

Santa Ana Sucker Conservation Team

September 18, 2014
Research & Project Activities



Tuberculated SAS @
Sunnyslope / 04_09_12
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Budget



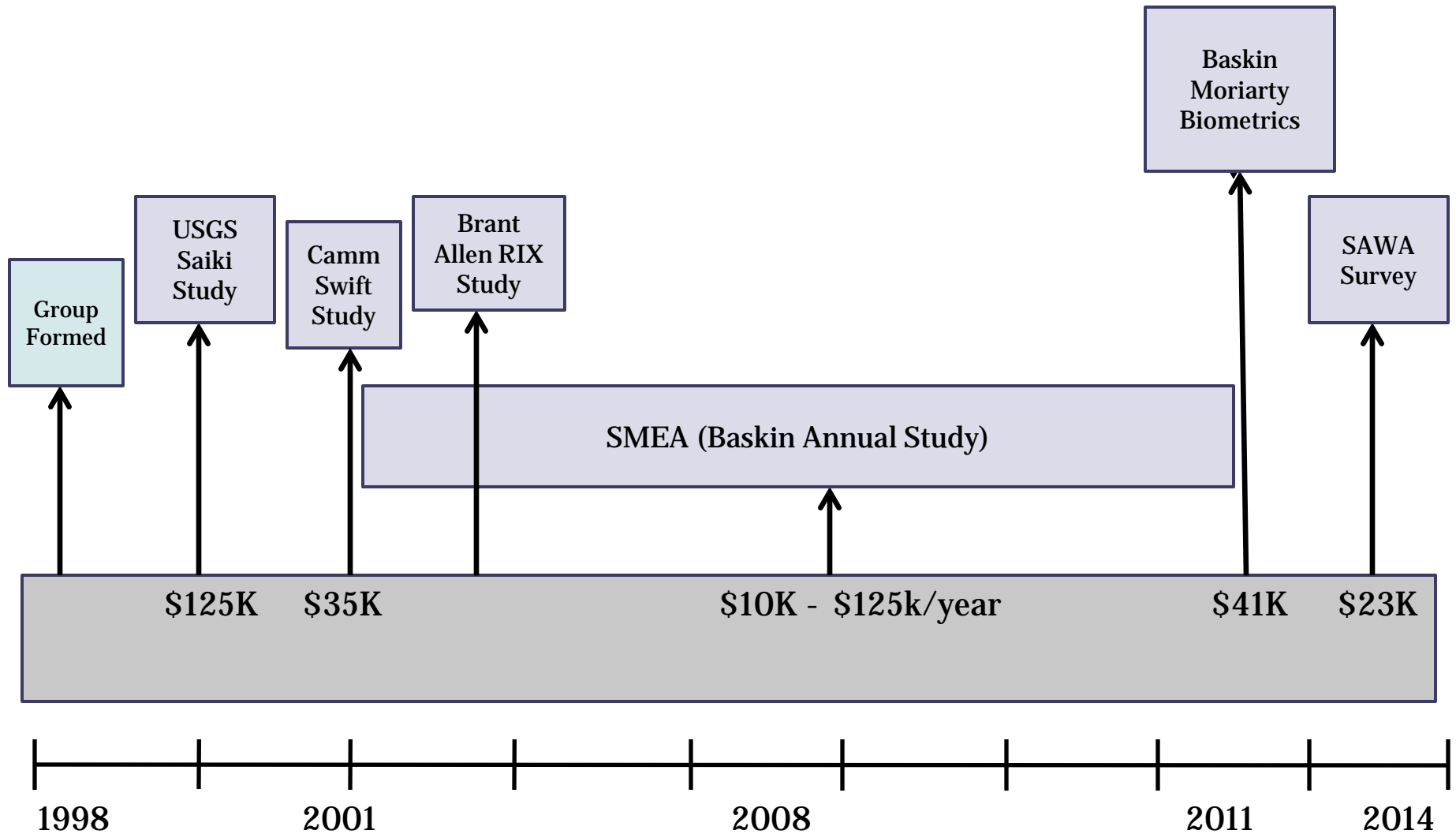
	FY 2014-2015
Riverside Public Utilities/River Regional Plant	\$ 8,000
San Bernardino Valley Municipal Water Dist.	\$ 8,000
Orange County Water District	\$ 15,000
SAWPA Member Agencies	\$ 10,000
Total Revenue	\$ 41,000
Administrative Costs	<i>\$ 20,000</i>
Consultant Costs	<i>\$ 31,000</i>
Total Cost	\$ 51,000
Remaining Revenues	\$ (10,000)

Activities to Compliment/Consider

- **Upper SAR HCP:**
 - **Restoration of tributaries besides Sunnyslope and Tequesquite Creeks**
 - **Relocation of Suckers to Upper Watershed**
- **Your Projects**
- **Restoration Projects**
- **Past Research**
- **FWS Recovery Outline**



Past Studies



Research & Projects: (new ones in blue)

- **Regularly survey** the current distribution of suckers within the river system;
- If the drought continues, pay for well water to **keep tributary sites flowing** through spawning season
- **Vet past survey methodologies** to assess the most appropriate sampling technique;
- Assess sensitivity to **environmental conditions**, or fluctuating conditions (eg – water temperature);
- Locate areas where suckers are **currently spawning** and areas where habitat modification could result in spawning;
- Determine optimal **habitat conditions for spawning**;
- Determine **optimal conditions for feeding**;
- Determine how *Compsopogon coeruleus* impacts sucker foraging and spawning success;
- Document the importance of **larval drift** from spawning areas in fish distribution;
- Identify **and restore suitable tributaries** along the Santa Ana River for spawning and refugia;
- Further refine knowledge of **habitat preference** if each of the known populations, *i.e.* preferred depth of water, preferred velocity of water, preferred substrate and preferred cover (shading from canopy), preferred temperature;

Research & Projects:

- Determine **residence time** in different tributaries and the seasonality of adult distribution;
- Conduct studies relating **sucker age to size**;
- Determine **when suckers reach sexual maturity** in the Santa Ana River system;
- Conduct **genetic studies** to distinguish if the sucker found in the Santa Ana River is genetically distinct from suckers in other locations;
- Determine the **effect of predation** on the sucker, e.g. brown trout , green sunfish or largemouth bass and determine what other species can occupy habitat with the sucker without detriment;
- **Reduce predation** by aquatic predators;
- Develop **pilot projects for in-stream restoration**;
- **Assess the potential for fish ladders as well as low-flow designs for use within concrete-lined channels to address fish passage**;
- **Environmentally friendly methods to encourage in-stream channelization so as to increase the abundance of rocky substrate**;
- **Work with the USFWS to craft range expansion plan(s).**
- **Reduce Off-road vehicle use**;

From Recovery Outline

The last 5-year review for Santa Ana sucker (USFWS 2011, pp. 1–74) identified the following threats to Santa Ana sucker: modification, fragmentation, and loss of habitat attributed to dams, changes in water allocations, and other hydrological modifications; water quality degradation, impacts to habitat from recreation; loss of habitat from economic development; increased wildfire frequency; and potential effects of nonnative vegetation and predators, which are described below. Of these threats, the impacts attributed to water quality degradation from treated wastewater and increased wildfire frequency are considered new since the time of listing. The primary threat to Santa Ana sucker is attributed to modification, fragmentation, and loss of habitat through hydrological modifications rangewide. A detailed evaluation of all threats is described in the 2011 5-year review (USFWS 2011). In this document, we summarize the threats to Santa Ana sucker.

From Recovery Outline

B. Recovery Vision Statement

We envision recovery for Santa Ana sucker as sizable, stable populations that are maintained in managed and conserved suitable habitat, free of barriers to dispersal to ensure gene flow and maximum dispersal of individuals. Populations will be monitored and maintained to provide sufficient representation, resiliency, and redundancy across the species' historical range so that the Santa Ana sucker no longer requires the protections of the Act. Threats impacting the species will be sufficiently understood and abated to ensure long-term conservation of Santa Ana sucker. A rangewide monitoring and adaptive management approach will be in place to address unforeseen events and threats.

From Draft Recovery Plan

Develop a rangewide monitoring protocol. – The protocol should include the following components:

- Metrics related to the status of the Santa Ana sucker population (e.g., abundance, age structure, and distribution).
- Metrics related to the suitability of habitat for each life stage (e.g., water quality, water quantity, substrate, and food sources).
- Metrics related to the status of threats (e.g., hydrological modifications and barriers to dispersal, water quality, nonnative vegetation, and OHV use).
- Standardized data sheets.