

THE TIDINGS



LAKE MERRITT INSTITUTE

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“The Tidings” is an editorial newsletter. Posted opinions are not necessarily those of the City of Oakland

CELEBRATE EARTH DAY with THE LAKE MERRITT INSTITUTE!

Lake Merritt Institute will be hosting an Earth Day clean-up on Saturday April 22 from 9:30-1pm at the Lake Merritt Boating Center at 568 Bellevue Ave.

Director James Robinson of the Lake Merritt Institute (LMI) invites you to join him and staff to clean the lake. Volunteers will work in groups according to City and Alameda County public health guidelines. Volunteers will sign waivers and be directed to small work parties as they arrive. Waivers will be provided and must be signed. A parent or guardian must sign a waiver for volunteers under 18 years of age. **Love Our Lake!**



LAKE MERRITT IS TOO BIG TO FAIL

– by Dr. Richard Bailey

Considering the impact of our 150-acre downtown estuary plus associated Lakeside Park on the City of Oakland, Lake Merritt is too big to fail. By that I mean that tens of thousands of people, uncountable numbers of wildlife, hundreds of businesses, and the real estate value of thousands of mortgages would all suffer if Lake Merritt goes under, and succumbs to rotten algae, dead fish, and odors associated with foul water.

THE PEOPLE vs. →



Photo of red tide algal bloom by Peggy Rehm

SAVE LAKE MERRITT!!



Donate to our GOFUNDME

This could happen. A warming global climate and developing El Nino could easily bring late summer temperatures to levels conducive to harmful algal blooms, leading to zero oxygen again, and more dead fish. Nutrients levels are already there, and tidal flows (although improved) remain lower than when the Lake evolved. Add urban runoff from 4,000+ acres, the fact that most storm drains and inlets are unfiltered, and you can have quite a mess (continued on page 3).

LMI in APRIL 2023: 6,030 gallons of trash were removed from the lake by staff and volunteers in MARCH. 19,980 gallons have been removed to date in 2023. LMI Executive Director James Robinson hosted 181 volunteers and gave 1 presentation. 96 used syringes were removed.

5.64 inches of rain were recorded by the LMI rain gauge in March

THANK YOU TO ALL OF OUR MARCH VOLUNTEERS!

(Continued from page 1) The Lake's water quality account is overdrawn. By that I mean that for far too long, trash and oxygen impairment issues have been swept under the rug, or addressed with solutions limited by inadequate will power. What is supposed to happen when something that is too big to fail, begins to fail? We bail out banks, automobile companies, and insurance companies, why not a lake?

The technology is here, nonprofits are ready, and volunteers are standing by. It is now time to invest in permanent, long-term infrastructure dedicated to improvement. Every day in the news we see a million dollars for this, 2 million for that, multiple millions for new infrastructure at a proposed new coliseum for the A's. Now it is the Lake's turn.

So, what should be done? Perhaps the Lake should become a corporation, which after a recent legal ruling has some of the legal rights and responsibilities enjoyed by natural persons. Lake Merritt, LLC has a nice ring to it. Then it could be bailed out, just like a bank. But even if that does not happen, you can still help Lake Merritt.

The first phase of a bailout is the Lake Merritt Institute's gofundme campaign, which could improve capabilities to remove trash from the Lake, create islands of adequate oxygen when lake-wide conditions decline, increase staffing for social media and maintenance, and monitor water quality so that we may know what to do to prevent a fish kill rather than respond to one. You are encouraged to contribute here:

<https://www.gofundme.com/f/help-save-lake-merritt-and-lake-merritt-institute>

The second phase is planned to be a pilot aeration / oxygenation system for part of the Lake. The design will be determined by data now being gathered by 3 water quality monitoring buoys that will determine the volume of various layers in the Lake so that the amount of remediation can be calculated. Top notch experts with considerable experience in Lake management are working on this project, which should happen this year.

The third phase of the bail out needed to leave fish kills in the rear-view mirror will be a lake-wide aeration / oxygenation system, and several million dollars will be needed. This system may combine continuous remediation with additional oxygen triggered when the monitoring buoys determine that levels are below the standard.

Right now, volunteers are removing trash from the Lake several times a week, and conducting spatially specific water monitoring as needed. But they can't add oxygen to the Lake; they can't stop another harmful algal bloom; they can't prevent another fish kill. There is little money for testing, equipment is failing, another monitor is needed, and the lake-wide system will be very expensive.



So, are we (government agencies, foundations, businesses, and you) going to let Lake Merritt fail? Will we commit to saving it? Or will we see this again.

City Buoys: A public portal for the two monitoring buoys installed by the city is promised but still not available. The data is being analyzed by consultants in preparation for design of a pilot aeration / oxygenation project, followed by a lake-wide system, if major funding is available.

Funding: Our <https://www.gofundme.com/f/help-save-lake-merritt-and-lake-merritt-institute?> campaign to improve trash collection efforts and provide temporary aeration has brought in \$15,000 (ten percent of our goal) but has a long way to go. For those that donated, thank you for your support. Watch for future efforts to raise the 2 million dollars that will be needed for the lake-wide system to prevent future fish kills. **Lake Merritt is too big to fail.**



HAPPY 21st BIRTHDAY, HANK!

Hank, our beloved female rescue pelican, has lived at the Lake Merritt Wildlife Refuge since 2004. She was probably 1-2 years old when she was entrusted to Oakland's Rotary Nature Center by the California Department of Fish & Wildlife staff at Pyramid Lake (without any formal papers that can be found). She is unable to fly because of an accident involving a power line, they say. Although the breeding dates for her species, the American White Pelican (*Pelecanus erythrorhynchos*) have been advancing (earlier) because of **climate change**, we can be confident that she hatched from her egg sometime in January to March – so it is her (probably) 21st birthday!

American White Pelicans have a group-foraging strategy. For 15 years, Hank was fed fish during the months when her fellow AWPEs were off on migration (November – May). In 2019, the City of Oakland Parks, Recreation and Youth Development (OPRYD) put a stop to her official feedings in the bird sanctuary yard, which is off limits to the public! However, loyal volunteers have kept up her supplemental feeding schedule (Nov-May) and raised money for the fish from Hank's many fans.

In 2022, The Oakland Zoo stepped in to provide fish for Hank and continue doing so in 2023. Wild fish populations in Lake Merritt are recovering slowly from the August 2022 fish kill. Time will tell when Hank's feeding schedule can return to the way it was before the Harmful Algae Bloom event. Thank you, Oakland Zoo, for supporting Hank! May she live out her 30+ possible years in peace and understanding at Lake Merritt!

If you see Hank, wish her Happy Birthday, but from a distance!

Aftermath at Lake Merritt – by Hilary Powers, Golden Gate Audubon Society Volunteer

Twenty-five shaky birders gathered for the March 4th-Wednesday Golden Gate Audubon walk, reveling in the morning's sudden change from rain to sun and the overnight switch from gale to breezes. All were so busy recounting the past day's adventures that I forgot to mention the Red-shouldered Hawks I'd watched battling crows when I arrived – normally a highlight of the trip.

When we finally thought of birds, the crowd of American White Pelicans on one side of the far island captured our attention. An equal crowd of Double-crested Cormorants filled the other side, with a hard line between them, white against black like two tiles on the floor. The cormorant side wasn't quite solid black; they had several bronze juveniles among them, but enough were adults (some growing their seasonal bunny-ear crests) to make me hope they'd rediscover the charms of the bare island tree as a nest site.

Three Black-crowned Night-Herons in one bush triggered the usual discussion of their age-based plumage, in the midst of which another adult flew over to the beach beside us and perched on a post, making for easy viewing even without binoculars. Six of the pelicans and a couple of coots splashed down near the cormorant, adding to the treat and providing yet more proof that this trip really is the best for the new birder: great big birds almost in arm's reach, unconcerned about humans clutching weird shiny things....

In the bird paddock, the ground around the freshwater pools (normally bare dirt) had sprouted a huge patch of wispy foot-tall weeds – all chartreuse instead of proper green, suggesting too many gray days for plants as well as people, perhaps. The pond ducks were all Mallards, all entirely or mostly domestic. Both resident black Cayugas were there, along with a probable Khaki Campbell (tan body, brown head) and a drake with wild-type plumage who was just as oversized as the rest of the duck-for-dinner brigade.

As usual this year, the lake surface held lots of Ruddy Ducks. Lots and lots of Ruddy Ducks – and this month,

really ruddy Ruddy Ducks. Most of the males had at least started their change, and some had the complete auburn body and sky-blue bill of the full party suit. Around them, the Eared Grebes had traded all their white feathers for dark and were showing the first rays of the gold fans soon to surround their eyes and make them the best and brightest of our local stars.

One last Canvasback swam by the pergola, along with a few goldeneyes and the rest of the seasonal suspects. The male Common Goldeneye I'd glimpsed from a distance hid while we were nearby, leaving only females or juveniles, but heading back up the lake I spotted the bright orange bill of a female Barrow's Goldeneye, my first for the year. That made me reconsider one of those juveniles, whose faint cheek crescent I'd dismissed as wishful thinking and not evidence of a developing male Barrow's.

Across Bellevue, the huge oak along Perkins was down – the storm's most visible casualty. It hadn't just fallen; it had shattered, great splintered branches pointing to the sky. My mind's eye instantly skipped to another morning, ten years past, when four new-fledged Cooper's Hawks had played games of chase and pounce among those branches until a parent arrived with a teakettle whistle and claws full of lunch. No idea how long I'd been frozen there that day, but in a way I'm there still, now with pale shards all around in the same space.

By contrast, the fallen tree by the fountain, long and narrow and self-contained like a sleeping cat, seemed peaceful. Even the tent camp spread neatly around its trunk and branches seemed peaceful. We moved past it rapidly: nothing to see here, yep, keep on walking.

Over in the garden, the most notable sight was a bush full of sparrows – White-crowned Sparrows, Golden-crowns, Song Sparrows, and one unusually rusty Fox Sparrow all perched and hopped among the branches. Nearby, after a few minutes' ignoring us (or delay in finding us) some chickadees came hoping for peanuts, and finding them. There's just something about a chickadee's foot on your finger, like a moving ring, hard as metal and neither warm nor cold (or maybe both), life of another order....

We crossed the lawn beside the Boat House looking for scrub jays and finding some; that brought the day's total to 50 species, matching the 2021 high and much above other recent March walks. (Not that we knew the number at that point, but it was clearly a big one.) It was also a pleasure to see that the huge stone pine, struggling for years now, was still upright with all its branches spread wide.

Indeed, the park's grand old trees had stayed standing almost everywhere we looked – not everywhere, of course, but we could think of how little we'd lost rather than how much. We could see this day in our lives as yet another in Lake Merritt's unbroken string of very good days.

It was only after returning home that I learned the string had broken on Tuesday for someone – not just by temporary misery but forever: the tree that crossed the camp by the fountain had cost a life besides its own. In the midst of life... life goes on, at Lake Merritt too.



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. This trip happens rain or shine. It is free but advance registration is requested by Golden Gate Audubon. Use this link below.

<https://goldengateaudubon.app.neoncrm.com/np/clients/goldengateaudubon/event.jsp?event=10813>

Community Water Quality Report – Good Water Quality, Good Plankton!

Water quality was measured at 10:20 a.m. on April 8th from the Lake Merritt Boating Center Dock by the Achieve Program high school scholars.

Depth 1.75 meters; Water Clarity 1.25 m (Normal)

Temperature: 13.5 degrees Celsius at the top (56.3 degrees Fahrenheit)/15 degrees Celsius at the bottom (59 deg Fahrenheit) Normal for this time of year

Salinity 19 parts per thousand (ppt) top/20 ppt bottom)

pH: 8.5 top and bottom

Dissolved Oxygen 9 parts per million (ppm) at the top and bottom. (Meets EPA standard).

Plankton sampling has been done for several months now by Achieve Program students working with [Rotary Nature Center Friends](#) and the California Department of Public Health. The dominant plant-like plankton or phytoplankton (a.k.a. algae) since February has been a diatom called *Thalassiosira*. *Thalassiosira* is a “good plankton” according to SFEI lead scientist David Senn, one unlikely to cause a harmful algal bloom.

Nitrate: 0.5 ppm

Nitrite: 0.15 ppm

Phosphates: 0 ppm.

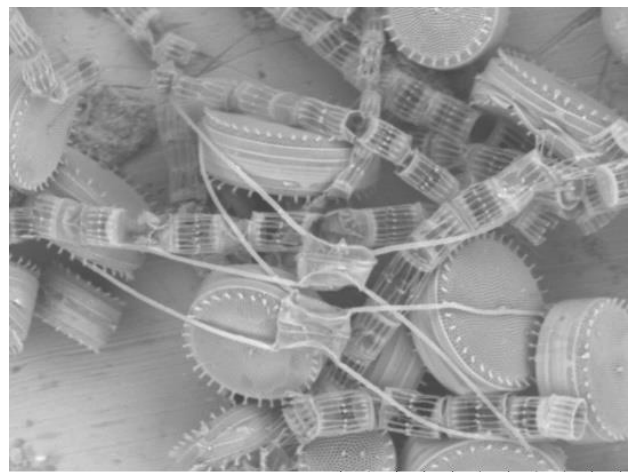
Results are below EPA limits.



a) Achieve scholar views plankton under the light microscope.



b) Chains of *Thalassiosira* cells under the light microscope (100 X magnification).



c) Scanning electron microscope image (1500 X magnification) by J. Southworth of the San Francisco Microscopical Society. The students were amazed to see the plankton they had collected!

COMING UP!

April 14th, 7-8 p.m. - Lakeside Chat #29 with Biologist and Naturalist, Dr. James Costa. His talk is entitled “Radical by Nature: The Revolutionary Life of Alfred Russel Wallace.” Jim will explore Alfred Russel Wallace’s epic life and achievements, his passion for science and social justice. Enjoy an interactive nature and social justice-oriented program hosted by [Rotary Nature Center Friends](#).

FREE, online.

<https://alfred-russel-wallace-radical-by-nature-with-dr-james-costa.eventbrite.com>

April 30th, 10 a.m.-2 p.m. – Lake Merritt City Nature Challenge Bioblitz

Help us find out how the Lake Merritt estuary community is recovering - oh, and help SF Bay Area win the City Nature Challenge! BioBlitz at Lake Merritt starts at the Rotary Nature Center at 10 a.m. and finishes up at The Oakland Museum at 2 p.m. Free, in-person. Details on Eventbrite.

Register for the in-person event here: <https://lake-merritt-bioblitz-city-nature-challenge-2023.eventbrite.com>

Register for the iNaturalist project here: <https://www.inaturalist.org/projects/lake-merritt-bioblitz-2023-city-nature-challenge>

March Water Quality Report: Sky-high Dissolved Oxygen (DO) - Are we out of danger?

Readers who have been checking the Lake Merritt Institute's public portal have noticed that oxygen levels (dissolved oxygen and oxygen percent saturation) have been very high recently in contrast to the complete lack of oxygen that brought about the August 2022 fish kill. One retired water treatment scientist remarked in an email

"The DOs are fairly off the wall. Over 150% is a big bloom. (SFEI) was seeing over 200% in the Bay during the (August) bloom. 20 ppm DO on February 21 is quite high. I don't know the RFU conversion to chlorophyll. The DO numbers suggest it's awfully green. Chlorophyll over 20 ug is high, over 50 is screaming."

and another...

"looking at your DO numbers again I think your meter needs to be calibrated. I am skeptical of 14 mg/l. It would explain the high saturated O2 level as well- reflective more of a surf zone than the Bay. What numbers do you see at Lake Merritt? Normal values in the bay are 7-8 mg/L."

(1 mg/L = 1 ppm) The Lake Merritt Institute buoy sensors are calibrated every 3 weeks and agree with the independent hand-held sonde. Similar high DO percents have been reported in 2014-2015 and 2004.

Checking around, the oxygen percent saturation may be higher now in Lake Merritt than anywhere in the Bay!

So, what is going on? There are many contributing factors, including low temperatures, windy weather and open tide gates, but robust photosynthesis activity is probably the reason. During the process of photosynthesis, plants and phytoplankton alike combine carbon dioxide from the air and water to form carbohydrates, a basic biochemical building block of life. Oxygen is released as a "waste product" of the reaction. In the lake, the waste oxygen goes into the water and becomes dissolved oxygen or DO. Phytoplankton monitoring has found at least three phytoplankton "blooms" since November, but none of them caused a fish kill.

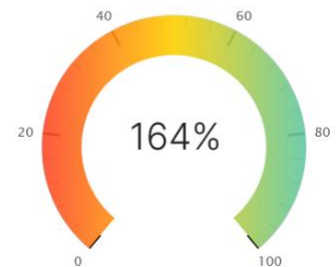
Current buoy monitors do not detect concentrations of nutrients such as nitrates and phosphates that encourage phytoplankton growth. These nutrients are common in urban runoff as well as agricultural runoff. Volunteers checking with paper strips have detected only small unproblematic amounts of nitrates and zero phosphates. However, these nutrients may be taken up quickly into phytoplankton biomass.

So, to answer the question in the title of this piece - **NO!!**

The dissolved oxygen readings are part of an integrated picture of the metabolism of an urban estuary ecosystem that needs close monitoring. Warmer temperatures expected with rampant **climate change** (IPCC Report in April) could kick off another harmful algal bloom as early as this summer.

Surface DO%

April 12, 2023 5:00 AM



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

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