2016

Witters Lake, Waushara County, Wisconsin
Lake Management Plan

Prepared by staff from the Center for Watershed Science and Education
University of Wisconsin-Stevens Point

Center for Watershed Science and Education
College of Natural Resources
University of Wisconsin-Stevens Point

Lake Management Plan for Witters Lake, Waushara County, Wisconsin

The Witters Lake Management Plan was developed with input from residents and lake users at a series of four public planning sessions held at the Dakota Town Hall in Wautoma, Wisconsin in October 2015 to February 2016. The inclusive community sessions were designed to learn about and identify key community opportunities, assets, concerns, and priorities. Representatives of state and local agencies, as well as nonprofit organizations, also attended the planning sessions to offer their assistance to the group in developing a strategic lake management plan (LMP).

The plan was adopted by the Witters Lake Association on: July 4, 2016.

The plan was accepted by the Town of Dakota on: _____.

The plan was accepted by Waushara County on: July 6, 2016.

The plan was approved by the Wisconsin Department of Natural Resources on: October 11, 2016.

A special thanks to all who helped to create the Witters Lake Management Plan and provided guidance during the plan's development.

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Waushara County Staff and Citizens
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Overarching Vision for Witters Lake

Witters Lake will remain a quiet, no wake lake with excellent water quality, great fishing and abundant wildlife.

Introduction

Witters Lake is located in the Town of Dakota, south of the Wautoma municipal airport, and west of Highway 22. There is one public boat launch located on the lake's eastern side, which is owned by the town. According to the WDNR, Witters Lake is a 51-acre seepage lake with surface runoff and groundwater contributing most of its water. Its maximum depth is 18 feet; the lakebed has a gradual to moderate slope with an average depth of 4 feet in most of the lake. The lake is enjoyed mostly by local residents. In 2015, community members around Witters Lake came together in partnership with local professionals and experts to develop this lake management plan (LMP).

The purpose of this plan is to provide a framework for the protection and improvement of Witters Lake. Implementing the content of this LMP will enable citizens and other supporters to achieve the vision for Witters Lake now and in the years to come. The plan was developed by community members who learned about the lake and identified features important to the Witters Lake community to help guide the fate of the lake. It is a dynamic document that identifies goals and action items for the purpose of maintaining, protecting and/or creating desired conditions in a 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.

Who can use the Witters Lake Management Plan, and how can it be used?

- **Individuals**: Individuals can use this plan to learn about the lake they love and their connection to it. People living near Witters Lake can have the greatest influence on the lake by understanding and choosing lake-friendly options to manage their land and the lake.
- **Witter Lake Association:** This plan provides the Association with a well thought out plan for the whole lake and lists options that can easily be prioritized. Annual review of the plan will also help the Association to realize its accomplishments. Resources and funding opportunities for Association 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 Witters Lake.

- **Neighboring lake groups, sporting and conservation clubs**: Neighboring 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 Dakota**: The Town can utilize the visions, wishes, and goals documented in this lake management plan when considering town-level management planning or decisions within the watershed that may affect the lake.
- **Waushara 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 Waushara County lakes, streams, wetlands, and groundwater.
- **Wisconsin Department of Natural Resources**: Professionals working with lakes in Waushara 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. Lake management plans help the Wisconsin Department of Natural Resources to identify and prioritize needs within Wisconsin's lake community, and decide where to apply resources and funding. A well thought out lake management plan increases an application's competitiveness for funding from the State – if multiple Waushara County lakes have similar goals in their lake management plans, they can join together when seeking grant support to increase competitiveness for statewide resources.

Background

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 lake conditions. This was done alongside 32 other lakes as part of the Waushara County Lakes Project. The Waushara County Lakes Project was initiated by citizens in the Waushara County Watershed Lakes Council who encouraged Waushara County to work in partnership with personnel from UW-Stevens Point to assess 33 lakes in the county. This effort received funding from the Wisconsin Department of Natural Resources' 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 and the Waushara County Land Conservation Department conducted the Waushara County Lakes Study and interpreted data for use in the development of lake management plans. Data collected by citizens, consultants and Wisconsin Department of Natural Resources professionals were also incorporated into the planning process, helping to create a robust set of information from which informed decisions could be made. Sources of information used in the planning process are listed at the end of this document.

Several reports from the Witters Lake Study and the materials associated with the planning process and reports can be found on the Waushara County website: http://www.co.waushara.wi.us/. Hover over the Departments tab, then Zoning and Land Conservation, Land Conservation, and finally click on Lake Management Planning. Unless otherwise noted, the data used in the development of this plan were detailed in the 2014 report *Waushara County Lakes Study – Witters Lake*, University of Wisconsin-Stevens Point.

The Planning Process

The planning process included a series of four public planning sessions held between October 2015 and February 2016 at the Dakota Town Hall. The Witters Lake Planning Management Committee consisted of property owners, recreational users, and association board members. Technical assistance during the planning process was provided by the Waushara County Conservationist, the Waushara County Community, Natural Resources and Economic Development Extension Agent, and professionals from the Wisconsin Department of Natural Resources (WDNR), Golden Sands Resource Conservation & Development Council, Inc. (RC&D), University of Wisconsin-Extension (UWEX), and the University of Wisconsin-Stevens Point Center for Watershed Science and Education (CWSE).

Participation in the planning process was open to everyone and was encouraged by letters mailed to Witters Lake waterfront property owners and by press releases in local newspapers. In addition, participants were sent emails about upcoming meetings which could be forwarded to others. In order to involve and collect input from as many people as possible, a topic-specific survey related to the subject of each upcoming planning session was made available prior to each planning session. Property owners and interested lake users were notified about the surveys and how to access them (via postcards mailed to waterfront property owners 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 Appendix E. Lake User Survey Results.

Guest experts and professionals attended the planning sessions. They presented information and participated in discussions with participants to provide context, insight and recommendations for the lake management plan, including environmental and regulatory considerations. This information was organized with the survey results into discussion topics, which included: the fishery and recreation; the aquatic plant community; water quality and land use; shoreland health; and, communication. After learning about the current conditions of each topic, planning committee members identified goals, objectives and actions for the lake management plan that were then recorded by professionals from UW-Stevens Point. Planning session notes and presentations are available on the Waushara County website.

Implementing the content within this lake management plan will enable citizens and other supporters to achieve the vision for Witters Lake now and in the years to come.

Goals, Objectives and Actions

The following goals, objectives, and associated actions were derived from the values and concerns of citizens and members of the Witters Lake Management Planning Committee, and the known science about Witters Lake, its ecosystem and the landscape within its watershed. Implementing and regularly updating the goals and actions in the Witters Lake Management Plan will ensure that the vision is supported and that changes or new challenges are incorporated into the plan. 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.**

Although each lake is different, to ensure a lake management plan considers the many aspects associated with a lake, the Wisconsin Department of Natural Resources requires that a comprehensive lake management plan address, at a minimum, a list of topics that affect the character of a lake, whether each topic has been identified as a priority or as simply something to preserve. These topics comprise the chapters in this plan. For the purposes of this plan, the chapters 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 and Quantity—water chemistry, clarity, contaminants, lake levels
Shorelands—habitat, erosion, contaminant filtering, water quality, vegetation, access
Watershed Land Use—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 and Revisions—continuing the process
Governance—protection of the lake, constitution, state, county, local municipalities, Witters Lake Association

List of Goals

Goal 1. Witters Lake will host characteristics that support a robust fishery.
Goal 2. Protect native plants to provide habitat, good water quality and limit the establishment of AIS while balancing recreational needs.
Goal 3. Prevent AIS from becoming established in Witters Lake.
Goal 4. Identify and inform others of quality habitat in and near Witters Lake.
Goal 5. Water quality in Witters Lake will improve, reducing nuisance algal blooms and improving the fishery.
Goal 6. Preserve and restore healthy shorelines around Witters Lake. Shoreline with mowed lawn to the lake's edge will be reduced by 60% (approximately 2,000 feet) within the next 5 years (2021).
Goal 7. Protect quality habitat and natural areas within the watershed from future degradation to enhance water quality, aesthetics, and the wildlife community.
Goal 8. Property owners in the watershed will understand their relationship to Witters Lake and will manage their lands in ways that minimize impacts to the lake.
Goal 9. Increase compliance of boating rules and special considerations.
Goal 10. The community will be involved in lake management actions.
Goal 11. Update the lake management plan annually or as needed.

Priority goals:

Goal 1. Witters Lake will host characteristics that support a robust fishery.
Objective 1.1. Improve fish habitat in Witters Lake.

Goal 3. Prevent AIS from becoming established in Witters Lake**.**
Objective 3.1. Promote community awareness about invasive species.
Objective 3.2. Monitor for aquatic invasive species in Witters Lake.
Objective 3.3. Be prepared to respond to AIS outbreaks.

Goal 6. Preserve and restore healthy shorelines around Witters Lake. Shoreline with mowed lawn to the lake's edge will be reduced by 60% (approximately 2,000 feet) within the next 5 years (2021).
Objective 6.1. Inform shoreland property owners about protecting existing shoreland habitat.
Objective 6.2. Provide an atmosphere and support to result in restored shorelands.
Objective 6.3. Reduce the effects of impervious surfaces on properties surrounding the lake.

Lead persons and resources are identified under each objective of this plan. These individuals and organizations are able to provide information, suggestions, or services to accomplish objectives and 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.

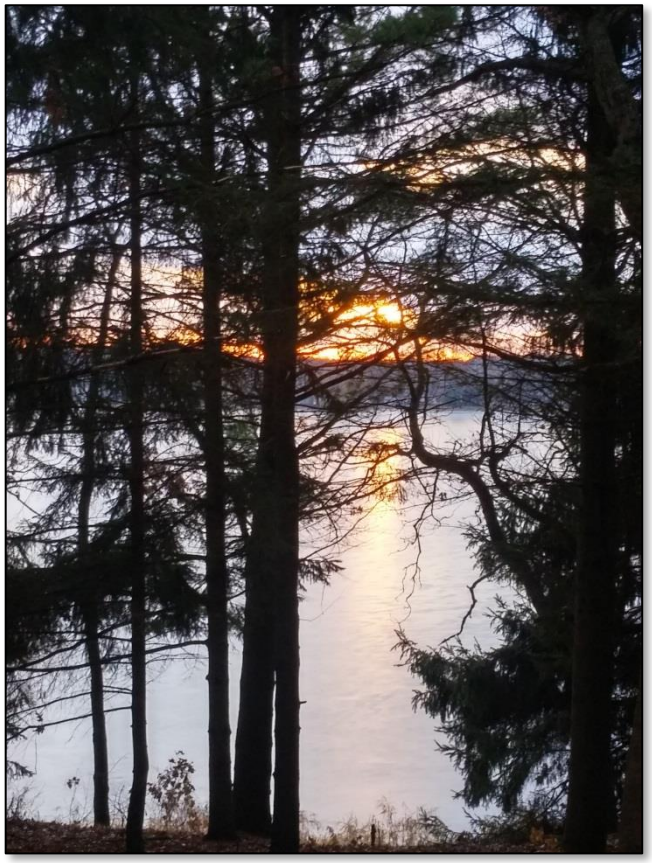
Resource	Acronym
Clean Boats, Clean Waters	CBCW
Citizen Lake Monitoring Network	CLMN
UWSP Center for Watershed Science and Education	CWSE
Wisconsin Department of Agriculture, Trade and Consumer Protection	DATCP
North Central Conservancy Trust	NCCT
USDA Natural Resources Conservation Service	NRCS
Golden Sands Resource Conservation & Development Council, Inc.	RC&D
University of Wisconsin Extension	UWEX
University of Wisconsin-Stevens Point	UWSP
Waushara County Land Conservation Department	WCLCD
Waushara County Watershed Lakes Council	WCWLC
Wisconsin Department of Natural Resources	WDNR
Wisconsin Department of Transportation	WDOT
UWSP Water and Environmental Analysis Laboratory	WEAL
Witters Lake Association	WLA

Contact information for organizations and individuals who support lake management in Waushara County can be found in Appendix A. Waushara County Lake Information Directory.

In-Lake Habitat and a Healthy Lake

Many lake users value Witters Lake for its scenery, fishing, wildlife, good water quality and the importance of sufficient water quantity. These attributes are all interrelated; 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.

Lake habitat occurs within the lake, along all of its shorelands, and even extends into its watershed for some species. Many animals that live in and near the lake are only successful if their needs – food, a healthy environment, and shelter – are met. Native vegetation including wetlands along the shoreline and adjacent to the lake provides habitat for safety, reproduction, and food, and can improve water quality and balance water quantity. 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. Aquatic plants infuse oxygen into the water and provide food and shelter for waterfowl, small mammals, and people. 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. Healthy habitat in Witters Lake includes the aquatic plants, branches, and tree limbs above and below the water.



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 in order to flourish. Activities in and around a lake that can affect a fishery may involve disturbances to the native aquatic plant community or substrate, excessive additions of nutrients or harmful chemicals, removal of woody habitat, shoreline alterations, and/or an imbalance in the fishery. Shoreland erosion can cause sediment to settle onto the substrate, causing the deterioration of spawning habitat. 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.

People are an important part of a sustainable fish community; their actions on the landscape and the numbers and sizes of fish taken out of the lake can influence the entire lake ecosystem. Putting appropriate fishing regulations in place and adhering to them can help to balance the fishery with healthy prey and predatory species, can be adjusted as the fish community changes, and can provide for excellent fishing.

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

According to the survey, the most popular values placed on the fishery were enjoying watching or seeing fish, and for catch-and-release fishing. Just under one-half of the survey respondents fish for food. One-half of the respondents felt fishing in Witters Lake had stayed the same or improved during their time at the lake. Planning participants reported a recent winter fish kill in 2012. Dave Bartz, Fisheries Biologist with WDNR, presented the following information during a planning session.

Witters Lake had a history of periodic winter fish kills in the 1950s, reportedly due to low water levels. The most recent fishery survey conducted by WDNR Biologists was a fall 2014 electrofishing survey. Largemouth bass were in good abundance with a capture rate of 116/hr for fish greater than 8" compared to 275/hr in 2004. The size structure remained poor, although it was a bit better than was revealed in the 2004 survey. The PSD12 was 9% compared to 5% in 2004, and the RSD14 was 4% compared to none in 2004. A lack of forage is likely responsible for the poor size structure. The 14" keep limit on largemouth bass was removed in 2005 and seems to have been successful in improving abundance and size structure.

Bluegill were also in good abundance with a catch rate of 236/hr compared to 14/hr in 2004. Young of year were common, and they had a good size structure with a PSD6 of 76% compared to 14% in 2004 and RSD7 of 15% compared to none in 2004. It is anticipated that improvements will continue with the new panfish regulations recently put into place. Witters Lake was selected as one of 94 lakes across the state for an experimental panfish rule. The rule is intended to increase the average size of panfish in lakes where habitat, water quality, and other characteristics indicate there is potential to improve. Taking effect on April 1, 2016, the new limit is 15/5: bag of 15 panfish with only 5 of one species. The rule sunsets in 2026; results will be evaluated periodically throughout the trial. Recommendations by Bartz included protecting existing habitat (bulrush and aquatic plant beds, woody structure in and overhanging the lake). Where habitat is lacking, the addition of woody structure, "fish sticks", is recommended. More than one-half of the respondents to the opinion survey identified loss of habitat and declining water levels as the greatest threats to the fishery in Witters Lake.

Guiding Vision for the Fish Community

Witters Lake will have a balanced and sustainable fish community.

Goal 1. Witters Lake will host characteristics that support a robust fishery.

Objective 1.1. Improve fish habitat in Witters Lake.

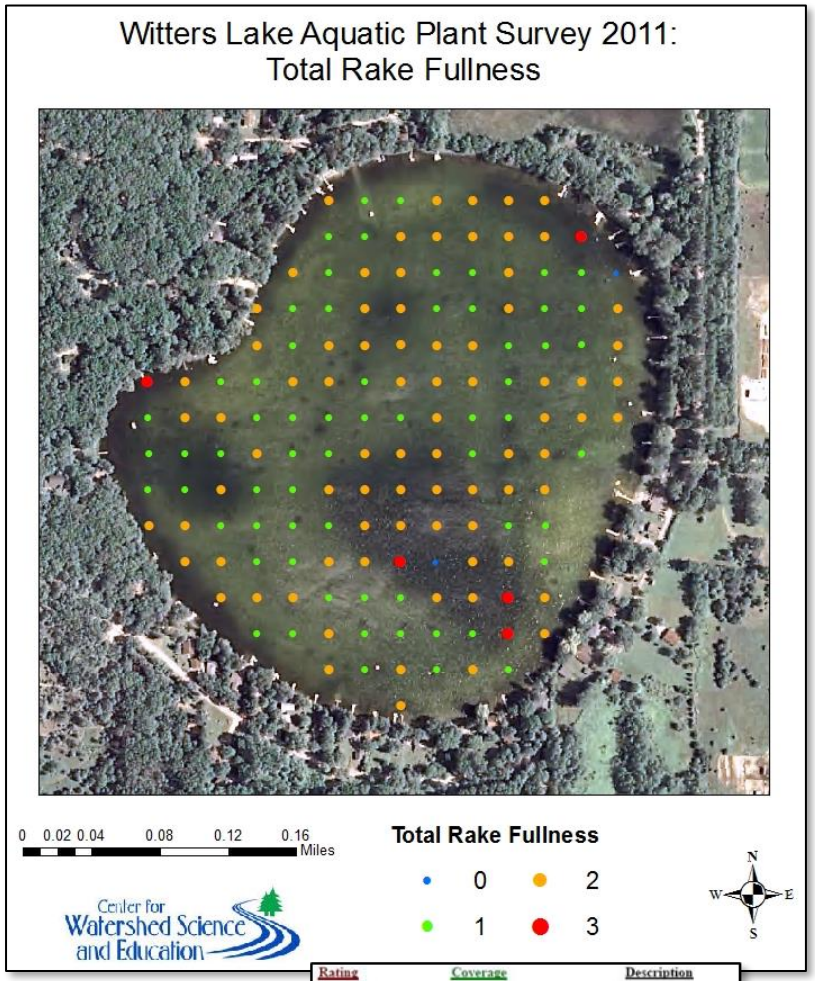
Actions	Lead person/group	Resources	Start/end dates
Provide information to WLA members about the benefits to the fishery from woody habitat and healthy shoreland vegetation.	WLA	UWEX Lakes (Educational materials)	Ongoing
Preserve and enhance existing woody habitat.	Shoreland property owners	UWEX Lakes (Educational materials)	Ongoing
Work with willing property owners to provide more woody structure such as tree drops, fish sticks or brush under piers.	WLA	WDNR Fisheries Biologist UWEX Lakes (educational materials) WDNR Healthy Lakes Grants	As requested by property owners
Protect existing fishery habitat/bulrush beds through education/communication with lake users and property owners.	WLA	WDNR Lake Management Specialist and Fisheries Biologist WCWLCA UWEX Lakes (educational materials)	Ongoing
Explore options for reducing muck.	WLA	WDNR Lake Management Specialist Consultants	Ongoing

Aquatic Plants

Aquatic plants provide the forested landscape within Witters 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 creates diversity that makes the aquatic plant community more resilient and can help to prevent the establishment of non-native aquatic species.

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, 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.

An aquatic plant survey was conducted on Witters Lake in August 2011 by staff from UWSP. Eight species of aquatic plants were observed, which is below average when compared with other Waushara County lakes in the study. Ninety-nine percent (147 of 149) of the sites sampled had vegetative growth, and the average depth of plants was 6 feet with the deepest plants found at 22 feet. The dominant plant species in the survey was muskgrass (*Chara* spp.) which occurred at 82% of the sites. More detailed information can be found in Appendix D. Aquatic Plants , *Aquatic Plant Survey of Witters Lake, Waushara County*, and *Waushara County Lakes Study - Witters Lake*.



A majority of survey respondents did not feel the plant growth present in Witters Lake limited their recreational opportunities and just under one-half felt aquatic plant control would be warranted. The greatest concerns expressed were the potential for infestations of aquatic invasive species (AIS) and water quality degradation.

Guiding Vision for Aquatic Plants in Witters Lake

Witters Lake will have a healthy and diverse native aquatic plant community.

Goal 2. Protect native plants to provide habitat, good water quality and limit the establishment of AIS while balancing recreational needs.

Objective 2.1. Avoid disturbing native aquatic plants as much as possible.

Actions	Lead person/group	Resources	Timeline
Inform shoreland residents about the importance of native aquatic plants to habitat, good water quality, and protection from the establishment of AIS.	WLA	WCWLC UWEX Lakes	Ongoing
Refrain from removing vegetation in and around the lake. If removal is necessary, approach with limited hand pulling in small areas around the dock. Closely monitor any disturbed areas for establishment of invasive species.	Shoreland property owners	WLA	Ongoing
Minimize removal and disturbance of native vegetation via educational materials (provided in annual mailing, website re: mitigation methods available.)	WLA	WCWLC UWEX Lakes	Ongoing
Encourage property owners to refrain from using fertilizers and implement runoff management techniques such as rain gardens, rain barrels and increased shoreland vegetation on shoreland properties to prevent the growth of dense aquatic plant beds (see Shoreland Section of this plan).	WLA	UWEX Lakes WCWLC	Ongoing

Aquatic Invasive Species (AIS)

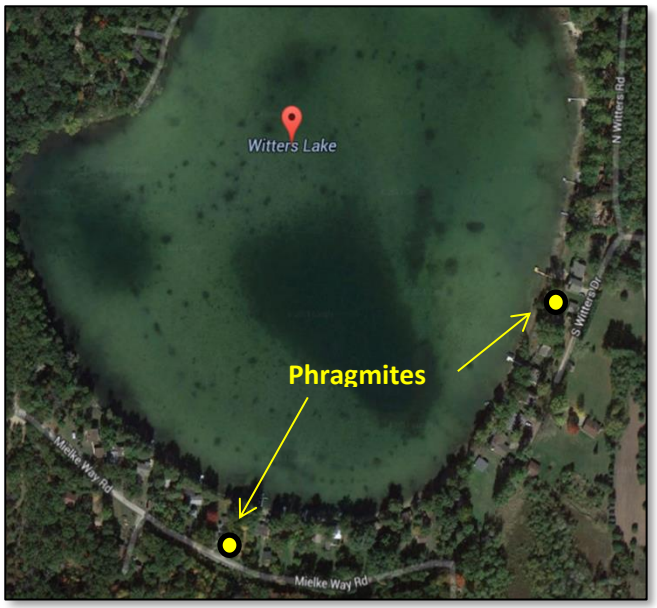
Aquatic invasive species are non-native aquatic plants and animals that are most often unintentionally introduced into lakes by lake users. This most commonly occurs on trailers, boats, equipment, and from the release of bait. In some lakes, aquatic invasive plant species can exist as a part of the plant 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.

Phragmites is a perennial wetland grass that can be native in Wisconsin. Its invasive European cousin often invades moist lake shores and river banks, and is most common in disturbed areas. It can be extremely invasive and may create dense clones that alter hydrology and wildlife habitat while choking out native plant species. Non-native phragmites was observed in two locations around Witters Lake in 2015: on the eastern and southwestern shores.


Wisconsin DNR

Like most lakes in central Wisconsin, banded mystery snail has been documented in Witters Lake; however, little is known about this species. There has been some impact on native snail populations, but there are currently no known management options to control them.

If an invasive plant species not previously documented in Witters Lake is observed by any lake user, the lake user is encouraged to refer to Appendix C. Rapid Response Plan for more information on how to confirm and report it.



Golden Sands RC&D,

Guiding Vision for Aquatic Invasive Species (AIS)

Proactive responses to AIS will prevent it from infecting and becoming established in Witters Lake.

Goal 3. Prevent AIS from becoming established in Witters Lake.

Objective 3.1. Promote community awareness about invasive species.

Actions	Lead person/group	Resources	Start/end dates
Organize an educational AIS identification program.	WLA	RC&D	2016
Ensure signage at boat launch includes information about preventing AIS spread.	Town of Dakota WLA	RC&D CBCW	Ongoing
Distribute placemats with information about AIS to local churches, businesses and organizations that show interest.	Interested people	Local lakes RC&D	Ongoing
Include information about the threat of AIS in a welcome packet or newsletter and remind lake users to clean plants off trailers, drain motors and live wells, and wash boats before and after entering/leaving the lake.	WCWLC WLA	WC UWEX RC&D CBCW	Ongoing

Objective 3.2. Monitor for aquatic invasive species in Witters Lake.

Actions	Lead person/group	Resources	Start/end dates
Learn how to identify and monitor for AIS.	WLA, Interested people	RC&D	Ongoing
Monitor routinely for early AIS outbreaks.	WLA Interested people	RC&D Consultants	Ongoing
Host a Clean Boats, Clean Waters workshop to organize volunteers to monitor boat launch during busy boating weekends.	WLA Interested people	RC&D CBCW	Ongoing

Objective 3.3. Be prepared to respond to AIS outbreaks.

Actions	Lead person/group	Resources	Start/end dates
Refer to the AIS Rapid Response Plan in Appendix C for confirmation and reporting of suspected AIS.	WLA	WDNR Lake Manager RC&D Consultants	As needed
Organize volunteers to remove current phragmites infestations. Follow up with monitoring for re-establishment	WLA	RC&D	2016 and as needed

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 Wisconsin Department of Natural Resources 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 Witters Lake does not have an official critical habitat area designation, there are areas within Witters 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.

Guiding Vision Witters Lake's Critical Habitat

Witters Lake's sensitive areas will be enhanced and protected from degradation.

Goal 4. Identify and inform others of quality habitat in and near Witters Lake.

Objective 4.1. Explore options for official identification of important habitat areas to inform others and to better protect habitat in the lake.

Actions	Lead person/group	Resources	Timeline
Request critical habitat designations from WDNR.	WLA	WDNR Lake Specialists and Biologists	
If critical habitat is designated on Witters Lake, communicate to property owners, visitors, and Town Board as to why these areas are important.	WLA Interested citizens	WDNR Critical Habitat Report	

Landscapes and the Lake

Land use and land management practices within a lake's 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. 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 on the land may result in changes to natural drainage patterns and 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. Land management practices can be put into place that better 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.

Shoreland vegetation is critical to a healthy lake's ecosystem. It helps improve the quality of the runoff that is flowing across the landscape towards the lake. It also provides habitat for many aquatic and terrestrial animals including birds, frogs, turtles, and many small and large mammals. Healthy shoreland vegetation includes a mix of tall grasses/flowers, shrubs, and trees which extend at least 35 feet landward from the water's edge. Shorelands include adjacent wetlands, which also serve the lake by allowing contaminants to settle out, providing shelter for fish and wildlife, and decreasing the hazard of shoreline erosion by providing a shoreland barrier from waves and wind.

The water quality in Witters Lake is the result of many factors, including the underlying geology, the climate, and land management practices. Since we have little control over the climate and cannot change the geology, changes to land management practices are the primary actions that can have positive impacts on the lake's water quality. The water quality in Witters Lake was assessed by measuring different characteristics including temperature,

dissolved oxygen, water clarity, and water chemistry. All of these factors were taken into consideration when management planning decisions were made.

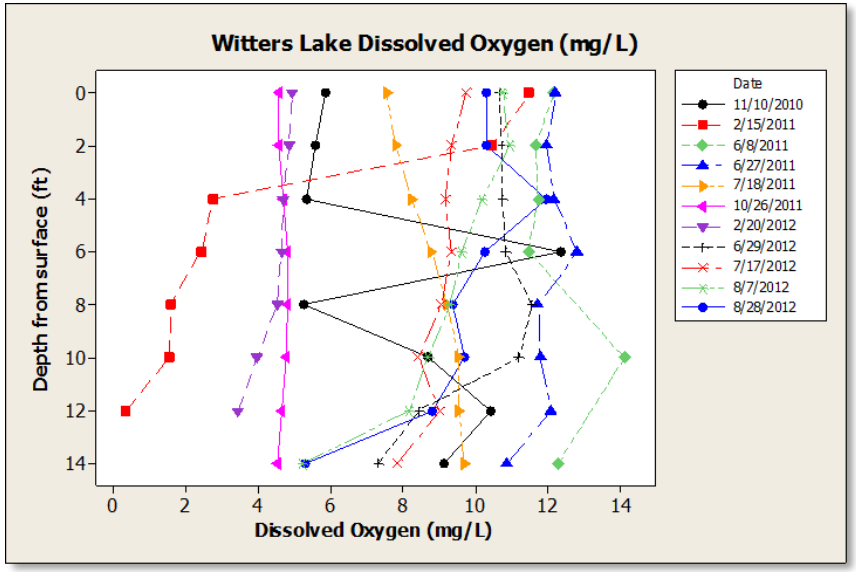
Water Quality

The vast majority of survey respondents indicated water quality in Witters Lake is excellent most of the year. A few perceived varying degrees of impairment, particularly with respect to floating algal biomass in late summer. Approximately one-half of survey respondents felt water quality had not changed significantly during their time at the lake, while just over one-third felt it had declined, primarily due to water level changes and heavy recreation.

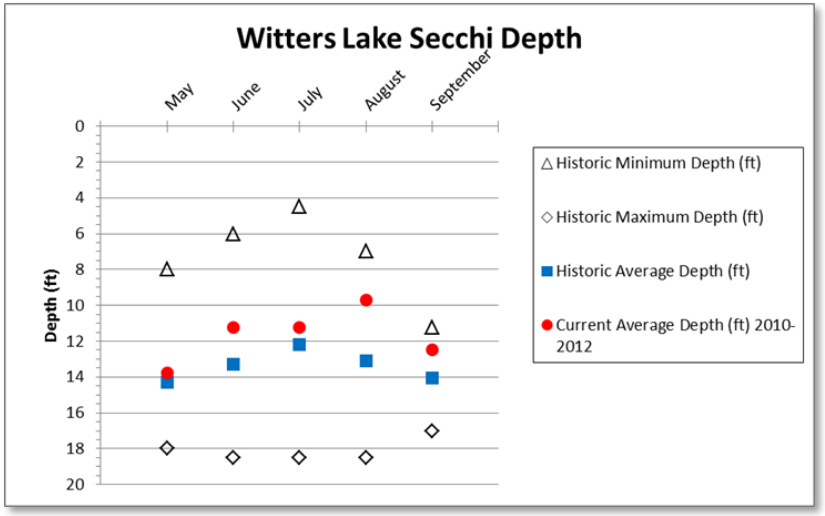
One pound of phosphorus entering a lake can result in up to 500 pounds of algal growth!
(Vallentyne, 1974)

A variety of water chemistry measurements were used to characterize the water quality in Witters Lake. Water quality was assessed during the 2010-2012 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 are used for growth by algae and aquatic plants. 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 Witters Lake's water quality.

Dissolved oxygen is an important measure in Witters 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. In October 2011 and December 2012, dissolved oxygen concentrations were uniform from the surface down to 14 feet; however, they were below 5 mg/L. In November 2010, dissolved oxygen concentrations were low in the water closer to the surface, but increased at depths of 6 feet and again at 12 feet. These spikes at depth are indicative of algae blooms. In February 2011, only the upper two feet of water had dissolved oxygen concentrations above 5 mg/L. Throughout the growing season, dissolved oxygen concentrations were consistently above 5 mg/L. Although there was some variability in concentrations during the summer, the lake was never strongly stratified. Weakly stratified lakes can be prone to mixing throughout the summer, which may cause a periodic increase in phosphorus in the water column. Based on data from the 2-year study, Witters Lake may be prone to periodic fish kills.



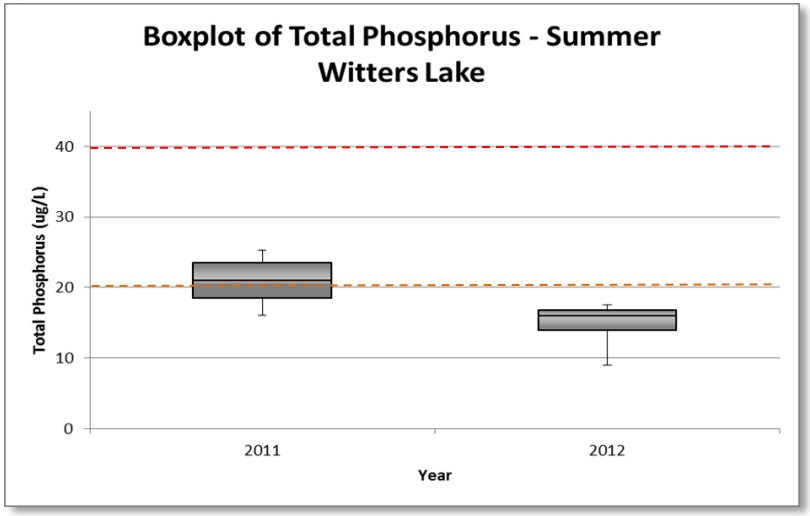
Water clarity in Witters Lake was considered good during the study with depths ranging from 5.5 to 16.5 feet. When compared with historic data, the average water clarity measured during the study was slightly poorer for most months and quite a bit poorer in June and August. Water clarity in Witters Lake is typically poorest in late summer. In Witters Lake, color was relatively low, so the variability in transparency throughout the year is primarily due to fluctuating algae concentrations and suspended sediment.



Chloride, sodium and potassium 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. All of these concentrations were low and a screening for atrazine detected none.

Phosphorus is an element that is essential in trace amounts to most living organisms, including aquatic plants and algae. Sources of phosphorus can include naturally-occurring phosphorus in 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.

During the study, total phosphorus concentrations in Witters Lake ranged from a high of 27 ug/L in May 2012 to a low of 6 ug/L in February 2011. The summer median total phosphorus concentrations were 21 ug/L and 16 ug/L in 2011 and 2012, respectively. These are below Wisconsin's phosphorus standard of 40 ug/L for shallow seepage lakes. Inorganic nitrogen concentrations in Witters Lake were low during the first spring; however, they were very high in a sample collected in October 2011 and slightly elevated in a sample collected in February 2011.



Managing nitrogen, phosphorus and soil erosion throughout the Witters 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 Witters 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.

Guiding Vision for Water Quality in Witters Lake

Witters Lake will have clear, clean water with minimal contamination and sufficient oxygen for the fish populations.

Goal 5. Water quality in Witters Lake will improve, reducing nuisance algal blooms and improving the fishery.

Objective 5.1. Maintain summer median phosphorus concentrations below 20 ppb and spring overturn inorganic nitrogen concentrations below 0.3 mg/L.

Actions	Lead person/group	Resources	Start/end dates
Provide information on how and why to decrease/eliminate the use of fertilizers on lawns around the lake to reduce inputs of nitrogen and phosphorus.	WLA	WC UWEX (info materials)	Ongoing – especially in late winter
Explore the use of lake water as fertilizer.	WLA	WDNR Lake Management Specialist	Ongoing
Improve shoreland vegetation to reduce phosphorus loading to lake (See shoreland section).	WLA	Property owners WCLCD Consultants WDNR Healthy Lakes Grants	Ongoing
Encourage farm operators to implement water-quality based nutrient strategies for their farms and fields to reduce excess nitrogen and chemical exports.	WCLCD	Waushara County UWEX Ag Agent NRCS Consultants	Ongoing

Objective 5.2. Prevent oxygen depletion during winter months when dissolved oxygen is low.

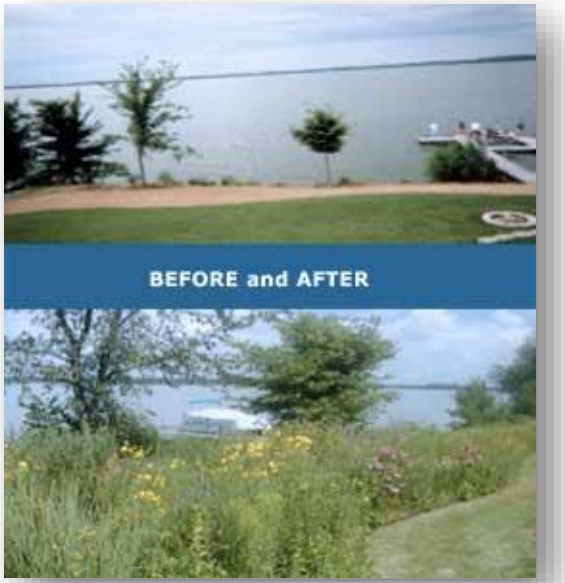
Actions	Lead person/group	Resources	Start/end dates
Explore plowing the ice to allow more light entry for plant growth beneath the ice and evaluate the effectiveness of this strategy.	WLA	WDNR Lake Management Specialist	2016-2017
Take routine measurements of dissolved oxygen at the deep hole, every 2 feet during (period where safe ice is on the lake.	WLA	WCLCD (loaner DO meter)	Safe ice on to ice off

Objective 5.3. Continue current water quality monitoring and begin new monitoring programs.

Action	Lead person/group	Resources	Start/end dates
Obtain training in lake monitoring and begin routine water quality monitoring.	WLA, Interested citizens	CLMN WDNR	Ongoing
Monitor water chemistry (phosphorus, nitrogen) and temperature monitoring twice per year during spring and fall overturn.	WLA	UWSP WEAL Lake Package B or Other certified lab	Ongoing spring and fall
Begin Ice on/Ice off monitoring.	Water monitor - appointed position within WLA	CLMN Coordinator	Begin 2016-2017, Ongoing
Obtain a dissolved oxygen meter (can be borrowed from county) and begin sampling during water quality sampling activities and routinely throughout winter months when safe ice is present.	WLA	CLMN Coordinator for WC WDNR Fisheries Biologist WCLCD	Ongoing: summer months—during water quality monitoring. Winter months—at least once every 7-14 days during safe ice-on.
Submit all lake-related data to the WDNR SWIMS database for storage and use.	Water monitor	CLMN coordinator (SWIMS database use)	As data are acquired
Encourage residents to test their well water for nitrate and other contaminants.	WLA	Waushara Co UWEX Certified Labs	Ongoing

Shorelands

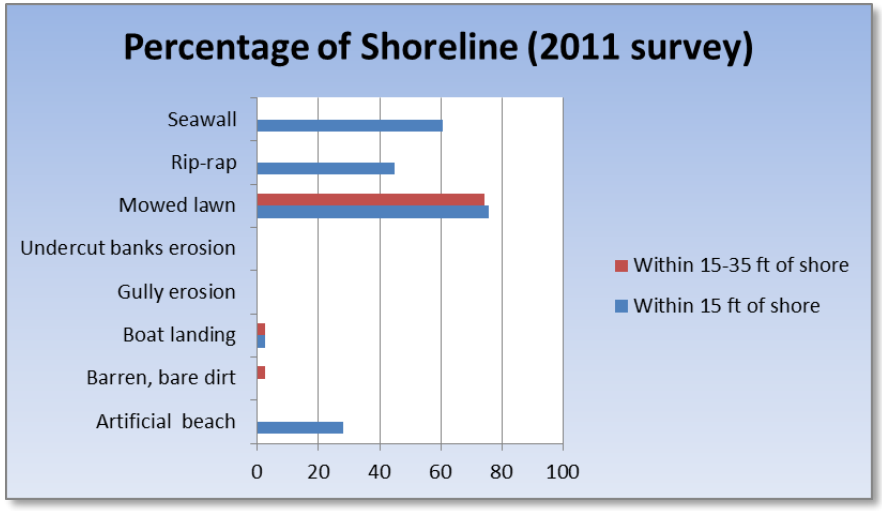
Shoreland vegetation is critical to a healthy lake ecosystem. It provides habitat for many aquatic and terrestrial animals including birds, frogs, turtles, and small and large mammals. It also helps to improve the quality of the runoff that is flowing across the landscape towards the lake. Healthy shoreland vegetation includes a mix of unmowed grasses/flowers, shrubs, trees, and wetlands which extends at least 35 feet landward from the water's edge.



To better understand the health of the Waushara County lakes, shorelands were evaluated. The survey inventoried the type and extent of shoreland vegetation. Areas with erosion, rip-rap, barren ground, sea walls, structures and docks were also inventoried. A scoring system was developed for the collected data to provide a more holistic assessment. Areas that are healthy will need strategies to keep them healthy, and areas with potential problem areas and where management and conservation may be warranted may need strategies for improvement. The scoring system is based on the presence/absence and abundance of shoreline features, as well as their proximity to the

water's edge. Values were tallied for each shoreline category and then summed to produce an overall score. Higher scores denote a healthier shoreline with good land management practices. These are areas where protection and/or conservation should be targeted. On the other hand, lower scores signify an ecologically unhealthy shoreline. These are areas where management and/or mitigation practices may be desirable for improving water quality and habitat.

The summary of scores for shorelands around Witters Lake is displayed on the map in Appendix B. Shoreland Survey – 2011.



Shoreland ordinances were enacted to improve water quality and habitat, and to protect our lakes. To protect our lakes, (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 viewing 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.

Geese were identified as a nuisance by some of the planning committee members and survey respondents. Property owners may be interested in understanding the connection between geese and mowed lawn, which is a "salad bar" for geese and also provides a place where they can see they are safe from predators.

Guiding Vision for Witters Lake's Shorelands

Witters Lake will have large portions of shoreline protected from development and properties with landowners invested in restored and healthy shoreland habitat and reduced runoff to the lake.

Goal 6. Preserve and restore healthy shorelines around Witters Lake. Shoreline with mowed lawn to the lake's edge will be reduced by 60% (approximately 2,000 feet) within the next 5 years (2021).

Objective 6.1. Inform shoreland property owners about protecting existing shoreland habitat.

Actions	Lead person/group	Resources	Start/end dates
Host speaker on healthy shoreland alternatives at the annual meeting.	WLA	UWEX Lakes – Patrick Goggin WDNR Healthy Lakes Grants	2017

Objective 6.2. Provide an atmosphere and support to result in restored shorelands.

Actions	Lead person/group	Resources	Start/end dates
Use 2011 shoreline survey results as a guideline for focusing shoreland restoration.	WLA	WCLCD	Ongoing until shoreline survey is updated
Create incentives by exploring fund raising/local businesses regarding prizes for best restoration(s). Consider working with area lakes to combine resources and interests.	Interested citizens	WCLCD WCWLC WDNR Heathy Lakes Grants	Prior to/during contest
Distribute information about shoreline restoration, advertise contest at annual meeting (newsletter, mailing, postings in local businesses and public buildings).	WLA	WCLCD UWEX Lakes (educational materials)	Annual meeting
Complete a second shoreline survey to track improvements.	Interested people	WCLCD WDNR Grant	

Objective 6.3. Reduce the effects of impervious surfaces on properties surrounding the lake.

Actions	Lead person/group	Resources	Start/end dates
Encourage installation of rain gardens and native vegetation around the lake. Provide information about rain gardens and shoreline restoration; direct those interested to contact WCLCD.	WLA	WCLCD Consultants WDNR Healthy Lakes Grants	Ongoing

Watershed Land Use

It is important to understand where Witters Lake's water originates in order to understand the lake's health. During snowmelt or rainstorms, water moves across the surface of the landscape (runoff) towards lower elevations such as lakes, streams, and wetlands. The land area that contributes runoff to a lake is called the surface watershed. Groundwater also feeds Witters Lake; its land area may be slightly different from the surface watershed.

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 ultimately, the lake's water quality and quantity. Essentially, landscapes with greater capacities to hold water during rain events and snowmelt slow the delivery of the water to the lake. 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. A variety of land management practices can be put in place to help reduce impacts to our lakes. Some practices are designed to reduce runoff. These include protecting/restoring wetlands, installing rain gardens, swales, rain barrels, and routing drainage from pavement and roofs away from the lake. Some practices are used to help reduce nutrients from moving across the landscape towards the lake. Examples include manure management practices, 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, and using erosion control practices.

The surface watershed for Witters Lake is 521 acres. Primary land use is agriculture (Figure 1). The lake's shoreland is surrounded primarily by wetlands, agriculture, developed land and forest. In general, the land closest to the lake has the greatest immediate impact on water quality.

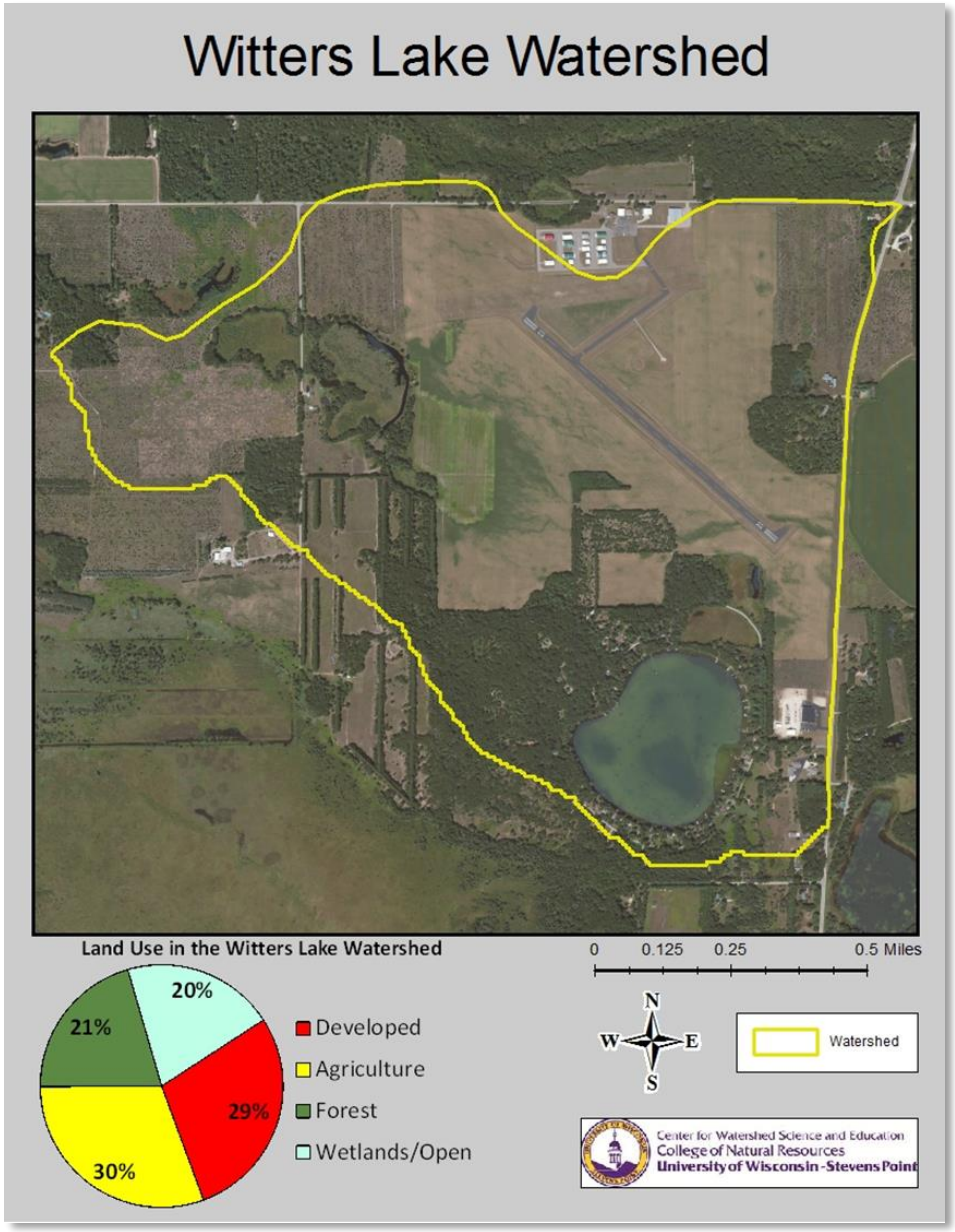
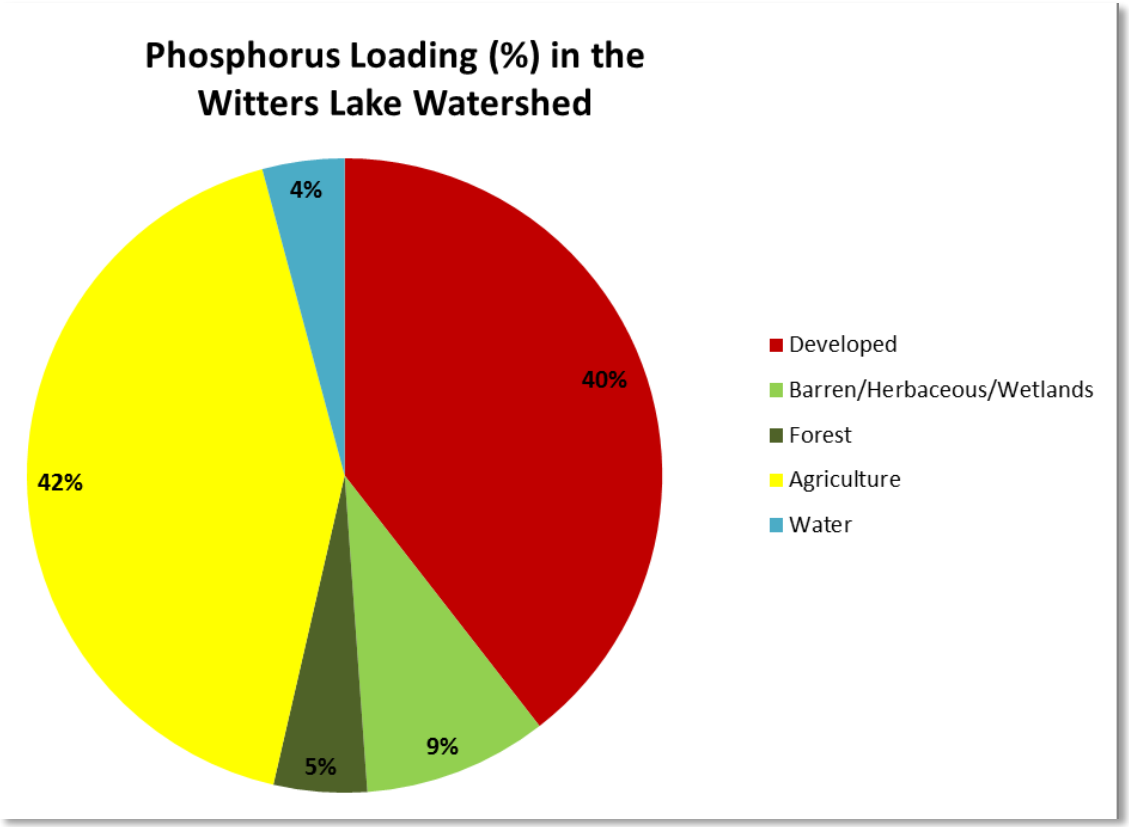


Figure 1. Surface watershed of Witters Lake.



Estimates of phosphorus from the landscape can help to understand the phosphorus sources to Witters 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. Based on modeling results, developed land and agriculture had the greatest percentages of phosphorus contributions from the watershed to Witters Lake.

Guiding Vision for Witters Lake's Watershed

Witters Lake will receive minimal negative impacts from lands within its watershed.

Goal 7. Protect quality habitat and natural areas within the watershed from future degradation to enhance water quality, aesthetics, and the wildlife community.

Objective 7.1. Encourage watershed landowners to restore and/or enter land into conservation programs.

Actions	Lead person/group	Resources	Start/end dates
Inform landowners in watershed and encourage them to explore conservation programs (Purchase of Development Rights, Conservation Easement, etc.).	WLA	NCCT Knowles-Nelson Stewardship Fund, WDNR Lake Protection Grant Program	Ongoing
Explore funding options for land purchase within the watershed for conservation, preservation, or restoration purposes.	WLA	Wisconsin Stewardship Fund Knowles-Nelson Stewardship Fund WDNR Lake Protection Grant Program Waushara County private donors	Ongoing

Goal 8. Property owners in the watershed will understand their relationship to Witters Lake and will manage their lands in ways that minimize impacts to the lake.

Objective 8.1. Future land use changes will put measures into place to minimize their impacts on Witters Lake.

Actions	Lead person/group	Resources	Start/end dates
Subdivisions and other developments in the watershed will manage stormwater on site and consider septic system impacts to Witters Lake.	Town of Dakota	WCLCD WC Planning	Ongoing
Discourage any water withdrawal projects that may impact the already low water levels in Witters Lake.	WDNR		Ongoing
Wetlands in the watershed will be protected to help maintain the water budget of Witters Lake. Any altered wetlands will be mitigated within the lake's watershed.	WDNR	ACE WDNR WC Consultants	Ongoing
Road and construction projects will be designed in a way that will minimize impacts to Witters Lake.	Town of Dakota, Interested people	Townships WC Highway Dept. WCLCD	Ongoing

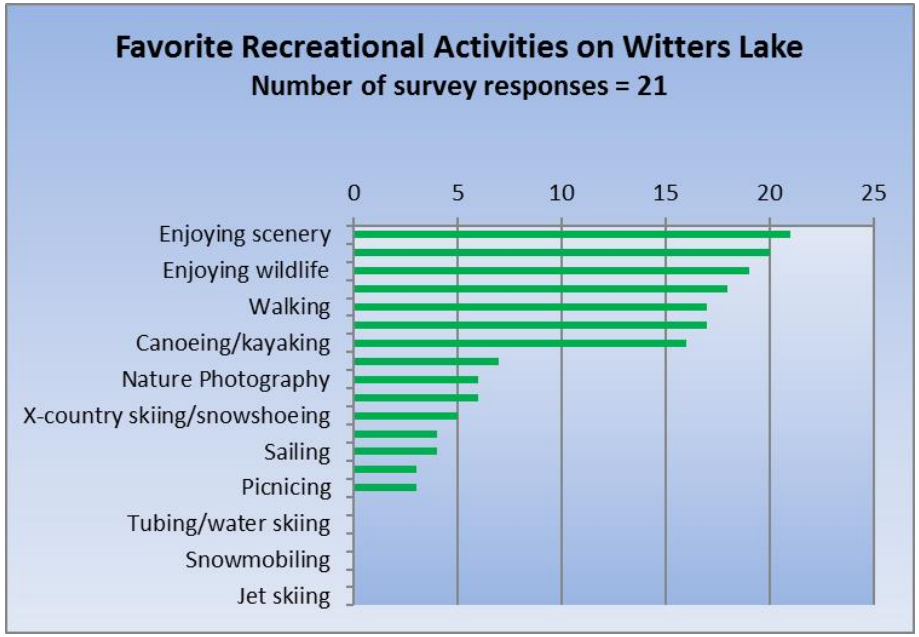
People and the Lake

The people that 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 Witters Lake Association, 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

Witters Lake is enjoyed by people who swim, boat, fish, and appreciate its beauty. People predominantly enjoy doing quieter activities on Witters Lake, including taking in the scenery, watching wildlife, walking, and canoeing. These activities highlight the importance of view and sound. In addition, survey respondents also wished for reduced lighting at night. Some discussion about this among the lake community may help to resolve this topic. Motion sensors, lighting options that reduce the amount of light pollution, and turning lights off when not in use are some possible solutions.



Public access to Witters Lake is primarily via the Town of Dakota boat launch on the east end of the lake. Boats may not operate at wake speeds on Witters at any time. All survey respondents indicated they enjoy the no wake status of Witters Lake, although some indicated many boats still travel too fast, churning up bottom sediments that affect water clarity and can increase the availability of nutrients for algal and aquatic plant growth.

The muck on the lakebed was also identified as a bit of a recreational nuisance, particularly for swimming. The planning committee members suggested that dredging be explored. Initial steps include talking with and obtaining guidance from the WDNR lake staff and possibly hiring a consultant for cost estimates.

Guiding Vision for Recreation

Witters Lake will support peaceful recreational opportunities leading to minimal recreational conflicts among those enjoying Witters Lake.

Goal 9. Increase compliance of boating rules and special considerations.

Objective 9.1. Inform lake users about recreational rules and considerations.

Action	Lead person/group	Resources	Start/end dates
Update and maintain boat launch signs and include information about significance of the slow no wake rule.	Town of Dakota	Towns Waushara County Parks	2016
Distribute brochures about the nature of shallow lakes, current regulations and respectful recreation to landowners and renters.	WLA	UWEX Lakes UWSP CLUE, Consultants	Ongoing
Install lake and road signage that correctly identifies the lake and public roads as Witters Lake.	Town of Dakota		2016-2017

Communication and Organization

Working together on common interests with partners will help to achieve the goals that are outlined in this plan and strengthen the lake community. 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 ecosystem in Witters Lake enjoyed by many people.

Guiding Vision for Communication

Lake stewardship efforts in and around Witters Lake will be supported by informed and engaged residents and lake users.

Goal 10. The community will be involved in lake management actions.

Objective 10.1. Healthy communication will occur with and amongst Witters Lake Association members.

Actions	Lead person/group	Resources	Start/end dates
Host informational programs and distribute important lake information at the annual meeting.	WLA	RC&D WCLCD	Ongoing, August annual meeting
Continue the distribution of welcome packets to new landowners and rental homes. Invite new WLA membership.	WLA	WCLCD WCWLC	Ongoing
Host an annual meeting	WLA	Newspapers: Argus/Resorter	Annually
Maintain and use Email listserv, newsletters, other	WLA		Ongoing

Objective 10.2. Open a dialogue with and get information to absentee renters and homeowners.

Actions	Lead person/group	Resources	Start/end dates
Leave brochures, informational materials, maps at hotels, marinas, churches, and other public buildings.	WCWLC	UWEX Lakes UWSP RC&D	2015-2016
Maintain signage at boat landings and around the lake.	Town of Dakota	WDNR	As needed

Objective 10.3. Communicate with other lake groups in Waushara County and around the state.

Actions	Lead person/group	Resources	Start/end dates
Participate in Waushara County Watershed Lakes Council.	WLA	WCLCD WC UWEX	Ongoing, 4 times per year
Coordinate with other lake groups working on similar efforts to reduce time and cost. Explore ways that lake groups can work together.	WLA	WDNR Lake protection grant RC&D WCLCD	Ongoing
Attend Wisconsin Lakes Convention.	WLA	UWEX Lakes	Annually in spring

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. Updates should be discussed with partners that have signed off on this plan.

Guiding Vision for Updates and Revisions

The Witters Lake Management Plan will be an up to date, evolving document that reflects the current needs of the lake and future visions of the lake community.

Goal 11. Update the lake management plan annually or as needed.

Objective 11.1. Communicate updates with community members and members of the Association.

Action	Lead person/group	Resources	Start/end dates
Include plan update as a regular agenda item at the Association annual meeting.	WLA	Partners listed in this plan	Annually
Notify Lake Association members of any potential changes in the management plan.	WLA	Partners listed in this plan	Annually, Ongoing

Governance

Written by Patrick Nehring, Community Agent, UW-Extension Waushara County.

Lake Management Plan Approval

The draft lake management plan will be completed by the lake association/district board, a committee, or a committee of the whole. The final draft of the lake management plan will be approved through a vote of the lake association/district membership or board. The final draft will be approved by the Wisconsin Department of Natural Resources (DNR) to have met the lake management plan requirements and grant requirements. If the DNR requires modifications or additional information before approving the plan, the plan will be changed to meet DNR requirements that are acceptable to the lake association/district. The completed plan that has been approved by the lake association/district and the DNR will be presented to the municipalities containing the lake and Waushara County. The municipality may reference the lake management plan or parts of the plan in their comprehensive plan to guide municipal or county decisions.

Lake Assistance

The lake management plan will enhance the ability of the lake to apply for financial assistance. The lake management plan will be considered as part of the application for grants through the Wisconsin Department of Natural Resources. Current listings of grants available from the DNR can be found at http://dnr.wi.gov/aid/. Waushara County offers technical and financial assistance through the Land Conservation and Zoning Department and University of Wisconsin-Extension Department. Additional assistance may be available from other agencies and organizations, including DNR, UW-Extension Lakes Program, Golden Sands RC&D, Wisconsin Wetlands Association, and Wisconsin Trout Unlimited.

Lake Regulations

The lake management plan is superseded by federal, state, county, and municipal laws and court rulings. However, the lake management plan may influence county and municipal ordinances and enforcement, which is why the lake management plan will be reviewed and included or referenced in the county and related municipal comprehensive plans. Federal laws contain regulations related to water quality, wetlands, dredging, and filling. State laws contain regulations related to water quality, water and lake use, aquatic plants and animals, shoreline vegetation, safety, and development. County laws contain regulations related to development, safety, use, and aquatic plants and animals. Municipal laws contain regulation of use and safety. The court system interprets these rules and regulations. The rules and regulations are primarily enforced by the US Army Corps of Engineers, the Wisconsin Department of Natural Resources, the Waushara County Sheriff Department, and the Waushara County Land Conservation and Zoning Office. If considering development near or on a lake, addressing problem plants or animals, or changing the lake bottom contact the Waushara County Land Conservation & Zoning Department at the Waushara County Courthouse (920) 787-0443 and/or the Wisconsin Department of Natural Resources (888) 936-7463.

Comprehensive Plans

The lake management plan and changes to the plan will be presented to the County and the Municipality for review and possible incorporation into their comprehensive plans. The comprehensive plan is intended to be used to guide future decision. Zoning, subdivision, and official mapping decisions must be consistent with the comprehensive plan.

Process for Inclusion in the Municipal Comprehensive Plan

The Municipal Plan Commission will review the lake management plan to determine if it is consistent with the municipality's comprehensive plan. If the lake management plan is found by the Municipal Plan Commission to not be consistent with the municipality's comprehensive plan, the plan commission may (a) recommend changes to the comprehensive plan or (b) ask that an aspect of the lake management plan be revisited. When the Municipal Plan Commission has reached a consensus that the lake management plan aligns with the municipality's vision, the Municipal Plan Commission will develop an amendment to the comprehensive plan referencing the lake management plan. This could include a reference to the lake management plan under local policies in the agricultural, natural and cultural resources background information and the addition of a recommendation to support the lake management plan and to implement the applicable recommendations contained in the lake management. The Municipal Plan Commission will recommend by resolution that the amendment to the comprehensive plan be adopted by the Municipal Board. A public hearing on the changes to the comprehensive plan will be held with a thirty-day class one notice. The Municipal Board will consider the recommendations from the Municipal Plan Commission. The Municipal Board may (a) adopt the recommendations to the comprehensive plan by ordinance, (b) adopt by ordinance the recommendations with changes, or (c) request the plan commission revisit the changes to the comprehensive plan.

Process for Inclusion in the County Comprehensive Plan

Waushara County Land Use Committee will review the updates to the municipality's comprehensive plan and the lake management plan as referenced by the municipality's comprehensive plan to determine if they are consistent with the County's comprehensive plan. If they are found by the land use committee to not be consistent with the municipality's comprehensive plan, the land use committee may (a) recommend changes to the County's comprehensive plan or (b) ask that an aspect of the lake management plan or municipality's comprehensive plan be revisited. When the Land Use Committee has reached a consensus that the updates to the municipality's comprehensive plan and the lake management plan aligns with the county's vision, and if it is not already consistent, it will develop an amendment to the County's comprehensive plan. The amendment may include a reference to the lake management plan under local policies in the agricultural, natural and cultural resources background information and the addition of a recommendation to support the lake management plan and to implement the applicable recommendations contained in the lake management. The Land Use Committee will recommend the amendment to the comprehensive plan to the Land, Water, and Education Committee.

The Land, Water, and Education Committee will review the amendment and if it concurs with the recommendation from the Land Use Committee, it will make a recommendation to the Planning & Zoning Committee. The Planning & Zoning Committee will hold a public hearing with a thirty-day class one notice. The Planning & Zoning Committee will recommend by resolution the amendment to the comprehensive plan or the amendment with changes be adopted by the County Board.

The County Board will consider the recommendations from the Planning & Zoning Committee. The County Board may (a) adopt the amendment to the comprehensive plan by ordinance, (b) adopt the amendment with changes, or (c) request the Land Use Committee or Planning & Zoning Committee revisit the changes to the comprehensive plan.

Use of the Comprehensive Plan

The lake management plans as referenced in the comprehensive plans will be used by the County and the Municipality to consider certain actions or in the implementation of zoning and other applicable regulations. The County Board of Adjustments and the County Planning and Zoning Committee may reference the lake management plans as referenced in the comprehensive plan when considering zone changes, variances, conditional uses, and suitable mitigation measures. The Municipality and County may take action as called for in the lake management plan as referenced in the comprehensive plan, including changes to zoning and other applicable regulations, shortly after the County's comprehensive plan has been updated or may take action as needed.

The lake organization, lake residents, riparian property owners, or other citizens may request that the Municipality or County take a specific action to implement aspects of the lake management plan as referenced in the comprehensive plan. The lake organization lake residents, riparian property owners, or other citizens may provide written or oral support to encourage the Municipality and County to reference the lake management plan when considering regulation or action that may impact the lake. The lake organization will inform the Municipality and the County when the lake management plan is updated and allow the Municipality and County an opportunity to participate in the update process.

References

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Vallentyne, J.R., 1974. The Algal Bowl-Lakes and Man. Ottawa Department of the Environment.

Wetzel, R.G., 2001. Limnology, Lake and River Ecosystems, Third Edition. Academic Press. San Diego, California.

Appendices

Appendix A. Waushara County Lake Information Directory

Algae - Blue-Green

Contact: Ted Johnson
Wisconsin Department of Natural Resources
Phone: 920-424-2104
E-mail: TedM.Johnson@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:
http://www.dhs.wisconsin.gov/eh/bluegreenalgae/contactus.htm

Aquatic Invasive Species/Clean Boats Clean Water

Contact: Golden Sands RC&D
1100 Main St., Suite 150, Stevens Point, WI 54481
Phone: 715-343-6215
Websites: www.goldensandsrcd.org
http://dnr.wi.gov/invasives/

Aquatic Plant Management (Native and Invasive)

Contact: Ted Johnson
Wisconsin Department of Natural Resources
Phone: 920-424-2104
E-mail: TedM.Johnson@wisconsin.gov
Website: http://dnr.wi.gov/lakes/plants/

Aquatic Plant Identification

Contact: Golden Sands RC&D
1100 Main St., Suite 150, Stevens Point, WI 54481
Phone: 715-343-6215
Website: www.goldensandsrcd.org

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: Ted Johnson
Wisconsin Department of Natural Resources
Phone: 920-424-2104
E-mail: TedM.Johnson@wisconsin.gov

Aquatic Plant Surveys/Management

Contact: Ted Johnson
Wisconsin Department of Natural Resources
Phone: 920-424-2104
E-mail: TedM.Johnson@wisconsin.gov
Website: http://dnr.wi.gov/lakes/plants/

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

Contact: Ed Hernandez
Waushara County Land Conservation Department
PO Box 1109, Wautoma, WI 54982
Phone: 920-787-0453
E-mail: lcdzoning.courthouse@co.waushara.wi.us
Website: http://www.co.waushara.wi.us/zoning.htm

Boat Landings, Signage, Permissions (County)

Contact: Scott Schuman
Waushara County Parks
PO Box 300, Wautoma, WI 54982
Phone: 920-787-7037
E-mail: wcparks.parks@co.waushara.wi.us
Website: http://www.co.waushara.wi.us/parks.htm

Boat Landings (State)

Contact: Dave Bartz
Wisconsin Department of Natural Resources
Hwy 22N, Box 430, Montello, WI 53949
Phone: 608-635-4989
E-mail: David.Bartz@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.

Citizen Lake Monitoring Network

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-662-5141
E-mail: brenda.nordin@wisconsin.gov

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: Ted Johnson
Wisconsin Department of Natural Resources
Phone: 920-424-2104
E-mail: TedM.Johnson@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: North Central Conservancy Trust
PO Box 124, Stevens Point, WI 54481
Phone: 715-344-1910
E-mail: info@ncctwi.org
Website: http://www.ncctwi.org/

Contact: NRCS Stevens Point Service Center
1462 Strongs Ave., Stevens Point, WI 54481
Phone: 715-346-1325

Critical Habitat and Sensitive Areas

Contact: Ted Johnson
Wisconsin Department of Natural Resources
Phone: 920-424-2104
E-mail: TedM.Johnson@wisconsin.gov
Website: http://dnr.wi.gov/lakes/criticalhabitat/

Dams

Contact: Joe Behlen
Wisconsin Department of Natural Resources
473 Griffith Ave., Wisconsin Rapids, WI 54494
Phone: 715-421-9940
E-mail: joseph.behlen@wisconsin.gov
Website: http://dnr.wi.gov/org/water/wm/dsfm/dams/

Fertilizers/Soil Testing

Contact: Ken Williams
Waushara County UW- Extension
209 S St. Marie St, PO Box 487, Wautoma, WI 54982
Phone: 920-787-0416
E-mail: ken.williams@ces.uwex.edu
Website: http://waushara.uwex.edu/agriculture/services

Fisheries Biologist (management, habitat)

Contact: Dave Bartz
Wisconsin Department of Natural Resources
Hwy 22N, Box 430, Montello, WI 53949
Phone: 608-635-4989
E-mail: David.Bartz@wisconsin.gov
Website: http://dnr.wi.gov/fish/

Frog Monitoring—Citizen Based

Contact: Andrew Badje
Wisconsin Department of Natural Resources
Phone: 608-266-3336
E-mail: Andrew.badje@wisconsin.gov
E-mail: WFTS@wisconsin.gov

Grants

Contact: Ted Johnson
Wisconsin Department of Natural Resources
Phone: 920-424-2104
E-mail: TedM.Johnson@wisconsin.gov
Website: http://dnr.wi.gov/Aid/Grants.html#tabx8

Contact: Ed Hernandez
Waushara County Land Conservation Department
PO Box 1109, Wautoma, WI 54982
Phone: 920-787-0453
E-mail: lcdzoning.courthouse@co.waushara.wi.us
Website: http://www.co.waushara.wi.us/zoning.htm

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: Ed Hernandez
Waushara County Land Conservation Department
Address: PO Box 1109 Wautoma, WI 54982
Phone: 920-787-0453
E-mail: lcdzoning.courthouse@co.waushara.wi.us

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

Groundwater Levels/Quantity (cont'd)

Contact: Scott Provost
Wisconsin Department of Natural Resources
473 Griffith Ave., Wisconsin Rapids, WI 54494
Phone: 715-421-7881
E-mail: scott.provost@wisconsin.gov
Website:
http://prodoasext.dnr.wi.gov/inter1/hicap$.startup

Informational Packets

Contact: UWSP Center for Watershed Science & Education
TNR 224, 800 Reserve St. Stevens Point, WI 54481
Phone: 715-346-2497
E-mail: pclakes@uwsp.edu

Lake Groups – Friends, Associations, Districts

Contact: Patrick Nehring
UWEX Economic Resource Development Agent
PO Box 487, Wautoma, WI 54982
Phone: 920-787-0416
E-mail: Patrick.nehring@ces.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: Terri Dopp-Paukstat
Waushara County Planning and Zoning
PO Box 1109, Wautoma, WI 54982
Phone: 920-787-0453
E-mail: lcdzoning.courthouse@co.waushara.wi.us
Website: http://www.co.waushara.wi.us/zoning.htm

Land Use Plans and Zoning Ordinances (cont'd)

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: Ed Hernandez
Waushara County Land Conservation Department
PO Box 1109, Wautoma, WI 54982
Phone: 920-787-0453
E-mail: lcdzoning.courthouse@co.waushara.wi.us
Website: http://www.co.waushara.wi.us/zoning.htm

Contact: NRCS Stevens Point Service Center
1462 Strongs Ave., Stevens Point, WI 54481
Phone: 715-346-1325

Parks (County)

Contact: Scott Schuman
Waushara County Parks
PO Box 300, Wautoma, WI 54982
Phone: 920-787-7037
E-mail: wcparks.parks@co.waushara.wi.us
Website: http://www.co.waushara.wi.us/parks.htm

Purchase of Development Rights

Contact: North Central Conservancy Trust
PO Box 124, Stevens Point, WI 54481
Phone: 715-341-7741
E-mail: info@ncctwi.org
Website: http://www.ncctwi.org/

Purchase of Land

Contact: Ted Johnson
Wisconsin Department of Natural Resources
Phone: 920-424-2104
E-mail: TedM.Johnson@wisconsin.gov
Website: http://dnr.wi.gov/topic/stewardship/

Rain Barrels – Order

Contact: Golden Sands RC&D
1100 Main St., Suite 150, Stevens Point, WI 54481
Phone: 715-343-6215
Website: http://www.goldensandsrcd.org/store

Rain Gardens and Stormwater Runoff

Contact: Ed Hernandez
Waushara County Land Conservation Department
PO Box 1109, Wautoma, WI 54982
Phone: 920-787-0453
E-mail: lcdzoning.courthouse@co.waushara.wi.us
Website: http://www.co.waushara.wi.us/zoning.htm

Septic Systems/Onsite Waste

Contact: Terri Dopp-Paukstat
Waushara County Planning and Zoning
PO Box 1109, Wautoma, WI 54982
Phone: 920-787-0453
E-mail: lcdzoning.courthouse@co.waushara.wi.us
Website: http://www.co.waushara.wi.us/zoning.htm

Shoreland Management

Contact: Ed Hernandez
Waushara County Land Conservation Department
PO Box 1109, Wautoma, WI 54982
Phone: 920-787-0453
E-mail: lcdzoning.courthouse@co.waushara.wi.us
Website: http://www.co.waushara.wi.us/zoning.htm

Shoreland Vegetation

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

Shoreland Zoning Ordinances

See: Land Use Plans and Zoning Ordinances

Soil Fertility Testing

Contact: Ken Williams
Waushara County UW- Extension
209 S St. Marie St, PO Box 487, Wautoma, WI 54982
Phone: 920-787-0416
E-mail: Ken.williams@ces.uwex.edu
Website: http://waushara.uwex.edu/index.html

Water Quality Monitoring

Contact: Ted Johnson
Wisconsin Department of Natural Resources
Phone: 920-424-2104
E-mail: TedM.Johnson@wisconsin.gov

Water Quality Problems

Contact: Ted Johnson
Wisconsin Department of Natural Resources
Phone: 920-424-2104
E-mail: TedM.Johnson@wisconsin.gov

Contact: Nancy Turyk
UWSP Center for Watershed Science and Education
TNR 216, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-4155
E-mail: nturyk@uwsp.edu

Wetlands

Contact: Keith Patrick
Wisconsin Department of Natural Resources
5301 Rib Mountain Drive, Wausau, WI 54401
Phone: 715-241-7502
E-mail: keith.patrick@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

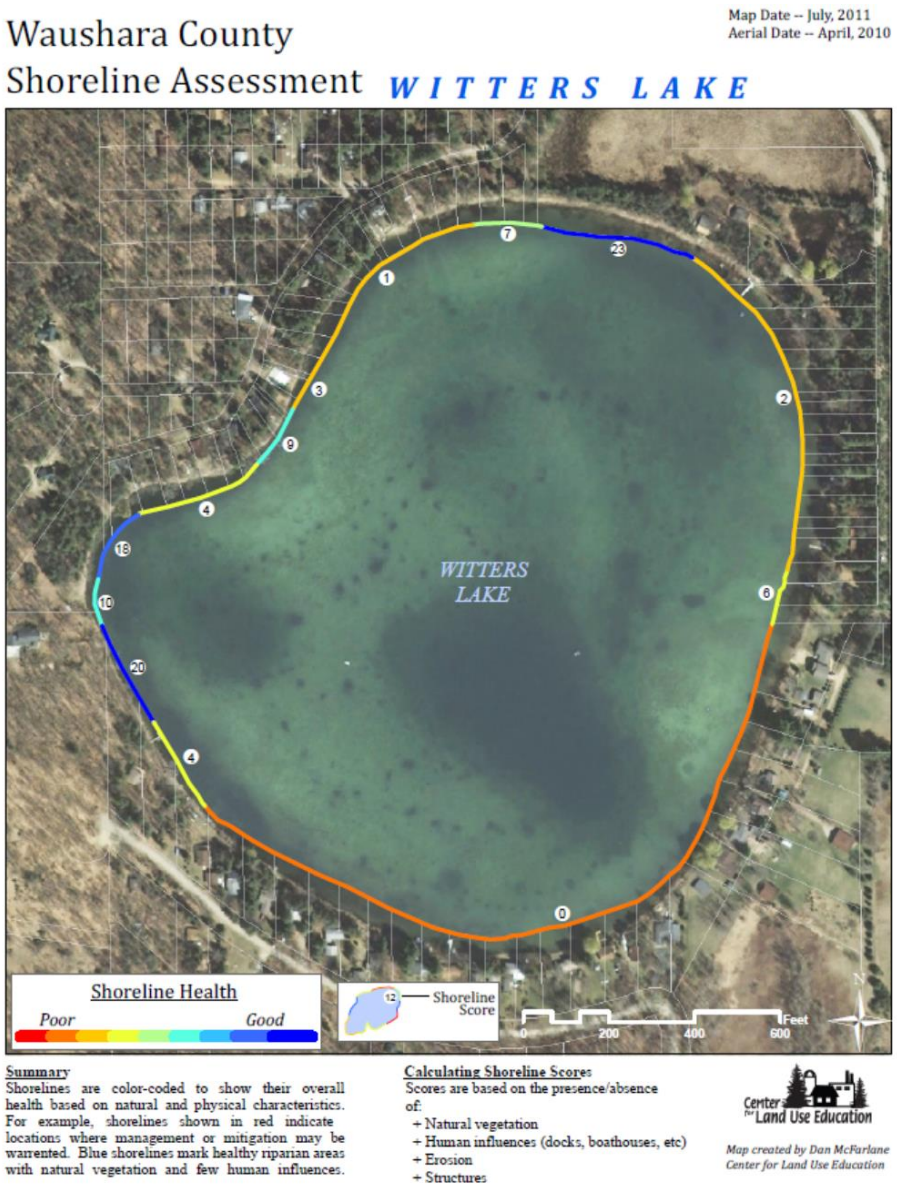
Contact: Dave Bartz, Wisconsin Department of Natural Resources
Phone:608-635-4989
Address: Hwy 22N Box 430, Montello, WI 53949
E-mail: David.Bartz@wisconsin.gov

If you are looking for any information that is not listed in this directory, please contact:
Ryan Haney (wclakes@uwsp.edu)
UWSP Center for Watershed Science and Education
TNR 224, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-2497

Appendix B. Shoreland Survey – 2011

A scoring system was developed for the collected data to provide a more holistic assessment. Areas that are healthy will need strategies to keep them healthy, and areas with potential problem areas and where management and conservation may be warranted may need a different set of strategies for improvement. The scoring system is based on the presence/absence and abundance of shoreline features, as well as their proximity to the water's edge. Values were tallied for each shoreline category and then summed to produce an overall score. Higher scores denote a healthier shoreline with good land management practices. These are areas where protection and/or conservation should be targeted. On the other hand, lower scores signify an ecologically unhealthy shoreline. These are areas where management and/or mitigation practices may be desirable for improving water quality.

The summary of scores for shorelands around Witters Lake are displayed to the right. The shorelands were color-coded to show their overall health based on natural and physical characteristics. Blue shorelands identify healthy shorelands with sufficient vegetation and few disturbances. Red shorelands indicate locations where changes in management or mitigation may be warranted. A few segments of Witters Lake's shorelands are in good shape, but large segments with challenges exist and should be addressed. One stretch of the southeastern shore of Witters Lake ranked as poor.




Witters Lake Shoreland Vegetation
Waushara Co. Wisconsin
N
0
260
520
1,040 Feet
Understory 1-15' tall
Distance Inland from Waters Edge (Ft)
Poor
0
1-15
16-35
Good
Trees and Shrubs
Absent
Present
Center for Watershed Science and Education
College of Natural Resources
University of Wisconsin-Stevens Point

Appendix C. Rapid Response Plan

SURVEY/MONITOR

1. Learn how to survey/monitor the lake.	**Contacts:** **Water Resource Management Specialist** Wisconsin Department of Natural Resources Phone: 920-424-2104 E-Mail: TedM.Johnson@wisconsin.gov **Regional Aquatic Invasive Species (AIS) Coordinator** Golden Sands RC&D 1100 Main St., Suite #150 Stevens Point, WI 54481 Phone: 715-343-6278 E-Mail: info@goldensandsrcd.org
2. Survey/monitor the lake monthly/seasonally/annually.	If you find a suspected invasive species, report it as soon as possible using the procedure below.

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. You can use TopoZone.com to find the precise location on a digital topographic map. Click the cursor on the exact collection site and note the coordinates (choose UTM or Latitude/Longitude).	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 (Latitude/Longitude or UTM preferred, or Township/Range/Section) • Plant name (common or scientific) • Land ownership (if known) • Population description (estimated number of plants and area covered) • Habitat type(s) 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** 427 E. Tower Drive, Suite 100 Wautoma, WI 54982 Phone: (920) 787-4686 **Regional AIS Coordinator** Golden Sands RC&D 1100 Main St., Suite #150 Stevens Point, WI 54481 Phone: 715-343-6214 E-Mail : info@goldensandsrcd.org **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
5. Once the specimen is dropped off or sent for positive identification, be sure to contact:	**Regional AIS Coordinator** Golden Sands RC&D 1100 Main St., Suite #150 Stevens Point, WI 54481 Phone: 715-343-6214 E-Mail : info@goldensandsrcd.org

If an invasive species is confirmed, the Regional AIS Coordinator will make the following public information contacts:

- **Wisconsin Department of Natural Resources**
  427 E. Tower Drive, Suite 100
  Wautoma, WI 54982
  Phone: (920) 787-4686

  The town board(s) in which the water body is located

  Town of: Dakota

- **The Lake Association** where the waterbody is located.
  Contact: Sandy Oemichen, President
  Phone: 920-647-6973
  Email: snoemichen@gmail.com

- **University of Wisconsin-Stevens Point**
  Water Resource Scientist
  Nancy Turyk
  Trainer Natural Resources Building
  800 Reserve Street
  Stevens Point, WI 54481Telephone: 715-346-4155
  E-mail: nturyk@uwsp.edu

- **Local Residents**

- **Witters Lake Association**

If an invasive species is confirmed the Witter Lake Association will make the following public information contacts:

- **Newspapers**: The Argus, The Resorter

Contact the WDNR to post notice(s) at the access point(s) to the water body.

Appendix D. Aquatic Plants

Witters Lake aquatic plant survey summary, 2011.

	Lake Average	Statewide Average	North Central Hardwood Forests Ecoregion Average
Littoral Frequency of Occurrence (%)	98.7	74.3	76
Maximum Depth of Plant Growth (ft)	22	15.3	15.9
Species Richness (Including visuals)	8	16.8	16.2
Floristic Quality Index (FQI)	15.6	24.1	23.3

Frequency of occurrence of aquatic plant species observed in Witters Lake, 2011.

Scientific Name	Common Name	Coefficient of Conservatism Value (C Value)	2011 % Frequency of Occurrence
Submergent Species			
Chara, spp.	muskgrass	7	81.6
Potamogeton illinoensis	Illinois pondweed	6	64
Elodea canadensis	common waterweed	3	36.7
Vallisneria americana	wild celery	3	21.8
Stuckenia pectinata	sago pondweed	6	6.1
Potamogeton foliosus	leafy pondweed	6	2.7
Potamogeton zosteriformis	flat-stem pondweed	6	2
Potamogeton gramineus	variable pondweed	7	1.4

General recommendations:

- Reduce nutrients traveling to the lake from the landscape.
- Avoid increasing algal blooms by maintaining a healthy amount of aquatic plants.
- Don't denude the lakebed.
    - Increases potential for aquatic invasive species establishment.
    - Sediments can add phosphorus to the water which may lead to increased algal growth.
- Choose options that are appropriate for your lake's situation.
- Monitor and adjust your strategies if you are not making headway!

List of Aquatic Plant Management Options (selection of options varies with situation):

No Action

ADVANTAGES	LIMITATIONS
∗ No associated cost. ∗ Least disruptive to lake ecosystem.	∗ May not be effective in achieving aquatic plant management objectives.

Hand Pulling

ADVANTAGES	
∗ Can be used for thinning aquatic plants around docks. ∗ Can target specific plants - with proper training. ∗ Can be effective in controlling small infestations of aquatic invasive species. ∗ If aquatic invasive species are not pulled properly, could worsen the problem.	∗ No associated cost. LIMITATIONS ∗ Removes near-shore wildlife and fish habitat. ∗ Opens up areas where invasives to become established.

Hand Pulling Using Suction

ADVANTAGES	LIMITATIONS
∗ Can be used for thinning plants around docks. ∗ Can be used in deeper areas (with divers). ∗ Can target specific plants with proper training. ∗ Can be effective in controlling small infestations of aquatic invasive species. ∗ May be useful in helping to remove upper root mass of aquatic invasive species.	∗ Costs associated with hiring a diver may be comparable to chemical treatment expenses. ∗ Currently an experimental treatment – not readily available. ∗ If aquatic invasive species are not pulled properly, could worsen the problem.

Mechanical Harvesting

ADVANTAGES	LIMITATIONS
∗ Removes plant material and nutrients. ∗ Can target specific locations. ∗ Used to manage larger areas for recreational access or fishery management.	∗ Not used in water depths less than 3 feet. ∗ Some harm to aquatic organisms. ∗ Is a temporary control. ∗ Risk of introduction of new aquatic invasive species (on a hired harvester) or spread of some existing invasive species. ∗ Hired cost at least $150/hr.

Water Level Manipulation

ADVANTAGES	LIMITATIONS
∗ Controls aquatic plants in shallower, near-shore areas. ∗ Can be low cost.	∗ Requires a controlling structure on the lake. ∗ May cause undesired stress on ecosystem. ∗ Cannot be used frequently.

Milfoil Weevils

ADVANTAGES	LIMITATIONS
∗ Natural, native maintenance of native and exotic milfoils. ∗ Prefers the aquatic invasive Eurasian Watermilfoil. ∗ Some lakes may already have a native population; need a professional stem count and assessment of shoreland health, structure of fishery, etc. ∗ Doesn't harm lake ecosystem.	∗ Require healthy shoreline habitat for overwintering. ∗ Cannot survive in areas of mechanical harvesting or herbicide application. ∗ Effectiveness highly variable between lakes (only works well for some lakes). ∗ Limited access to weevils for purchase in WI. ∗ Still considered experimental.

Chemical Treatment: Spot

ADVANTAGES	LIMITATIONS
∗ May be less destructive to lake ecosystem than lake-wide treatment.	∗ Only considered in lakes with aquatic invasive plants. ∗ Usually not fully effective in eradicating target species. ∗ Contaminants may remain in sediment. ∗ Effects on lake ecosystem not fully understood. ∗ Does not remove dead vegetation, which depletes oxygen and releases nutrients, adds to build-up of muck. ∗ Extra nutrients may spur additional aquatic plant and algae growth.

Chemical Treatment: Lake-wide

ADVANTAGES	LIMITATIONS
∗ May reduce aquatic invasives for a time. ∗ Treatment not needed as frequently.	∗ Only considered in lakes with aquatic invasive plants. ∗ Usually not fully effective in eradicating target species. ∗ Contaminants may remain in sediment. ∗ Does not remove dead vegetation, which depletes oxygen and releases nutrients, adds to build-up of muck. ∗ Extra nutrients may spur additional aquatic plant and algae growth. ∗ Negatively affects native vegetation. ∗ Effects on lake ecosystem not fully understood. ∗ Opens up space once taken up by natives for invasive species to colonize once again. ∗ ~$4000 per 5 acres.

Appendix E. Lake User Survey Results

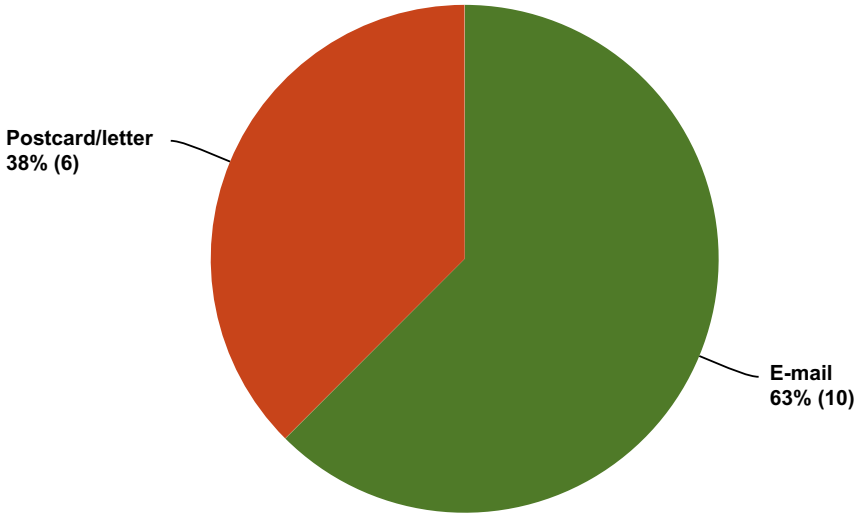
Q1 What is your Waushara County Lakes Survey ID?

Answered: 19 Skipped: 0

#	Responses	Date
1	[redacted]	10/29/2015 10:06 AM
2	[redacted]	10/29/2015 6:04 AM
3	[redacted]	10/28/2015 7:53 PM
4	[redacted]	10/28/2015 3:20 PM
5	[redacted]	10/28/2015 2:16 PM
6	[redacted]	10/28/2015 1:58 PM
7	[redacted]	10/28/2015 12:41 PM
8	[redacted]	10/28/2015 11:12 AM
9	[redacted]	10/28/2015 11:04 AM
10	[redacted]	10/28/2015 10:37 AM
11	[redacted]	10/28/2015 10:31 AM
12	[redacted]	10/28/2015 10:24 AM
13	[redacted]	10/28/2015 10:24 AM
14	[redacted]	10/28/2015 10:13 AM
15	[redacted]	10/28/2015 9:17 AM
16	[redacted]	10/26/2015 7:35 PM
17	[redacted]	10/26/2015 7:32 PM
18	[redacted]	[redacted]
[redacted]	[redacted]	10/20/2015 9:57 AM

Q2 How did you hear about this survey?

Answered: 16 Skipped: 3

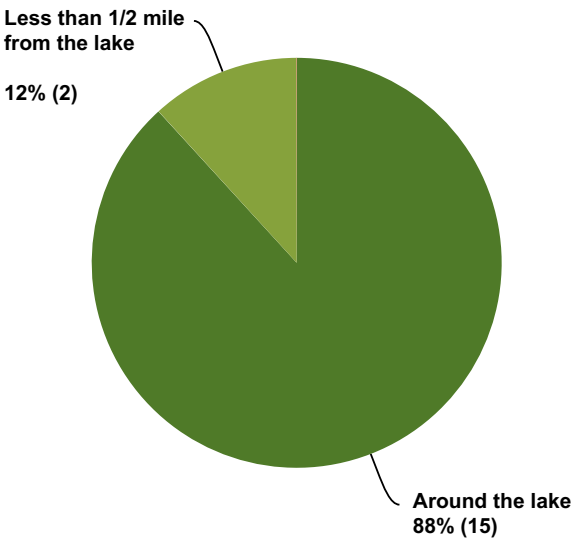


Answer Choices	Responses	
E-mail	63%	10
Newspaper	0%	0
Postcard/letter	38%	6
Facebook	0%	0
Radio	0%	0
Total		16

#	Other (please specify)	Date
1	Lake Association	10/28/2015 10:37 AM
2	association board members	10/28/2015 10:31 AM
3	Lake Association	10/28/2015 10:24 AM
4	local meetings	10/28/2015 10:24 AM
5	Email & letter in mail	10/26/2015 1:05 PM

Q3 Do you own or rent property...

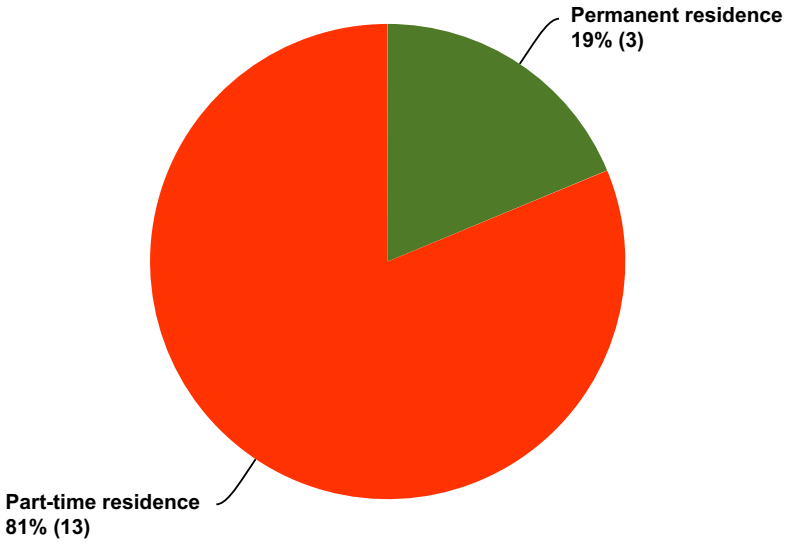
Answered: 17 Skipped: 2



Answer Choices	Responses	
Around the lake	88%	15
Less than 1/2 mile from the lake	12%	2
1/2 mile to 1 mile of the lake	0%	0
More than 1 mile from the lake	0%	0
I do not own or rent property near the lake	0%	0
Total		17

Q4 If you own or rent property near the lake, is this property your permanent residence, a part-time residence (such as a vacation home, rental, etc.), or other?

Answered: 16 Skipped: 3

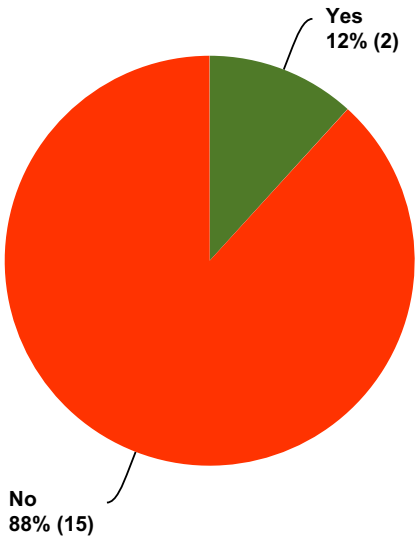


Answer Choices	Responses	
Permanent residence	19%	3
Part-time residence	81%	13
I do not own or rent property near the lake	0%	0
Total		16

#	Other (please specify)	Date
1	8 months of the yr	10/28/2015 10:35 AM

Q5 I own property on or near the lake because I inherited it.

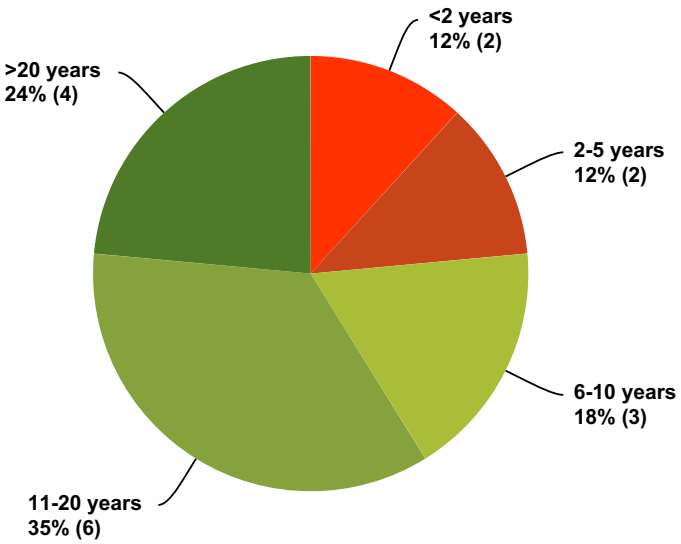
Answered: 17 Skipped: 2



Answer Choices	Responses	
Yes	12%	2
No	88%	15
Total		17

Q6 How long have you lived on, visited or recreated on the lake?

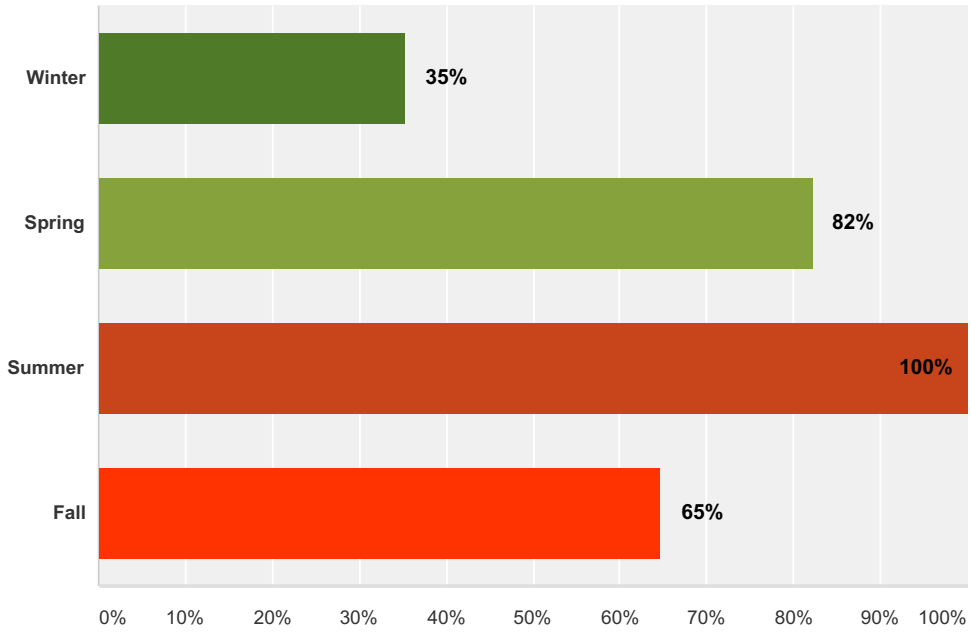
Answered: 17 Skipped: 2



Answer Choices	Responses	
<2 years	12%	2
2-5 years	12%	2
6-10 years	18%	3
11-20 years	35%	6
>20 years	24%	4
Total		17

Q7 What time of year do you generally use the lake? Select all that apply.

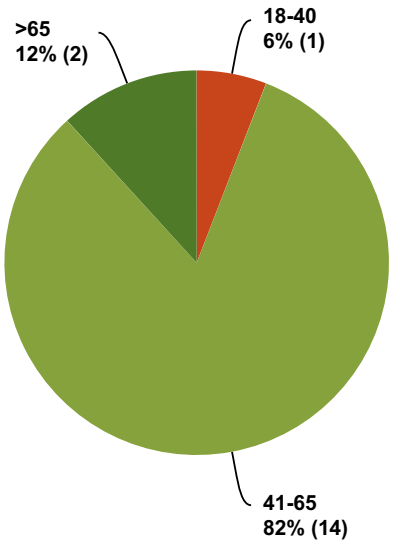
Answered: 17 Skipped: 2



Answer Choices	Responses	
Winter	35%	6
Spring	82%	14
Summer	100%	17
Fall	65%	11
Total Respondents: 17		

Q8 Which category below includes your age?

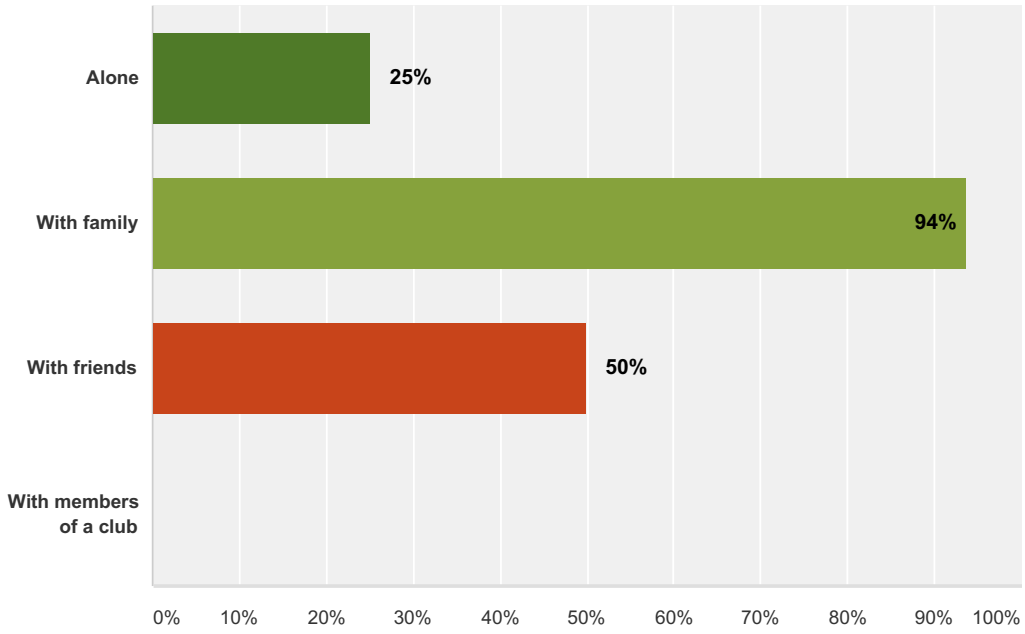
Answered: 17 Skipped: 2



Answer Choices	Responses	
Under 18	0%	0
18-40	6%	1
41-65	82%	14
>65	12%	2
Total		17

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

Answered: 16 Skipped: 3

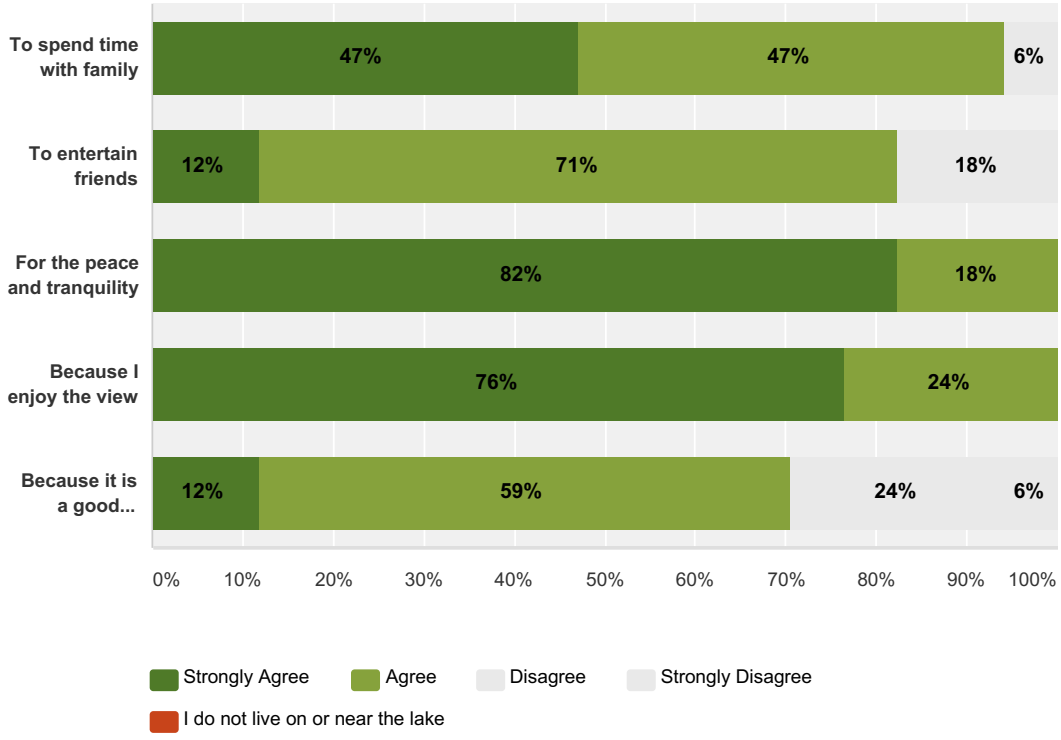


Answer Choices	Responses	
Alone	**25%**	4
With family	**94%**	15
With friends	**50%**	8
With members of a club	**0%**	0
Total Respondents: 16		

#	Other (please specify)	Date
1	some times friends that we made up there visit	10/28/2015 10:35 AM
2	We're year around residence	10/28/2015 10:29 AM

Q10 I live on or near the lake...

Answered: 17 Skipped: 2



	Strongly Agree	Agree	Disagree	Strongly Disagree	I do not live on or near the lake	Total
To spend time with family	**47%** 8	**47%** 8	**6%** 1	**0%** 0	**0%** 0	17
To entertain friends	**12%** 2	**71%** 12	**18%** 3	**0%** 0	**0%** 0	17
For the peace and tranquility	**82%** 14	**18%** 3	**0%** 0	**0%** 0	**0%** 0	17
Because I enjoy the view	**76%** 13	**24%** 4	**0%** 0	**0%** 0	**0%** 0	17
Because it is a good investment	**12%** 2	**59%** 10	**24%** 4	**6%** 1	**0%** 0	17

Q11 What do you value most about Witters Lake?

Answered: 16 Skipped: 3

#	Responses	Date
1	Quiet clean water and good fishing	10/29/2015 10:13 AM
2	No wake. Quiet. Good neighbors.	10/29/2015 6:12 AM
3	The memories that are made on and around the lake with family and friends.	10/28/2015 7:57 PM
4	Serenity	10/28/2015 3:23 PM
5	Water quality	10/28/2015 2:19 PM
6	The good water quality, peacefullness, fishing	10/28/2015 2:09 PM
7	Clean and peaceful	10/28/2015 11:23 AM
8	Swimming and paddling on the lake	10/28/2015 11:08 AM
9	quitness	10/28/2015 10:35 AM
10	The water quality and the peacefulness.	10/28/2015 10:30 AM
11	Tranquility, no wake rules, quality of the water	10/28/2015 10:29 AM
12	We were attracted to Witters Lake because of its clear water and size. We love that it is a no-wake lake. We value the tranquility.	10/28/2015 10:15 AM
13	Beautiful views, fair swimming for grandchildren, good fishing	10/28/2015 9:20 AM
14	clear water, quiet, not over built, not fed by river, nice size, view of lake(can see the whole lake because it is round in shape) , untouched nature	10/26/2015 7:47 PM
15	Peace, quiet, wildlife, pan fishing, beautiful views and setting	10/26/2015 1:17 PM
16	The tranquility. It's highly used only about 3 weekends a year.	10/20/2015 10:02 AM

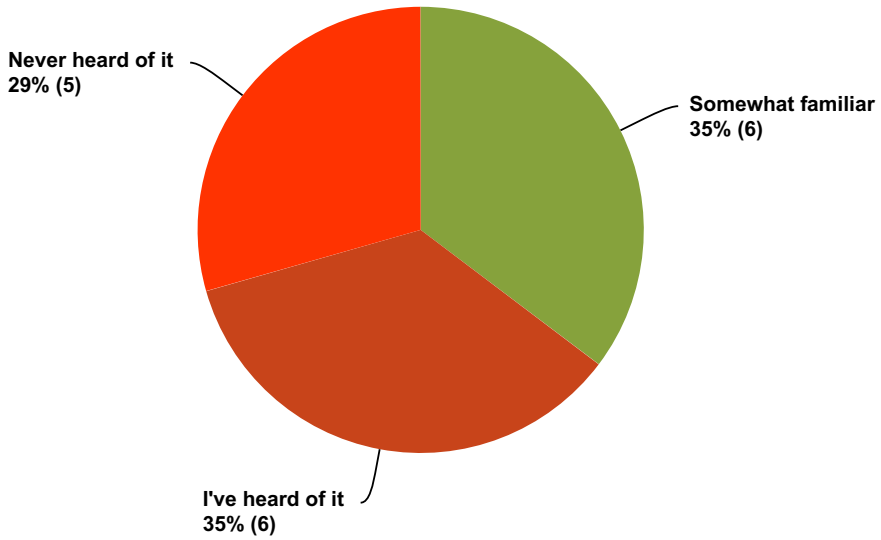
Q12 In your opinion, what should be done to restore, maintain, or improve Witters Lake?

Answered: 16 Skipped: 3

#	Responses	Date
1	nothing other than maybe do something the get rid of the muck. Years ago all of the lake had a sandy bottom. There might be way to get rid of the muck via a safe chemical treatment.	10/29/2015 10:13 AM
2	Better DNR oversight and monitoring of fishing practices of non-lake residents. Also, clarify and settle the issue regarding placement of piers on public access sites by residents who live off the lake.	10/29/2015 6:12 AM
3	More education for lake front owners on how to improve the habitat of their shoreline and I also think that only people that own lakefront property should be allowed to keep boats on the lake.	10/28/2015 7:57 PM
4	Control high capacity wells; be attentive to invasive species; maintain an active lake association.	10/28/2015 3:23 PM
5	Add native plantings to the shore line	10/28/2015 2:19 PM
6	Just what is being done, the good awareness and communication of conditions	10/28/2015 2:09 PM
7	Control over fishing and size allotment of fish; signage for cleaning boat props before entering lake and exiting to prevent unwanted plants from spreading.	10/28/2015 11:23 AM
8	control weeds and reduce muck	10/28/2015 11:08 AM
9	no wake inforcement you still have people that dont listen	10/28/2015 10:35 AM
10	Do not allow private docks to be placed on public access points. Force North Winters Beach Assn to put their dock on their frontage, just like everyone else does.	10/28/2015 10:30 AM
11	Stabilize the water level. A little more diversity in fish species primarily with bringing perch back and improving crappy population.	10/28/2015 10:29 AM
12	If there was something that could be done to reduce the amount of "muck" at the bottom of the lake, that would be ideal.	10/28/2015 10:15 AM
13	figure out why lake level is dropping, maintain/improve fishing	10/28/2015 9:20 AM
14	Since it is not fed by a river and it is a sand bottom the muck has accumulated thru the years. In the 50's & 60's it was sand. Since it is not fed by a river there are ways to eradicate the muck. You could add depth and help the fish population. There are natural bacteria that would do the job. Deep, high volume wells should be prohibited.	10/26/2015 7:47 PM
15	Minimize loud parties, keep radio's etc volume down, keep lake side exterior lighting to a minimum. Monitor off lake boats and trailers for harmful or invasive species	10/26/2015 1:17 PM
16	Do not allow any more high capacity wells that affect the lake levels. Restore local zoning restrictions. Continue to monitor and if possible improve fish populations. Keep a regular watch on invasive species (none detected in your study).	10/20/2015 10:02 AM

Q13 How familiar are you with Wisconsin's Public Trust Doctrine?

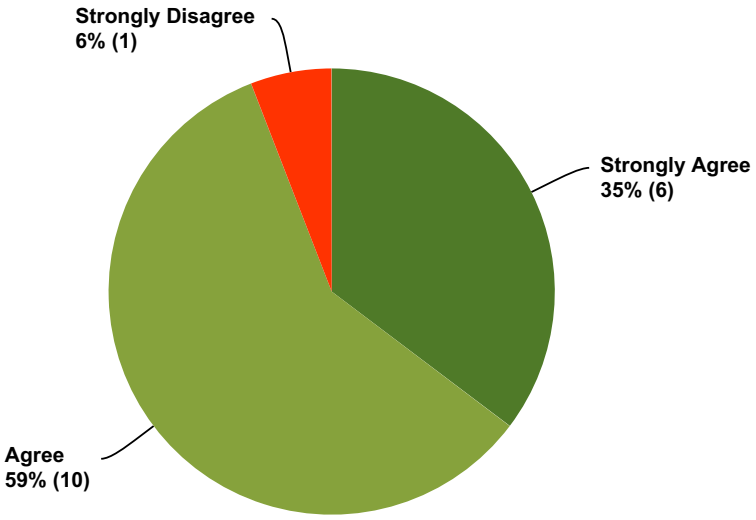
Answered: 17 Skipped: 2



Answer Choices	Responses	
Very familiar	0%	0
Somewhat familiar	35%	6
I've heard of it	35%	6
Never heard of it	29%	5
Total		17

Q14 How I recreate in and around the lake can affect other lake users.

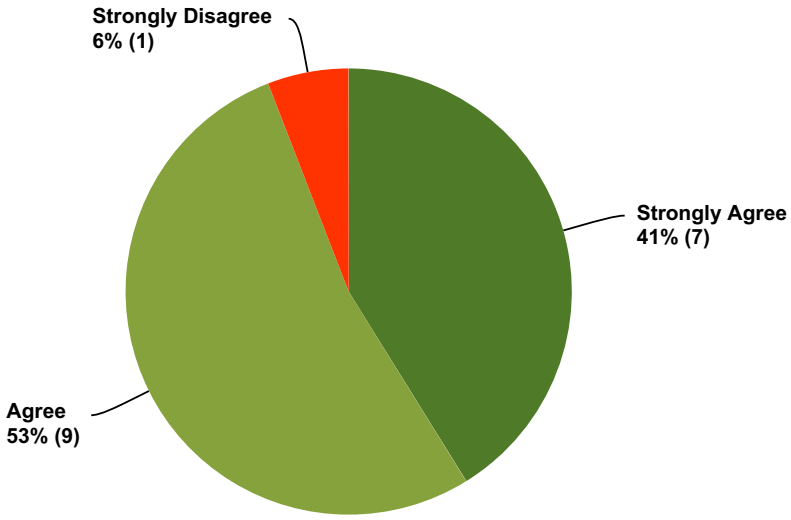
Answered: 17 Skipped: 2



Answer Choices	Responses	
Strongly Agree	35%	6
Agree	59%	10
Disagree	0%	0
Strongly Disagree	6%	1
Total		17

Q15 How I manage my land can affect other lake users.

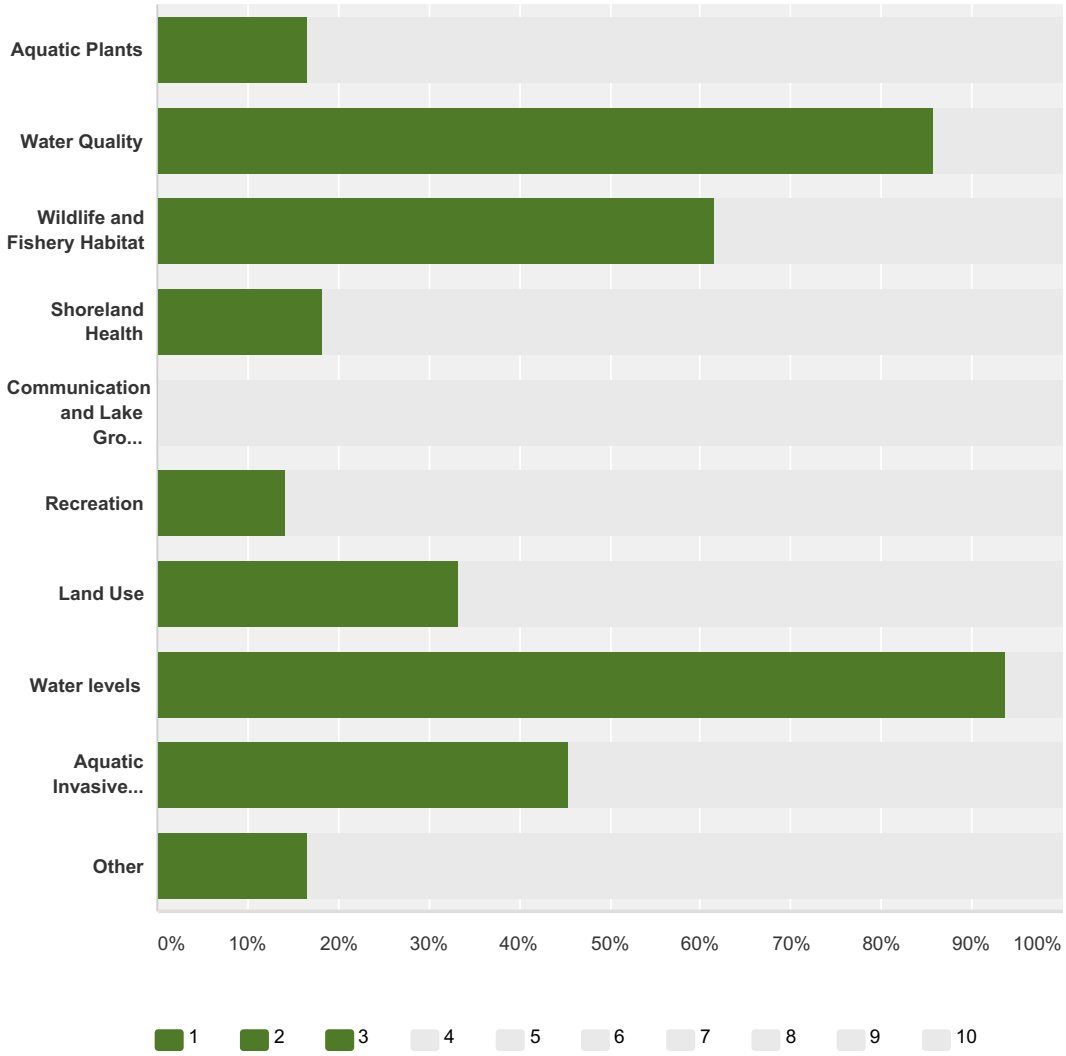
Answered: 17 Skipped: 2



Answer Choices	Responses	
Strongly Agree	41%	7
Agree	53%	9
Disagree	0%	0
Strongly Disagree	6%	1
Total		17

Q16 Which of the following meeting topics, in your opinion, are the most important to talk about regarding Witters Lake? (Please rank at least your top three.)

Answered: 17 Skipped: 2

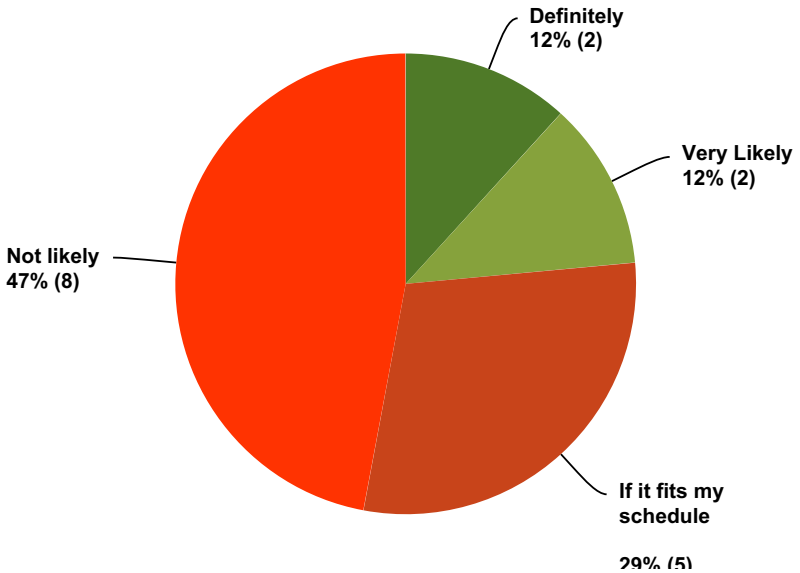


	1	2	3	4	5	6	7	8	9	10	Total	Score
Aquatic Plants	0% 0	0% 0	17% 1	0% 0	0% 0	33% 2	0% 0	33% 2	0% 0	17% 1	6	4.17
Water Quality	36% 5	29% 4	21% 3	0% 0	7% 1	7% 1	0% 0	0% 0	0% 0	0% 0	14	8.64
Wildlife and Fishery Habitat	0% 0	15% 2	46% 6	8% 1	8% 1	8% 1	8% 1	0% 0	0% 0	8% 1	13	6.85
Shoreland Health	0% 0	18% 2	0% 0	73% 8	0% 0	0% 0	9% 1	0% 0	0% 0	0% 0	11	7.09
Communication and Lake Group Support	0% 0	0% 0	0% 0	13% 1	13% 1	13% 1	0% 0	13% 1	50% 4	0% 0	8	3.63

Recreation	**0%** 0	**14%** 1	**0%** 0	**14%** 1	**14%** 1	**14%** 1	**43%** 3	**0%** 0	**0%** 0	**0%** 0	7	5.57
Land Use	**11%** 1	**0%** 0	**22%** 2	**0%** 0	**11%** 1	**11%** 1	**0%** 0	**33%** 3	**11%** 1	**0%** 0	9	5.33
Water levels	**63%** 10	**31%** 5	**0%** 0	**0%** 0	**6%** 1	**0%** 0	**0%** 0	**0%** 0	**0%** 0	**0%** 0	16	9.44
Aquatic Invasive Species	**0%** 0	**18%** 2	**27%** 3	**0%** 0	**27%** 3	**0%** 0	**18%** 2	**0%** 0	**9%** 1	**0%** 0	11	6.36
Other	**0%** 0	**0%** 0	**17%** 1	**0%** 0	**0%** 0	**0%** 0	**0%** 0	**0%** 0	**17%** 1	**67%** 4	6	2.33

Q17 Many of the decisions determining the final lake management plan will be made at the planning sessions. Sessions will typically take place monthly on weeknights or Friday afternoons. How likely is it that you will attend one or more of the planning sessions?

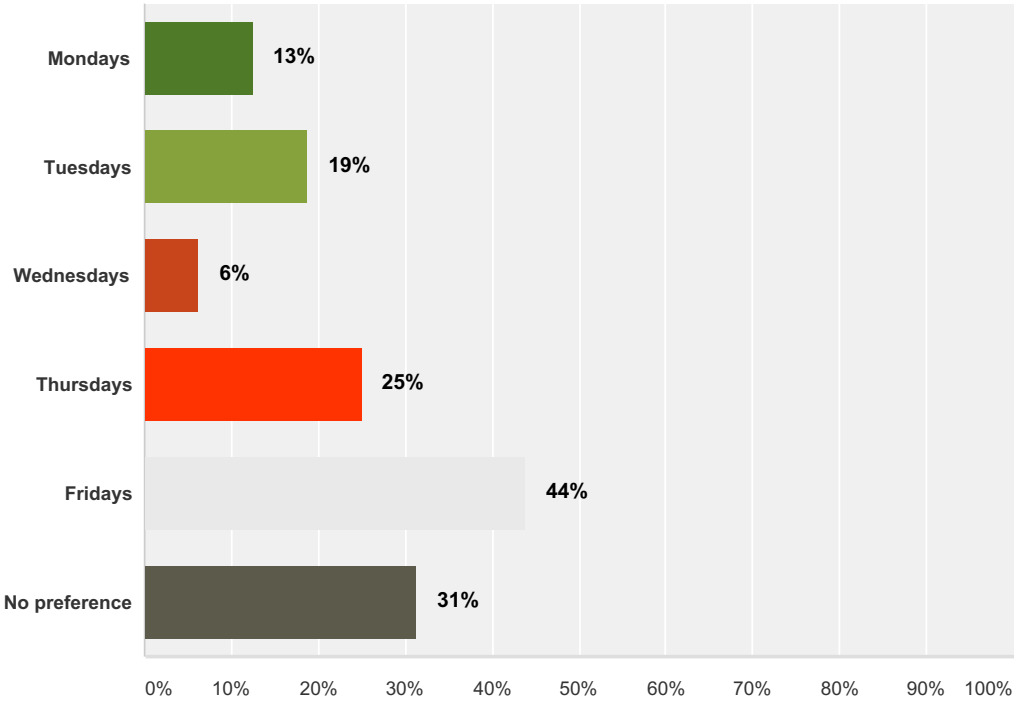
Answered: 17 Skipped: 2



Answer Choices	Responses	
Definitely	12%	2
Very Likely	12%	2
If it fits my schedule	29%	5
Not likely	47%	8
I won't attend any	0%	0
Total		17

Q18 If you will attend the planning sessions, which days do you prefer?

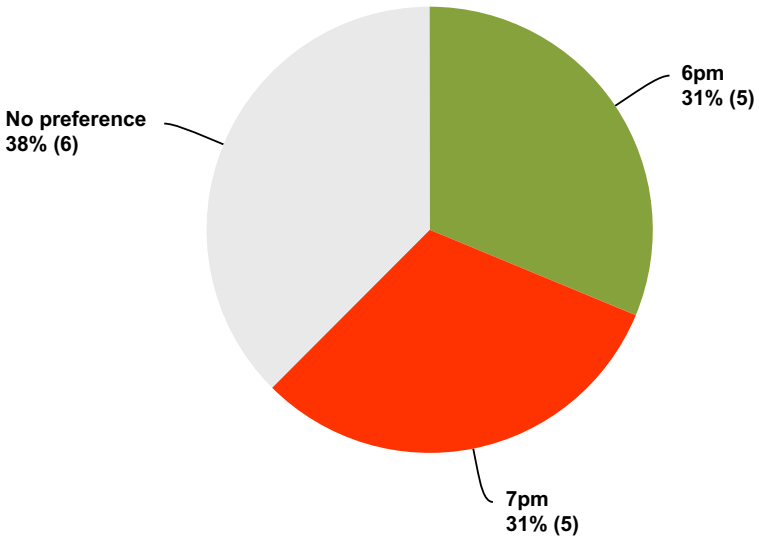
Answered: 16 Skipped: 3



Answer Choices	Responses	
Mondays	13%	2
Tuesdays	19%	3
Wednesdays	6%	1
Thursdays	25%	4
Fridays	44%	7
No preference	31%	5
Total Respondents: 16		

Q19 Most sessions will last around 2 hours. If you will attend the planning sessions, which times do you prefer to start?

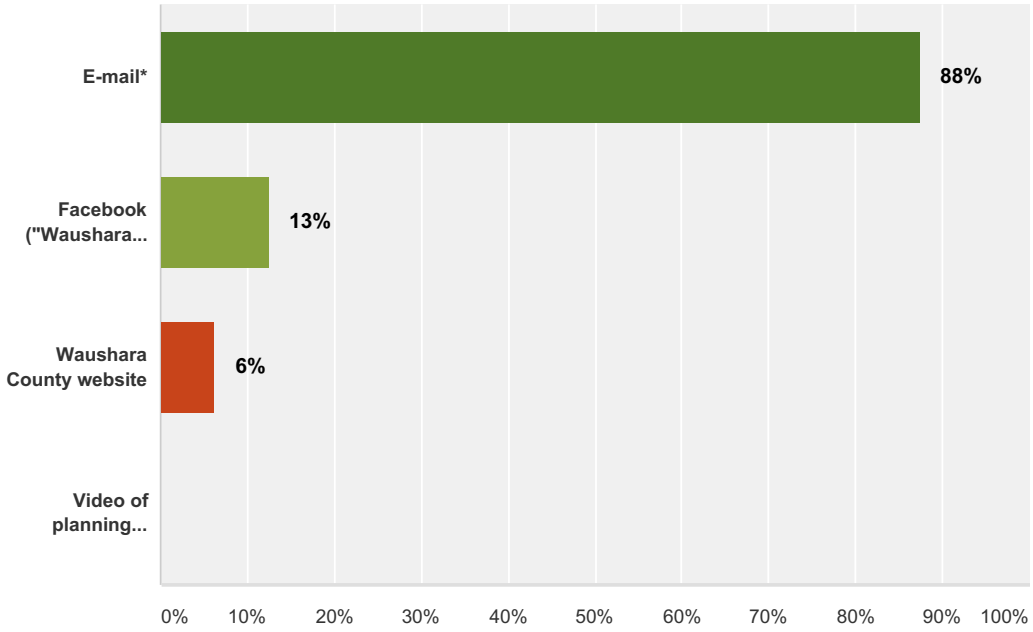
Answered: 16 Skipped: 3



Answer Choices	Responses	
3pm	0%	0
6pm	31%	5
6:30pm	0%	0
7pm	31%	5
No preference	38%	6
Total		16

Q20 How would you like to receive information about meetings (agendas, minutes), the planning process, and updates? (Select all that apply)

Answered: 16 Skipped: 3



Answer Choices	Responses	
E-mail*	88%	14
Facebook ("Waushara County Lakes Project")	13%	2
Waushara County website	6%	1
Video of planning meeting posted on the web	0%	0
Total Respondents: 16		

#	Other (please specify)	Date
1	association we have a good group of members	10/28/2015 10:38 AM
2	text	10/28/2015 10:35 AM

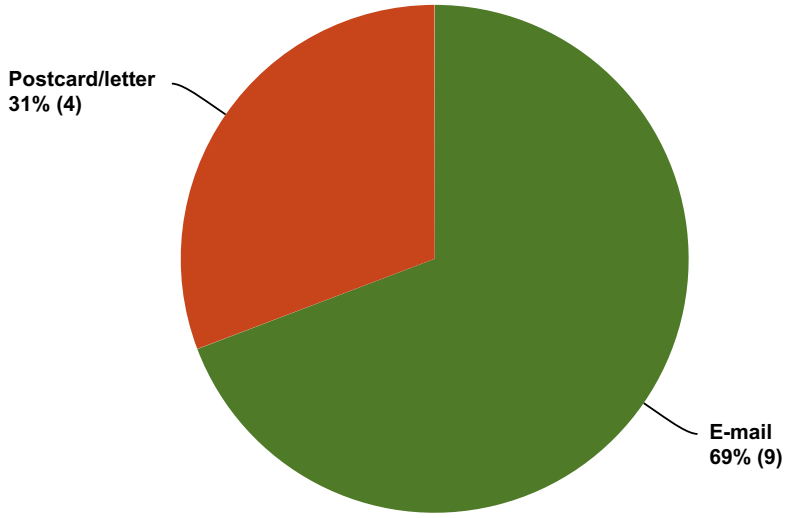
Q1 Enter your Waushara County Lakes Survey ID. If you've forgotten your ID or haven't created one yet, follow the instructions below.

Answered: 15 Skipped: 0

#	Responses	Date
1	[redacted]	10/29/2015 10:17 AM
2	[redacted]	10/29/2015 6:14 AM
3	[redacted]	10/28/2015 8:01 PM
4	[redacted]	10/28/2015 3:28 PM
5	[redacted]	10/28/2015 2:47 PM
6	[redacted]	10/28/2015 2:28 PM
7	[redacted]	10/28/2015 1:00 PM
8	[redacted]	10/28/2015 12:12 PM
9	[redacted]	10/28/2015 10:39 AM
10	[redacted]	10/28/2015 10:36 AM
11	[redacted]	10/28/2015 10:18 AM
12	[redacted]	10/28/2015 9:25 AM
13	[redacted]	10/26/2015 7:52 PM
14	[redacted]	10/26/2015 1:31 PM
15	[redacted]	10/20/2015 10:06 AM

Q2 How did you hear about this survey?

Answered: 13 Skipped: 2

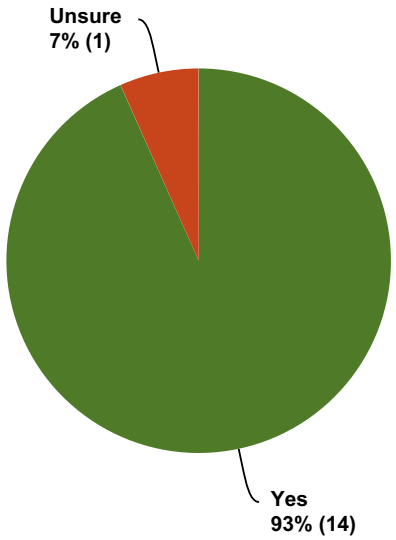


Answer Choices	Responses	
E-mail	69%	9
Newspaper	0%	0
Postcard/letter	31%	4
Facebook	0%	0
Radio	0%	0
Total		13

#	Other (please specify)	Date
1	association members	10/28/2015 10:39 AM
2	Meetings	10/28/2015 10:36 AM

Q3 Were you aware of the importance of aquatic plants?

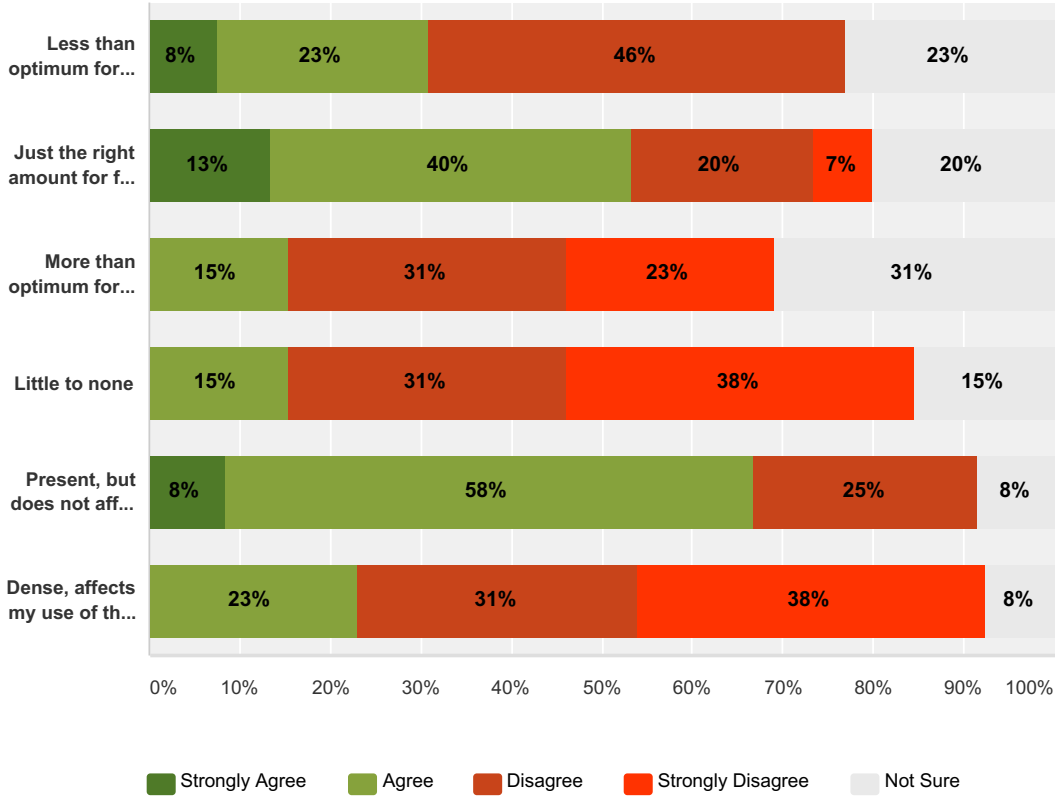
Answered: 15 Skipped: 0



Answer Choices	Responses	
Yes	93%	14
No	0%	0
Unsure	7%	1
Total		15

Q4 In your opinion, which statement best describes the amount of aquatic plant growth in Witters Lake?

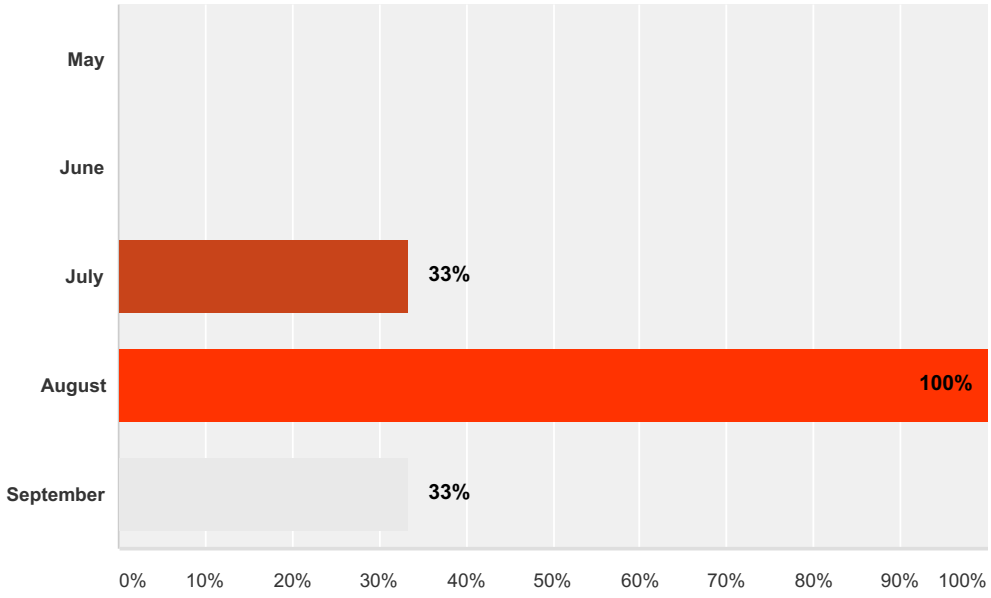
Answered: 15 Skipped: 0



	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure	Total
Less than optimum for fish and wildlife	8% 1	23% 3	46% 6	0% 0	23% 3	13
Just the right amount for fish and wildlife	13% 2	40% 6	20% 3	7% 1	20% 3	15
More than optimum for fish and wildlife	0% 0	15% 2	31% 4	23% 3	31% 4	13
Little to none	0% 0	15% 2	31% 4	38% 5	15% 2	13
Present, but does not affect my use of the lake	8% 1	58% 7	25% 3	0% 0	8% 1	12
Dense, affects my use of the lake	0% 0	23% 3	31% 4	38% 5	8% 1	13

Q5 If you selected dense or choked, what month(s) do the problems occur? Check all that apply.

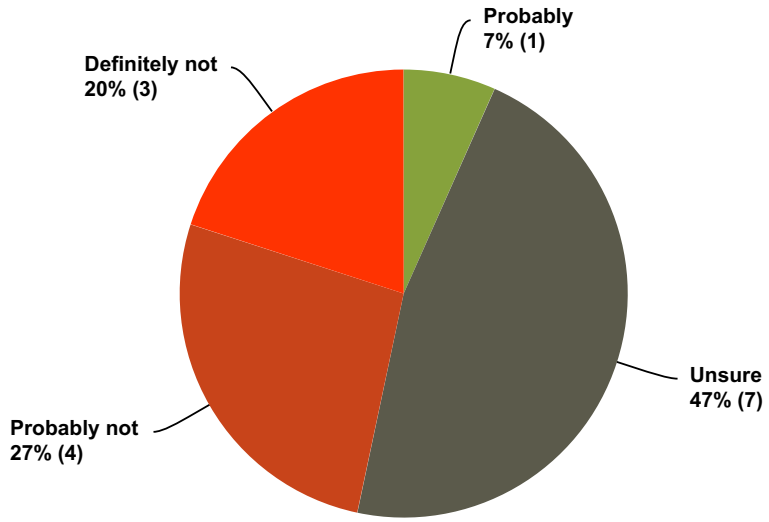
Answered: 3 Skipped: 12



Answer Choices	Responses	
May	0%	0
June	0%	0
July	33%	1
August	100%	3
September	33%	1
Total Respondents: 3		

Q6 Do you believe aquatic plant control is needed on Witters Lake?

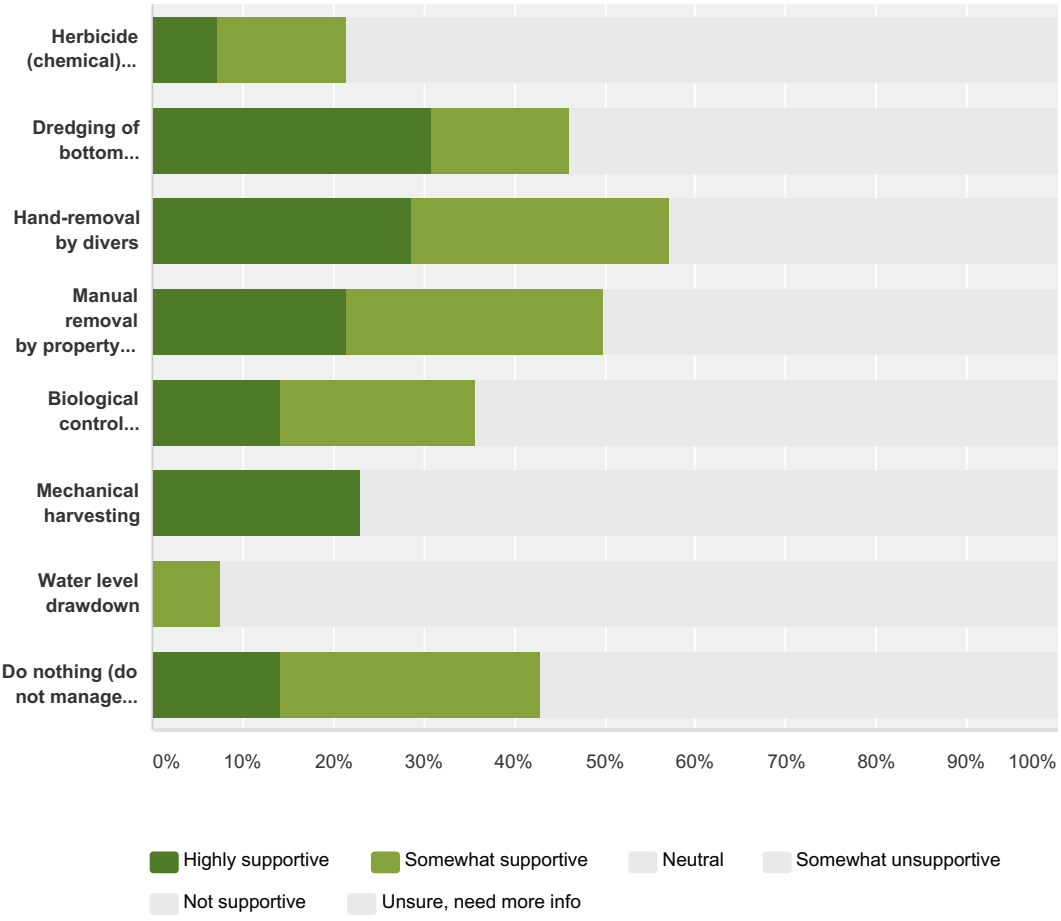
Answered: 15 Skipped: 0



Answer Choices	Responses	
Definitely	0%	0
Probably	7%	1
Unsure	47%	7
Probably not	27%	4
Definitely not	20%	3
Total		**15**

Q7 What is your level of support for the responsible use of the following techniques TO MANAGE AQUATIC PLANTS on Witters Lake?

Answered: 15 Skipped: 0

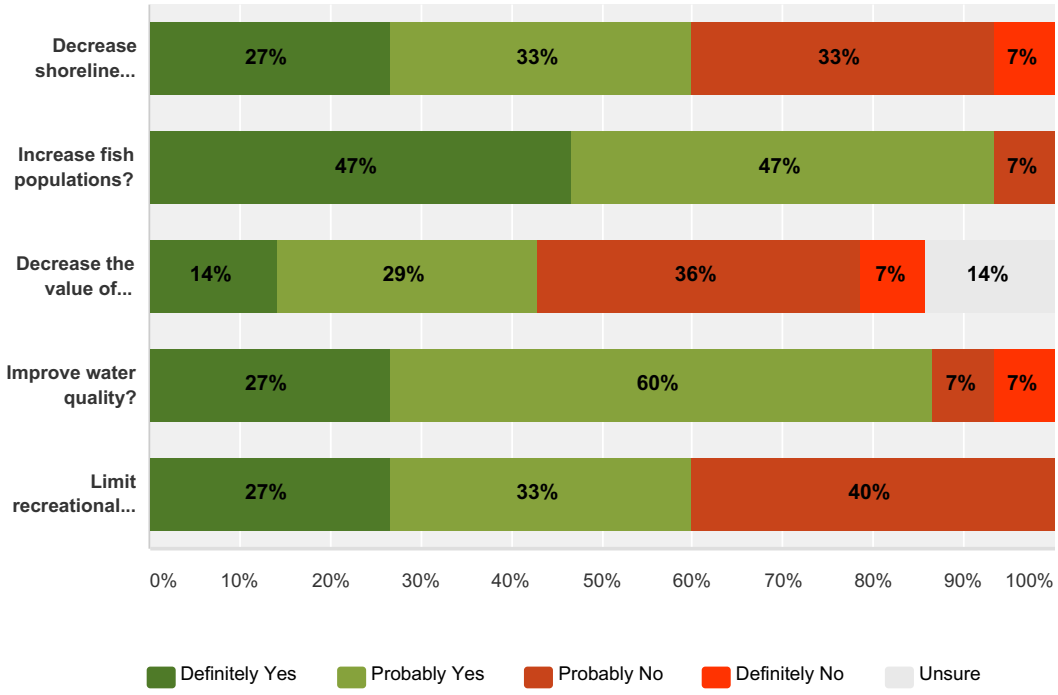


	Highly supportive	Somewhat supportive	Neutral	Somewhat unsupportive	Not supportive	Unsure, need more info	Total	Weighted Average
Herbicide (chemical) control	7% 1	14% 2	7% 1	7% 1	57% 8	7% 1	14	3.71
Dredging of bottom sediments	31% 4	15% 2	0% 0	8% 1	31% 4	15% 2	13	2.46
Hand-removal by divers	29% 4	29% 4	21% 3	0% 0	7% 1	14% 2	14	1.86
Manual removal by property owners	21% 3	29% 4	14% 2	7% 1	14% 2	14% 2	14	2.21
Biological control (milfoil weevil, loosestrife beetle, etc.)	14% 2	21% 3	0% 0	21% 3	21% 3	21% 3	14	2.50
Mechanical harvesting	23% 3	0% 0	15% 2	0% 0	46% 6	15% 2	13	3.00
Water level drawdown	0% 0	8% 1	0% 0	0% 0	85% 11	8% 1	13	4.38

Do nothing (do not manage plants)	**14%** 2	**29%** 4	**14%** 2	**7%** 1	**21%** 3	**14%** 2	14	2.50

Q8 In your opinion, does establishing or maintaining native vegetation IN THE WATER in the near-shore area…

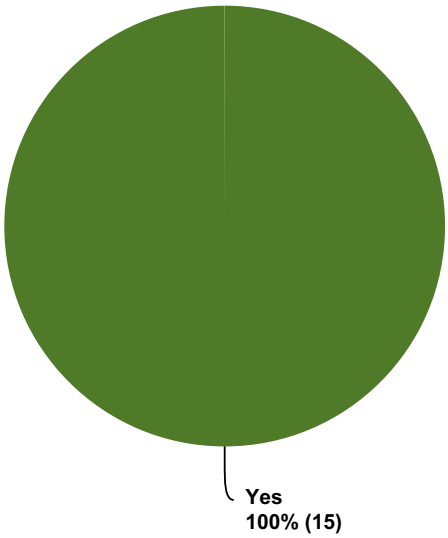
Answered: 15 Skipped: 0



	Definitely Yes	Probably Yes	Probably No	Definitely No	Unsure	Total
Decrease shoreline erosion?	**27%** 4	**33%** 5	**33%** 5	**7%** 1	**0%** 0	15
Increase fish populations?	**47%** 7	**47%** 7	**7%** 1	**0%** 0	**0%** 0	15
Decrease the value of shoreline property?	**14%** 2	**29%** 4	**36%** 5	**7%** 1	**14%** 2	14
Improve water quality?	**27%** 4	**60%** 9	**7%** 1	**7%** 1	**0%** 0	15
Limit recreational enjoyment?	**27%** 4	**33%** 5	**40%** 6	**0%** 0	**0%** 0	15

Q9 Have you ever heard of aquatic invasive species?

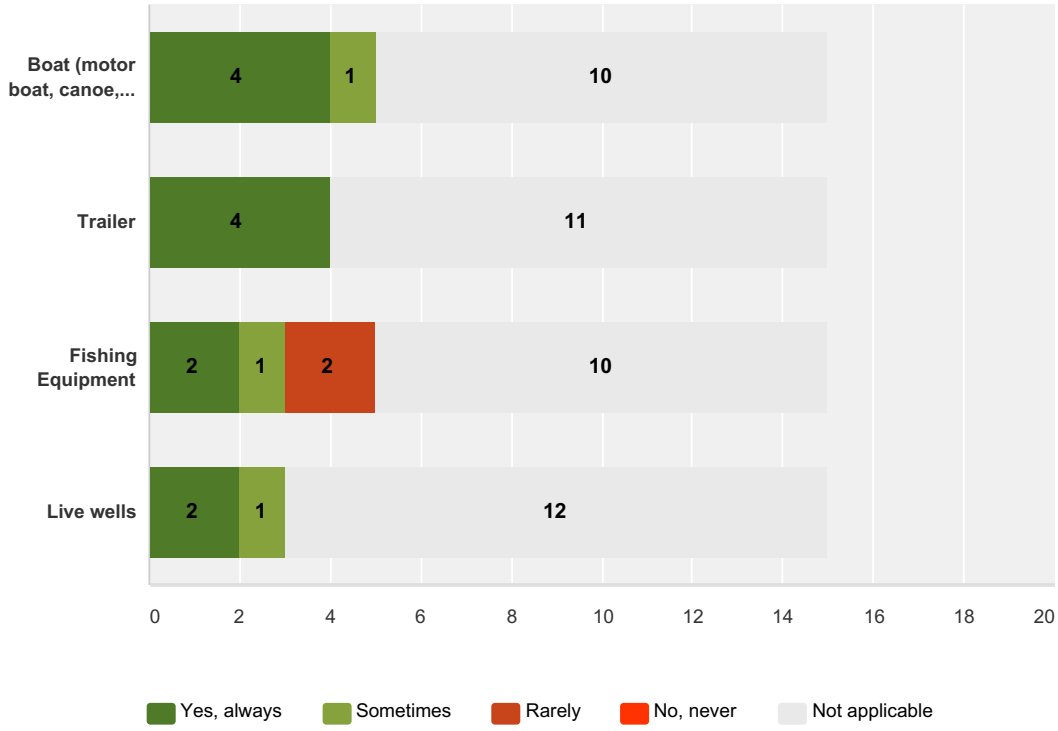
Answered: 15 Skipped: 0



Answer Choices	Responses	
Yes	**100%**	15
No	**0%**	0
Total		**15**

Q10 After you have been to another lake, do you clean your ... before bringing it back to Witters Lake?

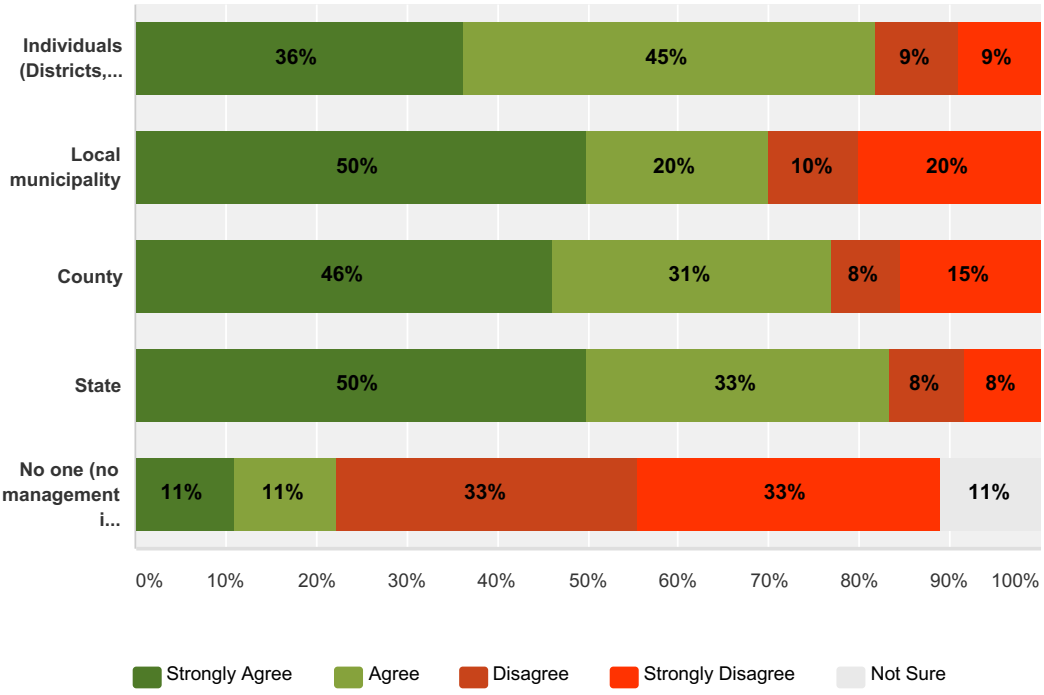
Answered: 15 Skipped: 0



	Yes, always	Sometimes	Rarely	No, never	Not applicable	Total Respondents
Boat (motor boat, canoe, kayak, etc.)	**27%** 4	**7%** 1	**0%** 0	**0%** 0	**67%** 10	15
Trailer	**27%** 4	**0%** 0	**0%** 0	**0%** 0	**73%** 11	15
Fishing Equipment	**13%** 2	**7%** 1	**13%** 2	**0%** 0	**67%** 10	15
Live wells	**13%** 2	**7%** 1	**0%** 0	**0%** 0	**80%** 12	15

Q11 Who should pay for the cost of managing invasive aquatic plants? Check all that apply.

Answered: 15 Skipped: 0

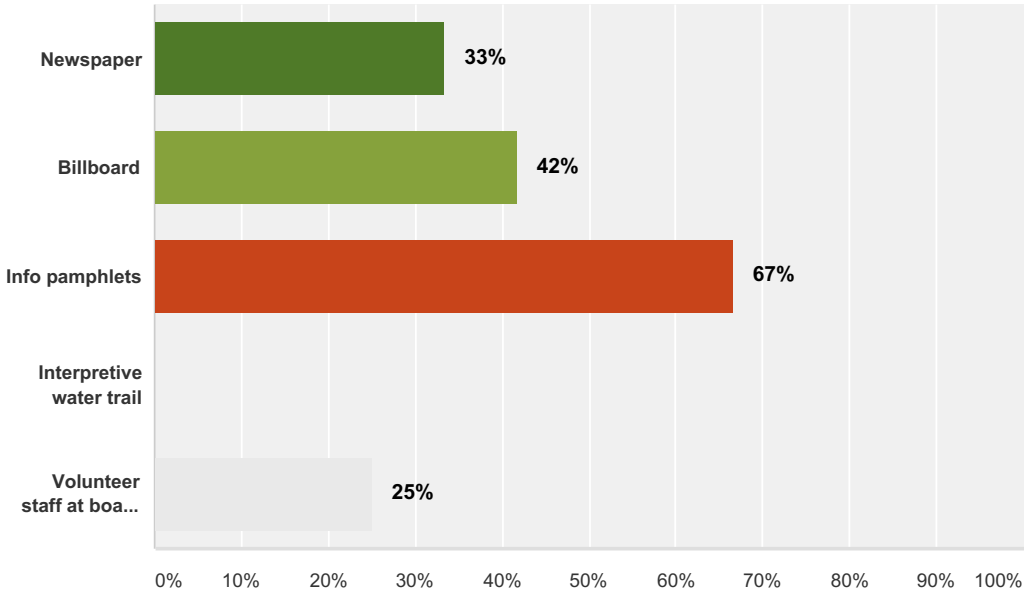


	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure	Total
Individuals (Districts, associations, lakefront property owners)	**36%** 4	**45%** 5	**9%** 1	**9%** 1	**0%** 0	11
Local municipality	**50%** 5	**20%** 2	**10%** 1	**20%** 2	**0%** 0	10
County	**46%** 6	**31%** 4	**8%** 1	**15%** 2	**0%** 0	13
State	**50%** 6	**33%** 4	**8%** 1	**8%** 1	**0%** 0	12
No one (no management is undertaken)	**11%** 1	**11%** 1	**33%** 3	**33%** 3	**11%** 1	9

#	Other (please specify)	Date
1	But cost sharing makes more sense lake residents, grants state, county	10/28/2015 10:53 AM
2	we pay taxes us that money to many free loaders in that county tobegin with!Time the county looks into that	10/28/2015 10:48 AM

Q12 What is the most effective way to inform others about aquatic invasive species?

Answered: 12 Skipped: 3

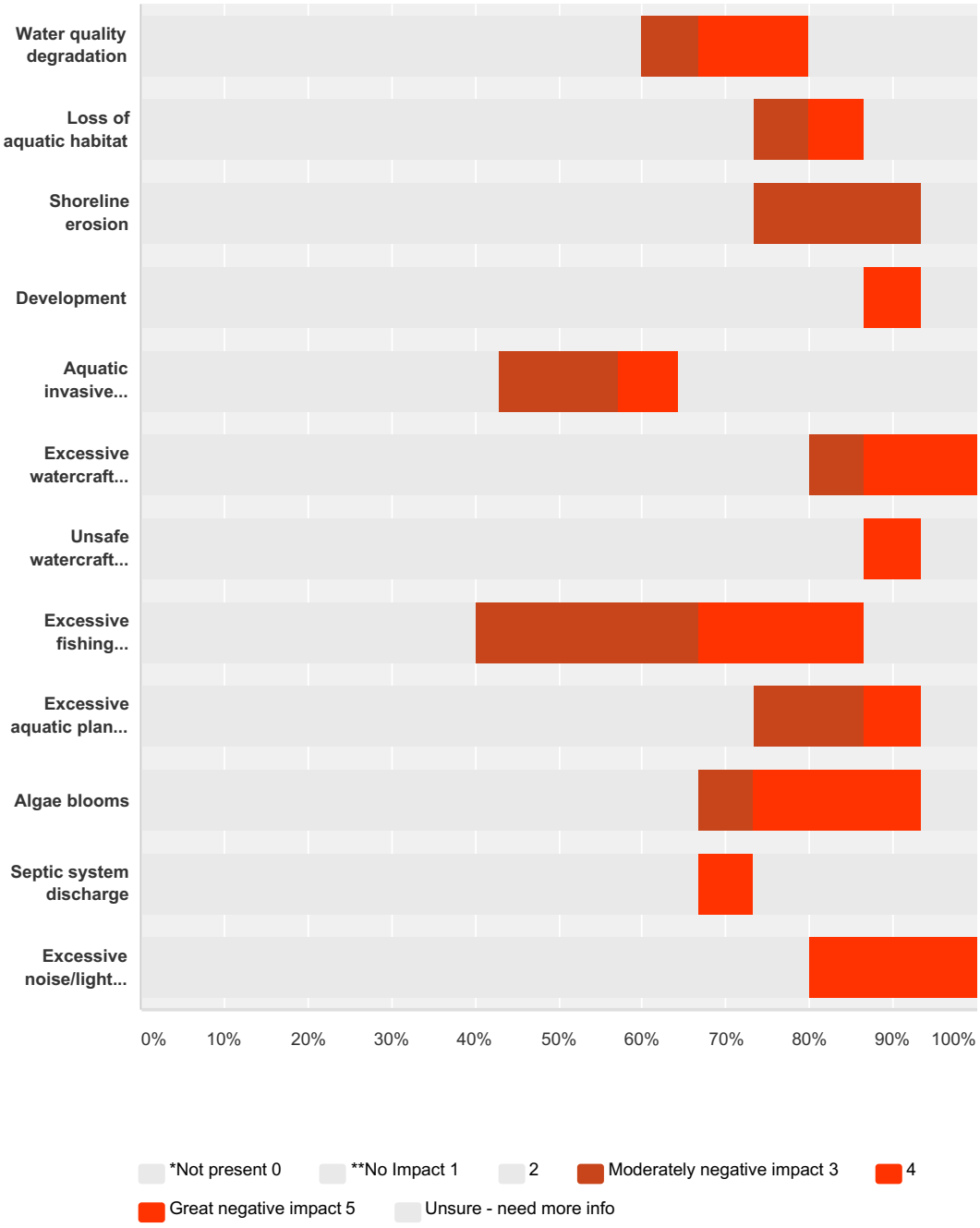


Answer Choices	Responses	
Newspaper	33%	4
Billboard	42%	5
Info pamphlets	67%	8
Interpretive water trail	0%	0
Volunteer staff at boat launch	25%	3
Total Respondents: 12		

#	Other (please specify)	Date
1	Invasive species are not a problem as of today	10/29/2015 10:24 AM
2	Email distribution of information	10/29/2015 6:20 AM
3	internet	10/28/2015 2:37 PM
4	Boat registration materials, auto registration renewals	10/28/2015 10:53 AM
5	dnr/sherrif need to come around n check we have been there over 30 yrs and only seen dnr once	10/28/2015 10:48 AM
6	Scope unclear. Be more specific. One lake, all lakes, purpose/goal of information?	10/26/2015 1:47 PM

Q13 Below is a list of possible negative impacts commonly found in Wisconsin lakes. To what level do you believe each of the following factors may be impacting Witters Lake? (Please rate 0 - 5)* Not Present means that you believe the issue does not exist on Witters Lake.**No Impact means that the issue may exist on Witters Lake but it is not negatively impacting the lake.

Answered: 15 Skipped: 0



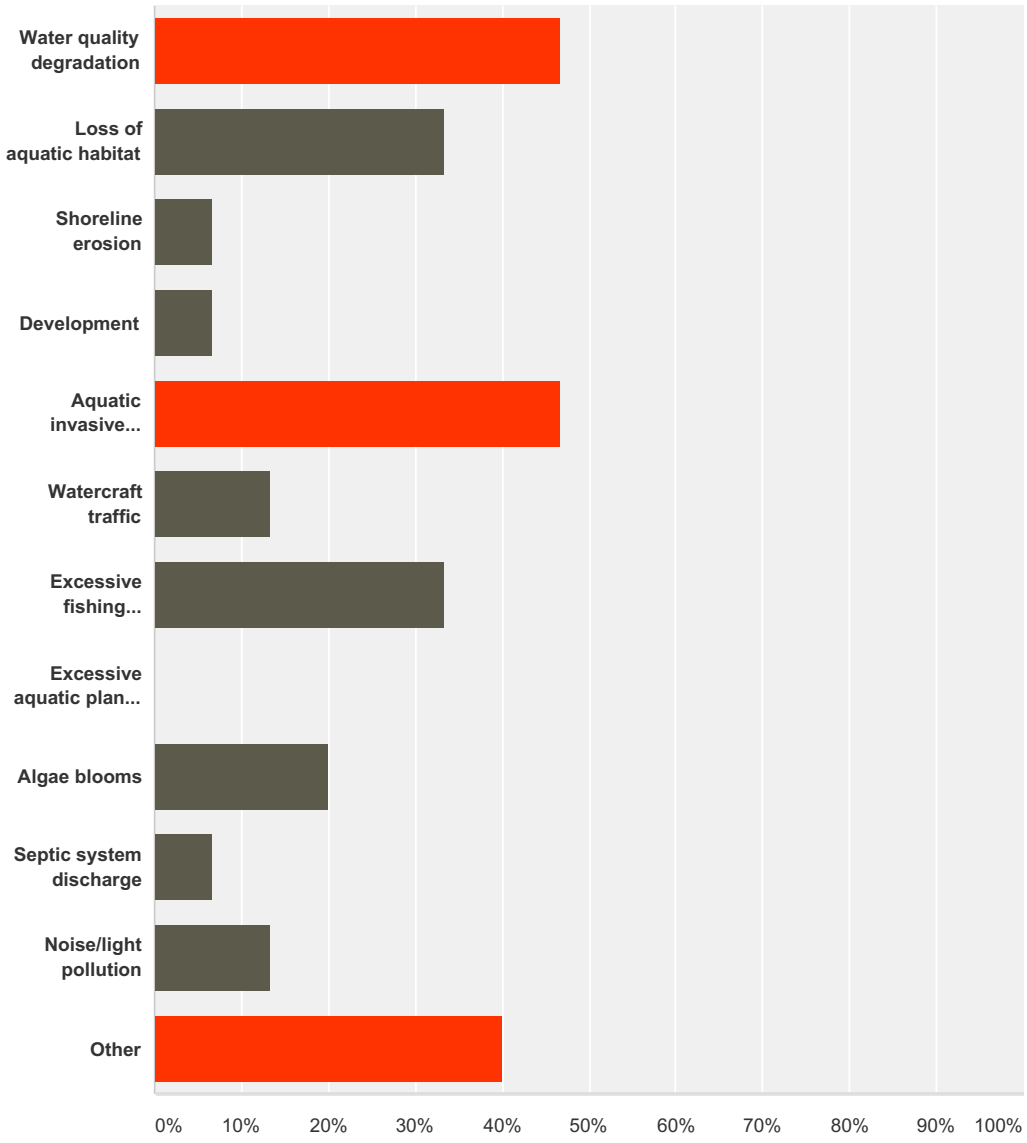
	*Not present 0	**No Impact 1	2	Moderately negative impact 3	4	Great negative impact 5	Unsure - need more info	Total	Weighted Average
Water quality degradation	47% 7	7% 1	7% 1	7% 1	7% 1	7% 1	20% 3	15	1.00
Loss of aquatic habitat	40% 6	7% 1	27% 4	7% 1	7% 1	0% 0	13% 2	15	1.07
Shoreline erosion	27% 4	33% 5	13% 2	20% 3	0% 0	0% 0	7% 1	15	1.20
Development	40% 6	20% 3	27% 4	0% 0	7% 1	0% 0	7% 1	15	1.00
Aquatic invasive species introduction	36% 5	0% 0	7% 1	14% 2	0% 0	7% 1	36% 5	14	0.93

Excessive watercraft traffic	**33%** 5	**27%** 4	**20%** 3	**7%** 1	**7%** 1	**7%** 1	**0%** 0	15	1.47
Unsafe watercraft practices	**33%** 5	**33%** 5	**20%** 3	**0%** 0	**0%** 0	**7%** 1	**7%** 1	15	1.07
Excessive fishing pressure	**0%** 0	**20%** 3	**20%** 3	**27%** 4	**7%** 1	**13%** 2	**13%** 2	15	2.33
Excessive aquatic plant growth (excluding algae)	**33%** 5	**13%** 2	**27%** 4	**13%** 2	**0%** 0	**7%** 1	**7%** 1	15	1.40
Algae blooms	**33%** 5	**13%** 2	**20%** 3	**7%** 1	**20%** 3	**0%** 0	**7%** 1	15	1.53
Septic system discharge	**33%** 5	**13%** 2	**20%** 3	**0%** 0	**0%** 0	**7%** 1	**27%** 4	15	0.87
Excessive noise/light pollution	**53%** 8	**27%** 4	**0%** 0	**0%** 0	**7%** 1	**13%** 2	**0%** 0	15	1.20

#	Other (please specify)	Date
1	boaters/the swimmers dont respect the fishermen they swim to close and dont stay far enough away	10/28/2015 10:48 AM
2	muck is the biggest impact, kills aquatic plants & fish, blue gills used to have spawning beds, now there are a few but most are covered with muck. The wood spawning beds built in the 70's are now coverd with muck. It is natural for a lake to fill but there are products that can take care of muck without hurting the water/environment	10/26/2015 8:07 PM

Q14 From the list below, please mark your top three concerns regarding Witters Lake.

Answered: 15 Skipped: 0



Answer Choices	Responses	
Water quality degradation	47%	7
Loss of aquatic habitat	33%	5
Shoreline erosion	7%	1
Development	7%	1
Aquatic invasive species introduction	47%	7
Watercraft traffic	13%	2
Excessive fishing pressure	33%	5

Excessive aquatic plant growth (excluding algae)	**0%**	0
Algae blooms	**20%**	3
Septic system discharge	**7%**	1
Noise/light pollution	**13%**	2
Other	**40%**	6
Total Respondents: 15		

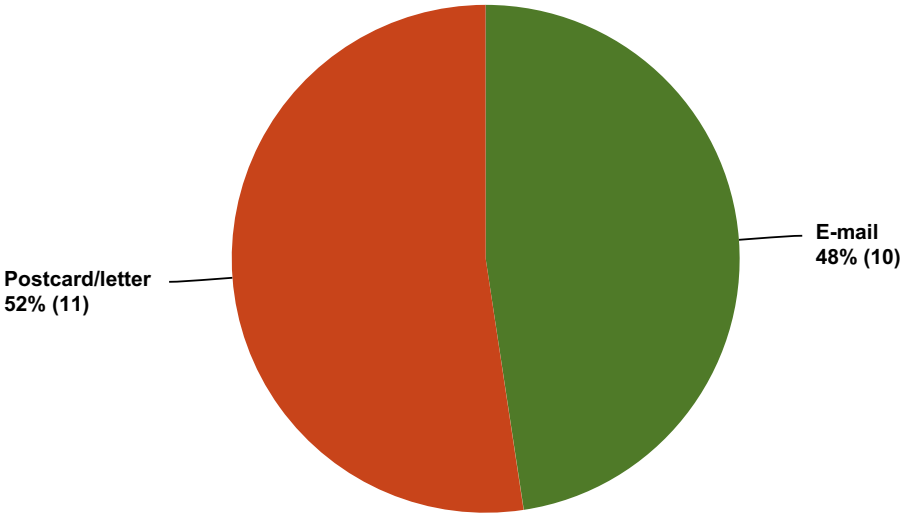
Q1 Enter your Waushara County Lakes Survey ID. Your survey cannot be processed without this information. If you've forgotten your ID or haven't created one yet, follow the instructions below.

Answered: 22 Skipped: 0

#	Responses	Date
1	[redacted]	11/30/2015 9:11 AM
2	[redacted]	11/24/2015 5:24 PM
3	[redacted]	11/22/2015 9:31 PM
4	[redacted]	11/21/2015 3:12 PM
5	[redacted]	11/18/2015 5:39 PM
6	[redacted]	11/18/2015 3:37 PM
7	[redacted]	11/18/2015 3:29 PM
8	[redacted]	11/18/2015 1:49 PM
9	[redacted]	11/17/2015 7:09 PM
10	[redacted]	11/17/2015 7:08 PM
11	[redacted]	11/17/2015 6:17 PM
12	[redacted]	11/17/2015 5:02 PM
13	[redacted]	11/17/2015 3:07 PM
14	[redacted]	11/17/2015 2:23 PM
15	[redacted]	11/17/2015 2:07 PM
16	[redacted]	11/17/2015 1:27 PM
17	[redacted]	11/17/2015 12:22 PM
18	[redacted]	11/17/2015 11:31 AM
19	[redacted]	11/17/2015 10:24 AM
20	[redacted]	11/16/2015 6:23 PM
21	[redacted]	11/16/2015 2:32 PM
22	[redacted]	11/16/2015 1:25 PM

Q2 How did you hear about this survey?

Answered: 21 Skipped: 1

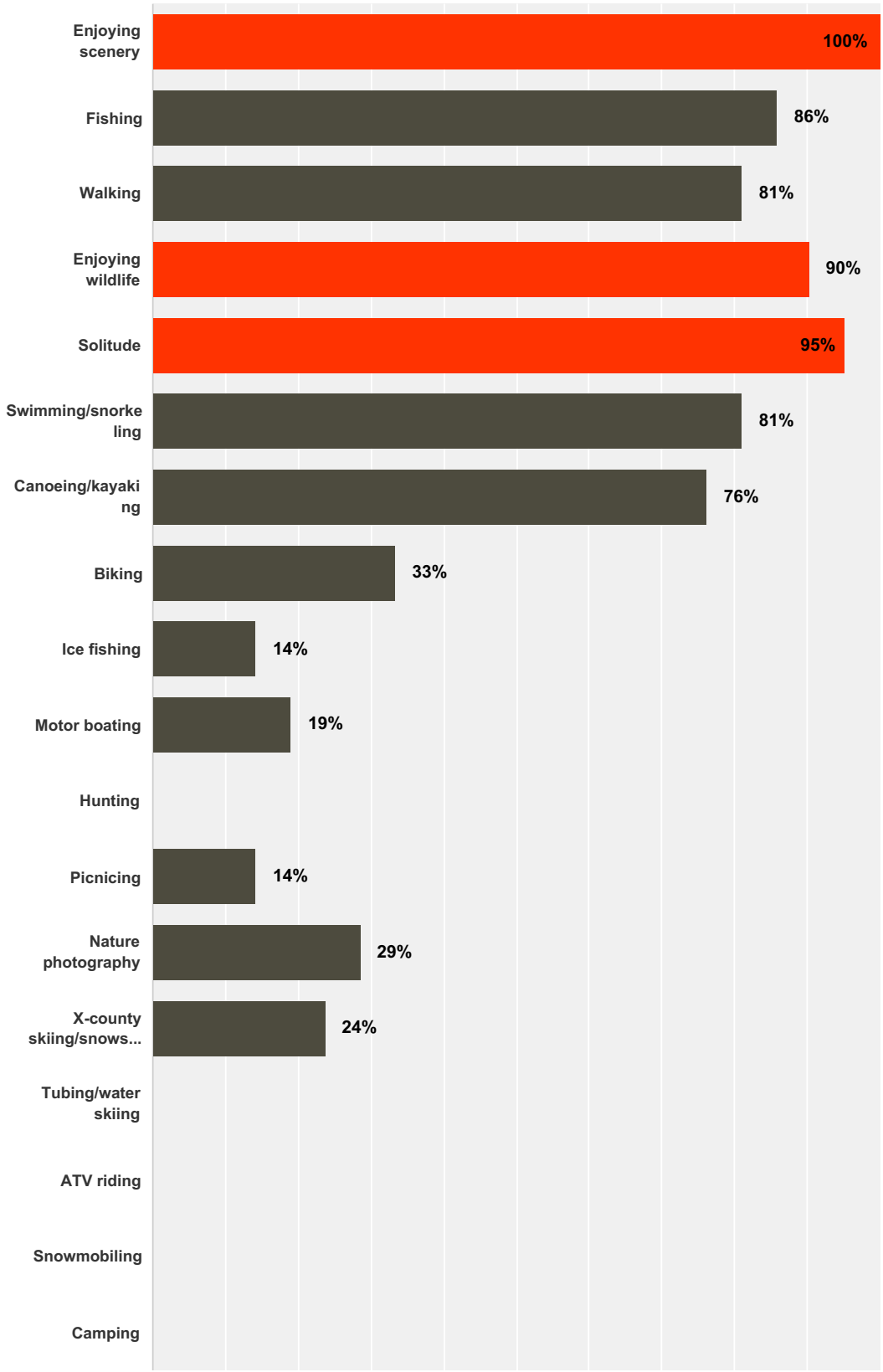


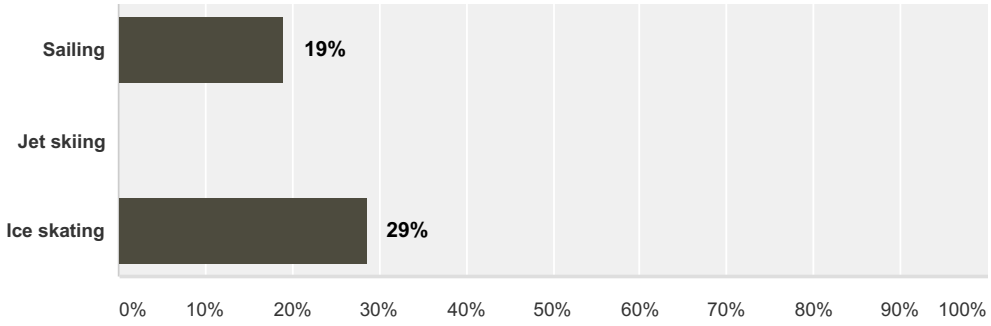
Answer Choices	Responses	
E-mail	**48%**	10
Newspaper	**0%**	0
Postcard/letter	**52%**	11
Facebook	**0%**	0
Radio	**0%**	0
Total		**21**

#	Other (please specify)	Date
1	Post card	11/24/2015 5:24 PM

Q3 What recreational activities do you partake in on Witters Lake (check all that apply)?

Answered: 21 Skipped: 1



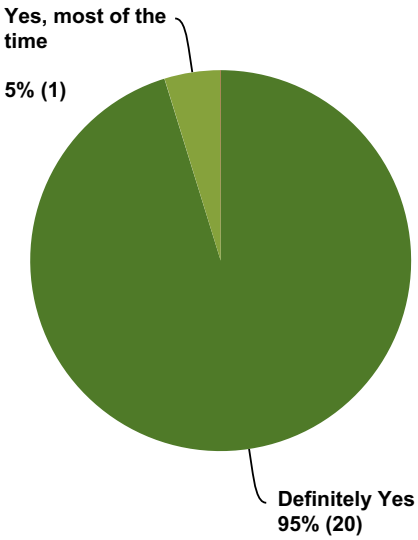


Answer Choices	Responses	
Enjoying scenery	**100%**	21
Fishing	**86%**	18
Walking	**81%**	17
Enjoying wildlife	**90%**	19
Solitude	**95%**	20
Swimming/snorkeling	**81%**	17
Canoeing/kayaking	**76%**	16
Biking	**33%**	7
Ice fishing	**14%**	3
Motor boating	**19%**	4
Hunting	**0%**	0
Picnicing	**14%**	3
Nature photography	**29%**	6
X-county skiing/snowshoeing	**24%**	5
Tubing/water skiing	**0%**	0
ATV riding	**0%**	0
Snowmobiling	**0%**	0
Camping	**0%**	0
Sailing	**19%**	4
Jet skiing	**0%**	0
Ice skating	**29%**	6
Total Respondents: 21		

#	Other (please specify)	Date
	There are no responses.	

Q4 "No Wake" is allowed on Witters Lake at any time. Do you like the current "No Wake" rules as they are?

Answered: 21 Skipped: 1



Answer Choices	Responses	
Definitely Yes	95%	20
Yes, most of the time	5%	1
No, not most of the time	0%	0
Definitely No	0%	0
Unsure	0%	0
Total		21

Q5 If you think the "No Wake" rules should be adjusted...in what way?

Answered: 6 Skipped: 16

#	Responses	Date
1	Some people still go too fast, which dredges up the slime balls (muck) from the bottom. Then it floats over to my shore and disintegrates.	11/30/2015 9:13 AM
2	Some pontoon boats may be creating too much of a wake.	11/17/2015 7:11 PM
3	The No Wake rules are one of the key reasons we picked Witters Lake. No adjustment is necessary.	11/17/2015 3:09 PM
4	No, although it would be lovely if snowmobiles were banned in winter!!	11/17/2015 2:26 PM
5	Make it "No Wake" and "No Motors" lake.	11/16/2015 6:29 PM
6	Do not change no wake rules	11/16/2015 1:31 PM

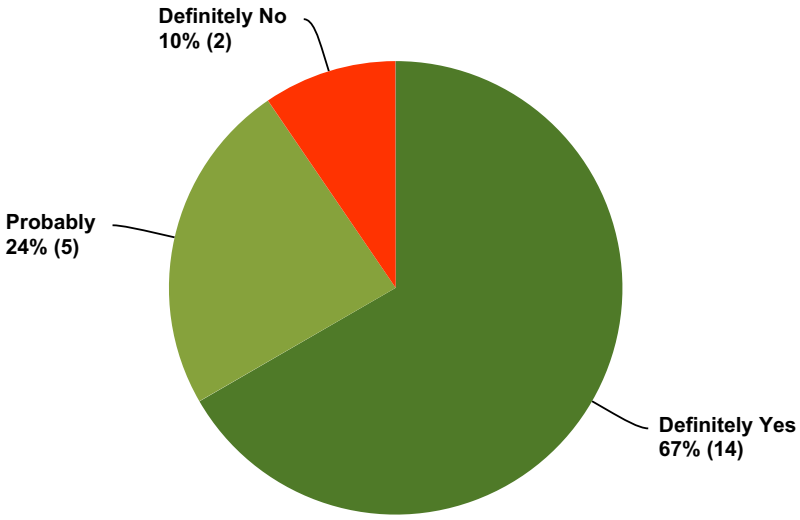
Q6 What could be done to improve your recreation experience on Witters Lake?

Answered: 17 Skipped: 5

#	Responses	Date
1	It would be great if we could dredge out parts of the lake to remove the muck so that the water would be deeper. I know there are many feet of muck there.	11/30/2015 9:13 AM
2	Less muck, less light polution	11/24/2015 5:25 PM
3	Remove the muck. It is filling up the lake	11/22/2015 9:33 PM
4	Limit the size of boat and motor allowed. There are several 10-16 person pontoon boats with large motors that churn up the lake bottom, making it murky, especially when the lake is low, which seems to be all the time these days.	11/21/2015 3:15 PM
5	keep dog barking to a minimum	11/18/2015 3:39 PM
6	anything that would maintain reasonable water levels	11/18/2015 1:51 PM
7	Improve water quality	11/17/2015 7:11 PM
8	reducing the muck bottom in our bay	11/17/2015 7:11 PM
9	If there was a safe way to reduce the amount of "muck" on the bottom, it would improve the quality of swimming in the lake.	11/17/2015 3:09 PM
10	Not having to watch the seasonal decrease of the lake waters with farmland watering each summer.	11/17/2015 2:26 PM
11	Limit outside fishermen or daily quota for non property owners.	11/17/2015 1:30 PM
12	Closer monitoring of fishing limit regulations. Especially for non residents.	11/17/2015 12:24 PM
13	I would like to see some monitoring by the DNR. There are some who fish and don't adhere to bag limits.	11/17/2015 11:34 AM
14	Make it an electric motor only lake. The geese are becoming a real problem. The make a mess of the lake shore with the droppings. They are pooping machines that are polluting the lake. Filthy!!!!!	11/17/2015 10:28 AM
15	No motors at all on the lake. Very concerned with the increase of pontoons and the pollution of the lake. Also this a small lake to have so many pontoon boats and irresponsible operators and owners.	11/16/2015 6:29 PM
16	Solidify lake bottom in shallows for better swimming experience. (I'm not saying it's possible, it just would make for better swimming, especially for my young grandchildren)	11/16/2015 2:35 PM
17	Stop loud music and noise by 9:00pm. Eliminate outside lights that stay on all night including security lights and decorative lighting after 9:00pm	11/16/2015 1:31 PM

Q7 Does a desire to provide better habitat for fish and wildlife motivate you to support (morally) efforts to improve Witters Lake?

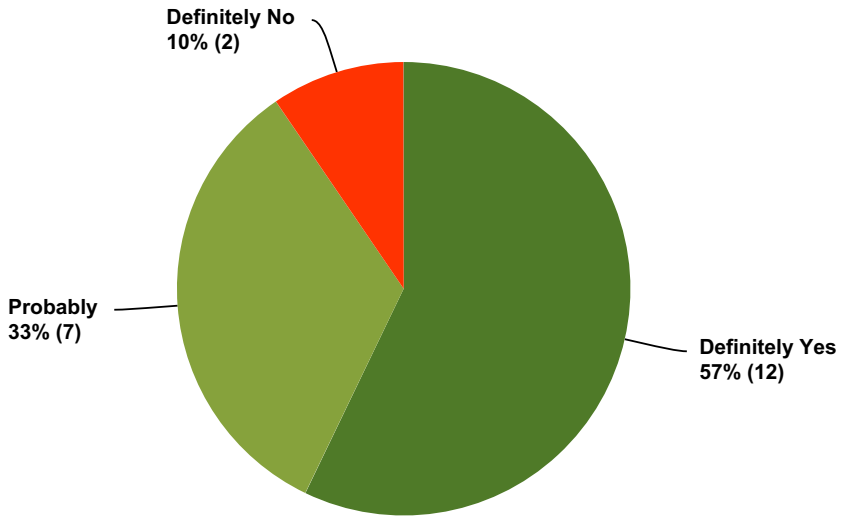
Answered: 21 Skipped: 1



Answer Choices	Responses	
Definitely Yes	67%	14
Probably	24%	5
Not Likely	0%	0
Definitely No	10%	2
Unsure	0%	0
Total		21

Q8 Does a desire to provide better habitat for fish and wildlife motivate you to support (by direct action) efforts to improve Witters Lake?

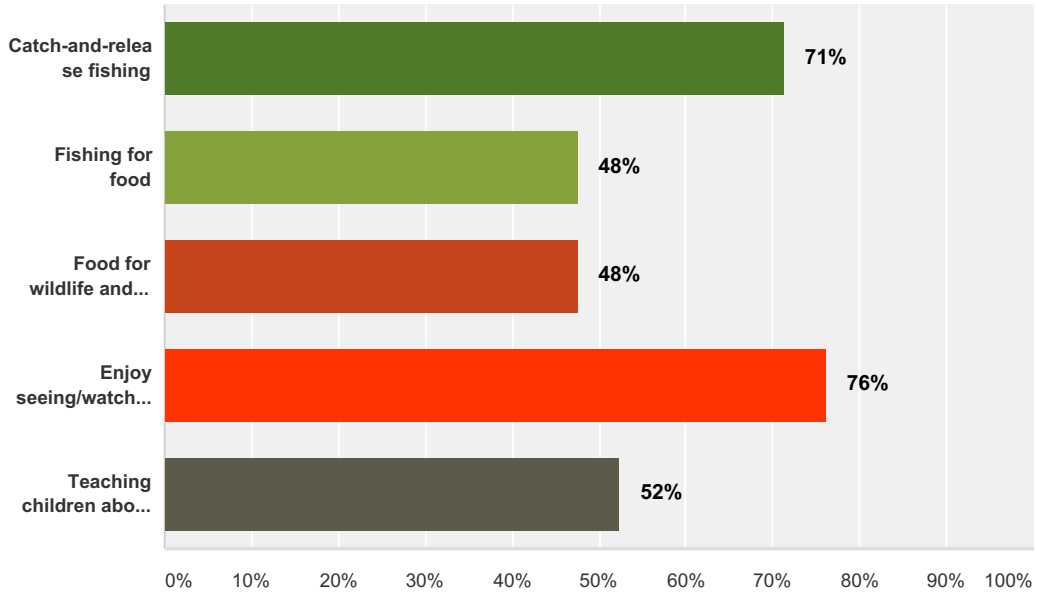
Answered: 21 Skipped: 1



Answer Choices	Responses	
Definitely Yes	57%	12
Probably	33%	7
Not Likely	0%	0
Definitely No	10%	2
Unsure	0%	0
Total		21

Q9 For what purposes do you value the fishery in Witters Lake? (Check all that apply.)

Answered: 21 Skipped: 1

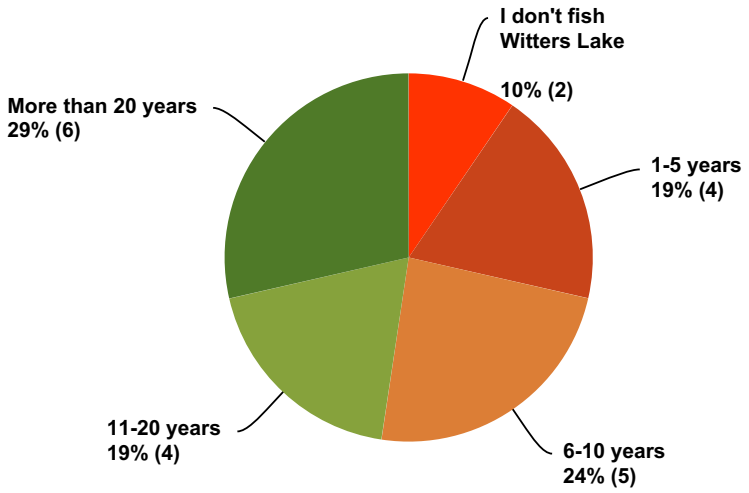


Answer Choices	Responses	
Catch-and-release fishing	**71%**	15
Fishing for food	**48%**	10
Food for wildlife and birds	**48%**	10
Enjoy seeing/watching fish	**76%**	16
Teaching children about fishing/lakes	**52%**	11
Total Respondents: 21		

#	Other (please specify)	Date
	There are no responses.	

Q10 How many years of fishing experience do you have on Witters Lake?

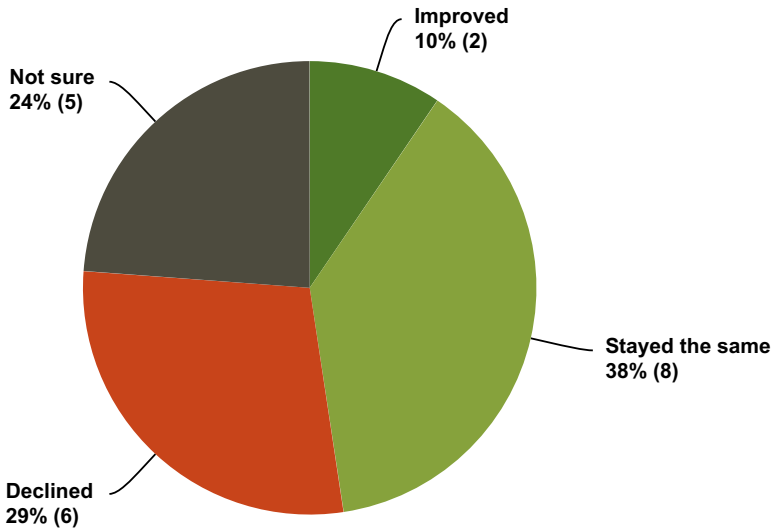
Answered: 21 Skipped: 1



Answer Choices	Responses	
I don't fish Witters Lake	10%	2
1-5 years	19%	4
6-10 years	24%	5
11-20 years	19%	4
More than 20 years	29%	6
Total		21

Q11 In the years you have been fishing Witters Lake, would you say the quality of fishing has...

Answered: 21 Skipped: 1



Answer Choices	Responses	
Improved	10%	2
Stayed the same	38%	8
Declined	29%	6
Not sure	24%	5
Total		21

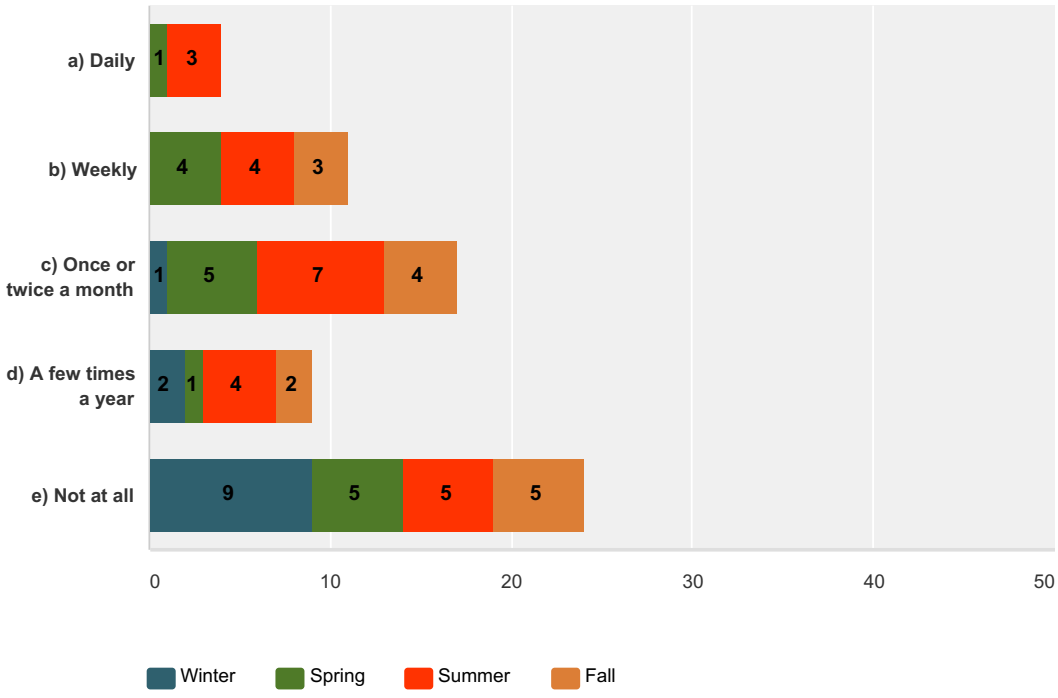
Q12 What factors do you feel have contributed to the change in fishing?

Answered: 12 Skipped: 10

#	Responses	Date
1	The amount of muck is decreasing the amount of water in the lake, less oxygen, and makes it harder for the fish to spawn and survive. The spawning beds that were there in the 50's & 60's are now covered with muck. Decreasing the lake depth makes it harder for the fish to survive the winter.	11/22/2015 9:58 PM
2	When there is a release for restock, there is an influx of put-ins who come to fish out all the new stock.	11/21/2015 3:19 PM
3	others coming to our lake and catching more than there limit and keeping them	11/18/2015 5:44 PM
4	overfishing and not tossing back small sized fish allowing for more mature growth	11/18/2015 3:43 PM
5	bluegill size structure varies over the years, but has been excellent for past 5 or so years (9 and even 10 inches not unusual)	11/18/2015 2:04 PM
6	Pressure to reduce bass population seems to have improved pan fish size but would like to see more diversity in bag, i.e. crappies and perch.	11/17/2015 7:18 PM
7	Not a fisherman, but reported by husband	11/17/2015 2:29 PM
8	No sure. Water level decrease can't be helping.	11/17/2015 2:13 PM
9	over fished by outsiders	11/17/2015 1:34 PM
10	no change	11/17/2015 10:35 AM
11	I don't think there is a lot of fishing pressure on Witters Lake. Also I think the size restriction for bass that was lifted several years ago by the DNR helped to reduce the bass population and helped the panfish population, both in size and numbers.	11/16/2015 2:48 PM
12	It is cyclical.	11/16/2015 1:36 PM

Q13 When and how often do you typically fish Witters Lake?(Please answer a-e)

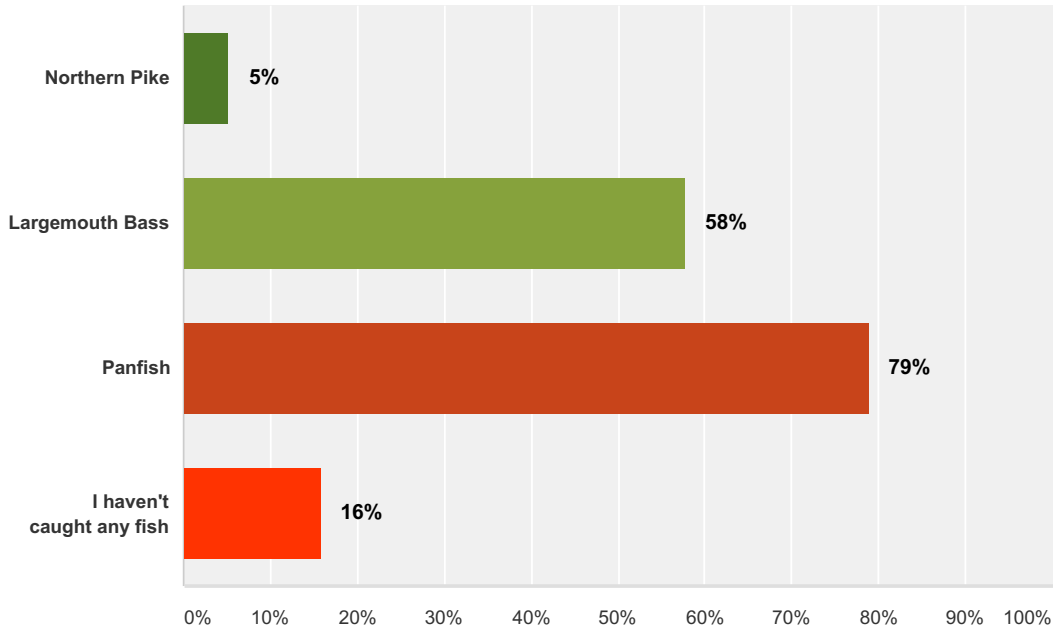
Answered: 21 Skipped: 1



	Winter	Spring	Summer	Fall	Total Respondents
a) Daily	**0%** 0	**33%** 1	**100%** 3	**0%** 0	3
b) Weekly	**0%** 0	**57%** 4	**57%** 4	**43%** 3	7
c) Once or twice a month	**10%** 1	**50%** 5	**70%** 7	**40%** 4	10
d) A few times a year	**29%** 2	**14%** 1	**57%** 4	**29%** 2	7
e) Not at all	**100%** 9	**56%** 5	**56%** 5	**56%** 5	9

Q14 What fish do you typically catch at Witters Lake? Check all that apply.

Answered: 19 Skipped: 3

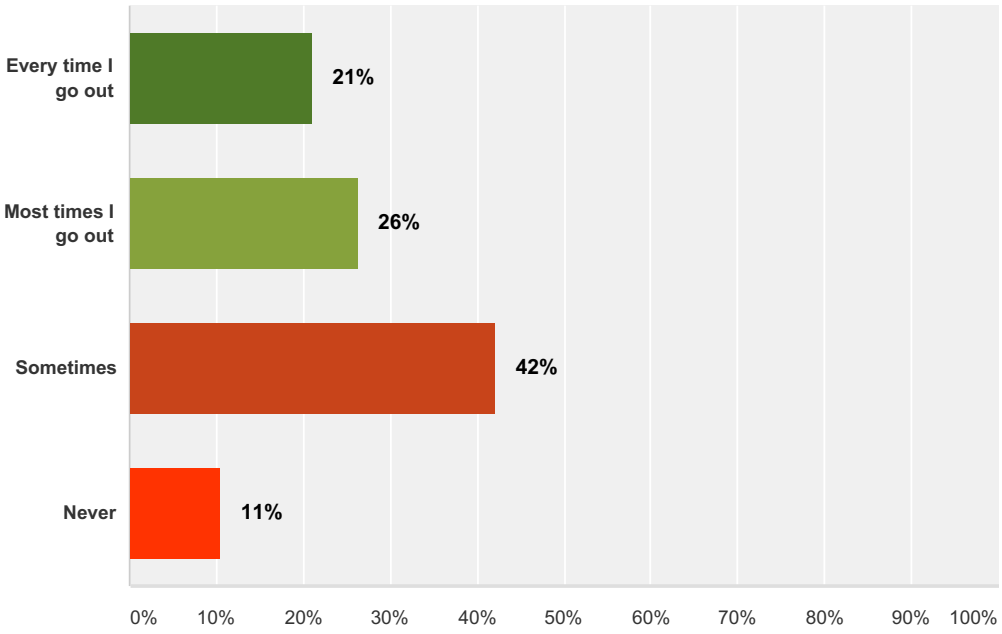


Answer Choices	Responses	
Northern Pike	5%	1
Largemouth Bass	58%	11
Panfish	79%	15
I haven't caught any fish	16%	3
Total Respondents: 19		

#	Other (please specify)	Date
1	Blue gill and never kept a fish, toss back in lake	11/18/2015 3:43 PM
2	occasional perch and crappie throw them back	11/17/2015 7:18 PM
3	Crappie, Perch, Pumpkinseed	11/16/2015 2:48 PM

Q15 In general, how often do you catch fish on Witters Lake?

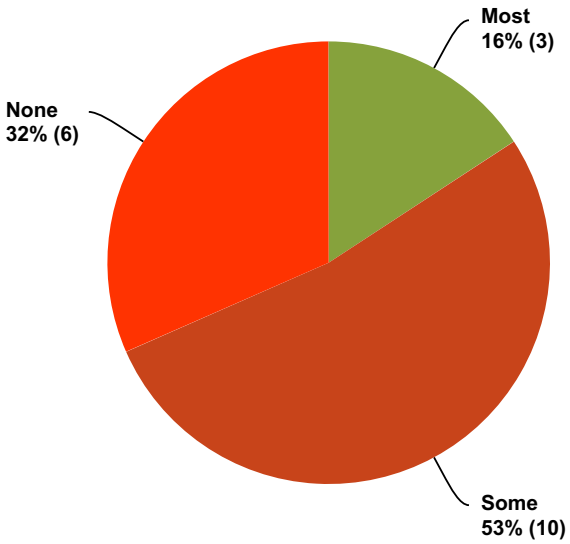
Answered: 19 Skipped: 3



Answer Choices	Responses	
Every time I go out	21%	4
Most times I go out	26%	5
Sometimes	42%	8
Never	11%	2
Total Respondents: 19		

Q16 In general, how many of the fish you catch are big enough to keep?

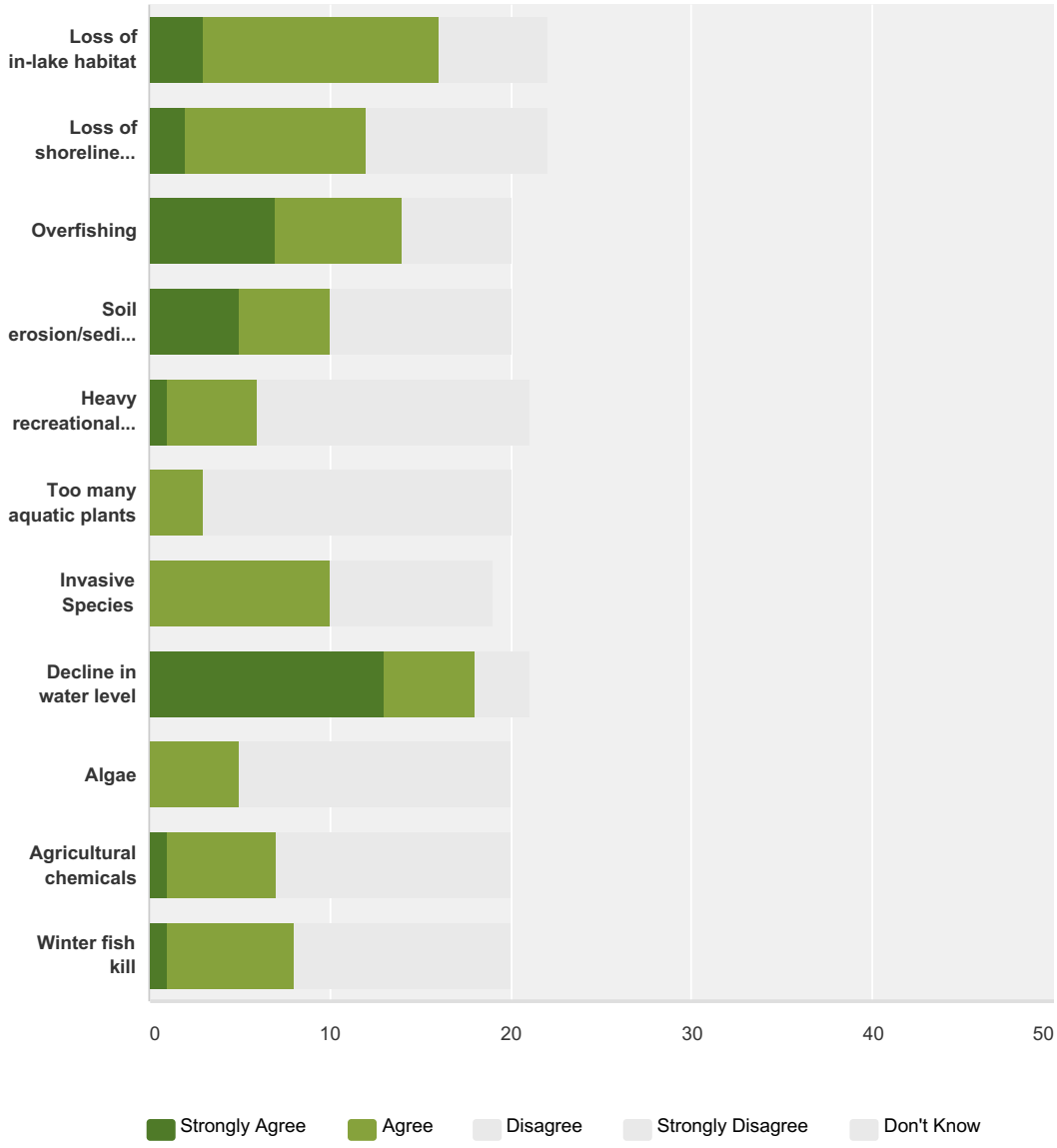
Answered: 19 Skipped: 3



Answer Choices	Responses	
All	0%	0
Most	16%	3
Some	53%	10
None	32%	6
Total		19

Q17 What do you believe is the greatest threat to the fishery in Witters Lake in the next 10 years?

Answered: 21 Skipped: 1



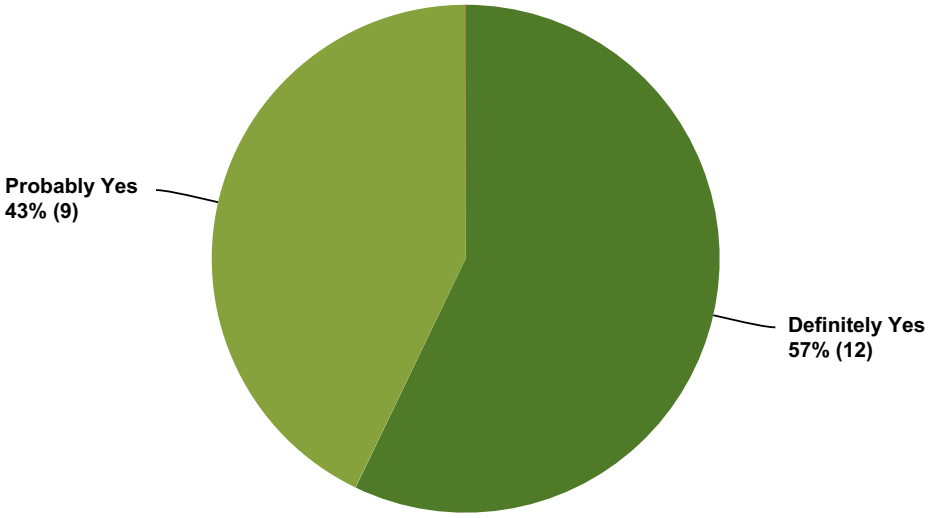
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Total Respondents
Loss of in-lake habitat	**14%** 3	**62%** 13	**10%** 2	**10%** 2	**10%** 2	21
Loss of shoreline habitat	**10%** 2	**48%** 10	**19%** 4	**10%** 2	**19%** 4	21
Overfishing	**35%** 7	**35%** 7	**15%** 3	**10%** 2	**5%** 1	20
Soil erosion/sedimentation	**25%** 5	**25%** 5	**35%** 7	**5%** 1	**10%** 2	20

Heavy recreational use	**5%** 1	**25%** 5	**55%** 11	**10%** 2	**10%** 2	20
Too many aquatic plants	**0%** 0	**15%** 3	**55%** 11	**25%** 5	**5%** 1	20
Invasive Species	**0%** 0	**53%** 10	**21%** 4	**11%** 2	**16%** 3	19
Decline in water level	**62%** 13	**24%** 5	**0%** 0	**0%** 0	**14%** 3	21
Algae	**0%** 0	**25%** 5	**35%** 7	**20%** 4	**20%** 4	20
Agricultural chemicals	**5%** 1	**30%** 6	**20%** 4	**20%** 4	**25%** 5	20
Winter fish kill	**5%** 1	**35%** 7	**30%** 6	**10%** 2	**20%** 4	20

#	Other (please specify)	Date
1	Sedimentation will eventually fill the lake and will no longer be able to be enjoyed. The sediment has turned the lake from a sand bottom to a muck bottom decreasing the area for the fish.	11/22/2015 9:58 PM
2	selective overharvest of big BG with new regs	11/18/2015 2:04 PM

Q18 Do you believe fish from Witters Lake are safe to eat?

Answered: 21 Skipped: 1



Answer Choices	Responses	
Definitely Yes	**57%**	12
Probably Yes	**43%**	9
Probably No	**0%**	0
Definitely No	**0%**	0
Unsure	**0%**	0
Total		**21**

Q19 Do you have any additional comments regarding the fishery in Witters Lake?

Answered: 6 Skipped: 16

#	Responses	Date
1	Are the weeds unhealthy because of the sediment?	11/22/2015 9:58 PM
2	concerned that limited bluegill harvest (5 bag limit) will result in overpopulation and stunting, which has been observed at times in the past	11/18/2015 2:04 PM
3	Most pan fish are blue gills by far. The five fish limit for one species is going to be very unpopular	11/17/2015 7:18 PM
4	Would it be beneficial to stock the lake?	11/17/2015 11:38 AM
5	Blue Gill population appears to be very good. Bass population is good also. I have seen a walleye caught once in a while. Northern are present but few fish for them.	11/17/2015 10:35 AM
6	I think the bass numbers have decreased, but the average size has increased in the past few years. There are still many small panfish, but on average I caught more keepers (6" and larger) this year than I remember in the past few years. I didn't catch many Crappie this year (maybe 6) but I don't think I had caught any Crappie in the past 3-4 years.	11/16/2015 2:48 PM

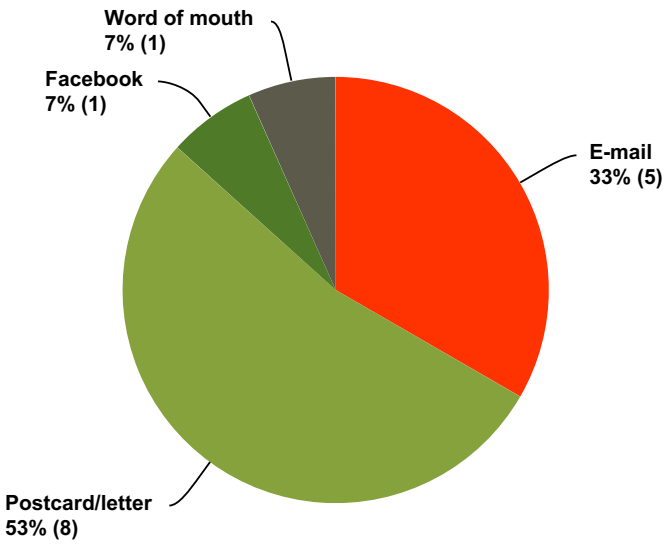
Q1 What is your Waushara County Lakes Study ID?

Answered: 16 Skipped: 0

#	Responses	Date
1	[redacted]	1/14/2016 11:05 AM
2	[redacted]	1/14/2016 11:04 AM
3	[redacted]	1/13/2016 10:35 PM
4	[redacted]	1/13/2016 1:52 PM
5	[redacted]	1/13/2016 9:49 AM
6	[redacted]	1/12/2016 10:03 AM
7	[redacted]	1/11/2016 7:14 PM
8	[redacted]	1/11/2016 6:53 PM
9	[redacted]	1/11/2016 5:11 PM
10	[redacted]	1/11/2016 5:10 PM
11	[redacted]	1/11/2016 3:46 PM
12	[redacted]	1/5/2016 11:00 AM
13	[redacted]	1/1/2016 2:03 PM
14	[redacted]	12/29/2015 1:54 PM
15	[redacted]	12/20/2015 9:58 AM
16	[redacted]	12/18/2015 3:13 PM

Q2 How did you hear about this survey?

Answered: 15 Skipped: 1

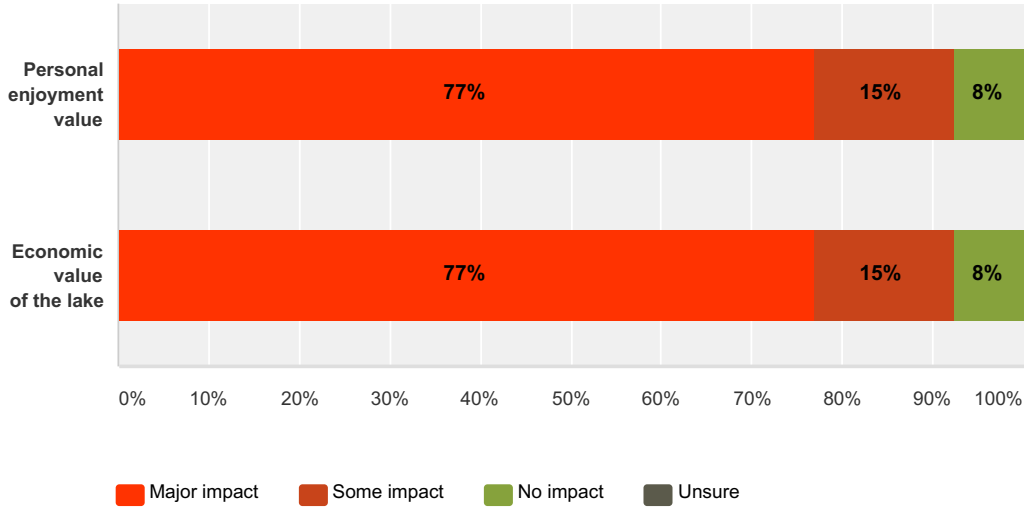


Answer Choices	Responses	
E-mail	33%	5
Newspaper	0%	0
Postcard/letter	53%	8
Facebook	7%	1
Radio	0%	0
Word of mouth	7%	1
Total		15

#	Other (please specify)	Date
1	I went looking because I hadn't gotten a notification.	1/11/2016 3:46 PM

Q3 How much impact does the water quality of Witters Lake have on the following?

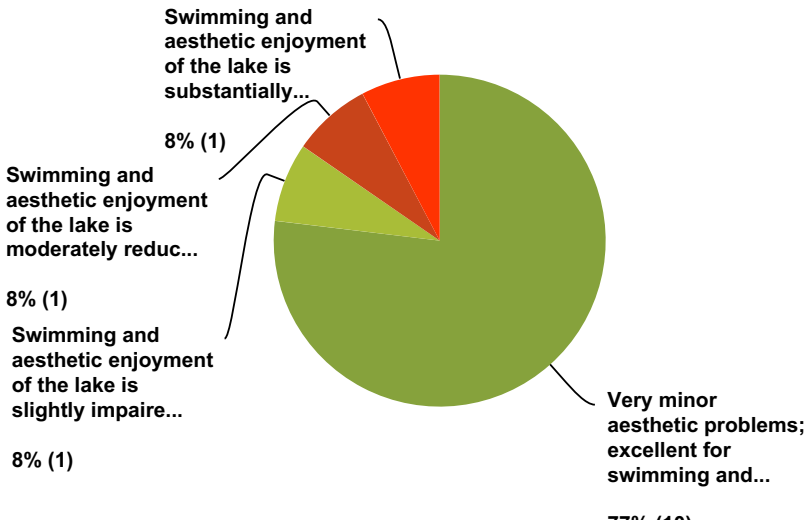
Answered: 13 Skipped: 3



	Major impact	Some impact	No impact	Unsure	Total
Personal enjoyment value	**77%** 10	**15%** 2	**8%** 1	**0%** 0	13
Economic value of the lake	**77%** 10	**15%** 2	**8%** 1	**0%** 0	13

Q4 Which statement best describes water clarity during the times you spend most on the lake?

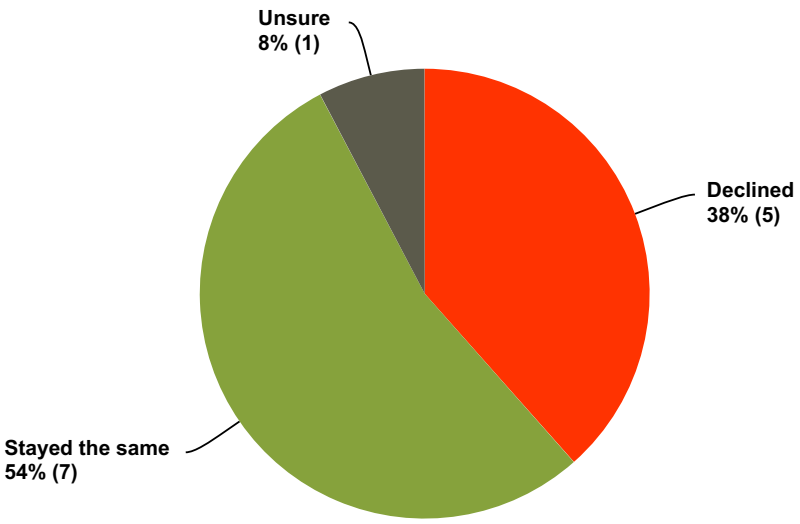
Answered: 13 Skipped: 3



Answer Choices	Responses	
Beautiful, could not be any nicer	0%	0
Very minor aesthetic problems; excellent for swimming and boating enjoyment	77%	10
Swimming and aesthetic enjoyment of the lake is slightly impaired because of algae	8%	1
Swimming and aesthetic enjoyment of the lake is moderately reduced because of algae	8%	1
Swimming and aesthetic enjoyment of the lake is substantially reduced because of algae	8%	1
Total		**13**

Q5 During the time that you have lived on, visited, or recreated on the lake, how would you say the water quality has changed?

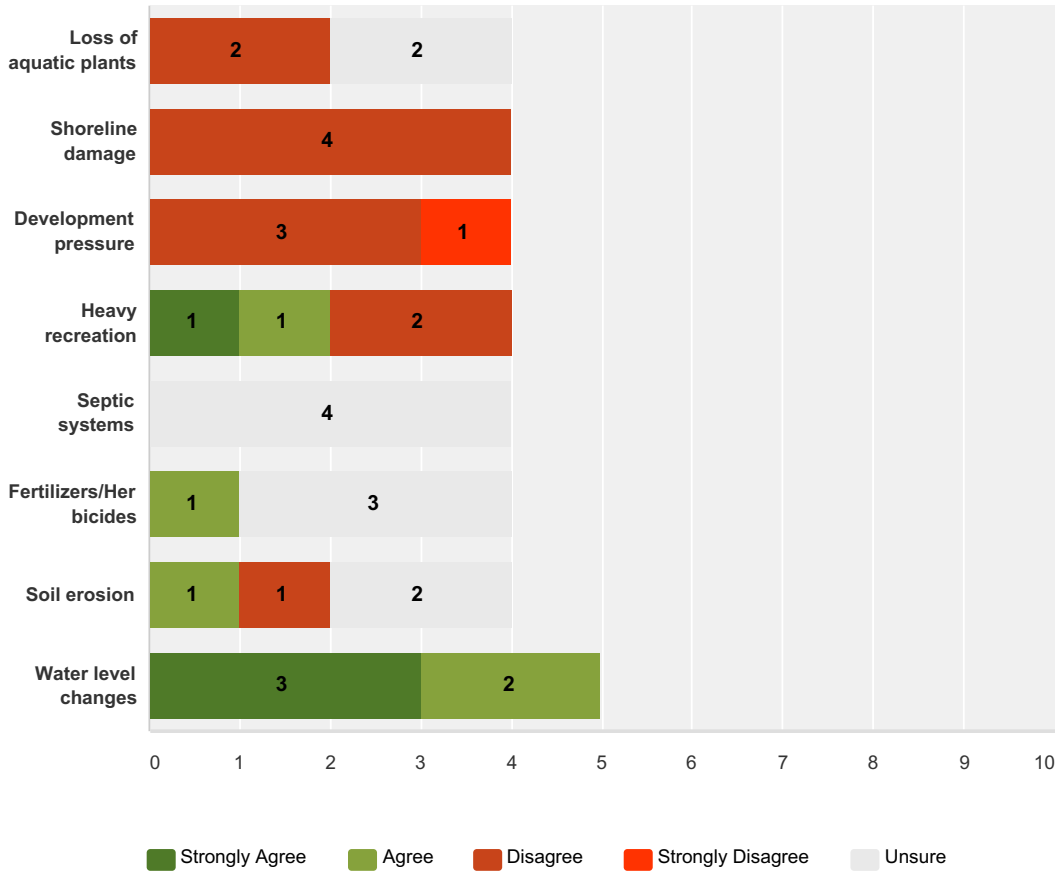
Answered: 13 Skipped: 3



Answer Choices	Responses	
Improved	0%	0
Declined	38%	5
Stayed the same	54%	7
Unsure	8%	1
Total		13

Q6 If it has declined, in your opinion, what are the primary causes?

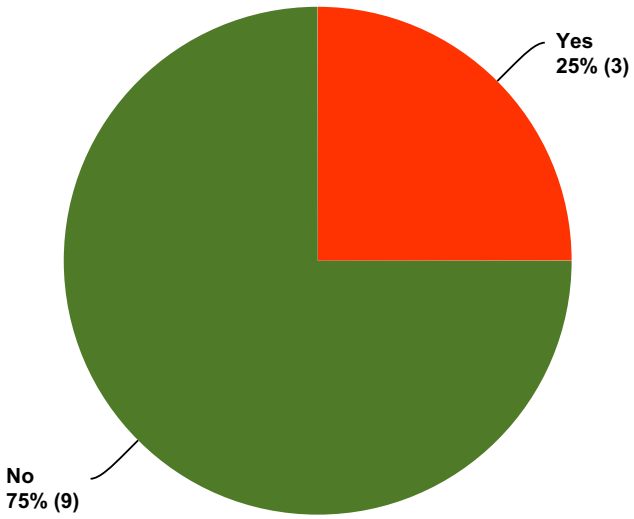
Answered: 5 Skipped: 11



	Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure	Total Respondents
Loss of aquatic plants	0% 0	0% 0	50% 2	0% 0	50% 2	4
Shoreline damage	0% 0	0% 0	100% 4	0% 0	0% 0	4
Development pressure	0% 0	0% 0	75% 3	25% 1	0% 0	4
Heavy recreation	25% 1	25% 1	50% 2	0% 0	0% 0	4
Septic systems	0% 0	0% 0	0% 0	0% 0	100% 4	4
Fertilizers/Herbicides	0% 0	25% 1	0% 0	0% 0	75% 3	4
Soil erosion	0% 0	25% 1	25% 1	0% 0	50% 2	4
Water level changes	60% 3	40% 2	0% 0	0% 0	0% 0	5

Q7 Do you use herbicides or pesticides (i.e. "weed and feed") on your land?

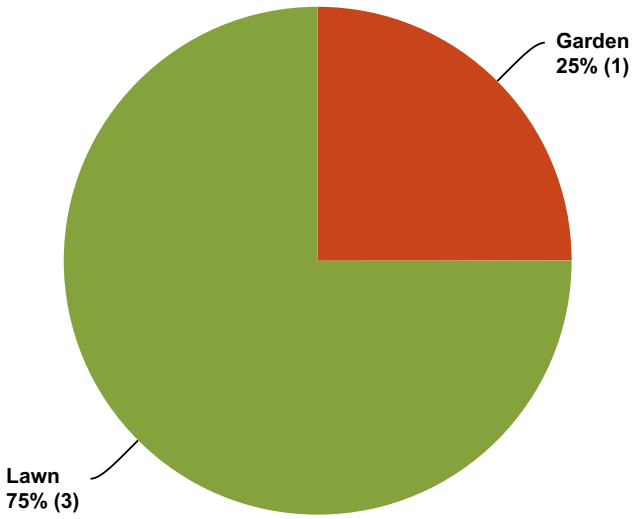
Answered: 12 Skipped: 4



Answer Choices	Responses	
Yes	25%	3
No	75%	9
Total		12

Q8 Where do you apply herbicides and/or pesticides?

Answered: 4 Skipped: 12

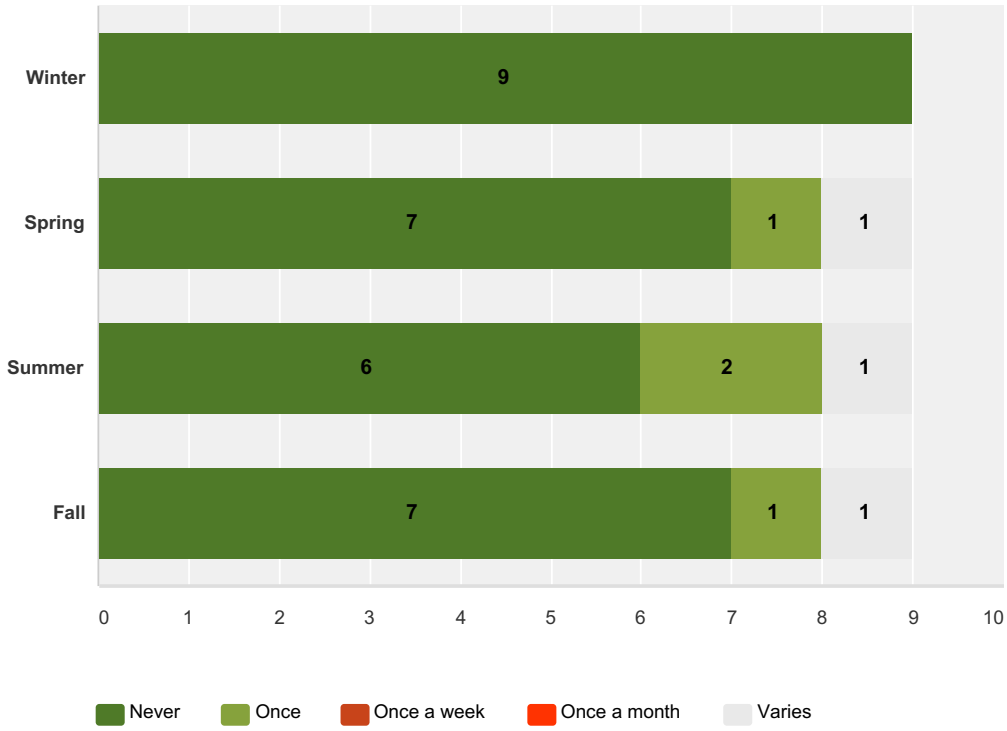


Answer Choices	Responses	
Agricultural fields	0%	0
Garden	25%	1
Lawn	75%	3
Total		4

#	Other (please specify)	Date
	There are no responses.	

Q9 In a typical year, how often do you apply herbicides and/or pesticides?

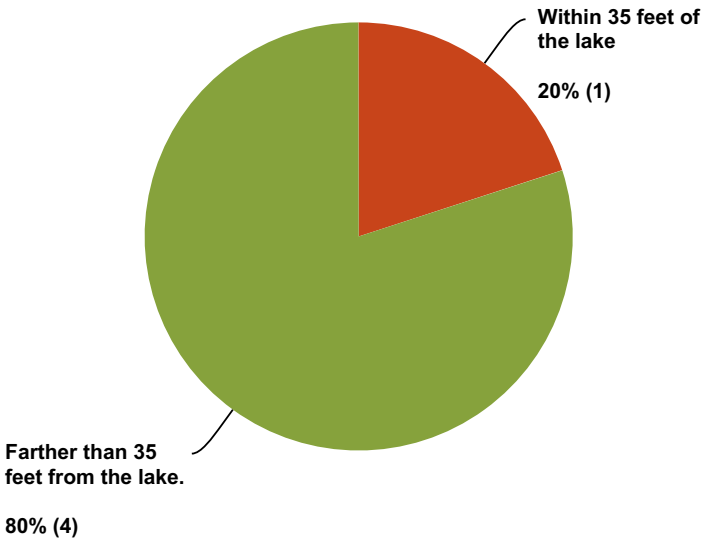
Answered: 9 Skipped: 7



	Never	Once	Once a week	Once a month	Varies	Total Respondents
Winter	**100%** 9	**0%** 0	**0%** 0	**0%** 0	**0%** 0	9
Spring	**78%** 7	**11%** 1	**0%** 0	**0%** 0	**11%** 1	9
Summer	**67%** 6	**22%** 2	**0%** 0	**0%** 0	**11%** 1	9
Fall	**78%** 7	**11%** 1	**0%** 0	**0%** 0	**11%** 1	9

Q10 If you apply herbicides and/or pesticides, how close to the lake are they applied (select the closest distance to the lake where herbicides/pesticides are applied)?

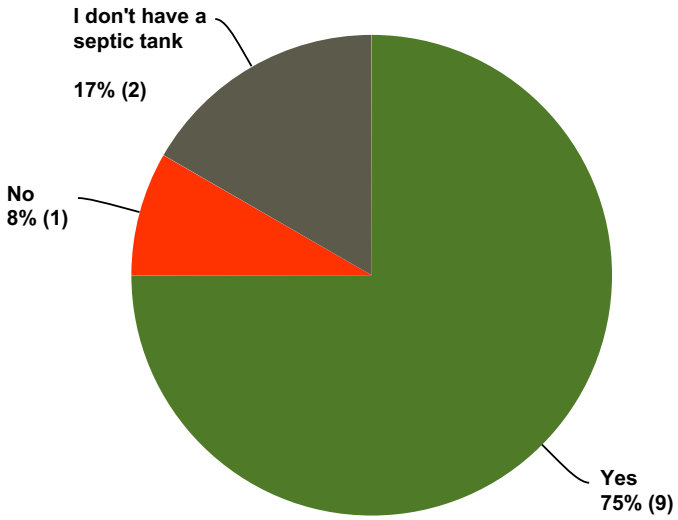
Answered: 5 Skipped: 11



Answer Choices	Responses	
Up to the lake	0%	0
Within 35 feet of the lake	20%	1
Farther than 35 feet from the lake.	80%	4
Total		5

Q11 Do you have your septic tank pumped at least every 3 years?

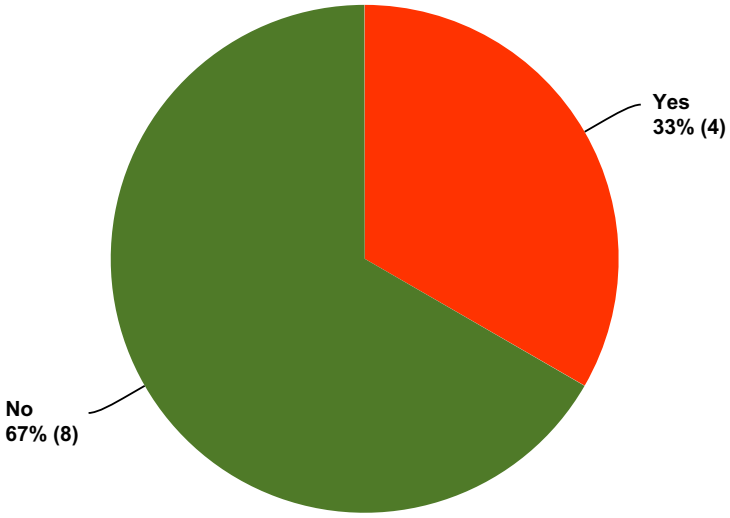
Answered: 12 Skipped: 4



Answer Choices	Responses	
Yes	75%	9
No	8%	1
I don't have a septic tank	17%	2
Total		12

Q12 Do you use fertilizer on your land?

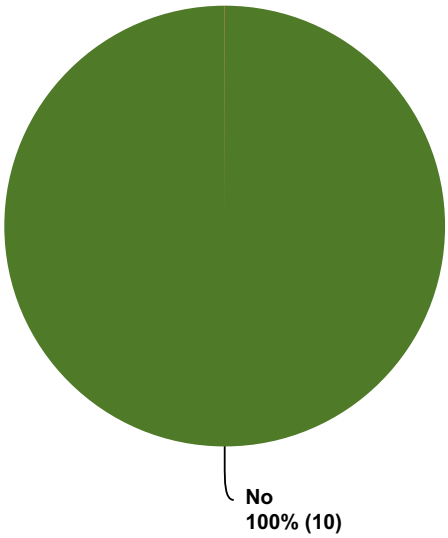
Answered: 12 Skipped: 4



Answer Choices	Responses	
Yes	33%	4
No	67%	8
Total		12

Q13 Do you use fertilizer which contains phosphorus?

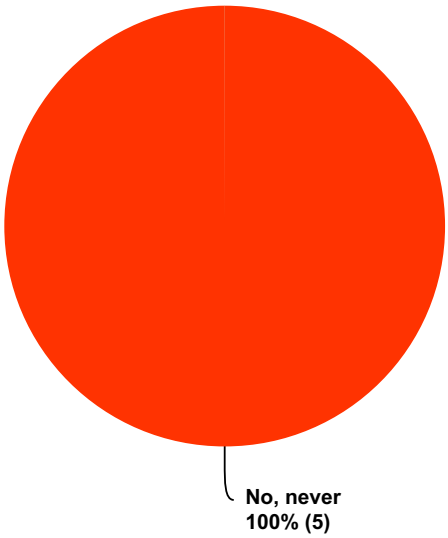
Answered: 10 Skipped: 6



Answer Choices	Responses	
Yes	0%	0
No	100%	10
I don't know	0%	0
Total		10

Q14 Do you have your soil tested before applying fertilizer?

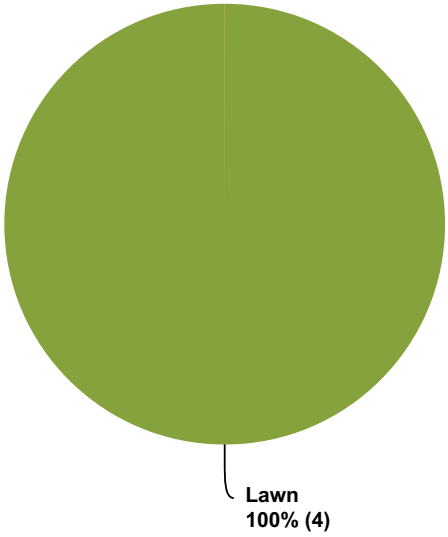
Answered: 5 Skipped: 11



Answer Choices	Responses	
Yes, all of the time	0%	0
Yes, some of the time	0%	0
No, never	100%	5
Total		5

Q15 Where do you apply fertilizer?

Answered: 4 Skipped: 12

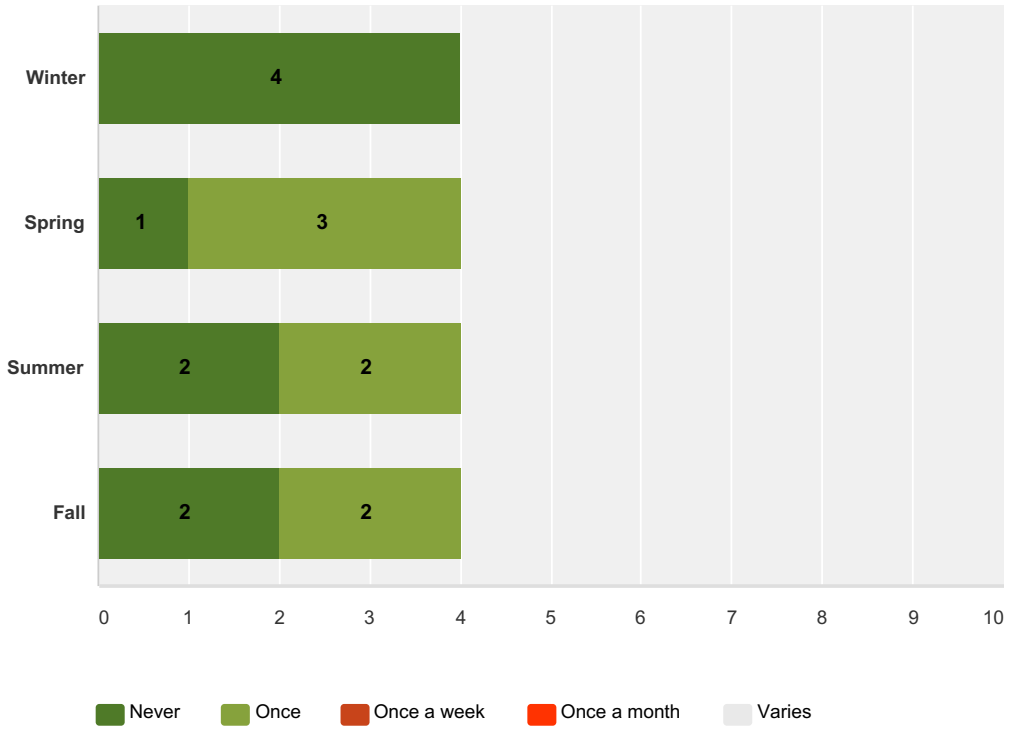


Answer Choices	Responses	
Agricultural fields	0%	0
Garden	0%	0
Lawn	100%	4
Total		4

#	Other (please specify)	Date
1	berry patches	1/5/2016 11:03 AM

Q16 In a typical year, how often do you apply fertilizer?

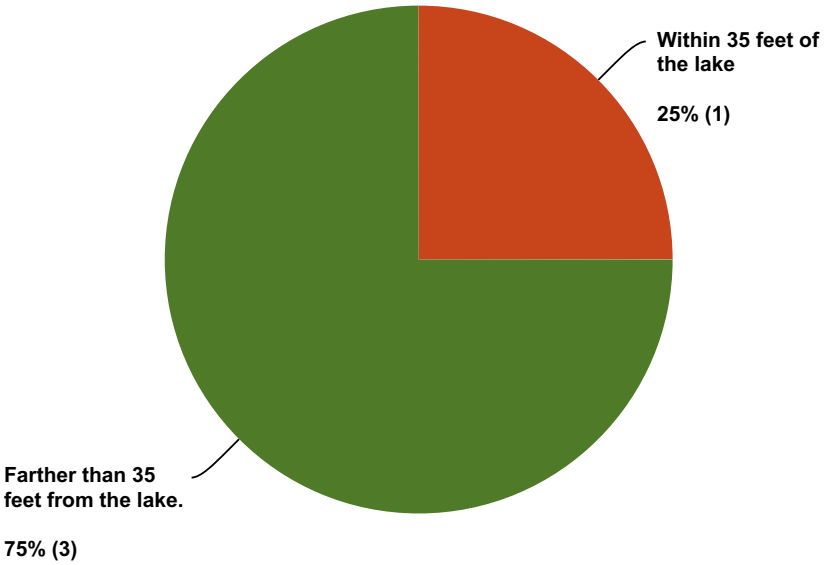
Answered: 4 Skipped: 12



	Never	Once	Once a week	Once a month	Varies	Total Respondents
Winter	**100%** 4	**0%** 0	**0%** 0	**0%** 0	**0%** 0	4
Spring	**25%** 1	**75%** 3	**0%** 0	**0%** 0	**0%** 0	4
Summer	**50%** 2	**50%** 2	**0%** 0	**0%** 0	**0%** 0	4
Fall	**50%** 2	**50%** 2	**0%** 0	**0%** 0	**0%** 0	4

Q17 If you apply fertilzer on lakefront property, how close to the lake is it applied (select the closest distance to the lake where fertilzer is applied)?

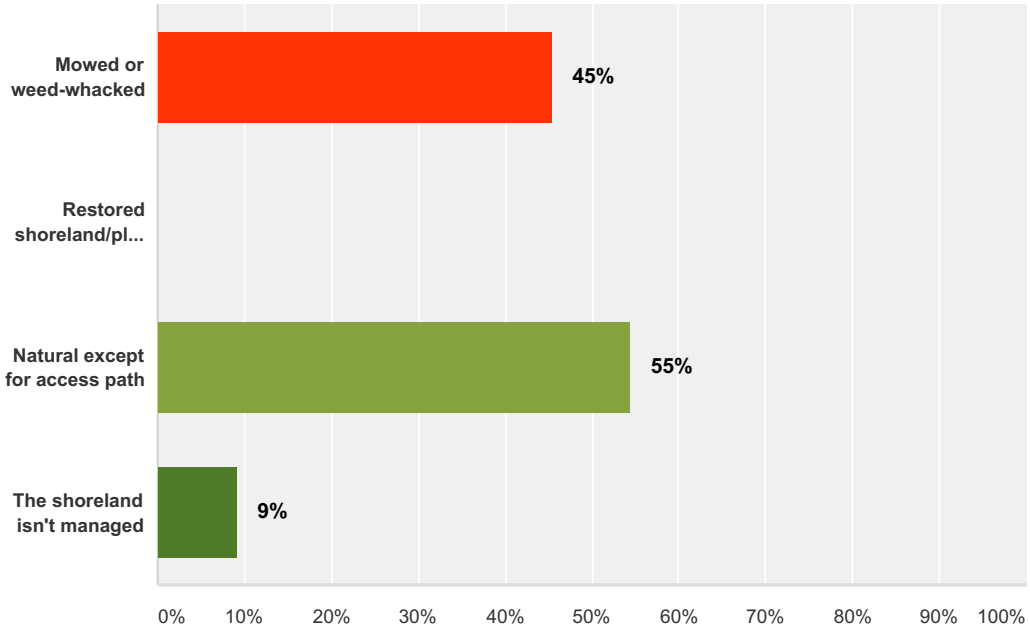
Answered: 4 Skipped: 12



Answer Choices	Responses	
I do not apply fertilizer on lakefront property	0%	0
Up to the lake	0%	0
Within 35 feet of the lake	25%	1
Farther than 35 feet from the lake.	75%	3
Total		4

Q18 How do you currently manage the majority of your property within 35 feet of the lake?

Answered: 11 Skipped: 5

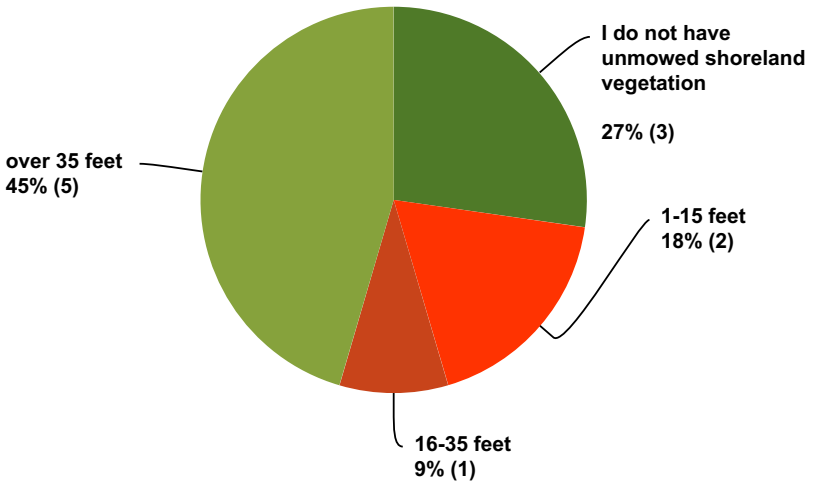


Answer Choices	Responses	
Mowed or weed-whacked	**45%**	5
Restored shoreland/planted	**0%**	0
Natural except for access path	**55%**	6
The shoreland isn't managed	**9%**	1
Total Respondents: 11		

#	Other (please specify)	Date
1	My house is less than 35 feet from the lake. I have a mowed area by house, but have let the shoreline go to natural for about 8'.	1/14/2016 11:08 AM
2	Our property in not waterfront property	12/29/2015 1:59 PM

Q19 If you have unmowed shoreland vegetation, how far inland from the water's edge does it extend?

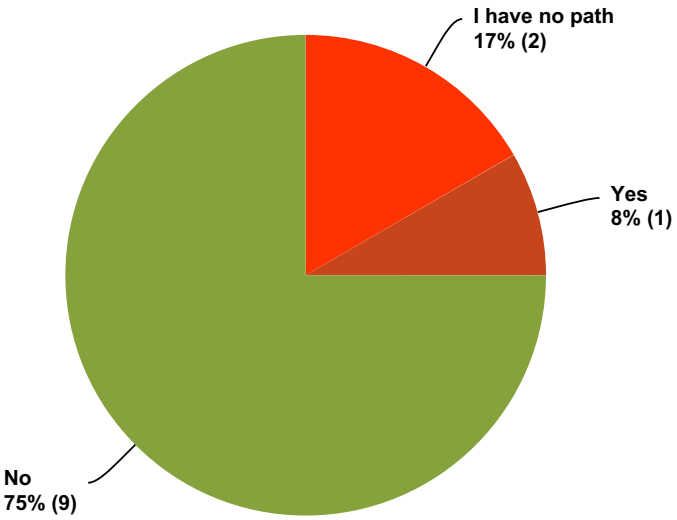
Answered: 11 Skipped: 5



Answer Choices	Responses	
I do not have unmowed shoreland vegetation	27%	3
1-15 feet	18%	2
16-35 feet	9%	1
over 35 feet	45%	5
Total		11

Q20 Have you observed erosion from your path to the lake?

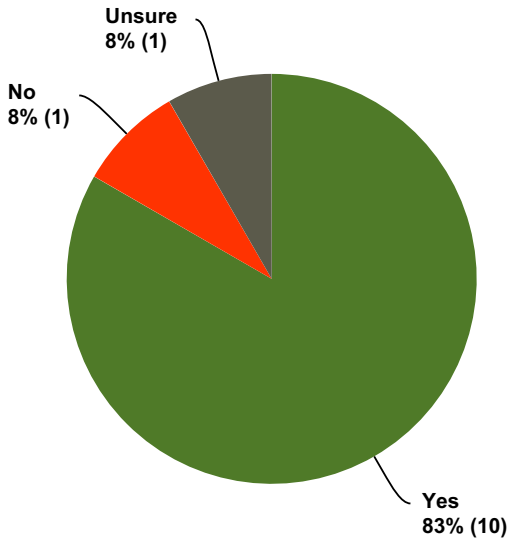
Answered: 12 Skipped: 4



Answer Choices	Responses	
I have no path	17%	2
Yes	8%	1
No	75%	9
Unsure	0%	0
Total		12

Q21 Did you understand the importance of shoreland vegetation before reading this?

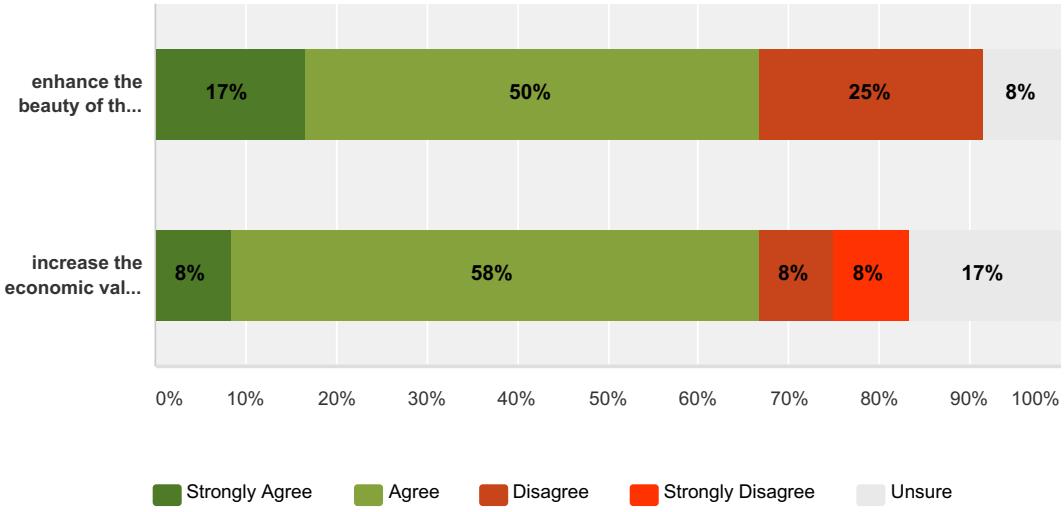
Answered: 12 Skipped: 4



Answer Choices	Responses	
Yes	83%	10
No	8%	1
Unsure	8%	1
Total		12

Q22 In your opinion, does shoreland vegetation...

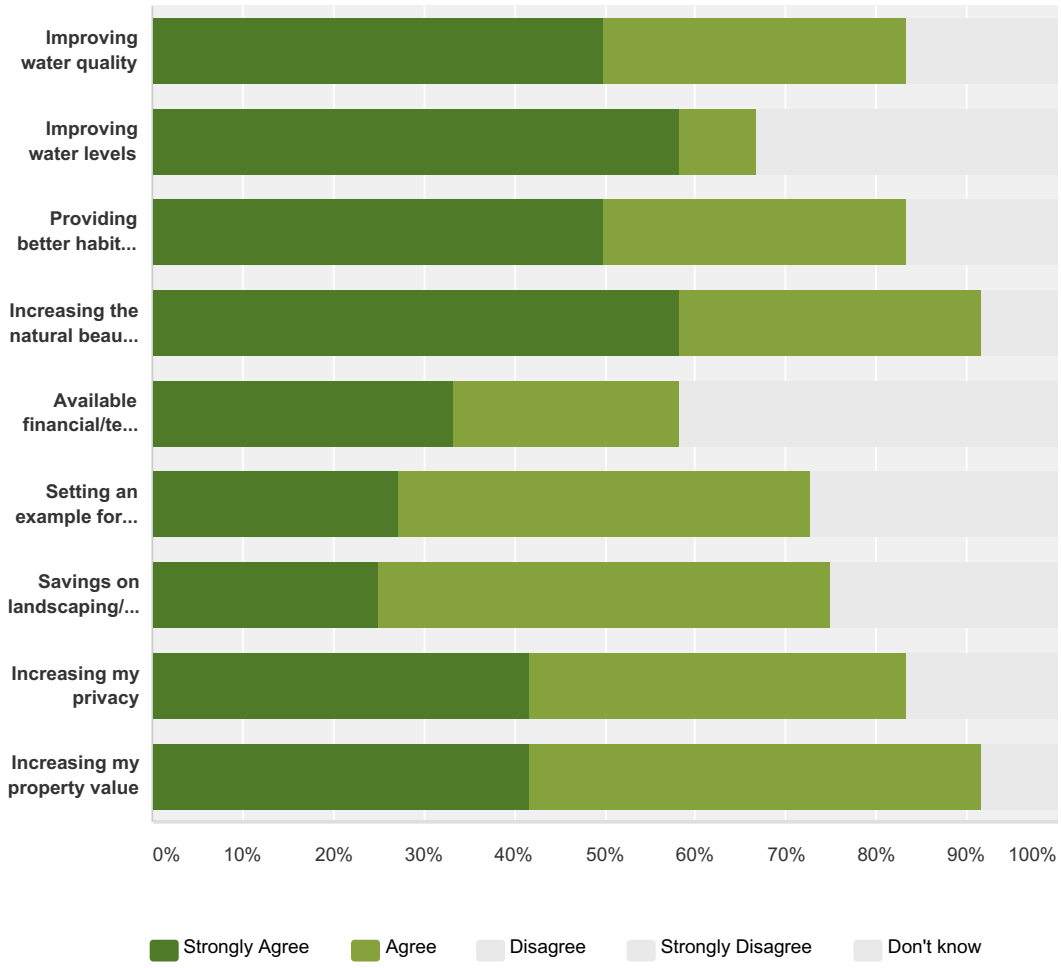
Answered: 12 Skipped: 4



	Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure	Total
enhance the beauty of the property?	**17%** 2	**50%** 6	**25%** 3	**0%** 0	**8%** 1	12
increase the economic value of the property?	**8%** 1	**58%** 7	**8%** 1	**8%** 1	**17%** 2	12

Q23 What might motivate you to change how you manage your land?

Answered: 12 Skipped: 4



	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't know	Total
Improving water quality	**50%** 6	**33%** 4	**8%** 1	**0%** 0	**8%** 1	12
Improving water levels	**58%** 7	**8%** 1	**17%** 2	**0%** 0	**17%** 2	12
Providing better habitat for fish and wildlife	**50%** 6	**33%** 4	**8%** 1	**0%** 0	**8%** 1	12
Increasing the natural beauty of my property	**58%** 7	**33%** 4	**8%** 1	**0%** 0	**0%** 0	12
Available financial/technical assistance	**33%** 4	**25%** 3	**25%** 3	**8%** 1	**8%** 1	12
Setting an example for community members	**27%** 3	**45%** 5	**27%** 3	**0%** 0	**0%** 0	11
Savings on landscaping/maintenance costs	**25%** 3	**50%** 6	**25%** 3	**0%** 0	**0%** 0	12

Increasing my privacy	**42%** 5	**42%** 5	**17%** 2	**0%** 0	**0%** 0	12
Increasing my property value	**42%** 5	**50%** 6	**8%** 1	**0%** 0	**0%** 0	12

#	Other (please specify)	Date
1	If it decreases the amount of muck at the bottom of the lake	1/1/2016 2:12 PM