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The Impact of the Proposed Alameda Creek Recapture Project (ACRP: 2015-004827ENV) on California's Native Amphibians

7/29/2015

To: Sarah B. Jones
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

Dear Ms. Jones:

On behalf of the SAVE THE FROGS! community, I would like to thank you for allowing me this opportunity to comment on the San Francisco Public Utilities Commission's (SFPUC) proposed Alameda Creek Recapture Project (ACRP), Case No. 2015-004827ENV. As California's native amphibians face a multitude of threats in the 21st century, SAVE THE FROGS! wants to ensure that the SFPUC includes all relevant amphibian and aquatic reptile conservation issues in the environmental review of this project. Amphibians and reptiles arrived in California long before the first human settlers, and they have an inherent right to exist. Plus they are incredibly valuable to our ecosystems and kids love them – so it is up to all of us to protect them for future generations of Californians.

Below, we list issues and questions we would like to see fully analyzed in the Draft Environmental Impact Report.

1. Cumulative Impacts.

The SFPUC's environmental review process must consider any potential impacts of ACRP to stream-dwelling amphibians and aquatic reptiles in relation to the cumulative impacts of the Calaveras Dam Replacement Project (CDRP) and projects directly associated with CDRP. These adverse effects include: (a) the loss of stream habitat for amphibians in Arroyo Hondo once Calaveras Reservoir is fully inundated; (b) the loss of amphibian breeding habitat at the site of the Alameda Creek Diversion Dam (ACDD) fish ladder; (c) future disruption to amphibian breeding by a new sluicing schedule for ACDD; (d) the loss of habitat in Little Yosemite due to proposed construction of weirs; (e) the loss of shallow slow habitat due to higher summer base flows along the reach of Alameda Creek from the confluence with Calaveras Creek to the ACRP; (f) the

potential to spread infectious diseases if any amphibians are transported from their current breeding sites; and (g) the effects of predicted colder water temperatures on survival, growth, and development of amphibians¹ and reptiles² when hypolimnetic releases from Calaveras Reservoir commence.

2. Comprehensive species review needed.

The SFPUC has paid much attention to balancing the needs of providing drinking water with restoring anadromous salmonids to Alameda Creek. We hope that the needs of the system's diverse herpetofauna will similarly be considered when evaluating the effects of this project. We urge the SFPUC to uphold its Environmental Stewardship Policy, which states that it will "protect and restore native fish *and wildlife* downstream of SFPUC dams and water diversions" (emphasis added). Unfortunately the scoping document (on page 10) excludes two special-status taxa which are extant in the ecosystem and currently undergoing review by the US Fish and Wildlife Service for listing under the federal Endangered Species Act. SAVE THE FROGS! expects that potential impacts on these stream dwellers, the foothill yellow legged frog (*Rana boylei*), and the Western pond turtle (*Emys marmorata*), will be fully addressed in the EIR. In addition to sensitive and special status taxa, the potential impacts of the ACRP on non-native taxa known to have detrimental effects on native species should also be included in the review. Because protecting ecosystem function also encompasses the goal of keeping common species common, we hope that all amphibians in the creeks will be assessed for potential impacts. These include the Western toad, the Pacific chorus frog, and the California newt.



Foothill Yellow-legged Frog (Rana boylei) in Alameda Creek, 2014.

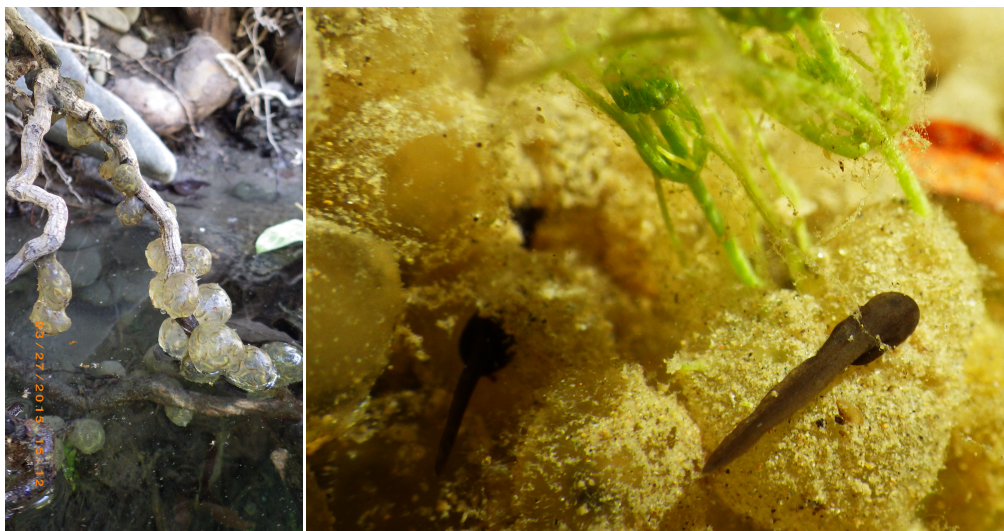
¹ Catenazzi, A. and S. J. Kupferberg. 2013. The importance of thermal conditions to recruitment success in stream-breeding frog populations distributed across a productivity gradient. *Biological Conservation*. 168: 40–48.

² Ashton, D. T., J. B. Bettaso, and H. H. Welsh, Jr. *In press*. Changes across a decade in growth, size, and body condition of western pond turtles (*Actinemys [Emys] marmorata*) on free-flowing and regulated forks of the Trinity River in northwest California. *Copeia*

3. Potential Impacts of Groundwater Extraction on Surface Flows and Aquatic Habitats

The proposed project is meant to “recapture” Alameda Creek groundwater that flows below the surface of the streambed and contributes to the water in quarry Pit F2. The ACRP will use water that percolates into the ground from surface water flows into the Sunol Groundwater Basin and Pit F2. A central question is: Will de-watering Pit F2 create a cone of depression that might adversely alter surface water flows in Alameda Creek and San Antonio Creek at times of year critical for amphibians, turtles, and snakes? Although the intent of the ACRP is to extract a volume of water that ‘correlates with’ the average *annual* amount to be released from Calaveras Reservoir or bypassed at the Alameda Creek Diversion Dam, we are concerned that the *daily* extraction rate may be out of synchrony with the seasonal timing of surface water flow events. In other words, during peak flood events and other periods when flows, releases, and bypasses are high, most water will flow downstream and not re-charge the groundwater. When instream flows are receding or low, on the other hand, the ACRP might extract water that did not originate as a dam release or a bypass flow, and further impair the flow regime.

We question the degree to which ACRP will extract water from the hyporheic flow under the alluvium in San Antonio Creek. According to documents received via Public Records Act request, California red-legged frog (*Rana draytonii*) adults, juveniles, and egg masses have been observed in San Antonio Creek less than 0.5 mile from the ACRP site. The EIR should assess how the magnitude, timing, and duration of surface flows in lower San Antonio Creek and Alameda Creek may be changed by ground water harvesting. Will the recession rate of flows in late spring be affected in the vicinity of ACRP? Will amphibian eggs be at increased risk of stranding? We are concerned that there are no releases from Turner Dam/San Antonio Reservoir to maintain adequate surface flow for native amphibians and compensate for groundwater harvested by ACRP operations.



California newt (Taricha torosa) embryos stranded (left) and successfully hatching California red-legged frog (Rana draytonii) tadpoles (right) in Alameda Creek, Spring 2015.

4. Impacts on Riparian Trees.

Our understanding is that the proposed ACRP project will harvest groundwater year round, including from May to October when there is usually no precipitation. In addition to this being the breeding and rearing season for amphibian larvae and young turtles, this is also the period when the riparian trees are leafed out and require groundwater supplies. Given that most precipitation falls in the winter in the Alameda Creek watershed, vegetation must find deep sources of moisture to survive the dry summer³. There are extant and historic/impacted sycamore woodlands in close proximity to ACRP. Approximately half of the historically occurring Sycamore Alluvial Woodland has already been destroyed or altered in southern Alameda County due to gravel mining, and the creation of Del Valle and San Antonio reservoirs contributed heavily to that loss.⁴ What will be the effects on the remnant sycamore groves and the recruitment of young riparian trees when there is summer groundwater harvesting? Recent advances in stable isotope research⁵ may provide tools for determining which sources of water are supporting the extant trees and whether they will be placed at risk by the project.

5. Piecemeal Review – ACRP inextricably linked to Little Yosemite Fish Passage and the Calaveras Dam Replacement Projects, yet reviewed separately

The ACRP proposes to increase the total amount of water SFPUC will recapture (average of 9,820 acre-feet annually compared to the 6,300 acre-feet enumerated in the 2008 Water System Improvement Program of 2008). This volume of water includes flows bypassed at the Alameda Creek Diversion Dam (ACDD) and releases from Calaveras Reservoir that were intended to facilitate the movement of anadromous fish along the length of Alameda Creek⁶. It is worrisome that the scoping document states on page 6 that the ACRP will be operated “in a manner that would assure the amounts recaptured **correlate** [emphasis added] with amounts released and/or bypassed” rather than **equivalent** to the amount released or bypassed. To what extent will groundwater

³ Shafroth, P. B., J. C. Stromberg, and D. T. Patten. 2000. Woody riparian vegetation response to different alluvial water table regimes. *Western North American Naturalist*, 66-76.

⁴ See Figure 1 of Gillies, E. L. 1998. Effects of regulated streamflows on the Sycamore Alluvial Woodland riparian community. MS Thesis, California State University, San Jose.

⁵ Oshun, J., Dietrich, W. E., Dawson, T. E., Rempe, D. M., and I. Y. Fung. 2013, December. Isotopic 'fingerprinting' of distinct water reservoirs in the critical zone and their exploitation by different tree species. In *AGU Fall Meeting Abstracts* Vol. 1, p. 0385.

⁶ National Marine Fisheries Service Biological Opinion (dated March 5, 2011, pp. 49-52) stated that bypass flows at ACDD would provide suitable migration conditions in Alameda Creek **all the way to San Francisco Bay**. Specifically, “CDRP minimum flows from the southern watershed when combined with flows from the northern watershed (at the confluence with the Arroyo de la Laguna) through Niles Canyon are expected to provide suitable conditions for adult upstream migration and smolt downstream migration. These flows will arrive at the upstream end of the Alameda Creek Flood Control Channel and ACWD will provide bypass flows at their water diversion facilities for fish passage through the Flood Channel.”

extraction exceed releases and bypasses, and how can this be reviewed outside the original EIR for CDRP? In the Little Yosemite reach, SFPUC has also proposed to construct weirs across three pool features with the intent of facilitating upstream passage of anadromous fish. All these projects are intricately connected. Holistic, rather than separate, evaluation is needed and inconsistencies need to be resolved.

The feasibility of water recapture in the Sunol Valley is directly relevant to decision making regarding flows and fish passage structures further upstream. For the Little Yosemite Fish Passage Project, there is considerable uncertainty about whether the boulders may be passable at high flows⁷. Given this uncertainty and the likely harms⁸ to resident native amphibians by the weir construction, SAVE THE FROGS! questions the necessity of modifying the natural channel in Little Yosemite to make it passable at mid-range flow volumes. If operation of the Recapture project can compensate the overall water supply for lost storage opportunities when flows bypass the ACDD, would it be possible to bypass enough water to make Little Yosemite passable to steelhead without weirs? Such alternatives analyses should be included in an EIR that encompasses *both* the ACRP and the Little Yosemite Fish Passage Project. It appears that these two projects are inextricably linked and each should be reviewed in light of the other. The California Environmental Quality Act forbids piece-mealing of environmental review. By issuing a Mitigated Negative Declaration for the Little Yosemite Project yet proposing to produce an EIR for the Recapture Project, SFPUC is splitting the review of two linked projects; both are directly driven by the flow schedule of the Alameda Creek Diversion Dam. Splitting the environmental review compromises the breadth and completeness of the alternatives analysis required by CEQA.

CONCLUSION

Given the ACRP's potential to cause negative hydrologic and biological impacts, SAVE THE FROGS! expects that scientifically rigorous studies will be completed as part of this project's Environmental Impact Report. The report should (1) describe in detail the flow paths of water that recharge the groundwater basin and provide summer baseflows to San Antonio Creek and Alameda Creek; (2) quantify what percent of bypass and release flows will actually enter the groundwater and clearly illustrate whether this project is truly recapturing flows or simply mining groundwater in excess of amounts released and bypassed; (3) evaluate the impacts of groundwater extraction on riparian flora and fauna under various climate change scenarios which may exacerbate fluctuations

⁷ SFPUC 2010. Assessment of fish upstream migration at natural barriers in the upper Alameda Creek sub-watershed. Technical Memorandum prepared by URS and HDR. Several statements highlight the uncertainty. For boulder feature 9 (page 4-7): "Potential passage routes through spaces between submerged boulders could have been obscured, however, and quantitative measurements of those features could not be obtained". For feature 10 (page 4-15): "It is unknown whether this feature poses a barrier to upstream migration at flows higher than 98 cfs". For feature 11 (page 4-15): "...the ability to evaluate passage opportunities along the left bank channel was limited."

⁸ See SAVE THE FROGS! appeal of the mitigated negative declaration.

between series of extremely wet and extremely dry years; and (4) detail the likely impacts on amphibians and reptiles, as described above. Because the dynamic interactions among surface water, ground water, and rock moisture are extremely complex, we would like to see direct observations and controlled physical tests made to trace water sources and address our questions about impacts on in-stream flow conditions.

SAVE THE FROGS! thanks the SFPUC for the opportunity to comment during the scoping phase of the project. We look forward to reviewing the DEIR when it is released. Kindly add our organization to the distribution list so we may receive direct notification of the document's completion.

Sincerely,



Kerry Kriger, Ph.D.

SAVE THE FROGS! Founder, Executive Director & Ecologist

This letter was sent via e-mail to:

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Western pond turtles (Emys marmorata) in Alameda Creek, spring 2015.