

Rebuttal comments to industry comments (submitted during public comment period) opposing RWVL's petition

March 9, 2023

(Industry comments appear below in black, and RVWL rebuttals appear below in **red italics**)

July 29, 2022

Attn: Laura Dlugolecki
Vermont Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Davis 3
Montpelier, VT 05620-3522

Dear Ms. Dlugolecki,

The petition *Vermont Use of Public Waters Rules Chapter 32 (2021) Proposed Change to § 3 for Managing Wake Boats and Their Activities on Vermont Lakes and Ponds* lays out a case for severe statewide restrictions on the sport of wakesurfing in Vermont that would ban the sport, as well as every boat equipped with ballast tanks, from all but 14 lakes. Each of those lakes is more than 470 acres in size.

The petition does NOT ban all boats with ballasts from any lake—it only bans wake boat use with full ballast tanks or other devices for the purpose of enhancing or increasing its wake while under power on lakes without wake sport zones. On lakes where they are allowed, it regulates wake sports to occur in appropriate locations—1000 feet from shore and in water deeper than 20 feet— to minimize the negative impacts on the environment and on safety risk.

On behalf of the National Marine Manufacturers Association (NMMA), the Water Sports Industry Association (WSIA) and the Marine Retailers Association of the Americas (MRAA), we believe the mandates within this petition are unnecessary and are a speculative overreach of regulation. We ask that the Vermont Department of Environmental Conservation take no action on this petition and its call for regulation of wakesurfing.

By way of background, the National Marine Manufacturers Association (NMMA) is the largest trade association for the recreational boating industry, representing nearly 1,300 marine businesses, including recreational boat, marine engine and accessory manufacturers. The Marine Retailers Association of the Americas (MRAA) is the leading trade association of North American small businesses that sell and service new and pre-owned recreational boats and operate marinas, boatyards, and accessory stores. MRAA represents more than 1000 individual member retail locations throughout the United States. The Water Sports Industry Association (WSIA) is the towed water sport's industry's leading advocate. WSIA develops best practices, maintains waterway access rights, educates participants, promotes safety, and more. The petition

creates and defines a “wake sports zone,” which it arbitrarily establishes as being a 60-acre minimum section of contiguous water whose boundaries are a minimum of 1,000 feet from any shore and is a minimum of 20 feet deep.

A “wake sports zone” is not arbitrarily defined. Each parameter is well justified in the petition.

The petitioners would have this limitation applied to every lake within Vermont’s borders based on the potential that, at some time somewhere, wake surfers will present issues significant enough to warrant such government control.

As documented in the petition and in supporting public testimony, significant issues are prevalent today, even with the relatively small number of wake boats in Vermont. The time to educate and regulate is now, before more boat enthusiasts, unaware of the negative impacts, embrace these sports.

The purpose of our comments is not to refute every fact or finding plucked from the reports cited by the petitioner. While we will reference areas of obvious exaggeration or cherry-picking, our primary intent is to focus on the lack of need for ban and over-regulation as demanded by the petitioners.

The industry is aware of the negative impacts of wake sports as evidenced by their educational efforts. Despite this, the industry demands no or minimal regulation. The 200 ft distance from shore proposed by the industry is equivalent to what is already in place in Vermont and which recent science shows is inadequate.

We believe that the petition greatly overstates the prevalence of wakesurfing in the state, as well as the possible impact the sport has on lifestyles, water quality and shoreline integrity. The Vermont Use of Public Waters Rules state: *The public waters shall be managed so that the various uses may be enjoyed in a reasonable manner, considering safety and the best interests of both current and future generations of citizens of the State and the need to provide an appropriate mix of water-based recreational opportunities on a regional and statewide basis.*

As documented in public written testimony and orally at the public hearings, in US locations where wake sports are prevalent, their impacts on the environment and on the behavior of traditional users are profoundly negative. Waiting until this is the case in Vermont would be to neglect the rationale behind the Use of Public Waters Rules.

We believe that the regulatory scheme outlined in the petition’s “wake sports zone” proposal greatly over-regulates Vermont’s waterways and substantially undermines the state’s mandate to provide an appropriate mix of water-based recreational opportunities. The small number of wakeboats in the state and the existing state requirement that all boats be at least 200 feet from shore when operating above no-wake speed are effective in providing a safe on-water experience for all user groups and protecting the state’s fauna and flora.

Each Lake is Unique

“Each Vermont lake and pond formed under unique conditions in diverse locations; no two lakes and ponds are alike. Hundreds of other lakes and ponds dot the state, ranging in size from tiny half-acre ponds to larger lakes that are hundreds or even a thousand acres in size. The Lakes and Ponds Program works with lake communities on an individual level to assess a lake’s unique features and determine how best to protect the lake and its .” -- Vermont Department of Environmental Conservation’s [website](#).

The petition seeks to regulate the operation of wake boats in Vermont’s lakes, ponds and reservoirs without consideration of the different characteristics of each lake, pond or reservoir. While the petition claims that 19 Vermont lakes will meet the criteria, presentations by the Vermont Department of Environmental Conservation state that only 14 lakes meet the petition’s “wake sports zone” requirements. The result: The petitioners would have the state ban wakesurfing on every lake within the state’s borders except:

Lake Size in acres

Little Averill 470

Echo 546

Morey 549

Maidstone 755

Crystal 771

Salem 776

Caspian 789

Great Averill 835

St. Catherine 885

Dumore 1,039

Carmi 1,415

Seymour 1,777

Willoughby 1,863

Bomoseen 2,415

Prevalence of Wakeboarding

On the 14 lakes the petitioners cite as representative of the presence of wakeboats in the state, 50 percent had no wakeboats at all and an additional 10 percent had three or less. Only Lake Dunmore, which is three miles long and up to three-quarters of a mile wide, had between eight and 12 boats. In total, only one-half of one percent of the 5,462 boats on 14 lakes were wakeboats. We do not consider this to be compelling evidence of waterways experiencing significant wakesurfing activity or an indication that wakesurfers are in some way dominating the use of the state’s waterways. In the majority of lakes with less than three boats, it is safe to assume that the boats will not be used at the same time.

The fact that there are currently relatively few wake boats on Vermont waters does not argue that wake sports do not need regulation. There are also few lake users who dump harmful chemicals into our Vermont waters, yet this activity is strictly regulated. Similar to harmful chemicals, available science indicates that engaging in wake sports in inappropriate locations can cause environmental harm and disrupt other users. A single wake boat can dominate a large portion of a lake, thus making this portion unsafe, or certainly unenjoyable for many, and unusable for some.

The petitioners went to great lengths to quantify the number of wakeboats in the state. They found that the occurrence of wakesurfing in Vermont is so low that in their opinion the only way citizens would know about it is if the state mounted an educational campaign to teach the public about the sport because “many Vermonters are completely unfamiliar with this type of watercraft.”

Yet the petition attempts to make a case that for these lakes with few wakeboats, the problem is so severe that the only course of action is to ban the sport, and the wakeboats themselves throughout the state. We strongly believe that through education, the finite number of wakeboat operators can be taught to remain at least 200 feet from shore when wakesurfing and in depths of at least 10 feet.

The Petition does not propose a wake boat ban.

Industry attempts to educate wake boat users on sustainable behavior is based on inaccurate guidance from research. Available science included in our petition, and particularly the St. Anthony Falls Laboratory study, indicates that the 200 foot shore buffer and the 10 foot depth are both grossly inadequate to protect our lakes.

Erroneous Use of Worldwide Sales Data to Predict Vermont Sales

Citing global sales figures and forecasts of future sales, the petitioners attempt to present a picture of a marketplace gone wild, with sales rising rapidly year after year at nearly unprecedented rates. However, just as the petitioners wish to assess every lake as being the same in every way, it does not recognize the unique nature of boat sales in Vermont. In fact, sale of wake boats in Vermont are very low, averaging 14 per year. The “high” of 18 sold in 2021 is unlikely to hold.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Wakeboat Sales/Units	9	10	15	12	16	17	16	15	18	16	14	13	18

Although such granular state sales data are not yet available for 2022, the National Marine Manufacturers Association estimates that sales of all boats are normalizing after historic years in 2020 and 2021.

These are very useful data. We wish that the boating industry would focus on these data rather than that for the total Vermont boat population when estimating the economic impact of wake boat regulation. These data suggest that there are only several hundred wake boats in Vermont whereas the industry's economic impact assertions are based on all 29,000 boats in Vermont thereby greatly overestimating regulation's impact.

Incorrect Reporting of Legislation and Regulation

The petitioners claim that 17 states are seeking to regulate wakesurfing, seeming to imply that discussion and consideration of wakesurfing by a homeowner's group or district in some way equates to the statewide lockdown of wakesurfing in all but 14 lakes as they would have imposed in Vermont. There simply is no equivalency. The only states to enact legislation were South Carolina and Tennessee, and they chose 200 feet as being the appropriate distance – the same offset already required in Vermont. The Vermont legislature has twice considered regulating wakeboats and each time chose not to carry either bill forward.

Vermont's billboard legislation in 1968 indicates that Vermont is willing to be among the vanguard of states in preserving the look and feel of its natural environment. All indications are that the Vermont DEC is taking our petition seriously because regulation is justified to protect Vermont's environment under the provisions of the Use of Public Waters Rules.

Scientific Studies

Among the studies cited in the petition, no consensus was found for distance from shore, depth or shoreline impacts. The reports cited by the petition have recommendations for offsets that range from 200 feet to almost 1,000 feet, and minimum depths to prevent disturbance of the bottom ranged from 10 feet to as much as 15 feet. Yet, the petition was consistent in one way: it cherry-picked the findings to support a predetermined conclusion. The 1,000-foot distance was cited by petitioners based on the most extreme finding of one study. However, the petition did not make clear that the authors of the study recommended 1,000 feet based on prior studies cited in its findings. That study made clear that it takes 1,000 feet for the wake to totally dissipate – not to equal that of other boats, not to be no greater than waves created by wind, but to become a ripple. Regarding depth, the petitioners state that if the range of findings was 10- to 15-feet, then Vermont should adopt a mandate for 20 feet. The intent is clear: Behind a blizzard of citations and reports, the petition wants Vermont to adopt regulations that exceed anything found in science. The agenda is clear: Ban wakesurfing as broadly as possible, regardless of any science and ignore that there are few wake boats in the state and that overall, the sport co-exists quite well with other users and residents.

There is a growing body of evidence to support and guide regulation. The studies have

different designs and some do not directly address the relevant comparisons between wakes from wake sports and those of traditional ski boats. One of the most relevant and comprehensive studies is the recent paper from the St. Anthony Falls Laboratory (SAFL). This research compared wake surfing wakes with those of traditional ski boats. See below for more comments on the SAFL research. It should also be noted that the available science does not consider the anticipated continuation of the trend documented in our petition towards heavier wake boats making even larger wakes. Nor does it consider the additive wake effects from multiple wakeboats operating in proximity. Based on the “Precautionary Principle” applied worldwide to avoid causing human health and environmental harm, regulation should err on the side of caution.
[\(https://pubmed.ncbi.nlm.nih.gov/15968832/\)](https://pubmed.ncbi.nlm.nih.gov/15968832/)

Surprisingly, one report petitioners did not cite is also the only peer-reviewed study on the topic published in an academic journal.

The publication of Endicott (Cotty) M. Fay did not appear until March 23, 2022, i.e., two weeks after the submission of RWVL’s petition on March 9, 2022. Hence, there was no way it could have been cited and discussed.

The *Journal of Water Resource and Protection*, a monthly journal featuring state-of-the-art research works, published the study *Numerical Study of the Impact of Wake Surfing on Inland Bodies of Water*. Its lead researchers include renowned researcher and computational fluid dynamic engineer in the marine space, Endicott (Cotty) M. Fay.

According to Wikipedia the publisher of this journal “Scientific Research Publishing (SCIRP) is a predatory academic publisher of open-access electronic journals, conference proceedings, and scientific anthologies that are considered to be of questionable quality.”

The paper quantifies the impact related to turbidity and erosion with the use of computational fluid dynamics (CFD) of boat wakes in shallow water and the build-up of wind driven waves. In its findings, the paper details that when wake surfing at least 200 feet from shore and in water that has a depth of at least 10 feet, the environmental impact is minimal. The paper also concludes:

- Boat wakes dissipate quickly and have little impact on shorelines compared to wind driven waves.
- Multiple simulations show great loss of wave energy at various distances from shorelines. In each case, a boat operating at 200 feet from shore and in water depths greater than 10 feet are optimal for shoreline and environmental health.
- The amount of sediment caused by shoreline erosion from boat traffic or wind driven waves is insignificant compared to the amount of sediment that flows in naturally through a lake’s watershed.

This peer-reviewed study confirms that shorelines are minimally impacted when wakesurfing at a distance of 200 feet from shore. While waves from wakesurfing at a distance of 200 feet from shorelines still will reach shore, the Cotty study concludes these waves will not carry enough force to degrade shorelines, especially when compared to wind driven waves. Additionally, wakesurfing in water at a depth of at least 10 feet protects the water bottom, seagrasses, and aquatic life.

The research used advanced simulations to analyze possible shoreline erosion and turbidity that wakesurfing causes on waters' bottom and shoreline impacts. The energy, type and direction of a boat's wake are described quantitatively in tables, which may be used for predicting wind driven waves over varying fetches, depth and wind speeds is provided.

The study can be accessed online at:

<https://www.scirp.org/journal/paperinformation.aspx?paperid=116094>

As one of the supporting documents for our petition, RWVL posted four critiques of the industry-funded study cited above, pointing out its unfounded assertions and other numerous flaws, a few of which are highlighted below:

- *None of the authors have previously published any peer-reviewed studies involving boat/ship generated waves, or hydrodynamics.*
- *The application of CFD to accurately simulate boat generate waves in anything other than the very near-field (ie. close to the hull) is very challenging.*
- *The model is not calibrated or validated.*
- *Many assumptions are not properly justified.*
- *This approach should not be a substitute for full-scale, direct measurement of wave characteristics such as the SAFL study.*
- *It is unclear where the value of the so-called "agreed" maximum wave height of 28 cm (11 inches) has come from, or how this was determined.*

The petition often referenced a study that was crowd-funded by anti-wakesurfing individuals and organizations and conducted by the University of Minnesota St. Anthony Falls Laboratory (SAFL) Wake Boat Wave Study (Marr J., Riesgraf A., et al., 2022).

Since the list of contributors has not been made public, the assertion that the study was funded by anti-wakesurfing individuals is unfounded. It is not uncommon for technical development to be crowd-funded and significant advances have been made with this arrangement.

The study underwent a "technical review process" by a small, handpicked group of people with a longstanding history of anti-wakesurfing positions, which is a review standard far short of an independent peer review as was done with the Cotty study. Based on their own

admission, the SAFL researchers handpicked people to review the study rather than undergoing a truly independent peer-review process.

Reviewers were picked by a third-party, independent organization.

The two people selected to review the report have previously published information critical of wakesurfing. It should not be surprising that a group of people with a predetermined position on wakesurfing agree with the report's findings.

Nor should it be surprising that reputable experts with relevant credentials agree that evidence supports a reality denied by the wake sport industry — that these sports pose a threat to water bodies if they occur in waters too close to shore or too shallow.

The SAFL does not make any recommendations regarding the impact of wakeboat wakes on shorelines. It does not conclude at what distance wakes have no more impact than wind-driven waves or other boats. The SAFL study simply states that wakes from wakesurfing boats wash up on shore within 500 feet from shore, which is not in dispute. However, the researchers did not study if wakes from wakesurfing boats contribute to shoreline erosion.

As explained in the RWVL petition, several studies have correlated shoreline erosion with motorboat wakes. The SAFL study was designed to compare wake sport wakes with those of traditional ski boats with the express purpose of providing evidence-based guidance for regulation.

The RWVL petition seeks to provide inland lake protection equivalent to the protection which was provided to our lakes by the 200-foot shoreline distance when considering traditional motorboats. Hence, we petitioned for a new distance at which wakesurfing wakes have parameters equivalent to those of traditional ski boats at 200 feet. This is exactly the comparison that the SAFL study addressed. Its authors concluded that this equivalence is reached for all considered wave parameters when the distance is >600 feet. RWVL argues that additional margin is needed to compensate for a documented industry trend to produce heavier wake boats in order to create larger wakes. It also cites the Precautionary Principle, as discussed above as further justification for this extra margin.

A close read of the SAFL study reveals that one of its two "reference boats" was a Malibu Response LX, a professional competition ski boat designed to create the absolute smallest, flattest wake.

According to Figure 5 in petition, the SAFL study concluded that after traveling 200 feet, there was four-inch difference of height, at 500 feet there still was 4 inches of difference between the height of the minimal wake of a professional waterskiing boat and a wake boat. At 1,000 feet,

there was two inches difference, with the professional ski boat wake being 3 inches high and the wake boat wake being 5 inches.

For a difference less than the width of a person's hand, the petitioners would ban wakesurfing in lakes where there may be as few as three wake boats – that likely will not be used at the same time.

The way petitioners presented the distances and wake heights found by researchers builds a case that no powerboat should operate on- or -off plane outside of their "Wake Sports Zone." If the 1,000-foot distance was recommended because that is the distance it takes for a wake to totally disappear, can any boat's wake be small enough? This highlights a key concern: The standards set by the petitioners to ban one boat type can as easily be adapted to ban any motorboats from most Vermont lakes. This is further reasons for the petition to be rejected.

Most Vermont shorelines have been exposed to motorboat wakes for decades and have been somewhat hardened by these wakes and by wind waves. However, at 200 feet distance from shore, the SAFL study found that wakes from wake surfing have 5-7 times the peak wave power compared to traditional ski boats. Many of our shorelines are protected from sustained high winds producing waves with such power. Hardening of shorelines for a new onslaught of higher power wakes from wake surfing will likely cause significant shoreline erosion, harmful impacts to the littoral zones of our lakes including increased phosphorus loading, destruction of shoreline structures, and increased safety risk for those engaged in traditional activities.

Furthermore, it is not possible for RWVL's petition to be "adapted to ban any motorboats from most Vermont lakes" as it is focused exclusively on wake boats and wake sports. This is because "normal recreational and other uses" include "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 sports are not included as a normal use.

The parameters of the Wake Sports Zone also would ban wakesurfing on Harriman Reservoir, a 10-mile-long, unpopulated waterway that quickly plunges to depths of more than 100 feet, with a maximum depth of 180 feet. Despite being almost half a mile wide, its dimensions still do not meet the arbitrary standards sought the petitioners.

AIS Claims Are Overwrought; Wakeboats Are Seldom Trailered Between Lakes

The risk of transferring Aquatic Invasive Species (AIS) exists with all forms of boating, whether they be motorized, sailboats or kayaks.

Unlike most other boats, the large ballast tanks on wake boats are impossible to inspect and to fully empty. This increases the AIS risk for these watercraft. The wake boat industry has been aware of this hazard for well over a decade and has been unsuccessful

in solving this problem.

However, in order to transfer AIS, a boat must be trailered from an infested waterway to a “clean” waterway. According to the Final Report of the Commission to Study Wake Boats established in 2020 by the New Hampshire Legislature, only 2-4 percent of wakeboats are trailered between waterways. As one Vermont marina owner put it, “the only time wakeboat owners use their trailer is to store their boat or drive it home. They simply don’t trailer between waterways.”

Yet, the petitioners would ban these boats from most lakes in the state, however they were being used.

The RWVL petition proposes a rule that would NOT prohibit the use of wake boats for cruising or water skiing on any inland lake so long as their ballast tanks and other wake enhancing features are not employed.

With an indiscriminate swipe, it would wipe these boats off the water in most lakes and ponds, even those that never leave the waterway except to be winterized and stored. We agree that AIS present a significant threat to Vermont waters, as they do in every state. However, the proposed solution that affect .5 percent of the state’s boats, that are seldom trailered to start with, is an over-reach of regulation with miniscule justification.

Just because a known, growing problem is still relatively small does not mean it should be ignored.

We Recommend Education

Educational campaigns are underway throughout the United States. The *Wake Responsibly* education initiative sponsored by the Water Sports Industry Association has been presented nationwide through face-to-face instruction, social media and signage at marine dealerships, boat ramps, and marinas. Marine dealers reach boat owners repeatedly during the boating season. For example, dealers hang specific signage on the steering wheel of every wakeboat they service. Some state agencies, such as Minnesota DNR, have adopted *Wake Responsibly* as their own with signage and materials branded with their department’s logo. The three pillars of the education campaign are to operate at least 200 feet from shore, avoid repetitive passes, operate in water at least 10 feet deep and moderate the volume of music.

Educational campaigns are definitely needed, but, as indicated in an earlier comment, the parameters of 200 foot shoreline buffer and 10 foot depth adopted by the Wake Responsibly campaign are inconsistent with available scientific evidence. This makes it a mis-information campaign.

While bans are a simplistic answer that may or may not result in compliance, state governments should consider such extreme regulation only when voluntary and education efforts have been shown to be inadequate. Vermont has never mounted a well-coordinated *Wake Responsibly*

campaign. We recommend that Vermont government support and promote the *Wake Responsibly* campaign rather adopting a ban as its first effort to regulate the sport.

In testimony at public hearings held by the DEC, several people said that they have accommodated multiple uses of their lakes through cooperation. Enacting statewide bans and over-regulation rather than finding solutions among neighbors, as one person put it, “is not what being a real Vermonter is about.” We do not profess to be Vermonters, but we do know that education and local solutions are greatly preferred and should be aggressively supported by regulators.

In sum, we respectfully request that the Agency of Natural Resources deny this petition because its mandates are unwarranted and extreme, are “supported” by speculation and because there is absolutely no scientific consensus on the impact of the sport. Finding ways to accommodate all boaters and waterway users can be achieved in ways far less draconian than what is called for in the petition.

Vermont’s petition process and its Use of Public Waters Rules are designed to resolve use conflicts enabling shared use of these resources in a way that minimizes environmental and safety risk based on available evidence. RWVL’s petition is fully consistent with this approach.

Please contact David Dickerson, ddickerson@nmma.org, Brad Fralick brad@wsia.net or Chad Tokowicz at chad@mraa.org with any questions or concerns you may have.



National Marine
Manufacturers Association

David Dickerson
Vice President, NMMA State Government Relations



Brad Fralick
WSIA Chief Government Affairs Officer



Brad Tokowicz
MRAA Government Relations Manager