

The University of Minnesota study found that wakesurf boats produce larger, more energetic waves and can significantly disturb lake bottoms, recommending greater distances from shore and deeper water for safe operation.

## Study Overview

Researchers at the University of Minnesota's St. Anthony Falls Laboratory conducted a detailed study on the hydrodynamics and environmental impacts of recreational boats, focusing on wakesurf boats versus typical recreational boats [um.edu+1](#). The study measured **maximum wave height, total energy, and power** of wakes, as well as how these waves dissipate as they move toward shore [um.edu](#). The research aimed to provide scientific data to guide safe and environmentally responsible boating practices on Minnesota lakes.

## Key Findings on Wave Impacts

- **Wakesurf boats generate larger waves** than typical recreational boats in terms of height, energy, and power [um.edu](#).
- To reduce wave impacts to levels similar to non-wakesurf boats, **wakesurf boats require distances greater than 425–500 feet from shore or other boats**, which is more than twice the 200 feet currently recommended for standard recreational boats [um.edu](#).
- Larger waves from wakesurf boats take longer to dissipate, increasing potential shoreline erosion and disturbance to aquatic habitats [um.edu](#).

## Lakebed and Water Quality Impacts

- Phase II of the study examined **lakebed disturbance** at varying depths and speeds in Lake Minnetonka [Wisconsin Public Radio+1](#).
- Wake boats in surfing mode caused **significant sediment disturbance at depths of 9–14 feet**, uprooting vegetation and affecting fish habitats [protectlakebeulah.org](#).
- Based on additional testing in 27 feet of water, researchers recommend **operating wakesurf boats only in water depths of 20 feet or greater**, measured to the top of vegetation, to minimize ecological impacts [protectlakebeulah.org](#).
- Traditional recreational boats also disturb the lakebed but to a lesser extent, and should operate in at least 10 feet of water when cruising or planing [Wisconsin Public Radio](#).

## Recommendations and Implications

- Maintain **greater distances from shore and other boats** when wakesurfing to reduce wave energy near sensitive areas [um.edu](#).
- Operate wakesurf boats in **deeper waters (20+ feet)** to protect lake bottoms, vegetation, and fish habitats [protectlakebeulah.org](#).
- The study provides **baseline data** for policymakers, lake managers, and boaters to balance recreational use with environmental protection [um.edu+1](#).
- Findings may inform **statewide boating guidelines** and encourage education on responsible wakesurfing practices [MPR News](#).

The University of Minnesota wake boat study highlights the need for careful management of wakesurfing activities to protect lake ecosystems while allowing recreational enjoyment. It establishes scientifically backed recommendations for **distance from shore, water depth, and boat operation modes** to minimize environmental impacts.