About Me

Josh Magill

Claire and I moved to Lake Sherwood in October of 2023, Dylan was born August 2024.

Claire and I enjoy spending time on the lake with Dylan, working out, traveling, and skydiving.

2 dogs – Ludo & Layla

Work at Ford as an Engineering Manager

Certified 6 Sigma Black Belt

Lake Sherwood Association By Laws

ARTICLE II - PURPOSE

2.01 **Purpose**

The purpose for which this Association is formed is as follows:

a. To actively promote the education of riparian property owners and other lake users about water quality and water safety.
b. To morally and actively support issues which concern the welfare of lake and stream waters in general including the conservation of the water supply and environment of the Lake Sherwood watershed and that of the surrounding area, the maintenance of the water supply for safe recreational activities and the maintenance of the water supply and surrounding areas so as to be conducive to the renewal of fish, wildlife and plant life resources.
c. To cooperate and otherwise interact with local, state and federal governments and educational institutions in matters relating to the preservation of water supply and quality.
d. To actively oppose indiscriminate or over development of the waterfront or access thereto which could lead to overuse or improper use of the waters and deterioration of their quality including but not limited to the negative impact such would have on Lake Sherwood Association riparian property owners.
e. To actively support the Michigan Lake & Stream Associations, Inc. and other lake associations in all matters that will promote the conservation of water quality and supply or serve as a detriment to same.

f. To actively promote the welfare of the Association member property owners in matters relating to building and lake restrictions, sanitation, taxation, public nuisance, property maintenance and threat and/or potential abuse of Lake Sherwood and its property owners by member or non-member influences.
g. To do any and all things lawful in connection therewith for a non-profit Corporation.

Rationale for Supporting Current Rights of all Lake Sherwood Boat Owners

1. Reducing Lake Sherwood's current standing of being an All Sports to a Multi Sports Lake risks a reduction of property values
2. The State of Michigan has assessed similar legislature to what is being proposed for Lake Sherwood and has elected not to proceed with such restrictions. Legally, it would be extremely difficult to institute such a ban, even on our private lake.
3. While water quality is a known issue, there is no factual evidence or data indicating reducing/eliminating/banning wake boats would make any significant impact on water quality.
    - Other efforts and subject matter expert recommendations, which are backed with evidence, should be adopted first
4. Scientific evidence does not support findings that wake boats are a significant cause of shoreline erosion / seawall damage
    - There are several scientific papers on both sides of this issue, which are contradicting. Peer reviewed studies indicate that operating 200 ft from shore is equivalent to the waves created by common natural winds.

Property Value Comparison:
All Sports vs. Multi Sports Lakefront Properties

The following analysis serves as a comparison of property values considering whether a similar home resides on an all sports lake or a lake with some level of activity/boat restrictions.

Specifically, this analysis compares:

- Lake Sherwood, in Commerce Township, MI

  An all sports lake without activity and/or boat size/type restriction

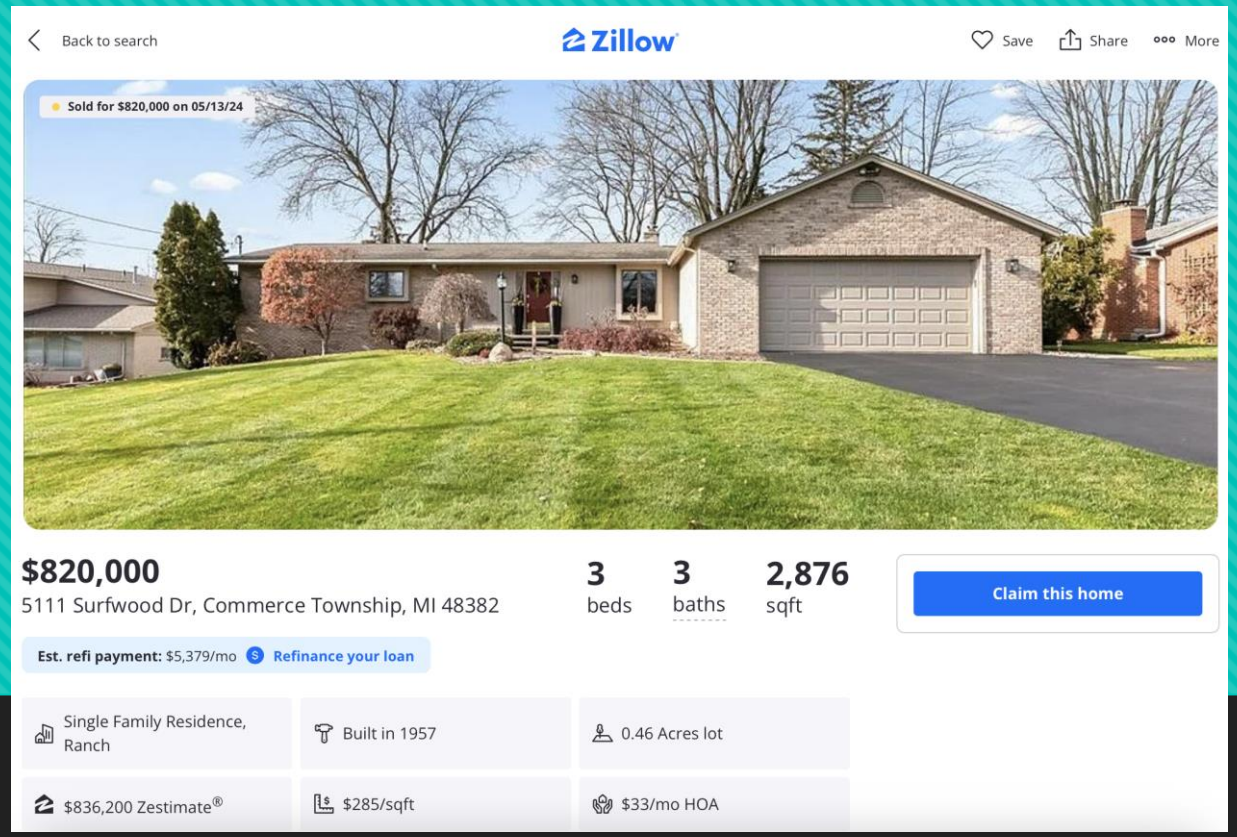
- Tull Lake, in White Lake, MI

  A multi sports lake with restrictions on engine horsepower size

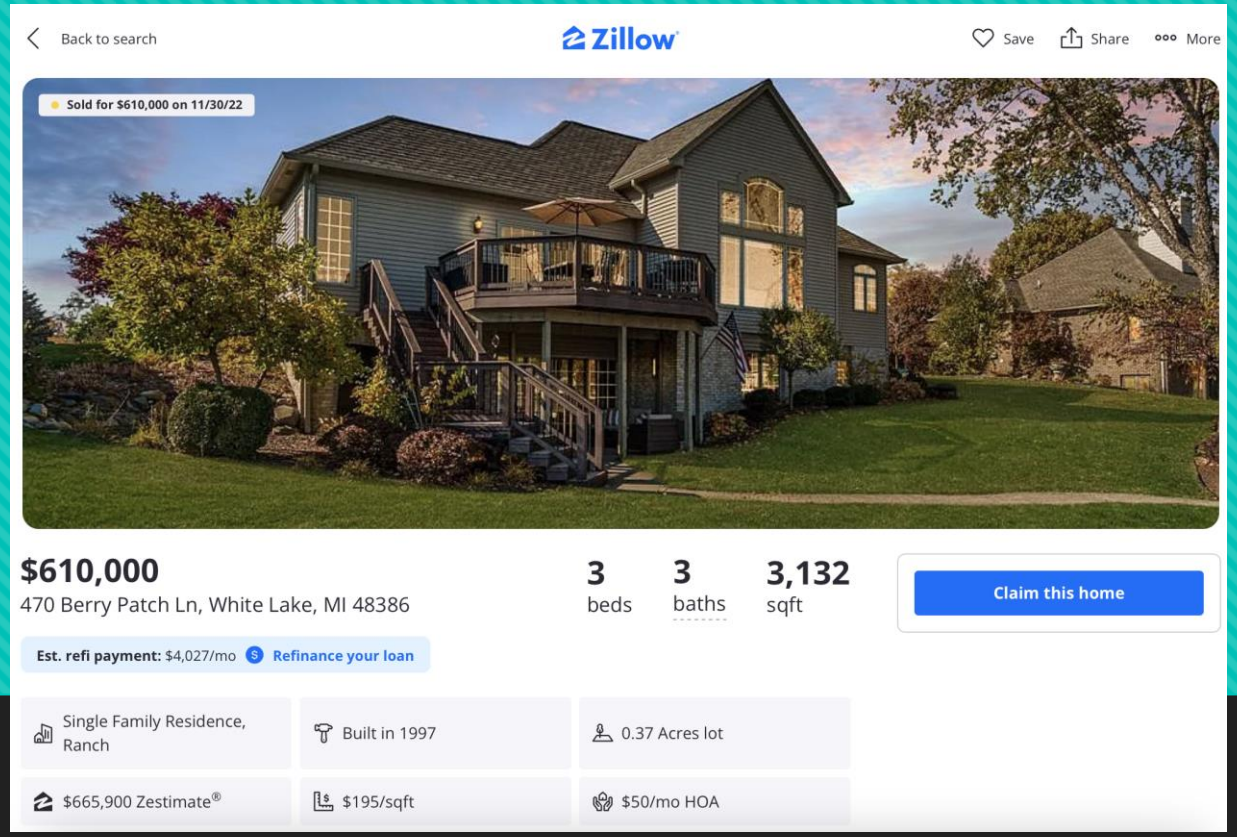
  Specifically, Tull Lake has engine size restrictions and does not allow jet skis

Comp #1

All Sports Lake Comparator:
Lake Sherwood, Commerce Township, MI



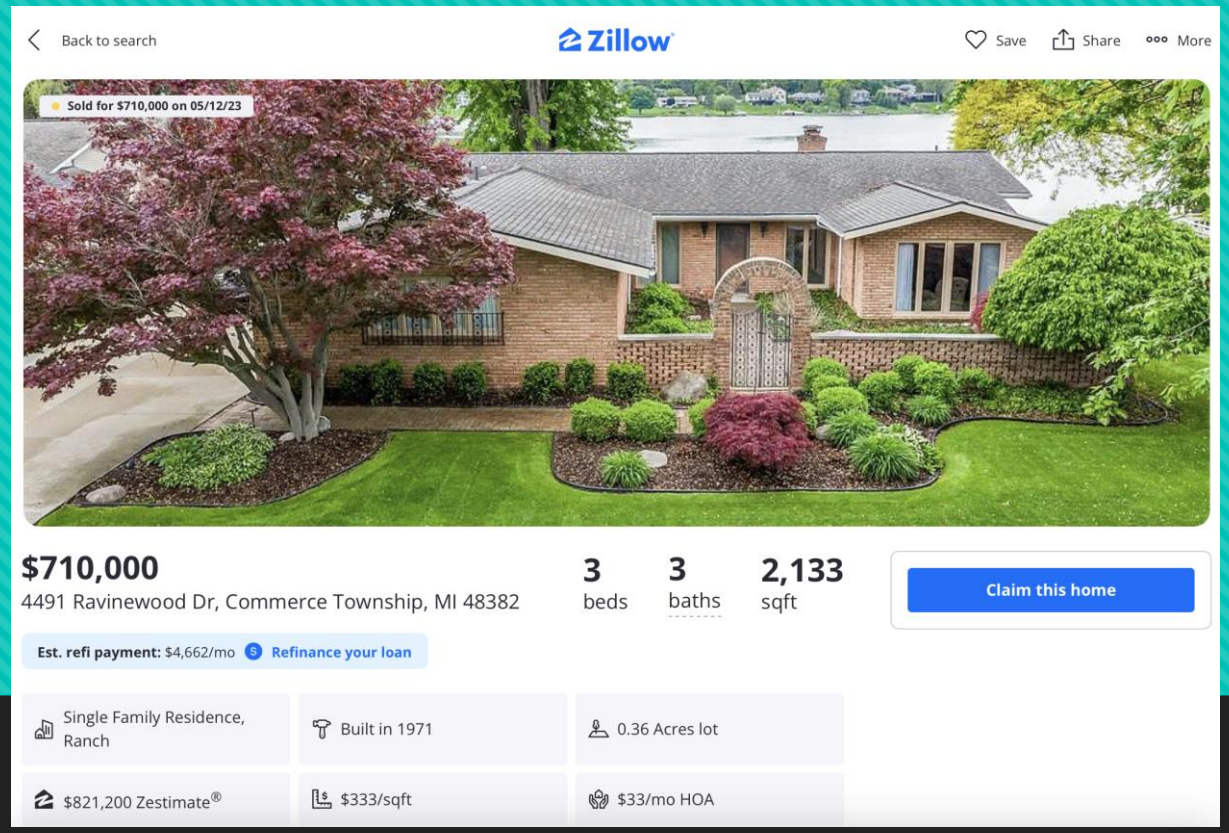
Multi Sports Lake Comparator:
Tull Lake, White Lake, MI



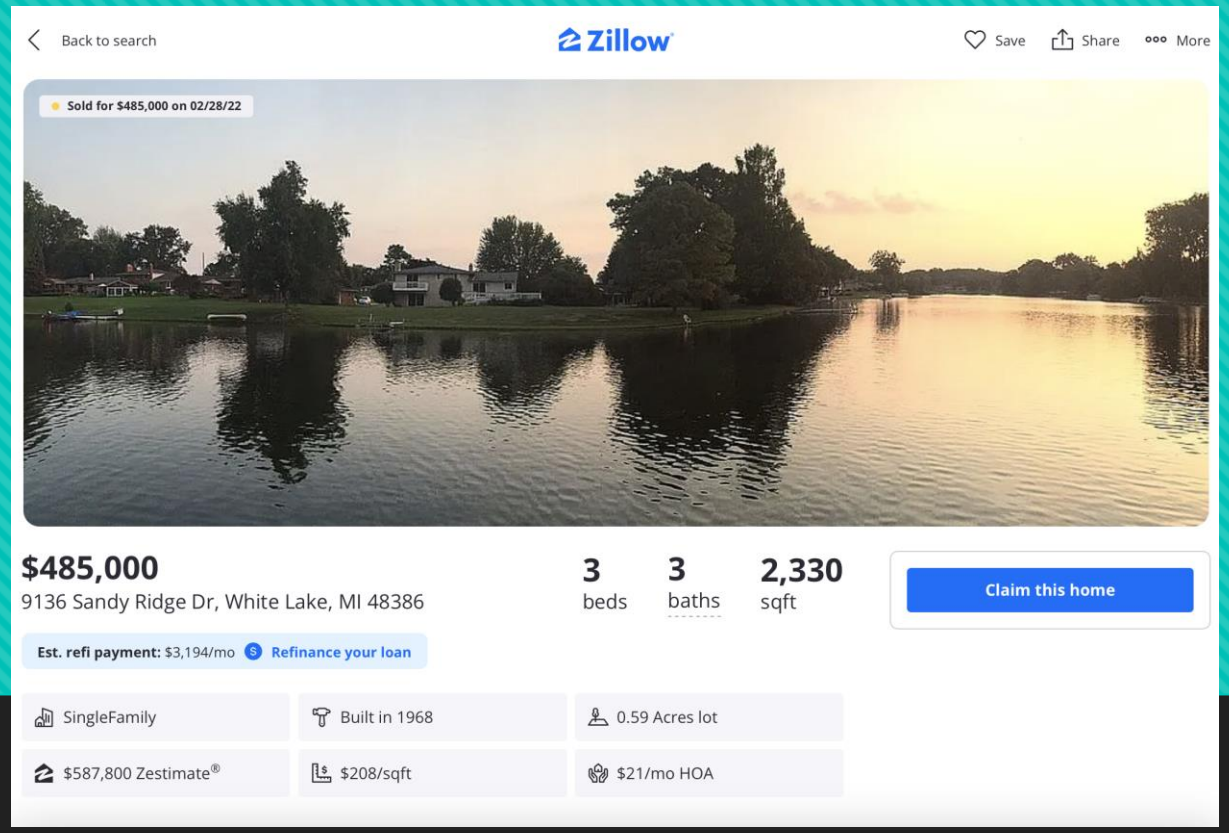
Value of multi sports lake home in this comparison is 26% lower value than all sports lake home

Comp #2

All Sports Lake Comparator:
Lake Sherwood, Commerce Township, MI



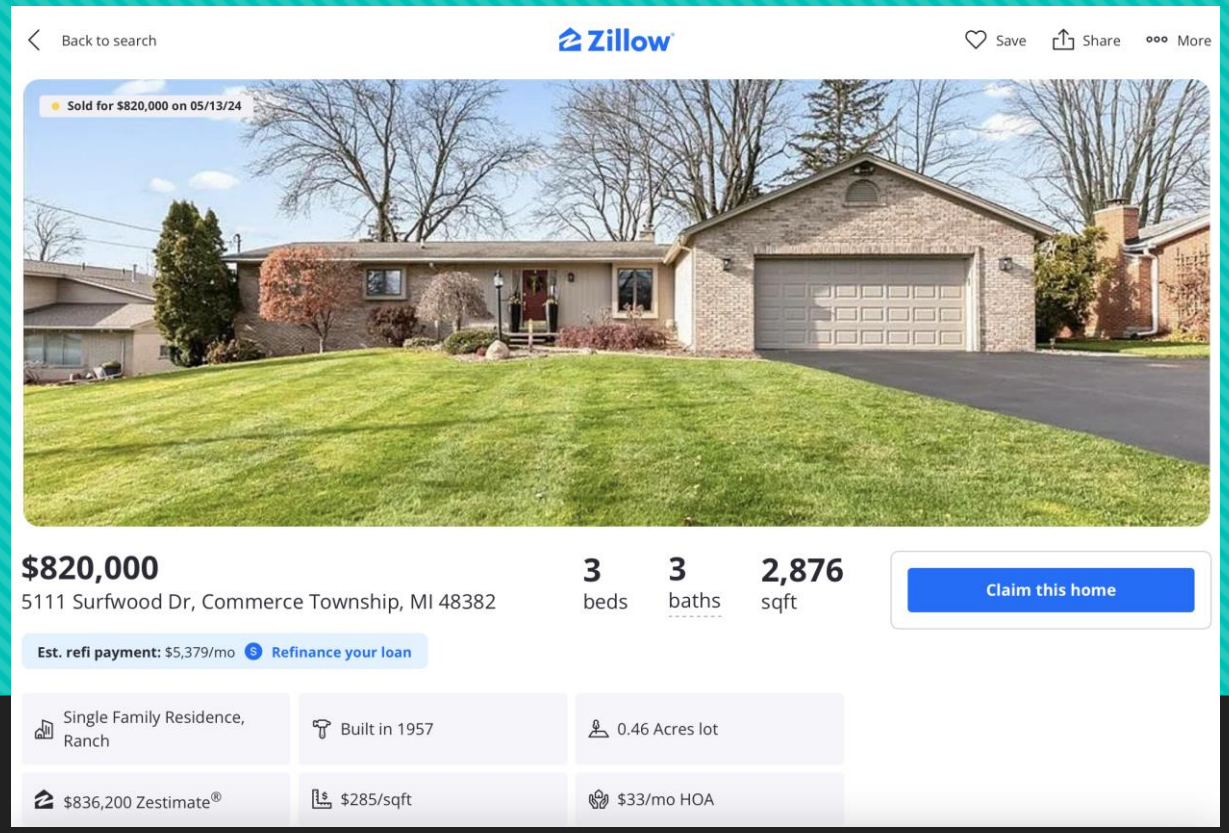
Multi Sports Lake Comparator:
Tull Lake, White Lake, MI



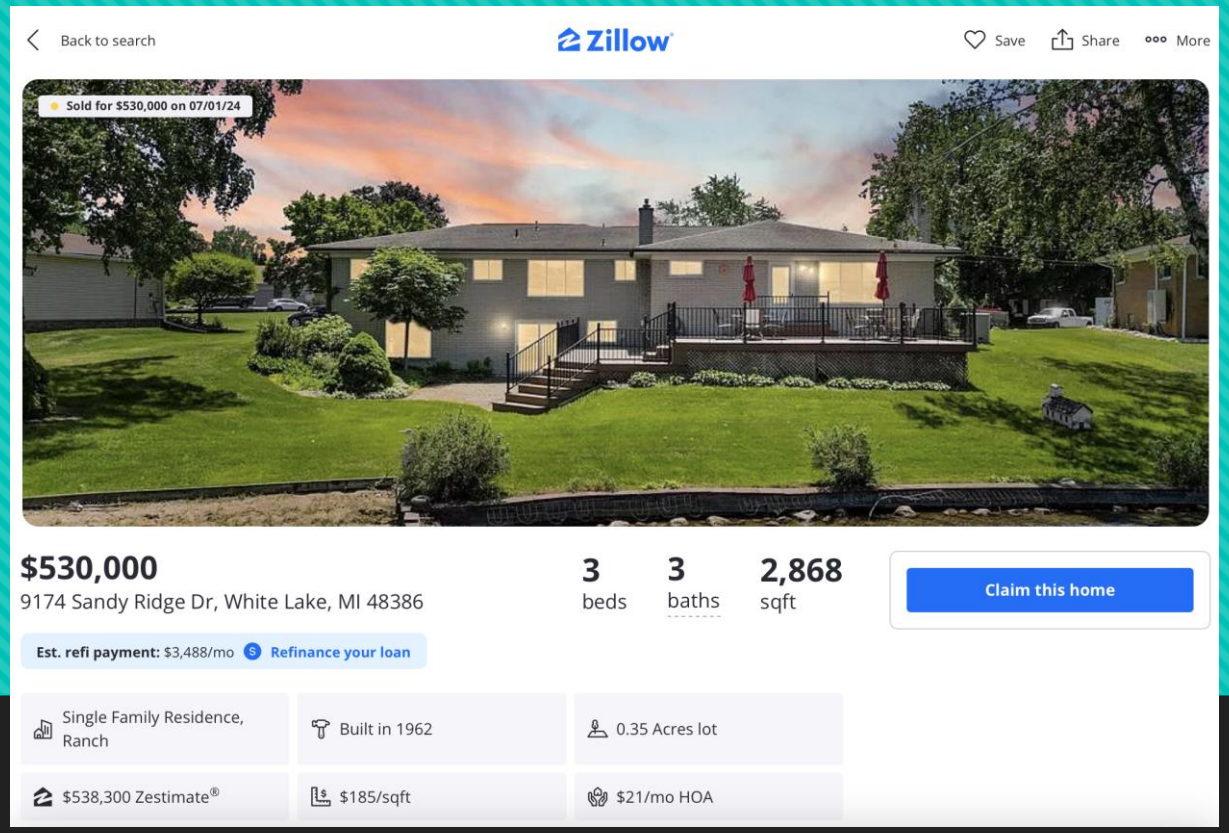
Value of multi sports lake home in this comparison is 32% lower value than all sports lake home

Comp #3

All Sports Lake Comparator:
Lake Sherwood, Commerce Township, MI



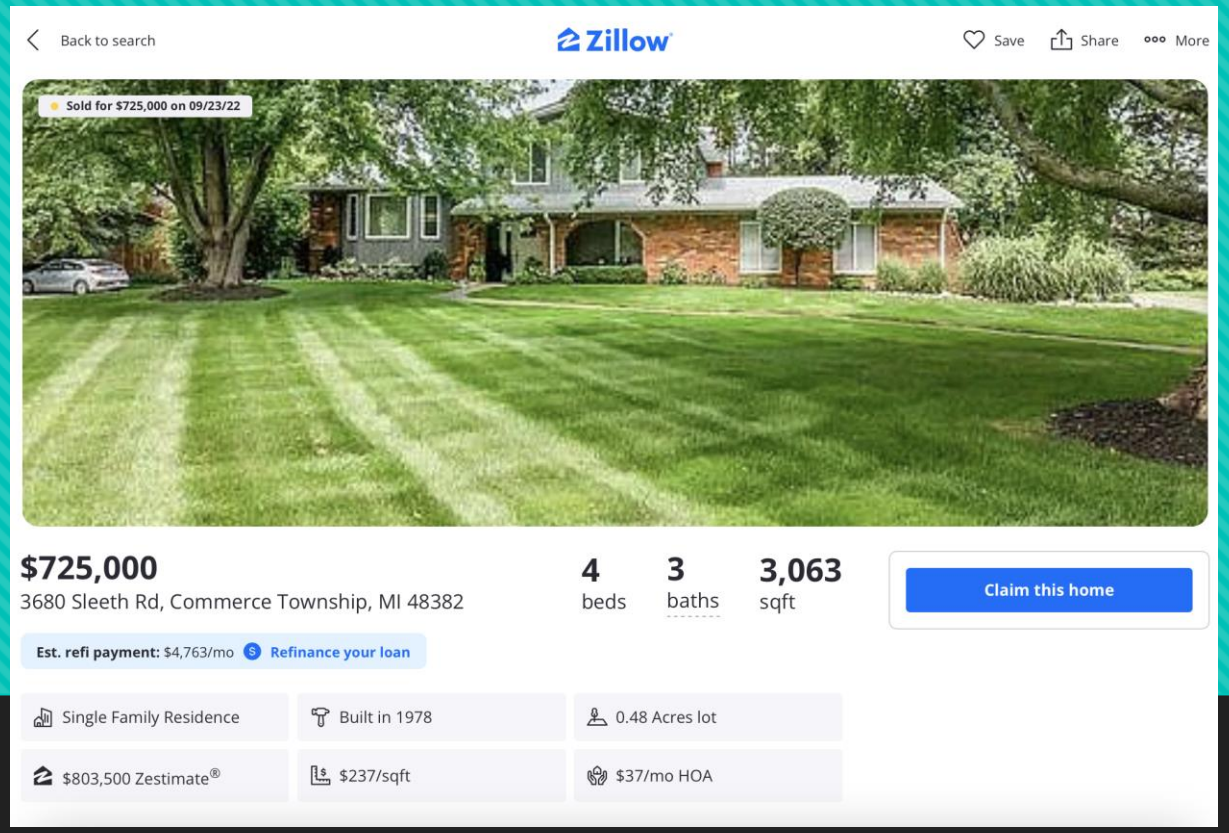
Multi Sports Lake Comparator:
Tull Lake, White Lake, MI



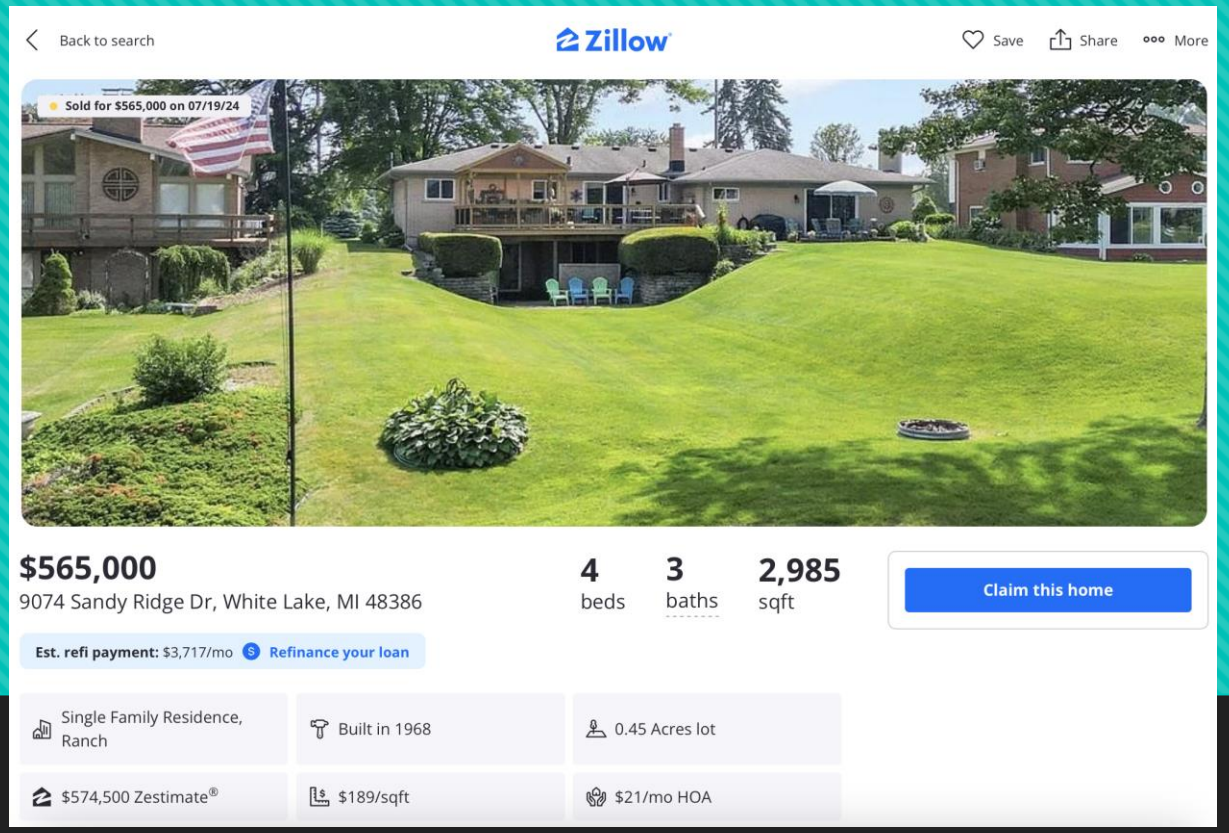
Value of multi sports lake home in this comparison is 35% lower value than all sports lake home

Comp #4

All Sports Lake Comparator:
Lake Sherwood, Commerce Township, MI



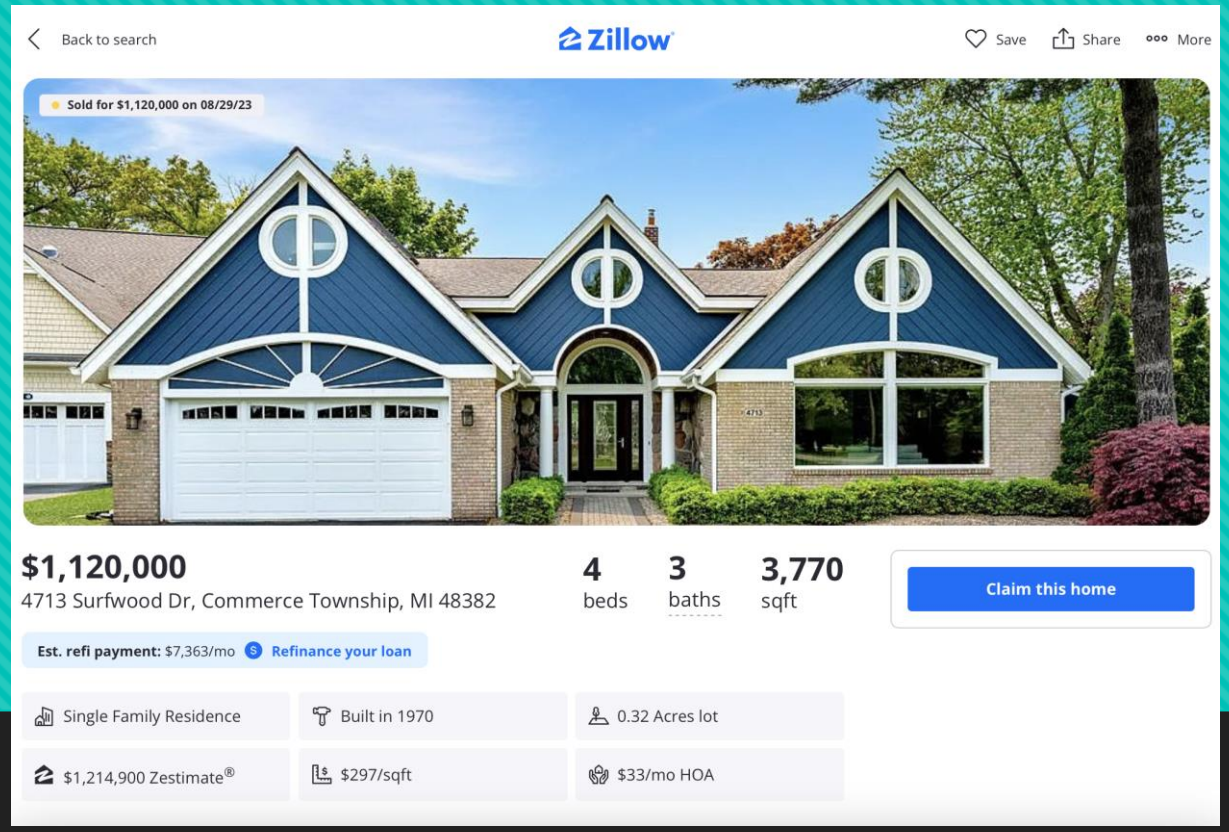
Multi Sports Lake Comparator:
Tull Lake, White Lake, MI



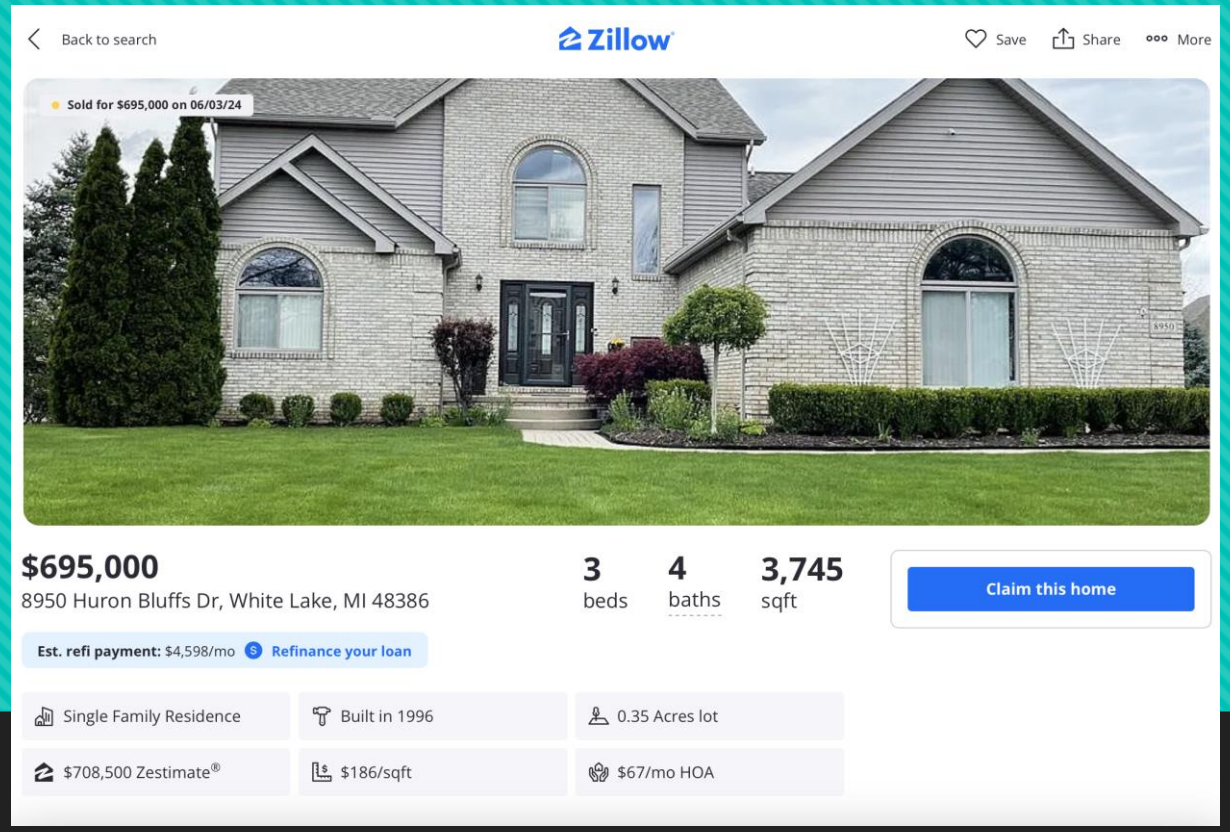
Value of multi sports lake home in this comparison is 22% lower value than all sports lake home

Comp #5

All Sports Lake Comparator:
Lake Sherwood, Commerce Township, MI



Multi Sports Lake Comparator:
Tull Lake, White Lake, MI



Value of multi sports lake home in this comparison is 38% lower value than all sports lake home

Conclusions

- Comp #1:
  Value of multi sports lake home was 26% lower than the value of a similar all sports lake home
- Comp #2:
  Value of multi sports lake home was 32% lower than the value of a similar all sports lake home
- Comp #3:
  Value of multi sports lake home was 35% lower than the value of a similar all sports lake home
- Comp #4:
  Value of multi sports lake home was 22% lower than the value of a similar all sports lake home
- Comp #5:
  Value of multi sports lake home was 38% lower than the value of a similar all sports lake home
- Average:
  Value of (5) comparisons of multi sports lake homes were ~30% lower than the value of a similar all sports lake home

Inducing activity/boat/etc. restrictions risks substantial property value degradations

Michigan House Bill 5532

MI HB5532 | 2023-2024 | 102nd Legislature

Michigan House Bill 5532 (*Prior Session Legislation*)

MI State Legislature page for HB5532

Summary | Sponsors | Texts | Votes | Research | Comments | **Track**

Status

Spectrum: Slight Partisan Bill (Democrat 6-2)
Status: Introduced on February 29 2024 - 25% progression, died in committee
Action: 2024-03-05 - Bill Electronically Reproduced 02/29/2024
Pending: House Natural Resources, Environment, Tourism And Outdoor Recreation Committee
Text: Latest bill text (Introduced) [HTML]

Summary

Watercraft: other; wake boats; define and regulate. Amends secs. 80104 & 80146 of 1994 PA 451 (MCL 324.80104 & 324.80146).

Proposed MI HB5532 sought to require watercraft in "wake sport mode" to be 500 feet or more from a shore or dock and at a depth of 20 feet or more. MI HB5532 was not adopted and was rejected before making it out of the proposing committee.

Michigan House Bill 5532

Rationale that supported the rejection of MI HB 5532:

- **Education is always the preferred method of changed behaviors.** MBIA, WSIA and NMMA have begun a nationwide effort to educate wake boat operators to stay 200 ft. away, avoid repeat passes, turn down the music, and be respectful to other boaters and property owners. Many lakes have worked through user plans which ensure no one loses access and all can enjoy the lake safely.
- A change to 500 ft. set back and 20' depth has many risks. It will create a smaller usable water surface leading to a higher concentration of boats. This could lead to an increased probability of accidents. It may make some narrow lakes unusable – lowering property values and decreasing home values. This change may also render personal assets unusable.
- The Boating Industry in Michigan has an $11.7 billion annual economic impact, with more than 800,000 registered boats, 1,478 businesses and more than 45,000 jobs supported. Banning a segment of boats will impact the industry not only with less boaters but will have a detrimental impact on business and jobs.
- Regarding bans, banning boat types is a slippery slope. Other boat types can make big waves.

Source:

Michigan Boating Industries Association

Legal Requirements to Institute Proposed Wake Boat Ban

The LSA HOA does not legally have the power to institute the proposed wake boat ban.

The Michigan Boating Industries Association (MBIA) legal counsel has confirmed with the Michigan Boating Law Administrator that the DNR would need to approve any new rules on any Michigan lake whether it has a public launch site or not.

If the LSA HOA Board elects to proceed and this proposal is ratified by the active membership, legal proceedings would follow in order to institute this ban, including but not limited to a public hearing with the Township.

Note: some other lakes in our area (incl. Orchard Lake) have tried to do this in the past and failed

2024 Lake Sherwood Water Quality Report

October 2024

LAKE SHERWOOD
ANNUAL REPORT

PREPARED FOR:
LAKE SHERWOOD PROPERTY OWNERS
OAKLAND COUNTY, MI

PROGRESSIVE COMPANIES

2024 Lake Sherwood Annual Water Quality Report Executive Summary

EXECUTIVE SUMMARY

In 2024, the Lake Sherwood Property Owners Association retained Progressive Companies to provide oversite and recommendations towards the lake's improvement. The following is a summary of project activities:

Water Quality Sampling: In 2024, samples were collected from Lake Sherwood in March and August. During the 2024 sampling period, phosphorus levels were elevated. Water clarity was moderate to poor in spring and summer, and algae growth was moderate to high during both sampling events. Overall, Lake Sherwood can be classified as eutrophic lake system.

Nuisance Aquatic Plant Control: In 2024, 208 acres infested by non-native milfoil, curly-leaf pondweed, and nuisance algae required treatment.

Recommendations: Lake Sherwood residents should use best shoreland management practices to reduce nutrient loading into the lake. In 2025, management activities should focus on nutrient reduction and invasive species control. Nutrient inactivation treatments in the canals are recommended to reduce total phosphorus concentrations. Eurasian milfoil should be treated with systemic herbicides and curly-leaf pondweed should be harvested when applicable. Native aquatic plant species should not be targeted for control in order to strengthen the current community.

Recommendations from our 2024 water quality study did not include restrictions on boat types/usage

2024 Lake Sherwood Annual Water Quality Report Discussion & Recommendations

Progressive's recommendations to address our water quality issues were thorough, scientific, and highly detailed.

Banning of a certain type of boat or towed watersports activity was not included in the recommendations to improve water quality.

WATER QUALITY

Lake Sherwood is categorized as a eutrophic lake system, having high phosphorus levels in spring and elevated chlorophyll-*a* during summer, along with decreased water clarity in the warmer months. Total phosphorus declined from spring to summer. Notably, significant growth of planktonic algae occurs throughout the summer, likely consuming the excess phosphorus available in the water. Other contaminants examined, such as chloride and *E. coli*, are currently low and not concerning. The primary challenge facing Lake Sherwood's water quality is the heightened phosphorus concentrations, probably stemming from external sources. It is essential for residents to adopt best shoreland management practices to minimize nutrient runoff into the lake. Additionally, the drains leading to the lake should be evaluated for possible nutrient contributions from the watershed. Residents can find a guide to best management practices in Appendix A.

A treatment for phosphorus inactivation is proposed for 2025, aimed at binding phosphorus in the water column to the sediment at the lake's bottom. Products like Eutrosorb G and Phoslock are recommended for application in spring to help mitigate summer algal blooms. Total treatment size and projected cost can be found in Table 7.

PLANT CONTROL

Lake Sherwood currently has a limited presence of beneficial native plants, with only 5% of the littoral zone comprised of native aquatic species, while 10% is occupied by invasive plants. Plant growth areas over the growing season can be found in Appendix B. According to the Michigan Department of Natural Resources (DNR), inland lakes with 25-35% native plant coverage across their total surface area are known to support the healthiest fisheries (O'Neal and Soulliere 2006). Efforts to manage plant life in Lake Sherwood should concentrate solely on controlling invasive aquatic species to promote the flourishing of native plants. Systemic herbicides should specifically target Eurasian milfoil. As for curly-leaf pondweed, which grows early in the season and naturally dies off in warmer waters, it is advised to treat this species minimally. Additionally, harvesting as an alternative to herbicides for removing curly-leaf pondweed biomass from the lake in the spring should be considered. Cost projections for aquatic herbicides and harvesting can be found in Table 7.

2024 Lake Sherwood Annual Water Quality Report
2025 Proposed Management Activities

TABLE 7. LAKE SHERWOOD 2025 PROPOSED MANAGEMENT ACTIVIES

Season	Activity	Projected Cost*
Spring 2025	**Water Quality Monitoring** • *Lake Sampling* • *Drain Assessment*	$10,000
	Nutrient Inactivation Treatment • *East and North Canal (50 acres)*	$30,000
	Mechanical Harvesting • *Curly-leaf pondweed (15-20 acres)*	$10,000-$15,000
Summer 2025	**Lake Management** • *Plant Control Oversight* • *Contractor Coordination* • *Water Quality Monitoring* • *Information and Education*	$13,000
	Aquatic Herbicide Applications • *Eurasian milfoil (30 acres)* • *Curly-leaf pondweed (20 acres)*	$10,000-$20,000
Total		**$73,000-$88,000**

*Costs are projected based on industry averages

Numerical Study of the Impact of Wake Surfing on Inland Bodies of Water – Turbidity Focus

Abstract

In many areas around the world, wake surfing has been cited as one of the major causes of lakeshore erosion and turbidity. This paper quantifies the impact related to turbidity and erosion with the use of computational fluid dynamics (CFD) of boat wakes in shallow water and the build-up of wind driven waves. The energy, type and direction of the boat's wake are described quantitatively and a table for predicting wind driven waves over varying fetches, depth and wind speeds is provided. The CFD simulation shows that if a wake surf boat is operated 200 ft from shore and in at least 10 ft of water, the environmental impact is minimal.

Source: https://www.scirp.org/journal/paperinformation?paperid=116094

Numerical Study of the Impact of Wake Surfing on Inland Bodies of Water – Turbidity Focus

CFD utilizes high performance computing to numerically solve the equations governing fluid flow. It has gained popularity in the marine industry for product development over the last 20 years due to the increasing availability of reasonably priced computing power. Many studies have been performed to validate CFD results and prove their usefulness for predicting real world performance. A well-known example for non-planning hulls such as large container ships is the 2016 Lloyd Register blind CFD workshop. Participants using various software packages were not allowed access to test results ahead of time, and all simulation results predicted speed within 4% of test data. The 2018 Multi Agency Craft Conference (MACC) generic prismatic planning hull (GPPH) simulation grand challenge is another case specific to planning hulls with a similar match between CFD and test data. Additionally, CFD has broad ranging applications in other fields such as the aerospace, automotive, and process industries.

This study starts with a discussion of linear wave theory and the wave generation power of different boat types. Then, CFD simulations using the OpenFOAM solver are performed on a popular wake surf boat to compare the impact of vessel weight, vessel speed, water depth, and distance from shore on wake propagation. Simulations are additionally performed using Siemens Star-CCM+ to solve for the interaction of wake surf boat propeller wash with various bottom depths. Finally, waves generated by the wind for various lake sizes and wind speeds are discussed and a CFD simulation is performed for validation. The purpose of the research is to accurately model the wake behind a planning craft and how it dissipates over time and distance.

Numerical Study of the Impact of Wake Surfing on Inland Bodies of Water – Turbidity Focus

6. Turbidity

The power boat is driven through the water by the thrust from the propeller. The propeller generates the thrust required to overcome the hull resistance that includes the power to generate the wave train travelling on the boat. The thrust is generated by a change in momentum of water running through the propeller disk. The added momentum generates a high velocity column of water travelling through the propeller and behind the boat. The change in momentum generates the thrust needed to propel the boat. The following equation idealizes the estimate of the thrust.

$$T = \rho A V_p \left(V_p - V_0\right) \tag{15}$$

where:

T: Thrust in lbf;

A: Area of the Propeller Disc (ft^2);

ρ: water density;

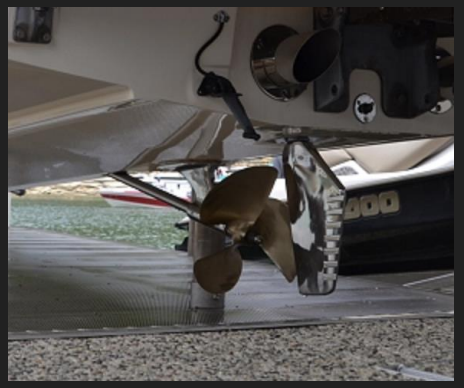
V_p: Water Velocity in propeller stream (nP/12) (ft/sec);

n = propeller speed in revs/sec;

P = propeller pitch in inches;

V_0: Boat Speed (ft/sec).

Ski boat (direct drive)



Wake boat (V drive)

Inboard/Outboard

Pontoon (Outboard)

Numerical Study of the Impact of Wake Surfing on Inland Bodies of Water – Turbidity Focus

The illustrations of the flow of the propeller in Figures 33-35 show that the wash does not travel toward the bottom with the movement of the boat through the water. In Figure 35 the wash reaches approximately seven and a half feet below the surface with the propeller at approximately three feet below the surface.

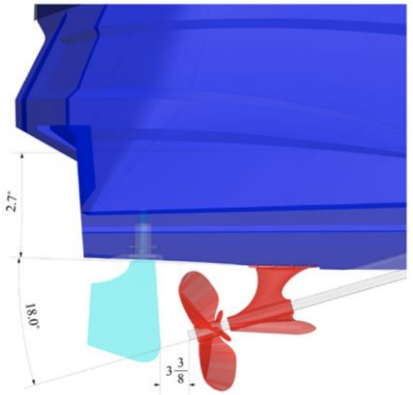


Figure 32. Propeller shaft and rudder arrangement.

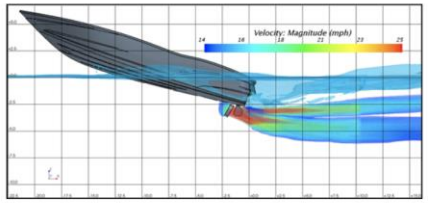


Figure 33. Propeller wash velocity (25 mph = 36.7 ft/sec).

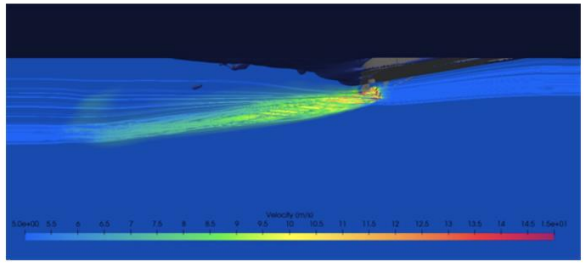


Figure 34. Propeller streamlines showing vertical mixing.

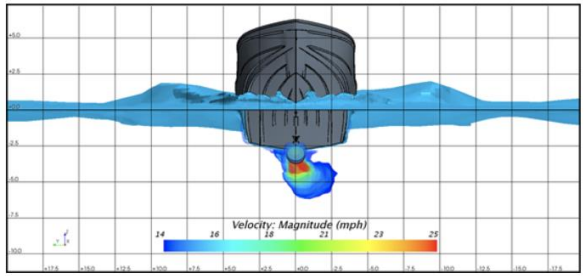
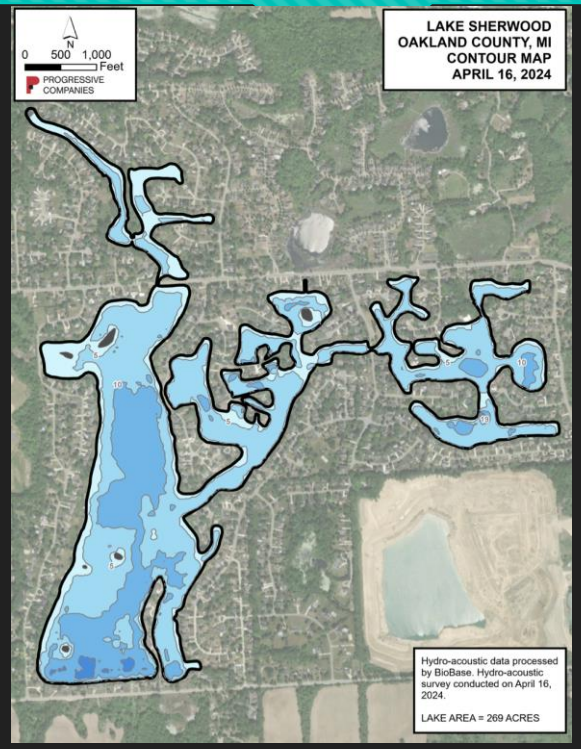


Figure 35. Water velocity below the surface.

Numerical Study of the Impact of Wake Surfing on Inland Bodies of Water – Turbidity Focus



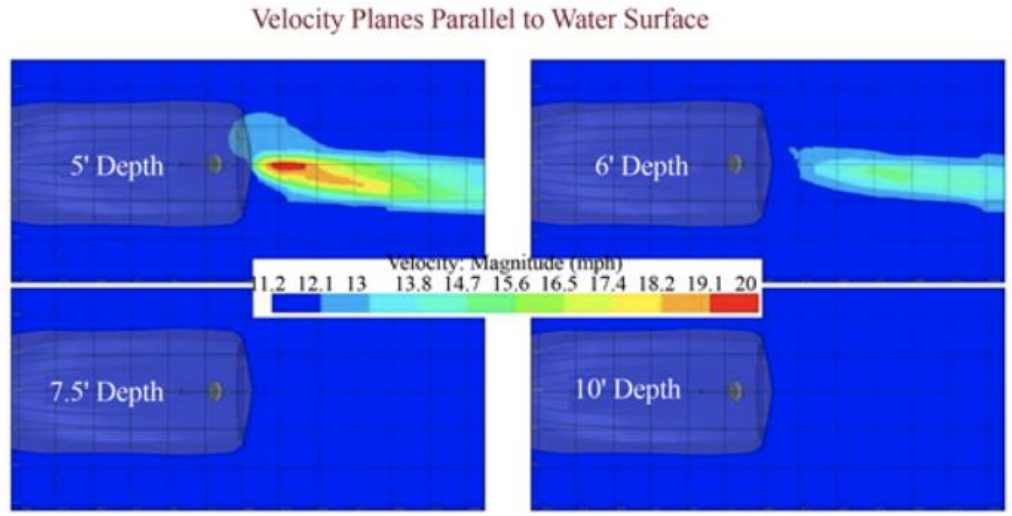


Figure 36. Velocity profiles at different depths.

Wake/surf boats do not have a significant impact to the bottom surface profile of a lake in depths of 7.5-10 ft or greater

Average depth of Lake Sherwood main lake is 8.9 ft

Average depth of "surfer's alley" is >12 ft

2024 Lake Sherwood Annual Water Quality Report
Total Suspended Solids Data

TOTAL SUSPENDED SOLIDS
According to EGLE (2020):

Total suspended solids (TSS) include all particles suspended in water which will not pass through a filter. Most people consider water with a TSS concentration less than 20 mg/L to be clear. Water with TSS levels between 40 and 80 mg/L tends to appear cloudy, while water with concentrations over 150 mg/L usually appears dirty.

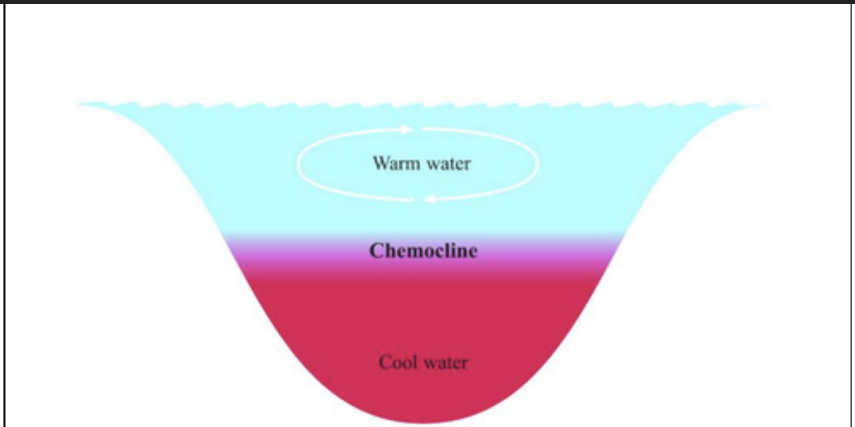


Figure 6. High chloride inputs can result in a chemocline, preventing lake mixing.

All Lake Sherwood total suspended solid measurements below 20 mg/L cutoff per Progressive

WATER QUALITY

TABLE 3 - LAKE SHERWOOD 2024 DEEP BASIN WATER QUALITY DATA

Date	Site	Depth (feet)	Temp (F)	DO *(mg/L)	TP *(ug/L)	pH *(S.U.)	Total Alk. *(mg/L CaCO3)	Chloride *(mg/L)	TSS *(mg/L)
28-Mar-24	1	1	42	12.6	36	7.8	198	55	7.0
28-Mar-24	1	5	42	12.6	23	7.7	197	51	5.6
28-Mar-24	1	10	42	12.6	25	7.6	200	60	5.2
28-Mar-24	2	1	42	12.6	15	7.7	199	54	5.2
28-Mar-24	2	8	42	12.6	19	7.5	196	63	4.0
28-Mar-24	3	1	44	10.5	14	7.4	235	57	4.0
28-Mar-24	3	4	44	10.5	23	7.3	234	51	5.6
28-Mar-24	4	1	42	12.4	19	7.8	191	64	4.4
28-Mar-24	4	5.5	42	12.4	23	7.7	189	61	7.0
13-Aug-24	1	1	76	9.4	10	8.5	185	44	9.0
13-Aug-24	1	5	75	9.1	10	8.5	183	44	8.4
13-Aug-24	1	10	75	7.2	21	8.3	182	44	10.4
13-Aug-24	2	1	75	9.0	24	8.3	182	43	8.4
13-Aug-24	2	8	74	8.8	23	8.3	195	44	10.8
13-Aug-24	3	1	71	7.6	19	7.8	200	35	4.0
13-Aug-24	3	5	68	4.7	14	7.8	x	35	4.4
13-Aug-24	4	1	78	10.0	14	8.4	157	47	7.6
13-Aug-24	4	5	76	10.8	10	8.3	156	47	5.0

WSIA Wave Energy Study

Characterization of Wake-Sport Wakes and Their Potential Impact on Shorelines

by

C.A. Goudey & Associates

C.A. Goudey & Associates
21 Marlboro Street
Newburyport, MA 01950

24 November 2015

WSIA Wave Energy Study Summary

WATER SPORTS INDUSTRY ASSOCIATION

With a goal to scientifically measure the energy produced by towboat wakes and waves, the first-ever Towed Water Sports Wave Energy Study was conducted in the Spring of 2015 in Orlando, Florida.

Clifford Goudey, ocean engineer and naval architect, is one of the most distinguished experts on wave science in the field today. Mr. Goudey commissioned the assistance of Lewis Girod, PhD, who is an accomplished software and sensing engineer. On March 23-27, 2015, the pair conducted an extensive study on the Conway Chain of Lakes at two different sites to measure energy at a shallow-water profile and deep-water profile, while also monitoring the effects of wind-driven waves.

A 2015 Nautique G23 was used for testing with 2,850 pounds of factory ballast with an additional four sacks weighing 350 pounds each for a total of 4,250 pounds of ballast and a total vessel weight of 10,150 pounds.

WSIA Wave Energy Study

Executive Summary

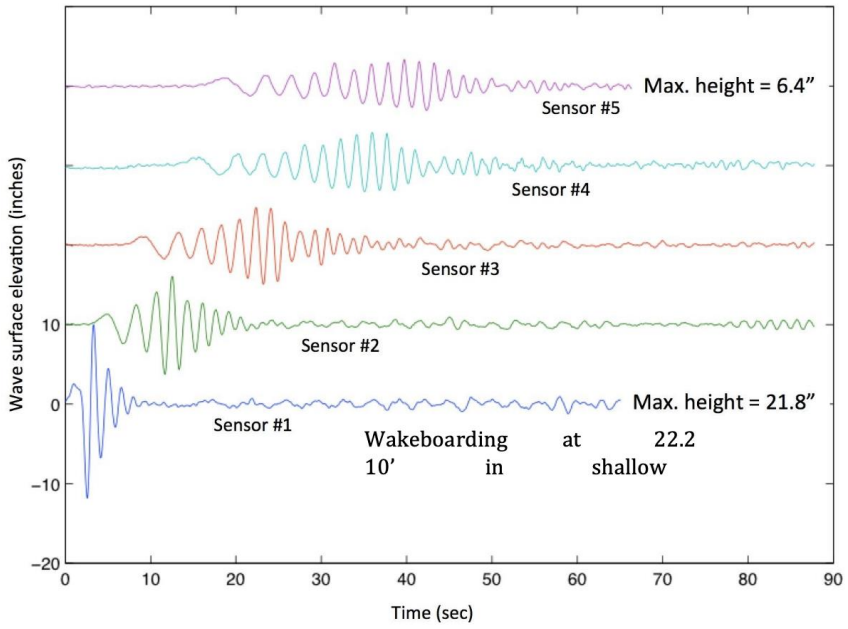
The effect of boat wakes on a shoreline varies depending on boat size, speed, water depth, and distance from shore. With the growing popularity of wake sports there has been a rise in concern over the potential effect of the associated wakes on shorelines. A study has been completed and reported here aimed at building an understanding of wake-sport wakes and how they fit into the spectrum of boat wakes in general as well as how those wakes compare to wind-driven waves.

A shallow and a deep-water test venue were used within the Conway Lake chain in Orlando, Florida. Both locations had sandy beaches and were surveyed for their depth profile to determine locations for wave-height probes within an array running perpendicular to the shore. At the four stations closest to shore, capacitance-wire wave probes were used. Due to the close passage of the boat to the outer probe, a submerged pressure probe was used. Each sensor was connected by underwater cable to a PC-based data acquisition system where the data was displayed and logged for post processing.

The vessel used for the tests was a Nautique G-23 wake-sport boat with an overall length of 23', a maximum beam of 102", and a light displacement of 5,900 lbs. This is considered typical of the fleet of wake-sport boats available from various manufacturers. The boat has factory installed ballast tanks that were filled to capacity with 2,850 pounds of water for the wakeboarding tests. For the wakesurfing runs, an additional 1,400 pounds of water was added, yielding a total displacement of 10,150 pounds.

Test runs were conducted at cruising speeds (20, 25, 30 mph), wakeboarding speeds (21.2, 22.2, 23.2 mph), and wakesurfing speeds (10, 11, 11.5, 12 mph). These runs were done at three distances from the outer wave probe (10', 110', 210') with the closest track resulting in a wave measurement being taken very close to the boat. A total of 94 tests runs were made at the shallow and deep sites. Logged data from each run were then processed to yield plots of wave profiles vs. time and to determine wave heights and wave counts at each sensor station. Wave profiles from all five probes were plotted for each run to enable quality control as shown below.

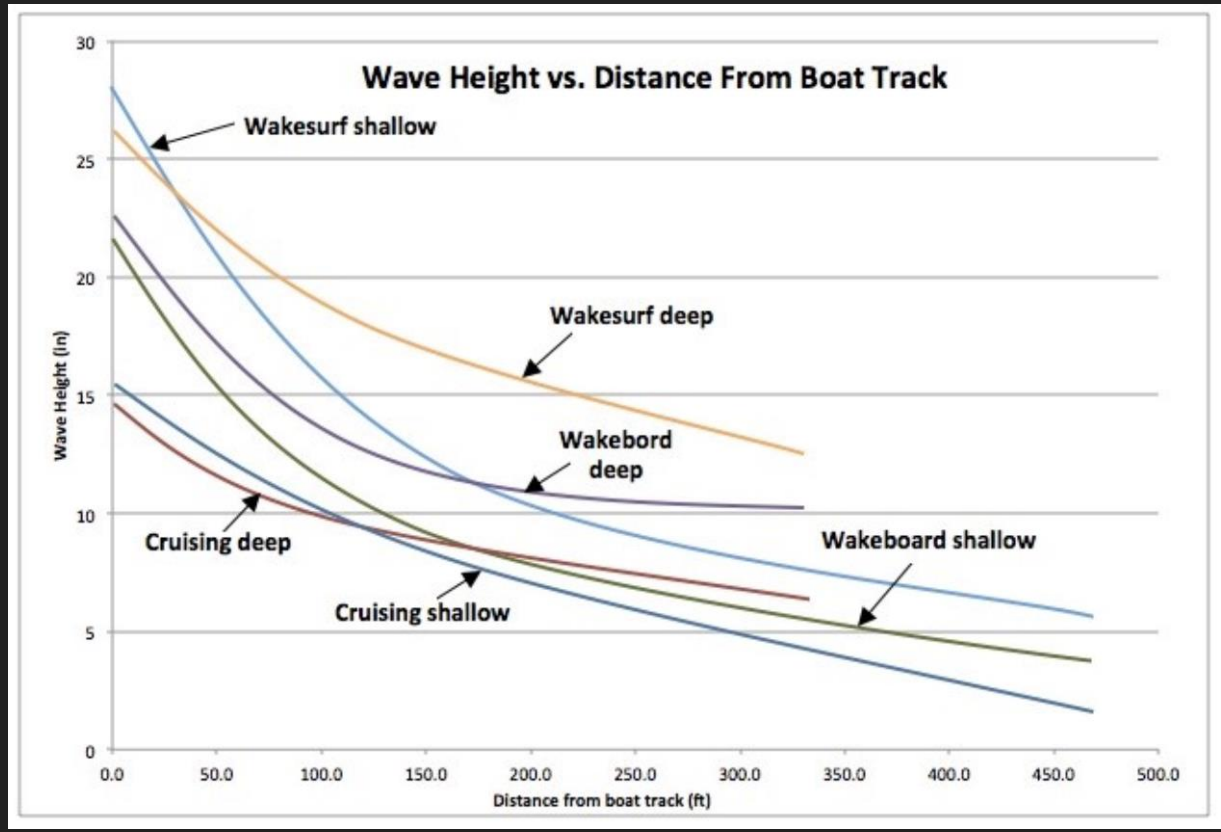
Note that the wave heights are given in terms of the total height of the wave from its trough to its crest. It is worth noting that very close to the boat the trough is deeper than the height of the crest. Specifically, at sensor #1 a trough 11.8" deep precedes a 10" crest for a total wave height of 21.8".



WSIA Wave Energy Study

The higher waves associated with wakeboarding and wakesurfing dissipate more rapidly than those generated under the cruising condition, more typical of a conventional craft on a full plane. We can also see in this figure that the maximum wave heights associated with wakeboarding and wakesurfing dropped precipitously in the first 100 to 150' of their travel from the boat's track. By contrast, the waves heights associated with cruising speeds dissipate more slowly and lack the initial drop seen with the other two modes of operation. This difference is because these smaller waves tend not to break and therefore propagate with less energy loss.

These results demonstrate the importance of standoff distance from the shoreline and from the data wave height can be predicted for various standoff distances. As shown in the table below, with the exception of wake surfing in deep water, the wake sport waves from a track 200' from shore fall below heights that could be viewed as exceptional.



Shallow water = max 10 ft

Deep water = min 22 ft

WSIA Wave Energy Study

In understanding the significance of boat-wake effects on shorelines, it is necessary to compare them to naturally occurring processes. Wind waves are particularly important due to their persistent nature. Waves resulting from wind over a stretch of water are well studied and predictable based on wind speed and fetch. Predictions were made of the significant wave height and dominant wave period of typical combinations of wind speed and fetch distance. These values were turned into energy levels to allow comparison with boat-wake energy levels derived from our tests. Through this comparison we were able to determine how often a boat wake would need to occur in order to equal the energy associated with wind waves.

Our analysis shows that a cruising boat would need to pass 110 feet from a shoreline every 101 seconds in order to equal the energy coming from waves associated with 10 mph winds and one mile of fetch. A wakesurfing boat would only need to pass every 270 seconds to equal the same wind-wave effects. At higher wind speeds and longer fetch distances, wind waves become more energetic. For example, a 20 mph wind blowing over 4 miles of fetch yields wave conditions equivalent to a cruising boat passing 110 feet offshore every 9 seconds. Those same wind waves are equivalent to a wakesurfing passing every 23 seconds 110 feet from a shoreline. These sorts of repetition rates are not representative of the sport.

A 10 mph wind blowing over a mile of open water is a common occurrence and our results suggest boat wakes are not likely to be the most significant source of energy along the shores of all but the smallest bodies of water. The persistence of wind waves can belie their importance. While a boat wake coming ashore can seem like a significant event, in the larger scheme of things it can be of little consequence if that shore also experiences wind-driven waves. In all but the most protected of shorelines, it would be difficult for boating to match the role of wind waves and natural currents on shaping shorelines.

		Maximum wave height (in)			
Distance from track (FT)		0	100	200	300
Cruising	Shallow	15.42	10.16	8.83	5.09
Cruising	Deep	14.54	9.95	7.19	6.32
Wakeboard	Shallow	21.82	11.18	9.13	6.93
Wakeboard	Deep	22.46	13.63	10.10	9.87
Wakesurf	Shallow	27.83	11.75	9.63	5.91
Wakesurf	Deep	26.14	19.88	15.89	12.92

Shallow water = max 10 ft

Deep water = min 22 ft

WSIA Wave Energy Study - Findings

What did WSIA learn from the scientific conclusions that emerged from the wave energy study?

1. Wakeboard and wakesurf wakes/waves, when operated at least 200 feet or more from shore, do not carry enough energy to have a significant impact on most shorelines or on properly maintained docks and other man-made structures.
2. The maximum wake/wave height associated with wakeboarding and wakesurfing drops 27 to 56 percent in the first 100-150 feet of its travel from the boat path.
3. Boat wakes/waves from cruising boats, recreational boats included, dissipate more slowly and lack the initial drop in size associated with wakeboard and wakesurf wakes/waves.
4. A Wakesurfing boat passing a section of shoreline every nine minutes is less damaging than naturally occurring waves from a 10 mph wind with one mile of fetch.
5. A wave loses the most significant amount of energy upon its initial break. This happens very quickly in wakeboarding and wakesurfing due to the wakes steepness, while a wave created by a boat at cruising speed with less displacement can fail to break while moving towards the shore, preserving its energy.

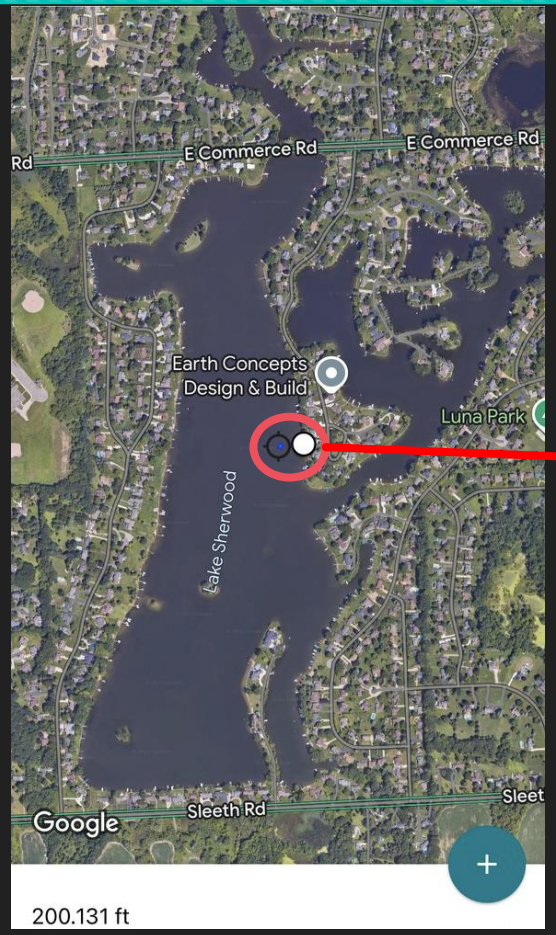
Picture from Aug 2024 storm on Lake Sherwood, wind generated waves on main lake

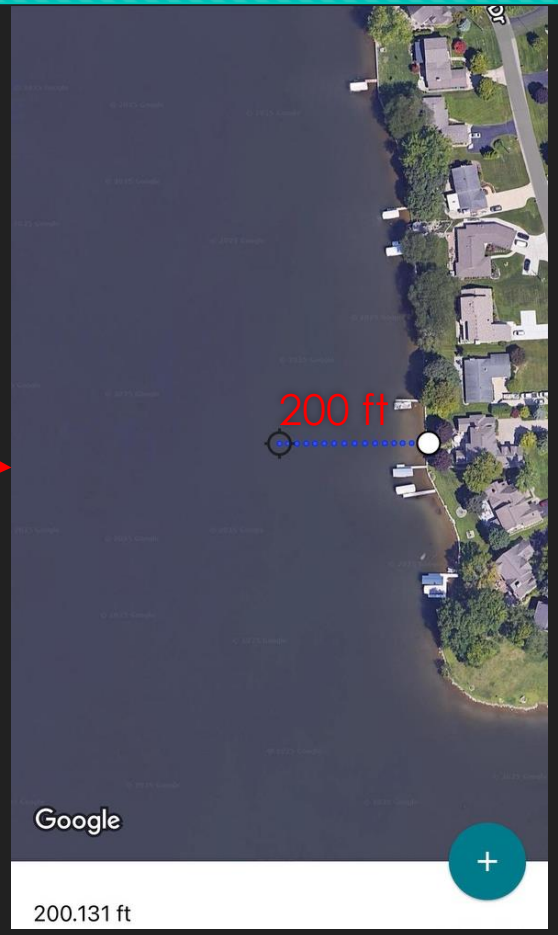
WSIA Wave Energy Study - Recommendations

While the study has demonstrated that, in most conditions, wakesurfing and wakeboarding are far less destructive than naturally occurring waves, the WSIA still strongly recommends the following:

1. Always try to wakeboard or wakesurf in the center of any given body of water, and avoid narrow channels or thoroughfares, if possible.
2. Always try to stay at least 200 feet away from any shoreline, dock, or fixed objects.
3. Maintain a reasonable sound level on your stereo.
4. Always respect the shoreline you are using and if the property owner asks that you leave, do so immediately, and always be gracious with the property owner.
5. Repetitive passes result in an accumulation of energy reaching the shoreline. Repetition is never a good idea and can lead to risk of waterway conflicts.
6. The non-surfing side of a wakesurfing boat creates waves that are 10% to 23% smaller with 23% to 33% percent less energy than the surfing side. When possible, present the non-surfing side of the boat to the closest shoreline.
7. Waves tend to increase in height on the inside of a gradual turn. Avoid such maneuvers close to shore.
8. Glass calm water is not a requirement for wake surfing, be respectful and operate as far from shore as you can.

Lake Sherwood Map





Maintaining the aligned 200 ft from shore guideline is not an issue on Lake Sherwood

MICHIGAN® BOATING INDUSTRIES ASSOCIATION

January 22, 2025

I am writing on behalf of the Michigan Boating Industries Association (MBIA), the National Marine Manufacturers Association (NMMA) and the Water Sports Industry Association (WSIA).

The MBIA is a statewide, non-profit marine trade association which works to advance, promote, and protect boating in Michigan. Our industry locally and nationally supports education, not restrictions. We are engaged and intent on defending the rights of boaters in Michigan, as well as educating them on their responsibility to protect the waters on which they recreate.

Our outreach today is as an advocate for boaters' rights. The MBIA and MDNR have a decades long relationship of working together to proactively educate the boating community and other water users on safe boating practices and collaboration on Michigan's lakes and rivers.

In 2024,the MDNR Fisheries Division recently released a "Literary Review of Wake Studies" – suggesting Voluntary Operating Practices for wake boat operators, not a rule. This Review has caused much confusion among boaters around the state.

Important to note: DNR Fisheries chose to review and cite studies that were "not" peer reviewed and in some cases partially or fully funded by anti-wake groups. None of these studies were conducted in Michigan. There was little consensus within these studies with setback recommendations from 200 – 1000 feet as well as other conclusions. MDNR Fisheries is suggesting a 500 ft. setback is appropriate for wake boats. We disagree.

The only peer reviewed wake boat study, Cotty Fay, shows a 200 ft. setback is the recommended distance to dissipate a wake so that its impact is equal to that of wind fetch. The boating industry nationwide is underway with an educational campaign using this 200 ft. recommendation. Additionally, the National Association of Boating Law Administrators (NASBLA) Model Act recommends 200 ft.

MDNR Fisheries has not proposed any regulatory changes for Michigan Boaters, only voluntary best operating practices, and hence it would be without merit that any lake preemptively seek to create rules based on this Literary Review of Wake Studies.

The current State of Michigan Law for operating distance is 100 ft. MBIA along with the major watersports related associations have uniformly suggested 200 ft. based on the peer reviewed Cotty Fay study. A change to 500 ft. has many risks. It will create a smaller usable water surface leading to a higher concentration of boats. This could lead to an increased probability of accidents. It may make some narrow lakes unusable – lowering property values and decreasing home values. This change may also render personal assets unusable.

It is also an attack on one boat type, when all boats are capable of making large wakes. Distance stipulation for one boat type will not change behaviors. Education is the best way to ensure all boaters work together to share the lake. As I mentioned, our industry is engaged in a state-wide effort to help boaters work together to share the lake. We invite users to host workshops for boaters in their area. Free educational materials are available upon request and widely shared with new boaters.

The MDNR retains full authority of the water, including on lakes without Public Access, and would need to approve any proposed changed or new resolutions for it to be enforceable. Any new resolutions would also likely require the MDNR access to the lake to study the effects and causation for which you are seeking to pass a resolution.

Banning and/or restricting one boat type is a slippery slope. The next target could be all power boats, or fishing. Many feel paddle craft are "in the way". Might they be targeted.

We must remember, the value of outdoor recreation to families is more important today than ever before as many new families have learned to embrace outdoor recreation these past 5 years. Outdoor recreation has grown significantly, and like the MDNR, MBIA is working hard to keep people recreating outdoors in our parks and on our lakes and trails.

Michigan's boating industry brings a $11.7 billion economic impact to our state each year – supporting 58,000 jobs and 1,500 businesses. Boating and access to water brings quality of life to more than 50 percent of Michigan's residents.

Education and collaboration are the key to allowing all who live on the lake to share the lake. We encourage all to host workshops for boaters in your area. Free educational materials, videos, and social media content are available upon request.

Please feel free to reach out to me if you have any questions.

Sincerely,

Nicki Polan

Nicki Polan | Executive Director
Michigan Boating Industries Association
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734.261.0123, ext. 4 | npolan@mbia.org
www. mbia.org | www.Boatmichigan.org

cc: National Marine Manufacturers Association
Watersports Industry Association

Additional Points from MBIA

1. Banning any boat type is a slippery slope. What boat type will be next?
2. Education and collaboration are the most important way to assure all users continue to have access to the lake.
3. Education for wake boats should include to avoid repeat passes, turn down your music, stay 200 feet away, be respectful of other boaters.
4. Do not know of any lakes which have banned wake boats. Many lakes have worked out a plan to assure safe and coordinated usage. Other lakes have identified wake areas. There are ways to collaborate without taking away access.

Rationale for Supporting Current Rights of all Lake Sherwood Boat Owners

1. Reducing Lake Sherwood's current standing of being an All Sports to a Multi Sports Lake risks a reduction of property values
2. The State of Michigan has assessed similar legislature to what is being proposed for Lake Sherwood and has elected not to proceed with such restrictions. Legally, it would be extremely difficult to institute such a ban, even on our private lake.
3. While water quality is a known issue, there is no factual evidence or data indicating reducing/eliminating/banning wake boats would make any significant impact on water quality.
    - Other efforts and subject matter expert recommendations, which are backed with evidence, should be adopted first
4. Scientific evidence does not support findings that wake boats are a significant cause of shoreline erosion / seawall damage
    - There are several scientific papers on both sides of this issue, which are contradicting. Peer reviewed studies indicate that operating 200 ft from shore is equivalent to the waves created by common natural winds.

Lake Sherwood Association By Laws

ARTICLE II - PURPOSE

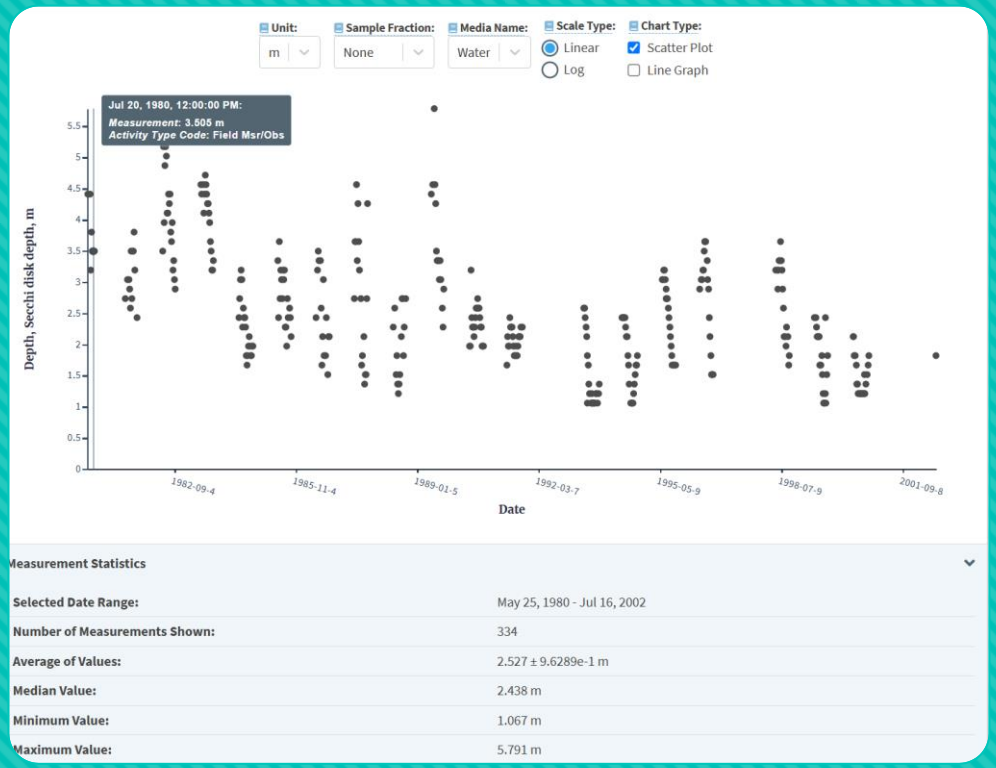
2.01 **Purpose**

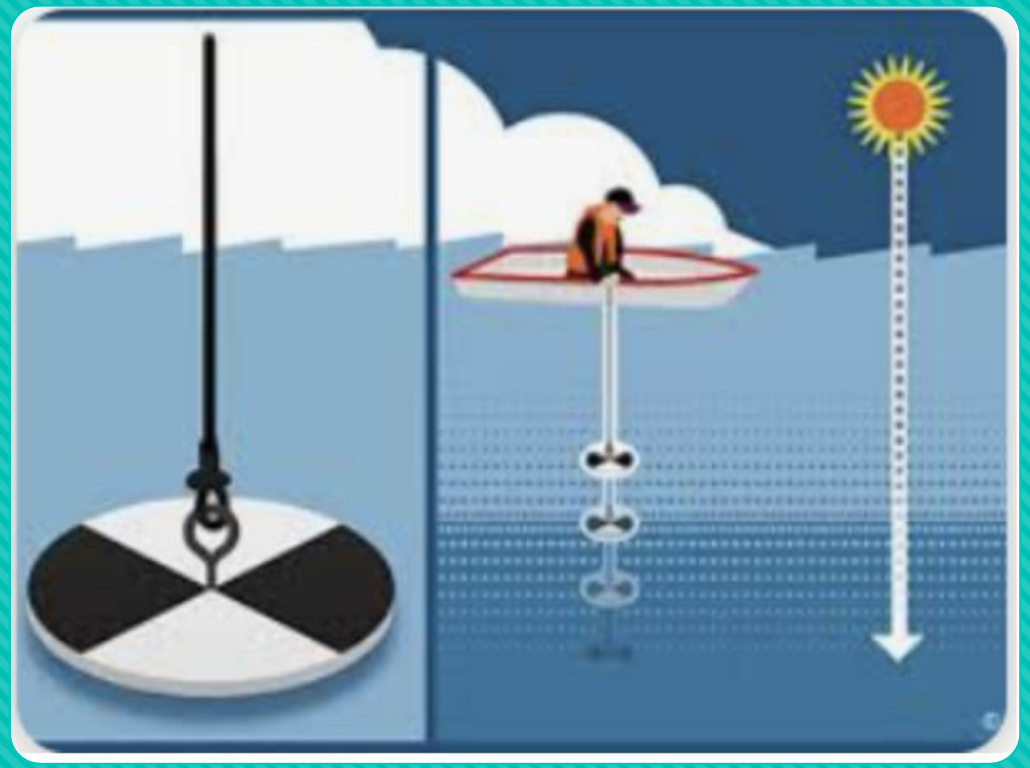
The purpose for which this Association is formed is as follows:

a. To actively promote the education of riparian property owners and other lake users about water quality and water safety.
b. To morally and actively support issues which concern the welfare of lake and stream waters in general including the conservation of the water supply and environment of the Lake Sherwood watershed and that of the surrounding area, the maintenance of the water supply for safe recreational activities and the maintenance of the water supply and surrounding areas so as to be conducive to the renewal of fish, wildlife and plant life resources.
c. To cooperate and otherwise interact with local, state and federal governments and educational institutions in matters relating to the preservation of water supply and quality.
d. To actively oppose indiscriminate or over development of the waterfront or access thereto which could lead to overuse or improper use of the waters and deterioration of their quality including but not limited to the negative impact such would have on Lake Sherwood Association riparian property owners.
e. To actively support the Michigan Lake & Stream Associations, Inc. and other lake associations in all matters that will promote the conservation of water quality and supply or serve as a detriment to same.

f. To actively promote the welfare of the Association member property owners in matters relating to building and lake restrictions, sanitation, taxation, public nuisance, property maintenance and threat and/or potential abuse of Lake Sherwood and its property owners by member or non-member influences.
g. To do any and all things lawful in connection therewith for a non-profit Corporation.

Thank You





A Secchi Disk is a black and white disk that is dropped into the water to test water clarity. The tester evaluates how deep they drop the disk before it is no longer visible. Simply put, how clear vs cloudy is the water?.

Secchi Disk readings 1980 – 2002 (334 datapoints) – Data provided by: www.mywaterway.epa.gov

2023 Studies – Avg 1.28m

2024 Studies – Avg 1.2m

2023/2024 Readings are similar to 1993/94 & 1999 results.