

Testimony for LCAR hearing, Feb 1, 2024 on ANR proposed ruling on Wake Boats.

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I ask the LCAR, as called for in 3 VSA 842, to remand this proposal back to the ANR to amend the proposal to a 1000 foot rule, to respond to the overwhelming public comment on the rule to be consistent with current laws and to be consistent with the mission of the ANR for the following reasons:

ANR has not, as called for in **16 VSA 840**, “**considered fully all written and oral comments and testimony.**” Wake boats, where allowed, will diminish the environment that attracts many other quiet users to lakes and ponds – literally drive them away and damage waterfront property. Wake boat use will create safety hazards for other recreational users – especially paddle sports, fishermen and shoreline users.

ANR has “decided in a final proposal to overrule substantial arguments and considerations raised for and against the original proposal,” as explained in **3 VSA 841**, That decision is **arbitrary**, as described in **eVSA 842(a)(3)**

The proposed rule is **contrary to the intent of the Legislature**, as spelled out in 3 VSA 842. The legislature intended for ANR to preserve and protect the health and traditional uses of our lakes and ponds. Specifically, the legislature at **10 VSA 1424** tasked the ANR “to manage the public waters so that the various uses may be enjoyed in a reasonable manner, in the best interests of all the citizens of the state.

This remainder of this document consists mainly of personal testimonies of the impact of wake boats on watersports’ activities and waterfront properties. It was collected from published commentaries and privately circulated documents. Additionally, there is a commentary of wave physics of Wake Boats at the bottom.

Wake boats are powerboats designed to create large (3- to 5-foot) wakes, enabling surfing behind the boat without a tow rope. Wake boats are enormously expensive limiting the number of people who can afford them. Their disruptive nature to other lake users and lakeside owners is all out of proportion to their numbers.

Normal uses” for this purpose were defined as those existing prior to Jan. 1, 1993: fishing, swimming, boating, waterskiing, fish and wildlife habitat, wildlife observation, the enjoyment of aesthetic values, quiet solitude of the water body, and other water-based activities. Wake boat use is not considered a normal use, nor was such a use ever contemplated in the originating legislation and regulations.

A citizen coalition, along with lake associations and DEC staff, designed a rule that would keep wake boats off Vermont’s smallest lakes and protect the traditional enjoyments of swimming,

Public opinion massively supported the 1000 ft rule, by anywhere from 8:1 to 30:1 depending on how some comments were counted for identical copies of a letter with different signatures – whether 29 separate comments or a single comment as the U.S. Air Force does in their consideration of public opinion submission. That change doubled the number of unprotected lakes. Small lakes such as Fairlee, Shadow, Parker, Iroquois, and Joe’s Pond would be left open to wake surfing. No matter the actual ratio, this is obviously a situation of ignoring public opinion violating the intent and letter of the originating legislation.

My own personal opinion is that Wake Boats should be banned from all inland Lakes in Vermont. I am compromising my own strong feelings for to the sake of community with others who are fighting the 500 ft rule.

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The testimonies

(The names of these folks are not included here, to protect them from possible retribution.)

"We have owned our camp on Joe's Pond about 13, maybe 14 years. Now, on any given summer day, our shoreline is hit with countless, large, artificial waves created by so-called wake boats, waves that are significantly larger and more powerful than any waves mother nature can create on our small pond. Some of these intentionally created artificial waves crash up and OVER our docks, something we've never seen before. We are no longer able to moor our antique wooden runabout out on the water, or tied alongside our dock, as its buffeted and banged by large artificial waves arriving randomly from all directions, often simultaneously. We now keep our boat pretty much out of the water."

"What used to be a relatively quiet sandy area in front of our camp, suitable for small children and toddlers, wading and swimming, is now dangerous. When the big artificial waves arrive, small children are easily swamped or knocked over. If they're going to be in the water they require especially strict supervision, with an adult in the water to right them, when they get knocked over. We can no longer simply watch them from the shore."

"The plying back and forth of wake boats, designed to create large artificial waves, so that teenage boys can pretend that they're surfing, is irrevocably changing the essence of Joe's Pond. What used to be a relatively quiet body of water with the occasional boat wake has become a veritable washing machine, with large, artificial waves never seen before on Joe's Pond, now arriving from all directions. Large, powerful wake boats have fundamentally changed the nature of boating, sailing, swimming, paddle-boarding, kayaking, shoreline enjoyment and maintenance, on our small pond."

"In 2021, a resident on Lake Fairlee was treating an elderly couple to a pontoon boat ride recently when they noticed a motorboat with a surfer riding in its wake. It passed down the east side of the lake and turned at the north end near the shallows that support the only loons' nest. to make a pass along

"In 2020 my four-year-old grandson was playing in the water next to our dock on Lake Iroquois. A large wave from a wake boat washed him under the dock. As he was wearing a life jacket he was caught between the water and the underside of the dock. One of his cousins pulled him out before other waves arrived so he was not hurt, but easily could have been. This event reinforced my concern over the generation of such large wakes on small lakes. "

"As a swimmer, I came damn close to being run over by a wake boat on Lake Willoughby. At the time, I'd never heard the term "wake boat." I was invisible to the pilot of the boat coming at me. Nor was he visible to me — until the boat passed. The wakeboarder behind the boat glanced at me in surprise as he swept by. Had the wake boat not angled slightly to my left, I would not be writing this."

Both Lake Fairlee and Joe's Pond would have been off-limits to wake boats under the RWVL proposal. But under the administration's plan they'd lose their place on the "no-wake" list and be forced to welcome wake surfing.

The Aloha Foundation owns and operates five summer camps on Lakes Fairlee and Morey in the upper valley.

"Our primary concern is the wake boats' impact on the lake environment. The artificially enhanced wakes created by these boats cause environmental damage by degrading water quality, hastening erosion, and causing physical damage to shorelines and property," said ... "Our second concern is that these artificially enhanced wakes can present safety hazards for swimmers and traditional, unpowered boaters. Canoeing, kayaking, paddle boarding, and sailing are integral to our programs and to the culture of both of our home lakes." "Upon reopening our camp programs for the summer of 2021, we experienced these enhanced wakes firsthand, and determined that they are incompatible with traditional recreational uses. The enhanced

wakes create significant safety issues, including potential capsizing of canoes, smaller sailboats and paddleboards, in particular when operated by our youngest and least experienced campers and staff. "

"A friend of mine was injured when a wake boat wave knocked her down as she was attempting to get into her kayak. During Lake Fairlee's busy Fourth of July weekend, a couple of kayakers were capsized by a wake boat; the wake boat operator didn't stop to help. Were they even aware of what they had caused? Someone from shore hopped into a boat to assist the kayakers. Luckily no one was hurt this time."

https://vtdigger.org/2023/09/18/philip-logsdon-wake-boats-and-wave-physics-in-vermont-lakes/?utm_medium=email

Philip Logsdon: Wake boats and wave physics in Vermont lakes

The science of wave dynamics physics and our unique Vermont lakes speak compellingly in support of restricting wake boat use to a minimum 1,000-foot distance from shore.

This commentary is by Philip Logsdon, a physics professor delighting in the Lake Sunset ecosystem in Benson with family and friends for 50 years.

As a university physics professor, I am pleased when science is applied to decision-making. Those studying appropriate distance from Vermont lake shorelines for wake boat use have heard strong biology/ecology science arguments for a 1,000-foot restriction.

That science is extremely compelling. Because physics predicts significant adverse consequences of any limits set below 1,000 feet, I implore Agency of Natural Resources Secretary Julie Moore to factor wave dynamics science, explained below, into her agency's recommendations.

The law of conservation of energy. This law states that energy can neither be created nor destroyed. When applied to wave physics, this means that total wave energy remains unchanged.

Wave energy is a function of wave speed, length and height. When any of these components changes, the remaining components must adjust to the changes to maintain the energy level contained within the wave.

Wave energy enters a process called shoaling as the bottom portions of waves encounter a rising lake floor. As this happens, the wave both slows and the wavelength shortens, forcing the wave to maintain its energy level by increasing its height.

Waves on Vermont lakes more often encounter steeply rising floors — sometimes cliff-like. This causes waves to react more forcefully than they would on gradually sloping lake beds, and the waves produced are bigger and more powerful. Extreme examples of this process are tsunamis.

Effect of wake boats on wave energy. Wake boats exacerbate the shoaling process by injecting high-speed jets of water deep into lakes. Some of this wave energy rises immediately to create the "surf" plume behind the boat. Other energy becomes longitudinal deep-water waves and transverse air-water interface waves that radiate toward the shore.

Wave energy travels much faster and more powerfully longitudinally through incompressible deep water than through air or air-water surfaces. This is why submarines fear depth charges. Deep water energy must forcefully move upward when meeting a steep lakebed rise, the type encountered in many Vermont lakes. Upon encountering sharply rising Vermont lake beds, radiating wake boat waves become tall transverse waves very quickly.

These high, powerful waves wildly toss about swimmers, kayaks, canoes, paddleboards, and even boats and docks — as has been extensively documented in oral and written public testimony presented to the Agency of Natural Resources. After deep water waves blast upward — as wave energy physics requires — they bounce off arcing shoreline coves to recombine dramatically near the cove-center nesting areas of loons and other wondrous aquatic life. Cove centers are also where young and old humans enjoy swimming and tranquil paddling.

Impact of multiple wake boats on wave energy. The above concerns are greatly exacerbated if more than one wake boat is operating at a time. Waves from multiple wake boats operating simultaneously can combine to create enormous waves. Moreover, the incredible wave energy generated by wake boats grows each year as new boat designs consistently increase wake boat size, weight, and power.

Future prospects for multiple, simultaneously operating wake boats underscore the need for the Agency of Natural Resources to apply the precautionary principle as it develops a strong 1,000-foot minimum operating distance from shore rule for wake sports.

The science of wave dynamics physics and our unique Vermont lakes speak compellingly in support of restricting wake boat use to a minimum 1,000-foot distance from our near-shore precious lives, ecosystems and activities.
