FINDLEY LAKE
Watershed Foundation
LAKE STEWARDS SINCE 1949

Strategic Management Plan for Findley Lake and the Watershed

Update to "The Management of Findley Lake and It's Watershed", 2002 and "Total Maximum Daily Load for Phosphorus in Findley Lake", 2008

2024

Revision Log

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Purpose

The purpose of this strategic management plan is to update lake and watershed management practices for implementation, and to put forth a comprehensive, integrated strategic plan and schedule to improve the water quality and usability of Findley Lake for generations to come.

Background Resources and Information

Foundational Reports

The following 3 reports form the foundation for this strategic management plan.

The Management of Findley Lake and Its Watershed, January 2002, prepared by the Findley Lake Watershed Management Team (The Findley Lake Watershed Management Team, 2002), presents prioritized actions in the form of management recommendations with methods and strategies for their implementation. It presents plans for informing and involving the public, measuring, and monitoring success, plus securing local, state and federal funding necessary for implementation.

The State of Findley Lake report, January 2002 (Chautauqua County Department of Health, January 2002), prepared by Chautauqua County Department of Health, characterizes sources of nutrients and sediment flowing to Findley Lake contributing to eutrophication and examines the chemical and biological conditions of the lake. This baseline data served as a guide for the team preparing the Management of Findley Lake and Its Watershed report and along with CSLAP data collected since 2002, provides a baseline for measuring results from implementation of management actions.

The Total Maximum Daily Load (TMDL) for Phosphorus in Findley Lake report (The Cadmus Group, prepared for USEPA REg 2 and NYS DEC, 2008), July 2008, prepared by The CADMUS Group for U.S. EPA, Regions 2 and NY State Department of Environmental Conservation (NYS DEC), is the current DEC-accepted plan for lake management. The following excerpt from the report describes the driving cause for preparation of the report and the purpose of the report:

> Findley Lake is presently among the lakes listed on the 1999 Allegheny River drainage basin PWL, with aesthetics, fishing and fish survival listed as impaired due to excessive nutrients, algae and weeds, and reduced water clarity (NYS DEC, 2006). The results from state sampling efforts

confirm eutrophic conditions in Findley Lake, with the concentration of phosphorus in the lake exceeding the state guidance value for phosphorus (20 µg/L or 0.020 mg/L, applied as the mean summer, epilimnetic total phosphorus concentration), which increases the potential for nuisance summertime algae blooms. In 2004, Findley Lake was added to the New York State Department of Environmental Conservation (NYS DEC) CWA Section 303(d) list of impaired waterbodies that do not meet water quality standards due to phosphorus impairments, but not designated as a "high priority for TMDL development" (NYS DEC, 2004). Based on this listing, a TMDL for phosphorus is being developed for the lake to address the impairment.

Reports, Data and Information After 2008

The following reports, data and information published after the foundational reports inform both the strategic objectives and updates to the management practices presented in later sections of this report. Each item in this section includes a brief description of the contents and salient results, recommendations, or information that is pertinent to either the strategic objectives and/ or the management practices.

CSLAP Data

The Findley Lake Watershed Foundation participated in the Citizens Statewide Lake Assessment Program (CSLAP) in the following years since the 2008 TMDL Report: 2009, 2010, 2011,2012, 2013, 2015, 2018, 2019, 2020, and 2023 (DEC, Multiple years since 1998).

The CSLAP Reports for Findley Lake demonstrate the ongoing eutrophic state of the lake and the poor water quality for beneficial uses of the lake – primarily, recreation, public bathing. The following Q and A is from the 2018 CSLAP Report:

> *Q. Are any lake uses likely to be affected by these conditions?*
>
> *A. Findley Lake supports recreation and public bathing use. This waterbody is not designated for use as a public water supply. Public bathing is impaired by unsafe levels of water clarity, and impacted by shoreline cyanotoxins, shoreline HABs, and open water HABs. Recreation is impaired by unsafe levels of water clarity, and impacted by high frequency of algae levels above criteria protecting recreational use, shoreline cyanotoxins, and shoreline HABs. Aquatic life appears to be fully supported. Aesthetics are poor due to poor recreational perception, and impacted by poor water quality perception, excessive phosphorus levels, and HABs. Habitat is fair due to surface aquatic plant growth, dense surface aquatic plant growth, and the presence of invasive aquatic plants. Fish Consumption use is considered to be unassessed. There are no health advisories limiting the consumption of fish from this waterbody (beyond the general advice for all waters). However, due to the lack of actual fish sampling data, fish consumption use is noted as unassessed, rather than fully supported but unconfirmed.*

FINDLEY LAKE – LAKE EVALUATION AND RECOMMENDATIONS, December 2021, prepared by Princeton Hydro, LLC.

The following excerpts from the 2021 Princeton Report (Princeton Hydro, LLC, December 2021) present an overview of the data, internal load estimates for P, and in-lake management options for internal P.

Princeton Hydro designed a sampling, modeling, and recommendation protocol to evaluate internal loading in the lake through sampling and modeling and to use this data to develop site specific recommendations for potential internal nutrient control. Such restoration techniques could therefore help reduce phosphorus loading and resulting harmful algal blooms (HABs).

The report details the results of a single water quality monitoring event conducted in July 2021, an estimation of the internal nutrient release from the lake, and a list of potential management options to reduce this load and improve water quality conditions.

Internal Load Estimate

Table 3.1: Findley Lake – Internal Load Estimate Anoxic Period		Oxic Period	Watershed Load*	Total Load
Anoxic area (kg)	Oxic area (kg)	Total area (kg)	(kg)	(kg)
157	48	21	426	652
*Per TMDL				

The internal load estimate for Findley Lake is 226 kg/yr which is 35% of the annual load. On an annual basis, this is significant enough to warrant management. The internal load was also evaluated on a 120-day growing season basis by breaking the watershed load down into 12-month loading segments of 35.5 kg/P/month. In this analysis, the internal load is 61% of the growing season P load. As such, management of this load would likely produce tangible water quality benefits in a cost-effective manner for Findley Lake.

In-Lake Management Options

In-lake management for Findley Lake should focus largely on mitigating internal phosphorus release under anoxic conditions. Such management does not replace the need for ongoing watershed management including streambank stabilization, stormwater management, waterfowl management, and septic/sewer management.

Nutrient inactivation is a common in-lake management tool utilized to control phosphorus availability and internal phosphorus loading. …The most commonly used nutrient inactivant is aluminum sulfate (alum)…. New York State currently has a moratorium on the utilization of aluminum based nutrient inactivation projects but has evaluated this management technique during pilot projects in 2018. As such, regulatory restrictions on these applications may change in the future.

Destratification (complete water column mixing) aeration systems use compressed air to vertically circulate the entire water column thereby preventing thermal stratification from occurring or from persisting.

Initial capital costs for the installation of a destratification system in Findley Lake would be in the range of $150,000 to $200,000.

Draft 2024 Comprehensive Plan – Town of Mina, New York, December 2023, including the Appendix. Prepared by the Town of Mina Planning Board in consultation with Small Town Planning Services.

The Draft Comprehensive Plan for the Town of Mina (Town of Mina Planning Board and Small Town Planning Services, 2023) is a single resource that should be used to progress towards desirable outcomes for topics and issues identified as priorities by a broad spectrum of focus groups and community-wide surveys. Several elements of the Draft Comprehensive Plan relate to the lake and the watershed. The community survey provides insights into several lake-related issues important to the community. Several of the survey questions and top tier responses of interest include:

- Rank the factors which would most likely cause you to leave Findley Lake
    - Deteriorating Lake Quality (2nd priority)
- How important are the following choices to make Mina a desirable place to live:
    - Quality of Findley Lake (1st priority)

Other survey questions specifically about the lake include:

20.) Rate the lake water quality of Findley Lake (Q# 21):

- Very Good Water Quality – 5.59%
- Good Water Quality – 23.82%
- Average Water Quality – 42.65%
- Fair Water Quality – 18.53%
- Poor Water Quality – 9.41%

29.41% of respondents find the water quality of Findley Lake to be very good or good. It is notable that an almost equal number of respondents, 27.94%, find the water quality to be only fair or poor. It is obvious that over half the community is split on their feelings regarding the condition of the Lake.

21.) Are you satisfied with efforts to improve the quality of the lake?:

- Very Satisfied – 4.71%
- Satisfied – 25.00%
- Neutral – 35.00%
- Dissatisfied – 24.12%
- Very Dissatisfied – 11.18%

22.) Do you feel safe when boating, swimming, or kayaking on Findley Lake?:

- Very Safe – 17.06%
- Safe – 35.29%
- Neutral – 30.29%
- Not Safe – 12.35%
- Very Unsafe – 5.00%

23.) Depending on how you responded to the prior question, please let us know why you do feel safe or why not.:

The highest priority issues identified by respondents to the prior question are listed below in the order of importance:

- Lake users, boaters, and jet skis not following the rules (27 responses)
- Water quality for swimming (17 responses)
- Need for enforcement of rules on Lake (14 responses)
- The high volume of users – too crowded - too many boats (11 responses)
- Size and horsepower of boats on Lake (9 responses)
- Weed growth impact on use and swimming (9 responses)

The following excerpts from the Draft Comprehensive Plan help to guide the FLWF in this Strategic Management Plan.

The Lake

Findley Lake is a large part of the heritage of the Town of Mina. While farming has taken up most of the land mass in the Town, the lake and hamlet have also helped define Mina as a Town. Protecting this important asset will ensure a high quality of life for residents, attract visitors, and support the economic base of the community.

Lake Goal:

Protect and improve the water quality of Findley Lake to preserve and improve this important recreational asset that the Town of Mina has been blessed with and ensure the lake can be used in a safe and enjoyable manner for generations to come.

Objective 1: *To improve the water quality of Findley Lake*

Strategies

1.1 Examine the feasibility of innovative best management practices for addressing the recent issue of harmful algal blooms.
1.2 Implement 2023 water quality grant for Findley Lake In-Waterbody Controls for Nutrients

Objective 2: *To reduce nutrient input into Findley Lake from the watershed and mankind.*

Strategies

2.1 Develop a watershed management plan to fully articulate and prioritize solutions to maintaining the water quality within Findley Lake.
2.2 Seek additional funding to study and mitigate nutrient input from external sources.
2.3 Implement 2023 water quality grants for stormwater retrofit study and the culvert assessment report.
2.4 Minimize impacts of stormwater runoff when land is developed. Work to minimize impervious surfaces and avoid compaction of soils

over large areas in areas having hydrological vulnerability. Update land use laws to reference existing NYS DEC Notice of Intent and stormwater requirements.

Objective 3: *To preserve and improve the recreational usability of Findley Lake*

Strategies

3.1 Create an annual work plan for the management of Findley Lake, with the Findley Lake Watershed Foundation, based upon a decision model that assesses historical data on water quality, aquatic vegetation species and density, and other factors that have a bearing on predicting potential seasonal lake conditions.
3.2 Examine the feasibility of a hybrid short-term approach to lake management such as aquatic herbicides or harvesting.

Objective 4: *To enhance safety for all users of Findley Lake.*

Strategies

4.1 Sherriff Patrol increased.
4.2 Evaluate potential boat size restrictions.
4.3 Jet ski limits/ rules.
4.4 Lake rules posted.
4.5 Lake regulations are provided to all short-term rental tenants.
4.6 Post warning signs on lake conditions (algae blooms)

Region 9 Aquatic Invasive Species Monitoring Program Aquatic Vegetation Survey, Findley Lake, Chautauqua County, NY Final Report 2022, prepared by NYS Department of Environmental Conservation Bureau of Invasive Species and Ecosystem Health, Invasive Species Coordination Section in cooperation with NYS Water Resources Institute at Cornell University.

The survey (NYS DEC and NYS Water Resources Institute at Cornell University, 2022) was conducted in 2022, but due to the number of recreational users and subsequent wave action made their standard method using a motorized canoe very difficult, and thus they focused on the north side near the boat launch, as well as the heavily vegetated southern end.

Their recommendation in the report for Findley Lake follows:

> Disclaimer: Mechanical harvesting is clearly being used to manage vegetative biomass for recreational purposes. If this is the overall goal for this lake, rather than a goal of dedicated invasive plant management, then the use of a mechanical harvester will continue to meet that need. The following recommendations are based solely with ecological community health/invasive plant control in mind, not recreational access.
>
> Eurasian watermilfoil and curly-leaf pondweed are both widespread species in the region and state, and due to the extent of both species within the lakes, potential age of the infestations,

and risk of reintroduction from recreational use, eradication is likely infeasible and control strategies with this goal in mind is not recommended. Curly-leaf pondweed is of highest concern, as it occurs more frequently and at higher densities than individual native species, however it should be noted that native Potamogeton species were found at equally high frequency and density, so it is unclear how significant the ecological impact of both Eurasian watermilfoil and curly-leaf pondweed is.

Should control of these two species be pursued, a goal management for suppression/containment is most appropriate with targeted herbicide treatments in areas of high density. It is understood that mechanical harvesters have been utilized at this site in the past to decrease vegetative biomass. Mechanical harvesters are not recommended for this site as a strategy for invasive plant management unless the intention is to continue annual harvesting in perpetuity, as this will not provide adequate, lasting control of Eurasian watermilfoil or curly-leaf pondweed due to the continuous reintroduction of plant fragments. Additionally, harvesters are non-selective, and may have a significant impact on the native plant community. There is evidence that harvesters can suppress Aquatic Invasive Species (AIS) populations over time, but this is only if timely management occurs consistently for several years, even decades. Herbicide treatments could be done for one or two seasons and then spot treated intermittently at a much lower operational cost and with higher selectivity. Other non-chemical methods could be potentially successful but require substantially higher budgets and/or dedicated staff time (diver assisted suction harvesting, benthic barriers, etc.). More information on these techniques can be found in the Aquatic Ecosystem Restoration Foundation's Best Management Practices publication at http://aquatics.org/bmp.html.

Aforementioned management strategies notwithstanding, continued annual or bi-annual monitoring for high-priority species as well as consideration for introducing a seasonal boat steward for AIS prevention is recommended.

2023 Findley Lake Aquatic Invasive Species Survey, by Ezra Schwartzberg, Ph.D. and Justin Wolford Adirondack Research, November 2023.

The FLWF decided to pursue management of Eurasian watermilfoil (Myriophyllum spicatum) using the herbicide ProcellaCOR EC in 2024. The permit application to DEC for this treatment requires an AIS survey to be included. Since the 2022 survey by DEC did not survey the entire lake, the FLWF contracted with Adirondack Research to perform a full lake AIS survey.

The following figure from the report shows the Eurasian Watermilfoil beds in Findley Lake.

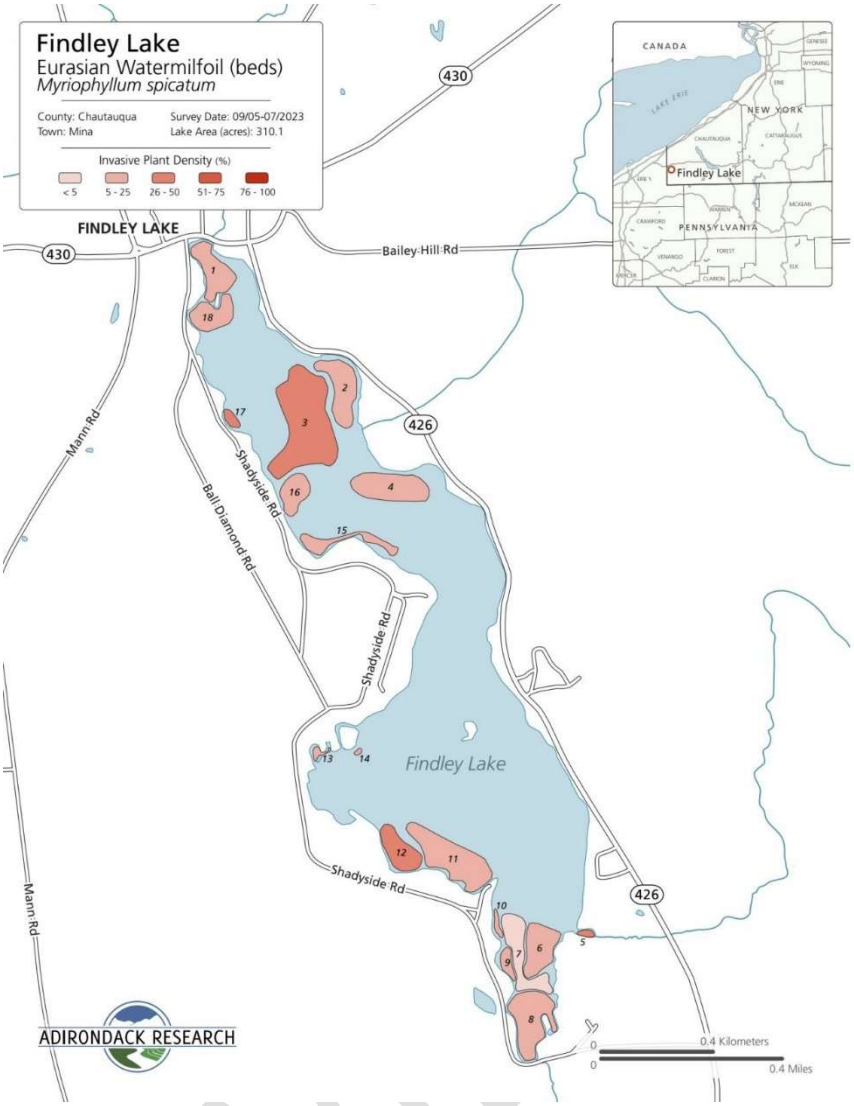

Figure 1 - Findley Lake Eurasian Watermilfoil Beds – by Adirondack Research, 2023

Town of Mina – DEC Grant Projects

In 2022 the Town of Mina was awarded grants from the DEC for 3 projects related to the water quality of Findley Lake. The final reports for the three projects are expected in early 2024. The 3 projects and a brief description of each follow:

1. Town of Mina Stormwater Retrofit Study - The Town of Mina will complete a stormwater retrofit engineering report to evaluate existing stormwater infrastructure and recommend stormwater retrofit practices. The project will reduce nutrient loading to Findley Lake.
2. Town of Mina Culvert Assessment Report - The Town of Mina will complete a comprehensive assessment of culverts in the Findley Lake watershed to identify any stream culverts that are undersized or failing. The project will reduce nutrients from erosion in tributaries to Findley Lake.

3. Town of Mina In-Waterbody Controls for Nutrients Report - The Town of Mina will complete an engineering study to assess the benefits of using in-waterbody controls for nutrients in Findley Lake. The report will evaluate existing nutrient loading conditions and recommend in-waterbody controls to reduce nutrient pollution.

Sewer District Formation

On October 21, 2023, the Town of Mina held a vote regarding the establishment of a sewer district, which was approved by eligible voters within the proposed sewer district. The implementation of this project will eliminate a major source of phosphorus entering Findley Lake from septic systems surrounding the lake. This will be addressed in the strategic plans for controlling external sources of pollutants.

Strategic Objectives and Plans

The following table of strategic objectives and plans is based on the Implementation Table for the Lake in the appendix of the Draft 2024 Comprehensive Plan (Town of Mina Planning Board with Small Town Planning Services, 2023), however the information is reframed and additional information is included here.

Table 1 Strategic Objectives and Plans

Category	Issues and Current Problem	Likely Causes	Goal/ Objective	Strategic Plan/ Actions	Priority	Tasks and Responsible Party	Cost	Timing
Lake Water Quality	Findley Lake is in a eutrophic condition and is listed as impaired due to excessive nutrients, algae and weeds, and reduced water clarity (NYS DEC, 2006). Algae growth causes the lake to look cloudy and is unpleasant for those wanting to swim or engage in water sports. Late summer Harmful Algal Blooms (HABs) can be harmful to people and pets. Algal blooms can also result in anoxic conditions, which can cause fish to avoid those areas or can cause fish kills.	Excessive Phosphorus, which has been shown to be the limiting nutrient in Findley Lake is a main cause of eutrophication. Total phosphorus concentrations in the lake above values of 0.05 mg/L can promote bloom like formations. While both external and internal sources contribute phosphorus into the lake water, sediment deeper than 15 ft may become anoxic during the late summer and release significant phosphorus into the water, causing blooms. (Princeton Hydro, LLC, December 2021) Canada geese are a large contributor of phosphorus to lakes. The New Hampshire Dept. of Environmental Services says: One goose can consume up to four pounds of grass per day, creating about three pounds of fecal matter daily. In large concentrations, this matter can contribute to excessive nutrient loading because fecal matter contains 76 percent carbon, 4.4 percent nitrogen, and 1.3 percent phosphorus. These nutrients can cause algal blooms and excessive plant growth in lakes. (New Hampshire Dept. of Environmental Services, 2019 - WD-BB-53)	Slow or reverse eutrophication of Findley Lake. Reduce algal blooms and eliminate HABs resulting in the lake being clear or almost clear the entire summer. Maintain dissolved oxygen levels throughout the lake at desired levels for a healthy lake ecosystem.	Consider the In-Waterbody Controls for Nutrients Report (one of the 3 Town Grants) and engage consultant to advance in-waterbody nutrient controls. Consider any further control measures if in-waterbody controls are deemed to be insufficient to achieve the goal/ objective.	1	1. Select Best Management Practice(s) (BMPs) to implement. [Town, FLWF]	Minimal	2024
					1	2. Obtain community support, permits and funding to implement the BMP, then obtain design and specs.	$50K	2024
					1	3. Implement the BMP.	$100 K to $500 K	TBD
						4. Monitor results.	TBD	Following implementation
				Implement external nutrient source elimination for septic systems around the lake.	1	1. Implement the sewer district, construct and operate the sewer system and treatment plant. [Town]	$26M	2024-2026
				Consider the Town of Mina Stormwater Retrofit Study and implement recommended nutrient source controls for stormwater runoff.	2	1. Select BMP(s) to implement. [Town, FLWF]	Minimal	2024
						2. Obtain community support, permits and funding to implement the BMP.	Minimal	TBD
						3. Implement the BMP.	TBD	TBD
						4. Monitor results.	TBD	Following implementation
				Reduce nutrients entering the lake from agricultural runoff.	2	1. Coordinate with the County Soil and Water Conservation District office, the State Soil and Water Conservation Committee, and farm owners with significant operations within the watershed to understand current plans and monitoring results and any need or benefits for changes. [FLWF, Town]	Minimal	2024
					2	2. Decide what BMPs (if any) to implement. [County, Farm Owners]	Minimal	2024

Category	Issues and Current Problem	Likely Causes	Goal/ Objective	Strategic Plan/ Actions	Priority	Tasks and Responsible Party	Cost	Timing
					2	3. Identify potential funding sources and secure funding. [County, Farm Owners]	Minimal	2024-2025
					2	4. Implement projects. [Farm owners]	TBD	TBD
				Reduce nutrients entering the lake from runoff from adjacent properties around the lake.	1	1. Continue to educate, publicize and encourage property owners around the lake to plant buffer gardens. Publicize implementations. [FLWF]	Minimal	Ongoing
				Investigate Canada Goose management options allowable in NY and implement viable option(s)	2	1. Investigate how to manage nuisance Canada Geese in NY per DEC Guidelines. (NY DEC) 2. Prepare and implement Canada Goose management plan for Findley Lake.	TBD	TBD
Water Quality Health Hazards	Harmful Algal Blooms (HABs) and e-coli (an indicator that other pathogens may be present) may be health hazards to both humans and pets.	HABs can occur during the summer (more often late summer) resulting from phosphorus being released from bottom sediments when anoxic conditions occur. Sources of E. coli in lakes are: · Failing septic systems · Manure from agricultural runoff · Feces from animals or humans. (Clean-Flo, 2023)	Inform public of unhealthy water quality – protect human and pet health.	Monitor regularly for unhealthy water quality – namely HABs and e-coli and communicate any unhealthy conditions.	1	1. The County will continue to monitor the beaches of Paradise Bay Campground and The Camp at Findley for e-coli. 2. Expand the number of people looking for and reporting HABs to the DEC web-site as part of the CSLAP monitoring program. 3. Prepare and implement a communications program for confirmed HABs.	Minimal	2024
			Reduce/ eliminate sources.	All Strategic Plan/ Actions for the “Water Quality” category above.	*	1. *See all Tasks for “Water Quality” category above.	*	*

Category	Issues and Current Problem	Likely Causes	Goal/ Objective	Strategic Plan/ Actions	Priority	Tasks and Responsible Party	Cost	Timing
Rooted Aquatic Plant Management	Aquatic plants are a vital part of any lake or pond. They convert sunlight and chemical elements into living plant tissue. Fish, waterfowl, insects, mammals, and microscopic animals use the plants for food. Plants also replenish the aquatic environment with oxygen, which is essential to aquatic animals. Additionally, rooted plants create a varied aquatic environment in which fish food organisms reside. They also provide cover for spawning fish, nesting waterfowl, shoreline mammals, and their young. Although they are important to the aquatic environment, plants frequently conflict with recreational and economic interests. A need, therefore, exists for proper aquatic plant management to ensure that the natural environment and human interests are mutually protected. (EGLE Environmental Assistance Center, State of Michigan, Rev. 01/2021) Nuisance rooted aquatic plants (what we often call weeds) have been a problem since at least the 1930s. (Chautauqua County Department of Health, January 2002). Rooted aquatic plants growing at or near the surface and floating on the surface: • Gets wrapped around propeller shafts, can clog intakes for jet boats, or can get caught on the keel of sailboats resulting in an	Some of the rooted aquatic plants in Findley Lake are native to the area, while many are invasive species brought into the lake from outside sources. Aquatic plant growth is enhanced from excess nutrients, some from external sources, but most of the nutrients for rooted aquatic weeds are provided from the bottom sediments. Aquatic plants that die and remain in the lake release some nutrients into the water, form nutrient-rich sediment that enhances further plant growth and consumes oxygen thus reducing the dissolved oxygen in the water. This sediment forms a malodorous “muck” that significantly hinders the enjoyment of the lake by swimmers. Aquatic weed fragments for numerous types of rooted aquatic plants that are created from uncollected harvesting operations and being cut by boat motor propellers can result in enhanced propagation of those plants that spread primarily from fragmentation, such as Eurasian water milfoil. (NYSDEC Division of Water, 2005)	The goal is to maintain a proper balance of plants within the lake for a healthy ecosystem while promoting recreational uses and fisheries. (EGLE Environmental Assistance Center, State of Michigan, Rev. 01/2021)	Create a macrophyte (rooted aquatic plant) management plan for Findley Lake for the long-term ecological health of the lake, and the community’s use and enjoyment of the lake. The plan will include objectives, evaluations of optional control methods, a phased plan specifying the control areas and recommended methods, and estimated costs.	1	1. Prepare general control plan for 2024 specifying preferred areas to be harvested and areas to be treated with herbicide (if permit is approved by DEC) [FLWF]	Minimal	Q2 2024
					1	2. Prepare the macrophyte management plan with input and guidance from the community and the NYSDEC. [FLWF]	TBD	2025
				In 2024, continue harvesting operations in weed beds not treated with herbicides to keep boating lanes clear and channel access to docks in areas that may be designated as fish habitat or areas with problematic operations because of stumps or shallow water.	1	1. Designate areas and maintain harvester operations. [FLWF]	$40 K	May-September 2024
				Apply DEC-approved herbicide (ProcellaCOR EC) to Eurasian watermilfoil beds in the northern half of the lake.	1	1. Identify funding sources.	Minimal	Done Q4 2023
					1	2. Engage consultant to prepare permit application for DEC consideration including public input. [FLWF]	Total for 2. and 3. $60K	Done Q4 2023
					1	3. Engage consultant to apply herbicide to permitted areas. [FLWF]	See above	Done Q4 2023
						4. Notify property owners on the lake and public participation per permit requirements.	$1K	Q2 2024
					1	5. Treat DEC-approved areas, monitor after treatment [FLWF]	TBD	Q2, Q3 2024
			Move or remove “muck” to improve usability and enjoyment.	Prepare and implement “muck” management plan considering options such as individual property owner water thrusters/ “muck blasters”, dredging, and	2	1. Develop and publish a “muck” management plan for Findley Lake. [FLWF]	TBD	2025
					2	2. Identify funding needs and sources and obtain funding [FLWF]	TBD	2025

Category	Issues and Current Problem	Likely Causes	Goal/ Objective	Strategic Plan/ Actions	Priority	Tasks and Responsible Party	Cost	Timing
	unpleasant and frustrating boating experience. • Can get wrapped around swimmers' legs/arms/bodies, making swimming a hazardous and frightening experience.			other mechanical and biological systems.	2	3. Implement "muck" management plan. [FLWF]	TBD	TBD
Aquatic Invasive Species Control	Invasive species can alter marine habitats and reduce biodiversity, impacting the local economy and recreational activities. Some marine invasive species attach to substrates such as drains, pipes, vessels, or fishing gear, reducing their efficiency. (NYS DEC, 2023)	Aquatic invasive species can be introduced and spread in a variety of ways. [Some] can be spread by boaters and anglers who do not properly clean, drain, and dry their boating and fishing equipment. (NYS DEC, 2023)	Minimize or eliminate the introduction of aquatic invasive species.	Prepare and implement an aquatic invasive species (AIS) control plan. Note: AIS **rooted aquatic plants** such as Eurasian watermilfoil are included in control measures above.	2.	1. Prepare and implement an Aquatic Invasive Species Control Plan for Findley Lake (with input from the public). [FLWF]	TBD	2024-2025
Lake Level Management	When lake level is too low during the boating season, boating hazards such as submerged stumps and shallow water that are normally deep enough to enable navigation may be an actual hazard and boats may not have enough depth to dock. When the lake level is too high when significant ice is on the lake, the ice flow may damage docks and other in-water structures. When the lake level increases when it is normally at a low level from late October through ice-off in the spring, in-water construction projects may be impacted. When lake level is significantly higher than the normal level in summer, docks may dislodge and/or float away and the groundwater level may increase and cause property damage.	Extreme amounts of precipitation or the lack of precipitation. Dam failure. Leaking or plugged gate/ overflow at the spillway.	Predictable lake level as much as reasonable using those factors we can control.	To manage lake level throughout the year per the written policy of the FLWF and communicate changes and variances to the community.	1.	1. Review the current lake level management policy of the FLWF, get public input and revise if the FLWF Board approves recommended changes. [FLWF]	Minimal	2024
					1.	2. Implement all management actions in accordance with the lake level management policy. [FLWF]	Minimal	Ongoing
					1.	3. Routinely check the dam gate for buildup of weeds or debris and clear to maintain free-flowing overflow. [FLWF]	Minimal	Ongoing
					1.	4. Communicate significant lake level management actions to the community. [FLWF]	Minimal	When indicated
					2.	5. Install and maintain a lake level gauge. [FLWF]	TBD	2024-2025
			Dam safety, integrity, and maintenance.	The FLWF owns the dam at the north end of the lake. The FLWF shall comply with all NYS DEC Dam safety regulations, certification requirements, and use the guidance provided by the NYS DEC regarding Dam	1.	1. Comply with all NYS DEC Dam Safety regulations and inspections. Follow appropriate DEC Bureau of Flood Protection guidance for maintenance. [FLWF]	TBD	Continuous

Category	Issues and Current Problem	Likely Causes	Goal/ Objective	Strategic Plan/ Actions	Priority	Tasks and Responsible Party	Cost	Timing
				Safety. (NYS DEC Division of Water, Bureau of Flood Protection, 2023)				
Water Safety	Unsafe boating situations are caused when: too many boats are operating on the lake at the same time, boats are operated at too high a speed for conditions, personal watercraft are operated in an unsafe manner.	Too many boats operating on the lake at the same time. Lack of knowledge and/ or personal decision not to follow safe boating rules and regulations.	Safe and enjoyable boating/ water sports and fishing.	Maximize compliance with New York Boating Laws and Regulations, the Town of Mina laws regarding the lake, and the FLWF Boating Guidelines that are specific for Findley Lake.	1.	1. Review, revise, publish and post the FLWF Boating Guidelines to incorporate the NYS Boating Laws and related Town of Mina Laws by reference and include what guidelines are unique to Findley Lake. Require that all short-term rental properties provide the FLWF Boating Guidelines to all tenants. [FLWF]	Minimal	Q2 2024
					1.	2. Request the Chautauqua County Sherriff patrol more frequently – agree on a schedule for patrols.	TBD	Q2 2024
					2.	3. Measure the number of boats operating on the lake at the same time on busy days to determine how “saturated” the lake is compared with recommended boat densities for various safe boating activities. Determine what further action if any is recommended.	TBD	2024-2025

Stakeholder Participation Plan

The FLWF will ask the community and FLWF members to review the draft of this plan and provide written and/ or verbal comments. The FLWF will consider all comments and modify the draft as they deem to be appropriate to better address the concerns of the community and FLWF members related to management of the lake and watershed.

The FLWF will solicit comments from the community and FLWF members on each revision and status update of the actions in this plan.

The FLWF will survey the community and FLWF members every 2 years with questions similar to those posed in the Town's survey for the Comprehensive Plan to better understand the public's perception of progress on improving lake water quality and usability and to get the public's input on priorities, goals and strategies moving forward.

Communications Plan

The FLWF will publish each revision and status update of this plan on the FLWF website and announce the availability of each revision of the plan on social media and with an email blast to the FLWF members who have provided an email address.

Updates and Revisions

The FLWF will issue revisions to the plan as and when significant additions/ changes/ revisions are made and approved by the FLWF Board of Directors.

The FLWF will issue status updates to the "Strategic Objectives and Plans" at least once per year.

All revisions and status updates will be tracked on the revision log at the beginning of this document.

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