**Mid-September Magic - Bioluminescence!**

Tipped off by local rovers, Naturalist Damon Tighe documented a magical display of bioluminescence in the lake this September. The light show was provided by microscopic 1-celled plankton called dinoflagellates whose population explodes in warm summer waters.

The light is so energetically expensive that each cell can only make one flash per 24 hour period. How can the light be an evolutionary advantage to the dinoflagellate? Triggered by mechanical stimulation, flashing is thought to help the dinoflagellate avoid being eaten by startling predators or by illuminating *their* predators and attracting the larger predators to eat them. See Damon’s October 2nd article in *Bay Nature* for more fascinating natural history details.

Left: Damon captured and photographed the microorganisms responsible, a dinoflagellate in the suborder *Gonyaulaceae*, different from the species known to cause bioluminescence along the California Coast at Pt. Reyes and Tomales Bay.

At Right, Damon’s map describes the distribution and intensity of the bioluminescence that he observed. They were concentrated in the Trestle Glen arm of the lake, suggesting that tidal currents were strongest there. This is consistent with the chronically lower dissolved oxygen in the western Glen Echo arm. Dr. Bailey remarked that a bubbler system in the Glen Echo arm might have the greatest impact on the lake’s low oxygen problems.

LMI IN September: 580 lbs. of trash were removed from the lake in September totaling 19,400 pounds total so far in 2018! Fifteen additional bags of trash were removed by LMI volunteers on Creek to Bay Day. LMI Director James Robinson and LMI Staff hosted 108 volunteers, made 2 educational presentations. (0.00 inches rain recorded by LMI rain gauge).
UPDATE: Homeless at Lake Merritt – Costs and Benefits of Shelter Communities

Camping in the parklands along the lake and tidal channel at Lake Merritt is illegal. It is a misdemeanor subject to fines that has not been strictly enforced in the rising tide of homelessness in the City and our nation. The encampments have changed the character and soundscape of the open space and have increased fire risks. At the very least, they have changed the nature of trash along the shoreline. Thoughtful people struggle to balance compassion for people, concern for endangered wildlife and what is realistic in approaching the problem.

In September, The Tidings publicized a Community Meeting hosted by Councilmembers Abel Guillen and Lynette McElhaney to discuss Homelessness at Lake Merritt and to hear City Administrator’s Assistant Joe DeVries explain a proposed action to address the needs of unsheltered residents. The City proposed to set up a “community cabin village” of tuff sheds on the Henry J. Kaiser Auditorium parking lot on the Lake Merritt Channel. The village would accommodate forty homeless people and provide two meals a day, weekly showers and clean bathrooms. Social services will also be provided to the residents to “navigate” into more permanent housing and jobs. The cost is about $750,000 a year to operate with money coming from private donations, Oakland, Alameda County and Kaiser Permanente.

Dr. Richard Bailey, founder and retired director of the Lake Merritt Institute, forcefully argued that locating the shelter community on the tidal slough (the Channel) would imperil water quality in the Lake and Bay, critical wildlife habitat and make it more difficult for the City’s to meet its regulatory trash reduction goals. He suggested relocating the homeless to another site such as the Oakland Coliseum.

Measure DD and Watershed Program Manager, Lesley Estes submitted a memo to the Encampment Management Team and Homeless Encampment Task Force on August 23rd warning of the impacts of encampments on environmentally critical areas including mitigation areas under regulatory jurisdiction. The memo detailed impacts related to physical destruction of trees, plants and fencing and widespread use of areas as latrines. She provided dollars and cents figures for the financial impact on the City:

- **$530,000** to extend a Water Quality Certification Permit obtained from the SF Bay Regional Water Quality Control Board for the Measure DD-funded wetland between 10th and 12th Streets and undertake another 3-year cycle of replanting, maintenance and monitoring.
- **$10,000** per day potential fines if wetland success criteria are not met or to provide long-term planting and monitoring.
- **$10,000** per day potential fines if the City cannot maintain the required stormwater treatment facilities under the Municipal Regional Permit.

The cabin village proposal was passed by City Council in a close vote on September 17th. Mayor Libby Schaaf thanked the Council and acknowledged “the tuff shed sites are part of an ongoing pilot program” and “are a compassionate and temporary intervention strategy designed to assist people on a path to housing.”

Skeptics point out that the new cabins will not be able to serve all the homeless living at Lake Merritt, estimated to be sixty to eighty people, and the cost is high. Journalists have reported that the sheds do not appeal to many homeless residents who prefer the freedom and privacy of the encampments. However, moving encampments away from the water and providing sanitation and human services for homeless citizens, however inadequate in relation to magnitude of the city-wide and national need, can only help to make things better.
CLIMATE CORNER: CLIMATE CORNER - CAP AND TRADE IS SECOND BEST
A Guest editorial by Dr. Richard Bailey

California’s main way of reducing climate change is by placing a limit (a cap) on carbon emissions, assigning allowances for those emissions to select industries, and letting them buy and sell (trade) them. It is not a bad system, and certainly better than the zilch we have been getting from our current federal administration. But we can do better. How? By enacting a national carbon fee and dividend. Both programs collect money from fossil fuel companies, but how it is collected, and how the money is used varies greatly. Consider the following comparison.

<table>
<thead>
<tr>
<th>Cap and Trade</th>
<th>Carbon Fee and Dividend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unpredictable price of carbon emissions.</td>
<td>Provides a predictable carbon price signal.</td>
</tr>
<tr>
<td>Unmanageable price variation in Europe.</td>
<td>Gives an equal, rising, monthly dividend check to every American household.</td>
</tr>
<tr>
<td>No consensus on use of the money.</td>
<td>Stimulates the entire economy.</td>
</tr>
<tr>
<td>No wide spread economic stimulus.</td>
<td>More politically acceptable.</td>
</tr>
<tr>
<td>Carbon tax creates government programs; some conservatives won’t vote for that.</td>
<td>Includes a border adjustment.</td>
</tr>
<tr>
<td>Cap and trade bill failed in Congress in 2009.</td>
<td>Easier international deployment.</td>
</tr>
<tr>
<td>No border adjustment.</td>
<td>Lowers carbon emissions from all sources.</td>
</tr>
<tr>
<td>Too complex for many nations.</td>
<td>Greater reduction in carbon emissions.</td>
</tr>
<tr>
<td>May not apply equally to all carbon sources.</td>
<td>Lowers carbon emissions faster.</td>
</tr>
<tr>
<td>Trading schemes are very complicated.</td>
<td>Is working well in British Columbia, Canada.</td>
</tr>
<tr>
<td>Cap may be set too high, or too low.</td>
<td>Does not fund “technology of the day.”</td>
</tr>
<tr>
<td>Substitutes money for carbon reduction.</td>
<td>Can work with, but does not require command and control regulations.</td>
</tr>
<tr>
<td></td>
<td>Provides an economy wide incentive for lowering carbon emissions.</td>
</tr>
</tbody>
</table>

Our cap and trade system is good, but California and its limited trading partners cannot solve the climate problem alone. We must have global wide price on carbon emissions. Without that, others will just use more of the carbon that we don’t.

A national fee on carbon emissions, with a border adjustment applied to imports from countries without such a fee, would result in international adoption of a price on carbon. Deployment of this money in equal amounts would both stimulate the economy, and be socially just. Starting with a low fee of $15 per ton will not shock the economy, and increasing the fee by $10 per year will quickly make it effective.

For more information on how you can support a carbon fee and dividend, go to: https://citizensclimatelobby.org/

https://www.flickr.com/photos/takver/5798869943
Melbourne World Environment Day
Hazy Day at Lake Merritt - by Hilary Powers – Golden Gate Audubon Society

Sunny but weird weather greeted the 30-odd attendees at the September Golden Gate Audubon walk: the sky seemed clear, but close to the water we had so much light-scatter that it felt like looking at the islands through a pane of dusty glass. A little of that was altogether enough, so after enjoying such nearby delights as a couple of dozen Snowy Egrets and six or eight Great Egrets (big and bigger white birds) on the islands, a hundred or so Double-crested Cormorants (mostly from this year’s hatch) sitting on the floats, and a female Belted Kingfisher that flew in and posed for us, we headed across Bellevue and into the park.

There the runaway highlight was a raiding party of three American Crows mobbing a Red-shouldered Hawk. The aerial dogfight – which the crows were not getting all their own way – went round and round and back and forth, starting from behind some trees across the meadow that used to have a plaque in the middle and passing more or less straight above us. Later we spotted what was probably the same hawk, alone and hyper-alert high in a thick pine tree in the garden.

We also had our first Townsend’s Warbler (the one with the burglar’s mask) of the season. A party of five California Scrub Jays was strung across the top of a line of trees, all shining so brightly white and dark that a birder new to the area asked if they were magpies. That would have been a real find - we don’t get magpies here, and if we did, they’d probably be the Yellow-billed variety endemic from eastern Contra Costa County through the Sacramento area, as opposed to the Black-billed Magpies found everywhere else that has magpies at all. But the jays – more than the group had ever encountered together in the past – were delight enough, especially when they all took off and flew side by side across the field and over our heads.

Besides the afore-mentioned hawk, the garden treated us to some good looks at Bewick’s Wrens (always there, often heard but not seen), White-crowned Sparrows (newly arrived for the winter), and brilliantly yellow-breasted Lesser Goldfinches. We also enjoyed the usual host of Anna’s Hummingbirds, House Finches, and California Towhees.

The light was marginally less dreadful when we returned to the lake, where we found a Green Heron and a Great Blue Heron on one of the islands - making it a five-heron day, with the egrets and the ever-present Black-crowned Night-Herons. None of the winter ducks had arrived, but we did see a lot of Pied-billed Grebes and one gray powder-puff Eared Grebe. The Western Bluebird family put in an appearance in the oaks along Bellevue, bringing the total for the day to 38 species and winding up yet another satisfying day at Lake Merritt, where every day is a good day to be there, haze or no....

***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.***
High *E. coli* in the Glen Echo Arm of the Lake

In mid-August, the Environmental Protection Agency notified the City of Oakland and the Regional Water Quality Board of unusually high levels of *E.coli* bacteria in water samples collected by Citizen Monitors in Glen Echo Creek and the upper Glen Echo arm of the lake. Two five-week sampling runs have been completed since February. Several (14) sites around the Lake are selected for sample collection with the goal of providing snapshot comparisons of coliform counts and general water conditions during wet and dry seasons. The samples were analyzed by the E.P.A. Region 9 Laboratory in Richmond according to an established protocol for sampling bacteria in surface waters.

The City responded and is continuing to study the situation:

- Sewer crews investigated the affected areas for potential sources of sewage, but have found none yet. They may continue to look upstream of the Harrison St. culvert for sewage releases.
- A professional water quality consultant was engaged to confirm initial coliform/*E.coli* observations in the affected areas and to test for additional factors including *Enterococcus*, a salt-water resistant bacteria often used to test brackish water environments.

Results will be received in a mid-October.

What is the source of high bacteria levels in Lake Merritt? It is a complicated story – an ever-changing detective story that hasn’t reached a conclusion. It could be a combination of leaky sewer pipes, pet waste, lack of sanitation in homeless encampments, and even wildlife. The *E. coli* bacteria that have been detected are not themselves a health risk to people, but they indicate the possible presence of human sewage, a serious agent of disease transmission.

Warm blooded animals such as dogs, cats, rats, raccoons and opossums are plentiful in and around an urban wildlife refuge like Lake Merritt. They could also introduce significant amounts of *E. coli* into the water. Lake Merritt has been declared an “impaired body of water” by the EPA because of low dissolved oxygen. Low dissolved oxygen can be a consequence of excess nutrient input from human sources such as fertilizers, sewage and organic trash, so finding the source of elevated levels of *E. coli* is important. A high-tech test called microbial source tracking could be used to tell if the *E. coli* came from birds, or mammals, but it is expensive.

The Tidings editor, Katie Noonan, followed along as Jennifer Stern, Environmental Stewardship Analyst with the City of Oakland and water quality consultant Lee Hovey collected water samples. At Glen Echo Creek by Grand and Harrison, a County contamination advisory has been posted since last July. The water below is chalky gray and smelled, but there are no tell-tale sewage paper products. Detritus from a homeless encampment, piled against the metal fence on the opposite bank also smelled. As Lee lowered a cup on a long pole into the water, we were startled by a loud “plop” delivering a rather massive bird poop into the water. Above, a juvenile Black Crowned Night Heron and 2 adults moved in the branches. How much *E. coli* is deposited by Night Herons into this stagnant section of creek? Or the cormorants roosting around storm drain outlets?

Thank you to the E.P.A. Citizen Monitors and to the City of Oakland for continuing to investigate. Results and more photos available in The Tidings email edition.
THANK YOU TO OUR SEPTEMBER VOLUNTEERS!  Volunteer groups in September included Treasury Wines Estates, St. Paul’s Episcopal Middle School, Wells Fargo, UC Berkeley Circle K International, American Indian High School, Piedmont High School, Our U-Clean-It self-organized teams, and the LMI A-TEAM regulars. We appreciate your efforts and community spirit. Great Job!

Treasury Wines Estates volunteers

James Robinson, LMI Director, and Karen Rolfes, Vice President of Treasury Wines Estates

Besides providing a large enthusiastic group of volunteers to clean the lake, Treasury Wines Estates donated to LMI as part of their corporate social responsibility. The company also matched the donations of their employees. Lake Merritt Institute’s Executive Director James Robinson gave a presentation about Lake Merritt and the harmful effects of urban run-off. Thank you!

St. Paul’s Episcopal Middle School

At St. Paul’s Episcopal Middle School cleaning Lake Merritt is part of the curriculum.

Mr. Faulkner and Mr. Bald’s 6th grade classes at St. Paul’s Episcopal Middle School began water testing at the Rotary Nature Center and at the LMBC dock for the 2018-2019 year.

Thank you!
Dumped Scooters – A Shame and a Strain on Clean Lake Effort!

An alarming number of eScooters have ended up in Lake Merritt. Director James Robinson of The Lake Merritt Institute has started keeping a tally of scooters removed from the shoreline as part of the Clean Lake Program – thirty-six since mid-September, and increasing each day. The looming questions are 1) What to do with the drowned scooters? 2) Will the companies who offer eScooter services accept responsibility to the visual and chemical pollution caused by their product, and 3) Will the Lake Merritt Institute receive additional compensation for the extra effort and time that is needed to deal with the problem.

It is reaching the absurd! LMI’s volunteers recently pulled a smoking Lime scooter from the lake. A-Team volunteer Miriam Valesco noted “There were so many scooters today, we weren't sure where to put them so they could be picked up by the LMI truck. It's difficult and time consuming to drag them to one spot for pick up. Several walkers hailed us down to tell us about scooters around the Lake. We'll need to double our volunteers to take care of this problem. If this continues, I see us spending our time picking up scooters instead of trash.”

A plan needs to be developed with City and eScooter companies to educate their patrons and modify and modify behavior to protect the Jewell of Oakland for wildlife and people. The current mess is not sustainable.

**First Rain Mishap!** Too big for LMI to deal with.

From James: We almost had a larger object to remove from the lake....Picture attached below taken by Helen Hutchison. For some reason rain makes people drive faster, I've never understood this.
Oakland Creek to Bay Day had a total of 58 sites this year, a new record! More than 1,750 volunteers contributed an estimated 5,434 hours, including the Friday and Sunday events. Volunteers removed 230 cubic yards of green waste and 243 cubic yards of trash (about 1,500 bags) from Oakland’s streets, parks, creeks and shoreline! Also, Track It Forward reports included 36 storm drains cleared on Oakland Creek to Bay Day. Oakland is cleaner, greener, and stronger for these efforts, which also protect San Francisco Bay and the Pacific Ocean. By hosting cleanups across Oakland you were instrumental in intercepting trash from entering local waterways – creeks, Lake Merritt, the Oakland Estuary, SF Bay and the Pacific Ocean. You also contributed to increasing public awareness of how trash impacts our local waterways.

Data from the California Coastal Commission shows that approximately 80% of all trash found in oceans and beaches originate on land, transported by storm water and creeks out to sea. This trash blights our communities and environment and threatens our own health and the health and wellbeing of wildlife from creek, to bay to ocean. Keeping trash out of our streets and creeks keeps our waterways flowing and clean, preventing flooding, pollution, and trash from harming wildlife, blighting our beaches, and impairing our access to clean and safe water.

As part of International Coastal Cleanup Day, Oakland Creek to Bay Day volunteers joined with thousands of others in trash removal and beautification of waterways and shorelines across California, the nation, and in about 100 participating countries. In California, over 1,000 sites in 55 of California’s 58 counties hosted cleanup projects. With 75% of these projects reporting, the totals are 53,073 volunteers removed 698,931 pounds of trash and 35,674 pounds of recyclables!

Thank you for your dedication and great service to the community and the environment over the Creek to Bay Day weekend!

PHOTOS:

Great job!

LOVE YOUR LAKE! ☺️
MORE CREEK-TO-BAY DAY PHOTOS

LMI focused cleanup efforts at the Lake Merritt Amphitheater beach area.

At the Rotary Nature Center:

Volunteers included OUSD Science Specialist, Sarah Pipping, David Wofford of the Oakland Museum, Oakland Tech Teacher Joe Senn and his students as well as many other Rotary Nature Center Friends.

Mayor Schaaf stopped by to thank our Creek-to-Bay Day volunteers after helping to launch the International Dragon Boat Races!
THANK YOU TO OUR SEPTEMBER VOLUNTEERS!  Volunteer groups in September included Treasury Wines Estates, St. Paul’s Episcopal Middle School, Wells Fargo, UC Berkeley Circle K International, American Indian High School, Piedmont High School, Our U-Clean-It self-organized teams, and the LMI A-TEAM regulars. We appreciate your efforts and community spirit. Great Job!

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E. coli in the Lake - Results of 2018 E.P.A. Citizen Monitoring

Here are the final results of the citizen monitoring effort in Lake Merritt in the WET season (from February 21st to March 21st 2018) and in the DRY season (from July 30th to September 6th 2018). The readings for each sampling site are shown by date and then the geometric mean of those readings in the highlighted bottom row. The target water quality values or standards apply to the geometric mean, a way of looking at the data which minimizes the effects of very high and very low values.

<table>
<thead>
<tr>
<th>Station Number</th>
<th>19th St.</th>
<th>20th St.</th>
<th>21st St.</th>
<th>Outfall 56</th>
<th>Glen Echo Bridge</th>
<th>Glen Echo Lake</th>
<th>Bandstand</th>
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</thead>
<tbody>
<tr>
<td>E. coli (7/30/18)</td>
<td>30</td>
<td>&lt;10</td>
<td>1800</td>
<td>29000</td>
<td>24000</td>
<td>20000</td>
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<td>E. coli (8/16/18)</td>
<td>50</td>
<td>20</td>
<td>620</td>
<td>10000</td>
<td>&gt;24000</td>
<td>&gt;24000</td>
<td>10000</td>
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<td>4600</td>
<td>580</td>
<td>2200</td>
<td>3100</td>
<td>24000</td>
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<td>370</td>
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<td>90</td>
<td>90</td>
<td>&gt;24000</td>
<td>930</td>
<td>200000</td>
<td>130000</td>
<td>520</td>
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<td>E. coli (9/6/18)</td>
<td>40</td>
<td>10</td>
<td>1100</td>
<td>9200</td>
<td>21000</td>
<td>33000</td>
<td>230</td>
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<td>Geometric Mean E. coli</td>
<td>120</td>
<td>&lt;40</td>
<td>&gt;2300</td>
<td>3800</td>
<td>&gt;3600</td>
<td>&gt;35000</td>
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</table>

<table>
<thead>
<tr>
<th>Station Number</th>
<th>Dock</th>
<th>RNC-Outside</th>
<th>TG inside</th>
<th>TG outside</th>
<th>18th St.</th>
<th>1200 Lakeside</th>
<th>Laney</th>
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<tr>
<td>E. coli (7/30/18)</td>
<td>&lt;10</td>
<td>90</td>
<td>&gt;24000</td>
<td>n/a</td>
<td>50</td>
<td>10</td>
<td>n/a</td>
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<td>190</td>
<td>750</td>
<td>69000</td>
<td>4900</td>
<td>150</td>
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<td>150</td>
<td>52000</td>
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<td>10</td>
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<tr>
<td>Geometric Mean E. coli</td>
<td>&lt;64</td>
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<td>&gt;35000</td>
<td>n/a</td>
<td>45</td>
<td>&lt;18</td>
<td>29</td>
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</tbody>
</table>

Map of sampling sites for Citizen Monitoring Project
COMPARING WET AND DRY SEASONS

E.P.A. Citizen Monitoring for surface water bacteria was conducted for five consecutive weeks in each season. The chart below shows the geometric means of E. coli for each sampling site. The vertical scale has been transformed into a Log$_{10}$ scale so that the full range of concentrations can be seen. The dashed line indicates the acceptable limit for E.coli for recreational waters (not for swimming or prolonged contact) of 430 E. coli/100mL. The dotted line shows the limit for contact activities like swimming of 125 E.coli/100mL.

We can see that some places in Lake Merritt have concentrations so low (below the dotted line) they might be considered swimmable --- but there is a lot of variation from day to day at each place depending on tides and currents, among other things. **Swimming is not permitted at any time in the lake!**

During the WET season, most sampling sites exceeded the limit for both swimming and recreation (such as boating). Keep in mind, though, that all of the samples were taken within a few feet of the shore where storm drains empty and other potential sources of E. coli are prevalent. There are 62 storm drains emptying into Lake Merritt. In the middle of the lake where boating recreation occurs it is likely that concentrations would be much less because of dilution and destruction by uv light. E. coli doesn’t survive long in brackish water either. This may explain the lower concentrations at sampling sites in and near the Lake Merritt Channel in both seasons.

The elevated levels of E. coli that prompted concern in the DRY season are indicated by yellow exclamation points. What source or conditions are causing E.coli to be so high are being investigated by Oakland Department of Public Works and their water quality consultants. The jury is still out, and there could be multiple “culprits.”

**E.COLI CONCENTRATIONS IN LAKE MERRITT - 2018**
Thank you to the E.P.A. Labs in Richmond and the many volunteers who helped collect samples. Thank you to Jennifer Stern and The City of Oakland for following up on the findings. We look forward to results of tests for total coliforms, *E. coli* and *Enterococcus* bacteria when they become available.

Glen Echo Creek, one of the sites with elevated E. coli.

The Tidings editor, Katie Noonan, and Jennifer Stern watched as Lee Hovey sampled the sites of elevated *E. coli*.

Lee Hovey, City water quality consultant, takes a water sample.

A water contamination sign has been posted at Glen Echo Creek since July 30th.

Who me? Black-crowned Night-heron; Photo by Lee Aurich
REFERENCES for the October Newsletter articles

**Bioluminescence-the what and the why**
https://baynature.org/article/why-is-lake-merritt-turning-blue-at-night
https://baynature.org/article/enlightened-bioluminescence/
https://scripps.ucsd.edu/labs/mlatz/bioluminescence/dinoflagellates-and-red-tides/dinoflagellate-bioluminescence/
https://www.npca.org/articles/1774-nature-s-night-lights

http://lakemerrittinstitute.org/our-watershed/
Interesting environmental technology use for dinoflagellates

**Hazy Day at Lake Merritt** – Golden Gate Audubon Society
Snowy Egret photo - https://www.inaturalist.org/observations/14005488

**E. coli Citizen Monitoring Project**
The Tidings – August and March 2018 issues
USEPA Region 9 Laboratory Volunteer Monitoring of Surface Water for Bacteria SOP 1106 R7
FRIENDS of Sausal Creek  http://www.documents.sausalcreek.org/E_coli.pdf

https://www.ncbi.nlm.nih.gov/books/NBK190421/#indicators.Enterococci_as_Indicators_of

Microbial Source Tracking –
https://pubs.usgs.gov/tm/2005/tm2a3/#N10013
“*The term "microbial source tracking" refers to a group of analytical protocols used to determine the source of fecal contamination. As evidence, MST uses host-associated characteristics of various microorganisms present in feces; that is, physiological differences in hosts are expected to select for specific characteristics (such as adhesion factors, antibiotic resistance, temperature optima, and other metabolic traits) in associated enteric microorganisms.*”
https://sourceomolecular.com/?gclid=EAIaIQobChMIsoMixo4GH3jIVAtdkCh00uQuBEAAYASAAEGIp9fD_BwE

https://www.researchgate.net/publication/233667090_STORMWATER_BACTERIA_SOURCE_TRACING_AT_SEATTLE-TACOMA_INTERNATIONAL_AIRPORT
60% bird

**Homeless Update:**
Walk-through with Mayor Schaaf on September 13th
City officials say that tent encampments have caused over $500,000 in damages to a wetland restoration area, and that one camper’s fire nearly burned down the Rotary Nature Center on the north shore of the lake. “Our unsheltered residents deserve our support and compassion, but so do children who rely on the Junior Center of Art and Science (and) families who rely on Lake Merritt as the place to find refuge and connection with nature,” said Oakland Mayor Libby Schaaf.


Schaaf said the sites are part of an ongoing pilot program and "are a compassionate and temporary intervention strategy designed to assist people on a path to housing."

Lesley Estes’ Memorandum to Encampment Management Team below.
Memorandum

To: Encampment Management Team, Homeless Encampment Task Force
From: Lesley Estes
CC: Danny Lau
Date: August 17, 2018
Re: Impacts from Homeless Encampments at Peralta Park

This memo is to provide the Encampment Management Team (EMT) with information regarding the impacts of encampments on environmentally critical areas, including mitigation areas under regulatory jurisdiction in and near Peralta Park, and to request action to help alleviate those impacts. The main areas of concern include a restored wetland that was built as required mitigation for the Measure DD-funded 12th and the 10th Street bridge replacement projects, and two landscaped, stormwater quality treatment basins required by the City’s stormwater discharge permit. Information is provided on regulatory issues related to encampment impacts, required remedial actions and costs, and potential solutions to prevent future impacts. The accompanying map illustrates the location of impacts described below.

Encampment Impacts on Regulatory Compliance

Mitigation Wetland for 12th Street and 10th Street Projects
The City was required to obtain a Water Quality Certification permit from the San Francisco Bay Regional Water Quality Control Board (Regional Board) for the 12th Street and 10th Street Improvement Projects at Lake Merritt Channel (projects). The mitigation requirements of the still-active permit included building the tidal marsh in Peralta Park.

The permit provides five years to meet success criteria (such as less than 50% invasive species cover and greater than 51% native plant cover) by December 31, 2018. If the success criteria have not been met at the end of year five, planting, maintenance, and monitoring must continue until the success criteria have been met for a minimum of three consecutive years. The adjacent homeless encampments have severely impacted the City’s ability to meet the required success criteria. Key impacts observed include:

- Encampment residents have been using the upland portion of the mitigation wetland as an informal latrine for 3-4 years.
- Neither Public Works gardening crews nor Lake Merritt Weed Warriors volunteers have been able to consistently perform required invasive species management, a key component to meeting permit success criteria, due to the informal latrines.

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1 Other landscaped areas in the park are also impacted by the encampments and are described below.
• Public Works had to pay additional fees to the consulting firm hired to conduct permit-required monitoring to add field staff to address safety concerns associated with the encampments.
• The irrigation system has been broken due to tampering and trampling which has led to loss of plants.
• Upland wetland plants have been heavily trampled for informal latrine use. This has impacted plant survival and coverage and has made more room for invasive species.
• One encampment resident has been routinely observed tampering with the fencing used to exclude the geese who eat some of the plant species in the lower portion of the wetland near the shoreline. Uncontrolled geese impacts further impact the success of wetland plantings.

**Water Quality Treatment Facilities for 12th Street Project**
The Regional Board also required the City to install water quality treatment facilities for stormwater runoff from Lake Merritt Blvd. (formerly 12th street) in order to meet Municipal Regional Stormwater Permit (MRP) regulations. These facilities are currently being used as informal latrines, trash receptacles, and campsites, hindering the City’s ability to monitor and maintain them as required by the MRP.

**Additional Encampment Impacts in Peralta Park**
• Littering is a growing problem. Trash is present in the wetland and in the water quality treatment facilities. Parks maintenance are emptying trash receptacles in the park, but encampments prevent additional trash management.
• There was a fire on July 30, 2018, at one of the campsites at the park. At least one tree was destroyed in fire. There may be a greater wetland vegetation fire risk due to the proximity of the encampment.
• Encampment tents are currently located in a planted area of the park between the wetland and the parking lot. Tents and tarps create an impermeable surface over the root zone. This kills the understory and prevents air and water from reaching the tree roots. According to one volunteer, two trees have died as a result.

**Planned Actions and Costs to Improve Conditions**

To address encampment impacts to the mitigation wetland, Public Works must request an extension of the permit term and is planning to implement a planting replacement and fence installation project this December that will cost approximately $530,000. Actions include:
• Install new native plants
• Remove invasive plants
• Repair irrigation
• Add and repair geese exclusion fencing
• Install sturdy border fencing to deter use of the wetland as a latrine
• Continue monitoring and maintenance until success criteria have been met for three consecutive years.
Consequences of Not Meeting Regulatory Requirements

- If encampment residents continue to use the mitigation wetland as an informal latrine, the planned $530,000 remediation investment is likely to increase.
- Invasive species maintenance by Public Works and volunteers will continue to be a problem if informal latrines are re-established at the site after the areas is cleared and replanted.
- The City could be subject to fines of up to $10,000/day if it does not meet the required wetland success criteria and/or will be subject to a long-term cycle of planting and monitoring with no anticipated end date, for which there will be no identified funds when the Measure DD bond funding ends.
- The MRP requires the City to maintain the stormwater treatment facilities in the park, however, maintenance staff cannot enter the facilities due to safety and health concerns. This could result in fines of up to $10,000/day from the Regional Board.

Potential Solutions

- Based on the findings presented in this memo, it is recommended that the City implement a closure of the encampment in Peralta and the encampments under the Lake Merritt Boulevard bridge over the Lake Merritt Channel and under the 10th St. bridge.
- Relocate the unhoused communities to a different location in Oakland or into the nearby parking lot at the Henry J. Kaiser building.
- Use enforcement to prevent re-encampment.
- Provide portable bathrooms and portable hand washing stations in the park or build permanent bathrooms and sinks.
- Provide more trash receptacles.

Thank you for your consideration of these issues and any assistance you can provide in helping meet regulatory requirements.