

The logo consists of three concentric circles. The innermost circle is dark blue and contains the text 'LAKE RESTORE' and a wavy line icon. The middle circle is a lighter blue, and the outermost circle is a greyish-blue. The circles overlap, creating a sense of depth and movement.

LAKE 
RESTORE

MOLEAER[®]
**Surface Water
Treatment**

Nanobubble Solutions Provider



Chad Woolson
Founder

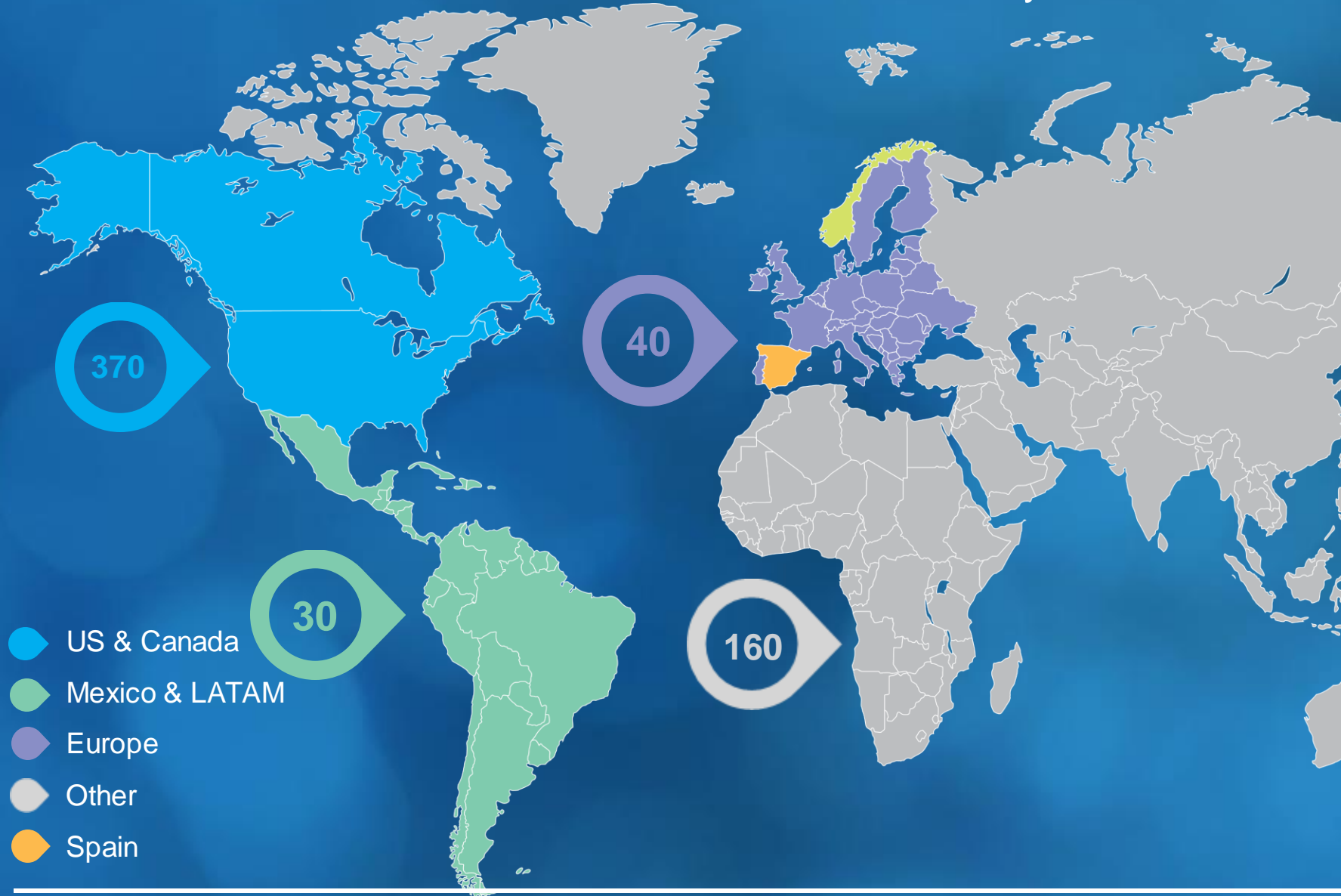


- **Lake Restore is an authorized Moleaer channel partner and distributor servicing the midwest utilizing a restorative approach to Lake Management.**
- **Providing site surveys, mapping, water quality monitoring, sales, installation, maintenance and on-going support.**
- **Operations in Blaine, MN**



Over 2,500 Nanobubble Installations

600+ Nanobubble Installations in Waterbodies & Waterways



The Global Leader in Nanobubble Lake Treatment

600+ surface water installations worldwide, ranging from <1 to >5,000 acres



Prescriptive solutions for each body of water's needs



Leader in nanobubble research with 13 Ph.D. on staff and extensive 3rd party validation



Utilize partners combined with responsive Moleaer global service team



Flexible air and / or oxygen generation and installation options from <40 to >6,000 GPM flow



Reliable technology with low maintenance, using industrial-grade components



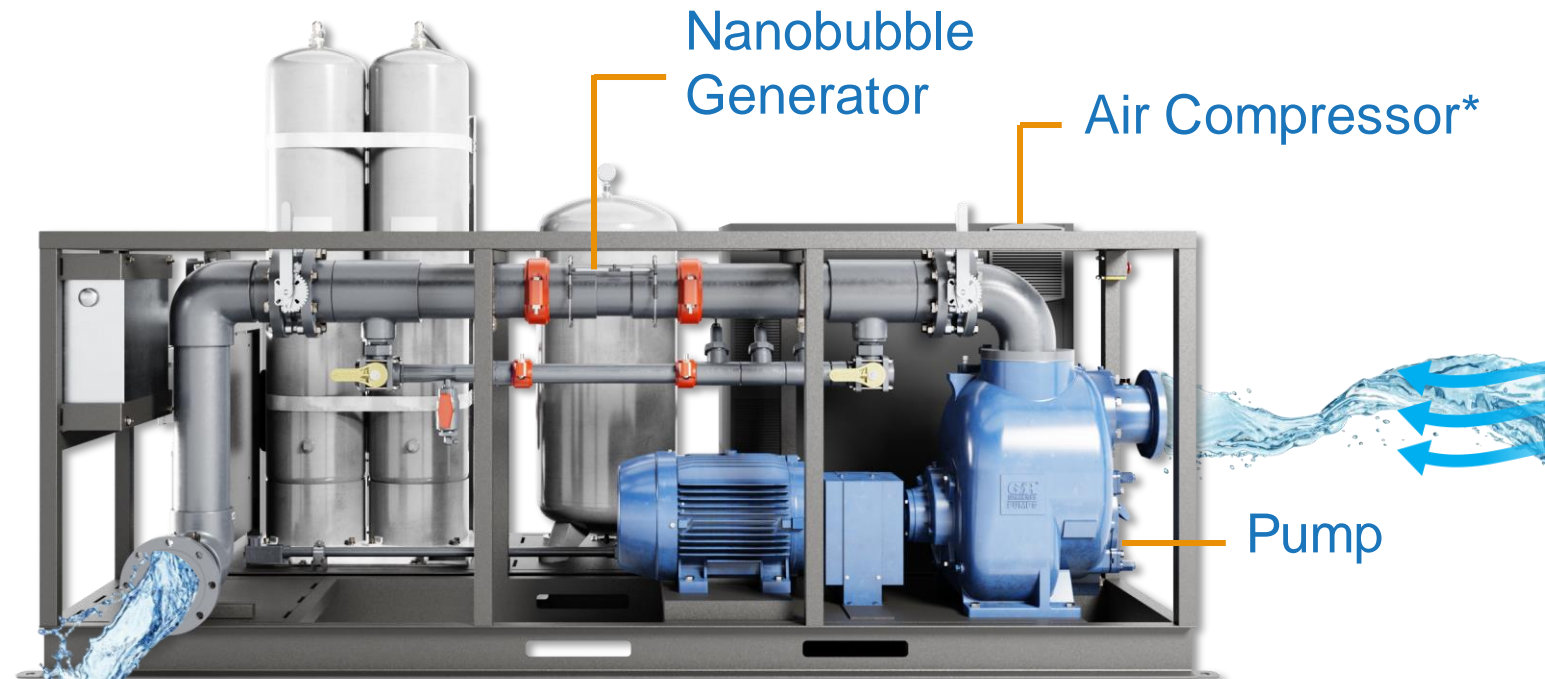
Moleaer's Patented Technology

Scalable to meet the needs of any size waterbody:

100's of installations over 1000 GPM

Introduces **dissolved oxygen and nanobubbles:**

- Most cost-effective way to provide critical dissolved oxygen to waterbodies
- Nanobubbles deliver the oxygen into the sediment where it is needed most
- Promotes natural lake cleaning processes



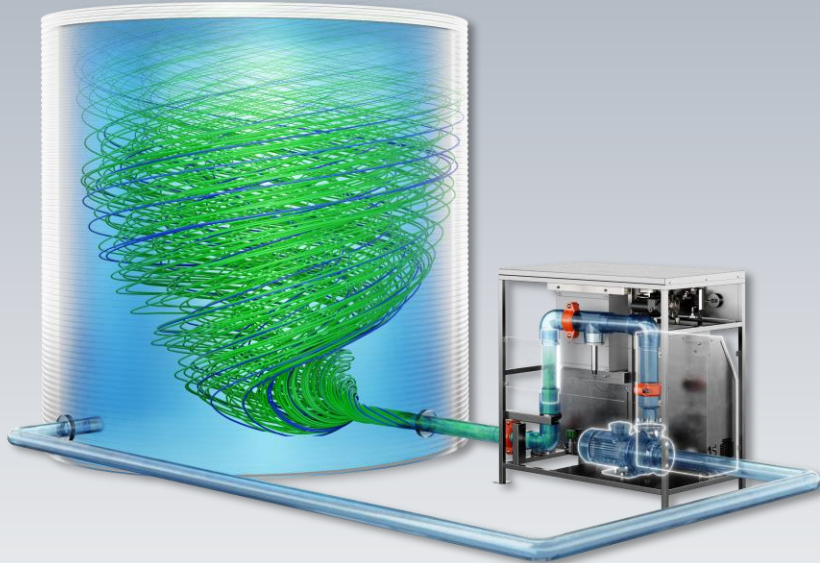
**Available with either an Air Compressor or with Oxygen Concentrator. No external gas supply or connection is required.*

Patented Technology Produces Two Forms of Air in Water

DISSOLVED

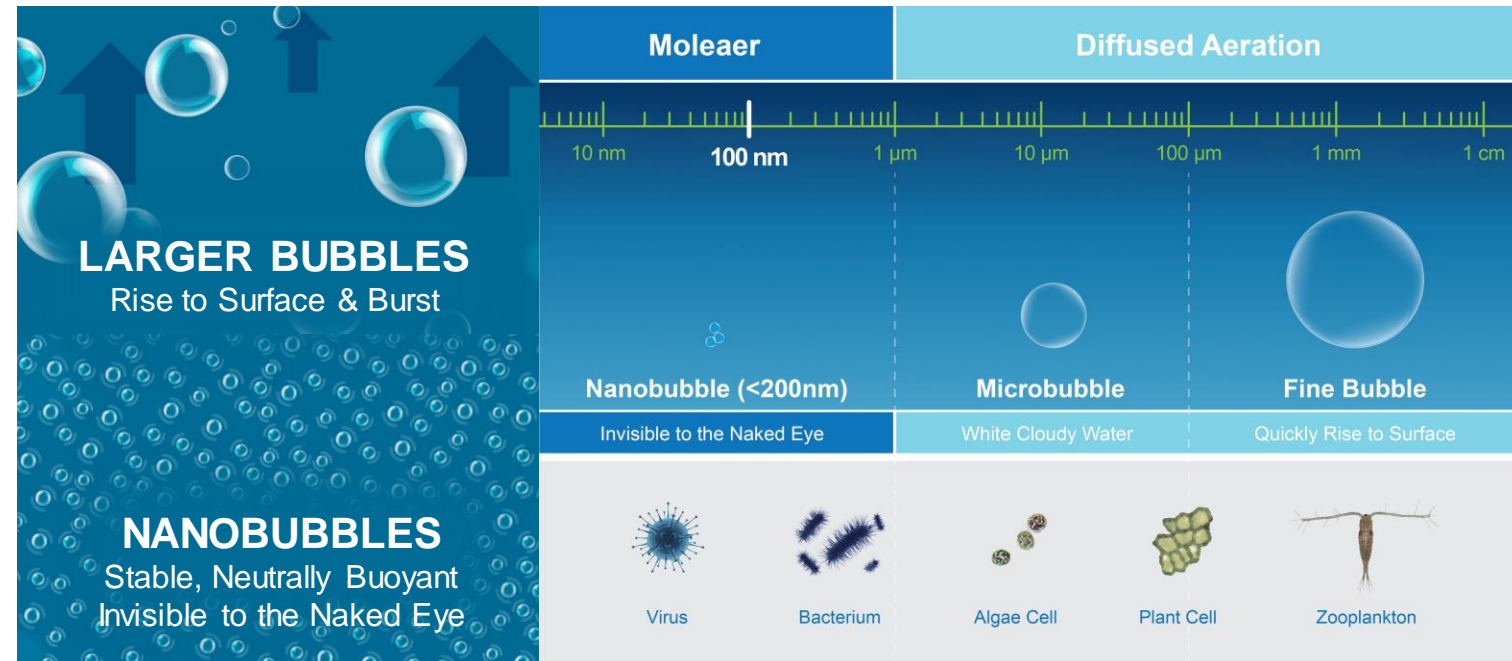
Dissolved Oxygen = Amount of Oxygen in Water

Moleaer's nanobubble technology **dissolves oxygen** with best-in-class efficiency in any depth waterbody at scale



NANOBUBBLES

Nanobubbles behave differently from all other bubbles
 All their beneficial attributes — **stability, surface charge, neutral buoyancy, etc.** — are the result of their size
 These unique features enable nanobubbles to disperse throughout a water body, delivering and retaining oxygen at all depths



Moleaer's Nanobubble Technology vs. Aeration / Oxygenation Systems

Aerate means to "supply with air" or to "supply with oxygen by respiration"

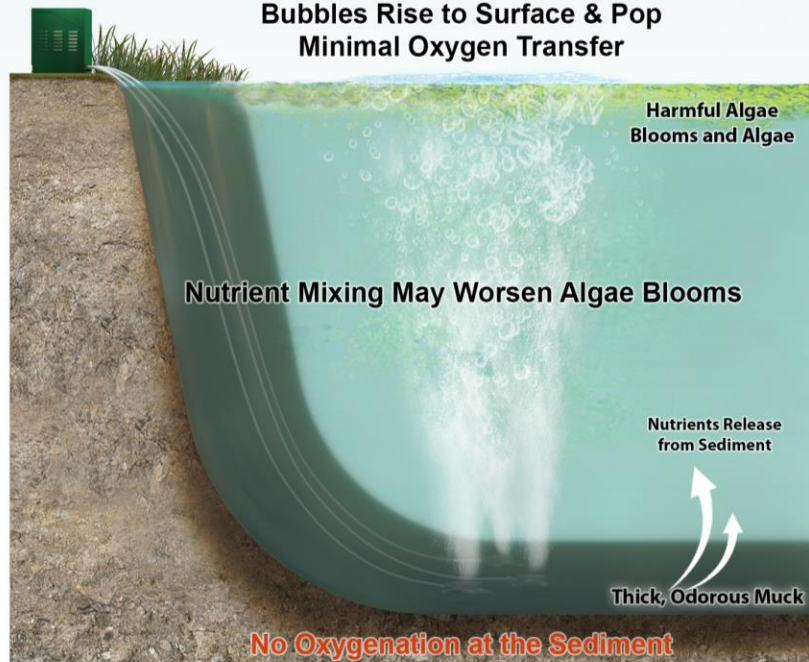
Localized benefit only
No benefits
to flowing water

Submerged
components or large
areas and require
high maintenance

May require
dredging for
installation

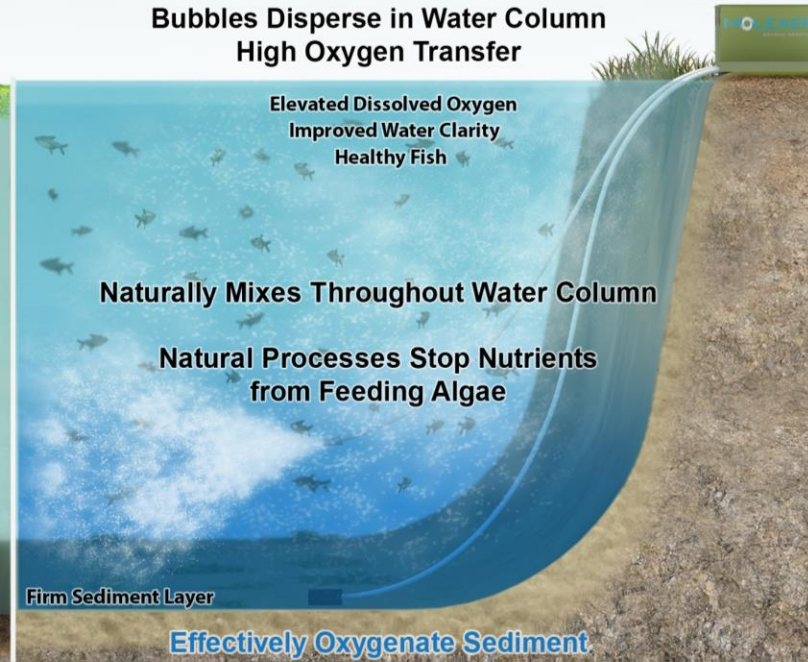
AERATION

Bubbles Rise to Surface & Pop
Minimal Oxygen Transfer



NANOBUBBLE TECHNOLOGY

Bubbles Disperse in Water Column
High Oxygen Transfer



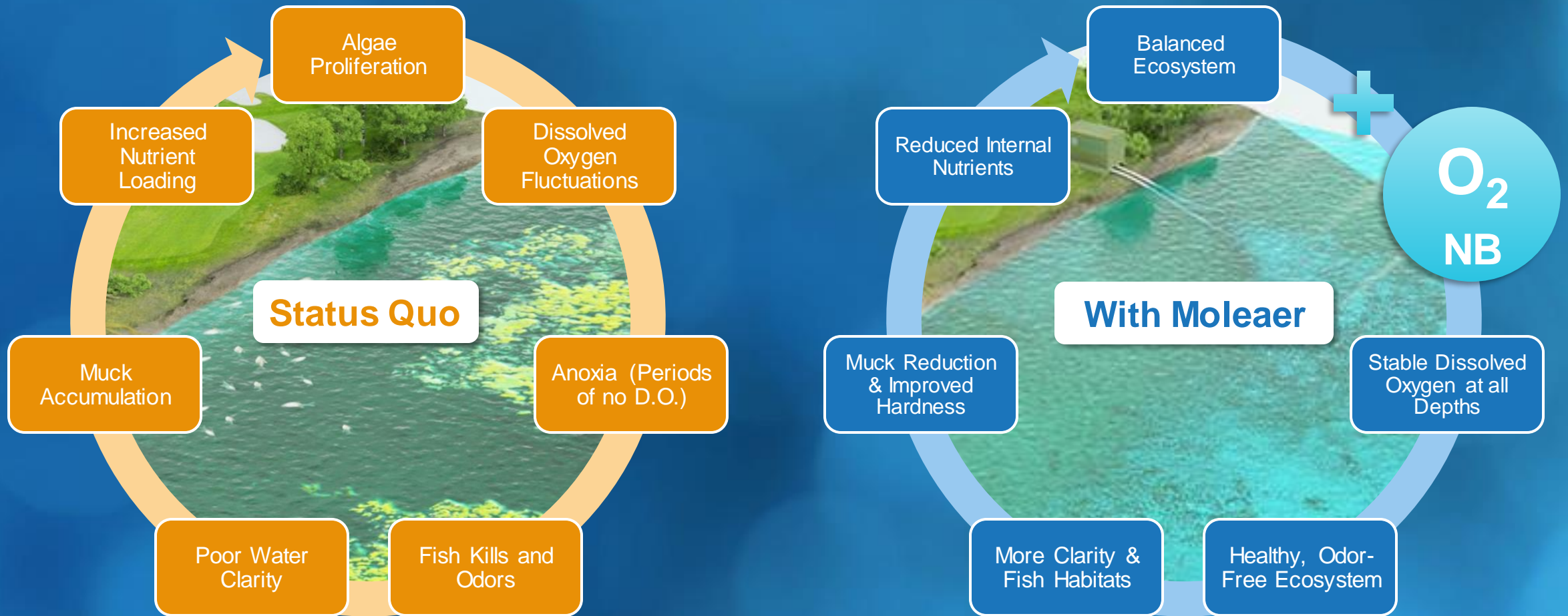
Easy to maintain, shore-mounted equipment

Single treatment point for large areas

Flexible air sources (air, oxygen or ozone)

Works in all waterbodies (big, small, deep, shallow and flowing)

Oxygen Nanobubbles Restore Natural & Healthy Lake Processes



Excess algae growth creates a negative cycle of low dissolved oxygen levels, poor water clarity, muck accumulation, and high nutrient levels that just promotes further algae growth

Moleaer oxygen nanobubble treatment helps break the negative loop by providing increasing dissolved oxygen in the lake and sediment

Nanobubbles Increase & Stabilize Dissolved Oxygen

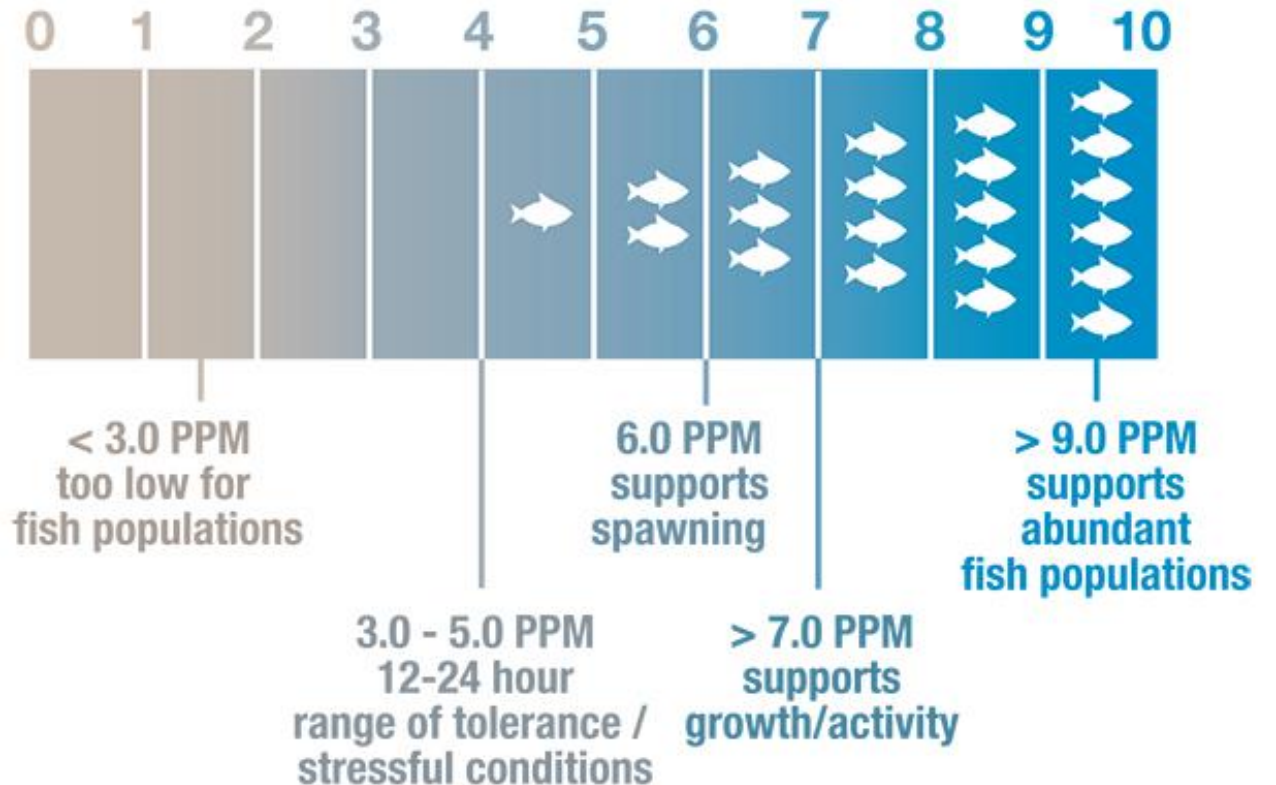
*Dissolved Oxygen (DO) =
amount of oxygen in water*

DO is the Key to Healthy Lake Ecosystems



RANGE OF TOLERANCE FOR DISSOLVED OXYGEN IN FISH

PARTS PER MILLION (PPM) DISSOLVED OXYGEN



Nanobubbles Immobilize Nutrients

*Offset the Harmful Effects
of Eutrophication*

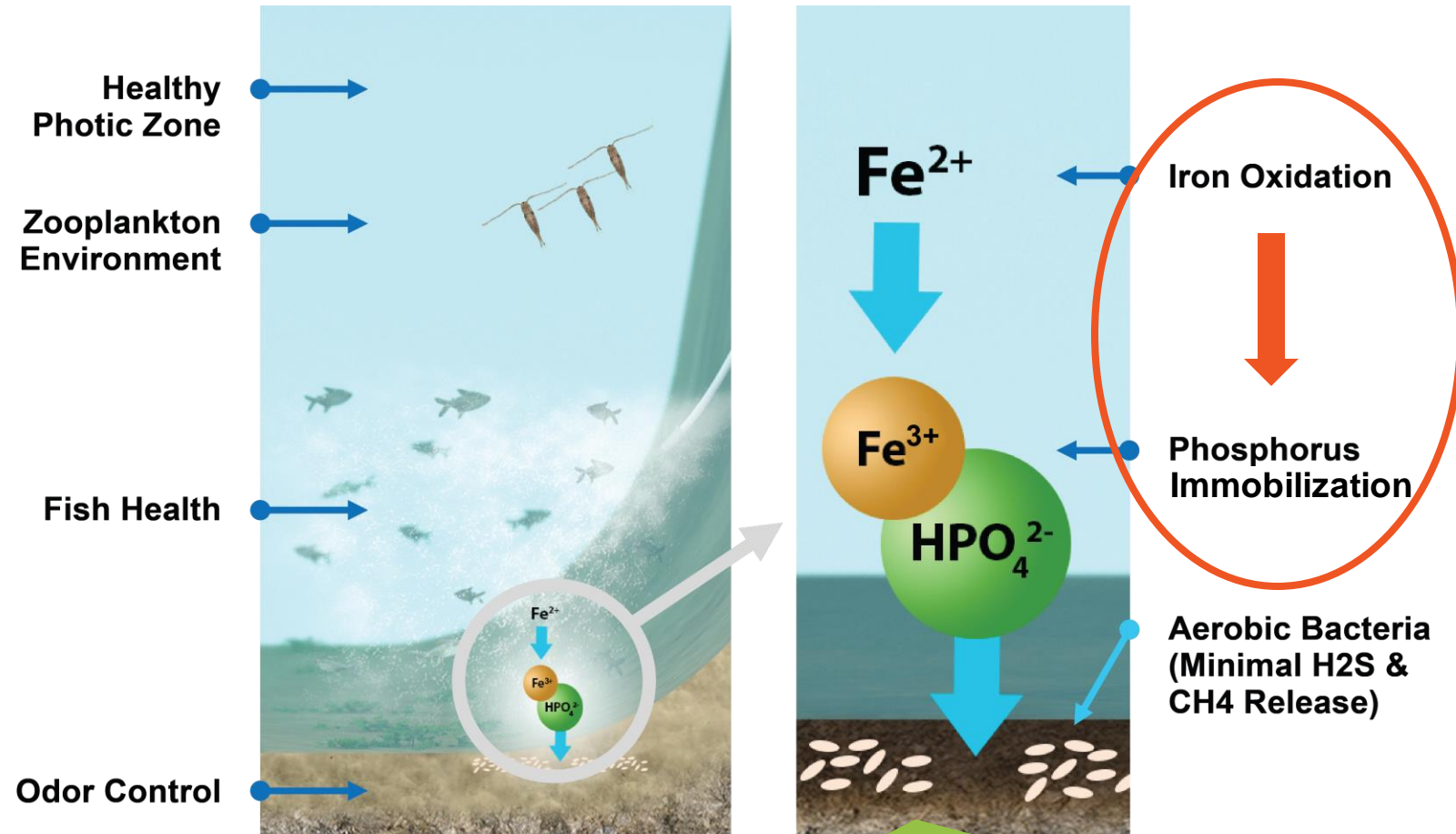
“**Eutrophication**” is a process that makes water bodies too rich in **nutrients**, causing excessive growth of **algae**, including HABs, and **plants**

Harmful algae (HABs) are exacerbated by:

- Sunlight
- Higher temperatures
- **Nutrients (eutrophication)**

HABs continue adding to eutrophication:

- Algae dies and decays
- Algae ties up oxygen in the water column during decomposition



Increased dissolved oxygen at the sediment layer drives natural processes like muck digestion, which helps immobilize phosphorus

Conclusion: Benefits of Moleaers Treatment Solution



Fish Spawning & Beneficial Habitat

Healthy Aquatic Ecosystem Supports:

- Fish spawning
- Beneficial habitat for fish and other aquatic organisms
- Beneficial aquatic plants thrive
- Clearer, cleaner water for beneficial habitat



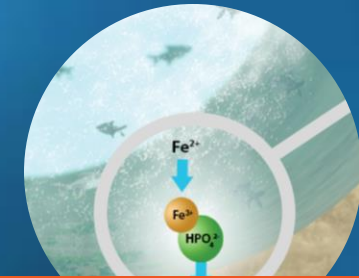
Muck Digestion

Excessive Muck is Bad Because:

- Consumes oxygen that is needed for a healthy ecosystem
- Causes turbidity – high suspended solids
- Can be the cause of foul odors
- Decreases fish spawning and beneficial habitat

Healthy Muck Digestion with Nanobubbles:

- Naturally occurs when oxygen-loving bacteria are stimulated by oxygen nanobubbles and degrade the muck



Nutrient Sequestration or Immobilization

Increased Dissolved Oxygen from Nanobubble Technology Helps:

- Improve aerobic conditions
- Break down muck, releasing nutrients back into the water column
- Help sequester or immobilize phosphorus
- Stabilize pH, keeping phosphorus bound to iron
- Help raise ORP, leading to precipitation of iron bound with phosphorus

The logo for Lake Restore is a circular emblem with a white border. It features three overlapping, semi-transparent rings in shades of light blue and grey. In the center, the words "LAKE RESTORE" are written in white, uppercase, sans-serif font. A small icon of three wavy lines representing water is positioned between the words "LAKE" and "RESTORE".

LAKE 
RESTORE

Case Studies

Lake Elsinore: Reduce Algae & Improve Clarity

Lake Metrics:

- Surface Area: 3,311 acres
- Max Depth: 16 ft
- Volume: 30K acre-feet
- Receives 6.5M GPD of treated effluent

Nanobubble System Metrics:

- NBG Barge: 2,400 GPM system
- Turnover Rate: 7.8 years

Danger advisory levels and/or lake closures for 4 out of the last 7 years

Summer 2022 - Lake closes for 8 months to recreation due to harmful algae blooms

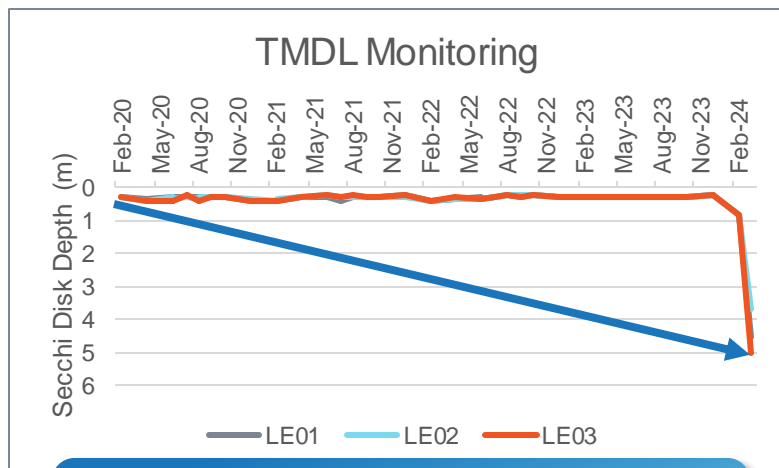
THE PRESS-ENTERPRISE

LOCAL NEWS

LAKE ELSINORE: Harmful blue-green algae forces area recreation closure



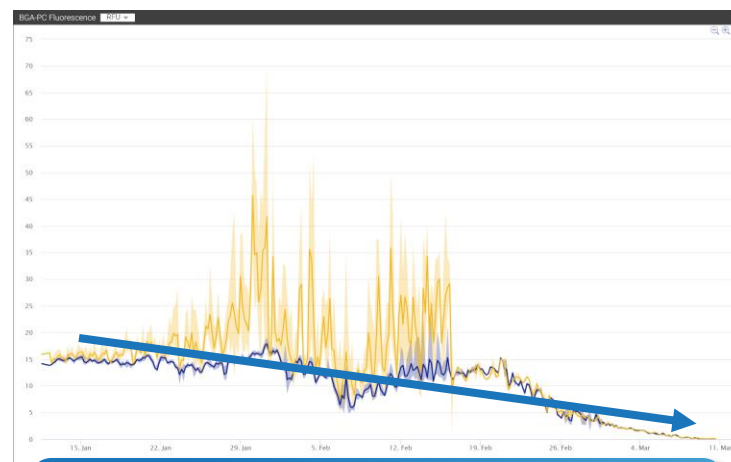
Lake Elsinore: Summary of 60-Day Results



12 Ft Improved Water Clarity

- Water clarity (Secchi Disk) went from 8 inches to 31 inches*

*Increased to 12' average within 45 days

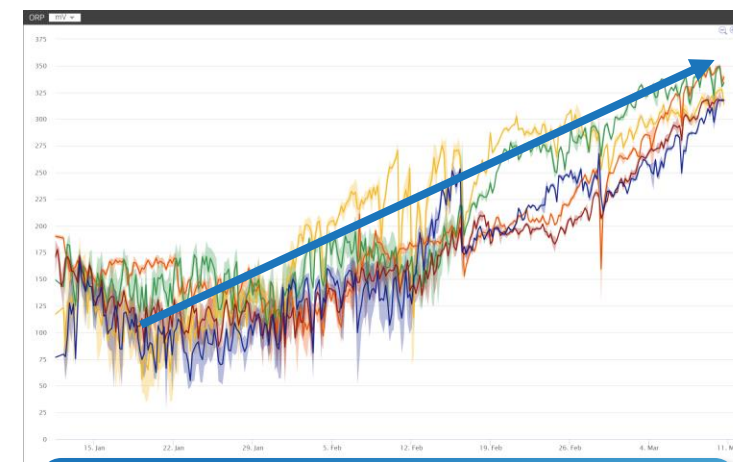


50-99% Reduced Blue-Green Algae

- Blue-green algae levels significantly reduced
- Reduced to near undetectable levels (less than 1 RFU) in the 90-acre area around treatment**
- Reduced by 50% over the entire lake***

**Historic average of 30 RFU

***Changed from average 30 RFU to less than 15 RFU



Increased ORP to Over 300 mV

- ORP (Oxidation-Reduction Potential) went from average of ~150mv to over 300mv at all 5 monitoring points across the lake
- Improved habitat and presence of beneficial organisms
- Improved lake resiliency (+ORP/DO)

Results from Owner's Engineers

February 28, 2024

*"Got over to the lake yesterday to run our bi-monthly TMDL monitoring program and grabbed the toxin samples while I was there. The lake is looking so different. Each morning, we take a Secchi disk reading across the 5 different sites to measure water transparency, and **we usually record a value of 0.2 meters before we can no longer see the disk but yesterday, we recorded 0.8 meters!** A very big improvement in surface water clarity."*

March 20, 2024

LE02 – 4.55 meters (15 feet)

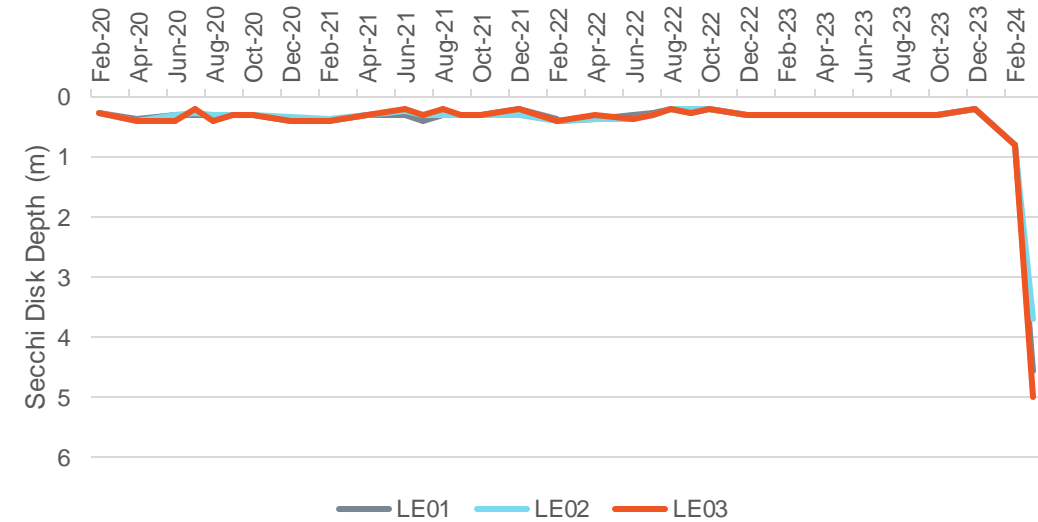
Grand – 3.7 meters (12.21 feet)

Lakeshore – 5.0 meters (16.5 feet)

March 20, 2024

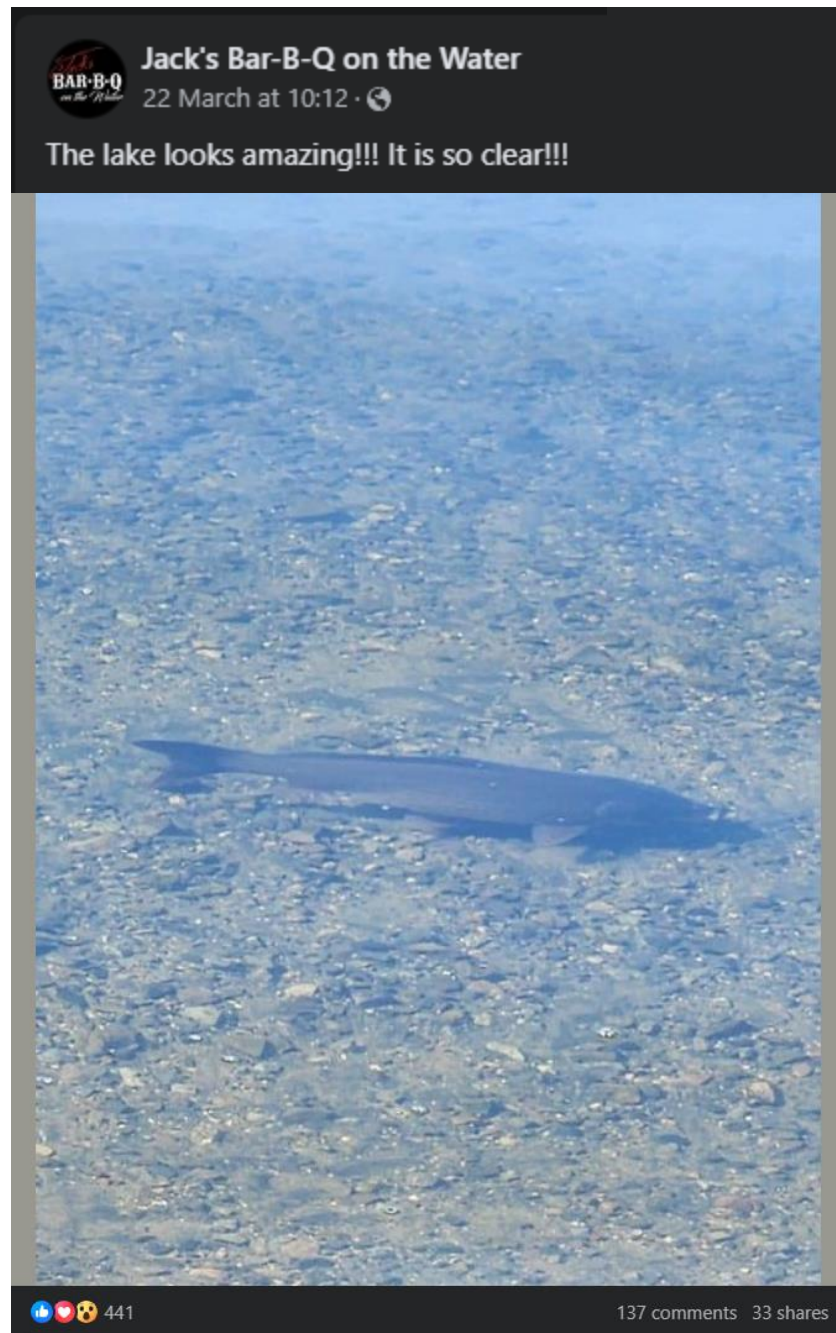
*"Also there were a lot of small organisms that we believe to be a **species of daphnia that were in abundance around the shoreline.** These organisms usually cannot tolerate higher conductivities..."*

TMDL Monitoring



Facebook Post by Jack's Bar-B-Q on the Water, a restaurant on Lake Elsinore

March 22, 2024



Stephanie Lynn
Thank you **Lake Elsinore - City Hall & Team Moleaer Inc**



1 hr Like Reply More



Megan Ashley
I can't wait to be on the water boating!!
Going to be weird to actually see by your feet 🤔



on Fri Like Reply More



Craig Young replied · 3 replies



Rick Guild
I have lived here, and always had boats since 1981 and have never seen it that clear 😊



on Fri Like Reply More



Rochelle Rudd
I have NEVER seen the bottom of this lake!! EVER! I'm so excited I may even rent a Sea Doo this summer! I can walk to Launch Pointe if I wanted to!! This lake is going to be popping this summer! I love the sound of speed boats on the lake in the summer!



on Fri Like Reply More



Dawn Bowen
Wow! I have been in Lake Elsinore since 1988. And never seen this. I wonder if Elsie will finally be spotted 😊🐡 Would love to wakeboard this.



441 reactions

137 comments 33 shares

Results After 30 Days of 24/7 O2 NB Treatment

Before Nanobubble Treatment



After 30 Days of Nanobubble Treatment



Taken Northwest of Elm Grove Beach

Lake Arrowhead Marina: Reduce Muck & Improve Water Clarity

Marina Metrics:

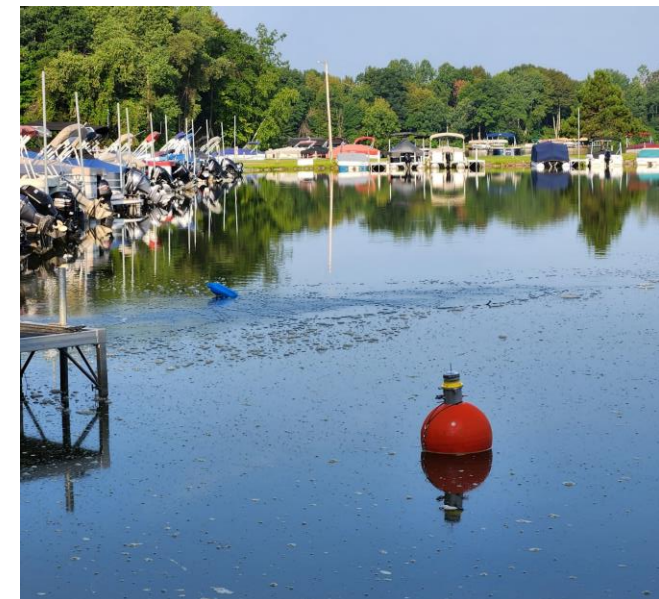
- Surface Area: 2 acres

Nanobubble System Metrics:

- NBG Trailer: 1000 GPM system
- Turnover Rate: 3 days

Problems:

- Excessive algae and very poor water clarity
- Higher than average amount of soft sediment and muck accumulation
- Stagnant area of lake with poor circulation
- Legacy poor water quality issues



Lake Arrowhead Marina: Summary of 75-Day Results



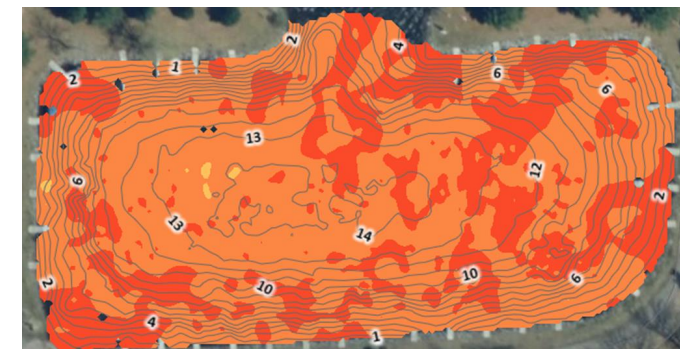
3 Ft Improved Water Clarity in 30 days

- Reduced algae visible in the water column and on the surface
- Water clarity improved (2-3')
- Abundant fish populations seen in marina
- Numerous slip owners commenting on improvement in water clarity and fish activity



Dissolved Oxygen 50% Higher Than Control

- Raised and kept DO level above saturation near sediment layer
- Marina dissolved oxygen levels experienced less diurnal changes in oxygen levels than control
- 50% higher than control group in 2 months



Improved Sediment Hardness

- Increased depth by 1'
- Improved hardness throughout marina
- Reduced softest spots with accumulation to same hardness as other areas

Stable, Elevated Dissolved Oxygen Regardless of Temperature

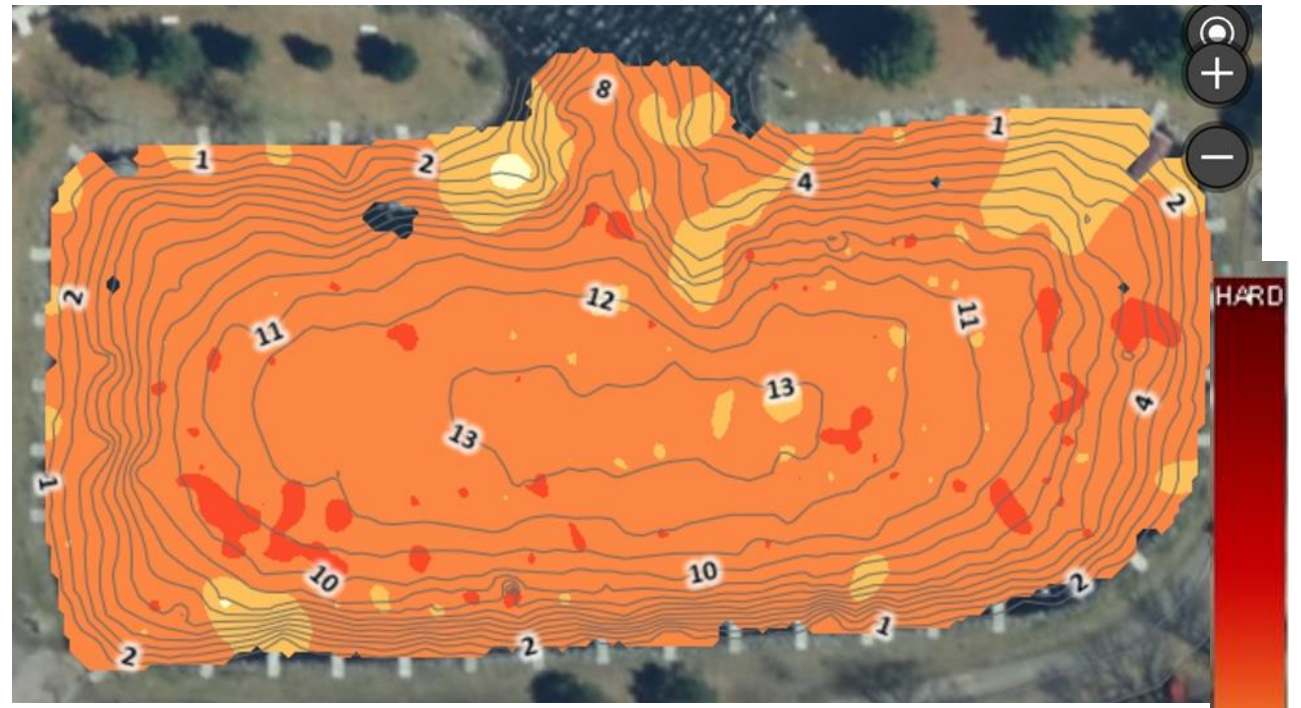


Green = Marina Treated with Moleaer Red = Control (Sherwood Finger)

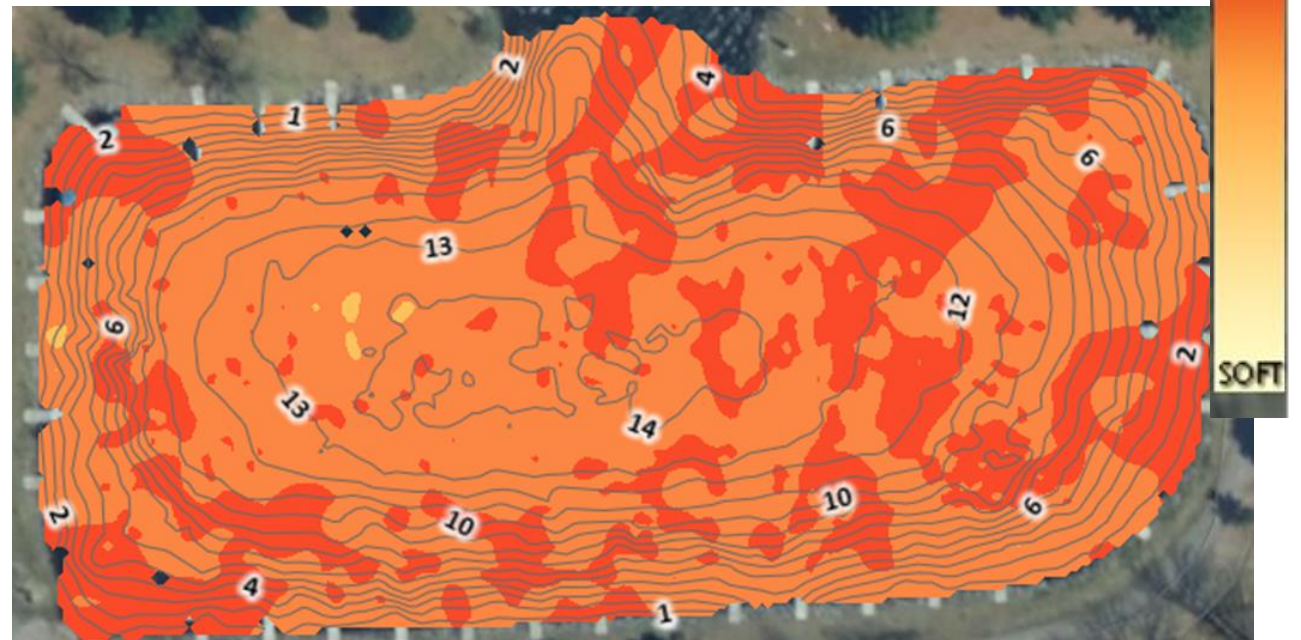
Sediment Hardness Map Comparison- Before and After

- Increased depth by 1'
- Improved hardness throughout marina
- Reduced softest spots with accumulation to same hardness as other areas

Before



After



Greenways Golf Course, Soet River: Eliminate H2S Odors

River Metrics:

- Length: 300 meters
- Depth: 51 cm
- River with tidal influence

Nanobubble System Metrics:

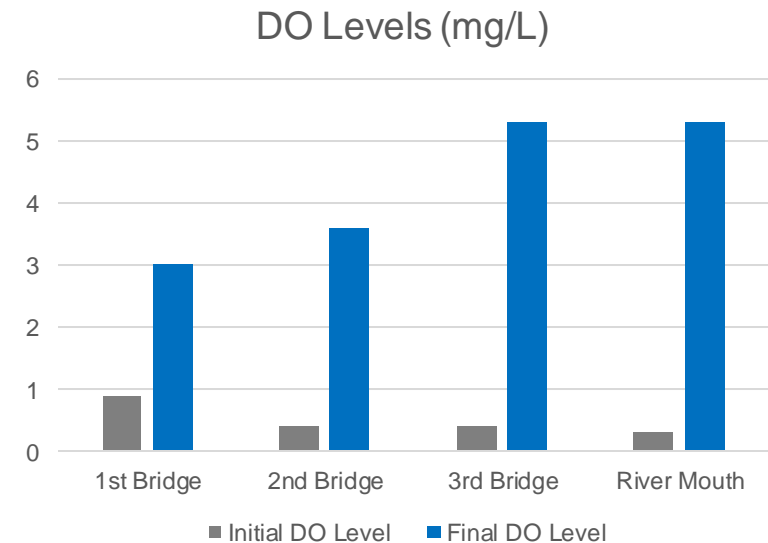
- (2) Clear nanobubble generators

Problem:

- Incoming river flow with high levels of pollution
- Foul odors from hydrogen sulfide (H₂S) formation
- High turbidity

Results:

- Increased DO by up to 1600%
- Increased ORP levels to 220 mV
- Reduced water turbidity by 89%
- Decreased COD by 68%
- Eliminated foul odors from H₂S



Private Quarry Lake: Reduce Muck & Algae

Emergency Deployment

Lake Metrics:

- Size: 30 acre-feet

Nanobubble System Metrics:

- NBG Trailer: 1000 GPM system with oxygen and ozone generators
- Turnover Rate: 3 days

Results:

- Improved water clarity within weeks
- Firmer sediment
- Reduced muck and algae



“Before nanobubbles, the water volume was so full of algae with algae on the top. After a week, the water color changed from green to brown as the algae died and started to decompose.” – Vance Walgrave, Those Blasted Things, Lake Owner

Stormwater Channel: Eliminate H₂S Formation

- 15.7 mile river stormwater canal apart of 133 sq mile watershed
- 50,000 GPM treatment capacity equaling 60M gallons of water per day treated
- Date of Installation: October 2021

Challenges

- Low oxygen levels in water channel
- Hydrogen sulfide (H₂S) gas production
- Rotten egg smell

Results

- Elimination of H₂S formation and related odor
- Increased dissolved oxygen
- Digested organic sediments



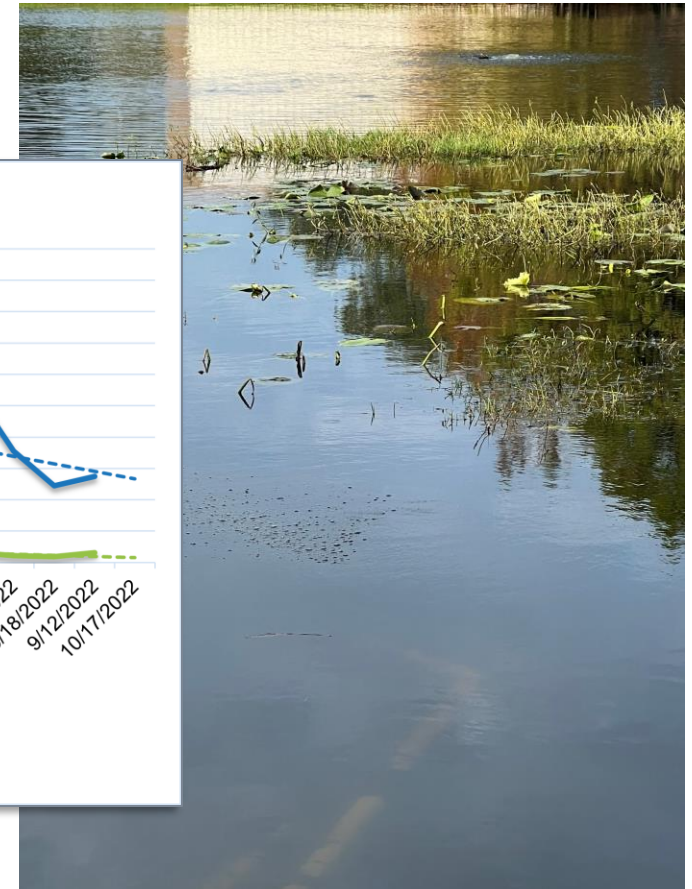
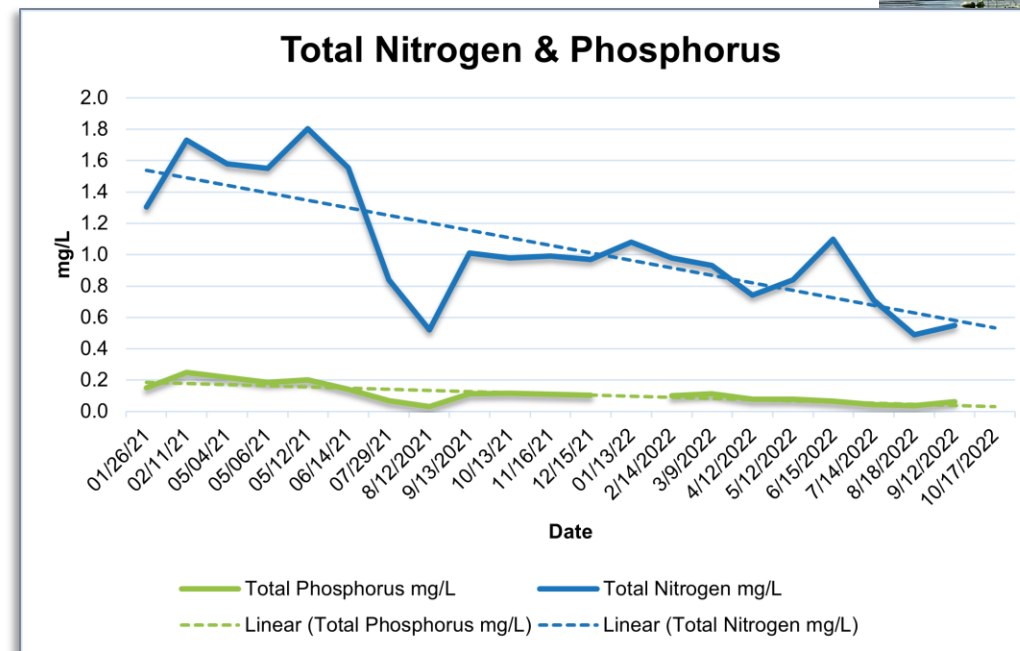
Southeast US Community Lake: Reduced Total Nitrogen by 96%

Specifications:

- Unit: Clear 150
- Lake Size: 1.1 acres, 6-acre feet

Results:

- Reduced Total Nitrogen (-96%) and Phosphorus (-59%)
- Improved water clarity
- Less maintenance effort



Westin Hapuna Koi Pond

Location: Hawaii, HA, USA

Specifications:

- Unit: Kingfisher
- Koi pond

“We have been using Moleaer's nanobubble generator here at the Westin Hapuna Beach Resort since March 2022, and it has been a game changer! We have been absolutely thrilled with the improvements to the health of the plants and fish. After just a short time, the clarity in the pond increased dramatically which has translated into a better experience for our Resort guests, and the fact that it is an all-natural treatment is an added bonus!” – Marguerite Heap, Hotel Manager



Private Golf Club: Algae & Odor Reduction

Location: Vero Beach, FL, USA

Specifications:

- Unit: Clear 150 & Kingfisher
- Lake Size: 2.87 acres, 14.35-acre feet

Results:

- Reduced algae growth
- Improved water clarity
- Eliminated foul odors



“Nanobubble technology is a sustainable and chemical-free tool for lake managers to utilize to restore lake health for our clients. By getting at the root cause of common lake issues, we can naturally improve water quality, allowing our clients to enjoy their lakes and ponds once again.” - Rick Anderson, the owner of Aquatic Balance

The Sands Coastal Community Lake: Eliminated Fish Kills

Location: Fort Pierce, FL,
USA

Specifications:

- Unit: Clear 150
- Lake Size: 15 surface acres, 150-acre feet, Maximum 20 feet deep

Results:

- Eliminated fish kills
- Reduced midge fly outbreaks
- Better water quality and clarity
- Improved discharge quality into surrounding ecosystems



Private Trout Pond: Reduce Algae Blooms

Location: Tomah, WI, USA

Specifications:

- Unit: Clear 50

Results:

- Water clarity improvement
- Algae bloom reduction
- Reduced gill lice parasites in trout



“The results from the nanobubbles were much faster than I would have expected. As a chemical engineer who specifies equipment as part of my job, I am also impressed with the quality of the design and build of the generator. I am happy with my local technical representative, with Moleaer as a company and with my results. The trout are healthier and the water quality is fantastic. I’m thrilled with all of it. The investment was worth every penny.” – Gregory Eirschele, Lake Owner



CONFIDENTIAL

LAKE RESTORE

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612.961.9854

Thank You

MOLEAER[®]

ADVANCING NANOBUBBLE TECHNOLOGY

www.moleaer.com

www.LakeRestore.com

What is Oxidation-Reduction Potential or ORP?

ORP = measurement of water body's ability to cleanse itself or break down waste products

- Helps provide insight into the types of chemical and biological activity happening in a lake

Increasing nutrient levels and lake productivity



Healthy Waterbodies have ORP of 300-500 mV

Higher dissolved oxygen
Low total nitrogen & phosphorus
Firm sediment
Healthy fish
Clear water
No odors

Good = +ORP

Low dissolved oxygen
High total nitrogen & phosphorus
Poor sediment health, thick muck
Low organic digestion
Fish kills
Poor clarity & foul odors

Bad = -ORP

Glossary | Summary of Nanobubble & Lake Terms

- **Aerobic:** Requiring or involving oxygen
- **Anaerobic:** Occurring or existing without oxygen
- **Algae proliferation:** A rapid increase or accumulation in the population of algae in freshwater or marine water systems
- **Dissolved oxygen (DO):** Amount of molecular oxygen (O₂) dissolved in water
- **Eutrophication:** Process by which a body of water becomes enriched with nutrients, particularly nitrogen and phosphorus
- **External loading:** Input of nutrients, sediments, and other pollutants into a lake from outside sources
- **Internal loading:** Release of nutrients, sediments, and other pollutants from the lakebed into the water column
- **Loading:** Input of nutrients, sediments, and other pollutants into the lake from both external and internal sources
- **Muck:** Soft, dark, and often foul-smelling organic material that accumulates on the bottom of lakes, composed of dead and decaying plant and animal matter as well as silt and sediment
- **Muck digestion:** Breakdown of muck by mechanical and biological activities, mediated by a diverse community of organisms
- **Nanobubble:** Stable gas bubble with a diameter of less than 1000 nanometers, 2500 times smaller than a grain of salt
- **Nanobubble generator:** Device that produces nano-sized bubbles and dissolved gas using a pump and compressed air or other gas
- **Nutrient immobilization:** Process by which nutrients are converted from a bioavailable form to an unavailable form, making them less accessible to organisms
- **Nutrient runoff:** Influx of nutrients, such as nitrogen and phosphorus, from land into lakes through various pathways, including surface runoff, groundwater flow, and atmospheric deposition. Poses significant impact on water quality and ecological health of lakes
- **Nutrients:** Essential elements that play a crucial role in the growth, development, and survival of organisms in lakes though excessive nutrient inputs can lead to eutrophication. Common nutrients discussed in lakes: Nitrogen, Phosphorus, Potassium, Magnesium, Sulfur and Silicon.
- **Nutrient sequestration:** Process by which nutrients are removed from the water column and stored in the sediments or other parts of the lake ecosystem, essential for maintaining healthy lake ecosystems and preventing eutrophication.
- **Oxidation-reduction potential (ORP):** Also known as redox potential, indicates the relative ability of water to oxidize or reduce substances, an important parameter in lakes because it provides insights into the natural chemical reactions and oxygen levels within the water body.
- **Sediment layer:** Accumulation of unconsolidated material that has settled to the bottom of the lakebed over time, consisting of organic and inorganic components, from decaying plant and animal matter to sand and gravel