

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

GLOW IS BACK! BIOLUMINESCENCE IN LAKE MERRITT

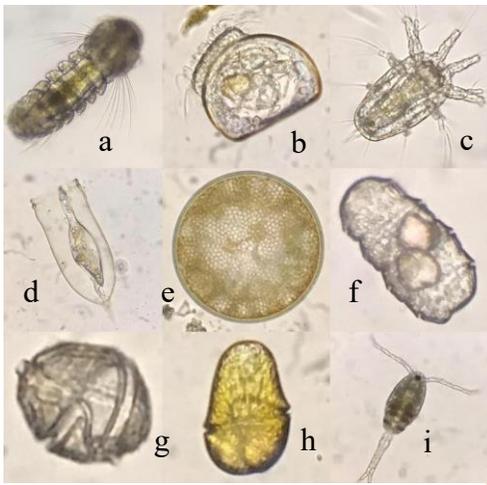


Photo by Damon Tighe, September 29, 2019.

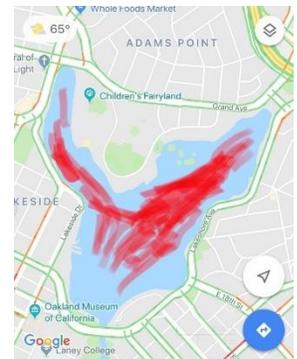
September is the time of year when Lake Merritt starts to glow. Bioluminescence (glow produced by organisms in the water) usually peaks near the new moon (October 13th this year) and is caused by tiny one-celled organisms called dinoflagellates. The dinoflagellates multiply rapidly in the warm surface water of the lake which reached 77 degrees Fahrenheit at mid-day in late summer and fall (see Youth Water Quality Report on page 4).

It was not as strong as last year, reported Naturalist Damon Tighe, but it's still the sort of biological magic many people feel like they have to travel to far off places to see. Bioluminescence tours are offered up and down the California coast. The species responsible for the glow in Lake Merritt *Lingnodinium* (g- in photos at left) is different from the species that causes glowing on the open coast. See “Why is Lake Merritt Turning Blue at Night” for interesting details.

<https://baynature.org/article/why-is-lake-merritt-turning-blue-at-night/>

The tiny organisms Damon photographed above left include other dinoflagellates (f and h), a ciliate (d), a diatom (e) and a copepod (i). These are considered *holoplankton* because they stay free-floating drifters all their lives. Others are *meroplankton* (a, b, and possibly c) because they will settle down eventually and become a sedentary worm, clam or mussel, or a barnacle maybe.

The map at right shows the concentration of glow in different parts of the lake. As in 2018, it appeared strongest in the Trestle Glen Arm near the bird islands.



Damon Tighe; iNaturalist

THE BATTLE FOR THE BAY RESULTS - GO OAKLAND!

On September 21st's Creek-to-Bay Day, Oakland collected more pounds of trash than any other city in the Battle for the Bay competition! THANK YOU to everyone who participated in keeping trash out of our beautiful lake and San Francisco Bay. The three cities turned out nearly 6,400 volunteers who picked up more than 200,000 pounds of trash in just one morning! **LOVE YOUR LAKE....**

LMI in SEPTEMBER: 1820 lbs. of trash were removed from the lake in September and **19,740 lbs.** so far in 2019.

LMI Director James Robinson and Staff hosted **203 volunteers**, made 3 educational presentations and attended 1 meeting
0.00” inches rain were recorded by LMI rain gauge.

THANK YOU TO OUR SEPTEMBER VOLUNTEERS! Volunteer groups: **Creek-to-Bay Day Volunteers, Blue Shield, Tanium, Montclair Elementary**, our U-Clean-It self-organized teams and the **LMI A-TEAM** regulars. We appreciate your efforts and community spirit. Great Job! See photos in the email version of The Tidings. **YOU** can support the Lake Merritt Institute’s important work. Go to lakemerrittinstitute.org to find out how.

SEA LEVEL RISE TALK by John Englander

The Lake Merritt Institute is proud to report that the free lecture by climate expert, oceanographer and consultant on sea level rise, John Englander, the first such event LMI undertook, was a rousing success. Over fifty people attended the presentation on sea level rise and learned what we can and can’t do about it.

The Lake Merritt Institute offers our gratitude for the generous support of the Frederick E. Hart Foundation for Educational Opportunity and St. Paul’s School. We would not have been able to afford a free event, and would have had to use a lesser venue without them.

The event went well, with a diverse audience including many college students, young and old folks, environmentalists, teachers, and government employees. Our speaker, John Englander, left out the jargon but effectively conveyed the complexities, certainties and uncertainties of how the rising seas will change the shorelines of the world, and the people who live along them.

A lively question and answer session followed the talk. In fact, almost as much time was devoted to the discussion as to the formal presentation. The audience was engaged. Mr. Englander made sure the audience could access and use his photos and graphs in their own educational efforts. Many of these will be in his new book *Moving to Higher Ground*, due out in the second quarter of next year.

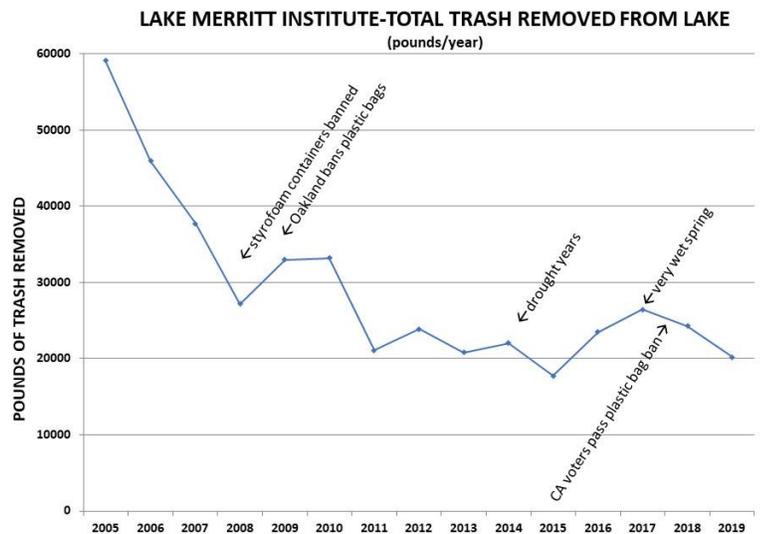


LMI Founder Dr. Richard Bailey, Dr. John Englander and LMI Director James Robinson

WILL OAKLAND MEET OUR TRASH GOALS?

On September 16th, the Lake Merritt Institute’s Executive Director James Robinson, founder Dr. Richard Bailey and Tidings editor Katie Noonan were invited to speak to the Measure DD Community Coalition meeting about water quality. They shared with the Coalition the records from the past 14 years of trash removal by LMI and noted that there has been an upsurge of heavy and difficult items our volunteers must deal with (scooters, sofas, air conditioners, pianos). See email version of The Tidings for more details).

They also noted that the City of Oakland must reach its goal of zero % trash released to the Bay by 2022, or face stiff fines by the Regional Water Quality Board. The Tidings has previously shown that our trash removal is linked to the number of volunteers. So, get on out there and help us clean the lake!



LMI added that there are low oxygen levels in the lake, and the operational practices at the tide gates impact those levels. LMI shared with the Coalition relatively low-cost measures that could improve dissolved oxygen and trash recovery such as nets, bubblers and curb-side storm-drain filters.

Hot Times at Lake Merritt by Hilary Powers – Golden Gate Audubon

The fourth Wednesday of September was hot this year. Really hot. It was so hot by 9:30 a.m. that we moved the meeting spot for the Golden Gate Audubon bird walk around behind the globe cage and into the shade – for the first time ever – and we spent the rest of the morning scuttling from shadow to shadow. But the birds were wonderful anyway, the peak (for those who managed to catch a glimpse) being what we decided had to be a female Western Tanager high in one of the Lakeside Park trees: bright gold underneath, orange beak, and huge compared to the black-masked Townsend’s Warblers moving through at the same time.



Nuttall's Woodpecker; by John Kirkmire

The park trees were also bouncing with Oak Titmice, plus some Chestnut-backed Chickadees and a Nuttall’s Woodpecker or two making their presence heard in the distance, and Brown Creepers seemed to follow the group. (We rarely see them at all, and almost never more than one, but this time they showed up on three separate occasions: hyper-elegant little curve-billed brown birds making their way up tree trunks or along the undersides of branches.) White-crowned Sparrows had returned too, with substantial flocks in the park and garden, but the other winter sparrows were still en route somewhere.

On the lake, black American Coots and little brown Pied-billed Grebes were out in force, after being missing or down to one or two individuals for the last few months. A dozen or so White Pelicans lounged on the islands or moseyed through the water dipping for fish, and several Brown Pelicans sat or slouched on the floats. Otherwise, it was all Canada Geese, Mallards, assorted gulls, and Double-crested Cormorants; none of the winter ducks had arrived yet, though a few species have appeared on nearby waters.

Two Black-crowned Night Herons perched side by side on the rocks in nearly identical erect poses, vividly illustrating the difference between the adult’s black, gray, and white business suit and the juvenile’s streaky brown casual plumage. Meanwhile, a Green Heron prospected along the near island, inspiring the usual discussion of all the colors that bird displays except green. A group of Snowy Egrets clustered around the fake one that perches on one of the far islands, making its excessive size and its stillness painfully obvious, and three or four Great Egrets joined the party too. We kept looking for the usual Great Blue Heron to complete the set, but it was hiding or missing that morning.



Red-shouldered Hawk; by Lee Aurich

The big treat in the garden was an adult Red-shouldered Hawk posing near the top of a bare pine tree, showing off its russet breast and black-and-white checkered wings and keeping a wary eye out for crows. It switched perches after a while but stayed in view long enough for people to reach the “seen enough hawk” point and move on, which isn’t quick. We headed for the Sensory Garden with high hopes of finches at the stone fountain, but it was crowded with three-foot humans instead – delightful little bipeds even without feathers, but we were way too hot to wait until the birds had a chance to return.

Did I mention it was hot? It was hot – but we did see or at least hear 38 species of birds again this year, and it was still a very good day to be at Lake Merritt instead of anyplace else.

*****AUDUBON BIRDWALKS AT THE LAKE:** Join bird expert Hilary Powers any fourth Wednesday of the month for a free “Birdwalk” 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. ***

ARE YOU FEEDING THIS BIRD?

based on KALX program by Science journalist Marissa Ortega-Welch

Science journalist and former Golden Gate Audubon educator Marissa Ortega-Welch recounted a tale of human intervention unwittingly leading to ecological catastrophe and the possible extinction of a species.

It goes like this:

- Humans drained Mono Lake to get water for the growing population in L.A.
- As water level fell, California Gulls were decimated by predators - foxes, raccoon and coyotes.
- Survivors began nesting in the Bay Area where they used two incidentally acquired survival skills:
 - 1) the ability to nest on human infrastructure and
 - 2) a tendency to scavenge and to feed on chicks of other bird species.
- The California Gulls populations on the coast and in the Bay Area soared, capitalizing on food scraps concentrated on our streets, in landfills and transfer stations.
- California Gulls now prey on the exposed chicks of the endangered Snowy Plover nesting in the South Bay pushing them closer to extinction.



A California Gull; Wikipedia

Ecologists call this an ecological cascade, and humans are almost always part of it. According to Hilary Powers of the Golden Gate Audubon Society, California Gulls are in the top 3 of the dozen or so species of gulls that can be seen at the Lake Merritt Wildlife Refuge. In September, the Rotary Nature Center posted a new anti-bird feeding sign on its doors and on fences around the bird sanctuary yard: “Caution! Feeding birds may harm wildlife and is a serious threat to aviation safety.”

Are *you* feeding these gulls? Of course not, you say. But Americans waste about 40% of the food we buy. And unless we are extremely careful a lot of our leftovers get transported to municipal waste facilities like our local Davis St. Transfer Station where they are consumed by gulls.

Marissa concludes: “Maybe the lesson to learn is when we humans change the environment, it almost always sets off a chain reaction that’s going to have implications across species and hundreds of miles.” Humans have drained wetlands, covered the ground with asphalt and grass and put fertilizer and pesticides into the water and caused sea level to rise. Stewarding our not-wild-anymore Wildlife Refuge wisely is a moral imperative.



Threat to aviation in Lakeside Park?

YOUTH WATER QUALITY REPORT

September 14th at the Rotary Nature Center Pop-up table with LAKE MERRITT OBSERVATORY.

Dissolved Oxygen 7 ppm top (normal)

pH 7.5 (NORMAL)

Salinity 31.2 ppt (NORMAL)

Water Temperature 25 degrees Celsius/ 77 degrees Fahrenheit (WARM)

Water Clarity (Secchi) >1.20 meters (CLEAR!)

Oakland Technical High School AP Environmental Science students help visitors test the water (at right).



CLIMATE CORNER: WORDS TO REMEMBER -- A Guest Editorial by Dr. Richard Bailey

In 1863, Abraham Lincoln wrote:

Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.

In 1961, John F. Kennedy wrote:

Ask not what your country can do for you—ask what you can do for your country.

In 1963, Martin Luther King wrote:

I still have a dream, a dream deeply rooted in the American dream – one day this nation will rise up and live up to its creed, "We hold these truths to be self-evident: that all men are created equal." I have a dream ...

These words continue to inspire us today. Joining them on the world stage of history are the following words by Greta Thunberg:

This is all wrong. I shouldn't be up here. I should be back in school on the other side of the ocean. Yet, you all come to us young people for hope. How dare you!

You have stolen my dreams and my childhood with your empty words and yet I'm one of the lucky ones. People are suffering. People are dying. Entire ecosystems are collapsing. We are in the beginning of a mass extinction and all you can talk about is money and fairy tales of eternal economic growth. How dare you!

For more than 30 years, the science has been crystal clear. How dare you continue to look away and come here saying that you're doing enough when the politics and solutions needed are still nowhere in sight.

You say you hear us and that you understand the urgency, but no matter how sad and angry I am, I do not want to believe that. Because if you really understood the situation and still kept on failing to act then you would be evil and that I refuse to believe.

The popular idea of [cutting our emissions](#) in half in 10 years only gives us a 50% chance of staying below 1.5 degrees and the risk of setting off irreversible chain reactions beyond human control.

Fifty percent may be acceptable to you, but those numbers do not include tipping points, most feedback loops, additional warming hidden by toxic air pollution or the aspects of equity and climate justice.

They also rely on my generation sucking hundreds of billions of tons of your CO₂ out of the air with technologies that barely exist.

So, a 50% risk is simply not acceptable to us, we who have to live with the consequences.

To have a 67% chance of staying below 1.5 degrees of global temperature rise the best odds given by the IPCC the world had 420Gt of CO₂ left to emit back on January 1, 2018. Today that figure is already down to less than 350Gt.

How dare you pretend that this can be solved with just business as usual and some technical solutions? With today's emissions levels, that remaining CO₂ budget will be entirely gone within less than eight and a half years.

There will not be any solutions or plans presented in line with these figures here today, because these numbers are too uncomfortable and you are still not mature enough to tell it like it is.

You are failing us, but the young people are starting to understand your betrayal. The eyes of all future

generations are upon you and if you choose to fail us, I say: We will never forgive you.

We will not let you get away with this. Right here, right now is where we draw the line. The world is waking up and change is coming, whether you like it or not.

Thank you.

To get the full impact of this speech, watch and listen at: www.youtube.com/watch?v=KAJsdgTPJpU

Time will tell if Greta's words inspired enough people to accept the challenge of our climate emergency. Time will tell if her life, and the lives of countless millions of young people, will continue to degrade. Time, and climate disruption will continue. What will you do?



LOCAL STUDENTS AND TEACHERS LEAD IN CLIMATE ACTION



Oakland Teachers meet at Cole Elementary School to plan lessons and action projects about climate change (covered in October issue of [EdSource](#)).

In 2018, students at Oakland Technical High School made a presentation to the Oakland Unified school board about why climate change should be a higher instructional priority for the district.

In January of 2019, the board updated its [policy](#) on environmental education to explicitly mention climate change and committed to connecting district sustainability projects like solar panel installation or school gardens to environmental education.



Ms. Lau's class at Cleveland Elementary displayed signs they had made at lunch-time demonstration.

Many older students skipped school "with Greta" to attend climate strike marches in San Francisco and other local cities.

THANK YOU TO OUR SEPTEMBER VOLUNTEERS! Volunteer groups: **Creek-to-Bay Day Volunteers, Blue Shield, Tanium, Montclair Elementary**, our U-Clean-It self-organized teams and the **LMI A-TEAM** regulars. We appreciate your efforts and community spirit. Great Job!



CREEK-TO-BAY DAY





Blue Shield



Robert Half



Montclair Elementary School



Lake Merritt Institute Volunteer
Appreciation Luncheon



Tanium

IN MEMORIAM

Rex Burress was Chief Naturalist at the Rotary Nature Center from 1975 to 1993. He passed away Oct. 2nd in Oroville at age 86.

From his Obituary in Chico Enterprise Record: A Celebration of Life Memorial Gathering will be held at the Lake Oroville Visitor Center 917 Kelly Ridge Rd. on November 23, 2019 at 2:00 pm. In lieu of flowers please feel free to contribute to the Feather River Nature Center, Artists of Rivertown, or your favorite nature conservation organization.

Rex Burress made significant contributions to the Lake Merritt Wildlife Refuge and to environmental awareness through the Rotary Nature Center. If you are interested in supporting a 150th Anniversary Celebration of the nation's first Wildlife Refuge in 2020 with a tribute to the past supervising naturalists, please contact Katie Noonan at ktnoon@aol.com.

Rex was a prolific nature writer who published his last column in September. Below is an article with specific relevance to the value of urban parks.

John Muir's impact still felt in parks, nature today | Natural Wonders

Column by [Rex Burress](#) | Columnist, Chico Enterprise-Record
April 20, 2019 at 3:30 am

For those, who, in the love of nature, hold communion with her visible forms, there is a common language, understandable to those who keep a kind heart.

Thus, it was that John Muir developed a love for nature in his 1838 birthplace of Dunbar, Scotland, before his father moved the family to Wisconsin in 1849 in a quest for freedom of religion and farming opportunities, and for 11-year-old John it was an even better place for outdoor study. Fountain Lake on the property had endeared John so much he retained an idea to make it a park later in life, one of the first trends to conserve special places by securing the land for all as a park.

Today, Muir is a popular symbol toward conservation, respect and admiration for wildlife and the environment.

By the time I got to California in 1957, I hadn't heard much about John Muir in Missouri, but when I got the Naturalist staff job in Oakland, the supervisor, Paul Covel, had hailed Muir a hero long before the 1960s, and I was soon drawn into the circle of Muir followers. It was easy, as Muir had written ten or more books by 1913, and was working on one — a manuscript strewn all over his hospital bed — when he died in 1914. His words rebound from numerous quotations. When Paul retired, he went to Dunbar to see where Muir was born. Muir is, however, buried at The John Muir National Historic Site in the Bay Area-city of Martinez. I was most humbled to receive the 2016 John Muir Conservation Legacy Award for work in writing, art and environmental education, nominated by California State Park folks Amanda Speer and Margaret Fowler in Oroville.

The same weekend of Muir's birthday celebration (Muir was born April 21, 1838) in 2016 at Martinez, was the annual Earth Day, April 22, as well as the Centennial Celebration of the National Park Service. Recognition of special occasions and famous people not only honors their accomplishments and lives, but also focuses thoughts on worthy causes. Most people would consider our outdoor heritage and wildlife as worthy, especially in a time of natural resource perils.

John Muir was indirectly helpful to me in establishing my Naturalist program job with Oakland Parks in 1961. I had felt the zest in discovering Muir and was inspired to write a "pretend" letter "[To The Glory of Nature, John](#)



[Muir, Eternity.](#)” Director William Mott saw it and had it printed in “California Parks and Recreation Magazine,” pleased with my connection of Muir with the modern-time bird refuge in the middle of Oakland.

Here are a couple phrases from the letter to Muir that are as good today as then:

“Your theme of leaving the busy city for the tranquility of the hills is a pleasant thought; but John, there are just too many people now-days to go and live in the mountains. If everybody was suddenly to make his home in the open spaces and wilderness areas, the out-of-doors would lose value as a retreat and be hopelessly cluttered with the debris of civilization. As it is, there are still some unspoiled areas held in parks and places that we can visit. Until that chance arrives, city wildlife and mankind must live in harmony ...”

Thus ran my Muir mind, as proper then as needful now.

“Nature is ever at work, building up and pulling down, creating and destroying, keeping everything whirling and flowing, allowing no rest but in rhythmical motion, chasing everything in endless song out of one beautiful form into another.” — John Muir

REFERENCES - October 2019 Tidings:

Bioluminescence

<https://baynature.org/article/why-is-lake-merritt-turning-blue-at-night/>

Feeding the birds:

“A Chain Reaction Brought Gulls to The Bay... Now, They Are Eating Other Birds” by Marissa Ortega-Welch
<https://www.kalw.org/post/chain-reaction-brought-gulls-bay-now-they-are-eating-other-birds?fbclid=IwAR3rgYvQz3Gq1agaKaQA7usakfvNiv16KAujs-AeYpE5Wi3UO0LopL8m6-M#stream/0>

New anti-bird-feeding sign

<https://www.aphis.usda.gov/aphis/home> Source of new sign.

Canada geese are another case-in-point:

Goose feathers <https://oaklandnorth.net/2011/09/06/ruffled-feathers-the-goose-dispute-at-lake-merritt/>

The Canada Goose poop crisis is another case in point. It is hard to imagine that flocks of Canada Geese were not always present at the lake. However, *none* were there before famed naturalist Paul Covel made a well-intentioned blunder. Covel introduced a few pairs of geese from Mare Island to the wildlife refuge for the enjoyment and education of the public. As hunting declined as a pastime though and natural predators like coyotes and wild cats were eliminated, the goose population rose. The popularity of expanses of grass lawns (which geese relish) fueled the population explosion more. Many geese don't even bother to migrate anymore. And this has happened all over the country.

Climate Strike

Teachers and students push for climate change education in California -

<https://edsources.org/2019/teachers-and-students-push-for-climate-change-education-in-california/618239>

Trash Goals

City will not meet trash goals June 2017

https://lakemerrittinstitute.org/wp-content/uploads/2019/02/2017_06_Newsletter.pdf

Oakland meets Trash Reduction Goal for 2016/2017!

https://lakemerrittinstitute.org/wp-content/uploads/2019/02/2017_11_Newsletter.pdf

Storm drain filters, bubblers and water quality.

https://lakemerrittinstitute.org/newsletters/06_04_tidings.pdf

Measure DD Community Coalition Meeting LMI presentation:

http://waterfrontaction.org/dd/mins/dd_9-16-19.pdf

5. Lake Merritt Water Quality Report

Richard Bailey, Ph.D., Lake Merritt Institute founder, gave an overview of the lake's environmental changes over time and distributed copies of a Lake Merritt water quality report. He also commented on the strengths of the curb inlet filters and nets described in the report.

James Robinson, Lake Merritt Institute director, distributed and commented on a report of trash removal volume by month/year from 2002-2019. He noted the large scope of the removal task.

Katie Noonan, Ph.D., offered two points:

- 1) There are low oxygen levels in the lake, and the operational practices at the tide gates impact those levels. See: 2014 to 2015 Water Quality Monitoring Report, Lake Merritt Monitoring Oakland, California - https://lakemerrittinstitute.org/wp-content/uploads/2018/03/Amec_Report.pdf
- 2) Opening the channel at 12th St. did not subsequently increase oxygen levels. She distributed a small card with a QR code that linked to this video from a dive in the Lake Merritt Channel near the flood gates: <https://www.youtube.com/watch?v=DTMzT43F0D4>.



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

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