

Wakesurfing

Know the Facts

Fact: All relevant studies have concluded that a) wind produced wave related energy transfer is the primary determinate of shoreline erosion and b) dissipation of enhanced wakes at 200ft is sufficient to prevent any threat of shore erosion

- In a 2022 Peer Reviewed study, Fay et al find that *"if a wake surf boat is operated at least 200ft from shore and in at least 10ft of water, the environmental impact is limited"*. That study can be found here: <https://www.scirp.org/journal/paperinforcitation.aspx?paperid=116094> or through a google search for "Numerical Study on the Impact of Wake Surfing on Inland Bodies of Water"
- In a 2015 study, Goudey and Girod show that, *"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."*
- The myth that wake boats erode shorelines primarily comes from a 2022 crowdfunded (non-peer-reviewed) study from the St. Anthony Falls Laboratory that compares wake surfing waves to those of other boats - primarily an old Lund fishing boat. This study finds that a brand new Malibu creates a bigger wave than an old Lund. The study concludes that the Malibu wave needs about 700ft to dissipate to the level of the Lund wave at 200ft (this is where the 500ft talking point comes from) but this is only a comparison of waves, not a commentary on their effect on the shoreline in the broader context of all forces experienced by that shoreline. In fact, the study directly states that, **".....(this study) does not address potential environmental impacts such as shoreline/riparian erosion, water quality degradation, or alteration of aquatic habitats"**.

EXAMPLE: All relevant studies have concluded that a) wind produced wave related energy transfer is the primary determinate of shoreline erosion and b) dissipation of enhanced wakes at 200ft is sufficient to prevent any threat of shore erosion

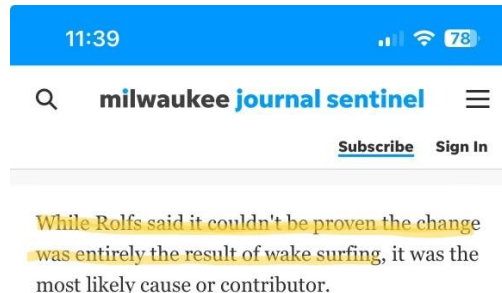
These figures (Goudey et al, 2015, p23,24) demonstrate the dramatically outsized effect that wind has on shore energy transfer when compared to boating. For example, with a 4 mile fetch, it takes only one wave generated from a 10mph wind speed to transfer more energy to shore (1,046 J/min) than any wakeboarding or wakesurfing wave with a 210ft standoff. Now consider that in this scenario the aforementioned wind generated wave has a frequency of 2 seconds (T_e (s) on the graph), meaning that on a common 10mph wind speed day, this amount of energy is being transferred to shore every two seconds by wind waves whereas a wake boat is likely to make a pass only a few times per day. One can conclude from this graph that over the course of a year, or even a day, **wind waves are transferring literally thousands of times more energy to shore than any wake boat operating 210 ft from shore.**

Wind speed (mph)	Fetch (mi)	H_{mo} (ft)	T_e (s)	Energy (Joules/min)
10	1	0.3	1.3	208
20	1	0.62	1.6	790
30	1	0.9	1.8	3,148
10	4	0.6	2	1,046
20	4	1.19	2.4	2,418
30	4	1.82	2.8	17,572

Operating mode	Water depth	Stand off (ft)	Total wake energy (J/m)
Cruising	deep	10	305
		110	349
		210	293
	shallow	10	280
		110	274
		210	230
Wakeboarding	deep	10	850
		110	616
		210	602
	shallow	10	666
		110	519
		210	478
Wakesurfing	deep	10	1846
		110	937
		210	821
	shallow	10	2495
		110	868
		210	692

Myth: Opponents of Wakesurfing claim that recent changes in lake environments corresponds with the arrival of wake boats

- Opponents of wake boats have been claiming that recent changes in lake environments are due to the recent introduction of wake boats to these lakes. This claim is simply non-factual, as wake boats have been on Wisconsin lakes since the late 1990's and have thus been on Wisconsin lakes for nearly 30 years.
- Besides the fact that these claims are often based on anecdotal evidence and never seem to consider the thousands of alternative variables that could cause changes to lake environments (ie. higher fishing traffic post covid or differences in year over year weather patterns), they demonstrate a lack of historical understanding, as wake boats were introduced in 1997.
- When pressed, promoters of the specious narrative are unable to point to specific changes or data, and will even admit that they do not know what is causing the unspecified perceived changes. See excerpt below in which Scott Rolfs, a director of LASW, admits in a Journal Sentinel article that he cannot prove that wake boats are causing perceived changes in lake environments:



Fact: Representative Wisconsin lakes are as healthy as ever

- A recent video published by LASW allegedly shows video of weed decline in Big Cedar Lake in Washington county as evidence for wake boat-caused harm to aquatic vegetation. However, the most recent DNR survey gave Big Cedar Lake its highest score for vegetation health.
- The Big Cedar Lake PRD harvests and tracks aquatic vegetation weekly during the summer. Their harvesting data for 2022 similarly paints a picture of robust aquatic vegetation life.
- Further, the US Geological Service presented findings from ongoing monitoring efforts to the Big Cedar Lake PRD this year. Their findings demonstrated a clear **improvement** in water quality over the past 20 years.
- For the 2015-2023 period (The time period that LASW claims it began noticing “changes”) the 2023 DNR Citizen Lake Monitoring Report for Big Cedar Lake displays no discernible trends in any of its tracked measurements, including: trophic state, water clarity, Secchi depth, phosphorus levels or chlorophyll-a levels.
- In summary, the narratives pushed by anti-wake boat groups are **directly refuted** by publicly available data from multiple authoritative agencies.

Myth: Opponents of wake boats claim to have videos depicting a decline in aquatic vegetation

- The aforementioned video published by LASW does not provide any corroborating evidence that the two video clips were a) taken at the same time of year b) were taken at the same spot on the lake c) were taken during at the same time of week either prior to or post-weed harvesting or d) were even taken in Wisconsin!
- The video appears to be taken in separate areas of the lake that are less than 10 ft deep, meaning that it is unlikely that any wakesurfing has even occurred in either of the locations shown.
- **The conclusions that LASW draws from these two allegedly related video clips is directly contradicted by publicly available official data from the WI DNR, the US geological service, and the PRD from the lake in question.**

Fact: Every recreational boat can spread AIS

- Some AIS can attach to hull surfaces, making it necessary for all boaters to take extra care to clean their boats and prevent AIS spread.
- Many types of boats have onboard water tanks such as livewells on fishing boats. **On board water tanks are not unique to wake boats**, and any boater with an onboard water tank must take precautions to prevent AIS spread.
- Opponents of wake boats claim that ballast systems present an increased risk of AIS spread because AIS can live in these systems. While true that AIS can spread through ballast systems, anti wake boat groups conveniently ignore that fishing boats with livewells dramatically outsell wake boats in Wisconsin. What's more, these livewell systems in fishing boats are specifically designed to house aquatic species. To claim that wake boats present an urgent threat of AIS spread while not mentioning fishing boats with livewells is a disingenuous argument.
- All boaters, including those with fishing and wake boats have the right to enjoy Wisconsin lakes and simultaneously the responsibility to ensure that their boats are not harboring AIS.
- **A study conducted in 2018 by the University of Minnesota Aquatic Invasive Species Research Center showed that ALL boats have the ability to transport aquatic life. These include ballast, sterndrive engine, outboard motor, livewell, foot well (kayaks), splash well, bilge, and jet. Heidi Wolf, Invasive Species Supervisor for the MN DNR stated, “under that strategy, wakeboard boats shouldn’t be singled out,...”**
- A study conducted by the University of Notre Dame (August 2008) showed that upwards of 30% of fishermen in northern WI move across lakes, sometimes multiple lakes in the same day...a high risk behavior.

Myth: Wakesurfing Is Operationally Dangerous

- Wake boats, even in surfing mode have full visibility while operating
- Wakesurfing is done at ~10mph, significantly slower than other recreational activities such as tubing (~20mph), slalom skiing (~30mph), or fishing tournament shotgun starts (~40mph).
- As of 4/10/24, the DNR's incident tracking system doesn't have a single recorded accident or fatality in the last 5 years involving a wake boat in surf mode.