MEETING SUMMARY

Santa Ana Sucker Conservation Team

October 1, 2015

ATTENDEES:

Alberto Martinez, RCFCWCD
Bob Packard, MSHCP
Bonnie Johnson, OCWD
Brett Mills, RCRCD
Christopher Jones, USACE
David Lovell, SBC DPW
David Warren, CRF
Dick Zembal, OCWD
Ed Filadelfia, City of Riverside
Jonathan Baskin, CalPoly Pomona - Retired
Jonathan Richmond, USGS
Hayley Lovan, USACE
Kai Palenscar, USFWS
Kerwin Russell, RCRCD
Maricela Archer, SAWA
Rosemary Burk, USFWS
Phone: Ileene Anderson Center of Bio. Diversity
Phone: Kenneth Wong, USACE
Phone: Chris Medak, USFWS
Ian Achimore, SAWPA
Zyanya Blancas, SAWPA

Introductions and Announcement:
The Santa Ana Sucker Conservation Team (Conservation Team) meeting was called to order at 1:33 P.M. by Ian Achimore at the Santa Ana Watershed Project Authority (SAWPA) located at 11615 Sterling Avenue, Riverside, CA 92503. Brief introductions were made.

Approval of April 23, 2015 Meeting Summary
The meeting summary was approved as presented.

Discussion on Upcoming Riverside County Levee Maintenance (U.S. Army Corps of Engineers)
Kenneth Wong, Planning Division - U.S. Army Corps of Engineers (USACE), provided a PowerPoint presentation about the Riverside Levees 1 and 2 Maintenance Project. The general location of the Project, which is at the border line between the City of Riverside and City of Colton, is categorized as a critical habitat for the Santa Ana sucker fish. The levees were constructed by the USACE in 1958 per the Flood Control Act of 1950. The levees have sustained damages from the storms of 2010-11. Approximately 8,300 linear feet of the levee and 16 groins were damaged.

Conceptual maintenance planning began in 2012. Based on resources, this Project will most likely require an Environmental Impact Report (EIR). Two alternative designs were created. Alternative One is to repair the revetment toe, grade slopped areas in between groins, and reconstruct groins. Alternative Ttwo is to repair revetment tow, grade slopped areas in between groins where low flow has migrated near revetment, and reconstruct all damaged groins. In early 2013, the USACE met with U.S. Fish and Wildlife Service (USFWS) to assess preliminary designs. Upon assessment, the two agencies came up with a charrette conceptual design in which the levees are lengthened to minimize the need for future repairs by Riverside County Flood Control District and Water Conservation District (RCFCWCD). With this option, the groins will not be reconstructed.

The USACE is still in the process of finalizing the preliminary Project Information Report (PIR). Once finalized, it will be sent to USACE Headquarters with a funding request for engineering design and planning work. It is expected that funds will be received this spring. An EIR will come after the PIR. It is uncertain what USACE Headquarters is willing to support in terms of funding. The RCFCWCD is financially responsible for the levees. USACE will be financially responsible for its own levees. An

elementary risk analysis has been done for this Project by the USACE. The commencement date of this project is unknown.

Hayley Lovan, USACE, encouraged the Conservation Team to provide alternative solutions that can also benefit the Santa Ana sucker fish. Jonathan Baskin stated that the reconstruction of the groins is a very important factor for sucker fish habitat.

It was noted that on-going maintenance is required by the USACE Operations Manual of this particular reach of the river. It was stated that this repeated maintenance can be a disturbance to the sucker fish habitat. A design that reduces maintenance under any scenario is very desirable. USACE recognizes that they must reevaluate the Operations Manual for this reach. Discussion ensued regarding the recent Regional General Permit (RGP) for Flood Control Facilities Maintenance Program for RCFCWD's right of ways and whether it would be a way to establish gabions for the suckers. It was noted that a public notice for the RGP was sent out between July and August of 2015.

Mr. Wong said that if funding for the planning and design of the levees are approved there will be another round of charrettes and invited the Conservation Team to participate in the planning process.

Other USACE Projects

Christopher Jones, USCACE, provided a verbal update on USACE's mitigation commitment associated with Santa Ana River Reach 9 which is the section between Prado Dam downstream to Weir Canyon. He reported that there may be impacts to sucker habitat. Therefore USACE will be planning a two-fold approach to mitigate the impacts. The first part will be a short term plan to assist the sucker fish at their current location and then follow up with a substantial project. Second part will be a long term project where plan to translocate the sucker fish. Chris Medak, USFWS, added that this is an effort to offset a temporary impact to habitat and the intention is to create habitat that won't withstand the high flow that goes through system, but to create a more diverse structure that will last a period of time and will eventually be flushed away. They will be looking into pulling resources for this mitigation project. Discussion ensued on possible collaborations to assist with mitigation funding and/or creating a larger project that will incorporate other mitigations projects.

Ms. Lovan asked the Conservation Team if anyone had a real estate map with all the parcels to bring all parcel owners to the table for further discussion. Ian Achimore said that SAWPA could create one.

Jonathan Q. Richmond, PhD, U.S. Geological Survey, Presentation on Effects of 'Boom and Bust' Demography and Geographic Isolation on the Landscape Genetics of the Santa Ana Sucker

Jonathan Q. Richmond, PhD from the U.S. Geological Survey (USGS) provided a PowerPoint presentation outlining a study on the genetics and diversity of the Santa Ana sucker fish within the Santa Clara, Los Angeles, San Gabriel, and Santa Ana rivers.

The study revealed that the closest relatives to the sucker fish come from the lower portion of the Colorado River. The types of genetic markers that USGS used were the mtDNA sequence data and microsatellites. Cluster assignment modeling was performed to infer the number of identity of distinct populations, assign individual fish to populations, determine the boundaries of areas where hybridization may be occurring, and identify migrants and admixed individuals. Data was presented through bar plots, which allowed for exploratory data analysis to determine the genetic variation that exists within the data set. It was noted that sucker fish have more than double the number of chromosomes than humans, therefore are able to inbreed without major complications.

Historically, sucker fish adapt to boom and bust cycles by relying on the interchanges between drainages of water. When they go through a bottle neck area, their population collapses and they lose genetic

variation. The only way to replenish this variation is by obtaining it from a different site or through mutation. Mutation takes a very long time to occur. The percentage of fish necessary to add variation into a population is unknown.

Jonathan Baskin asked if using sucker fish from the San Gabriel or lower portion of the Santa Ana River for the purpose of reintroduction in the upper portion of the Santa Ana River makes a difference. Mr. Richmond stated that he is unsure whether it would matter because the two have exchanged genes in the recent years. He stated that it is preferred that sucker fish from those two drainages be used as opposed to using from other locations like Big Tujunga or Santa Clara.

In 2008-09, sucker fish was discovered in San Dimas Canyon. It is unknown how they were introduced to that area. Using the Approximate Bayesian Computation, USGS could determine the source of the San Dimas population and about the time they may have been introduced. This is done by simulating a large number of datasets under different plausible demographic scenarios, then using multivariate statistical techniques to find the "best-fit" or best historical scenario. After running the scenarios in the San Dimas Canyon, it was determined that a sucker fish had recently been transplanted by someone and not by connection of drainages. Chris Medak had concerns regarding the distinct genetics of the San Dimas Canyon sucker fish and suggested there might be another scenario other than transplant. Ms. Medak stated that in a recent exploration, a trout was found in a secluded area and believes that if a trout had survived perhaps a sucker fish could have been hidden for more years than what the scenario reaches. Brett Mills suggested a connection of drainages might have occurred during a flood in the late 1930s. Mr. Richmond agreed and stated he would explore other scenarios. Brett Mill and Kai Palenscar mentioned that the last time they were in the San Dimas Canyon, habitat was poor and did not see any sucker fish.

Evidence from mono-testing in Santa Clara River suggests that their sucker fish are a native population that diverges from everything else. Kerwin Russell added that with the geologic connections between Sespe Creek and Colorado River in Arizona, it is evident that drainages were once connected in different ways. He stated that with that connection, it may be possible sucker fish were also transported from the Colorado River.

In conclusion, the Santa Clara, Los Angeles, and San Gabriel Rivers each harbor genetically distinctive genetic clusters of sucker fish; there is no compelling evidence that sucker fish were introduced to the Santa Clara River from the Los Angeles Basin during the 1920's or 1930's; sucker fish and hybrids are restricted to the lower Santa Clara River below the Piru Dry Gap and stand very little chance of ever migrating and mixing the pure sucker fish above the Piru Dry Gap; and life history adaptation and polyploidy could save sucker fish populations if appropriate habitat is maintained within watersheds.

Team Projects Update: Illegal OHV Use River Sweep and Education
At the previous Conservation Team meeting, funding parties approved up to $8,000 for illegal off highway vehicles (OHV) contract with City of Colton's Police Department and signs along the Santa Ana River Trail. Ian Achimore provided a PowerPoint presentation report on sweeps and types of actions taken to prevent OHVs in the river.

2015 Riverwalk Planning and Training Video: October 8, 2015
Due to on-going maintenance, the RFCWCD had requested that their reach of the river be surveyed ahead of time. Three groups surveyed the RFCWCD portion last week. The rest of the river will be surveyed on October 8, 2015.

HCP Team Update 1:58
Kai Palenscar, USFWS, provided an update on the Upper Santa Ana River Habitat Conservation Plan (HCP) Team with a report on the recent native fish survey. Random sampling was performed in 18

reaches of the river, starting from the Rialto Channel to right above Mission Blvd. Sucker fish were seen throughout the 18 reaches. Due to the recent storm, the data set was split between rocky areas to mostly sandy conditions. About 1,000 sucker fish were spotted in one of the best natural pools they know of. This location was surveyed twice; once before the storm and another right after. It was noted that not a lot of sediment had entered the system. This is part of a two year survey in which surveys are scheduled every month.

The HCP Team is planning on using the $10M received from Proposition 84 to restore five areas in the lower part of the river. The Team is also looking to obtaining more funds through Proposition 1. The HCP Team is working on selecting a group to write up a translocation plan to be approved by the USFWS this time next year.

Critical Habitat Litigation Update
The critical habitat litigation is currently pending. No further update was given.

Red Algae Update
At the last Conservation Team meeting, the USFWS reported that the river needed to be approximately 20 degrees colder for at least two weeks to eliminate the red algae in the RIX outfall. Currently the involved parties are attempting to perform an experiment at Riverside-Corona Resource Conservation District (RCRCD). Unfortunately, they haven't been able to control the fluctuating temperatures in the raceways where they are attempting to grow the controlled red algae. Kai Palenscar claimed they might have to purchase water heaters to elevate the temperature stable it enough to grow and test the red algae. The red alga is still very present in the river and growing very densely. Soon after storm events the red algae is nonexistent, but then comes back a few weeks later. The preferred treatment remains chilling the river water.

The sucker fish has been seen interacting with the dense patches of red algae, but it is unknown what the long-term effect may be on sucker population. Feeding trials are ongoing at the RCRCD facility to determine whether or not the sucker fish will feed on red algae. Feeding on red algae has not been observed for reasons unknown.

Chris Medak stated that when it is growing in high density it creates a crusted layer at the bottom of the river and it may prevent sucker fish from spawning or the eggs may fail due to lack of flow. The cause of the introduction of the red algae is unknown, but it is a common plant used in tropical aquariums.

Restoration Project Updates:
Sunnyslope Creek
Maricela Archer provided a verbal update on the Sunnyslope Creek restoration project. She stated that in February, 27 sucker fishes were observed and were seen again in June. Their biggest concern right now is keeping up with the rain. A big willow tree that fell parallel in the creek due to the weather had to be hauled out. They continue with the removal of non-native fish.

Accumulated trash in Sunnyslope Creek has become a bigger concern. It is believed that the trash is coming from the Rubidoux High School, where they have a bridge right over the creek. The school has been contact. It was suggested that perhaps visuals of the accumulated trash would send a strong message.

Tequesquite Creek
Brett Mills provided a verbal update on the Tequesquite Creek restoration project He stated that Tequesquite Creek is in need of water flow. They recently received funds to remove non-native species. Their efforts to maintain the habitat alongside human borne impacts continue. They've come across erosion issues, and are currently trying to stabilize it. They are currently working on purchasing wells by

negotiating the price of two privately owned wells. The two wells are in need of work. One requires a powerhead and the other is capped.

Adjournment and Next Meeting
The next Conservation Team meeting is scheduled for a later time after the Riverwalk.