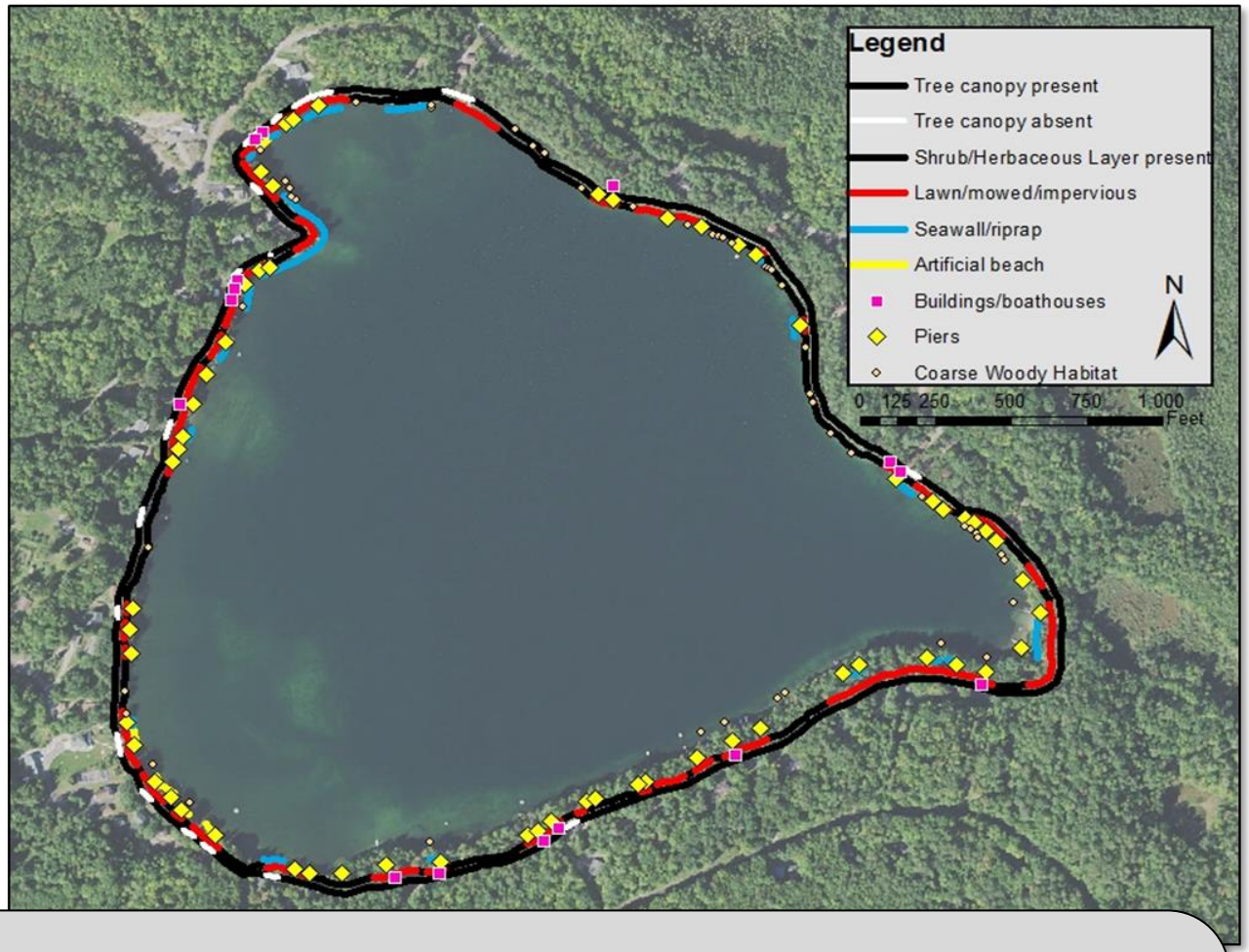
NR 115 Wisc. Adm. Code for Unincorporated Municipalities

No vegetation within 35 feet of the lake's edge shall be removed except for:

- Up to 30% (max 200') of shoreline may be removed of shrubs and trees for a view corridor
- A mowed or constructed pedestrian path up to 5 feet wide to access lake

Shorelands

Modifications, Structures, Erosion	Measured Occurrence
Artificial Beach	140 ft
Rip Rap	745 ft
Sea Wall	140 ft
Impervious Surface	76 ft
Mowed Lawn	1,715 ft
Erosion	55 ft
Nonconforming Buildings	15
Piers	61
Coarse Woody Habitat	29 logs/mile



Paya Lake's Shorelands

To better understand the health of Paya Lake, shorelands were evaluated. The survey inventoried shoreland vegetation, erosion, riprap, barren ground, seawalls, structures, and docks. The majority of the 2.8 miles of shoreline is developed as homes and seasonal cottages, but some undeveloped wetland shoreline exists on the north and south ends. A total of 61 piers were counted during the survey (1/32 ft).

- With 65 lakefront lots, 1,950 feet (22%) of disturbed shoreland is permitted. Based on the 2017 shoreland inventory, 50% (4,465 feet) of Paya Lake's shoreland was disturbed.
- As a whole, Paya Lake had poorer shoreland health compared to other lakes in the study. Some stretches of Paya Lake's shorelands are in good shape, but many portions have challenges that should be addressed.

Shorelands

Paya Lake 2017 Shoreland Survey Results			
Total lakefront footage	**# Riparian lots**	**Total allowable (NR115) disturbed shoreland**	**Measured disturbed shoreland**
8,884 feet	65	1,950 feet or 22%	4,466 feet or 50%

Goal 5. Paya Lake's shorelands will become increasingly healthy over time, providing good habitat and water quality benefits for the lake.

Objective 5.1 Shoreland property owners will be knowledgeable about and make good decisions regarding shoreland practices. Approximately 2,000 feet of shoreline will be restored over the next 5 years.

Actions	Lead person/group	Resources	Timeline
Provide informational materials to all shoreland property owners about basic lake stewardship including healthy shorelands and their composition (wildflowers, shrubs, trees, etc.). Include information on cost share programs. These materials can be paid for through a WDNR small-scale planning grant. Also, OCLWA could order these materials in bulk with a grant and provide them for their members.	PLA	OCLAWA UWEX Lakes Healthy Lakes grants	Ongoing
Encourage and support shoreland owners interested in shoreland restoration. Include information on how and why to create healthy shorelands in a welcome packet to new property owners. 5 properties/year for 5 years would reach the goal.	PLA	UWEX Lakes OCLCD WDNR Healthy Lakes Grants	Ongoing
Encourage those interested in shoreland restorations to contact the OCLCD for available resources.	PLA	OCLCD WDNR Healthy Lakes Grants	Ongoing
Host a speaker/demonstration: "How to restore your shoreline."	PLA	UWEX Lakes-Pat Goggin	2019
Consider restoring and showcasing a "demonstration site" with a sign at the water's edge about shoreland restoration and/or hosting a "shoreland tour".	PLA	OCLCD UWEX Lakes-Pat Goggin WDNR Healthy Lakes Grants	2019
Explore purchase of undeveloped shoreland property.	PLA	UWEX Lakes Knowles-Nelson Stewardship Fund	As available

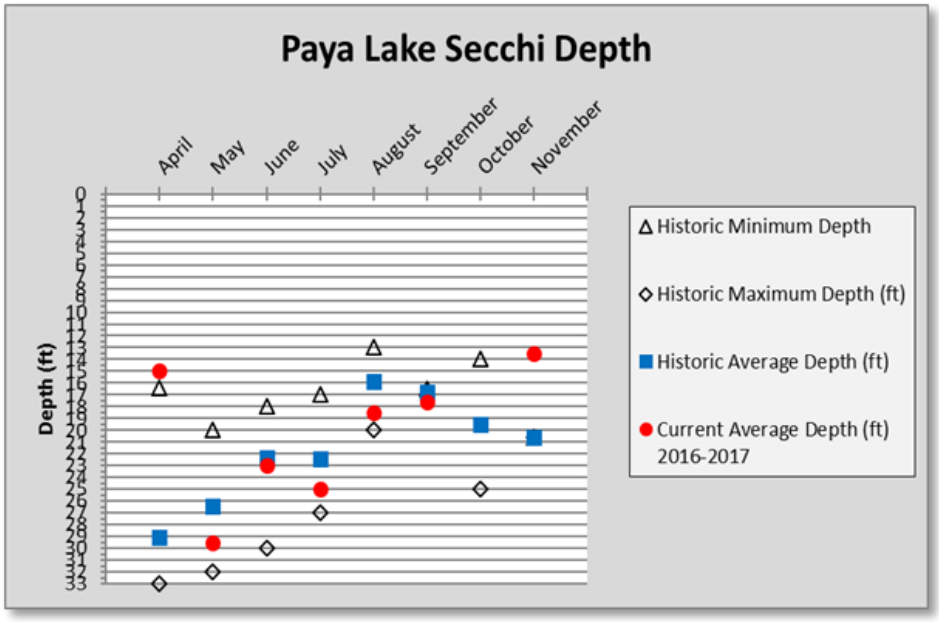
Water Quality

Water Quality

A variety of water chemistry measurements were used to characterize the water quality in Paya Lake. Water quality was assessed during the 2016-2017 lake study and involved a number of measures including temperature, dissolved oxygen, water chemistry, and nutrients (phosphorus and nitrogen). Nutrients are important measures of water quality in lakes because they contribute to algae and aquatic plant growth. Each of these interrelated measures plays a part in the lake's overall water quality. In addition, water quality data collected in past years was also reviewed to determine trends in Paya Lake's water quality.

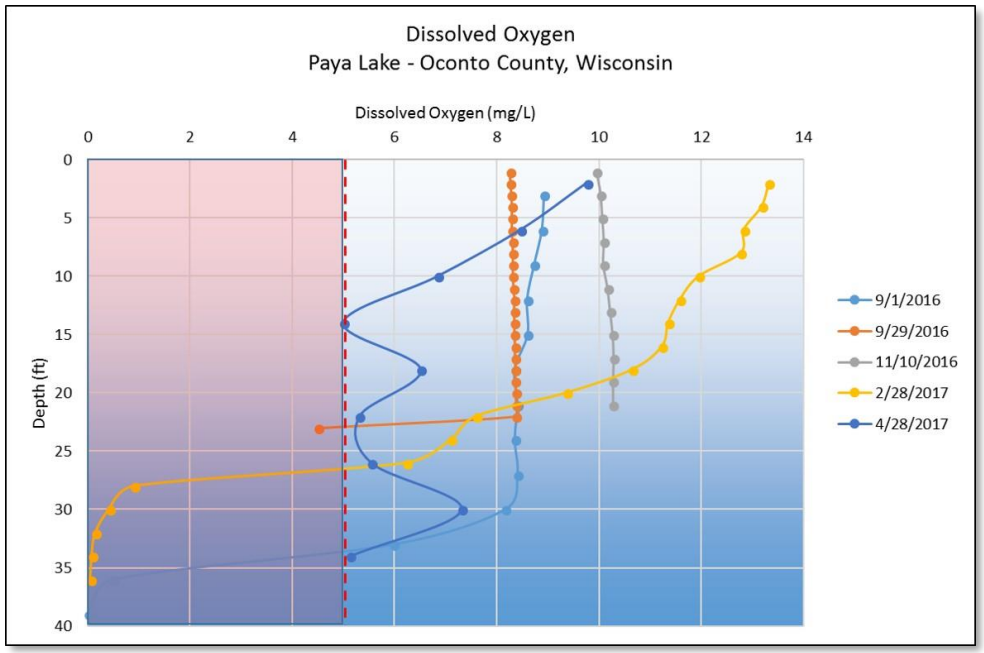
Water Clarity

Water clarity is a measure of how deep light can penetrate (Secchi depth). Clarity is affected by water color, turbidity, and algae and helps determine where rooted aquatic plants grow.



Dissolved oxygen

Dissolved oxygen is an important measure in Paya Lake because a majority of organisms in the water depend on oxygen to survive. Oxygen is dissolved into the water from contact with air, which is increased by wind and wave action. Algae and aquatic plants also produce oxygen when sunlight enters the water, but the decomposition of dead plants and algae reduces oxygen in the lake.



Contaminants

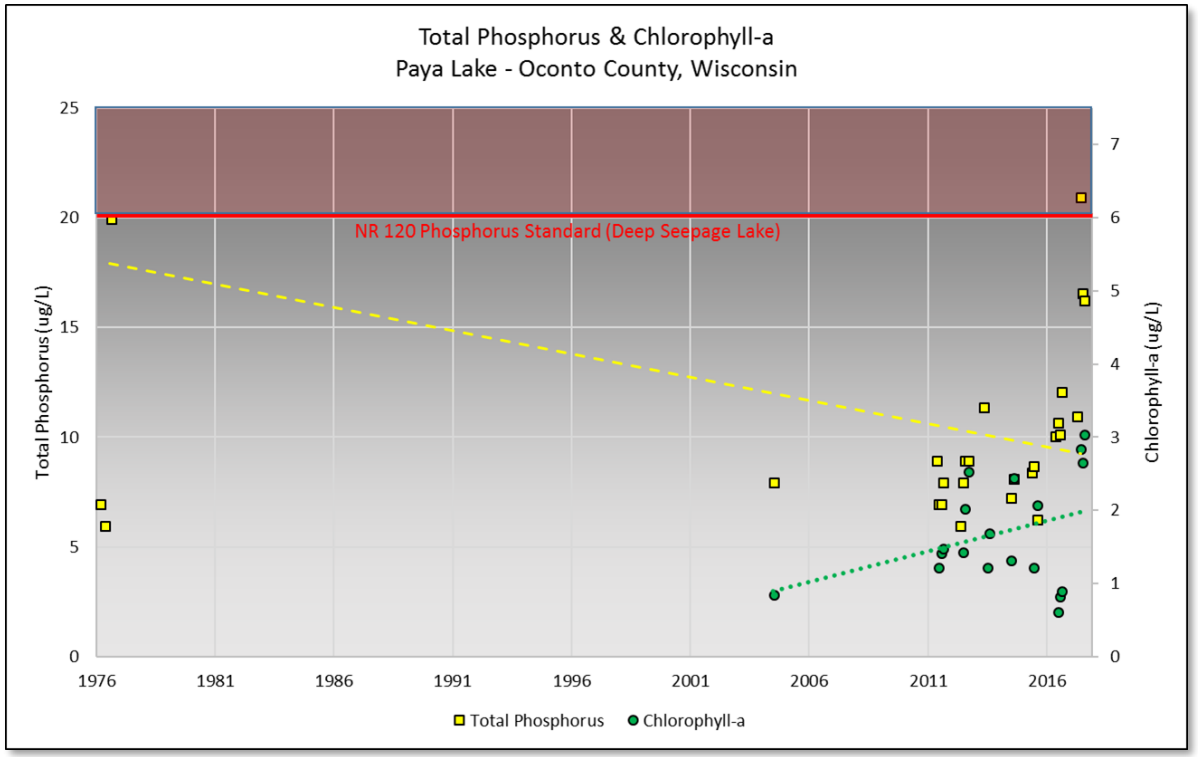
Chloride, sodium and potassium concentrations are commonly used as indicators of how a lake is being impacted by human activity. The presence of these compounds where they do not naturally occur indicates sources of water contaminants. Although these elements are not detrimental to the aquatic ecosystem, they indicate that sources of contaminants such as road salt, fertilizer, animal waste and/or septic system effluent may be entering the

Water Quality

lake from either surface runoff or via groundwater. Measurements of contaminants were low.

Nutrients

Phosphorus is an element that is essential in trace amounts to most living organisms, including aquatic plants and algae. Naturally-occurring sources of phosphorus include soils and wetlands, and groundwater. Common sources from human activities include soil erosion, animal waste, fertilizers, and septic systems. Although a variety of compounds are important to biological growth, phosphorus receives so much attention because it is commonly the "limiting nutrient" in many Wisconsin lakes. Due to its relatively short supply compared to other substances necessary for growth, relatively small increases in phosphorus result in significant increases in aquatic plants and algae. NR 120, Wisconsin Administrative Code lists phosphorus limits for different lake types. Deep seepage lakes such as Paya have a standard of 20 ug/L they must remain stay to remain healthy. The very limited data available show concentrations in Paya to be well below this standard. Continued monitoring is necessary to verify this and establish and trends. Concentrations of 0.3 mg/L inorganic nitrogen in spring are sufficient to fuel algal blooms throughout the summer. Sources of inorganic nitrogen include animal waste, septic systems/waste treatment effluent, and fertilizers.



Paya Lake's Water Quality Summary

- ✓ Sufficient **dissolved oxygen** was present in at least the upper 12 feet of water at all times during the study.
- ✓ **Water clarity** ranged from 13.5-32 feet (considered very good), which is consistent with historic measurements.
- ✓ Slightly elevated concentrations of **contaminants** were measured during the study. Atrazine was not detected.
- ✓ **Phosphorus** concentrations remained below the Wisconsin state standard of 30 ug/L throughout the study. Inorganic nitrogen periodically reached concentrations that spur algal blooms.

Water Quality

Be part of the solution!

Managing nitrogen, phosphorus and soil erosion throughout the Paya Lake watershed is one of the keys to protecting the lake itself. Near shore activities that may increase the input of phosphorus to the lake include applying fertilizer, removing native vegetation (trees, bushes and grasses), mowing vegetation, and increasing the amount of exposed soil. Nitrogen inputs to a lake can be controlled by using lake-friendly land management decisions, such as the restoration of shoreland vegetation, elimination/reduction of fertilizers, proper management of animal waste and septic systems, and the use of water quality-based management practices.

Goal 6. Maintain or improve water quality in Paya Lake.

Objective 6.1 Maintain median summer phosphorus concentrations below 20 ug/L and spring inorganic nitrogen concentrations below 0.3 mg/L. Residents will be knowledgeable about their role in the water quality of Paya Lake.

Actions	Lead person/group	Resources	Timeline
Inform others around the lake about the impact of nutrients and land management on water quality through the distribution of an Association newsletter and/or hosting a guest speaker at the annual meeting.	PLA	OCLAWA WDNR UWEX Lakes	Ongoing, 2019
Refrain from the use of fertilizers. Encourage soil testing to determine if fertilizer is necessary.	PLA	OC UWEX	Ongoing
Encourage the restoration of unmowed vegetation to slow and absorb runoff and pollutants.	PLA	UWEX Lakes	Ongoing

Objective 6.2 Create a robust data set for Paya Lake to monitor trends, declines and improvements over time.

Actions	Lead person/group	Resources	Timeline
Continue to monitor water clarity and chemistry (total phosphorus and chlorophyll-a).	Trained volunteer	CLMN	Ongoing-summer
Submit all collected data to WDNR for storage and use.	Trained volunteer	CLMN/WDNR	Ongoing

Recreation

Wisconsin has more than 500,000 registered boats-one for every 10 residents.

People and the Lake

The people who interact with the lake are a key component of the lake and its management. In essence a lake management plan is a venue by which people decide how they would like people to positively impact the lake. The plan summarizes the decisions of the people to take proactive steps to improve their lake and their community. Individual decisions by lake residents and visitors can have positive impacts on the lake and on those who enjoy this common resource. Collaborative efforts may have bigger positive impacts; therefore, communication and cooperation between the lake district, community, and suite of lake users are essential to maximize the effects of plan implementation.

Boating hours, regulations, and fishing limits are examples of principles that are put into place to minimize conflicts between lake users and balance human activities with environmental considerations for the lake.

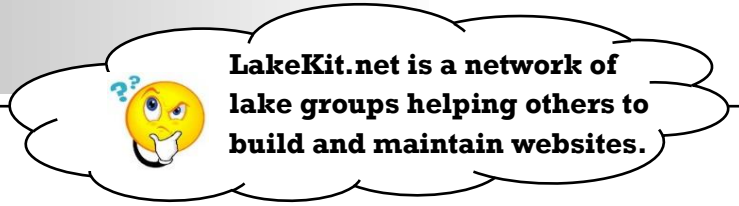
Recreation

According to survey responses, the lake is enjoyed for its scenery, wildlife, swimming and fishing. There is one public boat launch located on the south side which is owned and maintained by the Town of Riverview. No Wake is allowed between 4pm and 10am.

Goal 7. Lake users will be informed and respectful of Paya Lake.

Objective 7.1 Create an environment of compliance among lake users.

Actions	Lead person/group	Resources	Timeline
Work with other lake groups and towns to support/establish a recreational officer and municipal court for enforcement of regulations, including 'No Wake' and safe boat operation.	PLA	Town of Riverview OCLWA OC UWEX	Ongoing
Work with Town to upkeep boat ramp including placement of gravel, repair to asphalt or concrete, as appropriate. Boat ramps in disrepair can be unhealthy to the lake if it results in spinning tires, power loading, loose sediment and debris, etc.	PLA	Town of Riverview WDNR	2019
Ensure signage is up-to-date and clear. Consider updating sign board/kiosk with basic information on regulations and expectations. This can convey to lake users that there is an active and watchful group on the lake.	PLA	Town of Riverview UWEX Lakes	Ongoing



Communication and Organization

Working together on common values will help to achieve the goals outlined in this plan. This will involve communication between individuals, the Association, the Town of Riverview, Oconto County, resource managers, and elected officials. In addition, staying informed about lake- and groundwater-related topics will be essential to achieving the goals laid out in this plan. See the Oconto County Lake Information Directory in the Appendices for contact information.

Many of the goals outlined in this plan focus on distributing information to lake and watershed residents and lake users in order to help them make informed decisions that will result in a healthy Paya Lake ecosystem that is enjoyed by many people. Working together on common values will help to achieve the goals that are outlined in this plan.

Goal 8. Increase participation in lake stewardship.

Objective 8.1 Develop opportunities for education and volunteering among lake residents.

Actions	Lead person/group	Resources	Timeline
Maintain a PLA Facebook page and email to provide a common source of communication.	PLA	LakeKit.net OC UWEX	Ongoing
Maintain an email list of shoreland property owners and others interested in Paya Lake.	PLA	OC UWEX	Ongoing
Share minutes (or meeting notes) from annual meeting on website and/or newsletter.	PLA		As needed
Distribute a welcome packet/mailing to all new shoreland property owners with basic lake stewardship information/brochures. Small scale planning grants can pay for this.	PLA	WDNR UWEX Lakes OCLCD	Ongoing
Communicate updates to lake management plan and management activities to residents and users of the lake via email list and/or newsletter.	PLA		Ongoing
Host an annual meeting to discuss lake management and opportunities for shoreland property owners.	PLA		Annually
Host gatherings to learn about topics identified in this plan. Invite speakers or conduct demonstrations.	PLA	UWEX Lakes WDNR OCLCD	As needed

Objective 8.2 Network and communicate with clubs, municipalities, agency staff, elected officials, and organizations interested in Paya Lake and/or lake health.

Actions	Lead person/group	Resources	Timeline
Network with other lake groups in Oconto County by having Paya Lake represented at OCLWA. Encourage members of OCLWA to attend Lake Leaders Institute.	PLA	OC UWEX	Quarterly
Network with other lakes in the state to learn lake management strategies, etc. by having a representative attend the Wisconsin Lake Convention.	PLA	UWEX Lakes	Annually
Consider nominating an individual from Paya Lake for the Lake Leaders Institute.	PLA	UWEX Lakes	Even years

Updates and Revisions

Updates and Revisions

A management plan is a living document that changes over time to meet the current needs, challenges and desires of the lake and its community. The goals, objectives and actions listed in this plan should be reviewed annually and updated with any necessary changes. Partners listed in the plan should be contacted annually, and updated information complied. A list of changes/updates to the plan should be documented. To ensure that everyone is informed about changes, appropriate approval for changes should be acquired by all partners signing on to this plan.

Goal 9. Review plan annually and update as needed.

Objective 9.1 Communicate updates with lake community, Oconto County and WDNR.

Actions	Lead person/group	Resources	Timeline
Review plan at annual meeting and discuss accomplishments and identification of goals/objectives/actions for coming year.	PLA		Annually
Formally update this plan every 5 years.	PLA	OC UWEX UWEX Lakes WDNR	2023

REFERENCES

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APPENDICES

Appendix A

Appendix A. Oconto County Lake Information Directory

Algae - Blue-Green

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Website: http://dnr.wi.gov/lakes/bluegreenalgae

Contact: Wisconsin Department of Health Services
1 West Wilson Street, Madison, WI 53703
Phone: 608-267-3242

Website:
www.dhs.wisconsin.gov/eh/bluegreenalgae/contactus.htm

Aquatic Invasive Species/Clean Boats Clean Water

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Website: http://dnr.wi.gov/topic/Invasives/

Aquatic Plant Management

(Native and Invasive)

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Website: http://dnr.wi.gov/lakes/plants/

Aquatic Plant Identification

Contact: Dr. Emmet Judziewicz
UWSP Freckmann Herbarium
TNR 301, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-4248
E-mail: ejudziew@uwsp.edu

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Aquatic Plant Surveys/Management

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Website: http://dnr.wi.gov/lakes/plants/

Best Management Practices (rain gardens, shoreland buffers, agricultural practices, runoff controls)

Contact: Ken Dolata
Oconto County Land Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us

Website: http://www.co.oconto.wi.us/departments/

Boat Landings, Signage, Permissions (County)

Contact: Monty Brink
Oconto County Forestry/Park/Recreation
301 Washington Street, Oconto, WI 54153
Phone: 920-834-6995
E-mail: monty.brink@co.oconto.wi.us

Website: http://www.co.oconto.wi.us/departments/

Appendix A

Boat Landings (State)

Contact: Chip Long
Wisconsin Department of Natural Resources
101 N. Ogden Road, Peshtigo, WI 54157
Phone: 715-582-5017
E-mail: Christopher.Long@wisconsin.gov

Website: http://dnr.wi.gov/org/land/facilities/boataccess/

Boat Landings (Town)

Contact the clerk for the specific town/village in which the boat landing is located.

Conservation Easements

Contact: Gathering Waters Conservancy
211 S. Paterson St., Suite 270, Madison, WI 53703
Phone: 608-251-9131
E-mail: info@gatheringwaters.org

Website: http://gatheringwaters.org/

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Contact: Patrick Sorge
Wisconsin Department of Natural Resources
PO Box 4001, Eau Claire, WI 54702
Phone: 715-839-3794
E-mail: Patrick.Sorge@wisconsin.gov

Contact: Northeast Wisconsin Land Trust
14 Tri-Park Way, Suite 1, Appleton, WI 54914
Phone: 920-738-7265
E-mail: newlt@newlt.org

Website: www.newlt.org

Contact: NRCS Lena Service Center
410 ½ East Main Street, Lena, WI 54139
Phone: 920-829-5406

Critical Habitat and Sensitive Areas

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Website: http://dnr.wi.gov/lakes/criticalhabitat/

Dams

Contact: Meg Galloway
Wisconsin Department of Natural Resources
PO Box 7921, Madison, WI 53707
Phone: 608-266-7014
E-mail: meg.galloway@wisconsin.gov

Website: http://dnr.wi.gov/org/water/wm/dsfm/dams/

Fertilizers/Soil Testing

Contact: Dale Mohr
Oconto County UW- Extension
301 Washington Street, Oconto, WI 54153
Phone: 920-835-6845
E-mail: dale.mohr@co.oconto.wi.us

Website: http://oconto.uwex.edu

Fisheries Biologist (management, habitat)

Contact: Chip Long
Wisconsin Department of Natural Resources
101 N. Ogden Road, Peshtigo, WI 54157
Phone: 715-582-5017
E-mail: Christopher.Long@wisconsin.gov

Website: http://dnr.wi.gov/fish/

Appendix A

Frog Monitoring—Citizen Based

Contact: Andrew Badje
Wisconsin Department of Natural Resources
Phone: 608-785-9472
E-mail: Andrew.badje@wisconsin.gov

Website: WFTS@wisconsin.gov

Grants

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Website: http://dnr.wi.gov/Aid/Grants.html

Contact: Ken Dolata
Oconto County Land Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us

Website: http://www.co.oconto.wi.us/departments/

Groundwater Quality

Contact: Kevin Masarik
UWSP Center for Watershed Science & Education
TNR 224, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-4276
E-mail: kmasarik@uwsp.edu

Website: http://www.uwsp.edu/cnr/watersheds/

Groundwater Levels/Quantity

Contact: Ken Dolata
Oconto County Land Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us

Website: http://www.co.oconto.wi.us/departments/

Contact: George Kraft
UWSP Center for Watershed Science & Education
TNR 224, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-2984
E-mail: george.kraft@uwsp.edu

Informational Packets

Contact: UW Extension - Lakes
TNR 224, 800 Reserve St. Stevens Point, WI 54481
Phone: 715-346-2116
E-mail: uwexlakes@uwsp.edu

Lake Groups – Friends, Associations, Districts

Contact: Dale Mohr
Oconto County UW- Extension
301 Washington Street, Oconto, WI 54153
Phone: 920-835-6845
E-mail: dale.mohr@co.oconto.wi.us

Website: http://oconto.uwex.edu

Contact: Patrick Goggin
UWEX Lakes
TNR 203, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-365-8943
E-mail: pgoggin@uwsp.edu

Website: http://www.uwsp.edu/cnr/uwexlakes/organizations/

Contact: Eric Olson
UWEX Lakes
TNR 206, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-2192
E-mail: eolson@uwsp.edu

Website: http://www.uwsp.edu/cnr/uwexlakes/organizations/

Contact: Susan Tesarik
Wisconsin Lakes
4513 Vernon Blvd., Suite 101, Madison, WI 53705

Phone: 1-800-542-5253
E-mail: lakeinfo@wisconsinlakes.org

Website: http://wisconsinlakes.org/

Lake Levels

See: Groundwater

Lake-Related Law Enforcement (no-wake, transporting invasives, etc.)

Contact: Ben Mott
State Conservation Warden
Wisconsin Department of Natural Resources
427 E. Tower Drive, Suite 100, Wautoma, WI 54982
Phone: 920-896-3383

Website: http://www.wigamewarden.com/

Land Use Plans and Zoning Ordinances

Contact: Patrick Virtues
Oconto County Planning/Zoning/Solid Waste
301 Washington Street, Oconto, WI 54153
Phone: 920-834-6827
E-mail: Patrick.virtues@co.oconto.wi.us

Website: http://www.co.waushara.wi.us/zoning.htm

Contact: UWSP Center for Land Use Education
TNR 208, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-3783
E-mail: Center.for.Land.Use.Education@uwsp.edu

Website: http://www.uwsp.edu/cnr/landcenter/

Nutrient Management Plans

Contact: Ken Dolata
Oconto County Land Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us

Website: http://www.co.oconto.wi.us/departments/

Contact: NRCS Lena Service Center
410 ½ East Main Street, Lena, WI 54139
Phone: 920-829-5406

Parks (County)

Contact: Monty Brink
Oconto County Forestry/Park/Recreation
301 Washington Street, Oconto, WI 54153
Phone: 920-834-6995
E-mail: monty.brink@co.oconto.wi.us

Website: http://www.co.oconto.wi.us/departments/

Purchase of Development Rights

Contact: Northeast Wisconsin Land Trust
14 Tri-Park Way, Suite 1, Appleton, WI 54914
Phone: 920-738-7265
E-mail: newlt@newlt.org

Website: www.newlt.org

Purchase of Land

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Website: http://dnr.wi.gov/topic/stewardship/

Rain Gardens and Stormwater Runoff

Contact: Ken Dolata
Oconto County Land Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us

Website: http://www.co.oconto.wi.us/departments/

Appendix A

Septic Systems/Onsite Waste

Contact: Patrick Virtues
Oconto County Planning/Zoning/Solid Waste
301 Washington Street, Oconto, WI 54153
Phone: 920-834-6827
E-mail: Patrick.virtues@co.oconto.wi.us
Website: http://www.co.waushara.wi.us/zoning.htm

Shoreland Management

Contact: Ken Dolata
Oconto County Land Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us
Website: http://www.co.oconto.wi.us/departments/

Shoreland Vegetation

http://dnr.wi.gov/topic/ShorelandZoning/

Shoreland Zoning Ordinances

See: Land Use Plans and Zoning Ordinances

Soil Fertility Testing

Contact: Dale Mohr
Oconto County UW- Extension
301 Washington Street, Oconto, WI 54153
Phone: 920-835-6845
E-mail: dale.mohr@co.oconto.wi.us
Website: http://oconto.uwex.edu

Water Quality Monitoring

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Water Quality Problems

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Wetlands

Contact: Jason Fleener
Wisconsin Department of Natural Resources
GEF2 DNR Central Office, Madison, WI 53707
Phone: 608-266-7408
E-mail: Jason.fleener@wisconsin.gov
Website: http://dnr.wi.gov/wetlands/

Contact: Wisconsin Wetlands Association
214 N. Hamilton Street, #201, Madison, WI 53703
Phone: 608-250-9971
Email: info@wisconsinwetlands.org

Wetland Inventory

Contact: Dr. Emmet Judziewicz
UWSP Freckmann Herbarium
TNR 301, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-4248
E-mail: ejudziew@uwsp.edu

Woody Habitat

Contact: Chip Long
Wisconsin Department of Natural Resources
101 N. Ogden Road, Peshtigo, WI 54157
Phone: 715-582-5017
E-mail: Christopher.Long@wisconsin.gov

Appendix B. Rapid Response Plan

REPORTING A SUSPECTED INVASIVE SPECIES

1. Collect specimens or take photos.

Regardless of the 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.

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).

2. Note the location where the specimen was found.

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.

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

3. Gather information to aid in positive species identification.

- Collection date and county
- Your name, address, phone, email
- Exact location (lat/long or UTM, Township/Range)
- Plant name
- Land ownership (if known/applicable)
- Population description (estimated # plants, area covered)
- Habitat type where found (forest, field, prairie, wetland, open water)

4. **Mail or bring specimens and information to any of the following locations (digital photos may be emailed):**

Wisconsin Dept. Natural Resources
2984 Shawano Avenue,
Green Bay, WI 54313
Phone: (920) 662-5100

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

Wisconsin Invasive Plants Reporting & Prevention Project
Herbarium-UW-Madison
430 Lincoln Drive
Madison, WI 53706
Phone: (608) 267-7612
E-Mail: invasiveplants@mailplus.wisc.edu

Appendix C

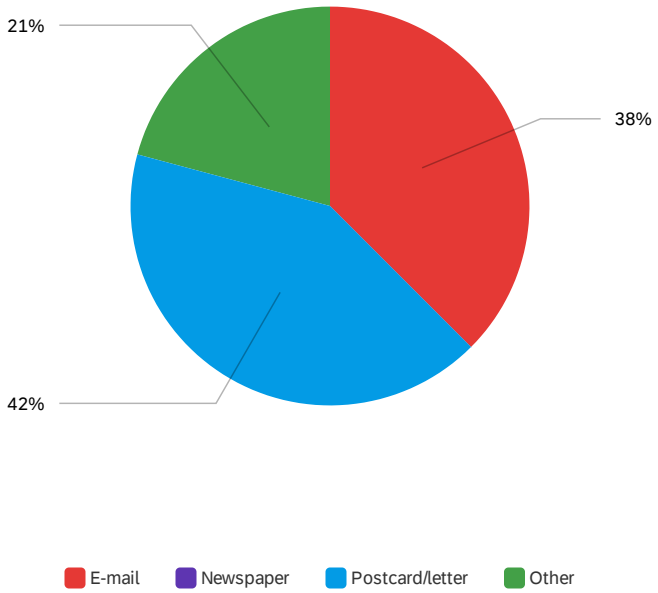
Appendix C. Lake User Survey Results

Default Report

Paya Lake Survey - Oconto County Lakes Project

August 23, 2022 8:40 AM MDT

Q2 - How did you hear about this survey?



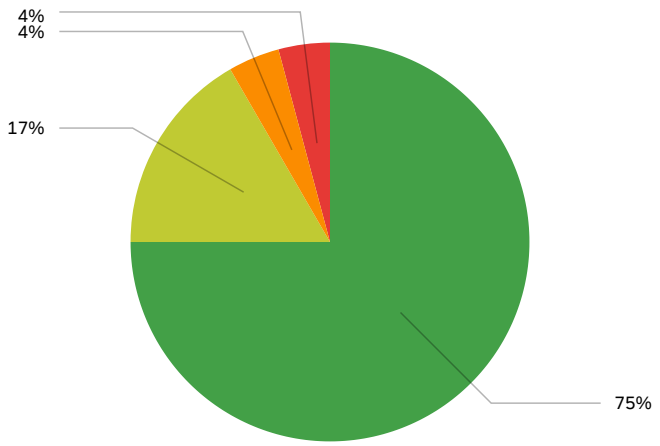
Showing sample data...

#	Field		Choice Count
1	E-mail	37.50%	9
2	Newspaper	0.00%	0
3	Postcard/letter	41.67%	10
4	Other	20.83%	5
			24

Showing rows 1 - 5 of 5

Showing sample data...

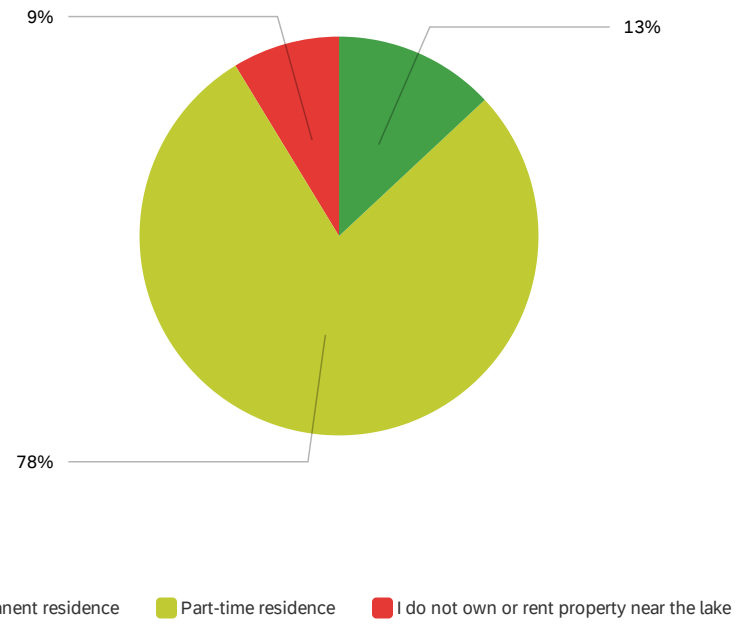
Q3 - Do you own or rent property...



#	Field	Choice Count	
3	Near the lake, but more than 1/2 mile away	4.17%	1
2	Less than 1/2 mile from the lake	16.67%	4
4	I do not own or rent property near the lake	4.17%	1
1	Around the lake	75.00%	18
			24

Showing rows 1 - 5 of 5

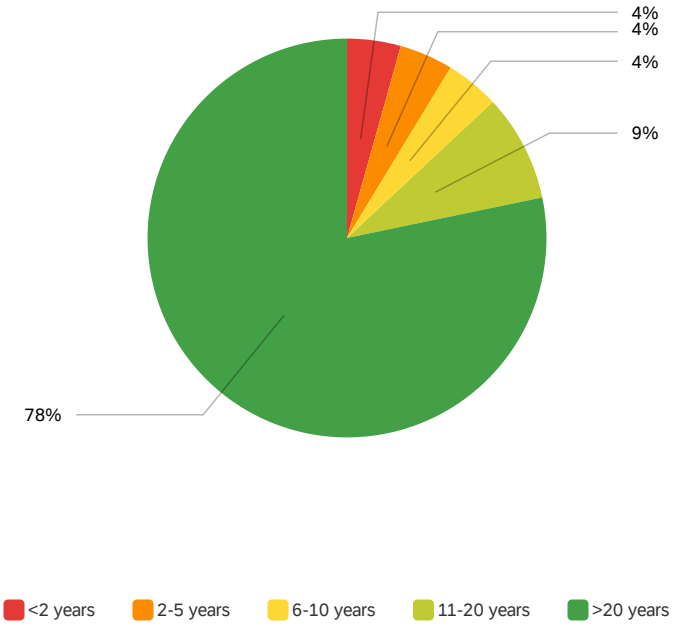
Q4 - If you own or rent property near the lake, is this property your...



#	Field	Choice Count	
1	Permanent residence	13.04%	3
2	Part-time residence	78.26%	18
3	I do not own or rent property near the lake	8.70%	2
			23

Showing rows 1 - 4 of 4

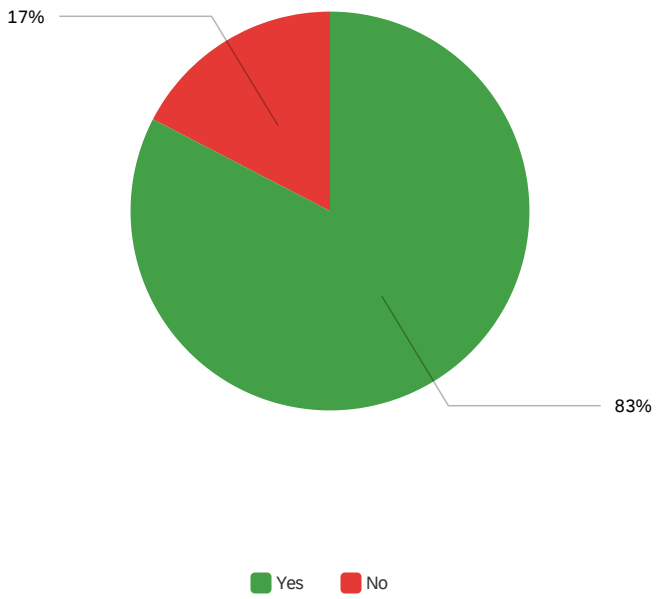
Q5 - How long have you lived on, visited or recreated on the lake?



#	Field	Choice Count	
1	<2 years	4.35%	1
2	2-5 years	4.35%	1
3	6-10 years	4.35%	1
4	11-20 years	8.70%	2
5	>20 years	78.26%	18
			23

Showing rows 1 - 6 of 6

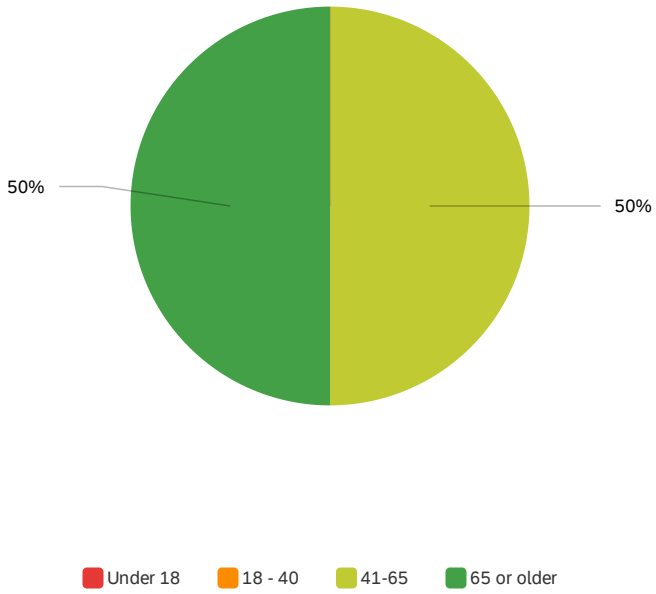
Q6 - Are you a member of the Paya Lake Association?



#	Field	Choice Count
1	Yes	82.61% 19
2	No	17.39% 4
		23

Showing rows 1 - 3 of 3

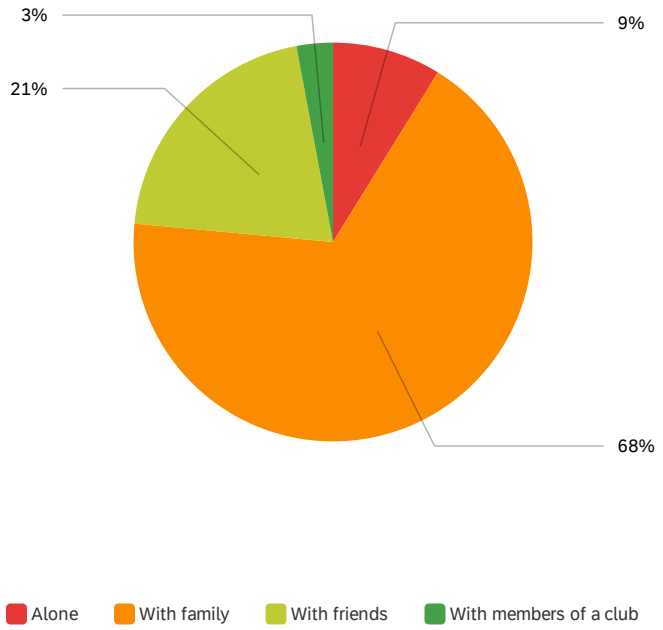
Q8 - Which category below includes your age?



#	Field	Choice Count
1	Under 18	0.00% 0
2	18 - 40	0.00% 0
3	41-65	50.00% 12
4	65 or older	50.00% 12
		24

Showing rows 1 - 5 of 5

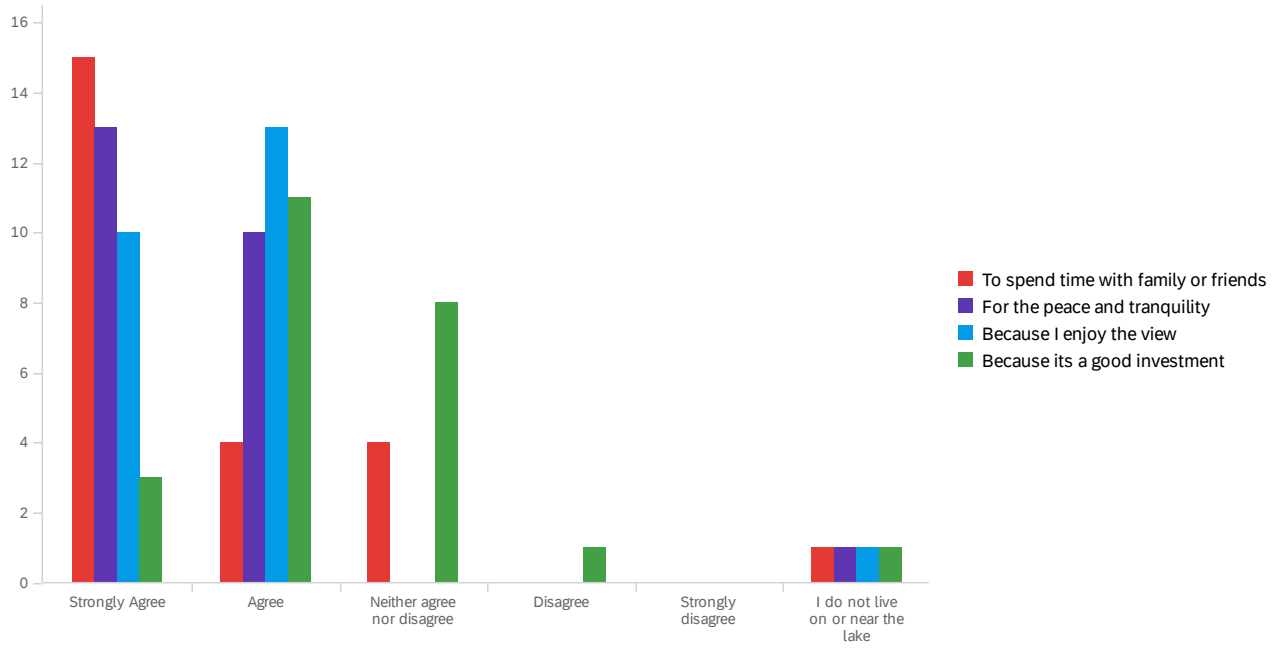
Q9 - When you visit Paya Lake, are you typically ...(check all that apply)



#	Field	Choice Count	
1	Alone	8.82%	3
2	With family	67.65%	23
3	With friends	20.59%	7
4	With members of a club	2.94%	1
			34

Showing rows 1 - 5 of 5

Q10 - I live on or near the lake...



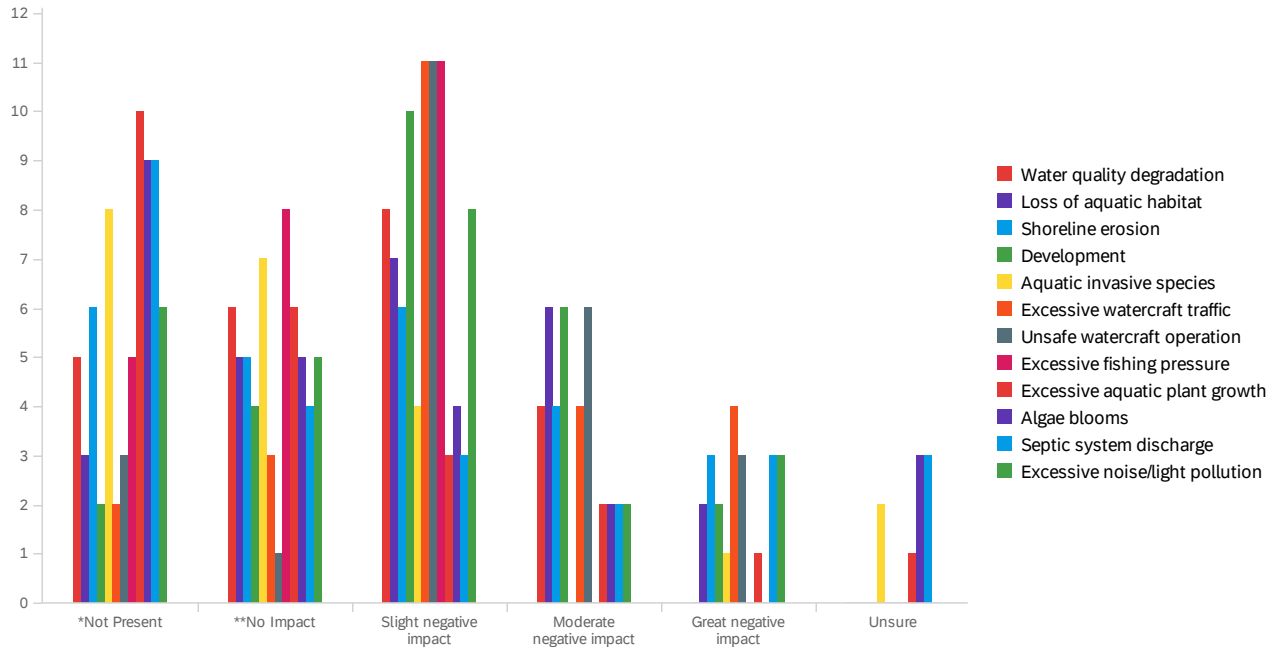
#	Field	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	I do not live on or near the lake	Total
1	To spend time with family or friends	62.50% 15	16.67% 4	16.67% 4	0.00% 0	0.00% 0	4.17% 1	24
2	For the peace and tranquility	54.17% 13	41.67% 10	0.00% 0	0.00% 0	0.00% 0	4.17% 1	24
3	Because I enjoy the view	41.67% 10	54.17% 13	0.00% 0	0.00% 0	0.00% 0	4.17% 1	24
4	Because its a good investment	12.50% 3	45.83% 11	33.33% 8	4.17% 1	0.00% 0	4.17% 1	24

Showing rows 1 - 4 of 4

Q11 - What do you value most about Paya Lake?

What do you value most about Paya Lake?
the natural setting
The beauty of the lake
It's clear water and that it is not very crowded.
Small lake with clear water that has fishing and swimming possibilities
Time with family while spending time near nature. ie, lake, forrest, birds, animals
Water quality, clearness.
Clear water for swimming. Close to Lakewood.
The size, clean neighbors.
The cleanliness of the lake. No bars/restaurants on the lake.
The structure and clarity of the lake.
Clear water
Water clarity
Great water quality and quiet
The clarity of the water
Water Quality and general appearance of the lake and surrounding homes
Small and quiet
Fishing
The clarity of the water
good fishing- clear water-nice little beach-not to much traffic
Excellent fishing opportunities
It is a beautiful lake with clear water
Quiet times

Q42 - Below is a list of negative impacts commonly found in Wisconsin lakes. To what level do you believe each of the following factors may be impacting Paya Lake? *Not Present means that you believe the issue does not exist on Paya Lake**No Impact means that the issue may exist, but is not negatively impacting Paya Lake

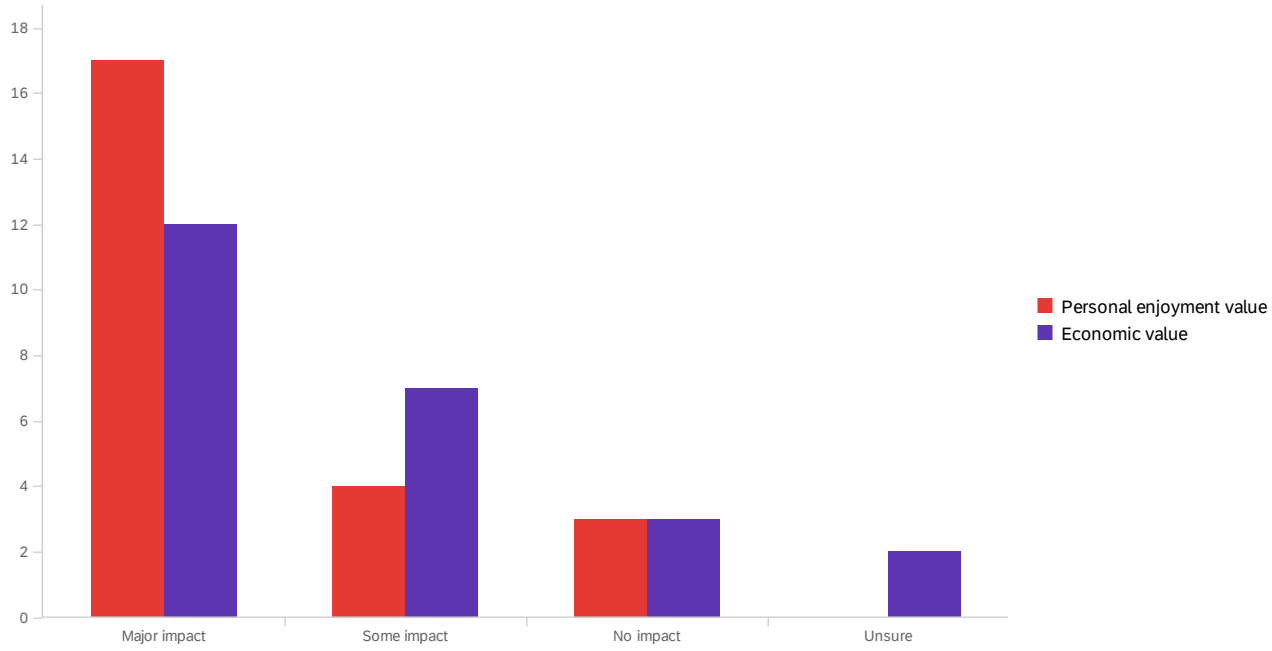


#	Field	*Not Present	**No Impact	Slight negative impact	Moderate negative impact	Great negative impact	Unsure	Total
1	Water quality degradation	21.74% 5	26.09% 6	34.78% 8	17.39% 4	0.00% 0	0.00% 0	23
2	Loss of aquatic habitat	13.04% 3	21.74% 5	30.43% 7	26.09% 6	8.70% 2	0.00% 0	23
3	Shoreline erosion	25.00% 6	20.83% 5	25.00% 6	16.67% 4	12.50% 3	0.00% 0	24
4	Development	8.33% 2	16.67% 4	41.67% 10	25.00% 6	8.33% 2	0.00% 0	24
5	Aquatic invasive species	36.36% 8	31.82% 7	18.18% 4	0.00% 0	4.55% 1	9.09% 2	22
6	Excessive watercraft traffic	8.33% 2	12.50% 3	45.83% 11	16.67% 4	16.67% 4	0.00% 0	24
7	Unsafe watercraft operation	12.50% 3	4.17% 1	45.83% 11	25.00% 6	12.50% 3	0.00% 0	24
8	Excessive fishing pressure	20.83% 5	33.33% 8	45.83% 11	0.00% 0	0.00% 0	0.00% 0	24

#	Field	*Not Present	**No Impact	Slight negative impact	Moderate negative impact	Great negative impact	Unsure	Total
9	Excessive aquatic plant growth	43.48% 10	26.09% 6	13.04% 3	8.70% 2	4.35% 1	4.35% 1	23
10	Algae blooms	39.13% 9	21.74% 5	17.39% 4	8.70% 2	0.00% 0	13.04% 3	23
11	Septic system discharge	37.50% 9	16.67% 4	12.50% 3	8.33% 2	12.50% 3	12.50% 3	24
12	Excessive noise/light pollution	25.00% 6	20.83% 5	33.33% 8	8.33% 2	12.50% 3	0.00% 0	24

Showing rows 1 - 12 of 12

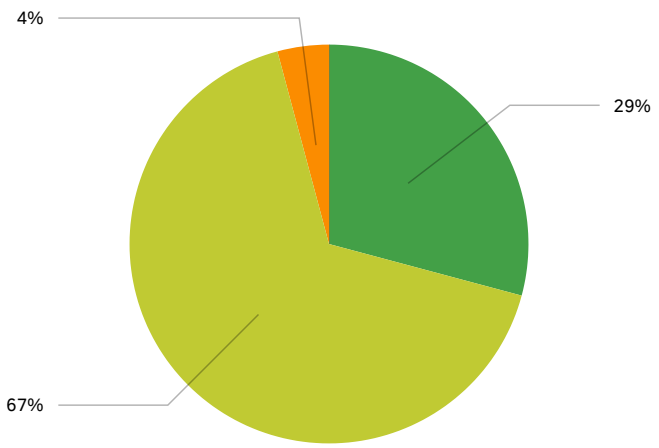
Q16 - How much impact does the water quality of Paya Lake have on the following?

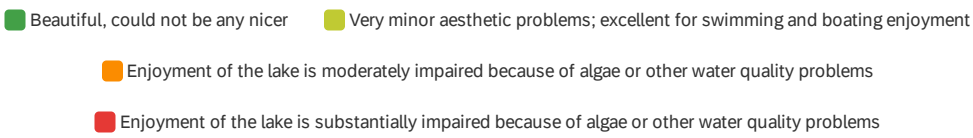


#	Field	Major impact	Some impact	No impact	Unsure	Total
1	Personal enjoyment value	70.83% 17	16.67% 4	12.50% 3	0.00% 0	24
2	Economic value	50.00% 12	29.17% 7	12.50% 3	8.33% 2	24

Showing rows 1 - 2 of 2

Q17 - Which statement best describes water clarity during the times you spend most on the lake?

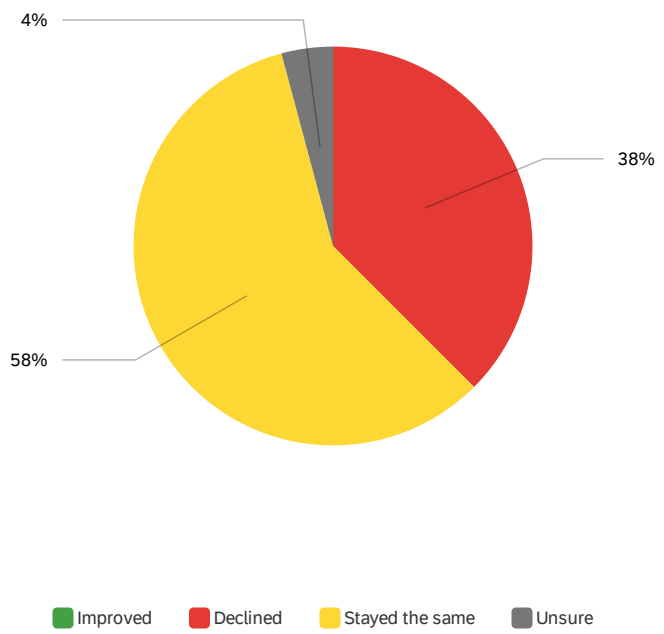




#	Field	Choice Count	
1	Beautiful, could not be any nicer	29.17%	7
2	Very minor aesthetic problems; excellent for swimming and boating enjoyment	66.67%	16
3	Enjoyment of the lake is moderately impaired because of algae or other water quality problems	4.17%	1
4	Enjoyment of the lake is substantially impaired because of algae or other water quality problems	0.00%	0
			24

Showing rows 1 - 5 of 5

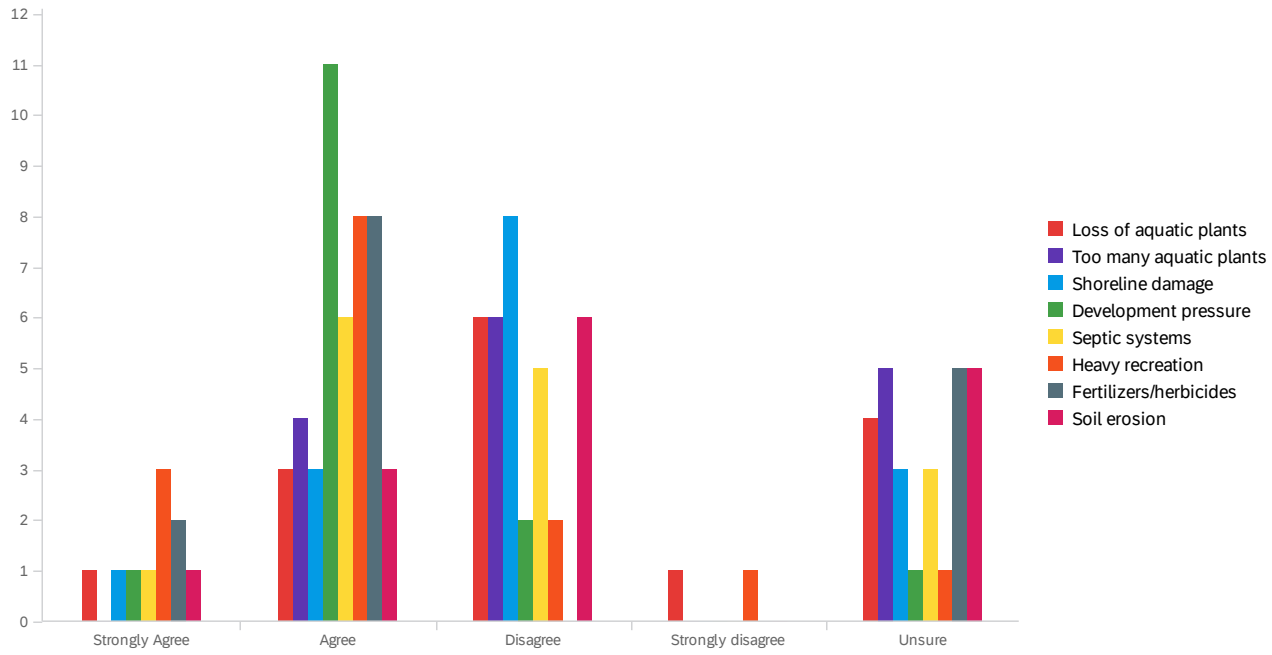
Q18 - During the time that you have lived on, visited or recreated on the lake, how would you say the water quality has changed?



#	Field	Choice Count	
1	Improved	0.00%	0
2	Declined	37.50%	9
3	Stayed the same	58.33%	14
4	Unsure	4.17%	1
			24

Showing rows 1 - 5 of 5

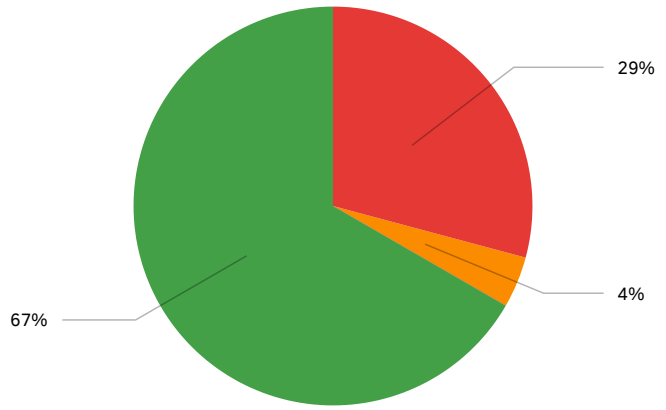
Q19 - If you think it has declined, what, in your opinion, are the primary causes?



#	Field	Strongly Agree	Agree	Disagree	Strongly disagree	Unsure	Total
1	Loss of aquatic plants	6.67% 1	20.00% 3	40.00% 6	6.67% 1	26.67% 4	15
2	Too many aquatic plants	0.00% 0	26.67% 4	40.00% 6	0.00% 0	33.33% 5	15
3	Shoreline damage	6.67% 1	20.00% 3	53.33% 8	0.00% 0	20.00% 3	15
4	Development pressure	6.67% 1	73.33% 11	13.33% 2	0.00% 0	6.67% 1	15
5	Septic systems	6.67% 1	40.00% 6	33.33% 5	0.00% 0	20.00% 3	15
6	Heavy recreation	20.00% 3	53.33% 8	13.33% 2	6.67% 1	6.67% 1	15
7	Fertilizers/herbicides	13.33% 2	53.33% 8	0.00% 0	0.00% 0	33.33% 5	15
8	Soil erosion	6.67% 1	20.00% 3	40.00% 6	0.00% 0	33.33% 5	15

Showing rows 1 - 8 of 8

Q20 - If you use fertilizers or herbicides on your land, where are they applied?

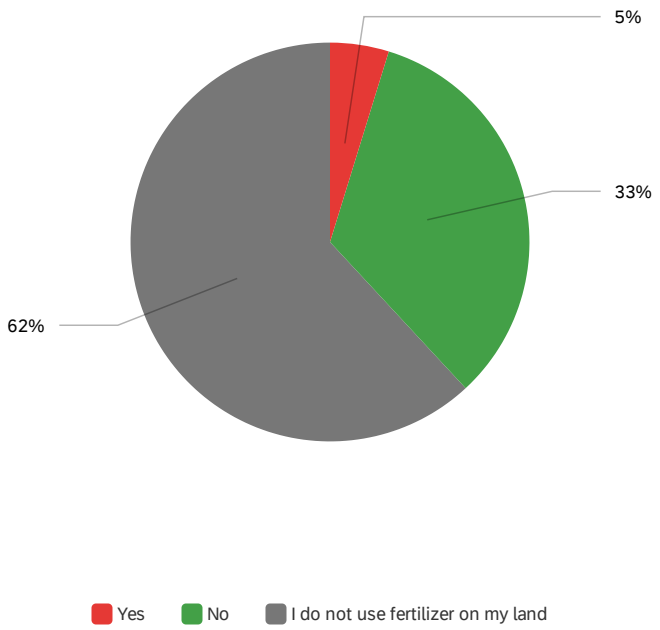


Lawn Garden Agricultural fields Other I do not use fertilizers or herbicides on my land

#	Field	Choice Count	
1	Lawn	29.17%	7
2	Garden	4.17%	1
3	Agricultural fields	0.00%	0
4	Other	0.00%	0
5	I do not use fertilizers or herbicides on my land	66.67%	16
			24

Showing rows 1 - 6 of 6

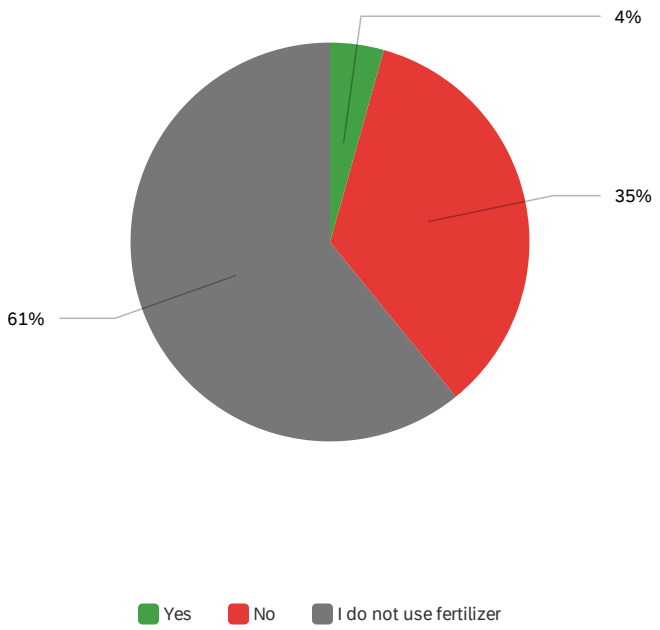
Q21 - Do you use fertilizer that contains phosphorus?



#	Field	Choice Count	
1	Yes	4.76%	1
2	No	33.33%	7
4	I do not use fertilizer on my land	61.90%	13
			21

Showing rows 1 - 4 of 4

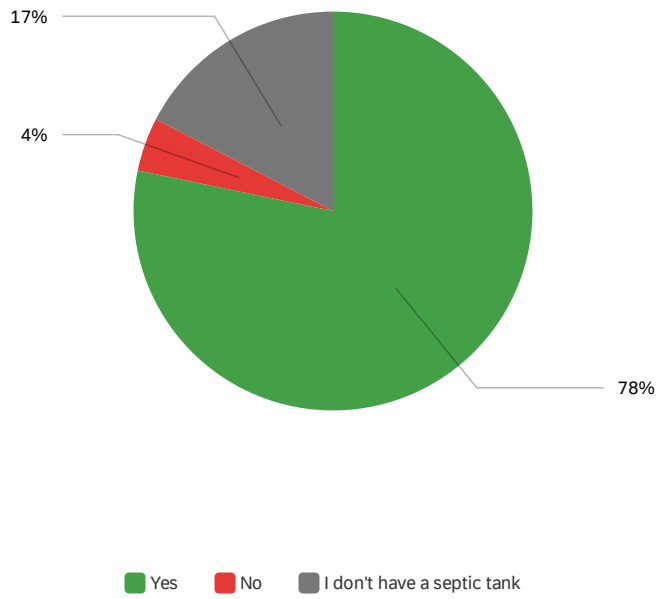
Q23 - Have you had your soil tested before using fertilizer?



#	Field	Choice Count	
1	Yes	4.35%	1
2	No	34.78%	8
3	I do not use fertilizer	60.87%	14
			23

Showing rows 1 - 4 of 4

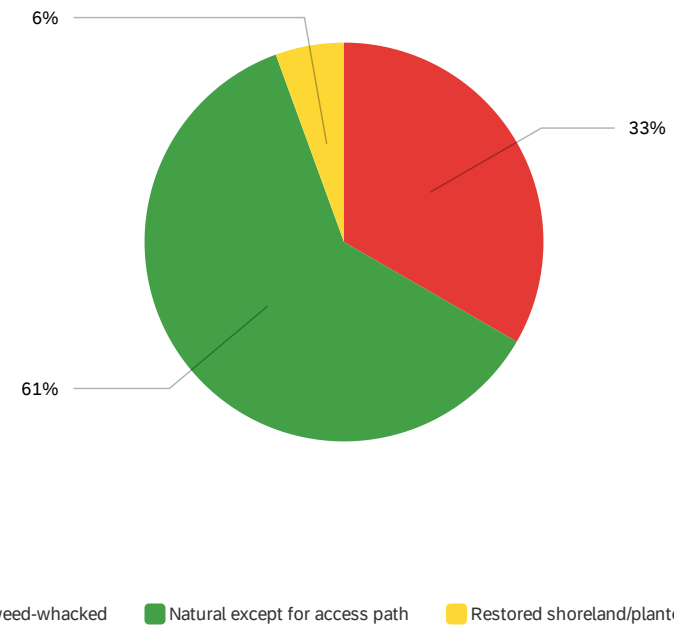
Q22 - Do you have your septic tank pumped regularly (at least every 3 years)?



#	Field	Choice Count	
1	Yes	78.26%	18
2	No	4.35%	1
3	I don't have a septic tank	17.39%	4
			23

Showing rows 1 - 4 of 4

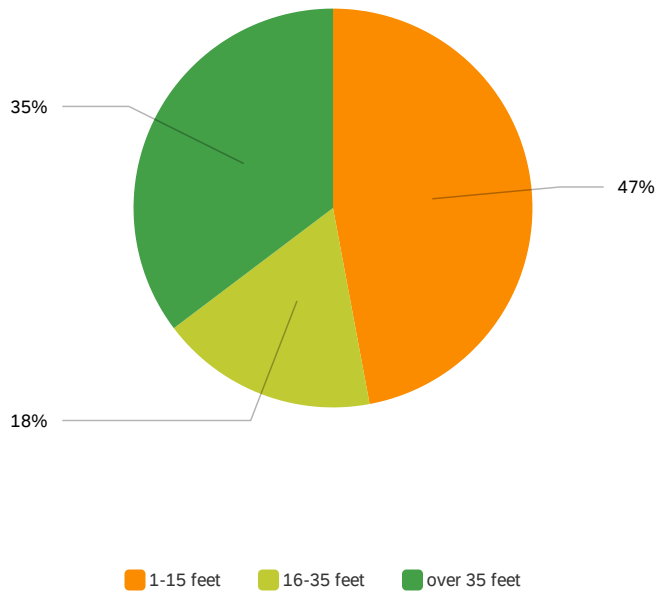
Q25 - How do you currently manage the majority of your property within 35 feet of the lake?



#	Field		Choice Count
1	Mowed or weed-whacked	33.33%	6
2	Natural except for access path	61.11%	11
3	Restored shoreland/planted/landscaped	5.56%	1
			18

Showing rows 1 - 4 of 4

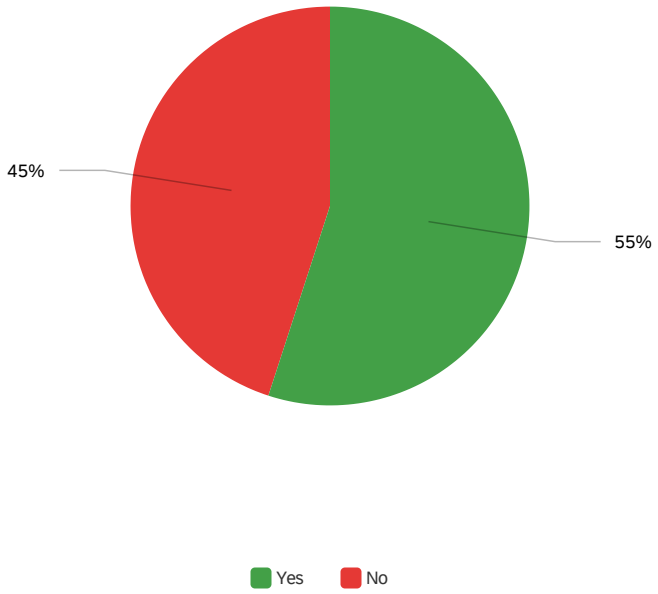
Q26 - If you have unmowed shoreland vegetation, how far inland from the water's edge does it extend?



#	Field	Choice Count	
1	1-15 feet	47.06%	8
2	16-35 feet	17.65%	3
3	over 35 feet	35.29%	6
			17

Showing rows 1 - 4 of 4

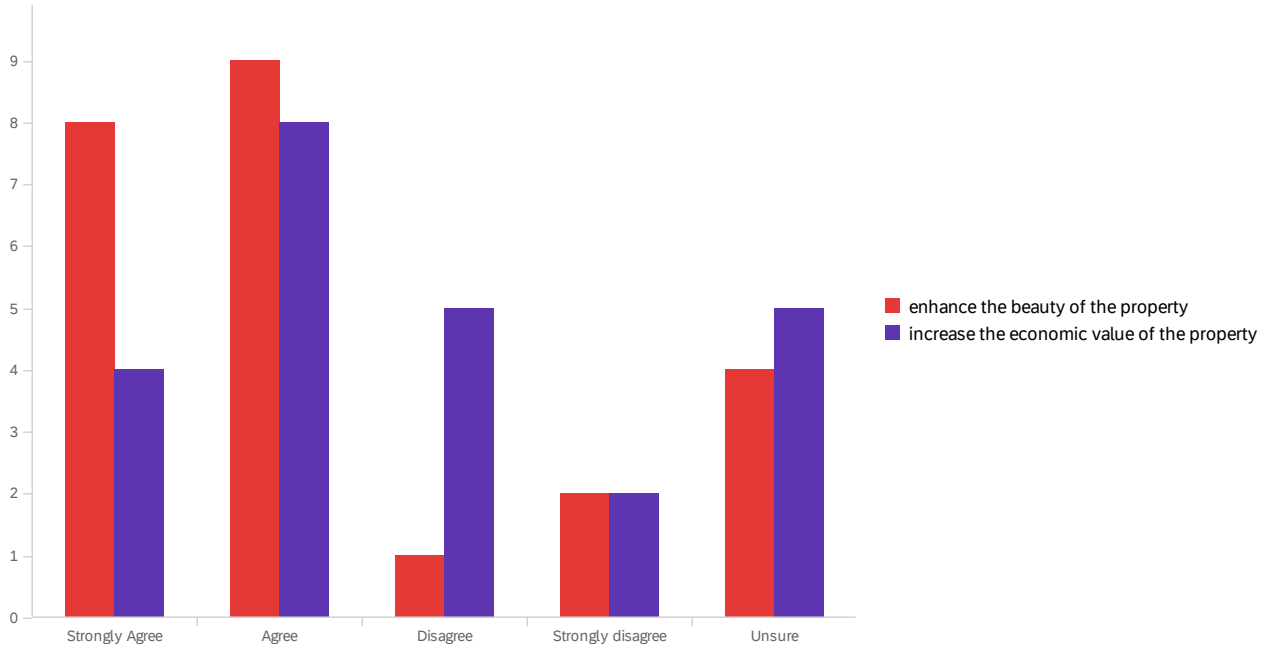
Q31 - Do you have woody structure such as fallen trees or large branches in the shallow water along your property?



#	Field		Choice Count
1	Yes	55.00%	11
2	No	45.00%	9
			20

Showing rows 1 - 3 of 3

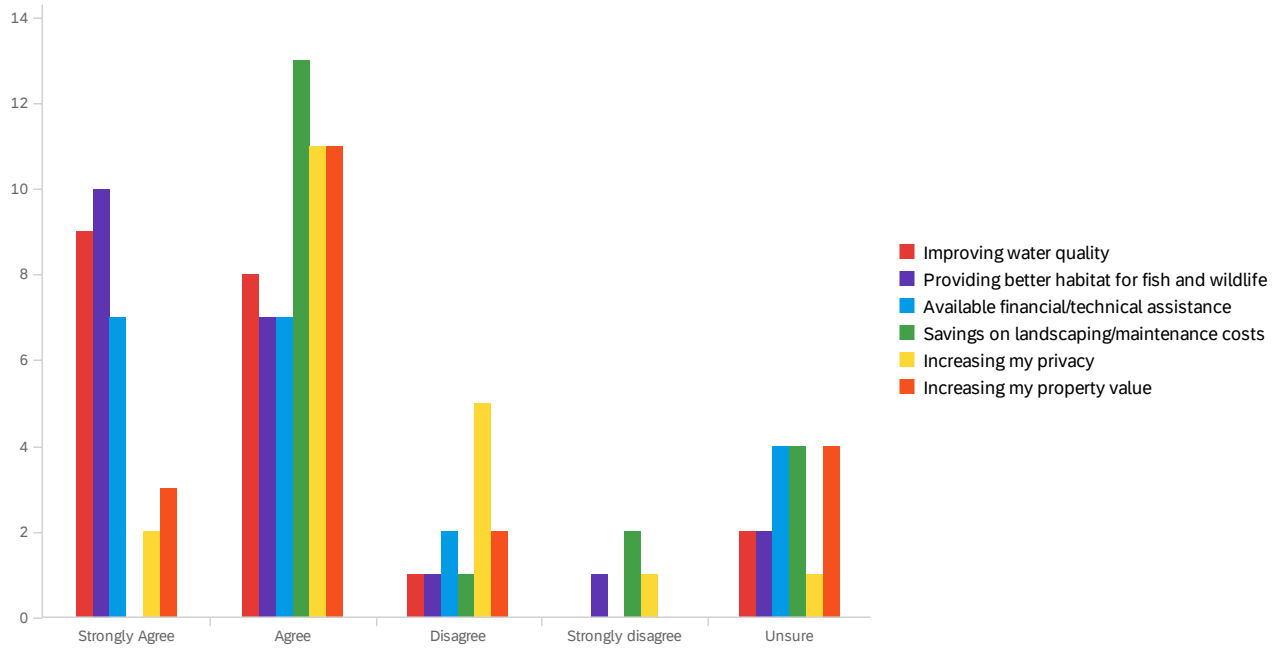
Q27 - In your opinion, does shoreland vegetation...



#	Field	Strongly Agree	Agree	Disagree	Strongly disagree	Unsure	Total
1	enhance the beauty of the property	33.33% 8	37.50% 9	4.17% 1	8.33% 2	16.67% 4	24
2	increase the economic value of the property	16.67% 4	33.33% 8	20.83% 5	8.33% 2	20.83% 5	24

Showing rows 1 - 2 of 2

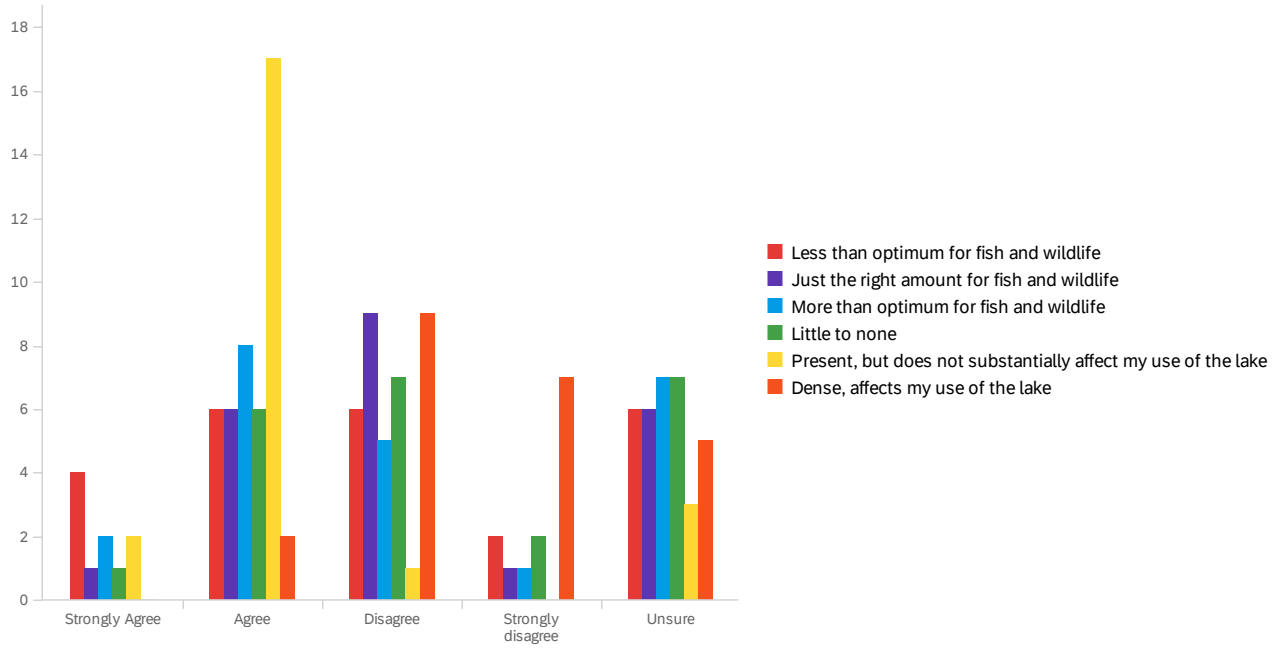
Q28 - What might motivate you to change how you manage your shoreland?



#	Field	Strongly Agree		Agree		Disagree		Strongly disagree		Unsure		Total
1	Improving water quality	45.00%	9	40.00%	8	5.00%	1	0.00%	0	10.00%	2	20
2	Providing better habitat for fish and wildlife	47.62%	10	33.33%	7	4.76%	1	4.76%	1	9.52%	2	21
3	Available financial/technical assistance	35.00%	7	35.00%	7	10.00%	2	0.00%	0	20.00%	4	20
4	Savings on landscaping/maintenance costs	0.00%	0	65.00%	13	5.00%	1	10.00%	2	20.00%	4	20
5	Increasing my privacy	10.00%	2	55.00%	11	25.00%	5	5.00%	1	5.00%	1	20
6	Increasing my property value	15.00%	3	55.00%	11	10.00%	2	0.00%	0	20.00%	4	20

Showing rows 1 - 6 of 6

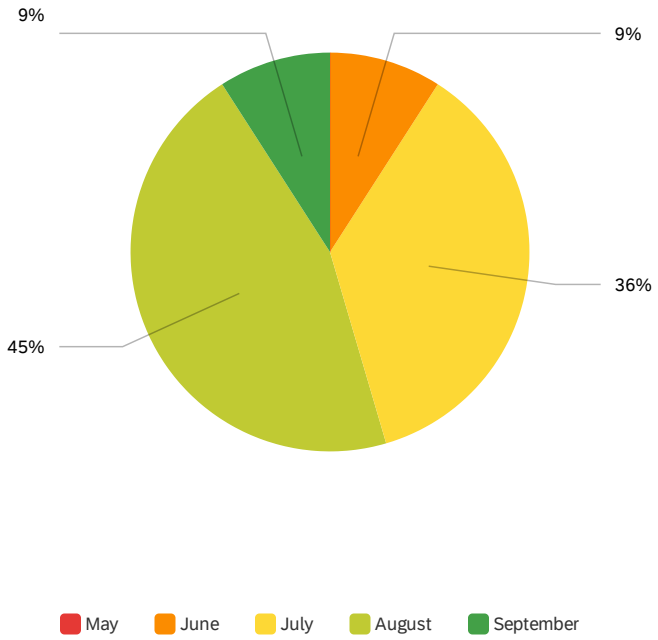
Q32 - In your opinion, which statement best describes the amount of aquatic plant growth in Paya Lake?



#	Field	Strongly Agree	Agree	Disagree	Strongly disagree	Unsure	Total
1	Less than optimum for fish and wildlife	16.67% 4	25.00% 6	25.00% 6	8.33% 2	25.00% 6	24
2	Just the right amount for fish and wildlife	4.35% 1	26.09% 6	39.13% 9	4.35% 1	26.09% 6	23
3	More than optimum for fish and wildlife	8.70% 2	34.78% 8	21.74% 5	4.35% 1	30.43% 7	23
4	Little to none	4.35% 1	26.09% 6	30.43% 7	8.70% 2	30.43% 7	23
5	Present, but does not substantially affect my use of the lake	8.70% 2	73.91% 17	4.35% 1	0.00% 0	13.04% 3	23
6	Dense, affects my use of the lake	0.00% 0	8.70% 2	39.13% 9	30.43% 7	21.74% 5	23

Showing rows 1 - 6 of 6

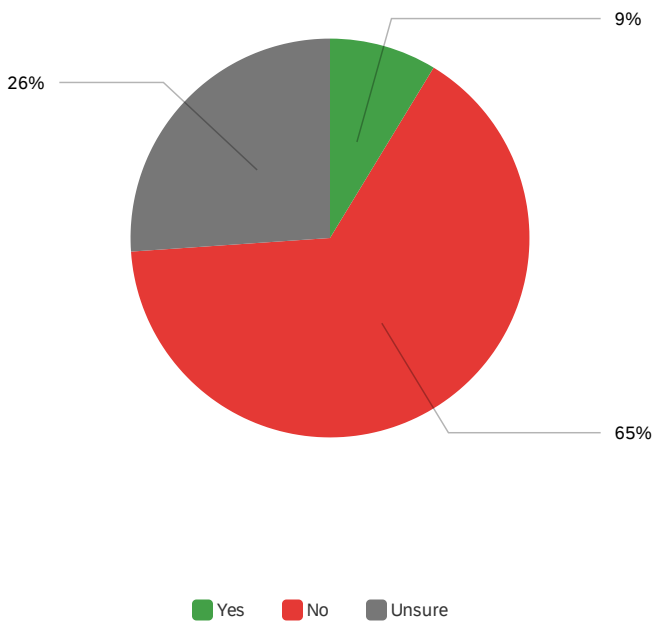
Q33 - If you think the plant growth in Paya Lake is dense, what month(s) do the problems occur? Check all that apply.



#	Field	Choice Count	
1	May	0.00%	0
2	June	9.09%	1
3	July	36.36%	4
4	August	45.45%	5
5	September	9.09%	1
			11

Showing rows 1 - 6 of 6

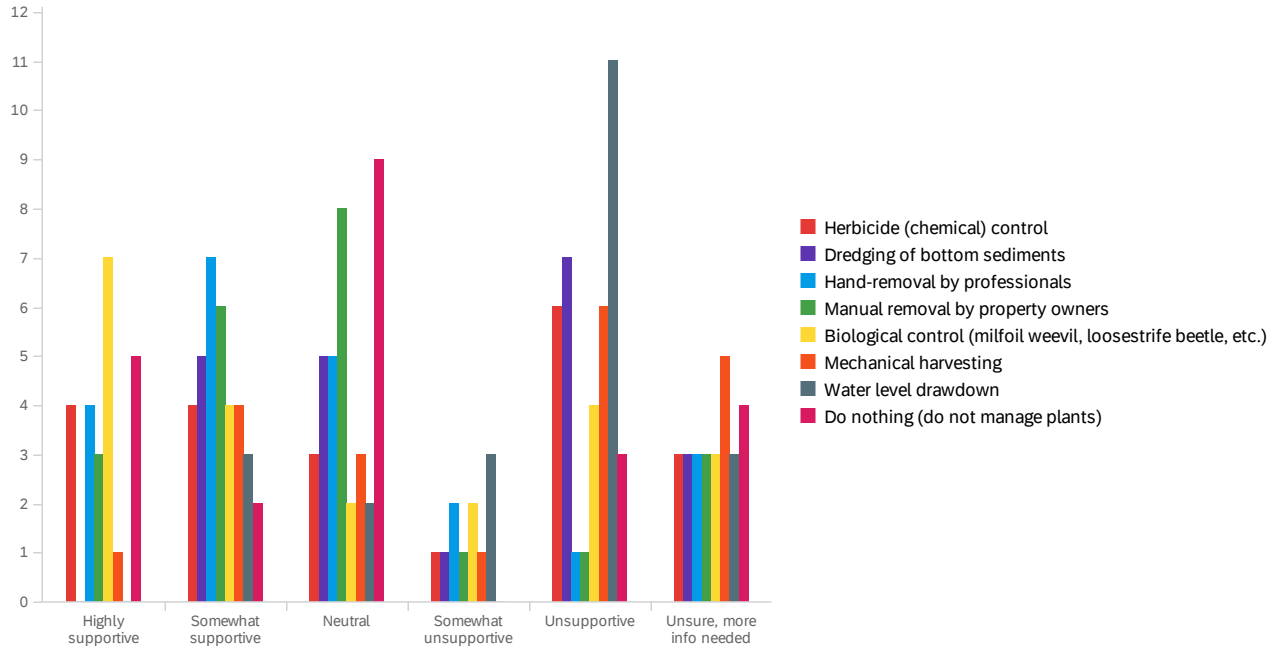
Q34 - Do you believe aquatic plant control is needed on Paya Lake?



#	Field	Choice Count	
1	Yes	8.70%	2
2	No	65.22%	15
3	Unsure	26.09%	6
			23

Showing rows 1 - 4 of 4

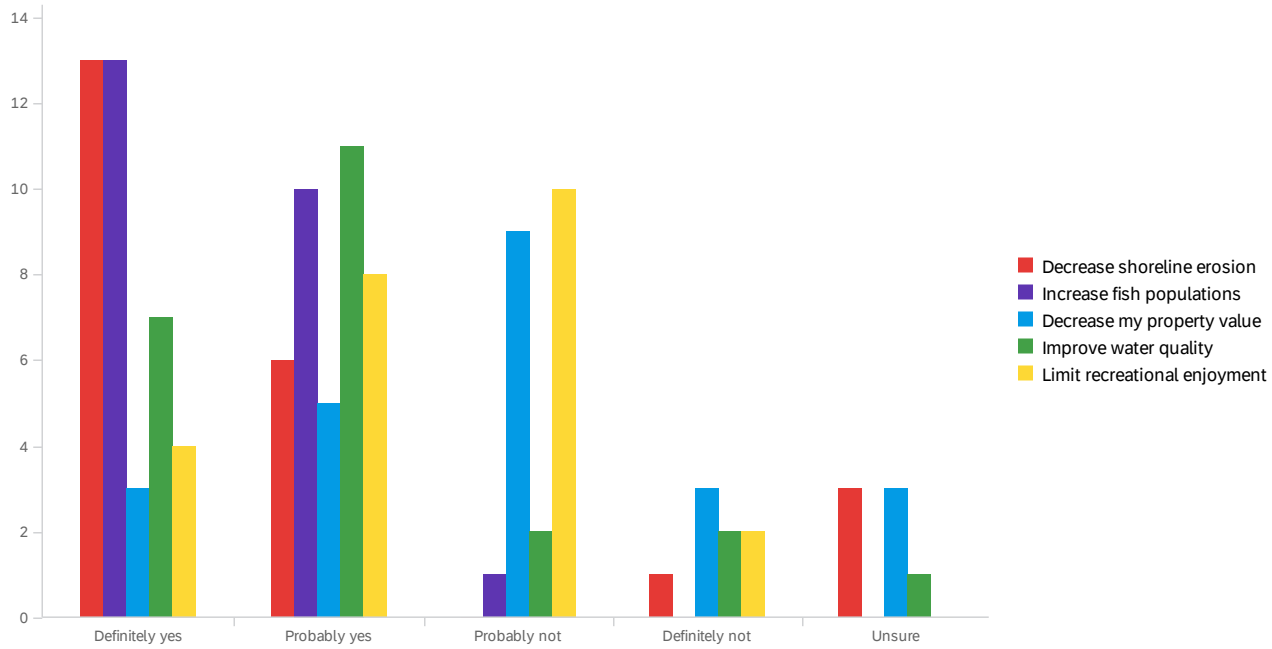
Q35 - What is your level of support for the responsible use of the following techniques to manage aquatic plants on Paya Lake?



#	Field	Highly supportive	Somewhat supportive	Neutral	Somewhat unsupportive	Unsupportive	Unsure, more info needed	Total
1	Herbicide (chemical) control	19.05% 4	19.05% 4	14.29% 3	4.76% 1	28.57% 6	14.29% 3	21
2	Dredging of bottom sediments	0.00% 0	23.81% 5	23.81% 5	4.76% 1	33.33% 7	14.29% 3	21
3	Hand-removal by professionals	18.18% 4	31.82% 7	22.73% 5	9.09% 2	4.55% 1	13.64% 3	22
4	Manual removal by property owners	13.64% 3	27.27% 6	36.36% 8	4.55% 1	4.55% 1	13.64% 3	22
5	Biological control (milfoil weevil, loosestrife beetle, etc.)	31.82% 7	18.18% 4	9.09% 2	9.09% 2	18.18% 4	13.64% 3	22
6	Mechanical harvesting	5.00% 1	20.00% 4	15.00% 3	5.00% 1	30.00% 6	25.00% 5	20
7	Water level drawdown	0.00% 0	13.64% 3	9.09% 2	13.64% 3	50.00% 11	13.64% 3	22
8	Do nothing (do not manage plants)	21.74% 5	8.70% 2	39.13% 9	0.00% 0	13.04% 3	17.39% 4	23

Showing rows 1 - 8 of 8

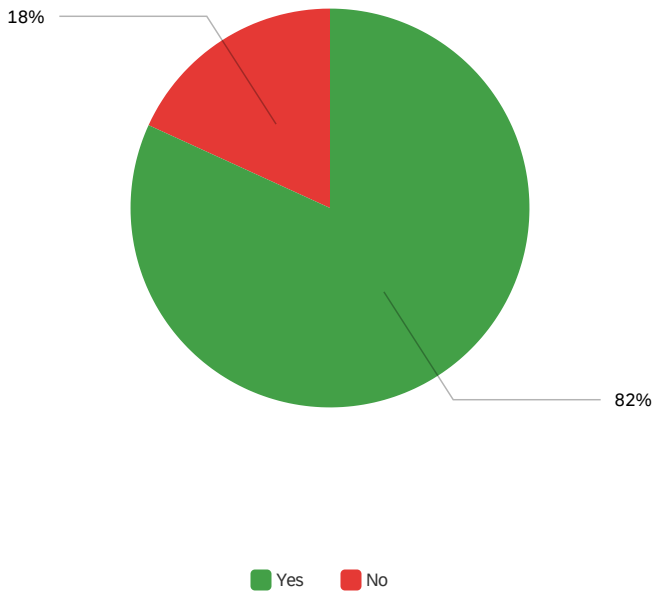
Q36 - In your opinion, does establishing or maintaining native vegetation in the water in the near-shore area...



#	Field	Definitely yes		Probably yes		Probably not		Definitely not		Unsure		Total
1	Decrease shoreline erosion	56.52%	13	26.09%	6	0.00%	0	4.35%	1	13.04%	3	23
2	Increase fish populations	54.17%	13	41.67%	10	4.17%	1	0.00%	0	0.00%	0	24
3	Decrease my property value	13.04%	3	21.74%	5	39.13%	9	13.04%	3	13.04%	3	23
4	Improve water quality	30.43%	7	47.83%	11	8.70%	2	8.70%	2	4.35%	1	23
5	Limit recreational enjoyment	16.67%	4	33.33%	8	41.67%	10	8.33%	2	0.00%	0	24

Showing rows 1 - 5 of 5

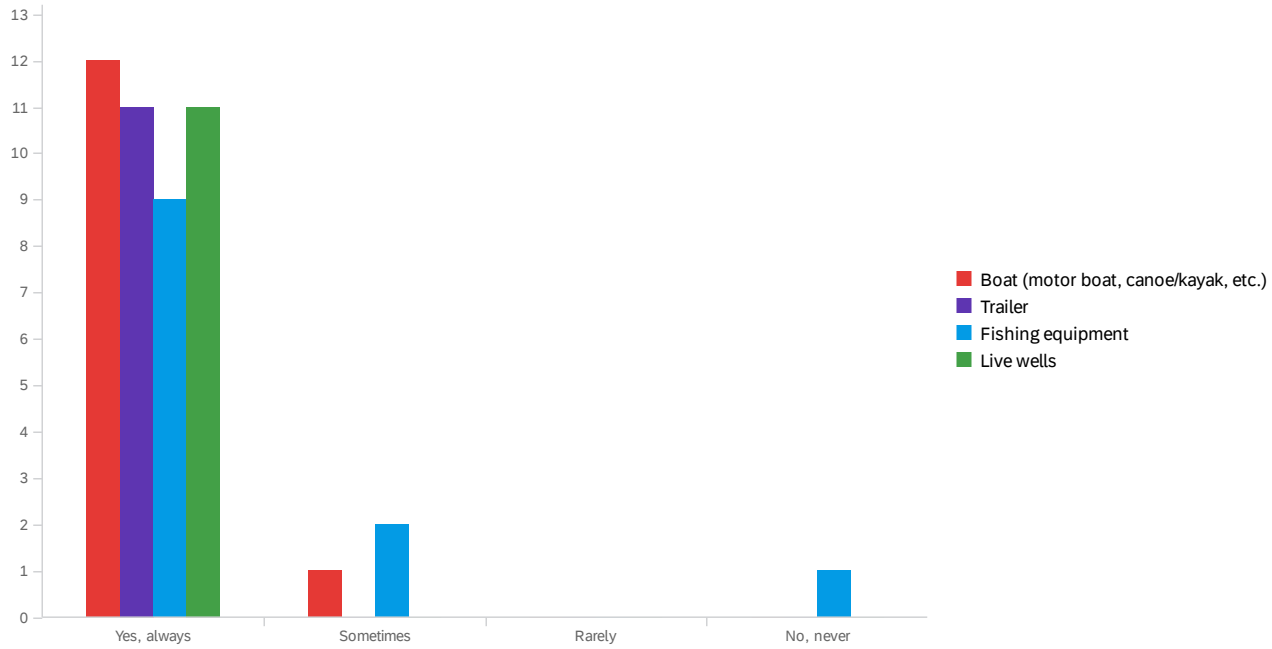
Q37 - Are you aware of invasive species (in general)?



#	Field	Choice Count
1	Yes	81.82% 18
2	No	18.18% 4
		22

Showing rows 1 - 3 of 3

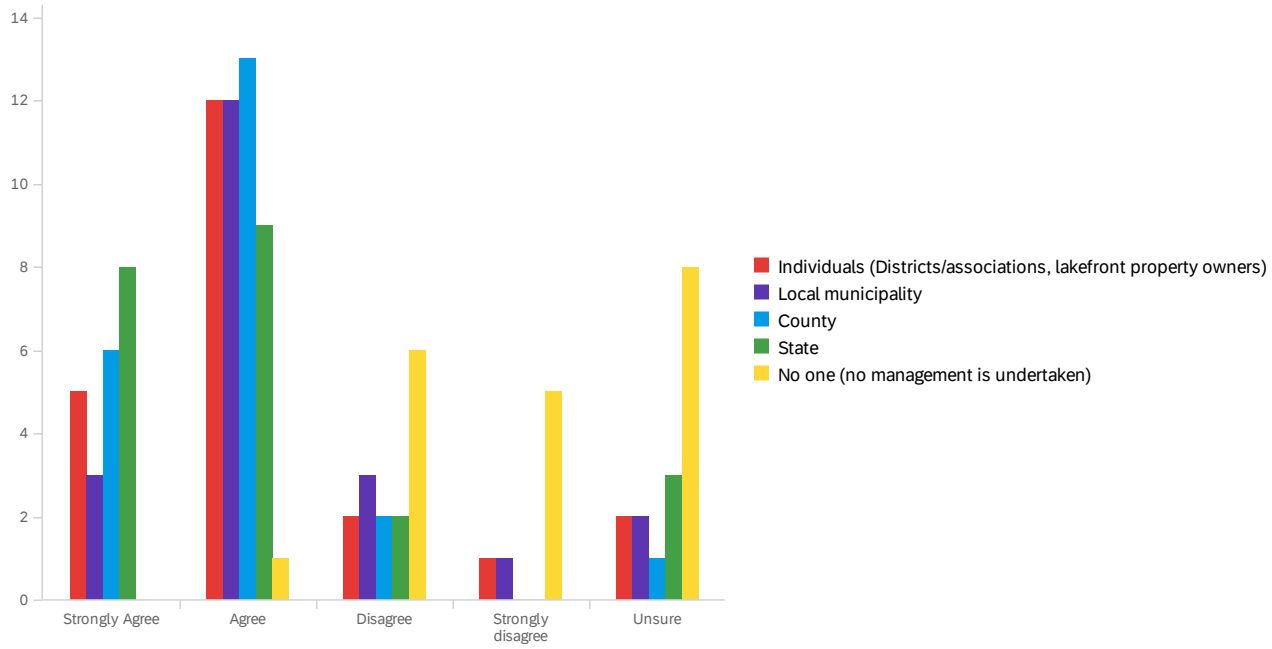
Q39 - After you have been to another lake, do you clean your.... before bringing it back to Paya Lake?



#	Field	Yes, always	Sometimes	Rarely	No, never	Total
1	Boat (motor boat, canoe/kayak, etc.)	92.31% 12	7.69% 1	0.00% 0	0.00% 0	13
2	Trailer	100.00% 11	0.00% 0	0.00% 0	0.00% 0	11
3	Fishing equipment	75.00% 9	16.67% 2	0.00% 0	8.33% 1	12
4	Live wells	100.00% 11	0.00% 0	0.00% 0	0.00% 0	11

Showing rows 1 - 4 of 4

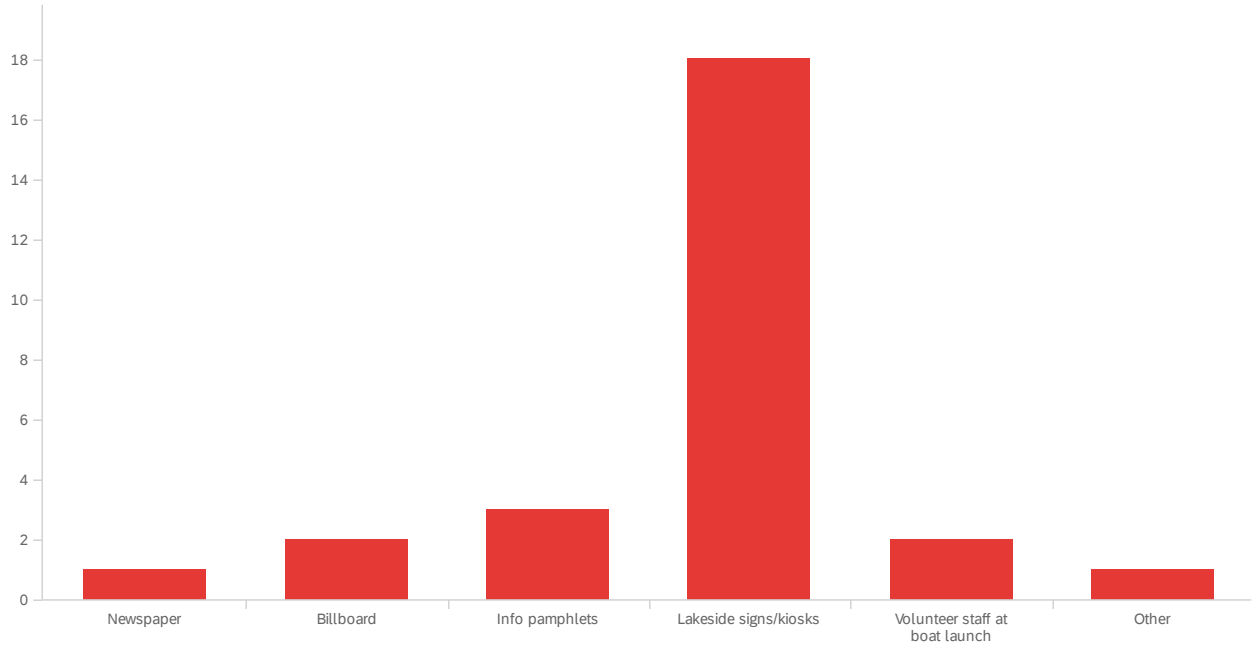
Q40 - Who should pay the cost of managing invasive aquatic plants?



#	Field	Strongly Agree	Agree	Disagree	Strongly disagree	Unsure	Total
1	Individuals (Districts/associations, lakefront property owners)	22.73% 5	54.55% 12	9.09% 2	4.55% 1	9.09% 2	22
2	Local municipality	14.29% 3	57.14% 12	14.29% 3	4.76% 1	9.52% 2	21
3	County	27.27% 6	59.09% 13	9.09% 2	0.00% 0	4.55% 1	22
4	State	36.36% 8	40.91% 9	9.09% 2	0.00% 0	13.64% 3	22
5	No one (no management is undertaken)	0.00% 0	5.00% 1	30.00% 6	25.00% 5	40.00% 8	20

Showing rows 1 - 5 of 5

Q41 - What is the most effective way to inform others about aquatic invasive species?



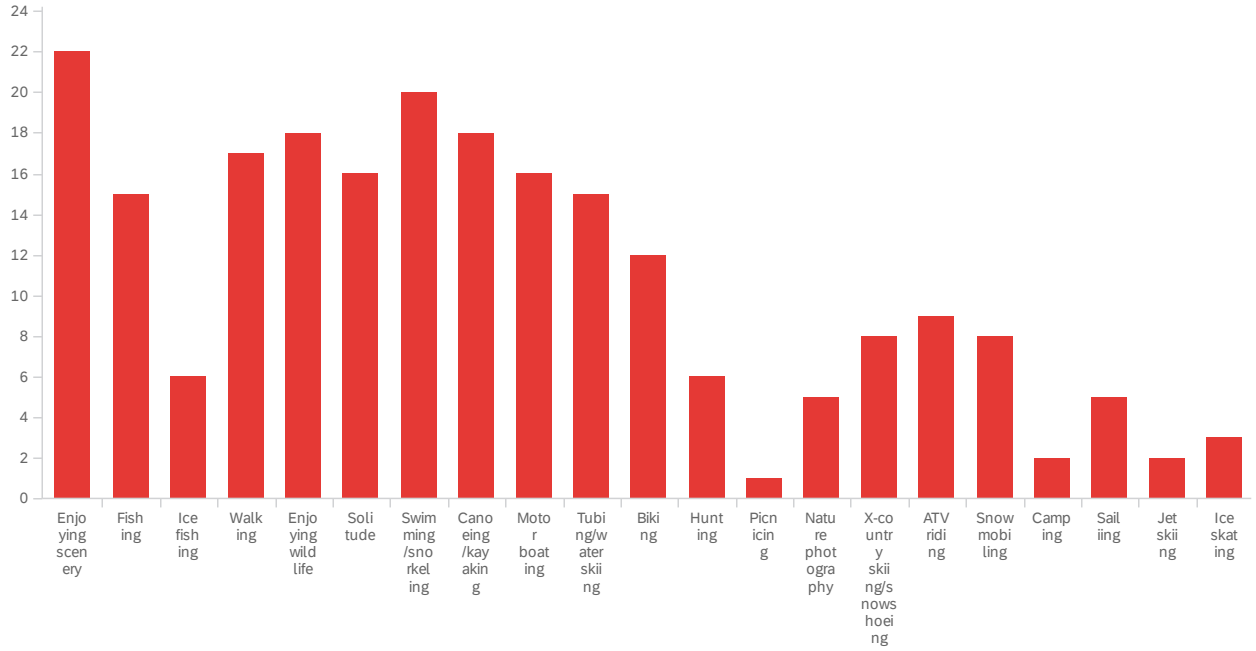
#	Field		Choice Count
1	Newspaper	3.70%	1
2	Billboard	7.41%	2
3	Info pamphlets	11.11%	3
4	Lakeside signs/kiosks	66.67%	18
5	Volunteer staff at boat launch	7.41%	2
6	Other	3.70%	1
			27

Showing rows 1 - 7 of 7

Q12 - In your opinion, what should be done to restore, maintain or improve Paya Lake?

In your opinion, what should be done to restore, maintain or improve Paya L...
Regulate the use of fertilizers and control what types of "improvements" are made to properties
Need more info about amount of wild area needed on lake shores. Also, some intervention is needed to manage ticks in the area. Much of the problem with leaving residential propery areas wild in norhern wisconsin is it is counter productive when trying to minimize tick born illnesses. Ticks like the edge of wild growth.
Limit boats that specifically create large wakes for purpose of “surfing”
Have only lived on the lake for about one year and not sure about the status of Paya Lake and what needs to be done. We did swim in Paya lake as kids (60 years ago) and water was clear then with sand beach at boat landing.
Verify where runoff currently enters lake. Improve areas/shorelands that do not have natural vegetation especially the obvious areas with lawns up to the water.
Manage the removal of vegetation near the lake.
Maintain lake rules for all, don’t let the “elite” get by with things.
Reduce wave runners/jet skis to larger lakes. As well as the size of boats (boarders) that make the large waves that ruin the shoreline by erosion
Limit the Horse power or displacement of some of the boats that create excessive waves for the erosion of the land
Fish stocking and a very small public beach or swim spot.
Stop dropping trees into water that causes deterioration and rotting of the material dropped.
Leave Paya Lake the way it is. There is enough weed growth to provide cover for fish yet clear areas for spawning and swimming.

Q45 - What recreational activities do you partake in on Paya Lake (check all that apply)?



#	Field	Choice Count	
1	Enjoying scenery	9.82%	22
2	Fishing	6.70%	15
3	Ice fishing	2.68%	6
4	Walking	7.59%	17
5	Enjoying wildlife	8.04%	18
6	Solitude	7.14%	16
7	Swimming/snorkeling	8.93%	20
8	Canoeing/kayaking	8.04%	18
9	Motor boating	7.14%	16
10	Tubing/water skiing	6.70%	15
11	Biking	5.36%	12
12	Hunting	2.68%	6
13	Picnicing	0.45%	1
14	Nature photography	2.23%	5
15	X-country skiing/snowshoeing	3.57%	8

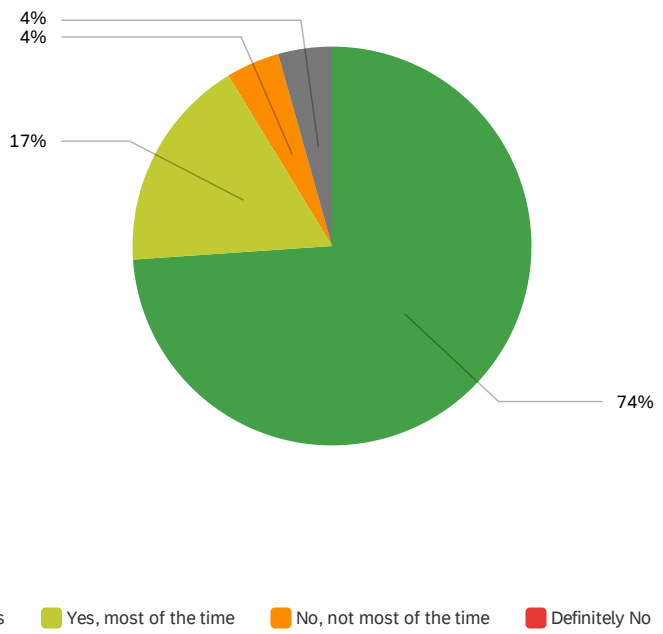
#	Field		Choice Count
16	ATV riding	4.02%	9
17	Snowmobiling	3.57%	8
18	Camping	0.89%	2
19	Sailiing	2.23%	5
20	Jet skiing	0.89%	2
21	Ice skating	1.34%	3
			224

Showing rows 1 - 22 of 22

Q46 - Other recreational activities not included above:

Other recreational activities not included above:

Q47 - "No Wake" is allowed on Paya Lake between 4pm and 10am. Do you like the current "No Wake" rules as they are?



#	Field	Choice Count	
1	Definitely Yes	73.91%	17
2	Yes, most of the time	17.39%	4
3	No, not most of the time	4.35%	1
4	Definitely No	0.00%	0
5	Unsure	4.35%	1
			23

Showing rows 1 - 6 of 6

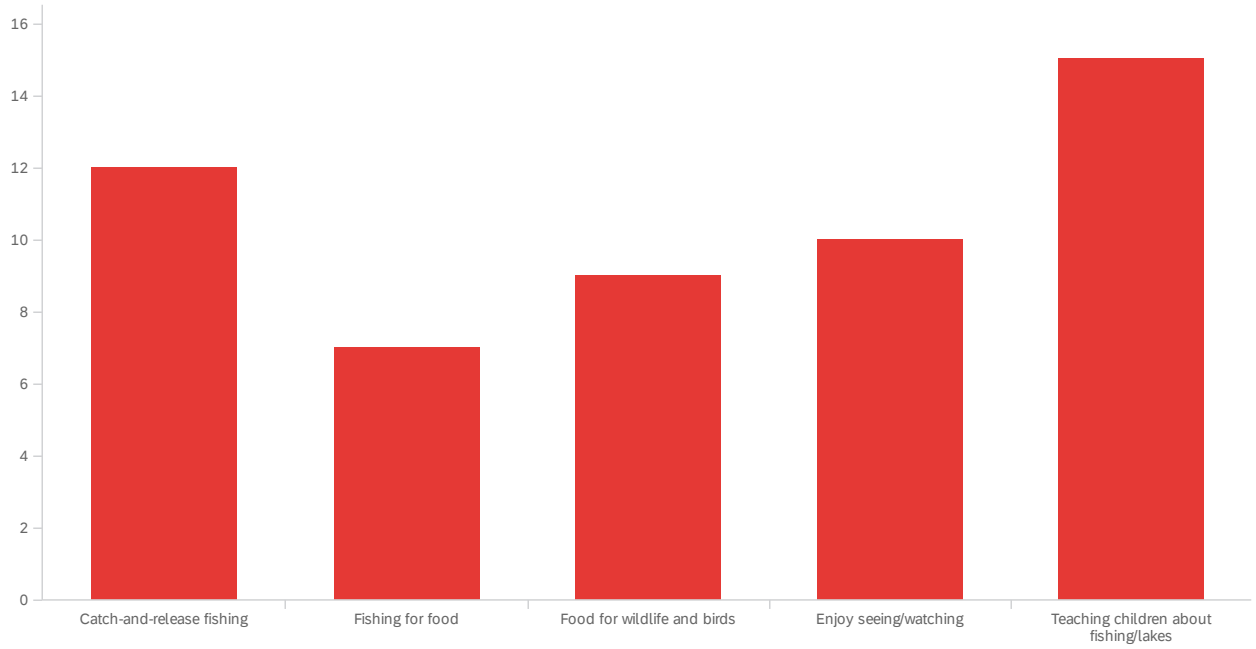
Q48 - If you think the "No Wake" rules should be adjusted...in what way?

If you think the "No Wake" rules should be adjusted...in what way?
Do not change
11:00 a.m. to 4 p.m. is better.
No change.
Stay the same.
5pm-10 am
Keep the same
The feeling of this subject varies depending on age and family orientation. Having lived through both emotions I feel it's more than fair to leave the hours as is for a blend for everyone.
5pm to 10am
The no wake hours should be extended to 5pm like most of the area lakes.

Q49 - What could be done to improve your recreation experience on Paya Lake?

What could be done to improve your recreation experience on Paya Lake?
unrelated, but the wood tick infestation is becoming a real issue on the north side of the lake
No complaints
Plant more fish and more species
Limit boats that specifically create large wakes for purpose of “surfing” and jet skis to larger lakes
Nothing
Outlaw jet skiing on small lakes.
Emphasis on aquatic invasive plants
Reduce wave runners
Jet ski on this lake are just an accident waiting to happen. I understand the desire to have this and respect it but a lake of this acreage should be right at the edge of not being acceptable.
small sandy public beach at the boat landing
A pier to help in launching boats
Extend the no wake hours.

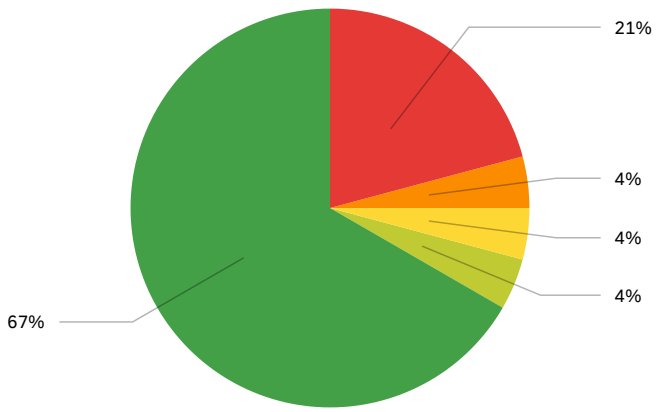
Q51 - For what purposes do you value the fishery in Paya Lake? (Check all that apply)



#	Field		Choice Count
1	Catch-and-release fishing	22.64%	12
2	Fishing for food	13.21%	7
3	Food for wildlife and birds	16.98%	9
4	Enjoy seeing/watching	18.87%	10
5	Teaching children about fishing/lakes	28.30%	15
			53

Showing rows 1 - 6 of 6

Q52 - How many years experience do you have fishing Paya Lake?

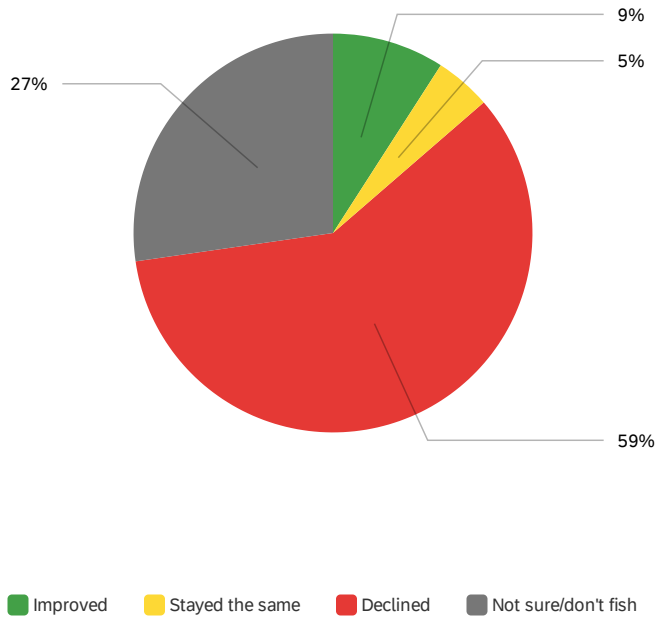


I don't fish Paya Lake | 1-5 years | 6-10 years | 11-20 years | More than 20 years

#	Field	Choice Count	
1	I don't fish Paya Lake	20.83%	5
2	1-5 years	4.17%	1
3	6-10 years	4.17%	1
4	11-20 years	4.17%	1
5	More than 20 years	66.67%	16
			24

Showing rows 1 - 6 of 6

Q53 - In the time you have been fishing Paya Lake, would you say the quality of fishing has...



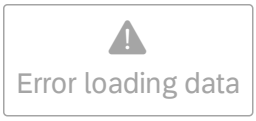
#	Field		Choice Count
1	Improved	9.09%	2
2	Stayed the same	4.55%	1
3	Declined	59.09%	13
4	Not sure/don't fish	27.27%	6
			22

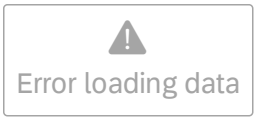
Showing rows 1 - 5 of 5

Q54 - What do you think has contributed to the change in fishing?

What do you think has contributed to the change in fishing?
lack of food stock, no dnr restocking of walleye
Over fished and not replenished. Need more opportunities for small fish to hide and make it from predators
Less variety, stunted growth, too many bass
Quality of water due to development and runoff
The bag limit
Change in structure.
More fishing by more people.
Lack of stocking of pan fish.
Over abundance of bass
Technology
I have seen people in the past catch 1/2 - 5 gallon pail full of lake perch thru the ice.
people and more homes
Somewhat less pressure. When I was a kid, there was always people fishing on the lake. Now, it is relatively easy to find a parking spot.
larger motors on boats and jet skis

Q55 - When and how often do you fish Paya Lake?

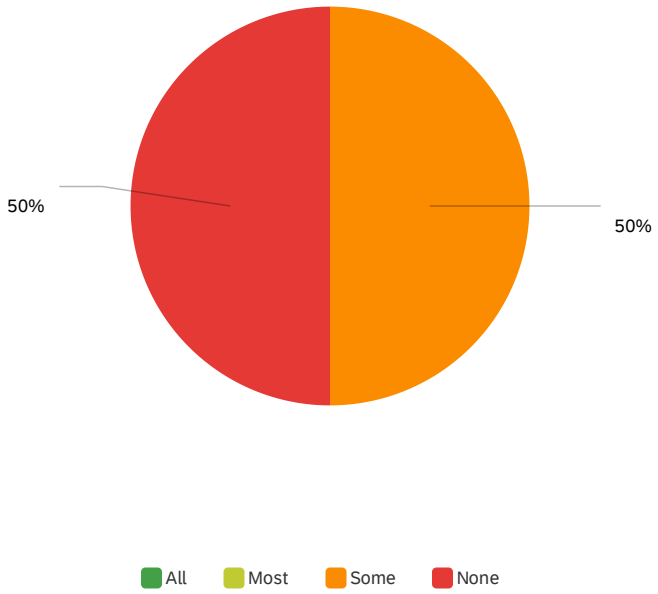




Q56 - What type of fish do you catch on Paya Lake?

What type of fish do you catch on Paya Lake?
bluegill, bass
NA
Bluegill and bass. Large mouth and small mouth bass
Bass, smallmouth, large mouth, rock bass.
Panfish
Bluegill, pan fish
Bass
Bass and bluegill
Bass and bluegills
Very small pan fish, bass
Bass
Bass
Typically bass with pan fish being the second most
Bass, bluegill
My kids catch and release fish, mostly bass
What ever bites
Bass and sunfish
panfish and bass

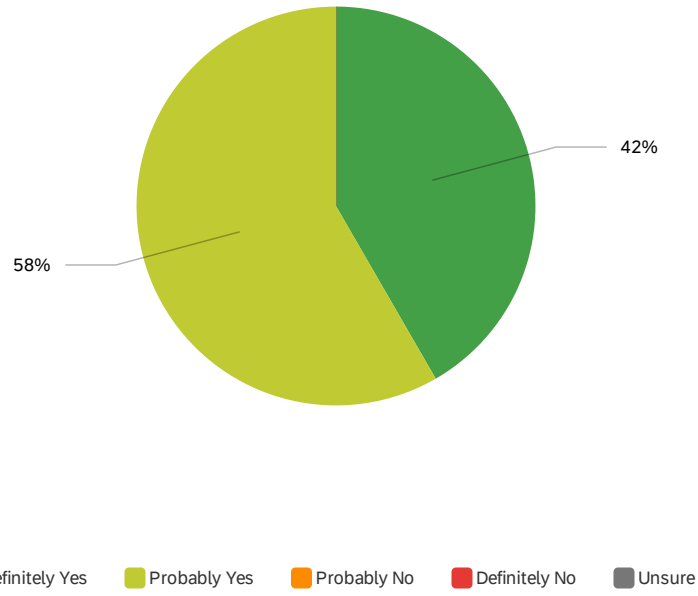
Q57 - In general, how many of the fish you catch are big enough to keep?



#	Field	Choice Count	
1	All	0.00%	0
2	Most	0.00%	0
3	Some	50.00%	11
4	None	50.00%	11
			22

Showing rows 1 - 5 of 5

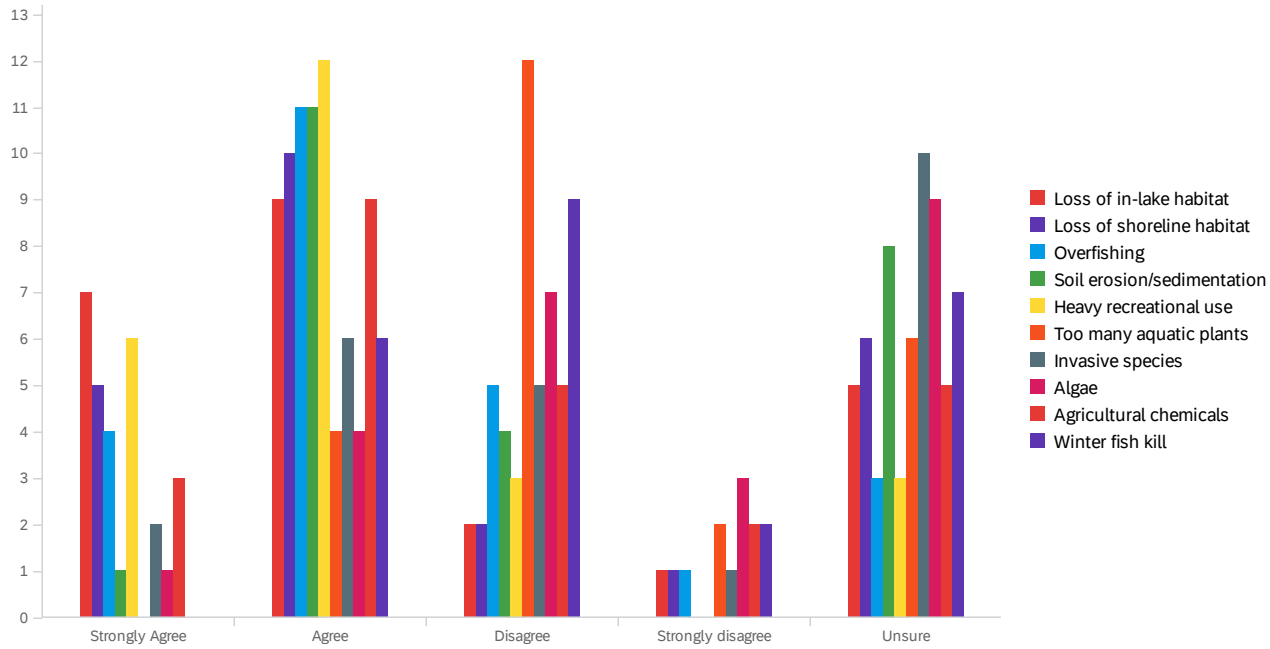
Q58 - Do you believe fish from Paya Lake are safe to eat?



#	Field	Choice Count	
1	Definitely Yes	41.67%	10
2	Probably Yes	58.33%	14
3	Probably No	0.00%	0
4	Definitely No	0.00%	0
5	Unsure	0.00%	0
			24

Showing rows 1 - 6 of 6

Q59 - What do you think is the greatest threat to the fishery in Paya Lake in the next 10 years?



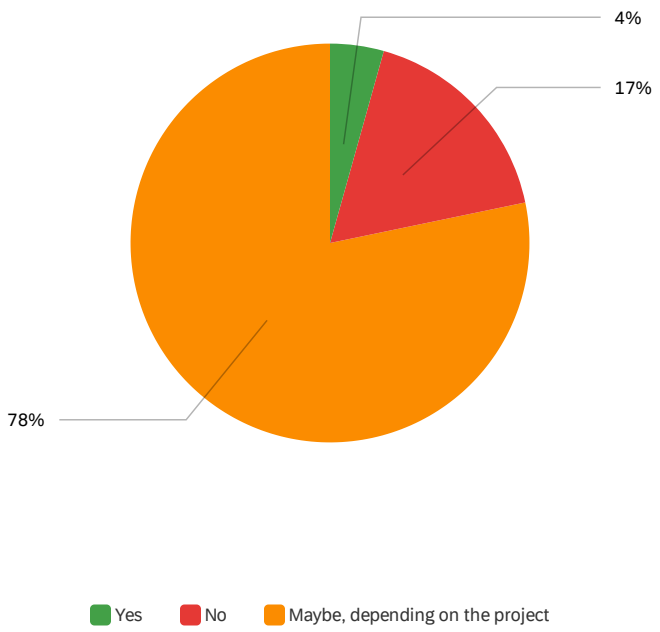
#	Field	Strongly Agree		Agree		Disagree		Strongly disagree		Unsure		Total
1	Loss of in-lake habitat	29.17%	7	37.50%	9	8.33%	2	4.17%	1	20.83%	5	24
2	Loss of shoreline habitat	20.83%	5	41.67%	10	8.33%	2	4.17%	1	25.00%	6	24
3	Overfishing	16.67%	4	45.83%	11	20.83%	5	4.17%	1	12.50%	3	24
4	Soil erosion/sedimentation	4.17%	1	45.83%	11	16.67%	4	0.00%	0	33.33%	8	24
5	Heavy recreational use	25.00%	6	50.00%	12	12.50%	3	0.00%	0	12.50%	3	24
6	Too many aquatic plants	0.00%	0	16.67%	4	50.00%	12	8.33%	2	25.00%	6	24
7	Invasive species	8.33%	2	25.00%	6	20.83%	5	4.17%	1	41.67%	10	24
8	Algae	4.17%	1	16.67%	4	29.17%	7	12.50%	3	37.50%	9	24
9	Agricultural chemicals	12.50%	3	37.50%	9	20.83%	5	8.33%	2	20.83%	5	24
10	Winter fish kill	0.00%	0	25.00%	6	37.50%	9	8.33%	2	29.17%	7	24

Showing rows 1 - 10 of 10

Q61 - Do you have any additional comments regarding Paya Lake?

Do you have any additional comments regarding Paya Lake?
is there a way to ban pesticide and chemical use withing 50 feet of the lakes?
Would like to see this lake be revived like it was in the 1960's. We caught a lot of nice perch and bluegills in this lake. Maybe we should have a fee to land a boat in the lake if you are not a member of yhe association.
Beautiful, but no fish.
Do not try to create this lake as a big fishing lake. There is not enough parking for all the vehicles and trailers the way it is.

Q63 - Would you be interested in volunteering on a project on your lake (such as shoreland restoration planting, invasive species monitoring/removal, water quality monitoring, highway cleanup, etc.)?



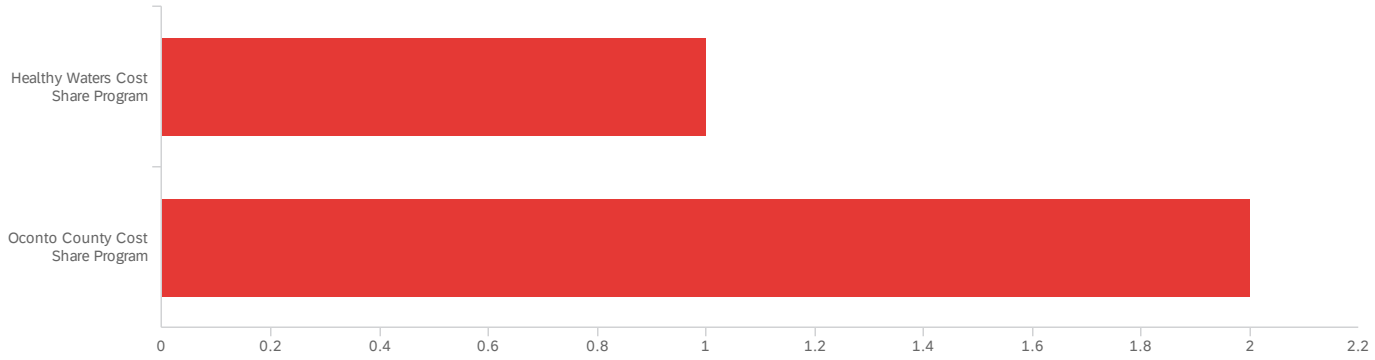
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Would you be interested in volunteering on a project on your lake (such as shoreland restoration planting, invasive species monitoring/removal, water quality monitoring, highway cleanup, etc.)?	1.00	3.00	2.74	0.53	0.28	23

#	Field		Choice Count
1	Yes	4.35%	1
2	No	17.39%	4
3	Maybe, depending on the project	78.26%	18
			23

Showing rows 1 - 4 of 4

Q64 - Are you aware of the following programs available to you from Oconto County?

(Check all that apply)



#	Field		Choice Count
1	Healthy Waters Cost Share Program	33.33%	1
2	Oconto County Cost Share Program	66.67%	2
			3

Showing rows 1 - 3 of 3

End of Report