

Wakeboating in Michigan

Impacts & Best Practices



Introduction

This booklet was created to help you learn about wake boats, the sport of wakeboarding, and their environmental, economic, and safety impacts in Michigan and the United States. As the sport gains popularity in Michigan, more scientific information is needed in order to make any decisions regarding reducing their environmental impacts.

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What is a Wake Boat?

Wake boats are a type of inboard motorboat, built for specific water sports. Wake boats generally have an inboard v-drive or stern drive (both types of inboard motors) configuration, which puts the **motor in the back and/or underneath the bottom of the boat**, and are **modified using a wedge device and/or ballast tanks or bags** that can weigh upwards of 1750 pounds when filled **to create a larger wake**.

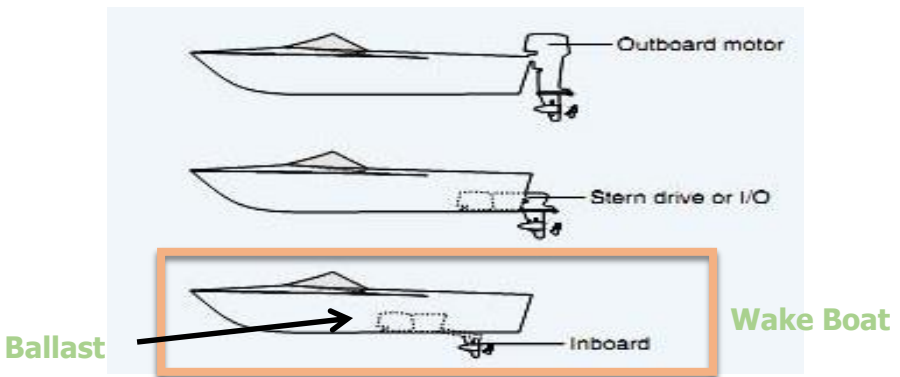


Diagram credit: Guidance to Buy, Maintain, and Improve Your Boat

Outboard motors are on many boats (like ones used for fishing), but they do not extend as deep into the water as inboard or wake boat motors. V-drive configurations (highlighted above) are typically the safest for boat users because the prop is tucked behind the rudder and cannot be reached by a user floating next to the boat.¹

How Do Wake Boats Affect Lake Environments?

Wake boat propellers can **churn up sediment** that settles to the bottom of the lake, **silting in fish spawning habitat and smothering aquatic vegetation.**

This turbulence can also **churn up nutrients** such as phosphorus that **could increase algal growth**, turning the lake water from a beautiful blue to a less than attractive green over time.



Algal bloom in Lake Erie in 2011.

Because wake boats produce a larger wake, there is more potential for erosion on shorelines compared to other motorboats.²

Wake Boat Environmental Impacts

Wake boats displace large amounts of water and have propellers that reach deeper into the water, so the boat needs to be kept at depths that keep the lake environment safe. If water is not deep enough, the propeller will cut off plant shoots and can even uproot whole plant. These aquatic plants provide food and habitat for aquatic wildlife and some species can even improve water quality.

Propellers and large wakes can also disturb nesting birds along the shore, as well as other organisms that use shorelines to nest, spawn, or feed.

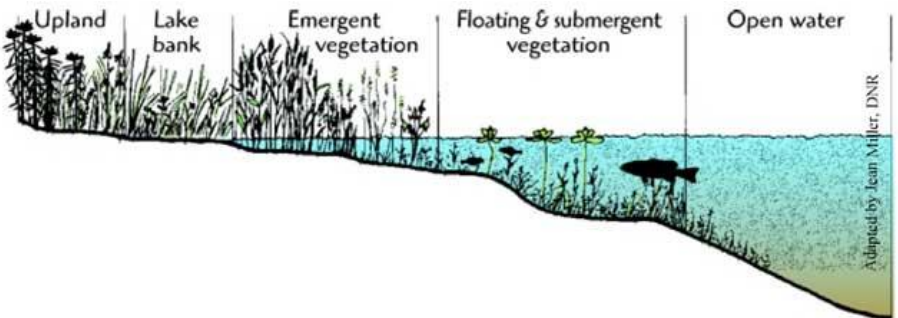


Diagram credit: Master Property Owners Association

As shown in the image above, lake vegetation varies as water depths change moving closer to the lakeshore. To reduce potential impacts, wake boaters should stay in deeper water. Wake boaters need to be aware of water depth and surroundings to reduce environmental impacts.

Wake Boat and Wakeboarding Background

Michigan is ranked third in number of boat registrations in the U.S., trailing Florida and Texas. It is a highly valued \$6 billion activity in the U.S.³

The amount of total boats sold has been increasing in recent years. According to the National Marine Manufacturer's Association (NMMA), new powerboat and sailboat increased 10.7% in 2012 and 2.2% in 2013; 11% of those increased sales in 2013 was the purchase of inboard motorboats. In 2011, the total number of inboard motorboats, like wake boats, was 1.05 million.⁴

Nearly 3,316,000, or 1.1%, of Americans age 6 or older participated in the activity of wakeboarding in 2013.⁵



Wake Boat Economic Impacts and What YOU Can Do

Section 80158 of Marine Safety Act holds wake boaters **personally responsible for any damage to life or property resulting from a wake.**⁶

Damage to property from boat wakes to docks, docked boats or landscaped shorelines can be in excess of thousands of dollars. **To reduce the impact of wake boats on shorelines and**



property, the Michigan Lake and Stream Associations, a nonprofit organization, recommends the following operating guidelines:

- **Reduce speed within 300 feet of shore**
- **Do not add ballast water or other extra weight to your wake boat**
- **Do not operate wake boats near sandy areas, wetlands or lakefront residences**
- **Avoid turning wake boats in tight circles (tight circles increase wave height and frequency)**
- **Avoid operating wake boats in shallow water or near natural shorelines**⁷

Wakeboarding in Michigan

Michigan also has designated **cable wake parks**, where wakeboarders are pulled by a cable system through the water:

Action Wake Park in Hudsonville, Traverse City and Fenton; Board Nation in Midland; and WakeFire Cable Park in Indian River



Wake parks, lessons, and clubs can be found in other states around the U.S. using a directory at www.wakescout.com.

In addition, Michigan hosts wakeboarding contests, such as ESPN X Games' MasterCraft Throwdown or the Meijer State Games of Michigan Cable and Boat Contest.⁸

MSU, U of M, and WMU have student wakeboarding clubs.



Businesses that provide wake boarding lessons, equipment rental, and/or charters in Michigan include:

Wake Sessions, PJ's Slalom School and Sharky's Slalom School in Waterford; Wakeboard Clinic in Boyne and Fenton; Eagle Sports in Fenton; Tommy's Ski and Wake School and Walloon Village Marina in Walloon Lake; and Pine Lake Ski School in West Bloomfield

Wake Boat Concern: Noise

Noise may be a concern to shoreline property owners.



Michigan law states that a vessel's muffler or exhaust system must prevent noise in excess of **90 decibels at idle**

from three feet away and 75 decibels when measured from the shore.⁹

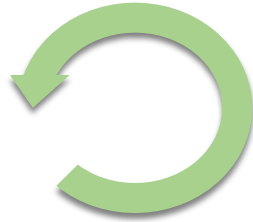
The National Marine Manufacturers Association (NMMA) identifies "one of the key annoyance factors is noise-induced speech interference, and indicates the highest acceptable level of outdoor background noise is a constant sound level of 72 dBA. Above this level, people have to raise their voices to communicate. The marine industry has conducted pass-by tests proving that a 75 dBA pass-by sound level produces an 'equivalent' (energy average) sound level of 71 dBA."¹⁰

Speakers designed to throw music behind the boat where a wakeboarder 20 to 80 feet away can hear it are another potential noise concern.¹¹



Guidelines from the Marine Safety Act

Always try to operate your wake boat in a **counter-clockwise** motion around a lake.¹² (From Part 1 of Section 80149)



Wakeboarders behind wake boats need to keep a distance of **100 feet from any dock, raft, buoyed or occupied bathing area, or vessel moored or at anchor**, except when the wake boat is proceeding at a slow—no wake speed or when wakeboarders are being picked up or dropped off.¹² (From



Part 1 of Section 80149)

Keep your wake boat at least **200 feet away from a buoyed diver's flag** unless it is involved in tendering the diving operation.¹³ (From Section 80155)



Wake Boat Safety Recommendations

The National Marine Manufacturers Association (NMMA) recommends that boaters:

- Stay at least **150 feet** from other vessels, swimming areas, anglers, etc.¹⁴
- Pass others within 150 feet at a **no-wake speed**¹⁴
- Don't operate your wake boat in water less than **2½ feet deep** and travel slowly in shallow waters¹⁵

A scientific study by Hostetler et al. (2005) found that **head injuries and lacerations, especially to the face, were the most common** types of wakeboarding injuries.¹⁶

Wear protective gear while wakeboarding!



Conclusion

Wakeboarding is a well-known water sport and sales of inboard motorboats, like wake boats, are increasing. There is little scientific data available about impacts of wake boats and more research is needed before regulations, if any, are made. We as Michiganders not only love our lakes, we love our water sports as well. By wake boating and wakeboarding responsibly and being conscious of our impacts, we can help keep ourselves and other water-users safe and keep our Michigan lakes “Great!”²

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