



Alameda Creek Alliance

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Interim Report for Alameda County 2021 Fish and Wildlife Propagation Fund

Project Title: Stonybrook Creek Trout Monitoring

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Brief summary of proposal: The Alameda Creek Alliance received funding for a volunteer-based monitoring program of steelhead/rainbow trout (*Oncorhynchus mykiss*) populations and for assessing stream habitat and water quality in Stonybrook Creek, a tributary of Alameda Creek in Alameda County. Volunteer-based habitat and fish monitoring in Stonybrook Creek was coordinated with assistance from professional fisheries biologists with the East Bay Regional Park District and California Department of Fish and Wildlife.

This interim report summarizes activities conducted in the spring through winter of 2021. Instream monitoring and data collection activities were initiated, but were challenging due to COVID and stream conditions due to drought and then flooding during the October atmospheric river event. A report will be prepared summarizing the data collected as well as existing information regarding trout populations and habitat surveys in Stonybrook Creek. This public report will help inform trout restoration efforts in the watershed by the Alameda Creek Fisheries Restoration Workgroup, land and water management agencies, and regulatory agencies. A final report will be delivered to Alameda County in 2022 on the grant activities and expenditures.

In 2021 the ACA and volunteers conducted fish habitat assessments and studied the trout populations in Stonybrook Creek; and salmon downstream which have the potential to spawn in Stonybrook Creek.

Water Quality Monitoring

The deployment of data loggers was postponed due to dry conditions in Stonybrook Creek; data logger deployment is rescheduled for spring of 2022.

Habitat Monitoring

Methodologies for assessing fish habitat in Stonybrook Creek were conducted in the summer and fall of 2021 in order to document habitat quality, both above and below existing fish passage barriers. Volunteer monitoring events were held in Stonybrook Creek on June 27, July 18, October 3, November 7, and December 5, 2021, with 3-7 volunteers participating at each event.

The first methodology, habitat typing, using level III/IV methodology from CDFW's California Salmonid Stream Habitat Restoration Manual (Flosi et al. 2010) provides a qualitative description of physical habitat for multiple life stages of steelhead/rainbow trout, inclusive of rearing and spawning.

Habitat typing included an analysis of bed sediment (fines, pebbles, cobbles and boulders). Bed

sediment was dry and covered with leaves and branches. Bed sediment analysis will be repeated in late winter 2022 when there is stream flow. Runs/riffle and pool assessments were conducted in the dry bed of Stonybrook Creek. Due to lack of water, it was challenging to accurately assess the sizes of runs/riffles and pools; therefore, habitat typing measuring runs/riffles and pools will be repeated in late winter 2021 or spring 2022.

Wet/dry habitat mapping was conducted on October 3, 2021, with several spring-fed pools measured and observed for trout. This is important since Stonybrook Creek is an intermittent stream. During the dry season, wetted stream habitat in Stonybrook Creek recedes to short flowing sections and isolated pools. Without a doubt this is a limiting factor affecting the local steelhead/rainbow trout population.



ACA Volunteer Habitat Surveys, 2021

Fish Monitoring

Fish monitoring was conducted with visual trout surveys from streambanks only, without any handling or disturbance of fish. No state or federal permits are required for these visual fish surveys. On October 3, 2021, two 6-7" rainbow trout were observed in two separate spring-fed pools about three quarters of a mile above the mouth of Stonybrook Creek.

Volunteer training for fish monitoring was conducted on November 7 and December 5, 2021 using the Coastal Northern California Salmonid Spawning Survey Protocol (Gallagher and Knechtle 2005); the protocol uses data sheets for fish (live/dead) and redd surveys.

Future fish surveys, where fish may be physically handled, and after 2021 (outside of the grant period), when anadromous steelhead have access to Stonybrook Creek, will need to be permitted by CDFW and the National Marine Fisheries Service.

After the atmospheric river rain event October 24-25, 2021, Stonybrook Creek flow resumed down to the mouth at Alameda Creek; however streamflow to the mouth abated a few days later. The rain event attracted Chinook salmon into the Alameda Creek watershed and adds another dimension for potential spawning in Stonybrook Creek. Future fish surveys will include rainbow trout, steelhead, and Chinook salmon and will be discussed at an upcoming ACA volunteer meeting scheduled for December 16, 2021 at the town of Niles.