

Cordry-Sweetwater Conservancy District
Wake Committee Meeting
March 8, 2023

1. **Members Present:** Aaron Parris, Scott Casey, Barb Bowers, Sarah Robinson, Sonia Leerkamp, and Marcia Harper
2. **Members Absent:** Brian Clancy
3. **Also, Present:**
 - a. **Staff:** Brittany Bay
 - b. 8 freeholders in attendance
4. **Welcome:** Mr. Parris called the meeting to order at 6:01 PM
5. **Agenda Modifications:**
 - a. Mr. Parris removed line item 5. Boat Show Discussion.
6. **Freeholder Concerns:**
 - a. Sarah Robinson spoke and noted she was one of the members that asked for the boat show to be taken off the agenda. She noted that at the last meeting the committee was told there are 58 wake boats currently on the lake, and that she did not want CSCD to add anymore boats made for wake enhancing, even though she knows any boat can create a large wake, because that is what these boats are specifically designed to do. She noted that in this committee she feels the members need to be proactive to avoid potential accidents, to not jeopardize freeholders safety, prevent destruction of property, and to prevent shoreline erosion. She mentioned she asked to be on this committee to formulate recommendations to the Board about these issues. She noted she doesn't believe large powerful boats belong on the lakes. She suggested asking the Board to make a resolution like the fishing boat resolution allowing boat patrol to board boats they suspect are using a wake enhancing device and inspect.
 - b. Kurt Wanninger introduced himself and noted that he purchased property here in 2019. He mentioned that his family has a wake boat and when they were looking for property here it was important for them to purchase where they could do water/lake activities such as skiing, wake surfing, etc. His concern here is to look out for his investment and things that are important to him and his family. He said that he respects the ecology of the lakes and that is why when they built their home here, they built a seawall. He doesn't want to have to trade off his boat in order to use the lakes. He then thanked the committee for what they were doing here and just wanted to make sure his thoughts and opinions on the topic were heard.
7. **Approval of Minutes:**

MOTION: Mrs. Harper motioned to approve the March 8th Wake Committee Minutes, as submitted, seconded by Mrs. Leerkamp. Motion passed unanimously.
8. **Old Business:**
 - a. **Scott Casey's Recommendations**
 1. Mr. Casey went over in detail his recommendations. (See attached)

2. Mr. Casey showed the wake size a 20' 4,000 lb. wake boat creates. Mr. Casey showed a picture of a wake surfer on Sweetwater where the wave appeared to be below the knee (roughly 16" tall). (See Attached) Mr. Casey also informed the committee that he had been informed that the maximum size wake created by this type of boat is 24". Mr. Casey showed the committee with a yard stick, The wave dissipates 50% in the first 100' (down to 12"), 20% in the next 100' (down to 7"), 3-4% the following 100', etc. Therefore, the wave size created by this type of boat is 7" tall if the boat stays 200' from shore. Mr. Casey then informed the committee that a fully ballast 20' wake boat creates a 26" wave and the dissipation percentages are the same as noted.

Picture of Ruler to be added to minutes

b. Marcia Harper's Recommendations

1. Mrs. Harper went over in detail her recommendations. (See attached) Resolution 2015-10 and affidavit freeholders completed to add a wake boat to our lakes clearly defined what a wake enhancing device was and what was to be done to permanently disable these devices. I do not believe you reward those freeholders that did not follow these rules and did not permanently disable their wake enhancing devices by grandfathering in their wake boats if they never met the criteria to begin with. Only the boat industry funded study suggest wake surfing 200' from shore does no damage where the other unbiased studies suggest wake surfing from 500' to 1000' for waves to attenuate before reaching shore making our lakes too narrow for wake surfing without damage to property and other boaters. Any recommendations of allowing wake surfing with all the wake enhancing devices on our small lakes is not responsible and going in the wrong direction to solve the current issues we are dealing with.

9. Long Term Projects: None

10. New Business: None

11. Committee Members Concerns

- a. Mr. Parris asked Mrs. Bay to ask a boat patrol representative to come to the April Meeting.
- b. Mr. Casey mentioned that a representative from the wake surf association has agreed to come to a meeting if the committee is interested. He noted that they are advocates for wake surfing, but it would be educational, and their information would be supported by data. Mrs. Harper requested that if this representative came to the May meeting as suggested by Mr. Parris that there be a time limit on his presentation.
- c. Mr. Parris asked if the committee saw value in taking a day in mid-May or late April to do a Scott test to see if the wakes dissipate in a reasonable manner to the shoreline. No decision was made on this.
- d. Mrs. Robinson suggested there be a deadline for when the Committee has to form a recommendation to take to the CSCD Board of Directors. Mr. Parris said that the committee needs to get recommendations to the Board and rewrite the wake enhancement affidavit. No deadline was set.
- e. Mrs. Harper suggested a deadline for educating everybody. Mr. Parris asked Mrs. Bay to create a wake committee tab on the CSCD website and start adding articles. Mr. Parris said his only concern was whether there would be any copyright issues. Mrs. Harper suggested a link to the articles. Mr. Parris said he would ask the CSCD attorney if there are any copyright infringement issues.

12. Adjourn (8:03 PM)

**MOTION: Mrs. Leerkamp moved to adjourn, seconded by Mrs. Harper.
Motion passed unanimously.**

13. Next Meeting: April 12th, 2023, at 6pm at CSCD Office

(Scott Casey Recommendation)

1-26-23

Dear Committee:

My recommendation below is based on the 3 attached exhibits which include:

- (1) proposed designated wake course maps;
- (2) Heritage Lake rules (see page 10 of 24 for 2 pertinent rules); and
- (3) my 5 pages of notes/discussion supporting my recommendation.

“Wake surfing may only be performed on the designated course near the middle of the Main Body of the Lake. Wake surfing is prohibited in all other areas. Ballast boost is only allowed on the designated course and must be drained before leaving the course.”

This recommendation is based on my analysis of all studies and data and the precedent set on another similarly sized Indiana lake. It also represents a reasonable compromise to keep the use of surf boats a privilege for all lot owners while taking into consideration concerns relating to the shoreline.

Scott's notes:

Task – this committee will look at any potential negative effects of wake boats as it relates to the ecology and security / safety of our lakes.

As noted in first meeting, for safety, I normally move to the right side of the lake along the shore buoys so my family / friends don't get run over by boats pulling tubbers zig zagging. I like most other wake surfers may be uneducated about the wake size concerns the freeholders along the shoreline have.

Studies / documents presented by the committee listed below. Each study varies in the statistics and recommendations. All studies are from fully ballast / enhanced wake boats (1a)

State of Michigan – Fisheries report 37 September 2022

Turbulence up to 33' deep – not an issue

Michigan current 100' buffer not enough – “agree”

Full 1a – 500 feet from shoreline

Ballast should be completely drained prior to transporting the watercraft – “agree”

Increased education – “agree”

Wakes 1.7 x higher than created in cruising mode

Would need 225-950 feet to dissipate to cruising boat level – “That's a large spread”

Page 5 - 5% of zebra mussel veligers remain alive in ballast tanks after 48 hours

Page 6 - Oregon Marine board for Wilamette River requires 300 feet from shoreline – Note: This is for 1a ballast wake surfing boat

Page 7 – Ballast boat 1a 500' from shoreline

Journal of Water Resource and Protections 2022,238-272 – fluid dynamic analysis was accomplished at

Ohio State University's Supercomputer Center

CFD simulation shows that if a wake surf boat is operated 200' from shore and in at least 10' of water, the environmental impact is minimal. 1a boat study

Page 246 – wave height dissipates quickly as it expands outward and away from the boat At 12mph the wave height is 1.64' tall

Page 247 - for comparison, the speed boat wave height is significantly lower, the wave energy is only 17% lower than the wake surfing condition.

The higher speed craft running 30 mph at the same distance from shore will generate similar wave energy striking the shoreline than the wake boat at a heavier displacement running at 12mph

Page 269 – 8 Conclusions – The report has shown that the operation of wake boats on a lake has minor impact on the environmental health of the body of water.

Page 270 – The field test data found 200 feet to be adequate to reduce the wave heights to under (11”)

Page 271 – New Hampshire there is no wake zone within 150’ from shorelines

Page 271 – Wake surf boats (1a) should operate 200’ offshore to minimize the wave impact.....to an average height lower than 11”

M College of Science & Eng – Univ of Minnesota 2-22

Wake surfing condition 1a (Largest possible wake)

At distances greater than 100’, the measured wake wave characteristic values did not seem to be affected by the addition of ballast water. These results were unexpected.

1a at 425’ = non wake surf boat at 200’

HB 1071 – Ossipee Lake - establishes a 250’ distance for wake surfing – (1a)

G MacFarlane – Distances of at least 300-400’ or more are required –This is for (1a)

State Regulations

Alabama -200’ from shoreline

Georgia HB 1416 -300’ set back

Oregon SB 1589 (River) 400’

Michigan – w Scott Brown May 2021

300’ from shoreline – 15’ depth

House bill 1098 (Indiana)

No wake surfing between sunset and sunrise – ok No wake surfing from out board motors – ok

W.A.C.F. – Lake Wawasee recommends Wakeboard and surf in deeper water

W.A.C.F. recommends Glacial Stone (Rip Rap) for shorelines instead of concrete seawalls – Stop the chop
\$50 / LF to install rip rap along shore

(US Army Corps of Engineers) Wave Height and Energy

The energy in a boat wake goes up exponentially with the wave height

That means a 2’ wave is 4 times as powerful as a 1’ wave, and a 3’ wave is 9 times as powerful. “How tall do you think the wave is in the picture is showed at the first meeting? Below the knee? “Picture attached as exhibit”

WSIA recommends 200’ from shoreline.

WSIA representative has agreed to come to a committee meeting and answer questions....

They would be happy to attend one of the meetings and help educate the members on wakes and wakeboarding
(brad@wsia.net)

Is a wake surf boat going 10MPH more dangerous than a high-speed zig zag tubing boat?

Task – this committee will look at any potential negative effects of wake boats as it relates to the ecology and security / safety of our lakes.

Other factors influence wave attenuation, including water depth and slope of the subsurface

Issue _ Slalom skiers travel in a straight line and require calm water / safe places. 10-15 min per skier is needed. **Solution** (set time for Slalom skiing only)

Solution - Boats pulling tubbers go in a straight line (no zig zag)

This will allow wake surf, skiing, knee boarders to move away from the shore line. All can enjoy.

Alt Solution -Wake boats could be educated to stay 200’ away from shorelines to let wake dissipate.

Hard to tell were 200’ is. Safety of the wake surfer still a concern due to tubbers unless boats pulling tubes go straight.

The name of the game for tubing is to zig zag and try to throw the person off the tub. Swinging the tubber(s) from side to side hoping they hit a big wave from another boat. "is there a wave study of this type of tubing activity creates?" "I looked on line and could not find one"

Issue – Wake boats hug shoreline buoys to stay away from tubing boats and create waves along shore / docks

Solution - Set up a wake surf course in the middle of the lake(s) 400' away from shoreline / dams. Attached as exhibit. This distance is far enough away from the shoreline to comply with the majority of studies submitted by the committee for (1a) (fully filled ballasts / tabs / enhancement) wake surfing / wake boarding.

Again, these (1a) studies compare to a ski boat on plane going in a straight line. They do not compare studies to a zig zagging boats pulling a tubber(s).

The 400' wake surf course(s) would provide a safe area for wake surfers and make freeholders along the main body of water happy.

See attached wake boat zone(s) for Sweetwater / Cordry

Wake boats will register and have a sticker – identifying them as a boat who has signed proper papers (stay on the course, procedures, draining ballast before leaving course, etc.....

Wake boat sticker will have a fee – in order to pay for buoys and education packet about the course location.

Note: Lake Lemon has a \$200 fee for ballast boats and they have a designate area by the dam for 1a wake surfing

If this does not suffice, I recommend C-SW (Cordry Sweetwater) conduct a study where we have a monitoring pole along the shore at a designated location and ski / tubing boats just outside the buoys and then wake boat at different distances away from the shore. This could be conducted during the week or on a weekend morning before other boats begin. The committee / board could view the pole and after each boat passes, a new piece of dry cardboard could be placed on the pole which will accurately mark how high the wave reaches. I think the test could be completed in 1-2 hours.

Ski boat

Zig Zag Tubber from ski boat

Zig Zag Tubber from pontoon boat with 2 tubes Ski boat pulling knee boarder

Wake surf along the shore – no ballast Wake surf 200' away from shore – no ballast Wake surf 400' away from shore – no ballast

Wake surf 400' away from shore (fully ballast) (1a)

Wake surf 400' away from shore (wedge) (1a)

If the wake surf boat does not create a higher wake in (1a) mode – 400' away from shore than the other boats running just outside the buoys, then we let the wake surf boats go fully ballast at the new designated course. "Happy lot owners / Happy surfers."

"This study would provide actual data from our lake instead of opinions or other studies."

The map(s) attached show 2 different areas / options for wake boats (200' away from shorelines shown in yellow and the course at 400' away shown in green)

For the course, buoys will be placed down the center (every 100' +/-). At the turns, there will be several buoys (orange / red) to divert other boaters to the right of the course. A pamphlet educating all boaters could be placed with each years renewal stickers with the rules and safety information.

Just like Lake Lemon, if you charged \$200 fee each year x 50 wake boats = \$10,000.00 for the buoys and education pamphlets.

Zebra Mussels issue –

What is the current quarantine / washing / inspection procedure currently for boats / trailers / etc? How is it monitored / enforced?

Zebra Larvae – Veligers Transported from lake to lake by:

Live wells Bait buckets Bilge water Dive gear Water fowl
And anything that moves from one body of water to another

Attached Resolution 2022-06 – All freeholders had to pass test in order to get stickers last year. We already have rule in place

First meeting

As I discussed in the first meeting, We can wake surf behind any type of boat. I used an example that we could use a 1975 Mastercraft boat and still accomplish the same thing as a 2022 new wake surf boat. I noted that these boats (Mastercraft NXT / similar) are combination boats used for wake surf, wake boarding, skiing, tubing, knee boarding, and cruising.

As discussed in first meeting: Trim tabs (flaps)– are used to level the boat during skiing to keep the boat from tilting and provide a lower smoother wake. They can also be used to shape wake at low speeds. Trim tabs (Center tab) help with the initial planing of the boat

Trim tabs help the boat stay on plane at lower speeds

They don't make the wake bigger, they actually push the rear end of the boat up and out of the water, which can help shape the wake making it less steep and more rampy. They are also known to help plane the boat quicker, clean up wash, and help flatten ski wakes at higher speeds. They help cure porpoising.

As discussed in the first meeting: Hydrofoils on the other hand are designed to pull the rear of the boat deeper into the water which increases displacement, wake size, and steepness. Mailibu is the most famous for this. They call it the Wedge (manual, floating or power)

What are the existing rules?

Prohibited watercraft – watercraft designed to create large wakes, or watercraft that have been modified to create a large wake. ----"Subjective? Is a wake below the knee large?"

From the waiver:

Must have the pumps that fill these tanks removed from the boat, to be considered permanently disabled. "That's the requirement (removed) = permanent" "Yes you could install a pump at another lake or when you go to sell it"

If the boat uses a common pump (a pump for the engine and bladder or tank) then the water line that fills the tank or bladder must be capped. "(Cap) = permanent" "Yes you could take the cap off and reconnect at another lake or when you go to sell it"

Wedge requirement is (removing) the hydraulic pump that powers the system or removing the wedge itself. "Yes, you could add hydraulic pump at another lake or when you sell it"

Watercraft owners that have signed the ballast/wake enhancing device affidavit stating that those devices on their watercraft have been disabled will be considered permanently disabled devices.

If found not in compliance and using their previously disabled devices, watercraft owner will be ticketed per 2015-10 – "What is the existing fine"?

Nothing in the Ballast/Wave Enhancing/Weight preregistration says that the boat will never, ever be used again with wake enhancement in any circumstances when taken to another lake or sold.



(Marcia Harper's Recommendations)

Initial List of recommendations for the Wake Boat Committee & Board Members:

1. Invite those that were involved in changing the rules, Resolution 2015-10, that allowed wake boats on our lakes to see if the situation we are in (wake boats not being permanently disabled) is what they had in mind. Educate ourselves on how they thought the affidavit and rules they put in place were suppose to keep things from getting out of hand. I know Dave Jarrett was on a committee that decided on how boats are measured, not sure if he was involved in the wake boat discussions. Ralph Nicolosi (sp?) was one person that did research on wake boats. Either one of them could enlighten us and probably know of others that were involved eight years ago that could be of help as well.
2. Place an immediate moratorium on any new wake boats being added to our lakes until this committee completes it research and discussions for permanent recommendations. We're told with recent high tech computer systems on wake boats, their wake enhancing devices can no longer be permanently disabled.
3. Ban wake surfing. We've seen how freeholders put up to 12 people in a boat to get a large wave for surfing instead of a full ballast and others using wake enhancing devices that are not allowed. We have research showing these boats create higher, larger, more powerful waves that take from 500 to 1000 feet to dissipate before reaching shore. Our lakes simply are not large enough for this activity. There is no research that supports this activity on small lakes. Indiana legislators voted on a bill last year and revisiting again this year banning wake surfing on public lakes under 300 acres. Small private lakes are vulnerable to the same damage these small public lakes are. I don't recommend waiting until a serious accident occurs or damage to the damns before we ban this activity.
4. Get a section set up on the CSCD webpage to add scientific studies and articles to educate all freeholders on wake boats, the waves they create and how that affects the ecology, shoreline, structures and other boaters on the lake, etc. Nick Johann shared at the September 2022 Board meeting once the wake boat committee is established, we will put a dedicated section up about wake boats and what the committee has found. The Board and Safety Committee has been given articles, studies and/or documentation regarding wake boats and their large waves since January of 2021. I'm hopeful there will be no more delays in educating freeholders on this topic and getting these studies and articles out to freeholders. The Wake Boat Committee Members can come to the next meeting, 2/8/23, with recommendations of articles we already have taking a majority vote on which ones should be added to the CSCD website. Hopeful these articles could be on the CSCD website by mid February. Use same majority vote to add any new articles as they arise.
5. Education on wake boats should include how they affect other freeholders on the lake. I'm proposing, a forum sanctioned through the board and available to all freeholders (not just those with Face Book) to express how the addition of these boats has affected their lake experience. Not a platform to argue back and forth. Just a place to share your experience. Freeholders have shared stories with us, but fear of retaliation keeps them from coming to meetings to share. Those breaking these rules and causing such large waves has cost other freeholders thousands of dollars repairing their shoreline and time off the lake with their family and friends on weekends because the waves are so large. Maybe wake boat owners are unaware or have not considered this.
6. Not knowing how many wake boats meet the requirements to stay on the lake, it's hard for me to make a recommendation on buoy placement around the lake at this time. Regardless of how many wake boats remain, I recommend the buoys near the damns are moved out a min. 200 feet from the damns. I believe with the research we currently have, this is minimally a prudent placement to begin with. They are supposed to currently be 100' away from the damn, although it appears some have moved closer than that.
7. Ban new wake boats from these lakes and return to the original rules of not allowing boats that are modified to create a large wake. Modified to create a large wake not only includes the wake enhancing devices, that were supposed to be permanently disabled, but the general design of wake boats that includes hull design and placement of the motor to add weight in the right spot to create a large wake. This technology will continue to change, making every year a new set of issues to stay ahead of. There will always be a new way to bypass the intended rules. If you're to remove the pump to bladder or cap the line- you can use sand bags, lead and steel plates instead of water for ballast. Put an inspection protocol in place to determine if wake enhancing equipment is permanently disabled prior to this years boating season. If a wake boat fails the inspection -the stickers are revoked and the boat permanently removed, not to be replaced by another wake boat. Once we establish which freeholders followed the rules made clear in the Resolution 2015-10 and/or the affidavits they filled out, we can discuss how those boats stay on the lakes until they fade away like the jet skis are or set an expiration date of 5 years (for example) before they are removed. I do not recommend all wake boats currently on our lakes are grandfathered into staying on our lakes. This would reward those freeholders that broke our rules and/ or lied on an affidavit by putting boats on our lakes that did not or could not have wake enhancing devices permanently disabled.

*I'll share a personal video of how large wake boat waves can be when even with tubing let alone wake surfing.

8. Address wake boats that are over 4000 lbs., also prohibited from Resolution 2015-10. These boats should have a list of equipment removed, to make the weight requirement, in the office. Do spot inspections on these and any remaining wake boats to ensure the equipment stays removed and permanently disabled. If caught with such equipment back on the boat, the boat is immediately banned and sticker pulled without the privilege of replacing it with another wake boat. These (and any remaining wake boats) affidavit and title records should be complete with signatures, stored separately in the office with a spreadsheet list of equipment removed, require a different color sticker and be tagged as a boat that can only remain on the lake with the original owner as stated in the resolution.

9. Letters sent to all freeholders notifying them of either new rules and consequences or reminding them of what rules currently are. If they do not have a completely filled out and signed affidavit and title on file, that needs to be done and turned into the office before they put their boat on the lake this year or May 1 at the latest. This will eliminate anyone saying they were unaware of rules. Maybe even a new color sticker can be issued this year for wake boats.

10. Update approved boat list to remove any wake boats that can not be permantley disabled and ultimately all wake boats.

11. Reconsider how speed boats are measured that allowed 5660 lb./ 24' wake boat on our lakes.

12. Get the unique perspective from lake patrol officers on what it's like trying to enforce rules on boats using wake enhancing devices. I've already reached out to one officer, that no longer lives here, that did issue tickets for the use of these devices. He is willing to Zoom or FaceTime into our meeting Feb 8th if the group finds that beneficial. He thought this could be more effective than an e-mail. Let me know what you think so we have time to set it up if necessary.

13. Leaders in all roles should be held to a higher standard or at least the same standards as those they have influence over by authority to make governing policy. I recommend the Board hold accountable any freeholder including current or past board members that broke the trust of our community by putting a wake boat on our lakes that was not permanently disabled (as required). They can be part of conversations on how to fix the problem but should be recused from voting on any policy now and in the future regarding wake boats, wake surfing and any rule regarding Resolution 2015-10 now and going forward in any commission/committee meeting, board meeting or special session. It would be unfortunate if the Board as a whole is discredited by the actions made by individual board members that chose to break these rules. This was not a one time mistake, but a choice made over years demonstrating a personal bias toward these wake boats of which they have a vested interest, setting the example for others to do the same. I do not believe we want the message to be portrayed that rules are optional for board members and committee members giving them a platform to rewrite rules to justify their actions.

14. The current rule of giving a single ticket is not severe enough for using wake enhancing devices you already signed an affidavit saying were permanently disabled. When these boats were allowed, it was intended to be one ticket for using wake enhancing devices and your boat was permanently removed from the lake. This was thought to be so severe no one would risk using the devices and would comply with the requirement of permanently disabling them so it didn't engage by accident or by a guest that may not know the rules. For any wake boats that remain, I propose implementing the initial rule if the wake enhancing equipment is used even once, the boat is permanently removed from our lakes like it was intended - with the knowledge you can not replace it with another wake boat. Having heard all the excuses of why it's hard to ticket this offense, it would still likely be a rare consequence.

15. Given my experience on the Security Committee, I have no expectation that new rules regarding these boats are the answer or that they would be obeyed or enforced anymore than the original rules/ restrictions were the last 8 years only delaying a resolution. I believe the former board members gave freeholders the opportunity to have these boats, with very strict restrictions in place, only to see now eight years later what they put in place did not work because restrictions were not followed. It's a sad truth the few often ruin it for the many. This is why we are at this juncture.

Submitted by:
Marcia Harper 1/30/2023