SAVING LAKE MERRITT
from THE LAKE MERRITT INSTITUTE

January began another year in the approximately 4,000-year history of Lake Merritt. But despite this ancient heritage, all has not been well at Oakland’s downtown estuary. In August and September of 2022, perhaps for the first time in recorded history, the Lake was devoid of dissolved oxygen (DO for short), from top to bottom. Unable to breathe, tens of thousands of fish and uncounted crabs, shrimp and other water dwelling creatures perished.

Monitoring of dissolved oxygen with hand-held professional instruments since the fish kill has shown that the Lake has mostly recovered its DO (kudos to Rotary Nature Center Friends). Young adult volunteers with the monitoring effort articulate the importance of continued monitoring in a 3-minute video. However, problems remain. DO of less than 5 parts-per-million are still observed occasionally in deeper waters. While not deadly, levels lower than 5 are below the E.P.A. recommended guideline for healthy waters.

Why did this happen? Many factors may have contributed, but a harmful algal bloom of Heterosigma akashiwo was largely to blame.

Could it happen again? YES.

What can we do? What can YOU do?
Support the Lake Merritt Institute’s plan to provide adequate 24/7 water-quality monitoring and oxygen support infrastructure as needed in Lake Merritt – at the same time maintaining and expanding our vital Clean Lake Program to remove trash. Find out more here: https://www.gofundme.com/f/help-save-lake-merritt-and-lake-merritt-institute?

TRASH! TRASH! TRASH! – Track the monthly and yearly totals of trash removed from the lake by our Clean Lake Program since 1997 on our website – lakemerrittinstitute.org

LMI in FEBRUARY 2023: 8,160 gallons of trash were removed from the lake by staff and volunteers in January. LMI Executive Director James Robinson hosted 162 volunteers, attended 5 meetings, and gave 1 presentation. 69 used syringes were removed. 7.17 inches of rain were recorded by the LMI rain gauge in January
THANK YOU TO ALL OF OUR 2022 VOLUNTEERS!

LMI in NOVEMBER and DECEMBER 2022: 11,040 gallons of trash were removed from the lake by staff and volunteers in November and December. Total trash collected in 2022 was 72,345 gallons. LMI Executive Director James Robinson hosted 282 volunteers, attended 15 meetings, and gave 2 presentations.

11.54 inches of rain were recorded on the LMI rain gauge in November and December.

Community Water Quality Report – Monitoring from land and Mid-lake

Water quality was measured on December 10th from the Rotary Nature Center outlook by St. Paul’s Episcopal School sixth graders and Rotary Nature Center Friends on December 10th 2022.

Depth 0.5 meters; Water Clarity 0.45 m (Normal)

Temperature: 11.5 degrees Celsius at the top (52.7 degrees Fahrenheit)/11 degrees Celsius at the bottom (51.8 deg Fahrenheit) Normal for this time of year

Salinity 17 parts per thousand (ppt) top/26 ppt bottom) Stratified, raining, water coming out storm drain pipe

pH: not taken

Dissolved Oxygen 9 parts per million (ppm) at the top/5 ppm at the bottom. (Meets EPA standard).

<=At left, students test for nutrients nitrates and phosphates that can cause low DO on 2/9/23. Results: both are below Maximum EPA limit.

(below)

COMMUNITY MONITORING IN LAKE SINCE AUGUST FISH KILL

Maps show that DO has recovered, but can be low (black squares) in spots in both arms of the lake. It changes with the tides if tidal flow is allowed.

Listen to video here.
CATCHING UP WITH THE BIRDS!

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/npo/clients/goldengateaudubon/event.jsp?event=10813

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NOVEMBER 2022 Column: Back in Birdness at Lake Merritt
– by Hilary Powers, Golden Gate Audubon Society Volunteer

Crowds of birds greeted the Golden Gate Audubon walkers on the day before Thanksgiving this year, much to the profound relief of the trip leader. We had pelicans, we had goldeneyes, we had cormorants and more – none of which had graced the lake the preceding week, when Rob Limon, our wizard videographer, was trying to get the footage required for an upcoming Lakeside Chat Zoom version of the tour. Things were so thin then that he’d agreed to return and donate more time to the project, working around the crowd (15 or so, it turned out) to give it another try.

Rob missed the squadron of Snowy Egrets that flew straight toward us at eye level and landed in the water at our feet, joining the juvenile Great Blue Heron that had just arrived, but most were still around when he got the camera set up. The Great Blue turned out to be one of several that settled and flew around the islands – how many, we couldn’t tell for sure (they kept moving), but we saw at least three and one a full adult, so we could compare its pale throat and long shaggy neck-beard feathers to the juvie’s smooth streaking.

We also saw the whole age range of Black-crowned Night-Herons, including one standing so straight and tall that someone in the group was heard to whisper, “Is that a crane?” “Nope - another Black-crown. They’ve got as much neck as any other heron – they just keep it in their shirt pocket most of the time.”

The presence of one bird doesn’t really make up for the absence of another, but the heronry show meant we didn’t grieve too hard for the missing Great Egrets and Green Herons. Likewise, with both Horned and Eared Grebes swimming in sufficient numbers to let us talk about the difference (flat head vs. pointy head), the total lack of Pied-billed Grebes (plentiful in the last coupla months and seen here every November since 2013) was simply another curiosity to mention.

And we had Bluebirds again, as in November 2021, leaving December as the only month where we’ve never seen them. Maybe this will be the year! The Hermit Thrush was back in the garden; the Barn Owl wasn’t, or at least it escaped our view, despite a careful prowl through the palm grove in hopes of catching a glimpse. What with both Nuttall’s and Downy Woodpeckers and the always-with-us Chestnut-backed Chickadees and Plain Titmice (to give their full, usually-forgotten names) and the Yellow-rumped Warblers and Bewick’s Wrens, the under-tree birding was well rewarded.

The day’s real prizes were out by the lake, however. We saw what was almost certainly an Iceland Gull (the darker variety we used to call “Thayer’s Gull” before the species were lumped a few years ago): a big white-headed gull with bubblegum-pink legs, a smallish bill for its size, and a lot of brown streaking on the head and mantle. Coulda been a Herring Gull, which might be described in much the same terms at this time of year, but it didn’t seem quite frowny-faced enough for that.
Then, down near El Embarcadero, we encountered the pair of Greater White-fronted Geese who’ve been hanging around the lake for the last month or so. Brownish birds, smaller than the Canada Geese but definitely wild – none of the droopy-drawers look of a domestic goose – and too young to show much of the white above the bill that gives the species its name.

The park is safe enough and close enough to transportation that it’s not alarming when people drift away, so we don’t try to keep track of the humans on the walk, and the ending group is always far smaller than the beginning. This month, however, the departed have cause to regret: only one remained for the two best sightings of the day!

A Spotted Sandpiper made its tail-pumping way across a Boat House dock – always one of the lake’s most entertaining birds, even in the winter when it hasn’t a spot to its name, and we hadn’t seen one since last February. Hard to top that, but we managed it in the same area, with a pair of American Wigeon (medium-sized ducks with shiny green panels around and behind their eyes and the white or cream foreheads – we had one each – that earned them the hunters’ name “Baldpate Ducks”), which had never ever shown up on one of these walks. https://ebird.org/species/amewig/L268122

That brought the species count to 45, same as last year and only one down from the 2020 record of 46, so even those who had to leave before the end had plenty of delights to savor on this day of all days at Lake Merritt. (Where, you may have noticed, every day is its own day of all days....)

**DECEMBER 2022 Column: Pleasures of the Lake and Garden**

– by Hilary Powers, Golden Gate Audubon Society Volunteer

First and brightest pleasure of the December 4th-Wednesday Golden Gate Audubon walk at Lake Merritt: the sun was shining bright as day – normally a ho-hum sort of pleasure or even a twinge of dread, but this was about the only scrap of sunlight for a week on either side. Much as we needed and praised the water that had filled the air lately, we were happier without it just then. The 25 or so birders (several on their first or second expedition) welcomed the Spotted Sandpiper tail-pumping its way along the new pickleweed marsh beside the Art & Science building, and also the Glaucous-winged Gull (missing since last January) perched like a statue on one of the floats.

A Cooper’s Hawk (we’re supposed to start calling it a “Swift Hawk” now, but that’s hard to do because all hawks are swift; as well call it a “Meat-eating Hawk” and be done with it) perched at the very top of a narrow pine. It shone like a Christmas ornament in the sun but still looked half asleep until a crow began minding its own business – by flapping as close as possible over and over and making life miserable for the hawk, which as every crow knows is the proper business of a crow; humans don’t get a vote.

The lake was moderately thin of company, which led to much discussion of what was there: the domestics – Chauncey the Chinese Swan Goose, the snow-white Muscovy Duck (with its gnarly red face), and assorted more or less domestic Mallards (degree of wildness inversely related to size of duck). Key to spotting Chauncey the Asian Swan Goose was last seen on January 5th in this photo by Lyla Arum. He will be missed.
domestic waterfowl: bulk. Domestic geese carry fat like an overfull diaper; domestic ducks of Mallard stock (meaning almost all of them) carry it more between the legs, besides being way bigger than wild ones; domestic ducks of Muscovy stock (the rest) carry it all over. A wild Muscovy Duck (which you’ll probably never see; they live mainly in South America) is a slim and graceful bird with only a trace of facial chewing gum.

Not-domestic news: the pair of Greater White-fronted Geese continued to forage with the Canada Geese near the pergola at El Embarcadero, recognizable by their small size, trim build, and bright orange legs. There really is a Lesser White-fronted Goose, by the by – even smaller, with more white on its face – but not around here. A Facebook fan page calls that species “Europe’s rarest goose.”

Brown Creepers greeted us when we reached the woods across Bellevue from the Nature Center, picking their way up the trunks while Oak Titmice and Chestnut-backed Chickadees darted through the branches – a scene worth crossing the street for all by itself. In general, park viewing was much improved over past months because most of the leaves were gone, though enough remained or were in the process of falling to provide several distracting “leaf-bird” false alarms.

As we approached the corner by the Garden Center, I launched into my usual cheery but basically hopeless refrain: “We always have to stop and look at those two catalpa trees on either side of that path across the street. If we’re going to see a sapsucker, that’s where it will be – just look at all the little holes they’ve left!” The holes are worth talking about: tear-on-the-dotted-line rows dug by birds planning to return and use their bottle-brush tongues to lick out sap and the bugs it’s attracted. The birds themselves we never see more than one in a year and many years none at all, making it hard to imagine when they did all that digging.

But as I ran my binoculars along a lumpy branch, what looked like a broken stub... wasn’t. “Sapsucker!!” says I, fumbling to get the spotting scope into line. “We’ve really got a sapsucker this time!” Sure enough, a streaky brown Red-breasted Sapsucker was working quietly away in the middle of one of the catalpa trees, elegant in itself and all the more delightful for its local rarity.

Next up on the delight scale: after our first few steps through the garden gate, something like a fluffy golden missile flashed past at knee level, almost in touching distance of the lead birder. Whatever-it-was landed about 10 feet away on a wooden pole and resolved into a Ruby-crowned Kinglet that hopped about, fossicking in crevices and ignoring us entirely, so calm that its head was altogether olive green, completely hiding the red patch it’s named for. Nonetheless, we got beautiful views of the signature kinglet movement style: flap-jump, flap-fly, generally the best way to identify a bird too fast for field marks. (“If you didn’t see it, it was a kinglet!” I often advise, only half in jest; there’s a vireo with almost the same feather pattern but a much more sedate and businesslike pattern of movement.) The kinglet wasn’t alone, either. Dunno what it was about that post and the shelter it supported, but a couple of Bewick’s Wrens thought it was the place to be, too. The chance to get good, close looks at usually elusive birds is something everyone hopes for on a walk like this, and all too rarely gets.

But the best was yet to come.

Some possibly unwise but well-meaning and welcome benefactor of birds and birders alike has taught the chickadees in the garden to take peanuts from a quiet hand. It’s a worry – does hand-feeding encourage unsafe behavior? Inspire excessive reliance on unnatural food? Spread disease? Maybe, maybe... but in the presence of ample food sources and the absence of disease, as in the garden that day, it is joy beyond measure. As to unsafe behavior, well, a Red-shouldered Hawk sat on a low branch of the tree we’d gathered under, surveying the activity and practically tying a napkin around its neck, but it didn’t actually try to catch any of the small birds we’d attracted and so simply added to the entertainment. To this day, the cool grip and faint prickle of tiny feet on my finger form an invisible ring that I can recall by a single thought.

So, yes, every day at Lake Merritt is a good day, but some days are better than others. We saw only 46 species, down a couple from last year, but didn’t regret the missing cormorants, herons, or other usual regulars in the face of the pleasures at hand.
Well, part of the shine the Golden Gate Audubon 4th-Wednesday walk encountered was from the general lack of birds to ruffle the surface. Numbers of individuals felt way, way down, with no clear explanation; it might be leftovers from the August oxygen crash, but the day’s decline only extended a long-term trend, and – a better sort of shine – numbers of species were well up: 52 kinds of birds observed, matching the several-years January record set in 2019.

And the day was shiniest of all: brilliant sun, cool but not cold, with the air so clear the air-(lack of)-quality chime by the Nature Center couldn’t sound a note. The 20-odd birders gathered for the walk visibly expanded in delight at the still-welcome break from earlier weeks of rain.

To start off the festivities, A female Red-breasted Merganser swam and dove by the near island while the group was gathering, clearly finding enough food to make the time and effort worthwhile. “How can you tell which merganser that is?” someone asked when I called the species. “No white under the chin!” was the easy answer. (Another rust-headed gray duck also has a thin red bill and a shaggy crest, but that one has a disc of white feathers right where the bill meets the throat. And why is it “Red-breasted” when the whole breast is clearly gray? Bird names strike again! This one describes the adult male in breeding plumage; females and youngsters don’t count, and nor do males for half the year....)

The lake showed what has become the typical pattern: about the right number of Ruddy Ducks (none ruddy at this season), both Greater and Lesser Scaup but not nearly enough of them (we should have a lot more scaup than ruddies), and a few Canvasbacks, Bufflehead, and Common Goldeneyes, plus some Pied-billed, Eared, and Horned Grebes. We also saw a pair of the big Western Grebes for the first time since last February. They were all getting enough to eat... but why did we see only one Double-crested Cormorant?

The oaks along Bellevue were positively sparkling with little birds – a flock of Lesser Goldfinches mixed with Chestnut-backed Chickadees, Oak Titmice, Ruby-crowned Kinglets and Hutton’s Vireos (almost identical except for the way they move), and Western Bluebirds, all darting among the branches of three or four trees. And right at ground level, where I’d never have thought to look for him if someone hadn’t seen him land, a male Nuttall’s Woodpecker showed off his brilliant red head as he worked his way around a tree trunk, hopping off occasionally to fossick in the grass.

We spent a long time with the magic grove (the Spot With All The Birds), but eventually tore ourselves away to check out what the park had to offer elsewhere. Heading back up the lake, we started hearing a strange, breathy shriek – GAAkk Aakk Aakk Aakk, GAAkk Aakk Aakk Aakk – high-pitched and sounding at once distant and right beside us. The latter turned out to be true; in the near-shore water, three Ring-billed Gulls circled and croaked in a tight group, beaks gaping, showing flashes of red on their faces. That surely sounded and looked like courting behavior – but although these gulls are here off and on all year, they don’t breed here, and January is the middle of the off season for them. Weird.

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COMING UP on March 3rd! Rotary Nature Center Friends will present Lakeside Chat #28: “Rocks of Lake Merritt” featuring geologist Andrew Alden. 7 pm to 8 pm by Zoom, FREE

Register HERE=> https://LakesideChat28-AndrewAlden.eventbrite.com

What IS Lake Merritt? The answer now in!
View the YouTube recording of Dr. Lipps’ February 3rd Lakeside Chat #27 to find out.
Nature Center Friends proudly presents the recorded program on YouTube:
https://youtu.be/dE5vF0MYrc
Enjoy!
LAKE MERRITT’S TIDAL DATA DILEMMA
A guest editorial by Dr. Richard Bailey

Background: Tidal flushing is a key component in determining our estuary’s water quality, biological health, plankton levels, oxygen, appearance, odors, and just about everything else. Twice a day the high and higher high tides sweep in from the Oakland Inner Harbor. Twice a day during the low and lower low tides, water drains out through the channel. Throughout the 28 day tidal cycle, an average drop of water remains in the Lake about four days; less during half of the cycle, more during the other half.

However, these life giving, pollution flushing flows are restricted compared to the natural water movements that existed for the thousands of years during which estuary life evolved. Why? Even with the recent removal of channel bottlenecks at 10th and 12th Streets, the channel is narrower now than then. It used to be up to a quarter mile wide. Getting water in and out of the Lake is like moving water to and from a bathtub with a straw. But, being a member of the Lake Merritt Institute, you knew all that.

The tide data dilemma. Tide gauges (which measure Lake water level) exist in the Oakland Inner Harbor, the channel, and at the Boating Center dock. At the dock, a microwave transmitter sends the data to the county flood control station at Seventh Street by the channel so they can keep an eye on the Lake and close the gates to keep high tides out and prevent flooding during significant rain events. The Institute recommended that a microwave receiver be installed at the Boating Center so Oakland would have this data, but it was never done. Inside the cavernous flood control station, a pen and ink, circular chart continuously records Lake level. Also, inside the station, a computer sets the position of the tide gates in one of four configurations. Herein lies the rub: It is a delicate balance to keep tidal flows natural for a healthy Lake, and prevent flooding.

What happens to the data? Given the close relationship between nutrients, algae growth, plankton (and even fish kills), access to 24/7 tidal data is essential to managing Lake Merritt. Over the years, the Institute has obtained the weekly, circular tide charts and other data from Alameda County, but never on a continual basis. Nor is such data sent to the city on a regular basis. Not so many years ago, and not very far away, a group called the Interagency Water Quality Technical Committee used to meet every month. County officials often attended and sometimes brought tide charts. But the committee no longer meets.

Problems: To get our own 24/7 tidal data, the Institute installed a camera set to photograph the tide gauge at the Boating Center dock every half hour. Within a day, the cable was cut and the camera was stolen. The upshot of all this, is that it is difficult to correlate plankton levels, oxygen levels etc. in the Lake with tidal flows and lake level. Are tidal flows related to the level of plankton in the Lake? We don’t know. Are oxygen levels lower when the tide gates are closed and the Lake stratifies into top and bottom layers? The answer is yes. The solution
to this problem is a system of aeration bubblers add oxygen to the water. How would tidal flows relate to a proposed Lake aeration system that was proposed several years ago? We hope to find out.

Solutions - A new day dawns: Shortly after the massive fish kill, a water quality monitoring buoy appeared in Lake Merritt. Connected to the internet for those with access to see, it distributed data on temperature, oxygen, plankton, and other parameters. Included in the data such buoys can collect can be (ta dah!) lake level, which is determined by tidal flows. If (and when we hope) such buoys become a permanent part of Lake Merritt, we will never have to worry about knowing what the tidal flows were when oxygen levels declined, or plankton bloomed, or fish died. A sample of what such buoys can record is shown here. Additional probes can monitor turbidity, salinity and even the type of plankton.

This is the answer to Lake Merritt’s tidal data dilemma: A permanent water quality monitoring system that reports continuous information needed to meet regulatory requirements, and manage our estuary to be the best it can be for the birds, fish, people, and other critters that call it home.

A sample of data from recording water quality buoys

Continuous water quality monitoring and an aeration system are within reach. Let’s not drop the ball.

Please direct questions and comments to The Tidings Editor, Katie Noonan, at ktnoon@aol.com. “The Tidings” is published by the Lake Merritt Institute (LMI) entirely with private funding donated to LMI, and not with funds from the City of Oakland. To contribute to LMI, use PayPal at the LMI website (lakemerrittinstitute.org) or send a check to: Lake Merritt Institute, 568 Bellevue Ave., Oakland, CA 94610-5026. LMI is a California State non-profit corporation; IRS Code 501(c)(3): EIN 94-3214160