

THE TIDINGS



LAKE MERRITT INSTITUTE

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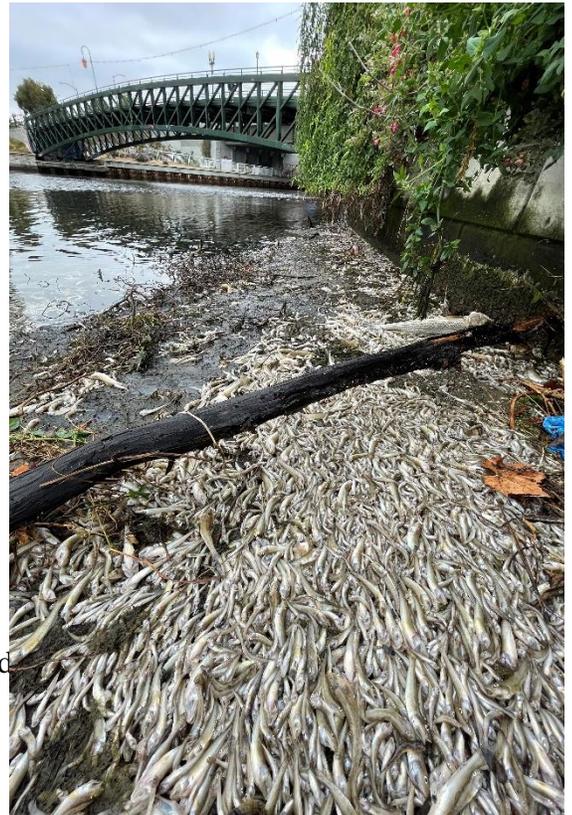
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Harmful Algal Bloom Wreaks Ecological Devastation – What’s Next?

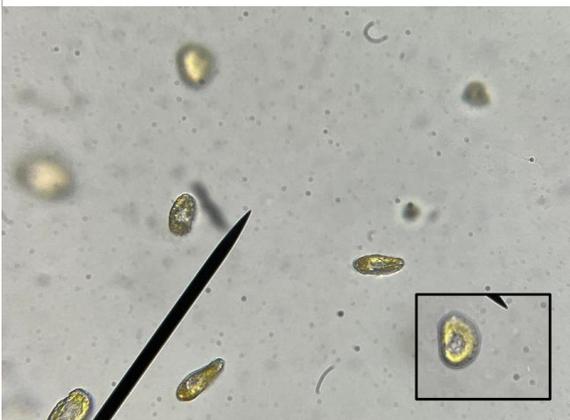


Above: Water on the Bay side of the petrobarrier has red-brown tint caused by algae. Photo by K. Noonan

A population explosion of microscopic algae called *Heterosigma akashiwo* caused a fish kill in Lake Merritt and throughout the Bay more severe than any seen in decades.



Thousands of dead fish piled up on the shores of the Lake and Channel. Photo by Damon Tighe (right).



Heterosigma under microscope at left. See video [here](#).

Fast action by Oakland’s Stormwater Manager, who called into service the summer algae harvesting machine, removed the rotting fish near pedestrian pathways and shorelines, but we are left with questions.

- What caused the toxic bloom and the fish kill? (*High temperatures, nutrients, and lack of oxygen*)
- Will this happen again and can we prevent it? (*Yes, and yes; an aeration system can prevent fish kills*)
- How could we respond to a HAB (harmful algal bloom) in progress to lessen the severity of the kill? (*Measures are needed to prevent the kill, not respond to it*)
- What will be the long-term effects of the fish kill on estuary ecology: migratory birds, fish and humans? (*Largely unknown, but certainly not good*)

LMI in SEPTEMBER: 10,1485 gallons of trash removed from the lake by staff and volunteers in July and August. Total trash collected so far in 2022 was **54, 895 gallons**. (Including May and June) 32 used syringes removed. **LMI Director James Robinson** hosted **217 volunteers**, gave 4 presentations. **0.00 inches** of rain recorded by LMI rain gauge in July and August

THANK YOU TO OUR JULY and AUGUST VOLUNTEERS! We appreciate your efforts and community spirit. Great Job! Volunteer groups: Achieve, Park Day School, Yoga Group and the LMI A-TEAM regulars. YOU can support the Lake Merritt Institute's important work. To find out how, go to <https://lakemerrittinstitute.org/> .

The Lake Merritt Institute expresses our deepest gratitude to the [California Indian Environmental Alliance](#) (CIEA) for purchasing an aeration fountain for our Clean Lake Program during the fish die-off crisis.

Ecological Devastation (cont'd): For a presentation about the algal bloom, its causes and how we might respond in the short term and long term see **Damon Tighe's September 9th Lakeside Chat #23 "SF Bay Harmful Algal Bloom"** at: <https://youtu.be/-COM00KIWo4>

If you are doing iNaturalist, help us observe living species at Lake Merritt after the harmful algal bloom. JOIN HERE: <https://www.inaturalist.org/projects/harmful-algal-bloom-at-lake-merritt-are-there-any-survivors>

Trash Talk Plus – by the Lake Merritt Institute Clean Lake A-TEAM Volunteers



Lake Merritt Institute table at the Farmer's Market

Look for the next Lake Merritt Institute table at SAT October 8th Farmer's Market!

The week of the algae bloom was a soul -wrenching week for many of us who live around Lake Merritt. The enormous fish die-off was hard to witness.

On our regular Tuesday, after the weekend algae bloom explosion, the weekly A Team volunteers met to clean up trash, knowing that this time there would be much more than trash. Kudos to the City of Oakland Department of Public Works who did the lion's share.

In the face of this moment the LMI Membership Committee suspected that Oaklanders who live by and love the Lake were looking for ways to help with and to respond to this environmental crisis right on our shores.

Staffed by A Team volunteers, Susan, Dorothy, Kathy and Dianne the LMI table returned to the area near the Saturday Lake Merritt Farmers Market, to recruit new volunteers and members, as well as educate the folks, families and children who enjoy the Lake and the Farmers Market. We had tremendous success last spring and we were once again encouraged to see how Oaklanders 'show up'.

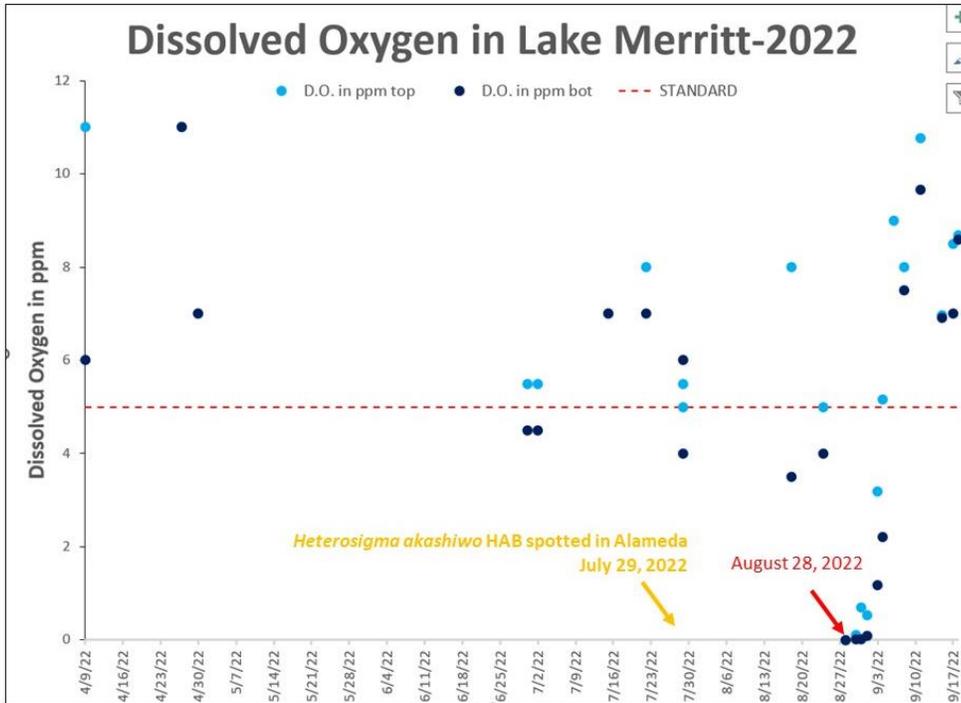
While none of us pretended to be experts, the A Team volunteers were busy all morning answering questions about the multiple factors leading to the algae bloom, the fountains, what the future might be for the wildlife in Lake Merritt, and how to volunteer. While there are still a lot of unknowns, multiple agencies are involved in looking for answers.

Equally as important, volunteers were also busy just listening to people share their sadness and stories about how disturbed they were to see so many fish, rays and bivalves dead, on the shores around the Lake. What will happen to the water fowl is still unknown. Clearly everyone was concerned and shared motivation to make a difference. Photographs of the condition of the Lake over the past week were helpful as talking points which expressed the urgency of the situation. As they say "One picture is worth a thousand words".

With the help of our new, streamlined QR code, dozens of people were able to go quickly and easily to the LMI website to check out volunteer opportunities, membership and donation levels as well.

Thanks to everyone on both sides of the table, volunteers and community activists alike for helping us all heal a bit. ***

Community Water Quality Report – Dissolved oxygen collapse!



Data were collected at the Lake Merritt Boating Center dock by Rotary Nature Center Friends staff, student interns and others.

Samples after 8/28 were taken by Janai Southworth and other adults with sonde loaned by Kristina Yoshida at Waterboards.

The downward trajectory of dissolved oxygen over the summer is consistent with past monitoring but the drop to zero at top is unique in our 25-year records, 1997-2017.



Water quality was measured from the Lake Merritt Boating Center dock on August 28th, 2022 at 11:30 a.m. by Rotary Nature Center Friends student volunteers from three different high schools Emily, Aria, Allie, Rohan and Yosef from College Prep High, Oakland Tech and St. Joseph’s High School in Alameda.

Depth 1.50 meters; Water Clarity 103 cm

Temperature: 23 degrees Celsius (degC) at the top (73.4 degrees Fahrenheit)/22.5 degrees Celsius at the bottom (72.5 deg Fahrenheit) WARM

Salinity 35 parts per thousand (ppt) top/35 ppt bottom) HIGH

pH: 7.5/8 NORMAL

Dissolved Oxygen <1 parts per million (ppm) at the top/<1 ppm at the bottom. (First time top water has been this low in 25 years of measurements. Does not meet EPA standard).



LOVE OUR LAKE? Make a tax-exempt donation today! Pick up a membership application at our Tuesday or Saturday morning table at the Lake Merritt Boating Center and soon at the Farmer’s Market. Or, download an application at lakemerrittinstitute.org or use the PayPal/credit card donation button.

Uncommon Crowds at Lake Merritt – by Hilary Powers – Golden Gate Audubon

August is supposed to be quiet at Lake Merritt. Calm. Offering new birders a few kinds of easy-to-learn birds. This month? Not so much.

Or maybe too much – though no one complained. The 4th-Wednesday Golden Gate Audubon walkers met crowds of birds from the get-go. Crowds of Canada Geese around and on Bellevue, so thick that in places cars kept to a goose-walking pace to avoid making a mess. Crowds of Double-crested Cormorants in the lake, on the floats, and on every bare branch of the island trees, both black adults and bronze juveniles, just like the end of a successful breeding season (only with no nests). Crowds of pelicans – American White Pelicans at the left end of one island and larger crowds of Brown Pelicans at the other – lounging and play-fighting (they were mostly juveniles, especially the browns) and swimming off after fish.

Not quite achieving crowd status, the heron-type birds were still out in force. We had a sprinkling of Black-crowned Night-Herons, both speckled juveniles and business-suited adults, several Snowy Egrets and a couple of Great Egrets, and one Great Blue Heron perched on a bush like a peculiar snack-on-a-stick: long legs straight and body and head hunched together into a tapered gray lump. To round out the set, a Green Heron – or possibly two – foraged along the rip-rap, and one later flew across to a twisty little tree between the paved path and the lake and posed there.



Green Heron - photo by Denny Parker

We'd already shared a round of stupid-bird-name jokes, triggered by a plaintive "Why do they call it a *Green* Heron anyway?" "Yah well," sez I, "If you're very lucky, you can catch a sort of green gleam on the back. Not enough for the name, but I have seen it – twice in my life!" Well, now it's three times. That bird stood at exactly the right angle to the sun and only a dozen feet away, and its whole back lit up with peacock-green frosting.

Two is only supposed to be company, but with Belted Kingfishers, two is plenty for a crowd. We heard them first, as usual, but from much farther away: metallic rattling clatter coming toward us like a train. Kingfishers call when they fly – not always but as far as I can tell only (I don't recall one making a sound while perched), and not always at the same volume. This one was *loud*. And constant. Instead of "I'm switching branches!" or "That's maybe a fish over there," this was "I'm on my waaaaay," from 12th Street past the islands to the baroque brick building and back to the islands. There it was joined by another, also calling. When the second one perched briefly, it looked like a juvenile, so perhaps its mama was giving it a Fishing Spots of the Bay Area tour.

To add to the crowd, a couple of crows started chasing the kingfishers, cawing madly, apparently for the sheer joyous wicked fun of it. Crows-being-crows are entertaining as long as you're not their current target; I'm glad I'm so much bigger than a crow.

By the bowling club clubhouse, lots of little birds fluttered between the shaved green and nearby trees – eventually resolving into a mixed flock of Western Bluebirds and House Finches. You'd think that would be easy to recognize, but these were mostly blurry females and juveniles. Eventually we found enough blue-and-red or red-without-blue males to figure out what we were seeing.

Then, in a crowd of another sort, Barn Swallows were feeding their babies on railings at the Boat House dock. We almost never see Barn Swallows (though other swallows appear fairly often), but this was their second mealtime to grace a morning's walk: a true treasure. The babies huddle together looking glum until a parent approaches with a bug, at which point they fluff out almost double in size, wiggle their wings wildly, and croak, "Me, Me, Meee!" in Bird.

It wasn't all crowds; we had some fascinating singletons too. Top of that list, a brownish duck swam near the islands: unmarked head, black bill, pointy tail, and a shining grass-green mirror that appeared and disappeared on the wings, where Mallards wear a blue patch. After much discussion, we settled on Green-winged Teal in eclipse plumage (the camouflage ducks put on while regrowing their flight feathers), but photograph-powered afterthought switched the verdict to Northern Pintail, which would be only slightly less uncommon here. Then we had two Cooper's Hawk overflights (maybe the same bird twice), one Turkey Vulture (not rare, except here at the lake), and a keening Red-tailed Hawk (probably a juvenile, heard several times but never seen).



Female Northern Pintail - photo by Denny Parker

Collectively, we counted 42 species (including a Brown Creeper and a Bullock's Oriole reported by single birders) – a massive record; last year's 38 had been a 10-year high – while enjoying what felt like the best weather in North America. Now that was what we all called a very very good day at Lake Merritt!
[e-Bird list](#) made by Peggy Rehm on August 24th: 42 species and 319 individuals observed.

AUDUBON BIRDWALKS AT THE LAKE: Join bird expert Hilary Powers any fourth Wednesday of the month for a free “Bird walk” at the lake. Muster at the geodesic bird cage near the Nature Center at 9:30 a.m. for what are always fascinating introductions to lake birdlife.

Bird Migration Season at Lake Merritt - The white boom barrier has gone up blocking off the



Embarcadero end of the lake for the birds. Migratory bird season at the lake runs from October 1st to April 30th with protected areas for birds in the Trestle Glen arm.



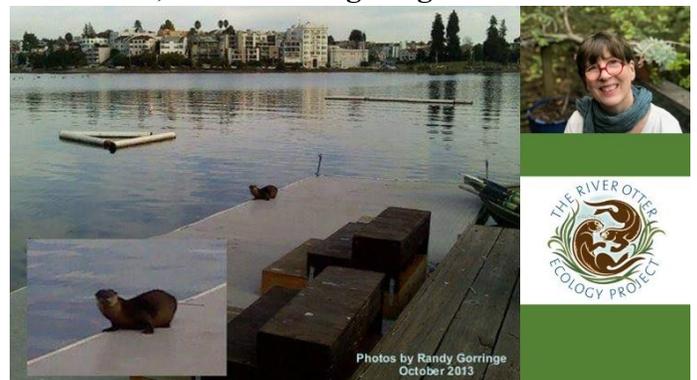
The Rotary Nature Center looked wonderful with fresh water ponds brimming and waterfowl splashing around! A great way to welcome the migratory birds of the Pacific Flyway that are already arriving after a difficult year of fires and climate change. Thank you to our OPR&YD and OPW staff.

COMING UP on October 14th Lakeside Chat #23: “Conservation, One Otter Sighting at a Time” with Megan Isadore of The River Otter Ecology Project.

Check out the river otter sighted in 2014 at Lake Merritt!

Register by Eventbrite => <https://lakeside-chat-23-river-otters-megan-isadore.eventbrite.com>

Don't Miss the [AUTUMN LIGHTS FESTIVAL](#) at the Lake Merritt Gardens:
 Thu, October 13, 2022 – Sat October 15th
 6:00 PM – 11:00 PM PDT **Buy Tickets [HERE](#).**



Photos by Randy Gorringer October 2013

A TALE OF TWO LAGOONS

A guest editorial by Dr. Richard Bailey

A lagoon is like an estuary, but often inhabited by evil pirates. Our Lake Merritt estuary no longer has pirates, but it is very shallow, and filled with nutrients that have evil intentions. Those intentions were fulfilled recently when a dense algal bloom, fed by nutrients, sucked up all the oxygen and triggered a massive fish kill.

This was foreseen in the '90's when Lake Merritt was declared an impaired body of water by EPA due to low oxygen, and high levels of trash. Since then, there has been progress on the trash problem, but not enough has been done about oxygen levels that are usually OK, but can reach zero and cause a fish kill.

Elkhorn Slough, 76 miles south of us, is also an estuary and a very shallow one. It too has high levels of nutrients, but not quite as high as Lake Merritt. In addition, it has the proud status of being a National Estuarine Reserve, which is kinda like a national park, but under water. Due to this status, a very comprehensive water quality monitoring program has existed there since 1988. <https://www.elkhornslough.org/water/>. You can see data on 12 parameters from about 27 station locations. This data drives recommendations regarding what to do to improve water quality.

At Lake Merritt, we don't know what to do because we don't have a comprehensive data set like the one at Elkhorn Slough.

But that could change. Discussions are happening about establishing a long-term water quality monitoring program that could include all the places where evil levels of nutrients may exist: Storm drains from the watershed, mucky sediments, or even incoming tides from San Francisco Bay where about 38 wastewater treatment plants discharge nutrients with evil intentions.

Solutions exist, all the way from ensuring that fish kills won't occur (aeration, oxygenation) to diverting or filtering all stormwater runoff. Should the Lake be dredged again? That would entail years of permitting, studies and finding disposal sites. Should an enormous tunnel be built under Lakeshore Drive to divert runoff? Maybe Elon Musk's tunnel company could do it. What kind of aeration / oxygen system should be built?

Initially, regulatory agencies are likely to require monitoring and data collection. But if we stop there, the evil will persist. Coupled to monitoring must be a contract that will analyze the data and make recommendations (with cost estimates) and actually build the system.

The choice is ours. An estuary like Elkhorn Slough, or one like Lake Merritt was in early September.

This?



Or this?



Please direct questions and comments to The Tidings Editor, Katie Noonan, at ktnoon@aol.com.

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