

The Lake Merritt Institute

A COMMUNITY BASED, NON-PROFIT CORPORATION

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GOODBYE ALGAE: Spring comes to aquatic environments just as it does to the land. As day length increases and the sun rises higher in the sky, it's light penetrates the water more easily, bringing warmth and energy. Ready and waiting to use this bonanza is the algae in Lake Merritt. Slowly at first, but then seemingly within days, it flourishes in the shallow water shelf out to twenty feet or more from the shoreline.



Suddenly, where there was only open water, a mass of green plant material appears, supporting tiny fish and a host of other marine life. All is fine until there is too much of it. Then the surface layer is scorched by the sun and dies. Small flies infest the decaying vegetation. Smells exude. When it dominates the shoreline and begins to use up too much oxygen at night, it reaches a nuisance level.

Enter the harvester boat. Each year the City contracts with Aquatic Environments to bring these big, paddle wheeled water mowers to our lake. Working diligently, typically for a whole week, the operator scoops up the masses of green on a moving screen, then unloads it to a trailer to be hauled away. It will grow back, but the great spring fling is over, and later blooms will be smaller and, we hope, not at nuisance levels. But if they are, the big boat will be back.

CLIMATE CORNER - A MESSAGE FROM THE LAKE: Purple bacteria in Lake Merritt; is it an echo from the past? Is it a sign of things to come? This much is known.

Some types of purple bacteria exist in warm, saline, stagnant, low oxygen waters illuminated by sunlight. These environments are few and far between, but when widgeon grass grew in Lake Merritt (see last month's issue) it would wash up along the shoreline, rot and die. Large masses of this dying plant life restricted water circulation, creating shallow areas where evaporation increased salinity, sunlight warmed the water and decaying vegetation used up oxygen. Voila, perfect conditions for purple bacteria, which

can be seen growing at Lake Merritt in a photo (on page 20 of “A Year in the Life of Lake Merritt”) at our website.

These were also conditions that prevailed in ocean waters 250 million years ago during a mass extinction of life on Earth when 95% of all marine species and 70% of all terrestrial vertebrate species on the planet vanished from the fossil record! How did these dead-like oceans come to be? From what is known, massive amounts of carbon dioxide and dominance of ocean waters by purple and green bacteria were associated with this time. Several theories exist as the cause of these conditions, including volcanism, asteroid impact, and release of methane to the atmosphere (such as could happen if the enormous methane hydrate deposits on the sea floor are released).



Purple bacteria, they are still here; waiting for the right conditions. So the next time you see them in Lake Merritt, remember what our planet was like when they dominated the oceans. Hopefully, history will not repeat itself.

ISLAND HABITATS TO BE RESTORED: When the wind is right, blowing from the bird islands to shore, you can smell the guano. Concentrated in the soil from decades of bird droppings on Lake Merritt’s five islands, it is no longer healthy for plant life. Salt levels are high; too high, and trees have died as a result. But vegetation (and decent soil) will be restored this fall when a restoration project begins. Recently put out to bid, the engineer’s estimate is for \$600,000 of materials and labor. In addition to new landscaping there will also be shoreline stabilization and installation of an irrigation system to prevent future build up of bird droppings. Completion will end 90 days from the start date to minimize disruption during the winter migration. The squawking you hear will be birds thanking our friends at the Coastal Conservancy for helping to fund this valuable project.



Left: One of the five islands.

Right: The residence on the left will be restored.



INSTITUTE WEBSITE TO BE REVISED: Look for it in mid to late July. The new, improved, revised and wonderful Institute website will be on line by then, including more information about the Lake, videos and a section on current information. You will also be able to renew your membership or make donations on line via PayPal.

TRASH TOTALS FOR 2010: Following are the pounds of trash removed from the Lake by volunteers and staff for 2010. Numbers in parentheses are inches of rain received at our gauge that month.

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|---------|--------------|----------|---------------|-------|--------------|
| January | 6,740 (5.62) | February | 3,400 (2.25) | March | 4,060 (2.33) |
| April – | 3,900 (2.60) | May | 2,240 (1.03). | | |

As you can see, rain brings trash to the Lake from the watershed. So, do your part. Don't litter, and if you see a litterbug, scowl at it! Social pressure works wonders.

TRAINING VIDEO TO BE PRODUCED: Students from the Piedmont High Key Club are working on a short video that will be used to train first time volunteers. Based on their last video (Urban Runoff at Lake Merritt – see parts I and II at our website) we expect great things. Included will be how to find the office, sign in procedures and safety rules, locations of our “U-Clean-It” boxes and how to find them, instructions on how to safely use the nets, use of the trash bags and barrels, “netscoop” techniques to catch trash and how to have fun cleaning up.

BIRD COLUMN: Five-Heron Day at Lake Merritt

June's fourth-Wednesday Golden Gate Audubon walk was treated to the sight of all but one of the herons in Northern California. No Cattle Egrets, but we had the usual foraging Black-crowned Night Herons and Snowy Egrets, and a couple of Great Blue Herons, and a lovely cinnamon-and-cream Green Heron. And ten or a dozen Great Egrets, sitting around on the rightmost island and looking for all the world like a rookery. It's late in the year for breeding, but these birds were in full breeding plumage (long sweeps of white feathers like bridal veils), and at least one pair included a member crouched down and looking very broody....

It can't be. But I can't help hoping.

Other than that - and the way the Double-crested Cormorant rookery is still blasting along, with rows of new fledglings on the floats and youngsters of all ages in the nests - the most notable sight on the lake was the Mallard population: the males are in what's called "eclipse plumage" - looking very butch without their shiny green head feathers.

The Canada Geese were a little scarce for the time of year - but perhaps it's just early days yet. The molt migration is definitely in progress, as geese from miles around show up to

drop their wing and tail feathers. (Unlike most birds, these shuck the whole set at once and spend a couple of flightless weeks waiting for the new one to grow in. If you're a goose, Lake Merritt is ideal for that, with good lawns for grazing and reasonable dog controls; if you're in charge of the park or want to play on the lawn, you're out of luck.)

The winter migrants are pretty well gone - only one little black American Coot was swimming around by the islands, bobbing its white beak back and forth and grumbling its old-coot complaint. So it'll be quiet - well, not quiet, but thin of species count - on the water till next September. On the other hand, summer has brought us another family of White Pelicans to visit our rescue bird; the lake seems to be becoming a regular stop for them.

In the woods across Bellevue, the species count was also down - but the population of Anna's Hummingbirds was huge. It was hard to look up without seeing a diving buzz-ball. Just as well they're so small.... Lots of Bushtits like flying flocks of mice, lots of red and dappled House Finches and lots of House Sparrows, too - they're said to be declining in numbers elsewhere, but Lake Merritt is still chirping and jumping with them. One Bewick's Wren was making enough noise for a flock, high in a tree by Children's Fairyland where I've never seen one before, and two kinds of swallows - Northern Rough-winged and Violet-green - were hunting over the grassy field around the brass whatsis.

And the sun was out and a light breeze blowing, and all in all, yet another wonderful day at Lake Merritt, a stand-out even though every day is a wonderful day at the lake.

RECENT SCENES FROM LAKE MERRITT:



“ Save the Bay” classes explore Lake Merritt



Loading algae from the harvester boat

This edition of “Tidings” was published entirely with private funding donated to the Lake Merritt Institute. To contribute to the Institute, contact us at 510-238-2290 or 568 Bellevue Avenue, Oakland, CA 94610.