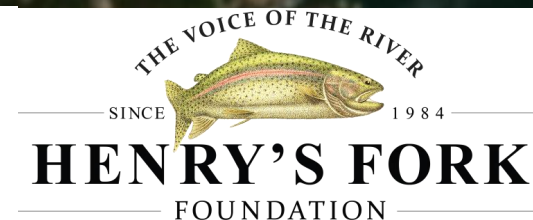


Wake surfing and other emerging threats to water quality in the Henry's Fork watershed

Modified Copernicus Sentinel data [2024]/Sentinel Hub

Dr. Jack McLaren | Aquatic Ecology Program Manager
Henry's Fork Watershed Council | April 2025



Takeaways

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4. There's work to be done to fix these issues, and 2024's freak winds show one path forward

The problems

- **High turbidity:** organic and inorganic turbidity from IP dam disrupts angling economy



The problems

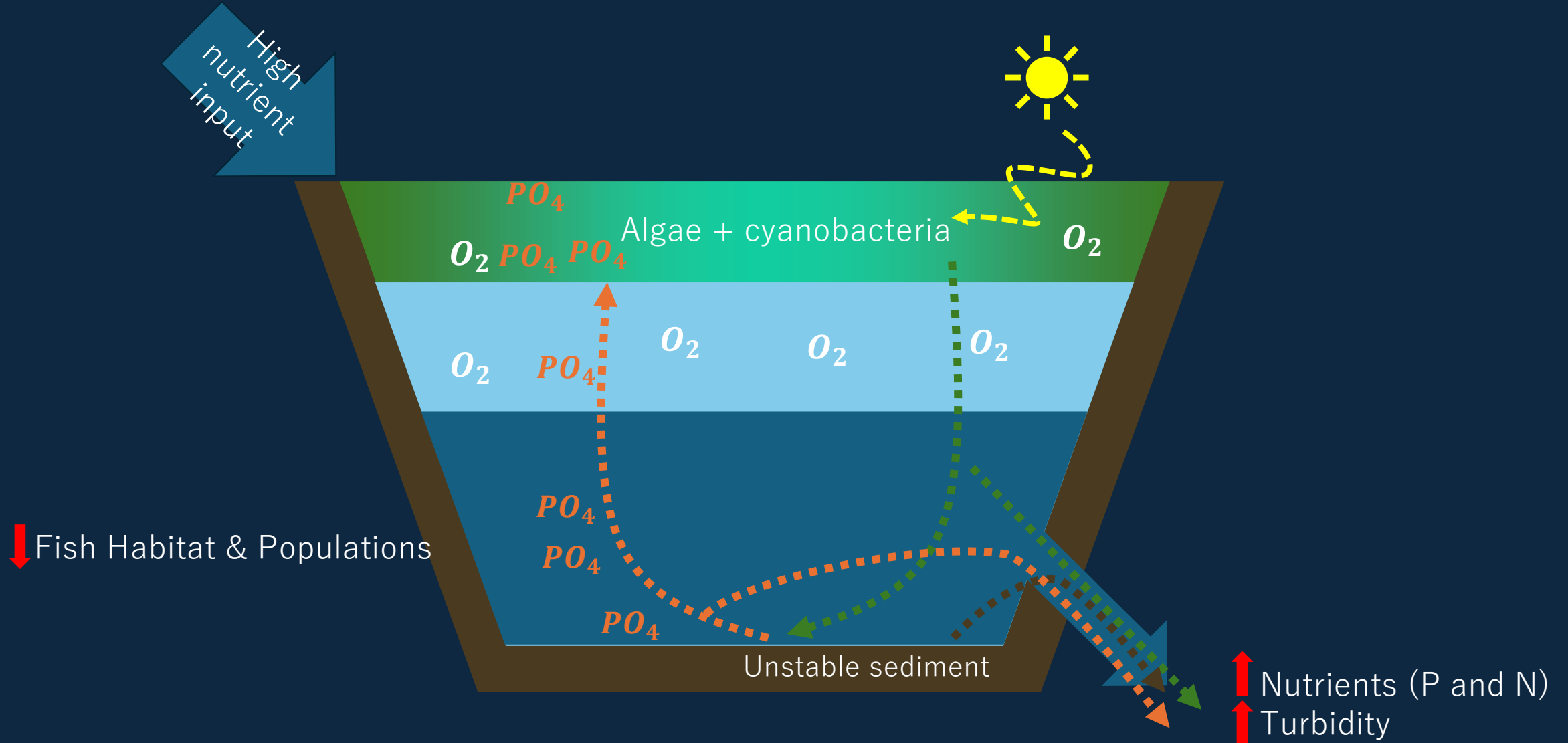
- **High turbidity:** organic and inorganic turbidity from IP dam disrupts angling economy
- **Low dissolved oxygen:** decomposition in Island Park Reservoir reduces hydropower generation, fish habitat



Economic and Ecological

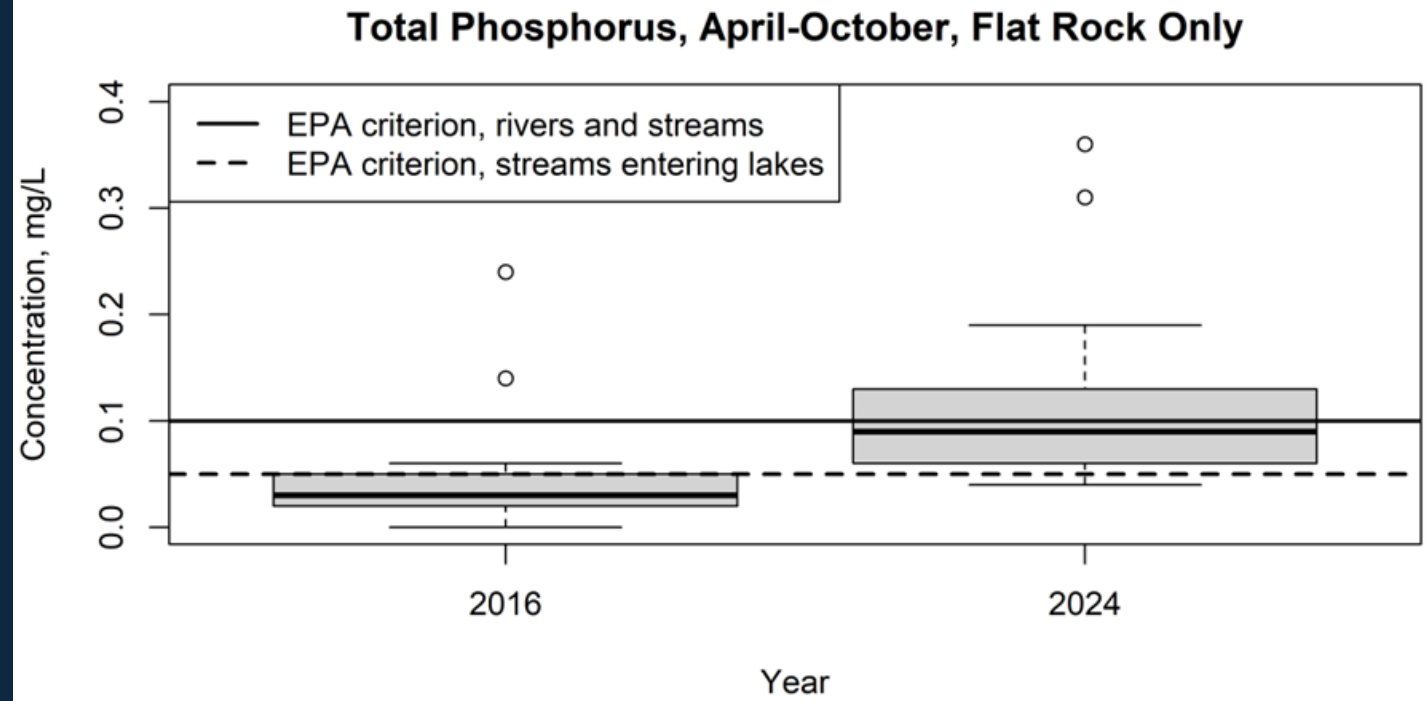
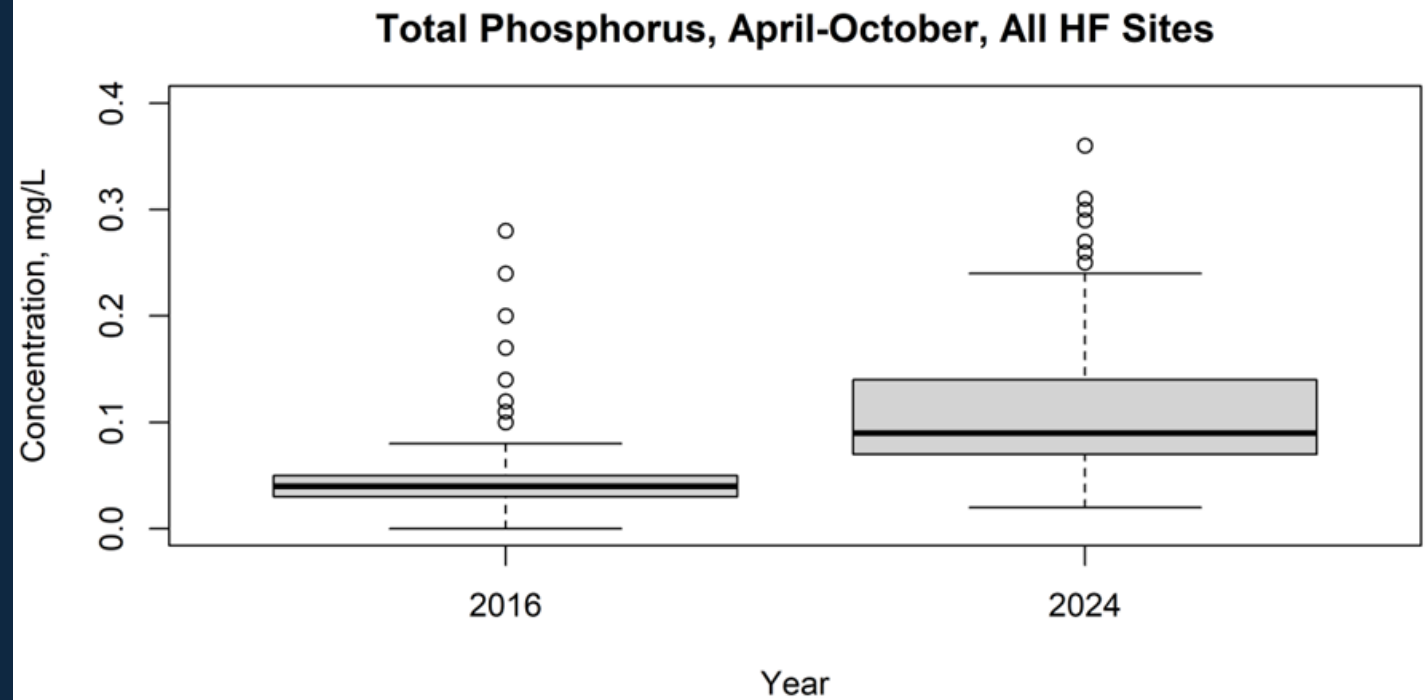
- \$30 million+ economic impact
- Most visited/valuable fishery in Idaho
- **“August is one of my favorite times to fish the Ranch. This year [2024] was tough for me. It was hard to find fish feeding.”** – Mike Lawson, Henry’s Fork Anglers
- **“The upper Ranch and here in Last Chance have been downright poor, and it’s getting a bit concerning...we are not seeing hatches and not much at all in the way of rising trout here in Last Chance.”** – John Campbell, TroutHunter

Eutrophication



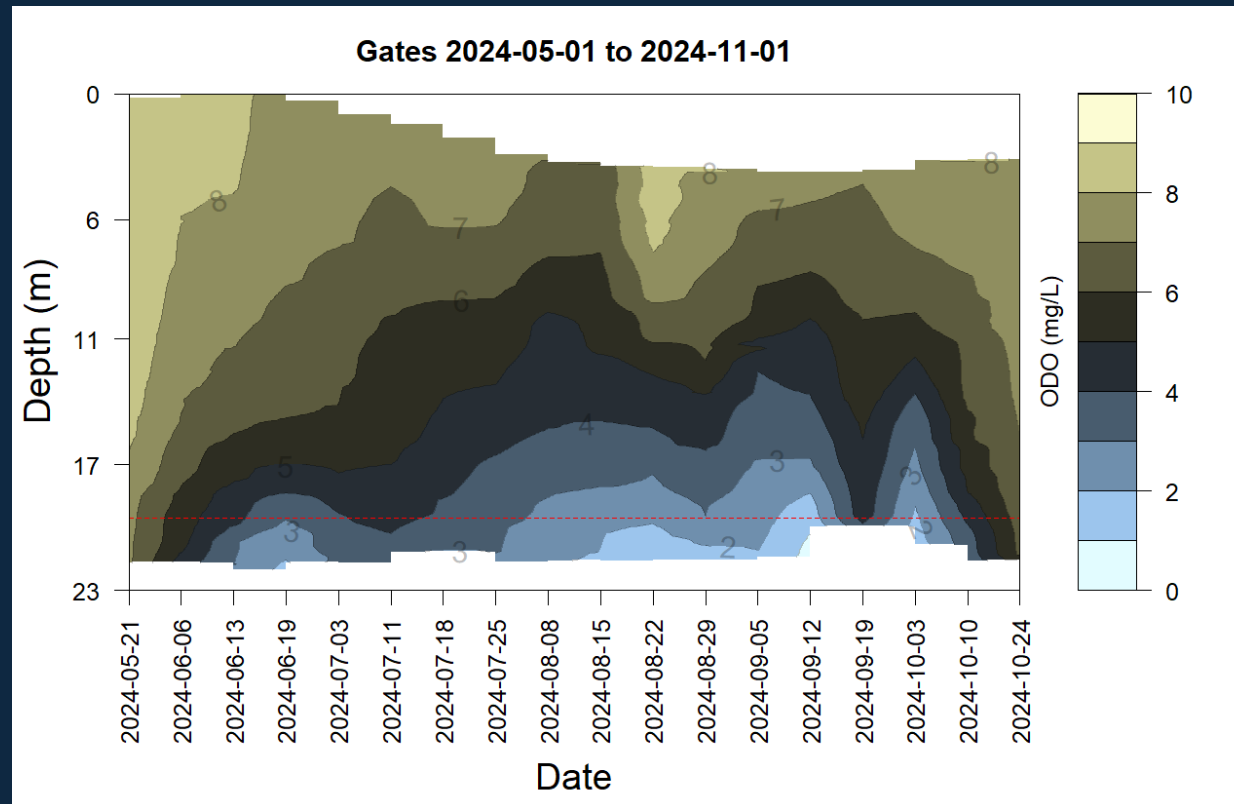
Eutrophication

- High nutrient input and low DO are key cogs in the processes
- Seeing this in IPR/Henry's Fork



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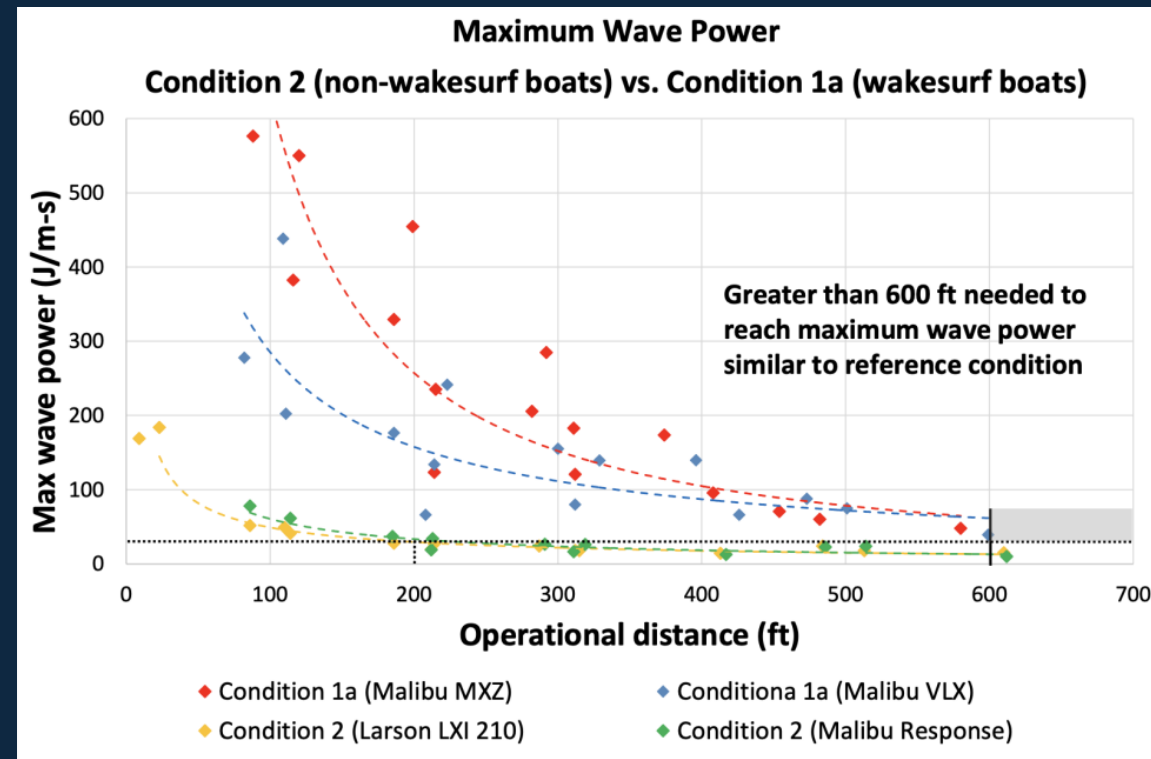
Wake Surfing

- Completely different than traditional motorized recreation
- Glamorous (image from Rolling Stone Magazine)



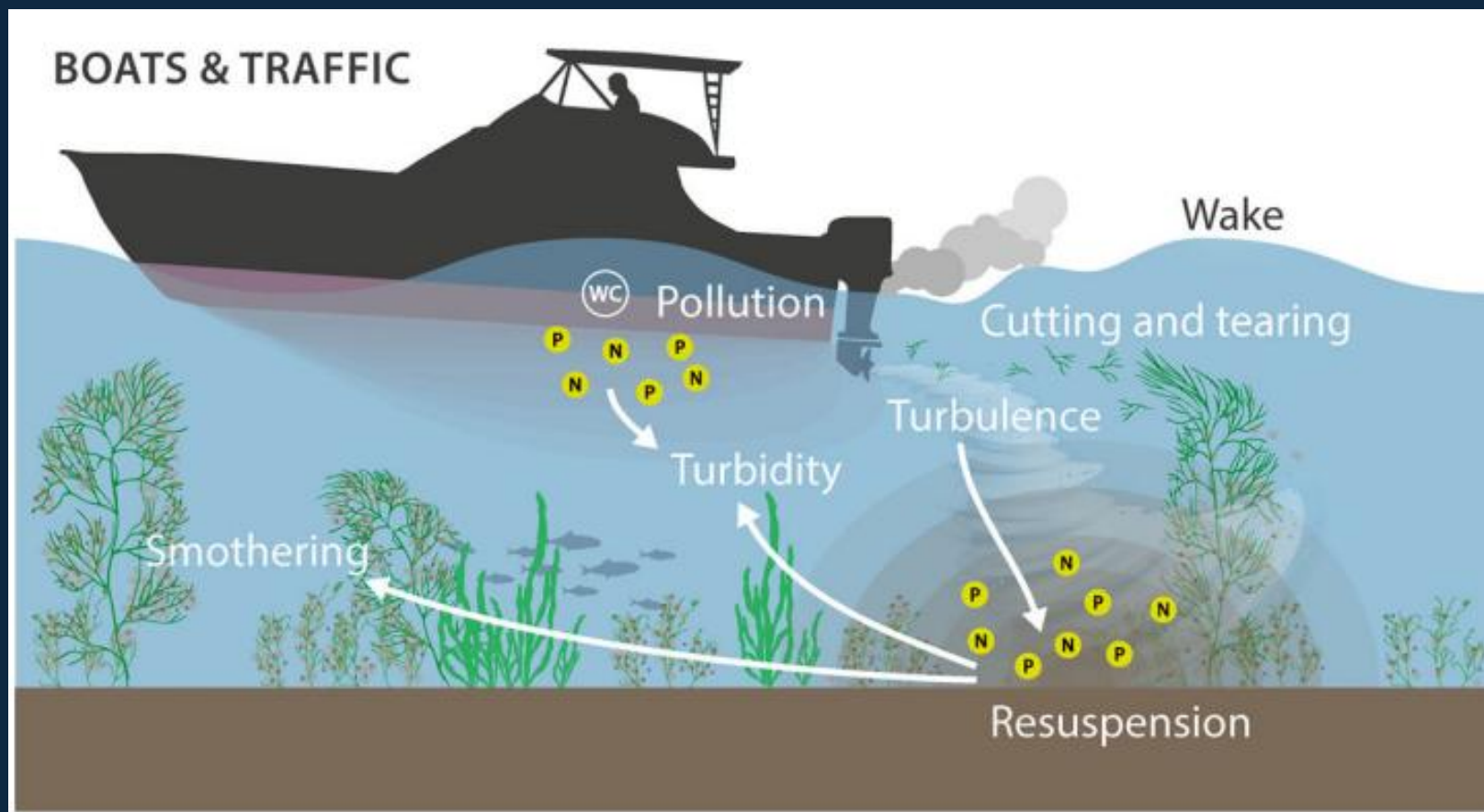
Wake Surfing

- Wakes 3-12 times greater than ski boats
- 600-1000 feet required to prevent shoreline damage, return to “normal” wave size



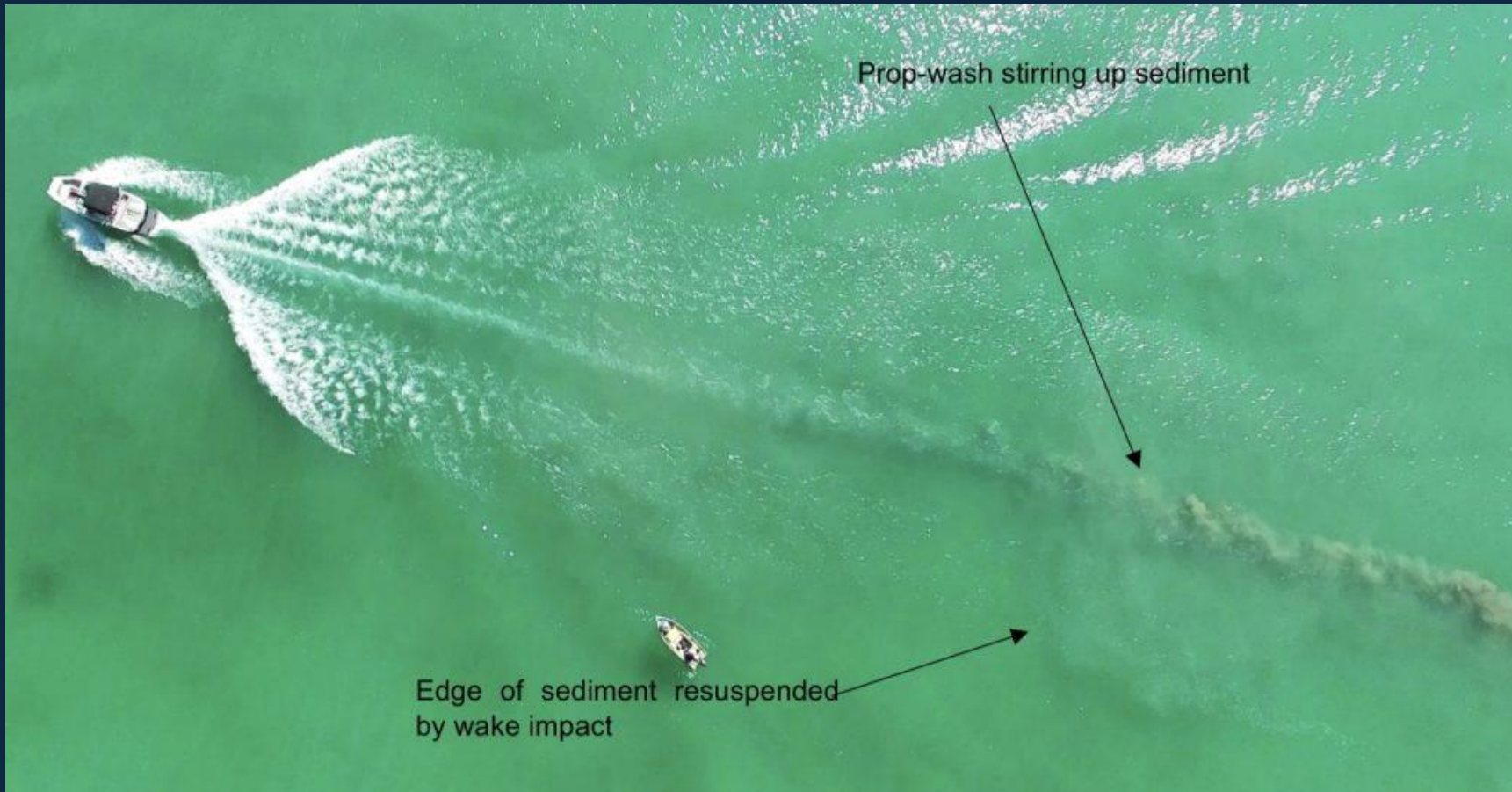
Wake Surfing

- Strong and proven water quality impact



Wake Surfing

- Strong and proven water quality impact



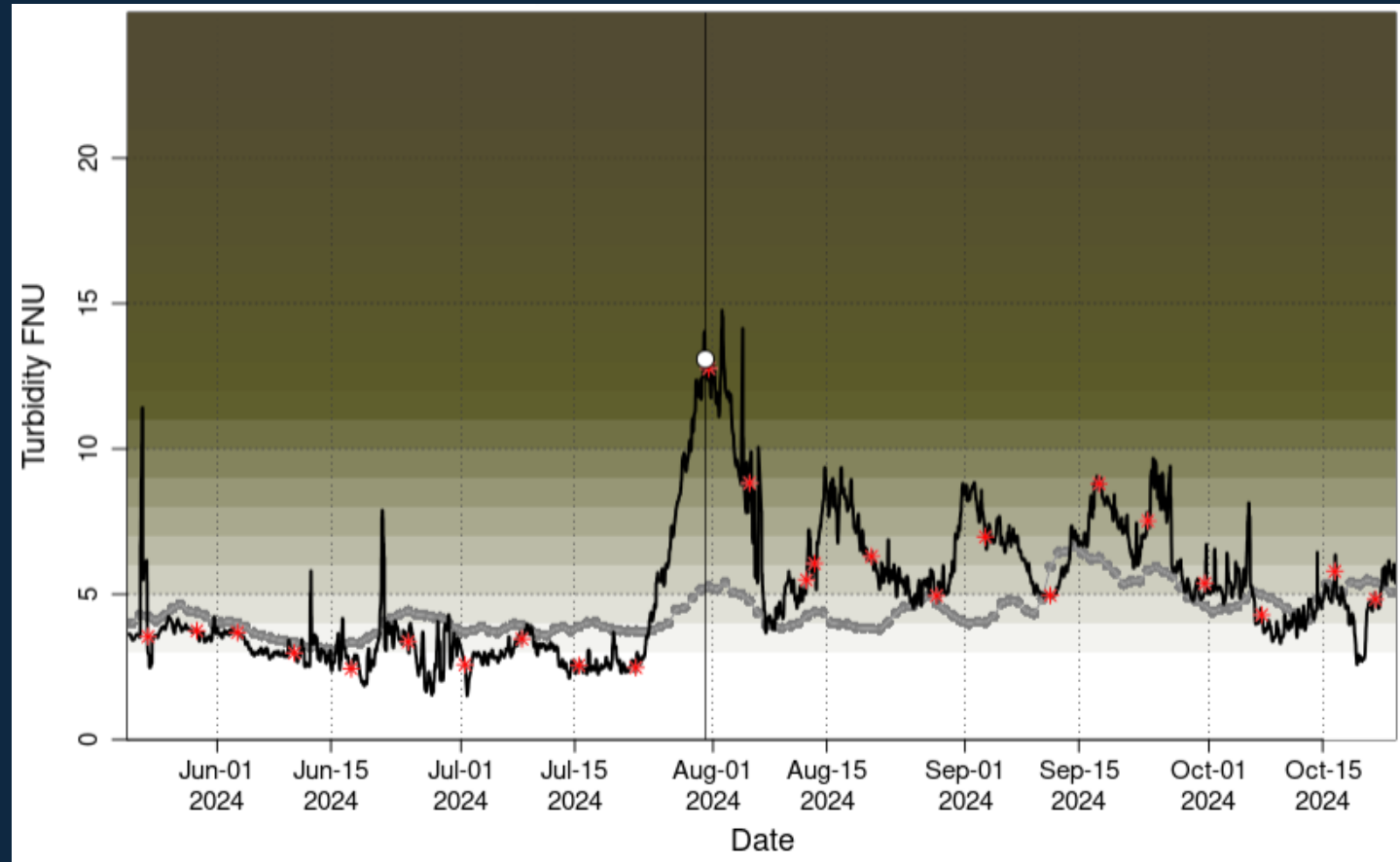
Wake Surfing

- Island Park Reservoir landowners responding: replacing natural shoreline with concrete walls
- Complaints about property and safety

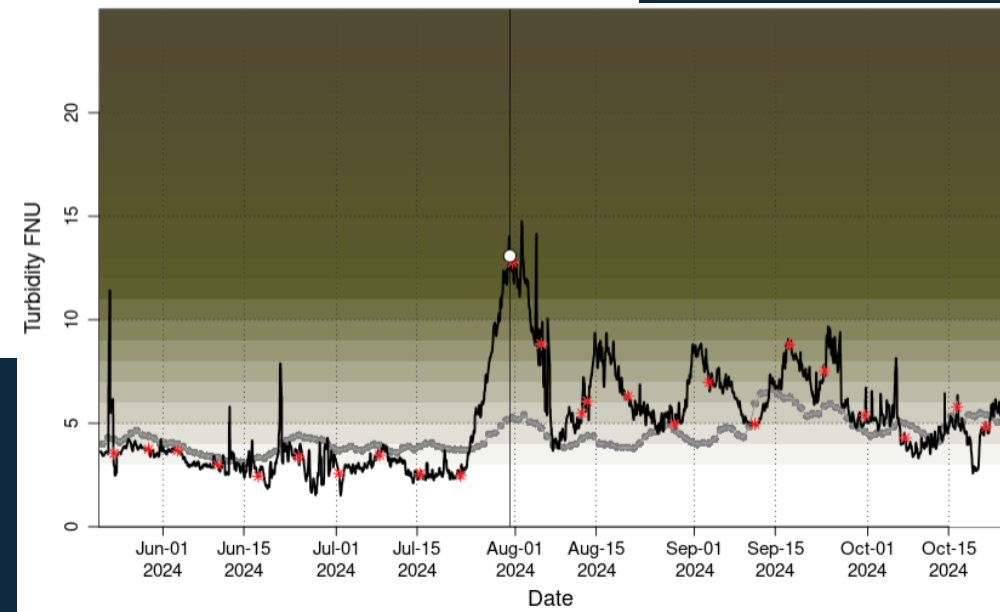
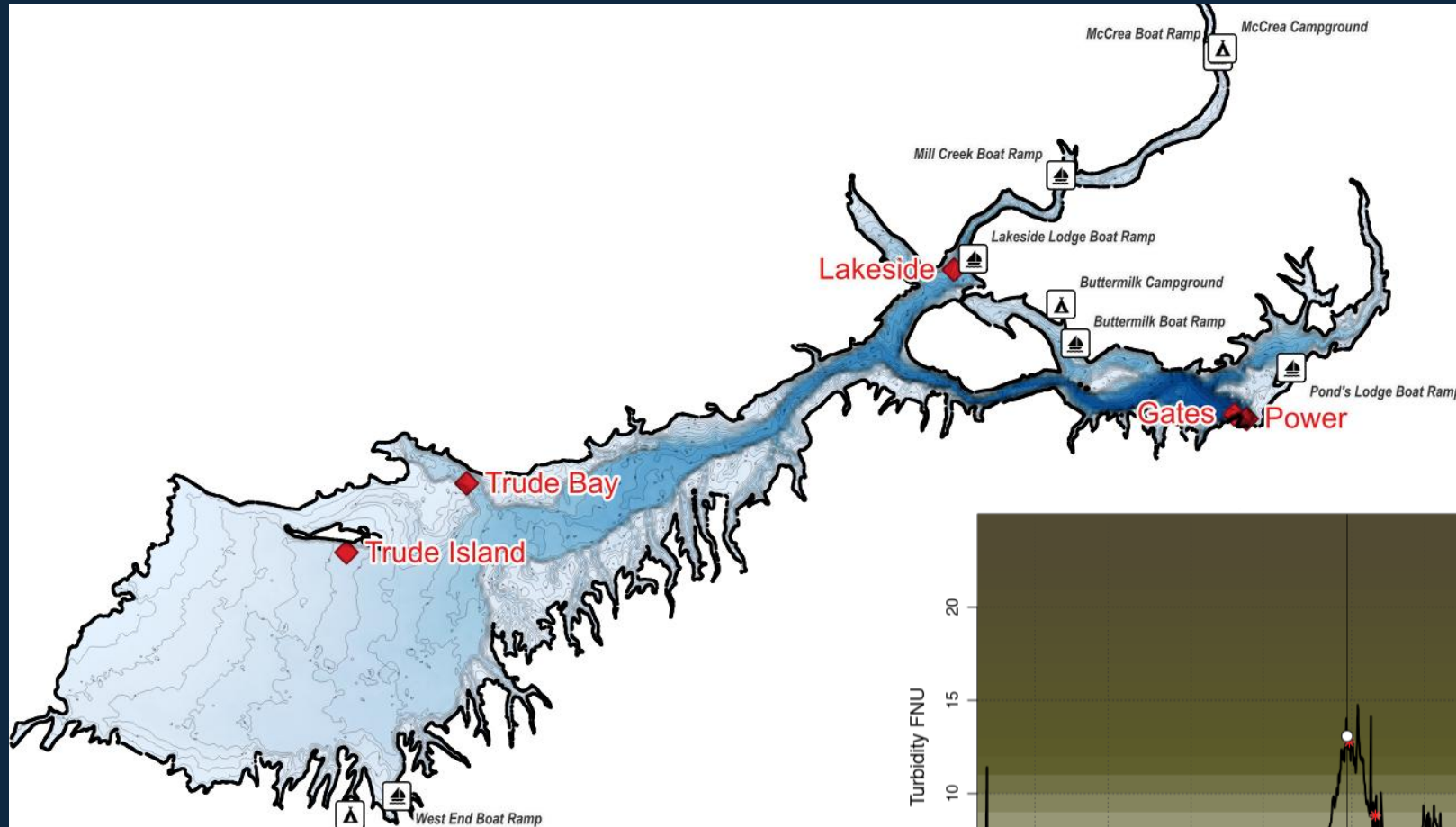


Wake Surfing + Eutrophy = Turbidity

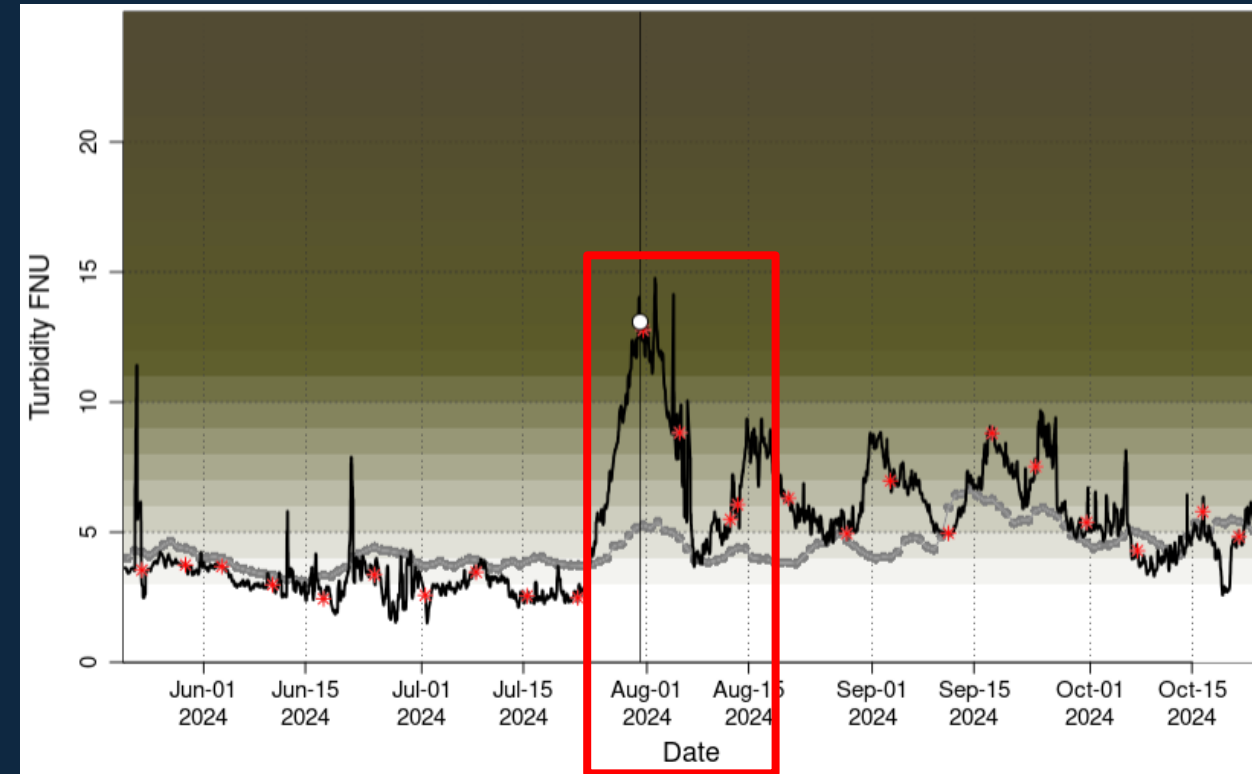
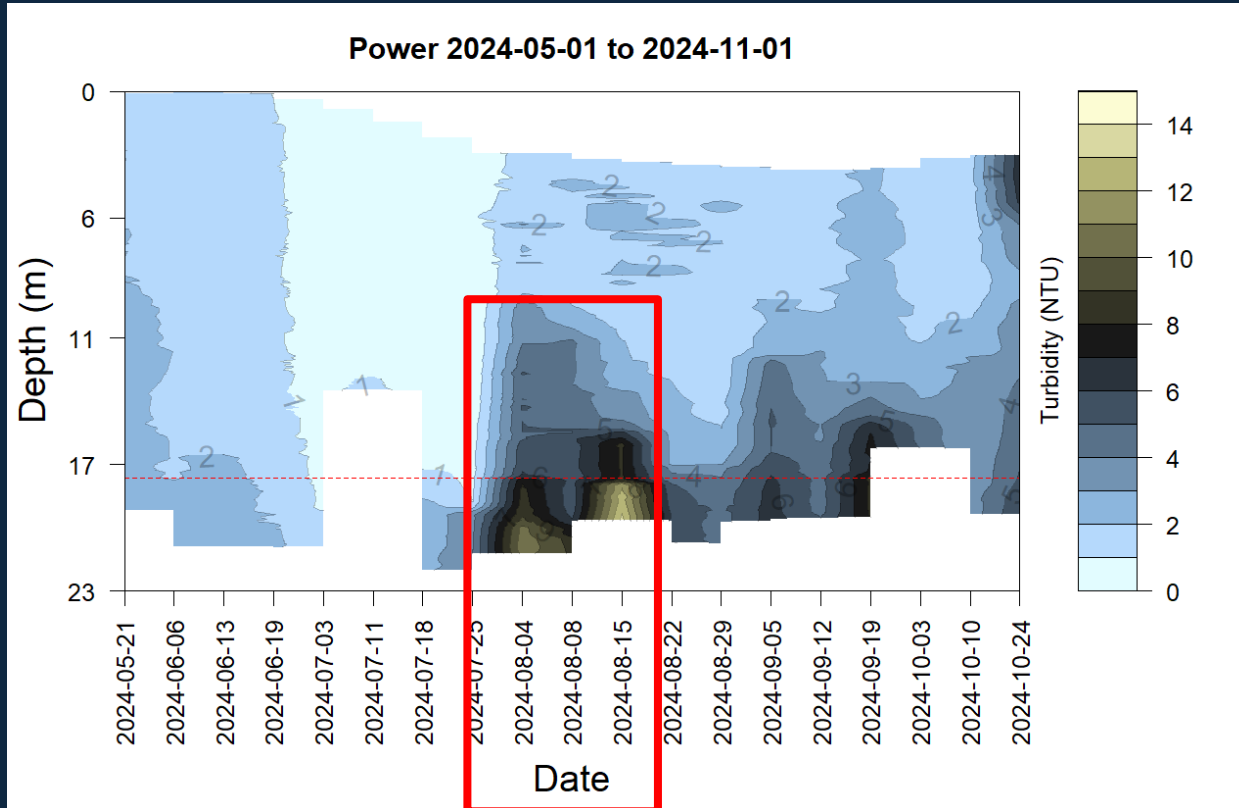
- Above average turbidity between late July and September
- Did not return to average until October



Wake Surfing + Eutrophication = Turbidity



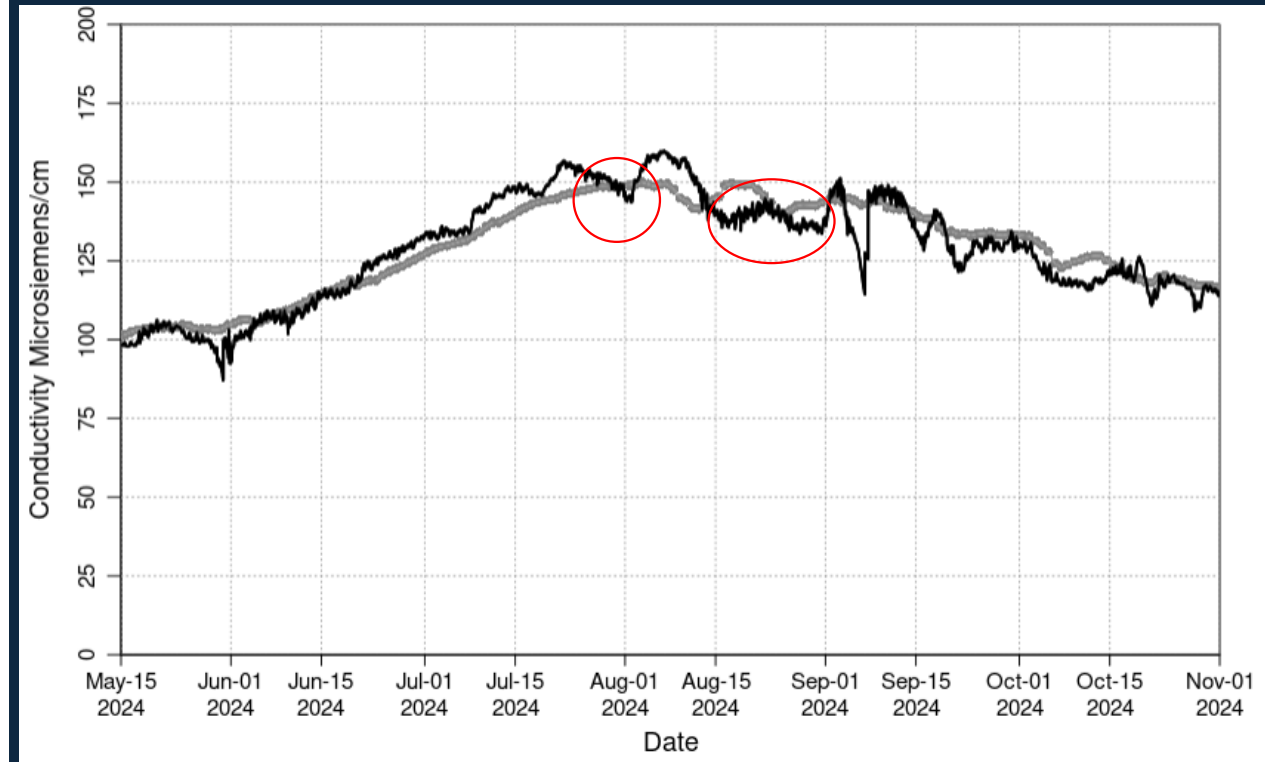
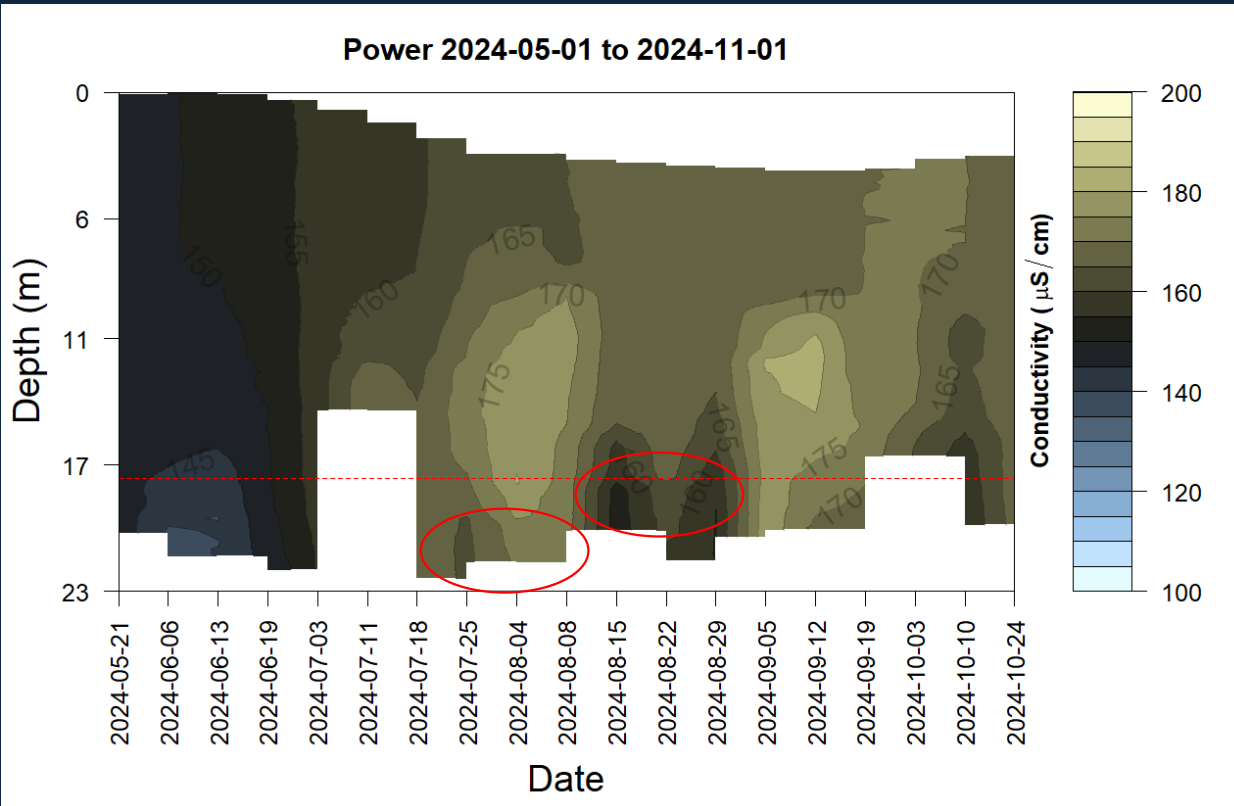
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Wake Surfing + Eutrophy = Turbidity

Where's the turbidity coming from?

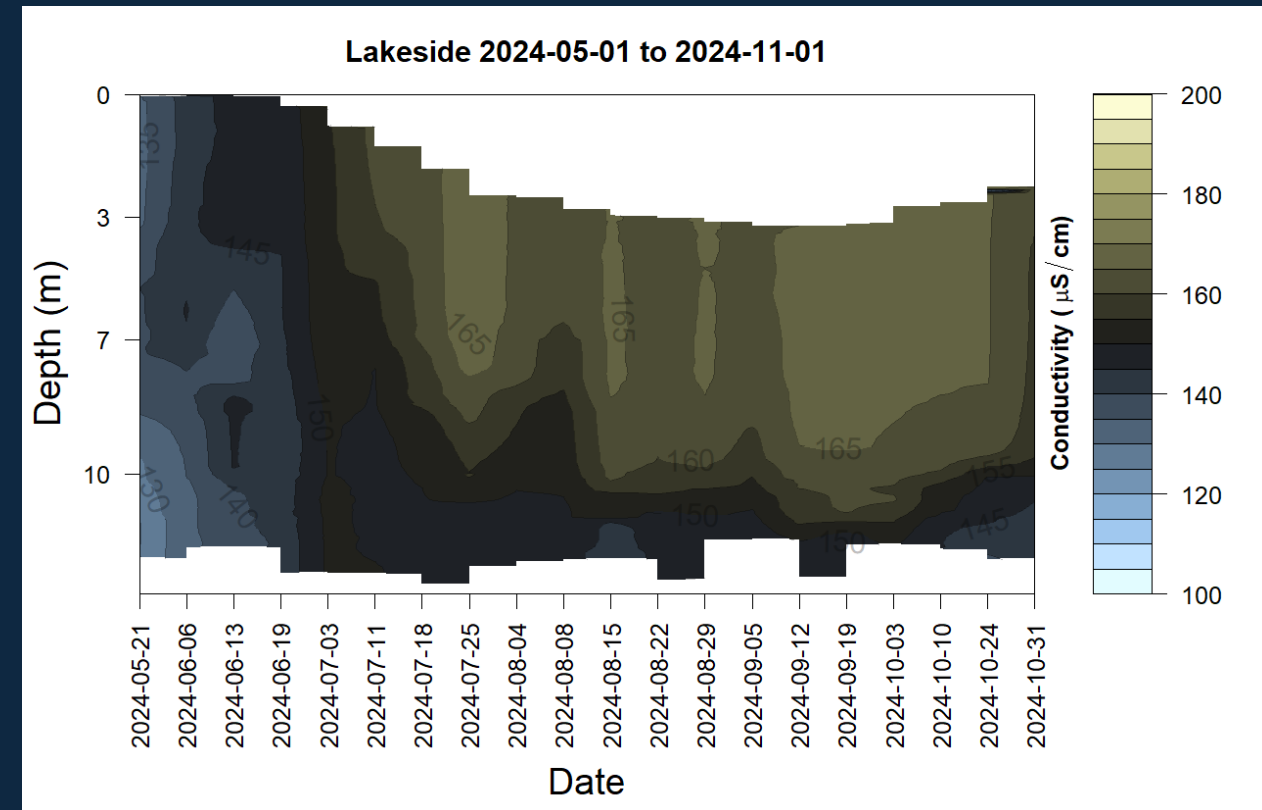
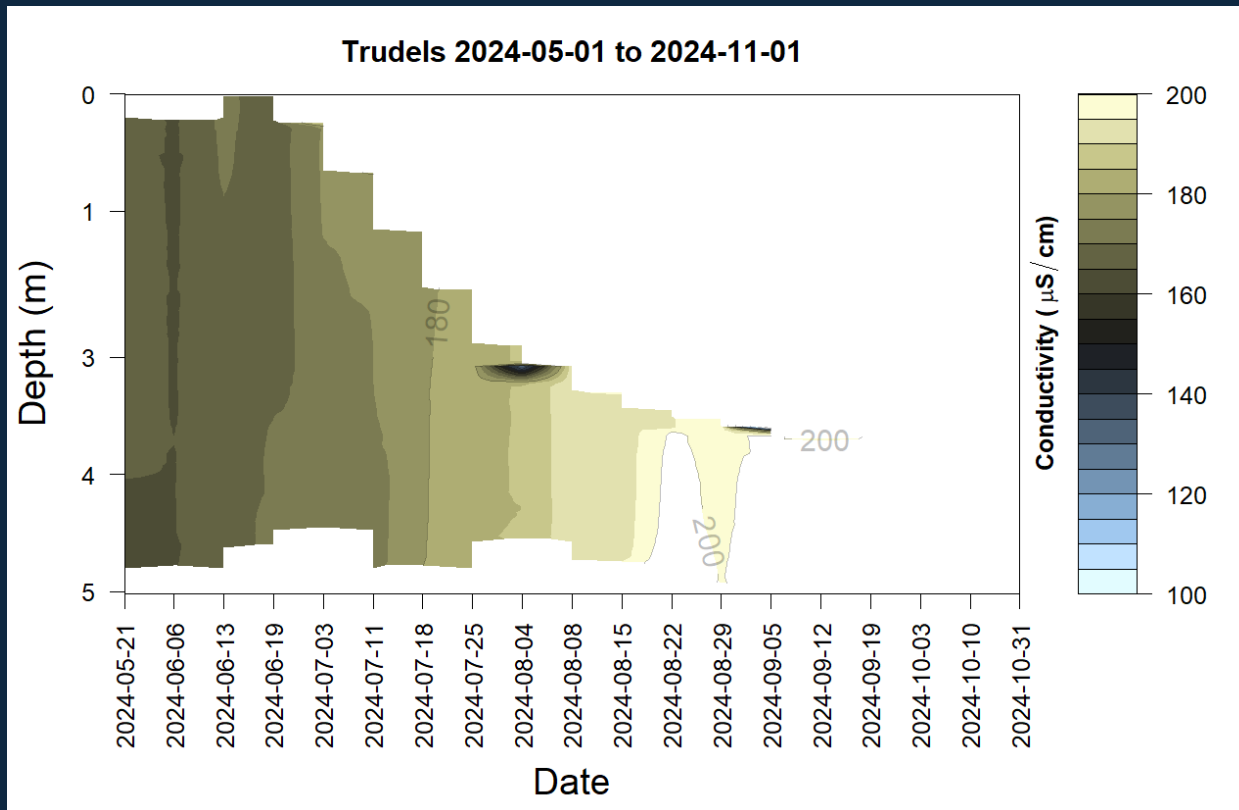
Conductivity helps us learn more



Wake Surfing + Eutrophy = Turbidity

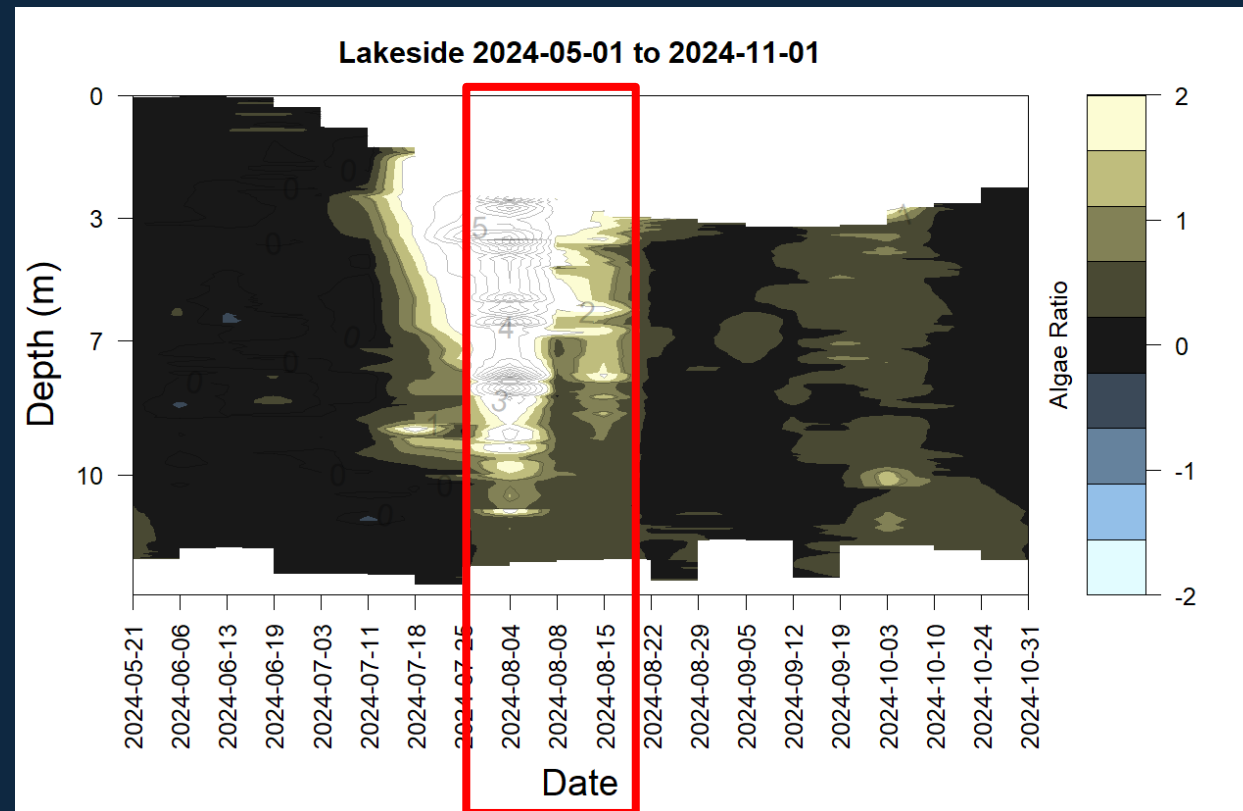
Where's the turbidity coming from?

Conductivity helps us learn more



Wake Surfing + Eutrophy = Turbidity

- Turbidity coming from Lakeside area
- Algal bloom in progress in the weeks leading up to turbidity



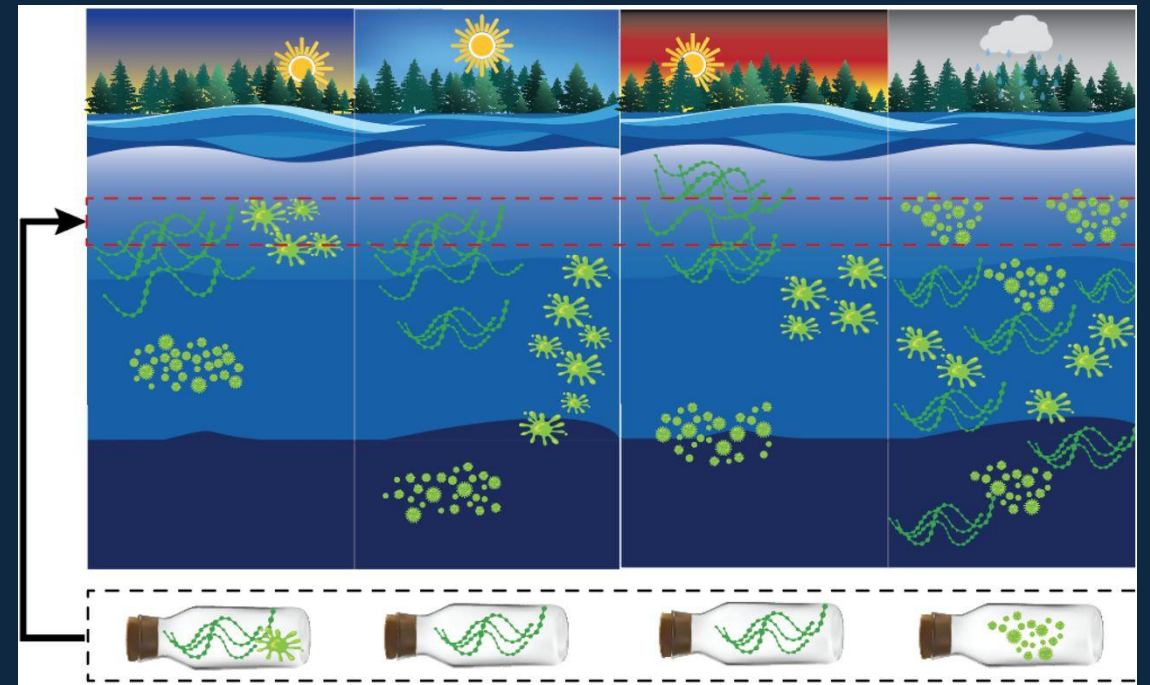
Wake Surfing + Eutrophy = Turbidity

- How did algae—a floating organism—end up deep enough to get into the outflow?
- IPR gets lots of algae blooms. Why did this one cause major turbidity downstream?



Wake Surfing + Eutrophy = Turbidity

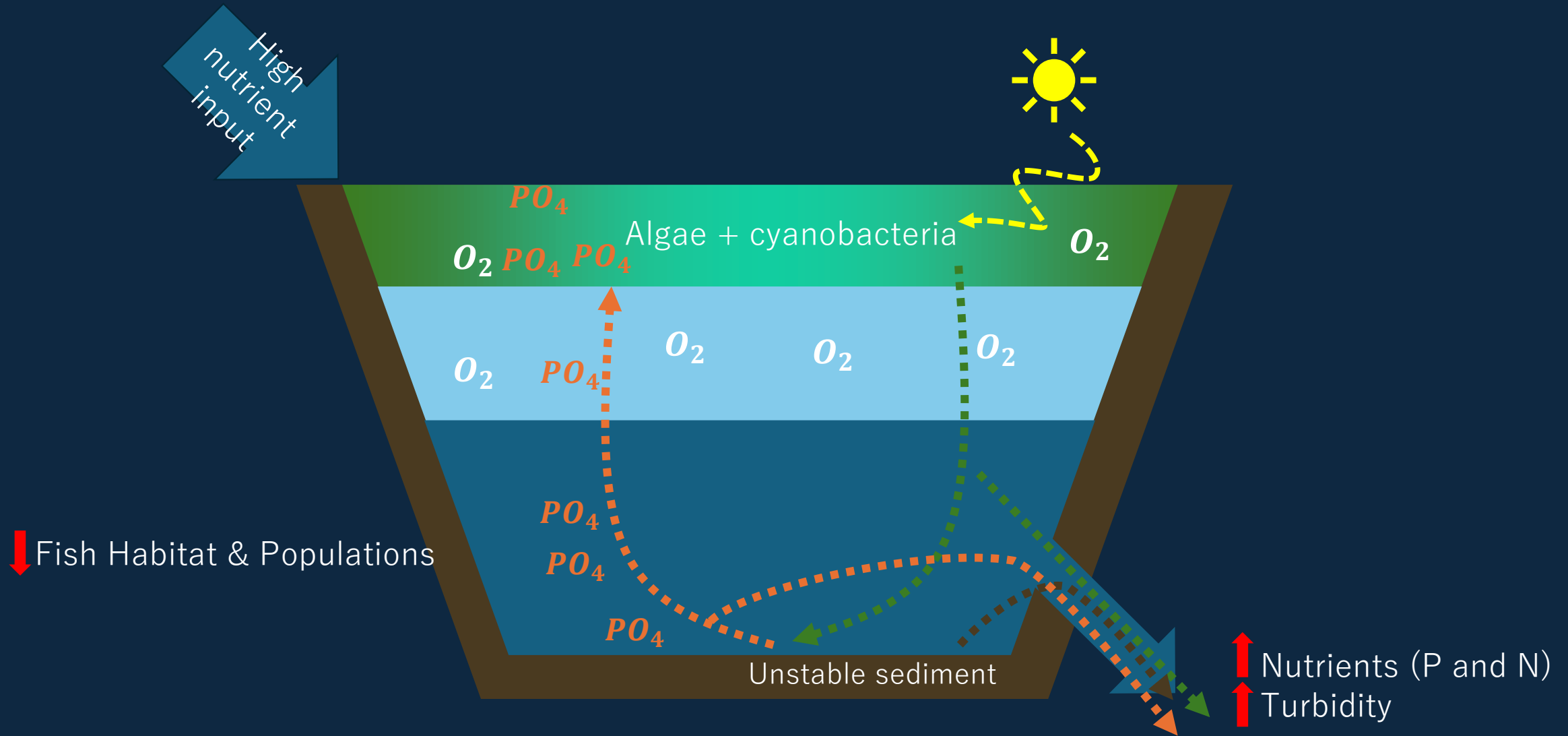
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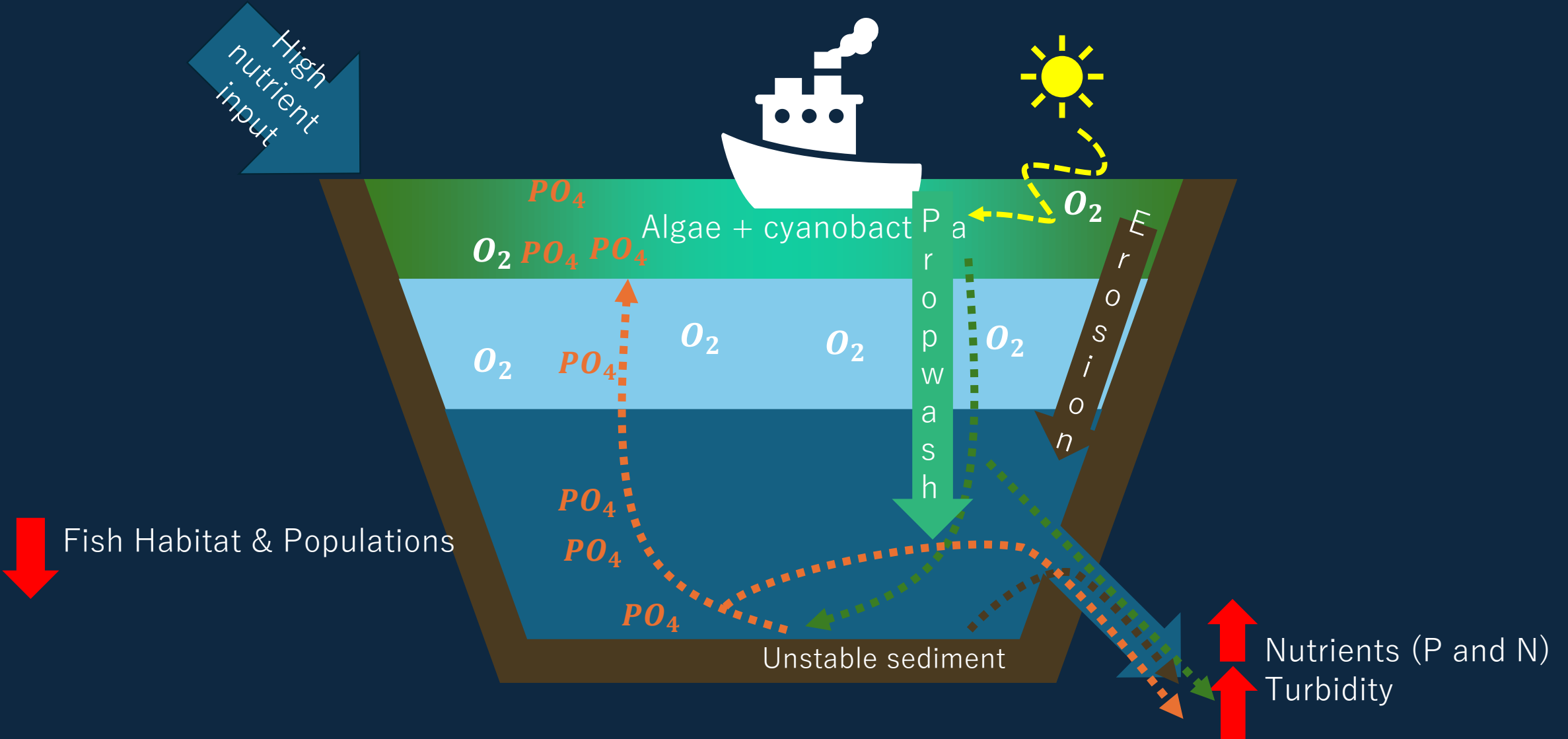
Wake surfing in July



Wake Surfing + Eutrophication = Turbidity



Wake Surfing + Eutrophy = Turbidity



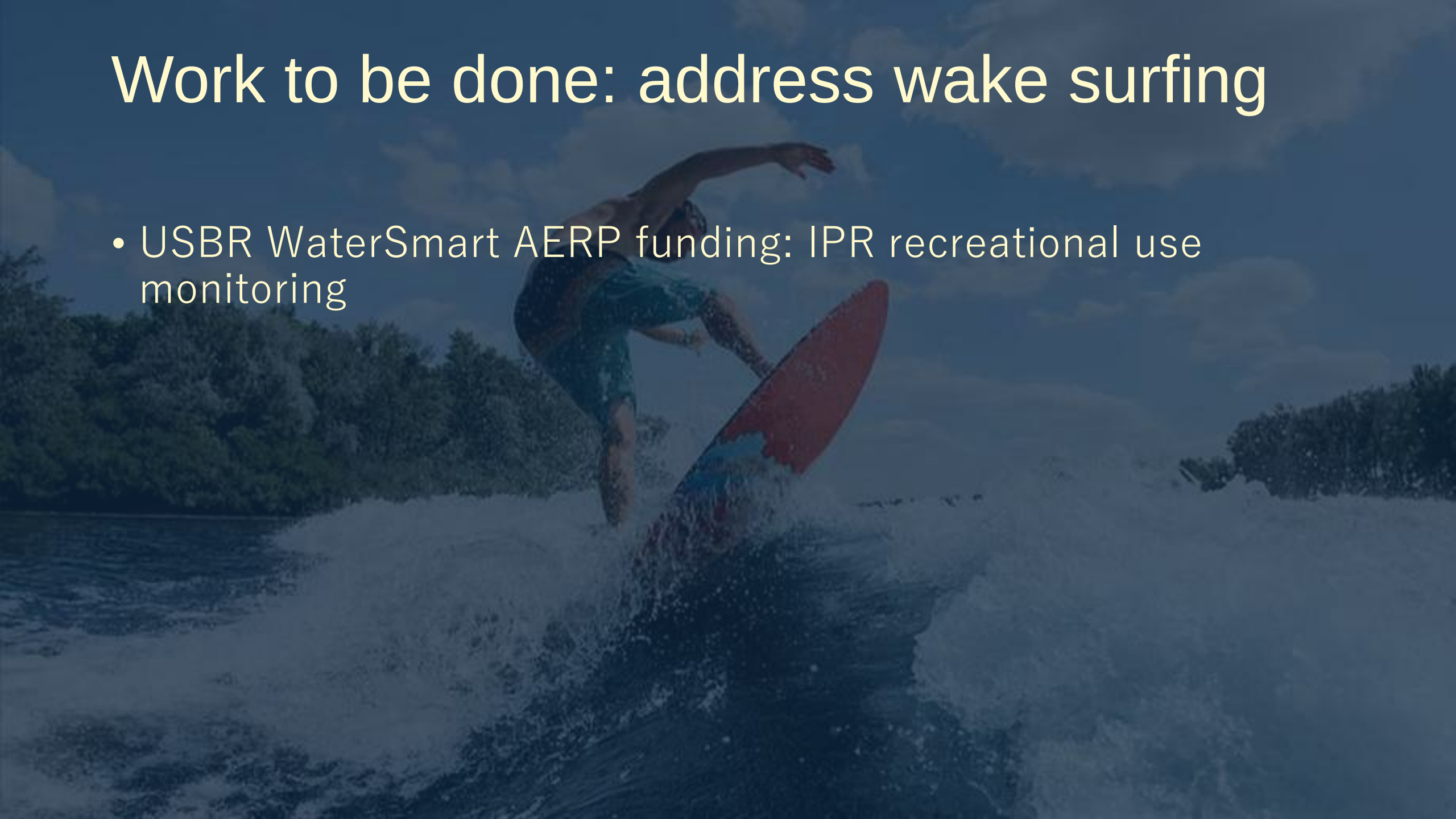
Long-term monitoring pays dividends

- DEQ plays key role
- Conductivity (often ignored) plays key role
- Ability to move forward
 - Model development in conjunction with DEQ
 - Model and data key for developing solutions
 - Public data and information dissemination



Work to be done: address wake surfing

- USBR WaterSmart AERP funding: IPR recreational use monitoring



Work to be done: address wake surfing

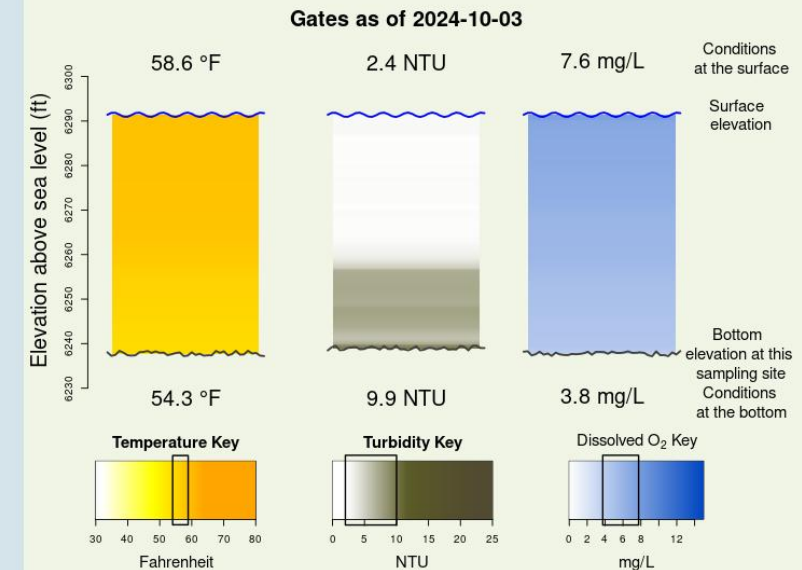
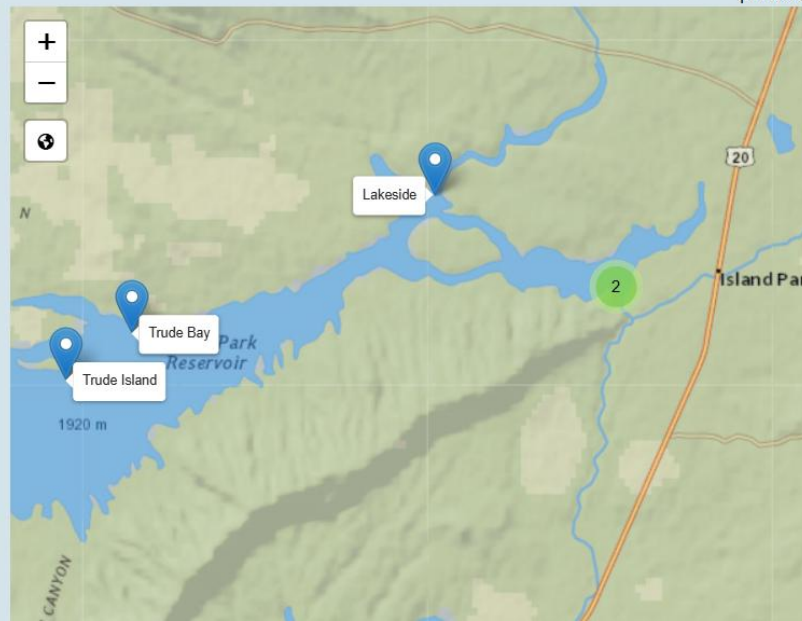
- IPR recreational use monitoring
- Information dissemination
 - Public data website (coming soon)
 - [bathy map link](#)

Weekly Water Quality Data for Island Park Reservoir, ID

Latest Conditions Profiles Isopleths Bathymetric Map Multi-Profiles

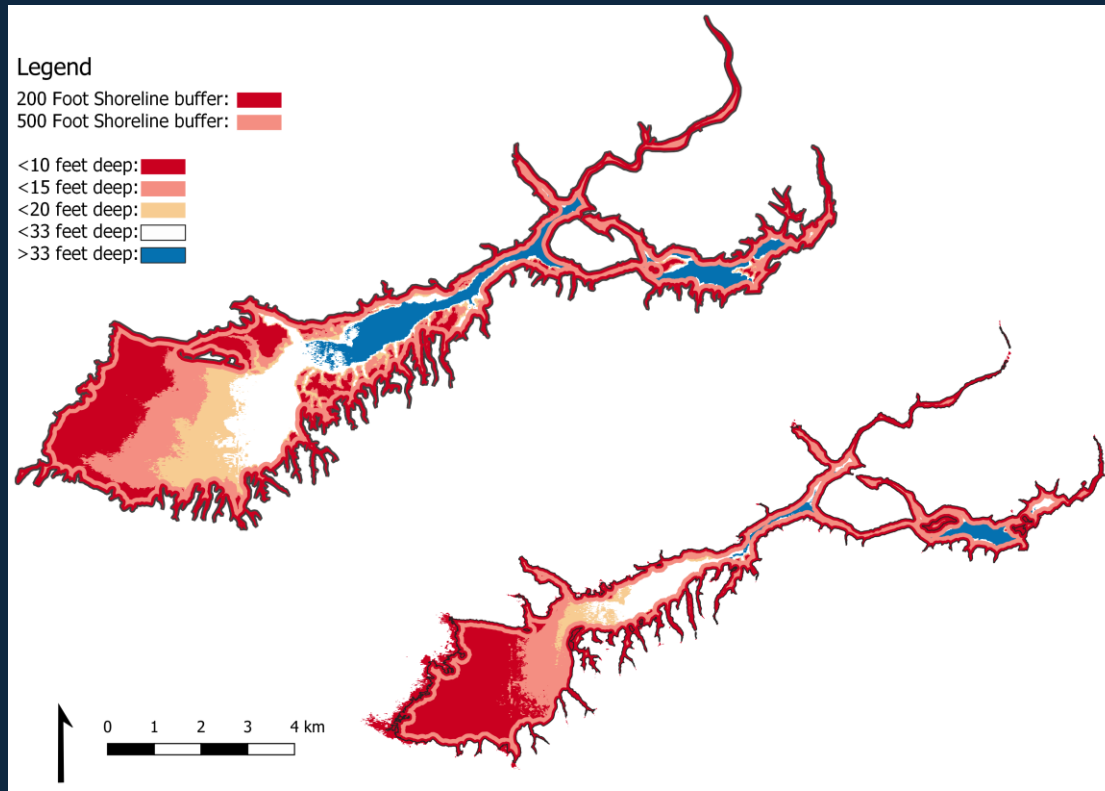
Latest weekly conditions at Island Park Reservoir

Choose from the 5 sampling sites in the map below. The pop-up in the map reports latest surface conditions at that site. Scroll down for a graphic of conditions through the water column. Click a map pin to select a different site



Work to be done: address wake surfing

- IPR recreational use monitoring
- Information dissemination
- Community involvement & enforcement

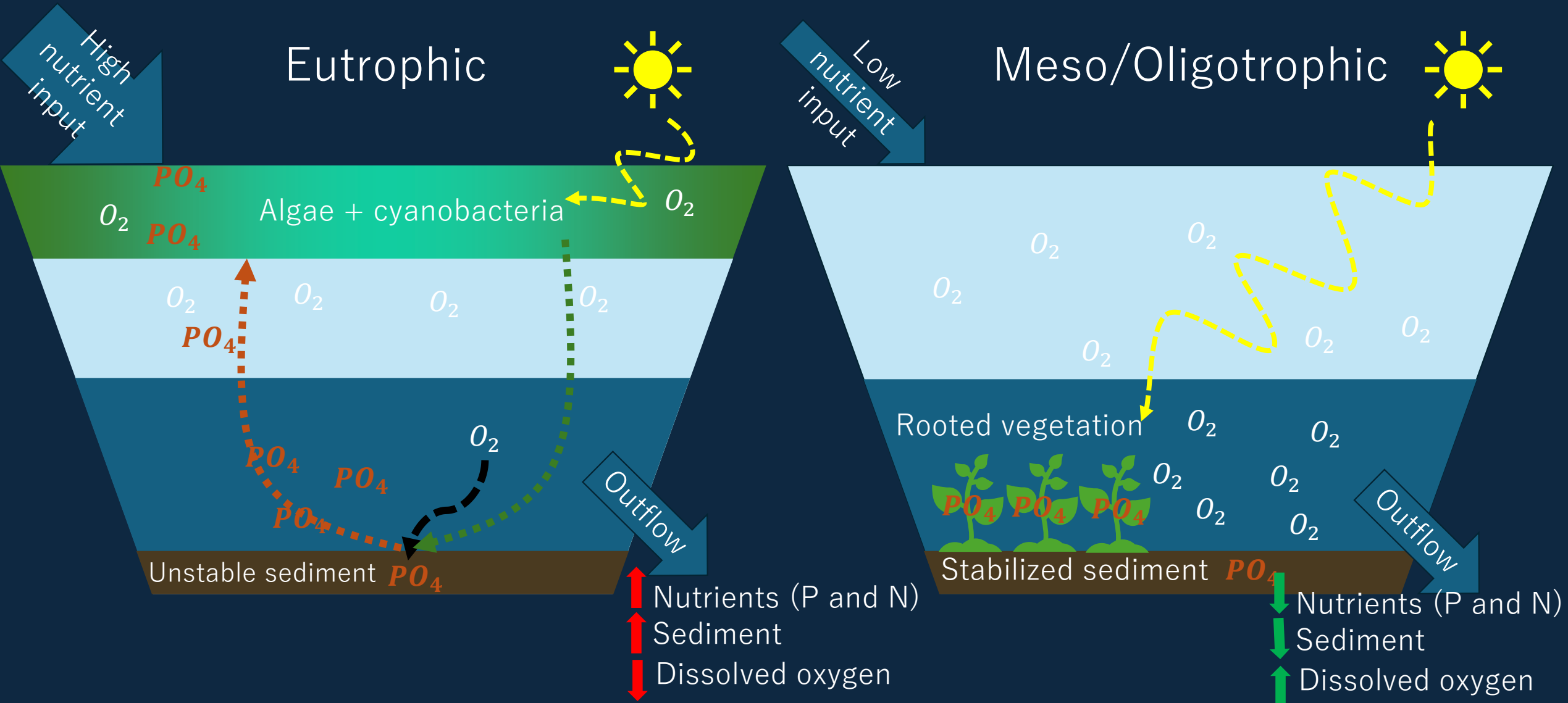


Work to be done: address wake surfing

- IPR recreational use monitoring
- Information dissemination
- Community involvement & enforcement
- Quantify invasive species risk

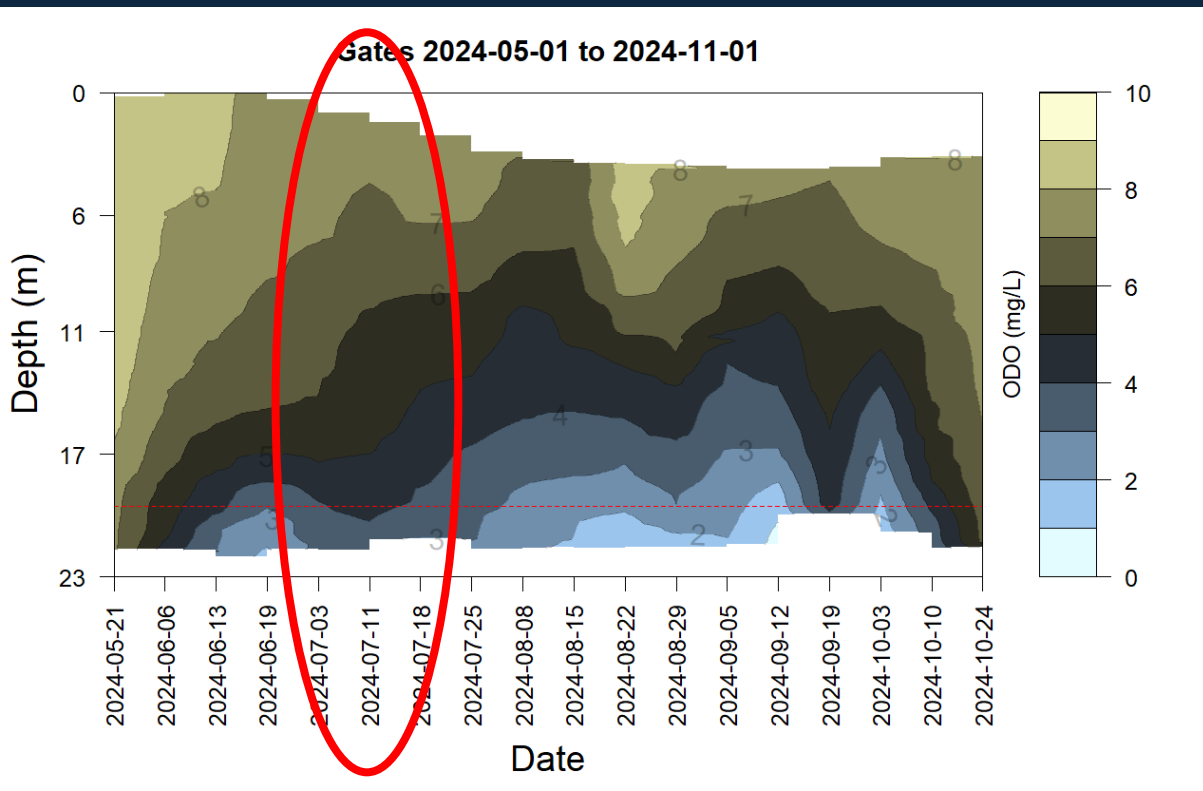


Work to be done: Eutrophication



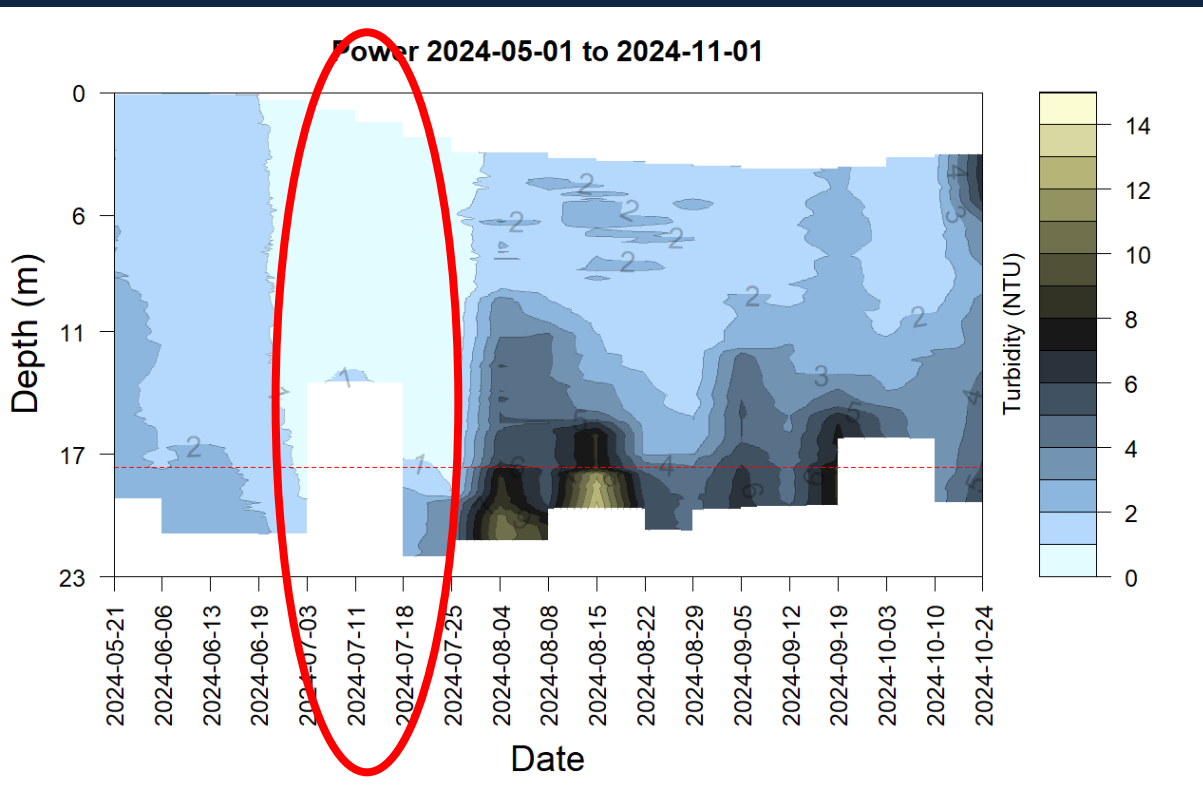
Work to be done: Eutrophication

- Break the eutrophication cycle with oxygenation



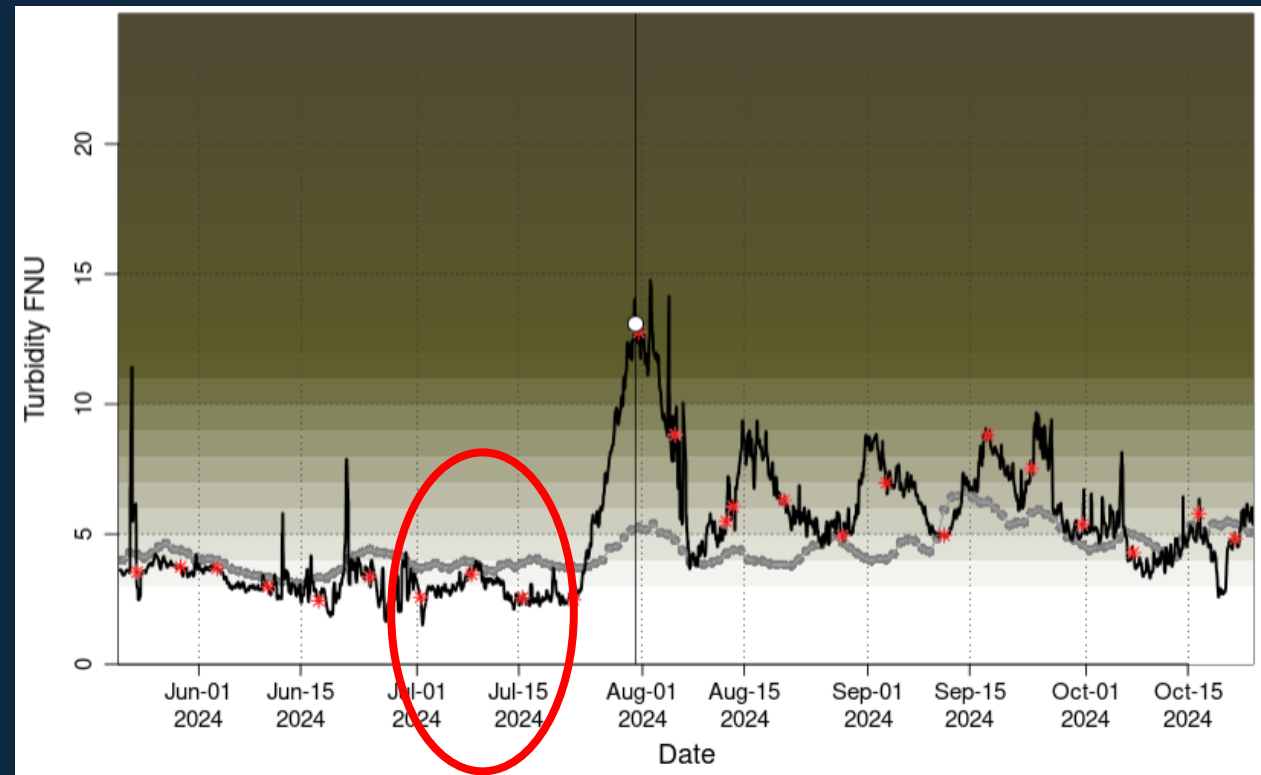
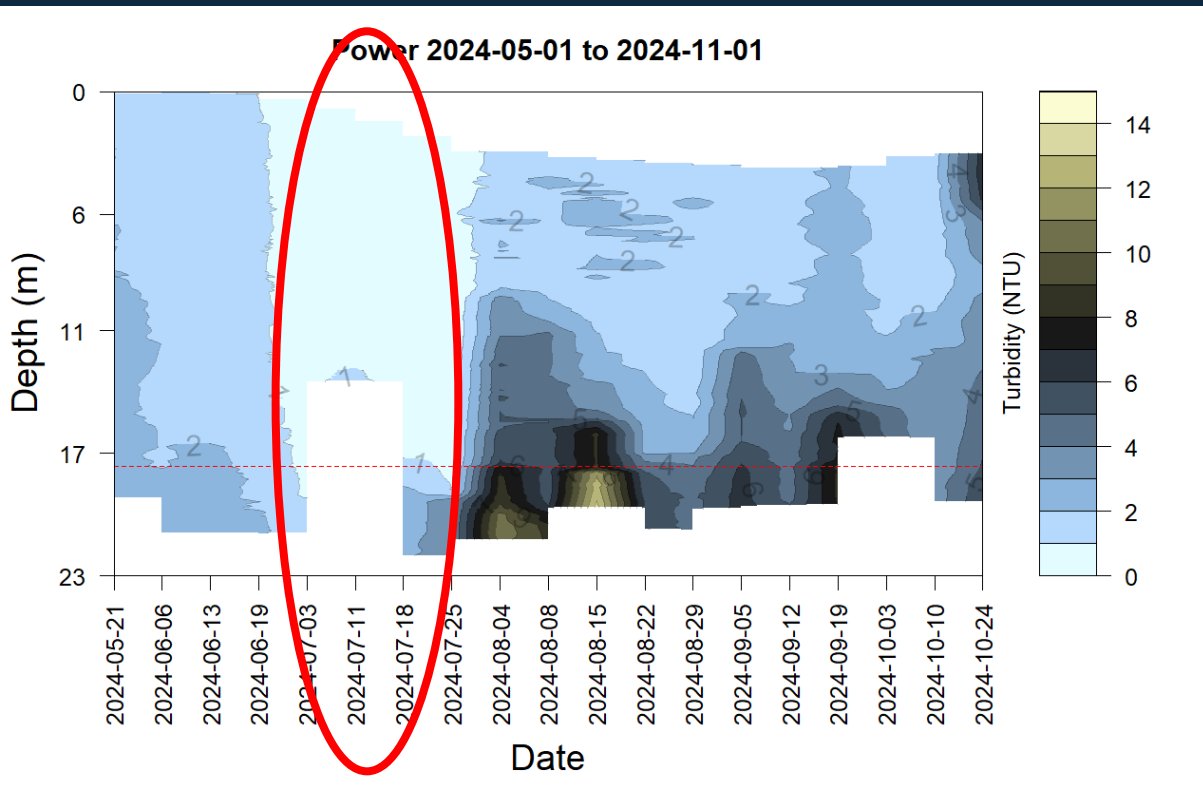
Work to be done: Eutrophication

- Break the eutrophication cycle with oxygenation



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Work to be done: Eutrophication

- Break the eutrophication cycle with oxygenation
- \$1 million USBR water smart grant to develop oxygenation design plans



Review

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Questions?

- Jack McLaren, Henry's Fork Foundation
- jack@henrysfork.org

