

March 22, 2023

Dear Inland Fisheries and Wildlife Committee,

Re: Support for LD 693: "An Act to Protect Inland Water Quality, Shorelines, Wildlife and Public Safety by Prohibiting Operation of a Wake Boat to Create an Enhanced Wake Close to Shore or in Shallow Water "

My name is Donald Griggs. I am a member of the Maine Boating Impact Coalition (MBIC). I have owned property on Kezar lake in Lovell ME for over 50 years. While serving on the Board of the Kezar Lake Watershed Association (KLWA), I became very concerned about the impact large boat wakes were having on our lake environment. Beginning in the spring of 2018 I spent several months researching and studying the hydrodynamic effects and equations associated with boat wakes inherent in the sport of wake surfing. I prepared presentations and a flyer for delivery to our Association, and many others, explaining the impact this sport was having on our lake. I also studied the problem of bottom scouring in shallow water. I developed recommendations that asked that wake surfing activities be done at least **500 feet** from shore and in water over **20 feet** deep. These recommendations were based on my calculations without any empirical supporting data.

Since my early work on this problem, we now have several studies that are based on rigorous empirical science. Chief among these studies is one from Saint Anthony's Falls Lab (SAFL) ([SAFL Boat Generated Wake Wave Report \(2.676Mb application/pdf\)](#)) that recommends wake surfing be done over **500 feet** from shorelines to dissipate the wake height down to the level of those from boats on a plane, such as a ski boat. This study also points out that these wake surfing wakes contain 3 to 9 times the energy of a ski boat wake and that the maximum wave power is 6 to 12 times greater. **The reason these wake heights and energy numbers are important is because of the damaging effects the wakes have on shoreline erosion, bottom disturbances and damage to docks and their moored boats.** Boats operating on a plane produce much smaller wakes and are not of much concern.

As for the minimum water depth appropriate for wake surfing, I had calculated the number to be 20 feet deep. I also conducted my own experiment by using an underwater video camera to record the bottom impact of a startup of my 130 hp I/O boat in about 10 feet of water. The video showed dramatic bottom disturbance with billowing silt and vegetation swirling before the camera. I also used a turbidity meter to record a tenfold increase in turbidity. Since then, an empirical study done by the Terra Vigilis Group in Wisconsin in July 2022 (<https://nlmddotorg.files.wordpress.com/2022/07/nlmd-phase-2-study-report-july-20-2022-with-appendices.pdf>) concerning the propeller downwash characteristics for wake boats in surf mode showed that a bottom impact was measured at depths over **20 feet** deep, This depth effect is 3-4 times greater than for other categories of boats owing to their greater engine power, propeller angles, hull design, ballasting, and the wake surfing mode of operation.

I have personally seen the impact of large boat wakes on my property in that these wakes have eroded part of the bank of the shoreline back about 5 feet. I have also experienced silt deposition and algae formation on my dock steps, boat bottom and rocks in the water from boats disturbing the lake bottom where the water is from 6 to 15 feet deep. These effects did not exist 20 years ago, or now, in the northern most part of the lake where there is very little boat traffic.

The problems and solutions of managing wake surfing throughout the United States and Canada is growing. There is a National Partners Group that has been formed that meets monthly to share ideas, solutions, and progress of the many states as they confront wake surfing issues. Vermont has a group similar to MBIC that has a petition before the Vermont Department of Environmental Conservation (DEC) to regulate wake boat use on Vermont lakes. The DEC has published a draft response to the petition (<https://dec.vermont.gov/sites/dec/files/wsm/lakes/docs/Wakeboats%20Proposed%20Draft%20Rule%20Info.pdf>) that advocates at least a **500 foot** standoff, a minimum depth of **20 feet**, a minimum "Wake Sports Zone" of 50 acres in which to wake surf, and a "home lake rule" to control the spread of invasive species.

It is important to establish controls on wake surfing activities soon, because these boats are proliferating and because the manufactures are competing with each other, increasing the performance of these boats to deliver ever larger wakes. For example, the SAFL study used 2019 wake boats with 450 HP engines and 4,800 pounds of ballast whereas the 2023 models of these boats have 600 hp engines and 6,000-pound ballast tanks.

A wake boat operating in the wake surf mode near the current 200-foot no-wake zone will create conditions in that zone that are unpleasant at best and un-safe for many boating activities such as fishing, paddle boats and small sailboats. A **500-foot** standoff rule would greatly benefit the shared use of the water for the majority of the people using the water.

I am a strong supporter of the need for regulation of wake surfing activities on Kezar Lake, and on all Maine lakes large and deep enough to support wake surfing. I think it is clear that wake boats are a whole new class of boats because of their power, hull design, weight, ballast and method of operation that require new rules to manage their use on Maine waters. I am willing to support those who want to enjoy the sport of wake surfing but only in those locations that are at least **500 feet** from shore and in water over **20 feet** deep. The science behind establishing these criteria is very strong and growing. Education for those people who want to wake surf is also important. They need to know about the side effects of the sport and how to mitigate its adverse impacts. One vital education tool is to provide wake surfers with a map of their lake that shows the designated wake surf areas, as shown below in yellow on this double-sided flyer for Kezar Lake.

I respectfully ask that you vote "ought to pass" on LD693 as it seeks to protect Maine lakes from undesirable effects of uncontrolled wake surfing and will benefit all users of our lakes.

Sincerely,

Donald Griggs  
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**CONCERNS**

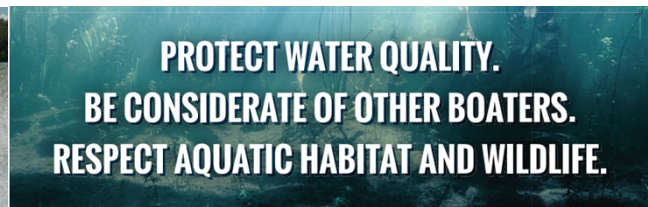
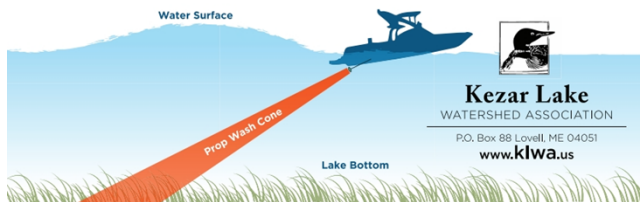
Wake surfing and wake boarding have increased substantially in recent years. While the challenges and excitement of these sports are undeniable, they do require large wakes which can have side effects on Kezar Lake.

**SIDE EFFECTS**

Large wakes can damage docks, moored boats, loon nests and limit enjoyment of small watercraft like paddleboards, canoes and kayaks. Large wakes also erode the shoreline and stir up bottom sediment which often has a high phosphorous content. Phosphorous can cause algae blooms. Sediment can clog fish gills and suffocate fish eggs.

**CAUSES**

While large wakes are often associated with high speed boating, you may be surprised that slow-speed boating (6 to 12 mph) creates the largest wakes. Off plane, a boat's bow angles up and the propeller angles down which creates large wakes and stirs up bottom sediment in shallow water. This is known as "plowing the water" as shown below.



**HOW TO HELP**

- Find large water areas where wakes will diminish before reaching shore and where propeller wash won't scour the bottom.
- Operate your boat at least 500 feet from shore.
- Operate in water more than 20 feet deep.
- Avoid small bays, channels and enclosed areas, especially during high water periods.
- Avoid marshy areas where fish and loon habitat is likely to exist.
- Leave and approach shore in a straight line. Turning makes large wakes.
- Operate at least 500 feet from small water craft.

