The Splash

Spring-Summer 2018

General Meeting:

Tuesday, October 16
San Leandro Main Library
300 Estudillo Ave. 6:30-8:00 PM

Upcoming Events

Creek Cleanup

- 23rd Annual Oakland Creek to Bay Day
  Saturday, September 15, 2018
  Hegenberger Road Creek Access, Oakland

This Issue:

Fisheries Management Plan

In the Spring/Summer 2016 Splash, we reported about the seismic upgrade that EBMUD did to retrofit to the base of Lake Chabot Dam. This work was completed in fall of 2017. The dam is now estimated to withstand an earthquake of 7.0.

In short; existing fill *below the dam* could have settled up to 3 feet in a large earthquake event. 60,000 to 80,000 cubic yards of soil was treated with 'Cement Deep Soil Mixing' (CDSM) in which cement slurry was injected through drilling augers and mixed with the existing sluice fill in-place to form a system of interconnected, non-liquefiable walls that strengthened the sluice fill, and improved the seismic performance of the dam.

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As a condition of the retrofit, The California Department of Fish and Wildlife (CDFW) mandated that EBMUD obtain a permit (California Fish and Game Code section 1600 permit, for streambed alteration) for the ongoing operation of Lake Chabot and Upper San Leandro reservoirs. To obtain this permit, EBMUD is developing a comprehensive fisheries management plan for the San Leandro Creek watershed. This mandate requires water companies to assess how their dams are affecting wildlife that have been blocked access to important and historical waterways. EBMUD hired engineering firm ESA to do a study of existing EBMUD fisheries and hydrologic data, and identify data gaps that must be filled to guide the development of management plan goals. The data collected as part of this study will determine the feasibility of providing fish passage and/or habitat and flow enhancements downstream of the reservoirs for the benefit of native fish and wildlife populations.

> "As long as some suffer
> The River Flows Forever
> As long as there is pain
> The River Flows Forever
> As strong as a smile can be
> The River will Flow Forever"
> — *Tupac Shakur*

This Splash report is a synopsis of what ESA found in the SLC Watershed. If you'd like to view the report in its entirety, use this link:

EBMUD_SLC_original.pdf

The goal of the Study was

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threefold:

1. To compile and review data that already exists,
2. Identify any data gaps,
3. Address key study gaps.

"To those who know the speech of hills and rivers, straightening a stream is like shipping vagrants—a very successful method of passing trouble from one place to the next. It solves nothing in any collective sense." — *Aldo Leopold*

ESA put all the existing data together & identified the questions that need further study. In other words, no actual *hands-on work* has been done.

In their study, ESA looked at 4 management issues key to having a viable population of fish:

1. **Habitat Restoration and Enhancement** What specific restorations/enhancements would likely help to stimulate fish populations? ESA concluded that the majority of the creek channel from San Leandro Bay to Chabot Dam will need to be managed as a *migration corridor* for salmonids. Improving the habitat within lower reaches will be a challenge. It would require coordination with Alameda County Flood Control District as well as adjacent property owners. From 98th Ave in Oakland to the boarder of the City of San Leandro the creek flows in a concrete channel. This channel was built in the 1970s by the Army Corps of Engineers, when such things were popular and creeks were viewed as *flood control channels*. This area of the creek is maintained by the Flood Control and is under lock and key. How this sort of "habitat" is improved is part of the challenge. ESA found this area was "unlikely to produce an acceptable return on investment". Translation: removing the vast amounts of concrete is way too expensive and controversial. ESA sited in their report that the "1.5 mile stretch of creek below Chabot Dam to the Cary/Haas Ave foot bridge (the Tailwater Reach) has the greatest potential for improving salmonid viability within the entire watershed". Which begs the question, how will trout travel from the Bay to above Bancroft Ave in San Leandro to this preferred habitat?

2. **Flow Management** Another tricky issue for two reasons: A. If more water is released from Lake Chabot, how will recreation at Lake Chabot be affected? B. Less water in the lake could cause a rise in the already active and dangerous algae blooms. Fish need good, cold water in predictable amounts. How much cold water is available from Lake Chabot? We don't know at this point. A *minimum* of 80 gpm from Lake Chabot is released *every* day. This is not enough flow so the very tiny existing population of native fish can have more critical habitat to spawn and rear, and attract more trout to San Leandro Creek. How much more can EBMUD release before recreation on Lake Chabot is adversely affected? Lake water is not discharged over the spillway. It is released from a fairly low section of the lake, the hypolimnion layer. This water is cold enough to maintain the health of native fish. How much of this cold water can be released before toxic algae levels in the lake rise? In recent years toxic algae has been present at Lake Chabot for longer and longer periods. It is caused by release of chemicals (such as fertilizers like those used by golf courses). Add hot sun + phosphates + nitrogen, voila, blue green algae. One more major factor in flow release: it is critical for cold water to flow *all the way* to San Leandro Bay/San Francisco Bay. Trout and other salmonids recognize their natal waters *by smell.* If enough *of their* streams' water is not present, trout can miss the clues necessary

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to return to spawn.

3. **Fish Passage** Should we build a fish ladder or two? ESA found that opening the entire watershed from the Bay to waters above Lake Chabot and Upper San Leandro Reservoir is not technically or economically feasible. *Enhancement* should be the focus, and only in the reaches below Lake Chabot Dam. Fact: there is no biological need for trout to breach Lake Chabot to spawn. The entire life process of a native trout *can* take place in stretches below the dam *if* habitat is restored and enhanced. Even the National Oceanic and Atmospheric Administration agrees! In their April 2016 Five-Year Status Review of California Central California Coast Steelhead, NOAA stated their recommendation to "focus on areas affected by urbanization in the SF Bay…to restore and protect active channel area(s), floodways, and floodplains to accommodate natural fluvial processes…These impaired below-reservoir stream reaches often co-occur with reaches impaired by urbanization; preventing access to headwater habitat and confining fish to reaches impaired by multiple threats".

4. **Genetics Conservation** When Upper San Leandro Reservoir was built in the 1920s, hundreds of native trout (Oncorhynchus mykiss irideus) were landlocked. Their descendants remain today, untouched. Building fish passage from Lake Chabot to Upper San Leandro Reservoir, essentially mixing farmed trout with the genetically pure O. mykiss population, is a very bad idea! The Upper Chabot trout have a significant inherent and scientific value. Because farmed fish are produced in such large numbers, they do not have to withstand much of the harshness of nature that wild fish do. "Natural" selection (at a trout farm) is not nearly as rigorous as stream life. The Friends agree, this population of trout should be kept separate from the mass-produced sport fish. It is estimated that Upper Chabot Reservoir has *the only* such living population of O'mykiss (a federally listed Threatened Species).

"The language of a river inscribes
over eyes of moths and flies
the navel of the land is a lake." — *Sneha Subramanian*

What's next? "Stage Two". ESA recommends the amount of water released be increased from Lake Chabot, with enough water year-round to cause attraction (attraction releases) of trout into SL and SF Bays during migration periods. This requires more studies as to the amount of cold water available (while maintaining recreation on Lake Chabot) and the affect that less water will have on algae blooms. Phase 2 has already begun, with two water study stations on Lake Chabot. Stations, with 100' cords that reach to the bottom of the lake to test for accurate depth as well, monitor dissolved oxygen levels, and water temperature. (Lake Chabot is a shallow lake with a depth of about 14 meters at its deepest parts). The stations have been collecting data since March of this year. Testing will continue for 2-3 years more. Monthly profiles will be taken to assess how much cold water is available.

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Part of "Stage Two" of this study will also include habitat mapping of the creek below Lake Chabot Dam. A "critical riffle" study includes, as the name implies, how flows look, but also identifying obstacles that could interfere with different stages of fish life such as:

- Are there secluded pools in which fish get stranded?
- Does there need to be finer gravel for spawning?

During this second period, ESA will do tests of those areas with different amounts of water released from the dam. They will test the same areas with 5, 10 or even 15 CFS's (22,44.1 Gallons Per Minute, 44,88.3 gpm, 67,32.47 gpm) of release to gage how much is "right" for different aspects analyzed. Some of these releases may be planned specifically for the study, but most will be during the wet season when regular reservoir management releases are made anyway.

After Stage Two, ESA will make its final recommendations to EBMUD. This will include prioritizing goals according to cost and ease of receiving grant funding. This phase will be in draft form in 2-3 years.

The above does sound like a lot of "what ifs" & "if onlys", however successful creek and river restoration is not a thing of fantasy. EBMUD has in fact been working on a large-scale project (not unlike those called for on San Leandro Creek) on the Mokelumne River. EBMUD has been working with supporting agencies; California Department of Fish and Wildlife, U.S. Fish and Wildlife; National Marine Fisheries Service and others to guide reservoir and river operations to support a successful salmon fishery in its lower stretches. Chinook Salmon and other species have returned to the Mokelumne in higher numbers than since record keeping began in the 1940s. The Salmon return of 2018 was a record 20,000 fish! Only three years out of the last 50 have produced within 6,000 of that number of returned fish: 1983, 2005 & 2011. This successful program was guided by Bert Mulchaey and his colleagues at EBMUD. Coincidentally, Bert is also heading the San Leandro Creek/Lake Chabot Fisheries Management Plan. We believe what they say for baseball fields holds true for rivers: build it and they will come.

"… the river sliding along its banks, darker now than the sky descending a last time to scatter its diamonds into these black waters that contain the day that passed, the night to come.
— *Excerpt from the poem* "The Mercy" — *Philip Levine*

We're on the web:
www.fslc.org

*The **San Leandro Creek Watershed Awareness Program** is a comprehensive watershed education program funded by Alameda County Flood Control and Conservation District, with additional support from the City of San Leandro, implemented by Friends of San Leandro Creek. Thank you to the following for your continued support: Alameda County Public Works, The City of San Leandro, Robert and Lois C. Braddock Charitable Foundation, and FSLC Members and Volunteers like you.*

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