

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

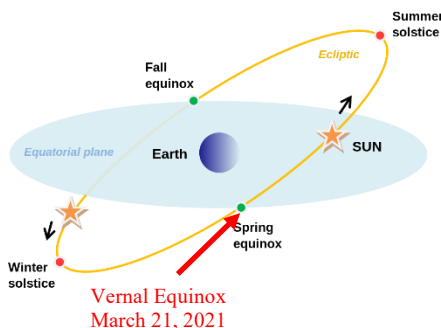
CELEBRATE EARTH DAY with THE LAKE MERRITT INSTITUTE!

Director James Robinson of the Lake Merritt Institute (LMI) invites you to join him and staff *in person* to clean the lake on Saturday April 24th. Volunteers will work in groups of 10 or less according to new City and Alameda County public health guidelines. If you wish to volunteer, email James at lmi@netwiz.net. He will provide additional information and reserve a spot for you and your group. Volunteers will sign waivers and be directed to small work parties as they arrive. Waivers will be provided and must be signed. Parent must sign waiver for volunteers under 18 years of age. Masks are required. The need to remain vigilant continues. <https://www.oaklandca.gov/topics/oakland-earth-month-april-2021>



How About Those Low Tides?

Lake-walkers have noticed that the water level in Lake Merritt has been very low lately. Long-submerged trash and a rich community of sometimes stinky marine life has been revealed extending some distance out from shore at low tide. Could something be wrong? What is going on?



The answer to any question about Lake Merritt can be complicated. Tides are created by the gravitational pull of the moon and the sun. In California, we have a semidiurnal pattern with one high tide and one low tide every 12 hours. One H-L cycle is more extreme than the other (HH-LL-LH-HL).

It turns out that the coastline all along California is experiencing very low low tides now because we are at the vernal equinox, the time of year when the daily periods of daylight and night are equal. The angle of the sun lines up directly with the plane of the Earth's Equator (see image at left) increasing the influence of the sun on water levels. This leads to lower low tides and higher high tides. That's why mid-Spring and mid-Fall are such great times to go tide-pooling (San Jose Mercury News).

LMI in MARCH: 6,840 gallons of trash were removed from the lake by staff and volunteers in MARCH. Total trash collected to date in 2021 is **15, 510 gallons**.

LMI Director James Robinson hosted **90 volunteers**, attended 1 meeting and gave a presentation to Laney College class.
0.00 inches rain recorded recorded by LMI by rain gauge (replaced after vandalism)

Low water (cont'd):

In Lake Merritt, water levels are also controlled the by the tide gates at the Alameda County Flood Control Station at 7th Street. The natural flow of the tides can be halted by closing the gates, and a specific level can be maintained by pumping. When Bay water is allowed to flow freely in and out of the lake, contaminants are flushed out and water quality in the lake is improved. So, the low water levels may be a good sign. However, if the water level remains the same all day, *that* means that the tide gates are closed – *not* a good thing for water quality.

The City is prioritizing keeping the gates open according to Kristin Hathaway, Watershed and Stormwater Division and Measure DD Program Manager at City of Oakland. A protocol used to operate the tide gates has been requested from the county and is due to be made public soon.

https://oceanservice.noaa.gov/education/tutorial_tides/tides04_angle.html

<https://www.mercurynews.com/2021/04/05/outdoor-adventures-4-spectacular-bay-area-tide-pools-and-beaches-to-explore/>

EVERY DAY IS EARTH DAY - THE CLEAN LAKE PROGRAM IS OPEN!



LMI's Executive Director James Robinson and volunteers conduct weekly trash removal operations in accordance with Alameda County and City Covid-19 regulations. If you would like to join the A-Team and other experienced volunteers who remove trash from the water at Lake Merritt, email James Robinson at lmi@netwiz.net. He will arrange for your training by an experienced volunteer. If you would like to bring a group of volunteers or use the U-Clean-It stations, contact James at lmi@netwiz.net or call the LMI office at (510) 238-2290 and leave a message so that he can explain our policy for volunteering and assist you in proper training to participate in the Clean Lake Program.

Citizen Water Quality Report

Water quality was measured on March 6th, 2021 at the Lake Merritt Boating Center dock by Merritt College Microscopy student, Dante Malone.

Temperature: 17 degrees Celsius (degC) at the top (62 deg Fahrenheit) /15 degC at the bottom (59 deg Fahrenheit) NORMAL

Dissolved Oxygen 7 parts per million (ppm) at the top/7 ppm at the bottom. (Meets EPA minimum standard of 5 ppm)

Salinity 30 parts per thousand (ppt) top/31 ppt bottom (**Saline or salty for this time of year**)

pH: 7 at the top/7 at the bottom NORMAL

Secchi Depth (water clarity) 140 cm, Depth 180 cm NORMAL



At right, Dante Malone from Merritt College measures the lake's salinity with a salinity refractometer (Rotary Nature Center Friends photo).



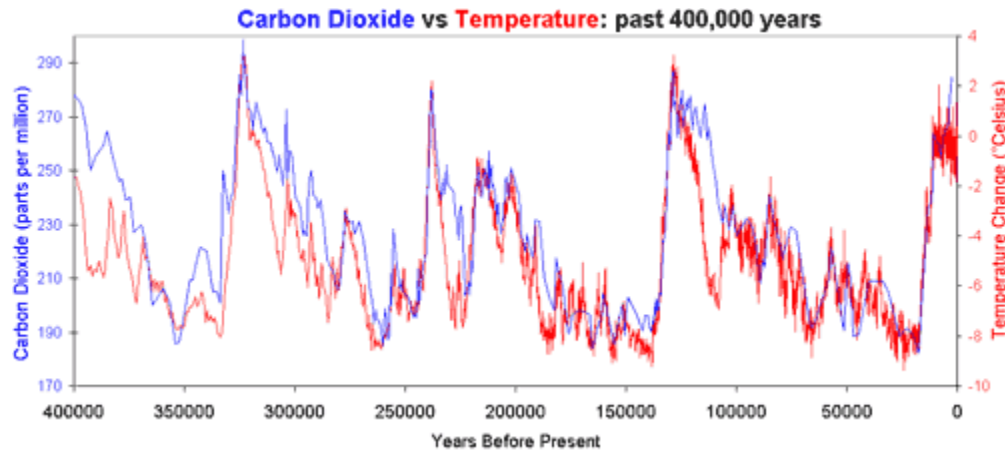
Artwork by Adrian Cotter; Design by Kerstin Fermin

Let everyone remember, Lakeside Park is a wildlife refuge! The Lake Merritt Institute funded a new banner at the Fairyland entrance to the Park. Installed by LMI Board Members Christine Brigagliano and Katie Noonan and Rotary Nature Center Friends Co-chair with Katie, David Wofford.

CLIMATE CORNER: CLIMATE CHANGE – THE

BASICS, and WHAT IS A PRICE ON CARBON? A guest editorial by Dr. Richard Bailey

I was born in 1944, which is 106 parts per million (ppm) of carbon dioxide ago. By that I mean that the level of this greenhouse gas in the atmosphere was 310 then, and is 416 now. This increase is important, because carbon dioxide is the earth's thermostat.



In this graph of data from Antarctic ice cores, it is obvious that carbon dioxide and temperature are related. A more detailed explanation of this relationship can be found at (1) as shown below.

<https://skepticalscience.com/co2-lags-temperature.htm>

Another way to view the interaction of carbon and temperature is to consider the following:

Carbon levels were about 160 during the ice ages, 280 before the industrial revolution, 315 in 1960, and rose to 395 in 2013.

Due to positive feedbacks, levels of 450 will be past the tipping point of no return. At the present rate of increase, we will hit that in about 2037! Most life as we know it will be unstable at 550. At 1,000, civilization may be extinct. Levels on Mars (300) and distance from the sun make it too cold. On Venus, existing levels of 960,000 would melt lead.

Note that the above graph ends with a carbon level of 290, but as of this month, it is 416 and rising by more than 2 ppm per year (including the seasonal variation of about 10). Not only that, the rate of change is increasing. In other words, our current setting of the thermostat is far off the scale, and the longer it stays there, the hotter the earth will get. It is happening faster each year because humans are putting carbon into the air faster than it can be removed. In the past, our planet was hot enough to melt the ice caps, and for cold blooded life forms like amphibians to survive north of the Arctic circle. If it gets there again, civilization would have long since collapsed. That could take hundreds of years to happen, but the immediate effects are now well known (fire, smoke, disease, sea level rise, storms, flooding, food and water shortages, immigration etc.).

Our best data indicate that the safe level of carbon is 350 ppm. Unless we can return to that level, the warming (and bad things) will continue to get worse. So how do we get there?

What Is A Price on Carbon? Twenty-eight Nobel laureate economists, four former Chairs of the Federal Reserve, and fifteen former Chairs of the Council of Economic Advisers all agree that a carbon tax offers the most cost-effective lever to reduce carbon emissions at the scale and speed that is necessary. But surprisingly, this solution has been opposed by not only anti-tax conservatives, but also by environmental organizations such as Greenpeace, 350.org and the Sierra Club. Why? They have claimed that carbon pricing is regressive (favors the rich), shields fossil fuel companies from liability, will not reduce emissions enough, and is not a substitute for regulations, subsidies, etc.

In his latest book "[The New Climate War.](#)" (2) Michael E. Mann tells us what a carbon tax is, and is not.

<https://michaelmann.net/books/climate-war>

- 1) It is not regressive. “In reality, whether a carbon tax is progressive or regressive depends on how it is designed. A fee-and-dividend method, for example, returns any revenue raised back to the people.”
- 2) It does not shield fossil fuel companies from legal liability for their actions. “While fossil fuel companies have lobbied for a bill that would do just that, none of the climate bills introduced in Congress have proposed to absolve fossil fuel companies of liability.” “It is simply a fallacy to equate carbon pricing with releasing fossil fuel interests from legal liability.”
- 3) It is not inadequate. That depends entirely on the magnitude of the tax.
- 4) It is not a silver bullet. Did anyone ever say that it was? In reality it is the foundation for many other actions to reduce climate emissions. For example, if carbon emissions are high, energy sources without emissions will be favored.

We Need Both

To those aware of the climate emergency, it is obvious that we need a wide variety of ways to lower carbon emissions. Although these include personal choices (giving up vehicles that use gasoline, recycling, a vegan diet, etc.) these solutions will only be effective if everyone does them, which will not happen.

Therefore, we need systemic, widely based solutions, including regulations to limit greenhouse gas emissions, reversal of government subsidies from fossil fuels to renewable energy, a Climate Corps, a national grid, agriculture that sequesters carbon, reforestation, and many more. Paramount of these is an annually increasing carbon tax with the money given back to the people, with no release of legal liability, and a border adjustment that prevents sending emissions offshore, and protects local jobs.

Put a carbon tax together with what the current administration is proposing and we have a shot at reaching the magic 350 level. But without a price on carbon, we are avoiding the best tool we have, and the odds will be tilted against us. One can only hope that environmental organizations will join the economists in their support of such. To do otherwise is shooting ourselves in the foot.

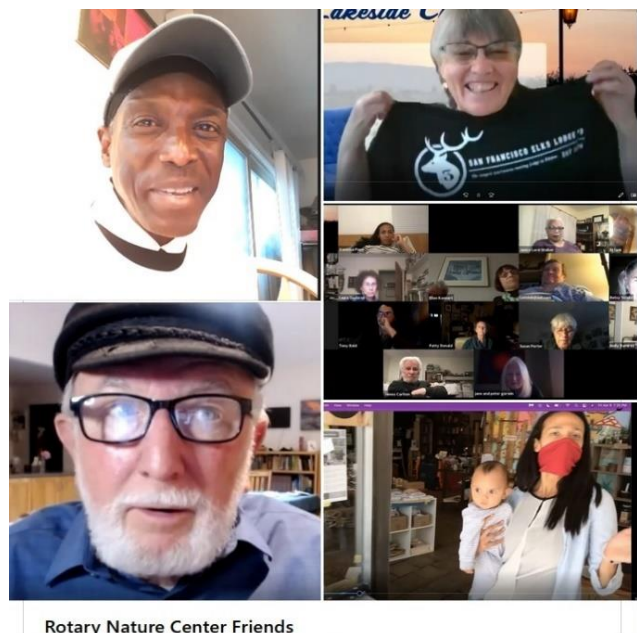
APRIL’S LAKESIDE CHAT #5 - Cheers to Dr. Bailey of The Lake Merritt Institute and Vanessa Pope MudLab Zero-Waste Café and Grocery Store at 440 Grand Ave for reaching over 150 people online with their inspirational message of stewardship of our lake community - both people and wildlife.

Click [HERE](#) to view YouTube recording.
<https://youtu.be/ddVMyZij27k>

MAY’S LAKESIDE CHAT #6 features Dr. Hoang Vuong, a young scientist who spent many hours at Lake Merritt in 2007 as a high school student testing water with in Oakland High School’s Environmental Science Academy.

REGISTER [HERE](#) Dr. Vuong’s talk is titled “What makes a bee a bee? Who they are and how to help them.”

<https://lakesidechat5-beesandmicrobiomes-drhoangvuong.eventbrite.com>



of

Clockwise from upper left: David Wofford, Katie Noonan, Vanessa Pope and Dr. Richard Bailey.

Everybody Finds Somebody at Lake Merritt - by Hilary Powers – Golden Gate Audubon Society

Especially in March! The still-unofficial 4th-Wednesday Golden Gate Audubon walk drew 13 birders – much less scary now with so many of us fully vaccinated – and the lake was as lively as it gets in these diminished days. The variety stays high and we resolutely avoid counting individuals, so we stay cheerful despite the ever-increasing amount of water between birds.

The bare island tree started out empty, but three gleaming black Double-crested Cormorants swooped up from the floats to pose near the biggest surviving nests – so it looks like we will have a season again this year. With any luck, we'll have another nine-nest colony, fitting into one tree and offering plenty of entertainment without raining further death onto the island.

Around by the Nature Center, we got our first look at a Green Heron in six months. The bird was standing unusually tall on a twist of roots on one of the islands, showing off its properly heron-long neck and helping us celebrate my scope's return to the walk for the first time since the initial lockdown.

The scavenger flock was in truly fine looks, with both Greater and Lesser Scaup drakes shining in white-winged perfection, despite the lack of hens to admire them. (The brown hens mostly stay well away from the islands.) A Hermit Thrush foraged near the corner of the bird paddock, still surprising despite showing up for a fourth straight month. The species hasn't graced a March walk since 2011 – and this time we saw two of them (or maybe one twice, but the other was near the monkey puzzle tree in the garden). Happy news, either way.

Northern Rough-winged Swallows swooped over the grass and water, flashing brown and cream. They look to be working closer to the islands now – at any rate, one darted out of the lake wall just below the playground, a good block west of where they nested last year.



Photo by John Kirkmire

Down toward El Embarcadero, we saw several Eared Grebes near or in full breeding plumage, gold fans sparkling beside their beady red eyes – worth a trip to the lake all by themselves. The Ruddy Duck drakes were also well into their astonishing transformation from secretive brownish slate to brilliant blue-billed auburn, making the black caps and white cheeks they always wear stand out rather than blend into the scenery.

Checking out the floats one last time before crossing Bellevue into the park, I gasped reverently, “That’s a merganser!” And not just any merganser (we’ve had them a lot recently, though not in March for almost a decade) but a fan-capped brown Hooded Merganser hen, missing from the walk since 2016. And while I was burbling and attempting to adjust the scope for a really good look, a sleek black head lifted from behind the floats and looked around, showing off deep white crescents on either cheek: a male *Barrow’s Goldeneye*, never glimpsed on a March walk and only once on any walk since 2019. He bobbed up several times, possibly dancing for a hidden female, but I don’t think anyone else spotted him – I had the scope and I wasn’t letting go of it.

Lakeside Park offered lots of tree-bird action, including pretty much all the seasonal regulars. The highlights were a pair of Oak Titmice nesting in what looked like a tiny crack in a young oak, about 5' from a big fat obvious hole (dunno if anyone else was using that or not), and a pair of Bushtits building their nest as we watched, weaving bits of this and that into the foot-long tube. They were unusually easy to see once spotted, in a *hmmph-mp* tree only about *mumble* feet off the ground – a real treat for those who were there, and not to be pinpointed in more detail for those who weren't. A second pair of Bushtits collected spider webs in the garden,

but we couldn't figure out where they were taking their loot.

And a Cooper's Hawk capped off the morning, landing high in a pine tree to survey lunch prospects for several happily crow-free minutes. That was another delight for the long-absent scope – in a morning chock-full of delights that included a full 50 species of birds (a many- March's record) and some of the prettiest weather in months at Lake Merritt, where almost any kind of weather makes for a delightful day, though rarely so delightful as this....

*******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. ***

IN MEMORIAM: Charles E. Ford passed away quietly in the morning of March 23, 2021. He was a founding field faculty and Chair of one of the first interdisciplinary environmental and ecology programs in the United States. Under his chairmanship, the Environmental Sciences Department at Merritt College in Oakland, California hosted the first Higher Education degree in the new science of Ecological Restoration. Charles Ford was also the founding Director of the student built Self Reliant House Environmental Center which was the first dedicated environmental studies building on any Community College campus and one of the first on any college campus. Charles was a Marine Biologist who operated one of the few marine research vessels available to undergraduates. He offered field studies at Lake Merritt in downtown Oakland which gave hands on science access to high school and college students.



CHARLES E. FORD
Founder of Merritt College's Environmental Management & Technology Program (ENVMT) and Founding Director of Self-Reliant House.



Under Ford's leadership, Merritt College produced reports on water quality and biota of Lake Merritt that are archived in the Lake Merritt Institute Library. He was a generous and enthusiastic teacher and naturalist and will be missed.

At right: Merritt Professor Charles Ford in 1994, reviewing data from his Urban Ecology course, the first of its type that began in 1962.



TIME TO MAKE A CHARITABLE DONATION TO THE LAKE MERRITT

The Lake Merritt Institute is a 501(c)3 non-profit charity, founded in 1992. We educate the public about urban runoff and involve them in solving the problem. Result: Volunteers remove [thousands of gallons](#) of trash each year that would otherwise increase the world ocean's plastics crisis *and* Oakland's regulatory liability for water quality.

LMI is funded by the City of Oakland and by donations from caring people like you. Help us preserve our beautiful and hard-working lake in the heart of downtown Oakland. You can download an application at lakemerrittinstitute.org. A membership application is at the end of this issue.

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

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