

INTRODUCTION

The purpose of this project was to examine the current distribution of sticklebacks, *Gasterosteus aculeatus*, in the Santa Clara River drainage and to determine the distribution of the Federally Endangered unarmored threespine stickleback (UTS), *G. a. williamsoni*, within the overall stickleback distribution. No complete survey of the drainage has been conducted since Michael Bell surveyed the drainage in the mid-1970s as part of his doctoral dissertation. Since the mid-1970s we only have sporadic point data that provide information on the status of sticklebacks in the Santa Clara River. Because point data only examine the status at a point in the river, it doesn't necessarily provide reliable data on the overall status of the stickleback. Streams are dynamic systems and as a result the distribution of stickleback habitat may shift from year to year; consequently, their presence or absence at a particular point in a specific year provides only limited information on stickleback status, when not placed in the context of the stickleback distribution within the entire drainage. The results of the current distributional survey address the entire Santa Clara River, including major tributaries. This will provide insight into changes in the distributional pattern of plate count data when the current dataset is compared to Bell's data

Secondarily, the survey was designed to examine the distribution of Santa Ana suckers (Federally threatened in other drainages), *Catostomus santaanae*, and the arroyo chub, *Gila orcutti* (a Species of Special Concern in California). Bell also provided distributional data on these two species from the mid-1970s.

This report compares Haglund and Baskin's (SMEA's) data with Bell's data from the Santa Clara River mainstem on a species by species basis, and then makes similar comparisons with the data from the tributaries.

Major management decisions affecting the Federally Endangered Unarmored Threespine Stickleback (UTS) have been, and are being, made on the basis of Bell's data. These decisions have assumed that the distributional pattern of stickleback subspecies, *G. a. microcephalus* and *G. a. williamsoni*, as defined by lateral plate phenotypes has been stable over time. Bell's dataset is now 35 years old. For a predominantly annual fish like the threespine stickleback, this means that there have been 35 generations during which change may have taken place. The data presented in this report allow a comparison with Bell's general distributional pattern of plate count data in the Santa Clara River drainage and identify the current distribution of the stickleback subspecies within the drainage.

BACKGROUND – BELL'S DATA

In 1974 and 1975, Michael Bell surveyed the length of the Santa Clara River and most of the major tributaries as part of his doctoral dissertation. During this process he collected stickleback samples, which he stained with Alizarin Red S (a bone stain) and counted the lateral plates under a dissecting microscope.

The comparisons of Bell's and SMEA's mainstem and tributary surveys are addressed in separate sections of this report. The results of Bell's mainstem surveys are visually summarized in the Figures 1 and 2.

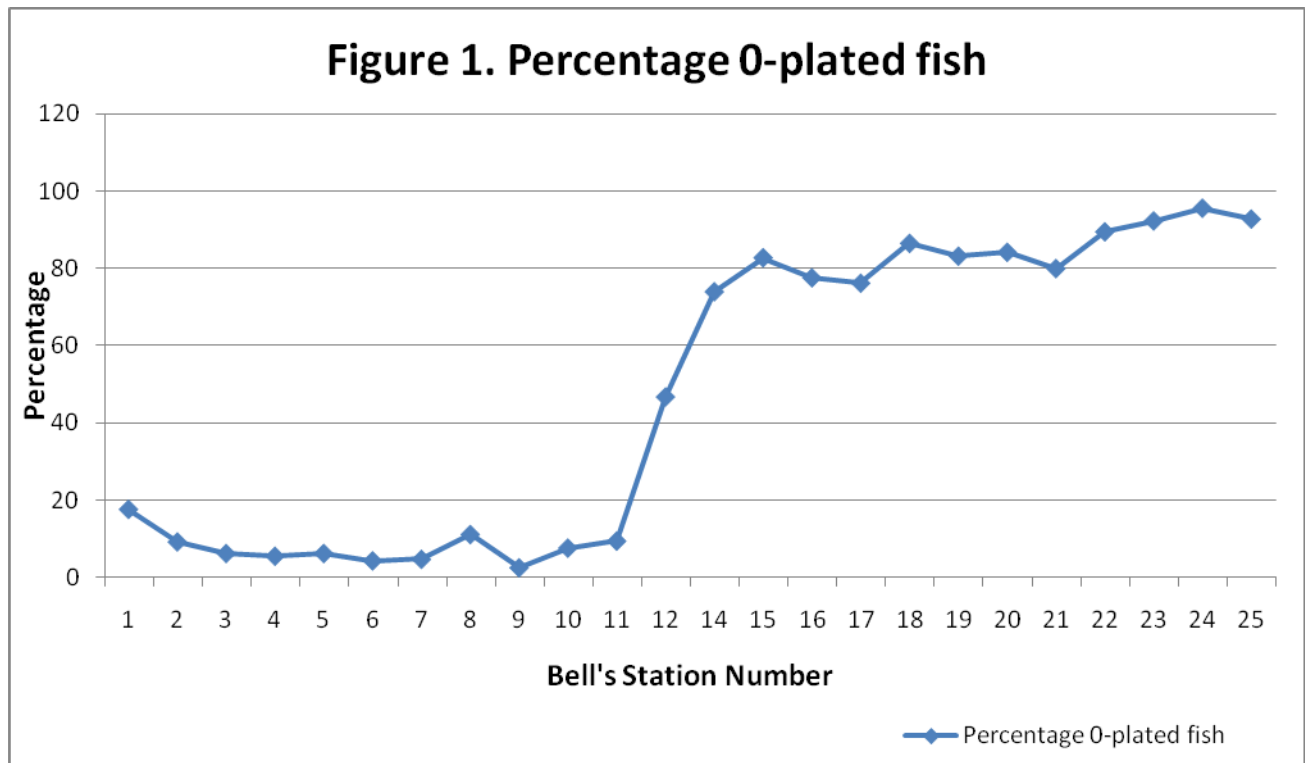


Figure 1. The data presented in the above figure clearly show three distinct river reaches: stations 1-11, low percentage 0-plated fish; stations 12 and 14, increasing percentage of 0-plated fish; and 15-25, a high percentage of 0-plated fish. A subgroup within the 15-25 group consisting of stations 22-25 have a particularly high percentage of 0-plated fish. For reference, station 9 is the mouth of Sespe Creek, station 16 is at Interstate 5 and station 17 is at Lange Station just downstream of the mouth of Soledad Canyon.

The data in Figure 1 shows that there appears to be a downstream population that had a relatively low percentage of 0-plated fish and an upstream population with a high percentage of 0-plated individuals. These two populations are joined by a stream reach which has a steep cline of rapidly increasing percent of 0-plated fish in the upstream direction.

The same data are displayed in Figure 2, but the data are expressed as average plate number/fish at each of Bell's stations. Figure 1 shows the same geographic pattern of lateral plate data. The average number of lateral plates per fish used to define unarmored threespine stickleback populations in the UTS Recovery Plan (an average of 0.55 plates/fish based on lateral plate counts of at least 30 fish 26mm or greater in standard length) is also shown on the graph. In fact, it was Bell's data that were used to create the lateral plate definition of UTS populations.

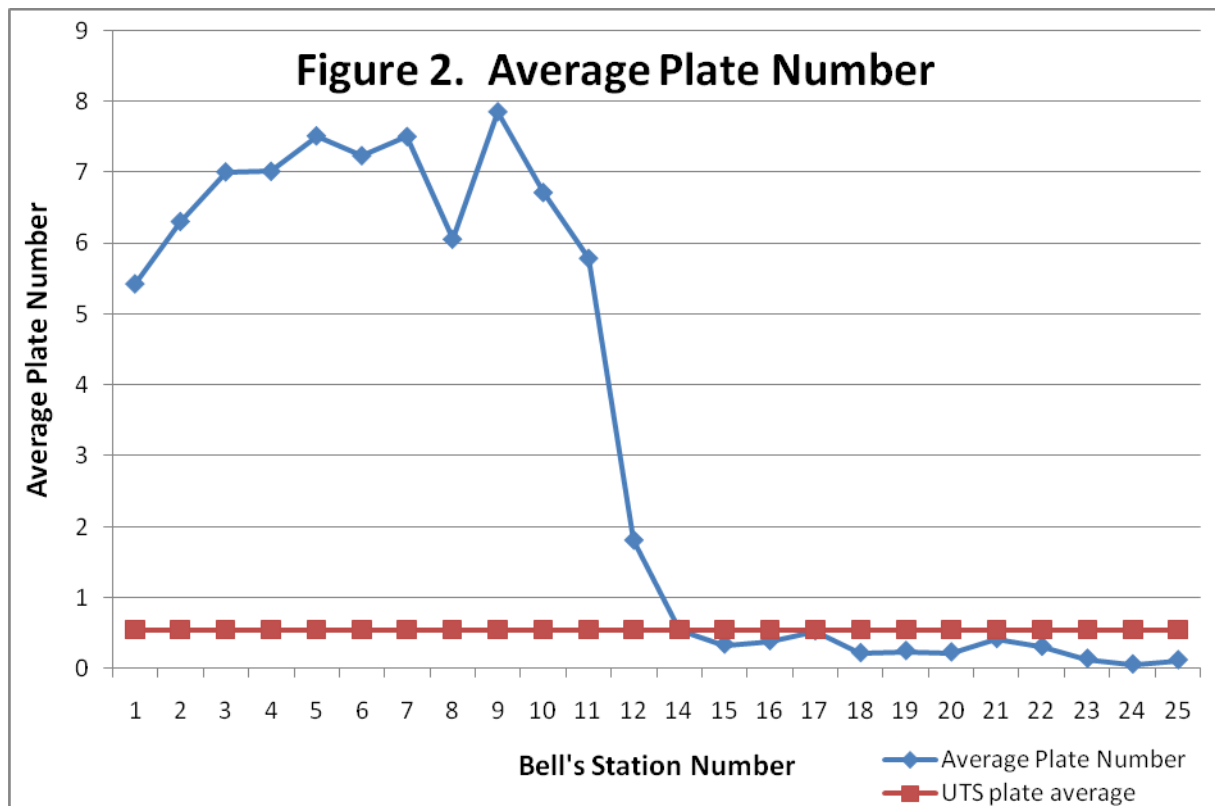


Figure 2. Bell's data presented as the average number of lateral plates per fish at each of his mainstem stations. Based on these data, at the time of Bell's surveys, sticklebacks that could be defined as the federally endangered UTS occurred upstream beginning at station 14 just downstream from the confluence of Castaic Creek. The confluence of Castaic Creek with the Santa Clara River occurs between Bell's station 14 and 15

Based on the data presented in Figure 2, the distribution of UTS begins at Bell's station 14, which was just downstream of the confluence of Castaic Creek and the Santa Clara River and extends to the headwaters of the Santa Clara River. The transitional stations are referred to as the Del Valle zone and collectively represent an intergrade zone between the UTS and the more highly plated populations in the lower part of the drainage, often referred to as *Gasterosteus aculeatus microcephalus* or the partially armored stickleback, which has lateral plates on the anterior part of the body. Fully armored sticklebacks which have lateral plates extending the entire length of the body do not occur in southern California.

The standard recognized distribution of *G.a. microcephalus*, *G.a. williamsoni* and the intergrade zone between the two subspecies has been traditionally recognized by overlaying the typical pattern of surface water flows onto Bell's lateral plate distributional data. So the partially armored, *G. a. microcephalus*, is considered to occur from the Santa Clara River lagoon upstream to the dry stream reach just upstream of the confluence of Piru Creek and the Santa Clara River (see Photograph 1). This stream reach is dry except for short periods of time following major winter storms, thus providing an effective upstream barrier to upstream movement by the small, weak-swimming stickleback.



Photograph 1. This photograph from Google Earth clearly shows Piru Creek flowing downstream from the north and creating flow in the Santa Clara River mainstem. The photograph clearly shows the absence of flow from upstream (to the right) in the Santa Clara River.

The distribution of the Federally Endangered unarmored threespine stickleback in the Santa Clara River mainstem is generally considered to begin upstream of the long dry stream reach which begins upstream of Bouquet Canyon Road and extends upstream to the vicinity of Lange Station (see Photograph 2) to the headwaters of the Santa Clara River. This is a very long dry river reach. Continuous surface flow is almost never occurs except during extremely large storms, and then the surface flow is not continuous for a sustained period. There is no rising groundwater to sustain surface flow in this stream reach.



Photograph 2. The above photograph from Google Earth shows the most downstream portion of the long dry stretch which extends upstream to near Lange Station. The Bouquet Canyon Road bridge can be seen crossing the Santa Clara River at the left side of the photograph. Surface flow is initiated immediately downstream of the Bouquet Canyon Road bridge due to the discharge of reclaimed water from the Bouquet Water Reclamation Plant.

Thus, the intergrade zone comprises the surface flow from upstream of Piru Creek to the confluence of Bouquet Canyon Creek/Bouquet Canyon Road. Surface flow may not be continuous between Bouquet Canyon Road and McBean Parkway (the next bridge downstream). Perennial flow begins downstream of McBean Parkway. Bell's upstream samples (from Castaic Creek upstream, Station 14) from the intergrade zone all had average lateral plate counts that qualified the samples as UTS. Downstream of the confluence of Castaic Creek, plate counts show a steep cline from 0.55 lateral plates/fish at Station 14 (UTS \leq 0.55 plates/fish) to 5.79 lateral plates/fish at Station 11, counts that typify the partially armored form in the Santa Clara River (generally greater than 6 plates/fish). Unfortunately, Bell has only one sample in the stream reach that appears to show the steep cline. While Stations 11 and 14 define the ends of the cline, Bell's Station 12 is the only sample in the stream reach that appears to show the rapid change, Station 13 did not have sticklebacks.

In his surveys of the Santa Clara River tributaries, Bell found sticklebacks in Sespe Creek, Piru Creek, Castaic Creek and San Francisquito Creek. Bell had 10 stations in Sespe Creek. The stations had populations whose average plate counts ranged from 7.16 plates/fish near the confluence with the Santa Clara River to 11.21 plates/fish at Lion's Gate, the most upstream sample. Sespe Creek had a very robust population and was considered to be the source population for *G. a. microcephalus*. Consequently, the Santa Clara River downstream of the confluence with Sespe Creek is dominated by

downstream gene flow from the Sespe stickleback population with a smaller contribution from the low-plated fish further upstream in the Santa Clara River.

Bell had 7 stations in Piru Creek. The upstream two stations did not have sticklebacks, the downstream populations had average plate counts per fish ranging from 2.06-2.62 plates/fish, which indicated that this was an intergrade population between *G.a. williamsoni* and *G. a microcephalus*.

Bell had only one station in Castaic Creek and the fish have an average plate count of 1.09 plates/fish, which would again suggest it represented an intergrade population. The confluence of Castaic Creek and the Santa Clara River is near where the average lateral plate counts/fish. Bell did not present raw data from his San Francisquito station although in the text he says the San Francisquito Creek population had average plate counts similar to samples from the Santa Clara River near the creek's confluence with the Santa Clara River (station 16 = 0.39 plates/fish). Bell does not report sticklebacks from Santa Paula Creek, Bouquet Canyon Creek or Agua Dulce Creek in Soledad Canyon.

Therefore, Bell considered UTS to occur in the mainstem Santa Clara River from Castaic Creek upstream including San Francisquito Creek, but not Castaic Creek. Two allozyme studies, one by Buth and Crabtree and another unpublished study by Haglund show that the allozyme (genetic) data reflect a pattern consistent with Bell's plate data, although neither study had a sufficiently fine-grained sampling protocol in the Santa Clara River to carefully evaluate correlations between the distribution of lateral plate phenotypes and the genetic data. Both of the genetic studies were designed to evaluate more limited questions. There is a downstream population which extends from the mouth of the river upstream near the confluence with Piru Creek, and there is a zone of intermediate plate counts (intergrade zone) from lower Piru Creek upstream to near Castaic Creek. This stream reach appears to show a steep clinal variation in lateral plate counts, but again, Bell really only analyzed one station with sticklebacks from this river reach. Because surface flow is continuous upstream of the Piru dry stretch all the way to McBean Parkway and sometimes Bouquet Canyon Road, this has typically been considered a unit, the intergrade zone, despite the fact that upstream of Castaic Creek average lateral plate counts/fish qualify them for recognition as UTS.

These distributions and population segments reflect patterns of surface flow that have remained stable for the 35 years since Bell's work. There is typically a dry stretch upstream of Piru Creek, separating the highly plated populations from the intergrade zone (see Photograph 1)t. The average plate counts decrease rapidly from an average of 5.79 plates/fish to 1.81 plates/fish to 0.55 plates/fish in the upstream direction in the intergrade zone. There is no physical barrier between the intergrade populations and those that had plate counts within the defined UTS range. This pattern probably reflected the domination of downstream gene flow from UTS populations over upstream gene flow from *G. a. microcephalus*. Upstream of San Francisquito Creek there is a long dry stretch which usually extends upstream to Lange Station (see Photograph 2). From Lange Station upstream into Soledad Canyon, the sticklebacks are UTS. This population is isolated by a long dry stretch.

The sticklebacks in San Francisquito Creek were recognized as UTS based on both lateral plate count data and allozyme (genetic) data . When Bell did his surveys, flow from San Francisquito Creek more frequently reached the Santa Clara River, and UTS were found in the lower portion of San Francisquito Creek. Downstream gene flow from San Francisquito Creek probably help sustain the low plate count data from the upstream portion of the intergrade zone. San Francisquito Creek had a relatively large self-sustaining stickleback population in the 1970s.

SAN MARINO ENVIRONMENTAL ASSOCIATES DATA

Before beginning to discuss SMEA's results and comparing them to Bell's data, it is critical to acknowledge the difference in how lateral plate count data was collected in the two studies. Bell counted lateral plates on preserved, stained specimens under a dissecting microscope in the laboratory. Haglund and Baskin counted lateral plates on live specimens in the field. In the 1970s, Haglund counted lateral plates on sticklebacks in the field, then preserved, stained and recounted the lateral plates under a dissecting microscope; in order to determine the reliability of plate counts on live fish in the field. This was repeated on 2 samples, and each time the total difference in the average number of lateral plates/fish between the field counts and the laboratory counts was less than 2% (Haglund, unpubl data). This means that a field estimate of 0.55 plates/fish could be 0.54-0.56 plates/fish (2% difference); on a field estimate of 7.00 lateral plates/fish could be 6.86-7.14 plates/fish. Additionally, there were no errors in counting 0-plated fish. This magnitude of difference will have no impact on the information and conclusions presented in this report.

SMEA has put together a variety of data along with that collected during the Trustee Council surveys in an attempt to answer the following questions:

- How stable has the overall pattern of plate counts been in the Santa Clara River drainage,
- How stable are plate count data at a single site in the stream reach between the confluence with Castaic Creek and the dry stretch upstream of the San Francisquito Creek confluence (intergrade zone with plates counts typically near those that define UTS populations),
- What is the overall distribution of sticklebacks in the Santa Clara River,
- What is the distribution of UTS in the Santa Clara River,
- Identify current distributional trends in the sticklebacks/UTS in the Santa Clara River, and
- Determine the distributional patterns for Santa Ana sucker and arroyo chub and compare those data to Bell's data.

All SMEA datasheets containing the data collected during this project can be found in Appendix 1.

Current Pattern of Stickleback Plate Counts in the Santa Clara River Mainstem.

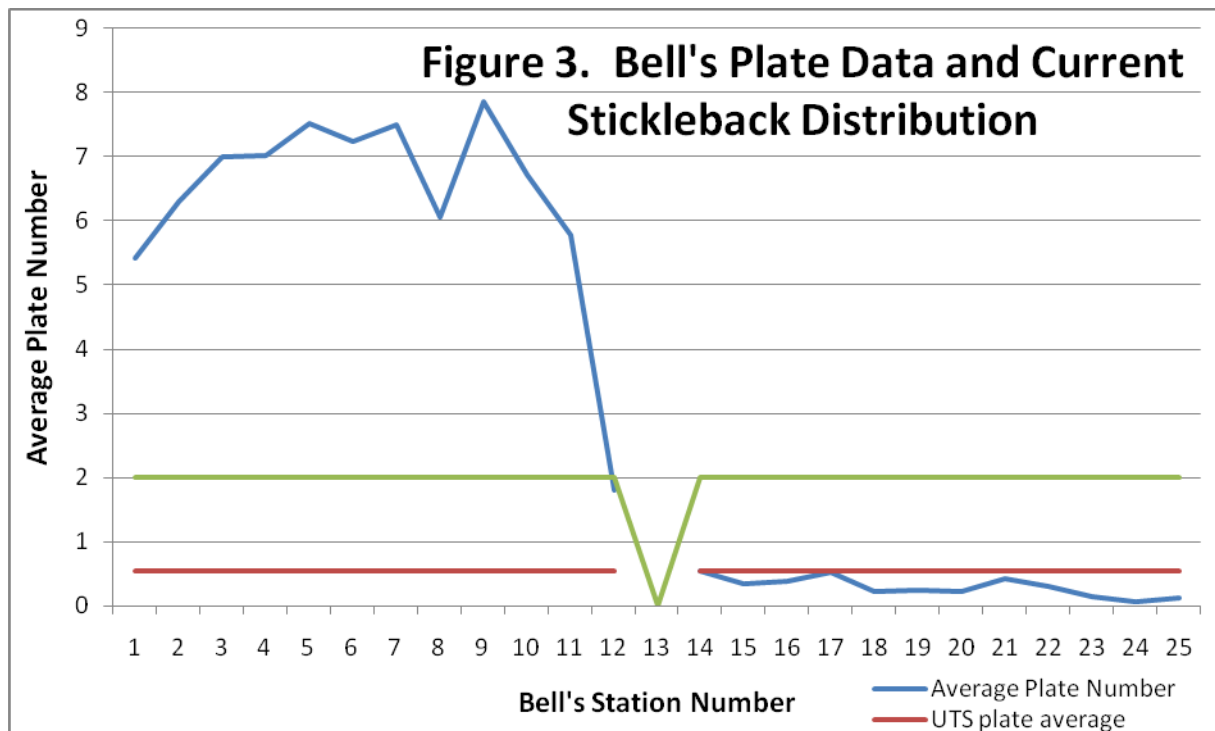


Figure 5. The blue line represents Bell's average number of lateral plates/fish data and the red line shows the cutoff value of 0.55 plates/fish to define the unarmored threespine stickleback. The green line is an indication of presence/absence only, with "2" representing the presence of sticklebacks and "0" indicating the absence of sticklebacks. The figure shows that during Bell's surveys sticklebacks were absent from one of the two sites he collected in the downstream portion of the intergrade zone, where the clinal change in plate number existed.

The pattern of lateral plate variation that Bell documented in the mainstem of the Santa Clara River was used by SMEA to determine sampling pattern. In order to determine the stability of the pattern observed by Bell, it would be necessary to collect data from each of the three river segments identified in Bell's study. A sufficient number of samples would need to be collected to determine the stability of the downstream reach dominated by *G. a microcephalus* and in the upstream reach that was occupied by *G. a. williamsoni*. It was also decided to increase the number of samples within the intergrade zone, particularly in the stream reach where the apparent clinal change in plate number occurred. Bell had only two samples in this reach and one of them did not have any sticklebacks. SMEA had 5 stations in Bell's stream reach of clinal change within the intergrade zone, while maintaining 3 stations in the upstream portion of the intergrade zone. By its very nature, the intergrade zone was expected to be the area most likely to show changes in lateral plate counts because this reach apparently received genetic input from both stickleback subspecies.

In the comparisons that follow, this report uses Bell's station numbers to identify his sampling locations and has assigned station numbers to SMEA's data collection sites. There is not geographic correspondence between the site numbers from Bell's study and those from the SMEA study. In other words, Bell's Station 5 was not taken in the same site as SMEA's Station 5. Bell's sampling took place before the routine use of GPS data to locate sampling sites. SMEA does not consider its attempts to locate Bell's exact stations reliable and so any station correspondence mentioned in this report should only be considered as approximate.

Table 1 summarizes the average plate count data from Bell's study and SMEA's work.

Table 1. Bell's () average number of lateral plates/fish data are presented on the left side of the table. SMEA's data are reported on the right, along with a general description of the site location and the sample size of sticklebacks used to determine the average number of plates/fish. There is no correspondence between the SMEA station number and Bell's station numbers. The shading of the table cells corresponds the area of the river that samples were collected: Blue = *G. a. microcephalus* zone, Green = intergrade zone, Purple – *G. a. williamsoni* zone.

Bell Site Number	Average Plates/Fish	SMEA Site Name	Average Plates/Fish	Sample Size	SMEA Site Number
1	5.43	Harbor Bridge Lagoon	-	0	1
2	6.31	Interstate 101	7.06	35	2
3	7.01	Vern Freeman Diversion	8.53	32	3
4	7.02	Santa Paula Golf Course	6.83	35	4
5	7.52	Santa Paula Bridge	8.93	15	5
6	7.24	Fillmore Highway 23	7.03	35	6
7	7.51	Torrey Road	6.65	17	7
8	6.06	Las Brisas Crossing	No Fish	0	8
9	7.86	Summer Crossing	No Fish	0	9
10	6.72	Salt Creek Crossing	No Fish	0	10
11	5.79	Mayo Crossing	No Fish	0	11
12	1.81	Alfalfa Crossing	No Fish	0	12
13	No Fish	Downstream Old Road	0.66	39	13
14	0.55	Interstate 5	0.39	39	14
15	0.34	Upstream I-5 pipeline	0.21	34	15
16	0.39	Downstream River's End Park	0.05	86	16
17	0.53	US Forest Service Campground	0.0	49	17
18	0.22	Robin's Nest	0.0	30	18
19	0.25	1000 Trails	0.0	31	19
20	0.23				
21	0.42				
22	0.31				
23	0.14				
24	0.06				
25	0.12				

When Bell's data are compared to the SMEA data, it is obvious that the downstream *G. a. microcephalus* zone plate counts are not significantly different. The same is true for the comparison of the *G. a. williamsoni* zone. Therefore, SMEA's data show the same pattern of lateral plate counts in these two stream reaches as did Bell's data. However, any two data patterns collected at different times are going to be either the same or different. SMEA looked for data from the intervening time period that would address the question of the degree of variation that has occurred during this time period. There is a lack of data from the *G. a. microcephalus* zone. SMEA has only one data point based on specimens captured at the Highway 101 bridge (plate counts taken on live fish in the field). The data were taken in May 2000, the sample had an average plate count of 7.93 plates/fish based on counts from 27 sticklebacks ≥ 30 mm standard length. SMEA's sample collected for this study had an average of 7.06 plates/fish and Bell's Station2 had an average of 6.31 plates/fish. While not compelling, it is an additional data point that supports a stable pattern. For the upstream *G. a. williamsoni* zone, SMEA has data from 1988, 1994, and 2000 from the US Forest Service campground in Soledad Canyon that had average plate counts ranging from 0.06 – 0.26 (SMEA unpubl data). The Robin's nest sample for this study was made in July, 2007. SMEA had also taken lateral plate data at Robin's nest in November, 2006. The 2006 data

had an average of 0.05 plates/fish while the 2007 sample contained all unplated fish. SMEA is not familiar with any plate counts from this upper stream reach that are inconsistent with the Recovery Plan's definition of UTS. As previously stated this river reach is well separated from the rest of the drainage by a long dry stretch.

Figure 4 graphically illustrates the data presented in Table 1.

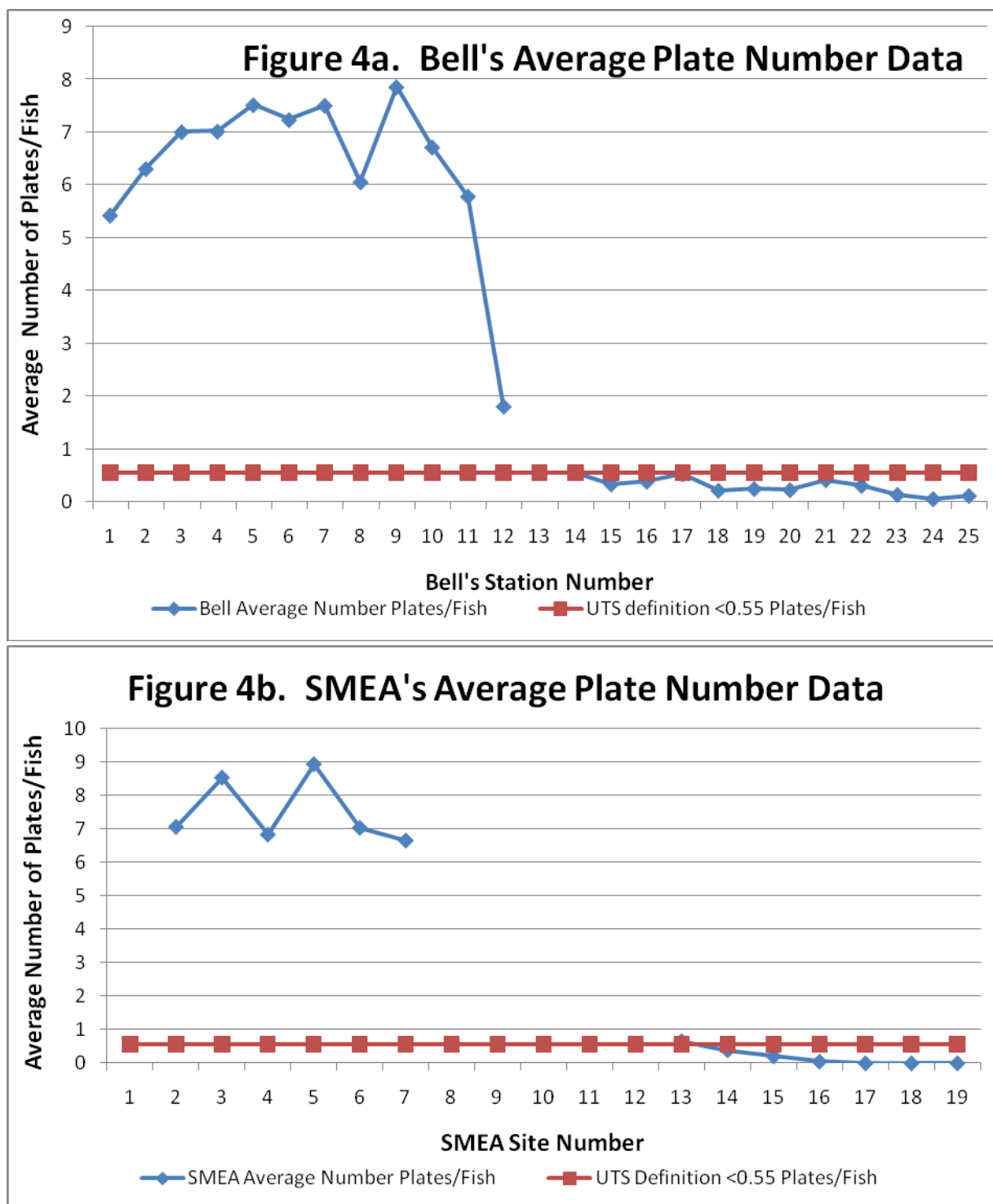


Figure 4 shows Bell's data in 4a and SMEA's data in 4b. Both graphs show consistent a nearly identical pattern in the downstream *G. a. microcephalus* zone and the upstream *G. a. williamsoni* zone.

A comparison of the data for the intergrade zone shows that both Bell's and SMEA's data show that sticklebacks within the intergrade zone from about Castaic Creek upstream (Bell's Stations 14 and 15 and SMEA's Stations 13-15) have plate counts consistent with the definition of the UTS. In 1993, a sample of 40 sticklebacks collected between Old Road and a point upstream of the confluence of Castaic Creek had an average of 0.8 plates/fish. In 1994, a sample of sticklebacks was collected from a 100m section of stream upstream of Castaic Creek and lateral plate counts taken. The sample had an average of 0.03 plates/fish based on 33 specimens. In 1995, lateral plates were counted on a sample of 67 fish collected between Old Road and Castaic Creek. The average number of lateral plates/fish was 0.0 based on 67 specimens. Based on available data, the pattern of low-plated fish occupying the upstream portion of the intergrade zone appears to have been stable although there has been variability in the average number of plates/fish .

In the portion of the intergrade zone , where the steep cline is anticipated, Bell found sticklebacks at only 1 of 2 stations and SMEA failed to find any sticklebacks at 5 stations between the lower end of the intergrade zone and Castaic Creek. The river reach in question is on private property and very limited lateral plate data are available between the time of Bell's sampling and the current SMEA sampling. SMEA does have one dataset collected in August, 1993 that provides some information. A sample of sticklebacks collected between Las Brisas (SMEA Station 8) and the USGS gauging station (just downstream of Salt Creek, SMEA Station 10). Bell's Station 12 was in this river reach. The 1993 stickleback sample had an average of 6.73 plates/fish (N=35), while Bell's Station 12 sample had 1.81 plates/fish. The only other lateral plate data that SMEA has is based on a small sample size, in 1995 lateral plates were counted on a sample of 11 sticklebacks in the river between Camulos and Los Brisas,; the average number of lateral plates/fish was 5.55. This suggests that the downstream end of the intergrade zone may be dynamic with respect to lateral plate counts. However, caution must be exercised in interpreting these data based on the limited data. Additionally, the Santa Clara River was severely impacted by two major oilspills, one in 1991 and the other in 1994. Both of these spills affected the river from upstream of Interstate 5 all the way down to Las Brisas. It is not known how these events may have affected lateral plate count data.

In addition to the question of the pattern of lateral plate variation, is the question of overall stickleback distribution. SMEA's recent sampling suggests that sticklebacks are currently absent from Castaic Creek downstream to the dry stretch above the confluence of Piru Creek. During SMEA's sampling at these 5 stations, the SMEA field joined by another field crew: U.S. Geological Survey, personnel; Camm Swift of Entrix, Chris Dellith of U.S. Fish and Wildlife Service and Newhall Land and Farming personnel. This second field crew seined independently of SMEA and consequently these 5 stations were thoroughly and intensively seined. Bell's data shows that sticklebacks were present at 2 of 3 sample stations between Las Brisas and Castaic Creek in the mid-1970s. Figure 5 graphically illustrates the distribution of sticklebacks during SMEA's survey.

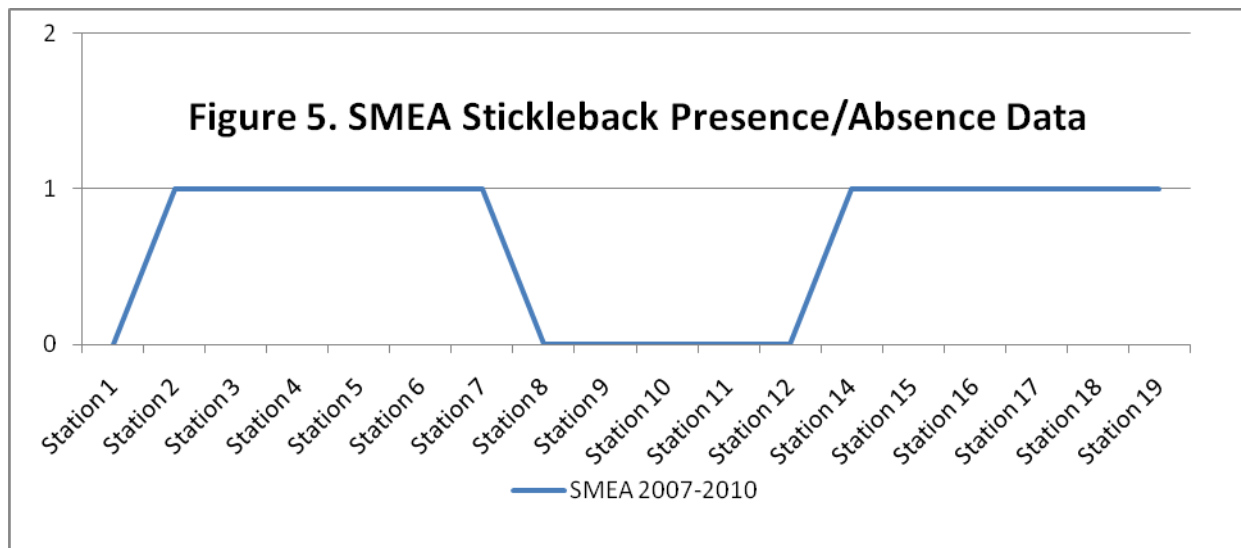


Figure 5. This figure is designed to show the absence of sticklebacks from a significant portion of the Santa Clara River mainstem. The blue line has a value of 1 where sticklebacks were found and a value of 0 where they were absent. The river reach which currently appears unoccupied extends from the dry stretch at Piru Creek’s confluence upstream to Castaic Creek.

Bell’s data demonstrate that sticklebacks were present in the mid-1970s. Additionally, SMEA has unpublished data that shows sticklebacks were present in this reach from 1993 through 1995. Although the numbers of sticklebacks were variable and their distribution changed somewhat from year to year, this river reach was occupied by sticklebacks between 1993-1995. While SMEA’s data do not include plate count data that could be used in the previous discussion, it does have sufficient presence/absence data that demonstrate sticklebacks were present (see Table 2).

Data collected

Table 2. This table contains data on the presence and absence of sticklebacks between Las Brisas and Castaic Creek between 1993 and 1995. The table contains two types of data: point data (dates in parentheses) derived from seining short stream reaches and stream reach surveys where good stickleback habitat was seined while walking the river. Note that Castaic Creek samples were taken just downstream of the confluence of Castaic Creek.

Location	1993	1994	1995
Point Data			
Summer Crossing SMEA Station 9	Present (11/9)	Present (4/6)	Present (4/10, 4/29, 11/27)
Salt Creek Crossing SMEA Station 10	Absent (10/26)	Present (4/6, 5/27)	Present (4/10) Absent (12/15)
Mayo Crossing SMEA Station 11	Present (11/9) Absent (5/6)	Present (4/8)	Present (4/15, 4/21) Absent (12/15)
Alfalfa Crossing SMEA Station 12	Absent (10/26)	Present (5/27) Absent (4/10)	
Castaic Creek	Absent (5/20, 10/26)	Present (5/27)	Present (6/7) Absent (12/15)
Stream Reach Survey Data			
Castaic Creek to Mayo Crossing	Present (7/24)		
Mayo Crossing to USGS Gauging Station	Present (8/1)		
USGS Gauging Station to Las Brisas	Present (8/8)		

Castaic Creek to San Martinez Grande		Present (4/4)	
San Martinez Grande to Salt Creek		Present (4/8)	
Salt Creek to Camulos Diversion		Present (4/10)	
Camulos Diversion to Las Brisas		Present (4/10)	
Castaic Creek to Mayo Crossing			Present (5/14)
Mayo Crossing to Camulas Diversion			Present (5/14)
Camulos Diversion to Las Brisas			Present (5/13)

The preceding data clearly demonstrate that sticklebacks were present from the Piru Creek dry stretch upstream to Castaic Creek so the current absence did not occur from 1993-1995. The documented presence during the 1993-1995 period is more impressive because of the 1991 and 1994 oilspills. Following the 1991 oilspill an SMEA survey between Old Road and where the surface water ended downstream of Piru located only 6 sticklebacks in the entire reach.

Entrix conducted a stickleback survey on September 2005 from Salt Creek upstream to Old Road and found no sticklebacks (Entrix 2007). Surveys of the same area in 2004 had produced small numbers of sticklebacks (Entrix 2007). The record rains of the 2004/2005 rainy season occurred between the two surveys. SMEA collected sticklebacks at Interstate 5 just upstream of Old Road in 2007.

There are insufficient data to determine whether the current lack of sticklebacks in the downstream portion of the intergrade zone is due to permanent habitat change or a transitory event. Recent observations by Haglund and Baskin suggest the absence of sticklebacks may extend upstream to the outflow of the Valencia Water Reclamation Plant. Stickleback were found immediately upstream of the outflow but not downstream of the outflow in 2009. If there has not been a permanent change in the river reach extending downstream from the Valencia WRP, one would expect the area to be recolonized. During the 1994 oilspill a side flow existed between the Valencia WRP outflow and the confluence of Castaic Creek. Because this flow provided a refuge for sticklebacks from the oilspill, SMEA called the area the refugium. On 26 August 1994 a sample of 91 individuals ≥ 30 mm standard length have an average of 0.10 plates/fish. While Entrix's 2005 survey failed to find sticklebacks in the Santa Clara River mainstem, sticklebacks were present in the refugium, no plate counts were reported. While this report was being written Baskin received an anecdotal report that sticklebacks were found in the refugium during spring 2010. The sticklebacks in the refugium and the Santa Clara River upstream of the reclamation plant outflow should constitute source populations for colonization of the mainstem. However, if sticklebacks have been absent from 2005, when Entrix surveyed the area until 2009 when SMEA surveyed the area, there is cause for concern.

Stability of Plate Counts at a Single Site in the Santa Clara River.

The previous discussions illustrate the difficulty of analyzing patterns of temporal variation without adequate sampling. Although the Santa Clara River appears to be a well studied river there is insufficient data to examine the patterns of temporal variation due to the absence of systematically collected data over a long period of time. There is one exception. Considerable data has been collected in the stream reach at Interstate 5 and just downstream. Mike Bell's Station 16 was from the area of Interstate 5. He reports an average of 0.39 plates/fish in 1975. Figure 3 includes Bell's data from 1975 and unpublished SMEA data collected in association with a

variety of projects at the Interstate 5 bridge. The data in 2007 was collected as part of this project. In 2009, SMEA collected two additional samples as part of this project, one upstream of the Interstate 5 (average 0.21 plates/fish) and the other downstream of Old Road (0.56 plates/fish).

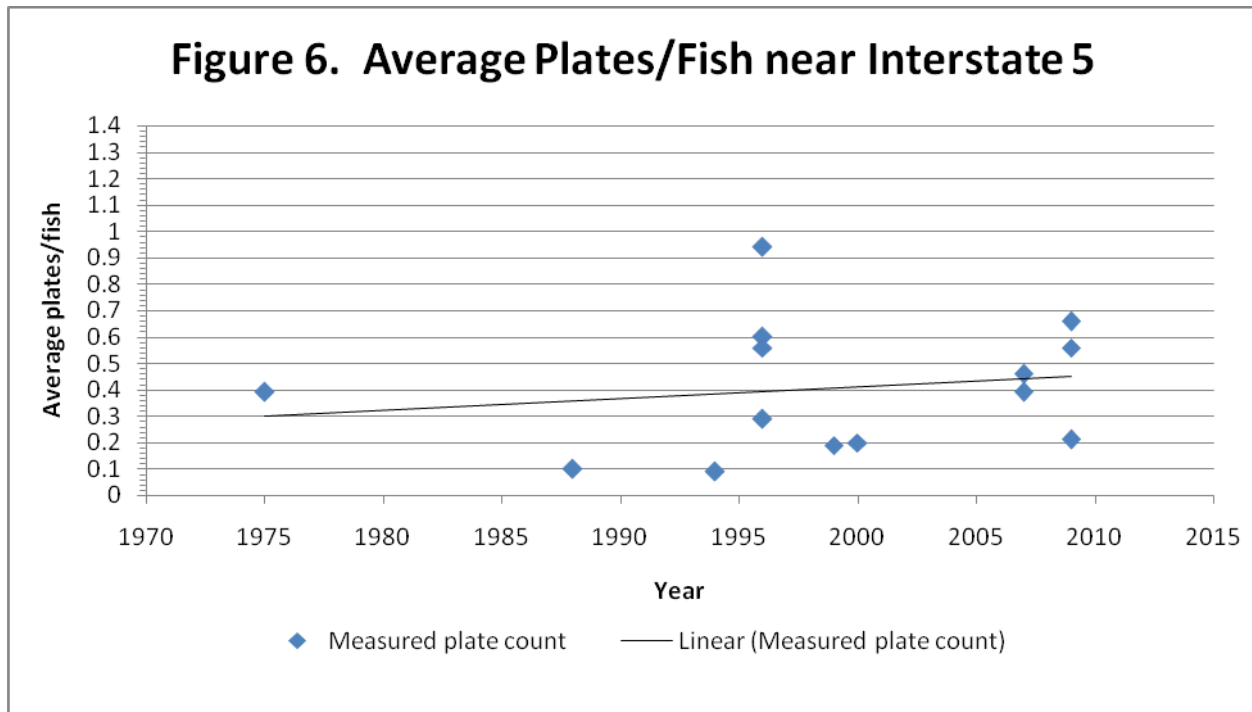


Figure 6. The river reach around Interstate 5 has more lateral plate data than any other site in the Santa Clara River drainage. This figure illustrates the variability in average lateral plate count data over the last 35 years (1975-2009) in the area of the Interstate 5 bridge.

The figure above clearly shows that of 14 samples (unpubl SMEA data), 12 samples had average plate counts within the range used to define UTS (<0.55 plates/fish) or very close to it (three samples had slightly high values, 0.56 and 0.60 plates/fish in 1996 and 0.56 plates/fish in 2009). Two samples, one collected in 1996 and another collected slightly downstream of Interstate 5 in 2009 had average plate counts clearly higher than the 0.55 plates/fish used to define UTS. These data demonstrate that over time there is variability in average plate counts at a single site. However, the data also demonstrate that the Santa Clara River in the area of the I-5 has been dominated by UTS over the last 35 years. A linear trendline was also added to the graph, which suggests a slight increase in average plate counts over time. This increase which appears to have occurred may be due to the loss of the gene flow from the San Francisquito UTS population (see discussion of San Francisquito Creek). SMEA possesses no other comparable datasets to evaluate variability in plate count data at a specific site.

The above data include some composite samples that were collected under circumstances that would assure that different fish were always being counted and are thus valid for provided plate count comparisons. Figure 7 below uses only single collection data to illustrate the percentage of 0-plated fish over time. The trend line added to the graph clearly illustrates that on the average the percentage of unplated fish in the river reach has remained relatively constant over time.

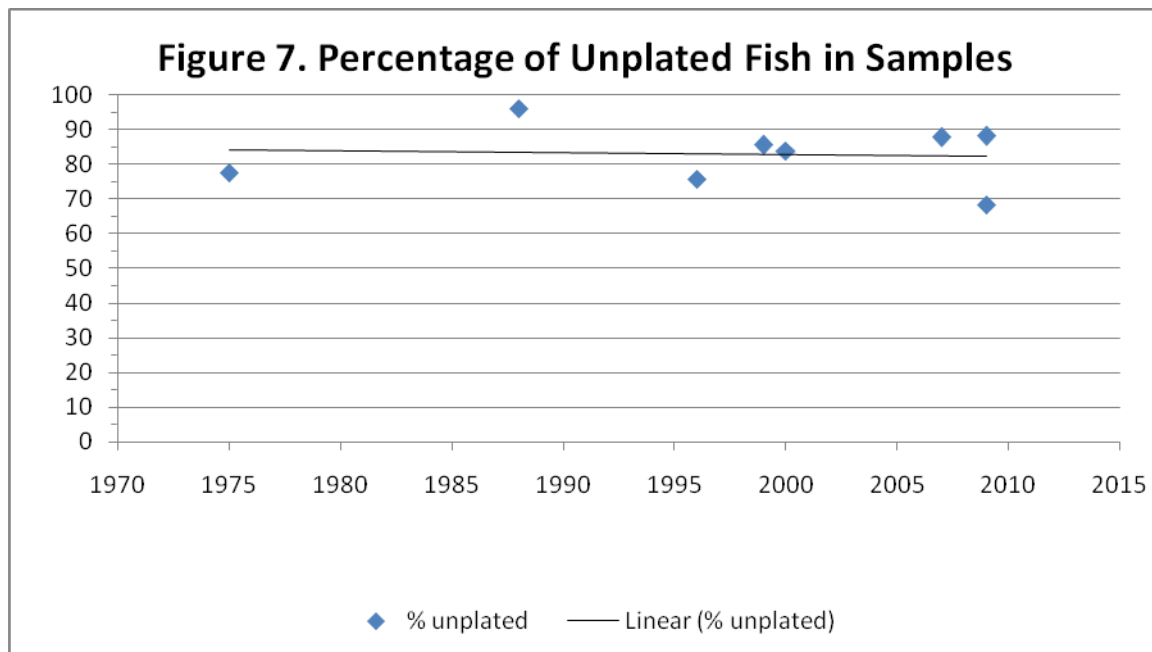


Figure 7. The data points represent the number of unplated fish in samples collected in the river reach near Interstate 5. A trendline has been added to the graph to show that on the average the percentage of unplated fish in the river reach near Interstate 5 has remained unchanged.

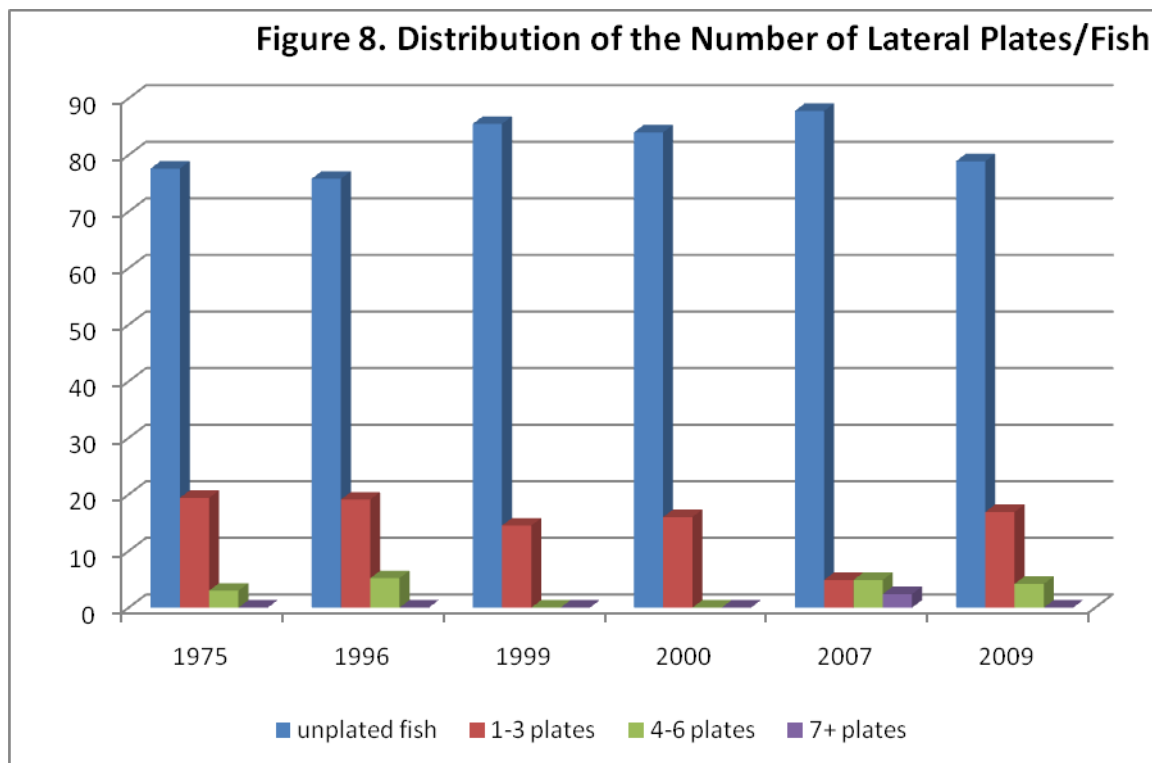


Figure 8. These histograms show the distribution of lateral plate counts from samples in different years.

Sticklebacks in the Tributaries of the Santa Clara River

Table 2 summarizes both Bell's and SMEA's data on sticklebacks in the tributaries to the Santa Clara River. Then following the table each tributary is individually discussed.

Table 2. This table summarizes the data on sticklebacks from both Bell's and SMEA's work. The average number of plates/fish is indicated for each collected sample. If populations were considered to be *G. a. williamsoni*, it is indicated in the table. If the local population has been extirpated, that is also indicated in the table.

Study	Status	Plate Count Data
Santa Paula Creek		
Bell	Did not survey	
SMEA	Sticklebacks Present	SMEA collected one sample (Station 20) from Santa Paula Creek which had an average of 7.50 plates/fish
Sespe Creek		
Bell	Sticklebacks Present	Bell had 10 stations in Sespe Creek with average plate counts at the stations as follows: 28 = 7.98, 29 = 7.16, 30 = 7.58, 31 = 10.06, 32 = 9.09, 33 = 10.19, 34 = 8.15, 35 = 9.76, 36 = 11.21, and 37 = 11.21
SMEA	Sticklebacks Present	SMEA collected 2 samples from Sespe Creek, one from low in the drainage (Station 21) and the other one very high in the drainage (SMEA's Station 22 is equivalent to Bell's station 37). Station have and average of 7.65 plates/fish and station had an average of 10.98 plates/fish
Piru Creek		
Bell	Sticklebacks Present	Bell reports plate counts from 5 stations: 38 = 2.54 plates/fish, 39 = 2.08 plates/fish, 40 = 2.06 plates/fish, 41 = 2.24 plates/fish, and 42 = 2.62 plates/fish
SMEA	Sticklebacks Present	SMEA collected one sample (Station 23) from lower Piru Creek which had an average of 2.52 plates/fish
Castaic Creek		
Bell	Sticklebacks Present	Bell reports the average plate count from one station (#45) as 1.09 plates/fish
SMEA	Surveyed – Periodic Occupation	SMEA found no sticklebacks in Castaic Creek
San Francisquito Creek		
Bell	Sticklebacks present	Bell lists no samples from San Francisquito Creek, but in text notes plates counts are like Santa Clara River near confluence (0.39 plates/fish). <i>G.a. williamsoni</i>
SMEA	Surveyed - Extirpated	Extirpation had been reported prior to this study, but surveys still conducted. <i>G.a. williamsoni</i>
Bouquet Canyon Creek		
Bell	Did not survey	
SMEA	Sticklebacks Present	SMEA has one sample (Station 24) from Bouquet Canyon as part of this study. The average number of plates/fish = 1.30 introgressed <i>G.a. williamsoni</i> ? Extirpated?
Agua Dulce Creek		
Bell	Did not survey	
SMEA	Surveyed - Extirpated	Haglund and Baskin monitored this population from 1992-1996. Plate counts averaged 0. <i>G.a. williamsoni</i>

Santa Paula Creek

Haglund (unpubl data) first collected sticklebacks in Santa Paula Creek in 19 and collected them periodically during the intervening – years. The sticklebacks in Santa Paula Creek have only been found downstream of the confluence of Santa Paula and Sisar Creeks and currently they do not occur upstream of the weir associated with the bridge immediately downstream of the entrance to Thomas Aquinas College. SMEA has never found sticklebacks in the lower part of Santa Paula Creek. Bell did not report sticklebacks from Santa Paula Creek, their absence from the lower portion of the creek may explain Bell's failure to find sticklebacks in this creek. Within the occupied portion of the stream sticklebacks are common.

Sespe Creek

Sespe Creek is the largest tributary to the Santa Clara River. Bell collected sticklebacks throughout the drainage. SMEA did not try to replicate the intensity of Bell's sampling in the Sespe Creek drainage. Instead, SMEA collected a sample low in the drainage and another at the same site that Bell collected his most upstream sample. Plate counts from SMEA's samples are very similar to the average number of lateral plates in Bell's samples. Because of the correspondence in the average number of lateral plates/fish in Bell's samples and those collected by SMEA, SMEA did not collect more samples from Sespe Creek.

Piru Creek

Bell collected 5 samples from Piru Creek. Bell's samples averaged between 2.06 and 2.62 plates/fish, and the variation was unpatterned *i.e.* there was not an increase or decrease in plate counts moving away from the confluence with the Santa Clara River. SMEA's single sample had an average of 2.52 plates/fish, well within the range of the values obtained by Bell.

Castaic Creek

Bell collected only one sample from Castaic Creek and this sample was collected downstream of Castaic Dam. This sample had an average of 1.09 plates/fish. Over the last 35 years, SMEA has sampled portions of the drainage upstream of Castaic Lake many times and never collected sticklebacks. Sticklebacks were collected in Castaic Creek periodically up until the late 1980s (Haglund unpubl data). In 1988, Haglund collected sticklebacks in the lowermost portion of Castaic Creek and the sample had an average 1.17 plates/fish and 58.33% of the fish in the sample were unplated. After 2000, the lower portion of Castaic Creek has been dry most of the time. Following the heavy rains of the 2004/05 rainy season, SMEA did find sticklebacks downstream of Old Road in July 2005. SMEA has surveyed this stream reach every year since 2003 and this is the only time SMEA has found sticklebacks. No plate counts were made on the captured fish. So it appears when there is sufficient surface water present in Castaic Creek the creek will be colonized. However, Castaic Creek no longer supports a resident stickleback population.

San Francisquito Creek

Bell (1976) does not provide plate counts on a sample from San Francisquito Creek, but in the text of the dissertation Bell states that lateral plate counts from San Francisquito Creek are approximately the same as those from the Santa Clara River near the confluence of San Francisquito Creek. The U.S. Geological Survey monitored the sticklebacks in this drainage for a long time **DATES**. SMEA last collected a stickleback in San Francisquito Creek on 24 June 2005. This individual was 32mm SL, had no lateral plates and was collected downstream of the U.S. National Forest boundary at 11 358328E, 3817484N (SMEA unpubl data). This population of UTS has been extirpated.

Bouquet Canyon Creek

The history of the Bouquet Canyon Creek is somewhat confused and undocumented. In the late 1970s Ken Sasaki, then head of the Unarmored Threespine Stickleback Recovery Team reported finding unarmored sticklebacks in Bouquet Canyon Creek. He wrote a memo on the discovery, but no one appears to have a copy of the memo. Bouquet Canyon has a long history of trout introductions at least some of which came from the Fillmore Hatchery. For a period of time these introductions were “contaminated” with Santa Clara River sticklebacks. Thus, it is assumed that the trout introductions also introduced partially armored sticklebacks, *G. a. microcephalus*. Sticklebacks up in the canyon tend to be plated, but little data are available. As part of this study, SMEA collected a sample of sticklebacks near the end of the canyon, just upstream of the U.S. Forest Texas Canyon Station, this sample had an average of 1.30 plates/fish, a value similar to the average plate counts reported by Bell in the Santa Clara River intergrade zone. In June 2005, during a cleanout of the culverts at milepost 15.89 a sample of 34 fish had an average of 3.00 plates/fish, also potentially indicative of plate counts in an intergrade zone. In 1998, SMEA had collected a sample of 27 sticklebacks downstream of Vasquez Canyon Road that had 0.44 plates/fish. The same area was surveyed in 2000, but the entire stretch was dry. In 2001, the same stream reach was surveyed, only 3 sticklebacks were located but all three were zero-plated. In 2005, only 3 sticklebacks were found again. Plates were counted on two individuals, one of which was zero-plated and the other had one plate. In subsequent years this stream reach has typically been dry. Clearly the habitat occupied by the low-plated fish has been more ephemeral in the last decade.

These data can be explained if an unarmored population occupied the lower portion of the creek (upstream of the channelized reach) and Santa Clara River fish from the Fillmore area were introduced with trout upstream in the canyon. A narrow intergrade zone developed in the area of the U.S. Forest Service Texas Canyon Station. Unfortunately, the unarmored population has been severely reduced or extirpated due to habitat loss. At this point it is unlikely that we will know if Bouquet Canyon Creek was once occupied by an unarmored population unless genetic data are collected on the existing fish in the stream and used to compare fish from the canyon with those lower in the drainage. This may represent another extirpated unarmored stickleback population.

Agua Dulce Creek

Bell (1976) does not report sticklebacks from Agua Dulce Creek. Haglund and Baskin has never seen sustained flow in the lower portion of Agua Dulce Creek near its confluence with the Santa Clara River. This combined with the fact that the sticklebacks are limited to a very reach of the creek may explain why Bell did not find this population

Haglund and Baskin studied a stickleback population in a short stretch of Agua Dulce Creek immediately downstream of Highway 14. Between 1992 and 1996, Haglund and Baskin counted lateral plates on 81 sticklebacks. Eighty sticklebacks were unplated and one stickleback had a single lateral plate. Most of the stickleback habitat existed on the property of a single land owner who had grown up on the property. He reported that sticklebacks had been present since he was a child, so the population of sticklebacks had occupied this stream reach for a considerable period of time, at least since the 1960s. As part of this project Baskin and Haglund went back to the stickleback locality. The reach that had held sticklebacks was completely dry. This population appears to have been extirpated.

Distribution of Arroyo Chub And Santa Ana Sucker in SCR mainstem

The arroyo chub, *Gila orcutti* and Santa Ana sucker, *Catostomus santaanae*, are native to southern California, but they are considered introduced into the Santa Clara River. The arroyo chub is listed as a Species of Special Concern by California Department of Fish and Game and the Santa Ana sucker is listed as Federally Threatened by the U.S. Fish and Wildlife Service in its “native” habitat. The Santa Ana sucker in the Santa Clara River is excluded from the federal listing, but it is noted as potentially important to the recovery of the Santa Ana sucker.

The arroyo chub is the most abundant fish in much of the Santa Clara River. The presence of arroyo chub at Bell’s (1976) localities in the mainstem of the Santa Clara River is illustrated graphically in Figure 7a and SMEA’s data are displayed in Figure 7b.

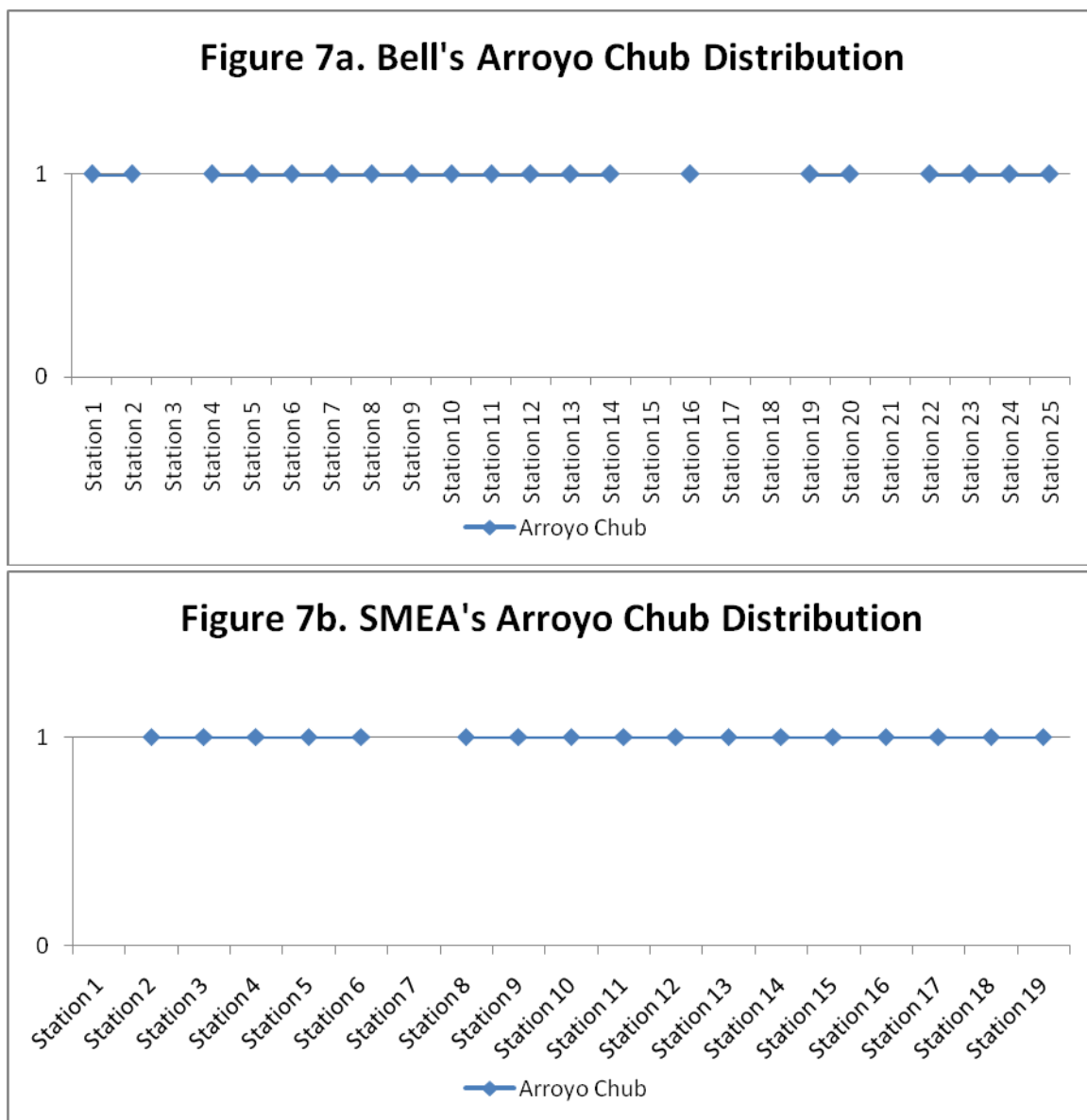


Figure 7. Blue Diamonds indicate the presence of arroyo chubs at specific localities.

As can be readily seen in Figure 7, both Bell's and SMEA's data show that arroyo chubs are widely distributed throughout the Santa Clara River mainstem. Bell failed to capture arroyo chubs at 5 of his 25 sites (20%) and SMEA failed to find arroyo chubs at 2 of its 19 (10.5%) mainstem sites. There are no systematic differences between Bell's and SMEA's arroyo chub distributional data. Arroyo chubs appear to have the least specific habitat requirements and therefore, utilize the widest variety of habitats in the Santa Clara River. Arroyo chubs should be considered as likely to occur wherever there is surface flow.

Table 3. This table summarizes the data on arroyo chub distribution in Santa Clara River tributaries from both Bell's and SMEA's work.

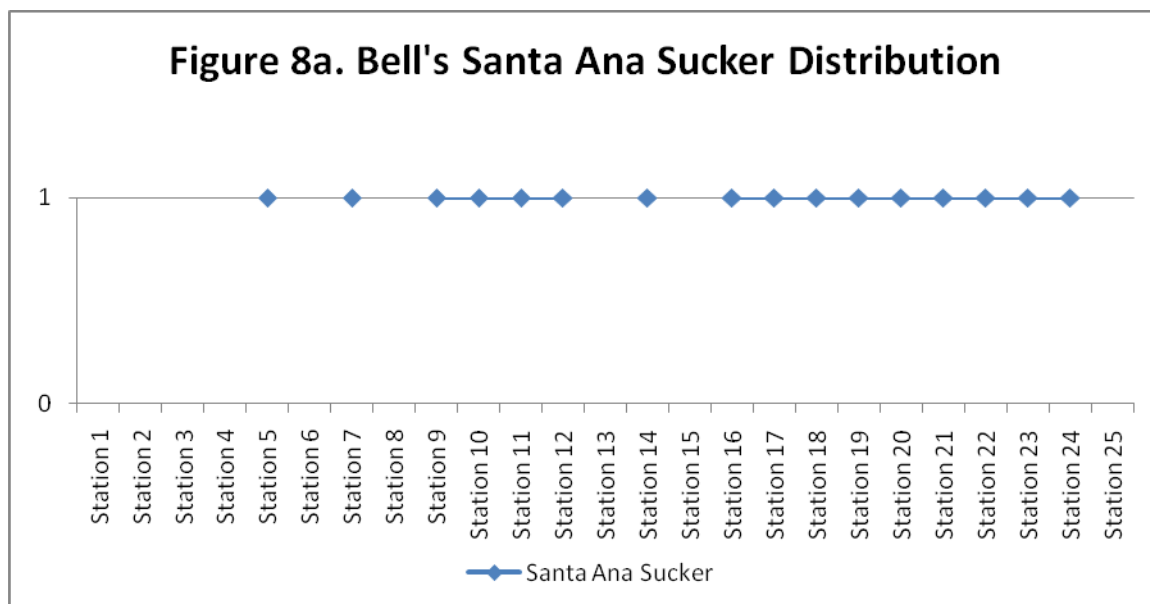
Study	Survey Result	Comments
Santa Paula Creek		
Bell	Did not survey	
SMEA	Surveyed Present	Baskin did not collect any arroyo chubs during his sampling for this project. However, earlier in the year Haglund had found a small number of arroyo chubs (unpubl data).
Sespe Creek		
Bell	Surveyed Present	Bell recorded arroyo chub at all his sites in Sespe Creek including the most upstream site.
SMEA	Surveyed Present	SMEA found arroyo chub in lower Sespe Creek, but did not find them at the most upstream site which corresponds to Bell's site 37. The only two data points for the most upstream locality are Bell's and SMEA's data. So arroyo chub may have disappeared from upper Sespe Creek.
Piru Creek		
Bell	Surveyed Present	Bell recorded arroyo chub from 5 of his 7 sites in Piru Creek. The two sites lacking stickleback do not show a pattern one is the downstream most sample and the other is higher in the drainage, but not the most upstream site.
SMEA	Surveyed Present	Arroyo chub were present at SMEA's site in lower Piru Creek. In the 1990s SMEA collected arroyo chub upstream in Piru Creek just downstream of the dam (unpubl data).
Castaic Creek		
Bell	Surveyed Absent	Bell did not collect arroyo chub at his one site in Castaic Creek
SMEA	Surveyed Present	SMEA has found arroyo chub in Castaic Creek downstream of Old Road and upstream of Highway 126 repeatedly within the last decade (unpubl data). Arroyo chub were present during sampling for this project also.
San Francisquito Creek		
Bell	Surveyed Present	Bell did collect arroyo chub at his one site in San Francisquito Creek
SMEA	Surveyed Present	SMEA did collect arroyo chub in San Francisquito Creek on the National Forest during this study, at about the same site Bell collected his sample. SMEA also found arroyo chubs downstream of the Forest Service property near Lady Linda Road in 2005 (unpubl data). This site was dry at the time of the survey for this project.
Bouquet Canyon Creek		
Bell	Did not survey	
SMEA	Surveyed	In all of its sampling in Bouquet Canyon, SMEA has never found arroyo chub

	Absent	upstream of the channelized section of Bouquet Canyon Creek.
Agua Dulce Creek		
Bell	Did not survey	
SMEA	Surveyed Extirpated	As discussed in the stickleback section this stream section was dry at the time of the survey.

Bell's data and SMEA's data are very consistent. SMEA did not find arroyo chub at the most upstream site in Sespe Creek and Bell did not find sticklebacks in Castaic Creek; these are the only two differences where both Bell and SMEA surveyed.

Arroyo chub distributions appear to have been stable over the 35 years between the collection of Bell's data and SMEA's data.

The presence of Santa Ana suckers at Bell's (1976) localities in the mainstem of the Santa Clara River is illustrated graphically in Figure 7a and SMEA's data are displayed in Figure 7b.



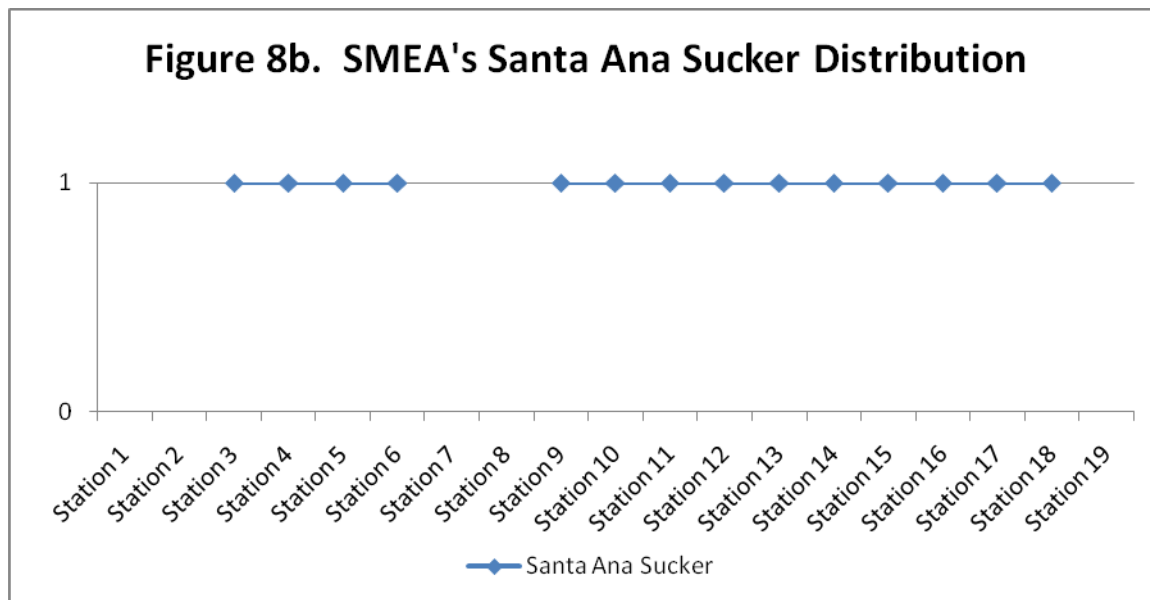


Figure 8. Blue Diamonds indicate the presence of Santa Ana suckers at specific localities.

Bell failed to capture Santa Ana suckers at 9 of his 25 sites (36%) and SMEA failed to find suckers at 5 of its 19 (26.3%) mainstem sites. This is probably not a significant difference between Bell's and SMEA's data. Santa Ana suckers have specific habitat requirements for reproduction and all life stages. Their abundance and distribution will be significantly dependent on habitat conditions and distribution within the stream. One pattern is consistent in both Bell's and SMEA's data and that is the absence of suckers from the most downstream sites and the most upstream site.

The Santa Ana sucker has in the past hybridized with the introduced Owen's River Sucker, *Catostomus fumeiventris*. Bell did not recognize this introgression and therefore did not separate areas of hybridization. Observations by SMEA and an allozyme study by Buth () suggest that hybrids probably did not colonize the intergrade zone and clearly did not reach Soledad Canyon. Because these two suckers belong to two different sucker lineages, their lip morphologies are significantly different allowing recognition of hybrids. Also, the Owen's River sucker is significantly larger than the Santa Ana sucker and their coloration is different. Throughout the 1970s and into the 1980s, large Owen's suckers could be readily seen below the outflow of the Fillmore hatchery (Haglund, unpubl data). Into the 1980s the suckers in lower Sespe Creek were highly intergraded with potentially recognizable F₁ and F₂ individuals (Haglund, unpubl data and Camm Swift, pers comm). During SMEA's surveys, the lip morphology of suckers throughout the mainstem was that of the Santa Ana sucker. To our knowledge, large Owen's River suckers have not been observed in the Santa Clara River since the mid-1990s. Therefore, hybrid individuals have been back-crossing with only pure Santa Ana suckers or other hybrids for many years, presumably reducing the presence of the *C. fumeiventris* genome in the Santa Clara River suckers. This conclusion needs to be verified by genetic studies.

Table 4. This table summarizes the data on arroyo chub distribution in Santa Clara River tributaries from both Bell's and SMEA's work.

Study	Survey Conducted	Comments
Santa Paula Creek		
Bell	Did not survey	
SMEA	Surveyed Hybrids present	Suckers are present upstream of the channelization in Santa Paula Creek. However, lip morphology, coloration and size indicate that these are intergrades between the Santa Ana sucker and the Owen's River sucker. In the past Haglund has collected pure Santa Ana suckers in Santa Paula Creek near Highway 126.
Sespe Creek		
Bell	Surveyed Limited Presence	Bell collected suckers at only one site in Sespe Creek, at one of his more downstream sites
SMEA	Surveyed Present	SMEA found suckers at the downstream site but not the site high in the drainage. Work in Sespe Creek by Haglund in the late 1970s and early 1980s and subsequent work by SMEA (unpubl data) clearly documents the presence of suckers from the confluence with the Santa Clara River upstream to Devil's Gorge. During this time though the population was in essence a hybrid swarm, while today lip morphology reflects pure Santa Ana suckers
Piru Creek		
Bell	Surveyed Present downstream	Bell found suckers at his two downstream most sites in Piru Creek, but they were absent upstream.
SMEA	Surveyed Present downstream	No Santa Ana suckers were collected at SMEA's site in Piru Creek, however several were observed just upstream of SMEA's site. In the 1990s SMEA surveyed upstream in Piru Creek just downstream of the dam, no Santa Ana suckers were found (unpubl data).
Castaic Creek		
Bell	Surveyed Absent	Bell did not collect Santa Ana suckers
SMEA	Surveyed Sporadically Present	SMEA did not find suckers during the current survey. However, SMEA has examined a portion of Castaic Creek every year since 2003 and Santa Ana suckers have been present about 50% of the time in low numbers. Potentially the result of serial recolonization from the Santa Clara River when there is sufficient flow.
San Francisquito Creek		
Bell	Surveyed Absent	Bell did not collect Santa Ana suckers in San Francisquito Creek
SMEA	Surveyed Status unknown	SMEA did collect Santa Ana suckers in San Francisquito Creek on the National Forest during this study, at about the same site Bell collected his sample. SMEA did find Santa Ana suckers downstream of the Forest Service property near Lady Linda Road in 2005 (unpubl data). This site was dry at the time of the survey for this project.
Bouquet Canyon Creek		
Bell	Did not survey	
SMEA	Surveyed Absent	SMEA has never collected Santa Ana suckers in Bouquet Canyon Creek
Agua Dulce Creek		
Bell	Did not survey	
SMEA	Surveyed Absent	SMEA never collected Santa Ana suckers in Agua Dulce Creek and the site was dry at the time of this survey.

Conclusions.

This study has two critically important conclusions which are enumerated below:

1. The overall pattern of lateral plate phenotypes described by Bell in the mid-1970s appears to have been stable over the last 35 years.
2. Sticklebacks are declining in the Santa Clara River.
 - a. Unarmored threespine stickleback populations are being lost and instead of a stable situation the subspecies is becoming critically imperiled.
 - i. The San Francisquito Creek population has been extirpated.
 - ii. The Agua Dulce Creek population has been extirpated
 - iii. This past year it was reported that a U.S. Geological Survey team failed to find sticklebacks at the U.S. Forest Service campground in Soledad Canyon. Haglund and Baskin have surveyed this site many times over the last 35 years and never failed to locate sticklebacks.
 - b. Sticklebacks are absent from the Santa Clara River in the reach downstream of the Valencia Water Reclamation Plant at the time of this study. This is a recent phenomenon.

Other important finding of this project are:

1. Arroyo chub distributions appear to be stable.
2. Santa Ana sucker distributions appear to be stable.
 - a. Santa Ana suckers not F_1 or F_2 intergrades dominate the suckers in the Santa Clara River. Genetic studies will be needed to determine the degree of intergradation that remains.
 - b. Suckers in Santa Paula creek show a lip morphology and coloration more typical of the Owen's sucker than the Santa Ana sucker.
3. The low-plated nature of the stickleback population at the upstream end of the intergrade zone has remained stable over the last 35 years.
4. The status of the Bouquet Canyon Creek sticklebacks will need to be determined by genetic studies. The unarmored population found in the creek just upstream of the channelized section appears to have been lost. Therefore, only an intergrade zone and the introduced Santa Clara River fish remain. Only genetic studies will be able to determine if an unarmored population of *G.a. williamsoni* ever existed in Bouquet Canyon Creek.
5. Castaic Creek no longer provides stable fish habitat, but is recolonized when surface flow conditions permit

Stickleback populations have been considered stable and resilient in the Santa Clara River. The current data suggest this is not the case and more attention will need to be devoted to Santa Clara River sticklebacks if the populations are to survive another 35 years.

Appendix 1

SMEA Data Sheets

San Marino Environmental Associates

Trustee Council: Santa Clara River Fish Survey

Date: 18 June 2007

General Location Description: Santa Clara River at Interstate 5 bridge, Los Angeles County

SMEA Site 14

GPS location NAD 27	11 354410 E	Length Seined	25 meters
Upstream end	3810315 N	Fish Captured	Number

Photographs	Camera owner: J.N. Baskin
# taken	Codes
~5	

Sticklebacks	71
Santa Ana sucker	25
Arroyo chub	15

Habitat Characterization (seined)	
Bank Vegetation	%
Shrubs/ruderal	85
Mulefat/Willow	15
Arundo	
Bare	
Substrate	%
Mud/Silt	6
Sand	64
Gravel	30
Cobble	
Boulder	
Habitat type	%
Edgewater	60
Riffle	40
Pool	
Run	
Glide	

Number Seine Hauls	12
--------------------	----

Additional stream to collect stickleback sample			
Length	0 m	Hauls	

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate		X	X
Good	X		
Excellent			

Life Stages	stickleback	sucker	chub
Fry			
YOY	X	X	X
Subadult/Adult	X	X	X

Temperature	22.8 °C
Time	4:11pm

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	yes	yes

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback		bank vegetation		instream vegetation	
Santa Ana sucker					
Arroyo chub					
Non-native					

Personnel	J.N. Baskin	Reptiles/Amphibians	Photo?
	T.R. Haglund		

COMMENTS: 95% of stream edge watercress, 5% reed/rush.
DO = 10.43; Sal = 0.05; pH = 7.78; Cond = 1.26; Turb = 0

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	29	0	0		
2	45	0	0		
3	54	0	0		
4	43	0	0		
5	37	0	0		
6	33	0	0		
7	36	2	0		
8	41	0	0		
9	42	0	0		
10	42	2	2		
11	28	0	0		
12	28	0	0		
13	35	0	0		
14	32	0	0		
15	26	0	0		
16	26	0	0		
17	22				
18	28	0	0		
19	30	0	0		
20	27	0	0		
21	24				
22	23				
23	41	0	0		
24	25				
25	27	0	0		
26	22				
27	25				
28	27	0	0		
29	29	2	2		
30	41	0	0		
31	41	1	0		
32	26	0	0		
33	30	4	4		
34	41	0	0		
35	16				
36	25				
37	30	0	0		
38	37	0	0		
39	23				
40	24				
41	30	0	0		
42	36	0	0		
43	29	0	0		
44	22				
45	36	0	0		
46	34	0	0		
47	38	0	0		
48	32	0	0		
49	23				
50	28	0	0		

Date: 18 June 2007

Location: Santa Clara River at Interstate 5
bridge (page 1 of 2)

Data Collector(s)

T.R. Haglund

J.N. Baskin

Data Transcription

T.R. Haglund

Comments

Experimented with photography of individual specimens, was unable to obtain good quality consistent photos from which measurements could be taken later...spine length, head length etc

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	31	0	0		
2	20				
3	20				
4	33	0	0		
5	31	0	0		
6	25				
7	17				
8	22				
9	18				
10	24				
11	25				
12	19				
13	22				
14	24				
15	21				
16	17				
17	16				
18	20				
19	17				
20	19				
21	17				
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49					
50					

San Marino Environmental Associates

Date: 18 June 2007

Location: Santa Clara River at Interstate 5
bridge (page 2 of 2)

Data Collector(s)

T.R. Haglund

J.N. Baskin

Data Transcription

T.R.Haglund

Comments

Santa Ana Suckers				
Fish #	SL	Weight	Lips	Photo
1	103		CS	
2	121		CS	
3	98		CS	
4	37		CS	
5	86		CS	
6	92		CS	
7	84		CS	
8	93		CS	
9	111		CS	
10	90		CS	
11	85		CS	
12	99		CS	
13	96		CS	
14	98		CS	
15	102		CS	
16	103		CS	
17	35		CS	
18	36		CS	
19	50		CS	
20	20		CS	
21	46		CS	
22	38		CS	
23	32		CS	
24	20		CS	
25	32		CS	
26				
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45				
46				
47				
48				
49				
50				

San Marino Environmental Associates

Date: 18 June 2007

Location: Santa Clara River at Interstate 5 bridge

Data Collector(s)

T.R. Haglund

J.N. Baskin

Data Transcription

T.R. Haglund

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chubs		
Fish #	Standard Length	Weight
1	55	
2	53	
3	53	
4	62	
5	62	
6	53	
7	61	
8	60	
9	60	
10	16	
11	63	
12	62	
13	61	
14	15	
15	17	
16		
17		
18		
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San Marino Environmental Associates

Date: 18 June 2007

Location: Santa Clara River at Interstate 5 bridge

Data Collector(s)

T.R. Haglund

J.N. Baskin

Data Transcription

T.R. Haglund

Comments

General Location Description: Bouquet Canyon Creek at closed campground (Zuni Campground) just upstream of Bouquet Canyon Creek Forest Service station. Upstream of Arizona crossing. Los Angeles County **SMEA Site 24**

GPS location NAD 27	11 3667025 E	Length Seined	25 meters
Downstream end	3819287 N	Fish Captured	Number
Photographs	Camera owner: T.R. Haglund	Sticklebacks	64
# taken	Codes	Santa Ana sucker	0
~4		Arroyo chub	0

Habitat Characterization (seined)	
Bank Vegetation	%
Various emergent	40
Mulefat/Willow/Cottonwood	10
Watercress	28
Bare	22
Substrate	%
Mud/Silt	25
Sand	25
Gravel	50
Cobble	
Boulder	
Habitat type	%
Edgewater	37
Riffle	55
Pool	8
Run	
Glide	

Number Seine Hauls **14**

Additional stream to collect stickleback sample			
Length	0 m	Hauls	

Habitat Evaluation	stickleback	sucker	Chub
Poor		X	
Moderate			X
Good			
Excellent	X		

Life Stages	stickleback	sucker	Chub
Fry			
YOY	X		
Subadult/Adult	X		

Temperature	16.6 °C
Time	9:00am

Attached Datasheets	stickleback	sucker	Chub
yes or no	yes	no	No

Characterization of site with abundant fish		depth	velocity	habitat type	Substrate
Fish Species	#individuals	45		Small pool	Snd/gravl
Stickleback	10	bank vegetation		instream vegetation	
Santa Ana sucker		misc		Watercress	
Arroyo chub					
Non-native					

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	M. Delgrosso		

COMMENTS: Hard to seine, sticks and debris common, emergent vegetation – sticklebacks common

DO = 9.89; Sal = 0.02; pH = 7.9; Cond = 1.03; Turb = 0

One 42 mm SL trout

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	34	0	0	10.0	
2	22			4.5	
3	48	2	2	12.0	
4	34	0	0	10.5	
5	31	1	0	8.5	
6	36	1	0	10.0	
7	27	1	0	8.0	
8	32	0	0	9.7	
9	37	2	2	9.6	
10	43	3	2	13.0	
11	24			5.0	
12	37	0	0	10.6	
13	43	0	0	12.5	
14	25			6.0	
15	32	0	0	10.3	
16	31	0	0	10.5	
17	30	0	0	9.8	
18	36	2	3	9.6	
19	33	0	0	10.0	
20	30	1	0	8.8	
21	23			7.0	
22	22			5.6	
23	20			6.0	
24	30	0	0	8.0	
25	25			5.0	
26	30	2	0	7.8	
27	33	0	0	9.6	
28	28	0	0	7.4	
29	23			4.5	
30	33	2	3	9.0	
31	34	0	0	10.2	
32	26	0	1	6.1	
33	23				
34	26	1	0	6.5	
35	23				
36	22				
37	27	1	1	6.0	
38	25				
39	23				
40	22				
41	28	0	0	8.5	
42	29	2	3	7.8	
43	28	0	0	9.0	
44	31	3	3	8.5	
45	20				
46	37	0	0	10.0	
47	23				
48	25				
49	25				
50	29	0	0	8.6	

Date: 21 June 2007

Location: Bouquet Canyon Creek at closed campground (Zuni Campground) just upstream of Bouquet Canyon Creek Forest Service station. Upstream of Arizona crossing

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	27	0	0	6.0	
2	30	0	0	7.5	
3	30	2	2	6.6	
4	28	0	0	6.0	
5	17				
6	23				
7	17				
8	31	0	0	7.0	
9	18				
10	24				
11	18				
12	21				
13	15				
14	25				
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

Date: 21 June 2007

Location: Bouquet Canyon Creek at closed campground (Zuni Campground) just upstream of Bouquet Canyon Creek Forest Service station. Upstream of Arizona crossing

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 21 June

2007

General Location Description: Santa Clara River, Soledad Canyon, U.S. Forest Service Campground,
Los Angeles County
SMEA Site 17

GPS location NAD 27	11 379701 E	Length Seined	25 meters	
Downstream end	3811657 N		Fish Captured	Number
			Sticklebacks	91
			Santa Ana sucker	18
			Arroyo chub	33

Photographs	Camera owner: T.R. Haglund
# taken	Codes
~3	

Habitat Characterization (seined)	
Bank Vegetation	%
Shrubs/ruderal	55
Mulefat/Willow/Cottonwood	15
Arundo	
Bare	30
Substrate	%
Mud/Silt	20
Sand	45
Gravel	35
Cobble	
Boulder	
Habitat type	%
Edgewater	45
Riffle	45
Pool	10
Run	
Glide	

Number Seine Hauls	14
--------------------	----

Additional stream to collect stickleback sample			
Length	0 m	Hauls	

Habitat Evaluation	stickleback	sucker	Chub
Poor			
Moderate		X	
Good			
Excellent	X		X

Life Stages	stickleback	sucker	Chub
Fry			
YOY	X	X	X
Subadult/Adult	X		X

Attached Datasheets	stickleback	sucker	Chub
yes or no	yes	yes	Yes

Temperature	20.5 °C
Time	11:15am

Characterization of site with abundant fish		depth	velocity	habitat type	Substrate
Fish Species	#individuals				
Stickleback		bank vegetation		instream vegetation	
Santa Ana sucker					
Arroyo chub		Fish evenly distributed			
Non-native					

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	M.Delgrosso		

COMMENTS: Fish abundant

DO = 10.76; Sal = 0.04; pH = 8.0; Cond = 1.11; Turb = 5

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	31	0	0	8.9	
2	24			6.6	
3	34	0	0	10.2	
4	40	0	0	11.5	
5	22			3.8	
6	25			5.0	
7	23			3.2	
8	36	0	0	10.3	
9	29	0	0	8.0	
10	39	0	0	11.0	
11	25			4.9	
12	26	0	0	5.5	
13	35	0	0	10.2	
14	24			4.5	
15	24			4.9	
16	24			4.0	
17	34	0	0	10.0	
18	27	0	0	7.0	
19	19				
20	20				
21	19				
22	25				
23	22				
24	27	0	0	6.6	
25	23				
26	21				
27	25				
28	24				
29	19				
30	20				
31	19				
32	27	0	0	5.8	
33	26	0	0	6.5	
34	22				
35	26	0	0	6.0	
36	33	0	0	9.0	
37	30	0	0	8.5	
38	19				
39	25				
40	28	0	0	7.5	
41	22				
42	30	0	0	8.5	
43	25				
44	31	0	0	9.2	
45	26	0	0	5.8	
46	18				
47	16				
48	19				
49	27	0	0	7.0	
50	25				

Date: 21 June 2007

Location: Santa Clara River, Soledad Canyon,
U.S. Forest Service Campground,
Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	23			4.3	
2	32	0	0	9.6	
3	28	0	0	7.0	
4	35	0	0	11.0	
5	23			3.8	
6	29	0	0	8.5	
7	31	0	0	9.0	
8	32	0	0	9.5	
9	35	0	0	10.0	
10	32	0	0	10.0	
11	27	0	0	6.5	
12	35	0	0	9.5	
13	26	0	0	6.0	
14	24			5.5	
15	27	0	0	6.2	
16	34	0	0	11.0	
17	34	0	0	10.0	
18	24			5.0	
19	23			4.0	
20	33	0	0	9.4	
21	35	0	0	10.7	
22	31	0	0	8.0	
23	35	0	0	10.5	
24	33	0	0	9.8	
25	25			5.5	
26	34	0	0	10.5	
27	27	0	0	7.0	
28	32	0	0	8.8	
29	24			4.2	
30	29	0	0	8.0	
31	19				
32	30	0	0	7.8	
33	24				
34	23				
35	22				
36	36	0	0	11.7	
37	26	0	0	5.7	
38	24				
39	19				
40	38	0	0	10.5	
41	28	0	0	7.0	
42					
43					
44					
45					
46					
47					
48					
49					
50					

Date: 21 June 2007

Location: Santa Clara River, Soledad Canyon,
U.S. Forest Service Campground,
Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Santa Ana Suckers				
Fish #	SL	Weight	Lips	Photo
1	19		CS	
2	20		CS	
3	22		CS	
4	21		CS	
5	25		CS	
6	19		CS	
7	13		CS	
8	23		CS	
9	21		CS	
10	19		CS	
11	24		CS	
12	22		CS	
13	21		CS	
14	20		CS	
15	25		CS	
16	18		CS	
17	17		CS	
18	16		CS	
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

San Marino Environmental Associates

Date: 21 June 2007

Location: Santa Clara River, Soledad Canyon,
U.S. Forest Service Campground,
Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Arroyo Chubs		
Fish #	Standard Length	Weight
1	78	
2	34	
3	38	
4	37	
5	56	
6	28	
7	51	
8	56	
9	15	
10	19	
11	59	
12	47	
13	57	
14	59	
15	22	
16	17	
17	17	
18	24	
19	22	
20	32	
21	19	
22	20	
23	18	
24	16	
25	17	
26	29	
27	15	
28	18	
29	20	
30	34	
31	32	
32	28	
33	27	
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

San Marino Environmental Associates

Date: 21 June 2007

Location: Santa Clara River, Soledad Canyon,
U.S. Forest Service Campground,
Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 22 July

2007

General Location Description: 1,000 Trails, Soledad Canyon, Santa Clara River, Los Angeles County
 West End of Park **SMEA Site 19**

GPS location		Length Seined	25 meters	
			Fish Captured	Number
			Sticklebacks	83
			Santa Ana sucker	0
			Arroyo chub	47

Photographs	Camera owner: J.N. Baskin
# taken	Codes
4 of site	
3 others	

Habitat Characterization (seined)	
Bank Vegetation	%
Emergent Nettle 5%	40
Mulefat/Willow	5
Cottonwood	30
Polygonium	10
Substrate	%
Mud/Silt	9
Sand	6
Gravel	4
Cobble	1
Boulder	
Habitat type	%
Edgewater	30
Riffle	0
Pool	40
Run	30
Glide	0

Number Seine Hauls	9
--------------------	---

Additional stream to collect stickleback sample			
Length	10 m	Hauls	4

Habitat Evaluation	stickleback	sucker	Chub
Poor		X	
Moderate			
Good	X		X
Excellent			

Life Stages	stickleback	sucker	Chub
Fry			
YOY	X		X
Subadult/Adult	X		X

Attached Datasheets	stickleback	sucker	Chub
yes or no	yes	no	Yes

Temperature	26.5 °C
Time	13:25

Characterization of site with abundant fish		depth	velocity	habitat type	Substrate
Fish Species	#individuals	187	Very slow	pool	As above
Stickleback	Yes	bank vegetation		instream vegetation	
Santa Ana sucker	No	nettle		Watercress	
Arroyo chub	Yes				
Non-native	No				

Personnel		Reptiles/Amphibians		Photo?
			Hyla regilla	No

COMMENTS:

DO = 7.54; Sal = 0.02; pH = 7.9; Cond = 5.22; Turb = 12

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	44	0	0	12	2.0
2	25	0	0	7	
3	28	0	0	9	2.0
4	53	0	0	14	2.5
5	51	0	0	13	2.5
6	44	0	0	12	3.0
7	43	0	0	13	3.0
8	44	0	0	13	2.5
9	36	0	0	10	2.5
10	32	0	0	9	2.8
11	48	0	0	13	3.0
12	26	0	0	6	
13	45	0	0	12	3.0
14	45	0	0	13	2.2
15	36	0	0	10	2.4
16	33	0	0	8	2.0
17	30	0	0	7	1.5
18	29	0	0	7	
19	31	0	0	9	2.0
20	32	0	0	8	2.0
21	32	0	0	8	2.4
22	39	0	0	10	2.0
23	23				
24	22				
25	46	0	0	14	2.6*
26	26				
27	22				
28	21				
29	27				
30	24				
31	32				
32	26				
33	27				
34	26				
35	29				
36	27				
37	54	0	0	13	2.8*
38	25				
39	27				
40	47	0	0	14	2.5*
41	21				
42	16				
43	27				
44	22				
45	23				
46	30				
47	18				
48	32	0	0	9	2.9*
49	23				
50	22				

Date: 22 July 2007

Location: 1,000 Trails, Soledad Canyon, Santa Clara River, Los Angeles County

Data Collector(s)

J.N. Baskin

Jason Hwan and Carla Stout

Data Transcription

Carla Stout/Jason Hwan

Comments

*from additional seining

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	27				
2	29				
3	30				*
4	41	0	0	11	2.9*
5	29	0	0	12.5	2.5*
6	25				
7	26				
8	20				
9	24				
10	34	0	0	8	1.9*
11	33	0	0	9	2.0*
12	30	0	0	8.5	1.2*
13	16				
14	29				
15	17				
16	30	0	0	8.5	2.3*
17	28				
18	12.5				
19	22				
20	26				
21	22				
22	24				
23	16				
24	23				
25	23				
26	23				
27	27				
28	25				
29	19				
30	23				
31	18				
32	22				
33	16				
34	21				
35	22				
36	25				
37	21				
38	24				
39	22				
40	24				
41	20				
42	22				
43	18				
44	22				
45	28				*
46					
47					
48					
49					
50					

Date: 22 July 2007

Location: 1,000 Trails, Soledad Canyon, Santa Clara River, Los Angeles County

Data Collector(s)

J.N. Baskin

Jason Hwan and Carla Stout

Data Transcription

Carla Stout/Jason Hwan

Comments

*from additional seining

Arroyo Chubs		
Fish #	Standard Length	Weight
1	37	
2	33	
3	64	
4	62	
5	24	
6	19	
7	20	
8	31	
9	50	
10	34	
11	52	
12	39	
13	62	
14	48	
15	37	
16	40	
17	22	
18	18	
19	14	
20	21	
21	12	
22	17	
23	21	
24	60	
25	43	
26	38	
27	28	
28	26	
29	18	
30	17	
31	20	
32	20	
33	19	
34	15	
35	19	
36	14	
37	34	
38	68	
39	61	
40	34	
41	25	
42	15	
43	22	
44	19	
45	19	
46	15	
47	40	
48		
49		
50		

San Marino Environmental Associates

Date: 22 July 2007

Location: 1,000 Trails, Soledad Canyon, Santa Clara River, Los Angeles County

Data Collector(s)

J.N. Baskin

Jason Hwan and Carla Stout

Data Transcription

Carla Stout and Jason Hwan

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 28 July

2007

General Location Description: Robin's Nest, Soledad Canyon, Santa Clara River, Los Angeles County
SMEA Site 18

GPS location		Length Seined	25 meters	
		Fish Captured		Number
		Sticklebacks		62
		Santa Ana sucker		4
		Arroyo chub		91

Photographs	Camera owner: J.N. Baskin
# taken	Codes

Habitat Characterization (seined)	
Bank Vegetation	%
Emergent Nettle	10
Mulefat/Willow	60
Arundo ?Shrub	30
Bare	0
Substrate	%
Mud/Silt	25
Sand	35
Gravel	35
Cobble	5
Boulder	1
Habitat type	%
Edgewater	10
Riffle	75
Pool	10
Run	5
Glide	

Number Seine Hauls	9
--------------------	---

Additional stream to collect stickleback sample			
Length	0 m	Hauls	

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate		X	
Good	X		X
Excellent			

Life Stages	stickleback	sucker	chub
Fry			
YOY			
Subadult/Adult			

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	yes	yes

Temperature	24.2 °C
Time	12:55

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals	200	slow	pool	Slt,grl,snd
Stickleback		bank vegetation		instream vegetation	
Santa Ana sucker		shrub		azola,watercress	
Arroyo chub					
Non-native					

Personnel	J.N. Baskin	Reptiles/Amphibians		Photo?
	Jason Hwan		1 tadpole preserved	no

COMMENTS: Almost the entire edge of the seined area was azola.

Bottom: 25% red willow roots, 20% dead vegetation, 10% green algae w/ sand and gravel underneath.

DO = 8.3; Sal = 0.02; pH = 7.77; Cond = 0.631; Turb = 1

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	36	0	0	10.5	2.1
2	34	0	0	10.5	2.0
3	39	0	0	11.0	2.5
4	31	0	0	9.0	2.1
5	45	0	0	12.5	2.5
6	33	0	0	9.8	2.0
7	35	0	0	10.0	2.0
8	38	0	0	10.2	2.2
9	43	0	0	12.2	2.5
10	41	0	0	12.0	2.9
11	58	0	0	11.5	2.2
12	43	0	0	12.5	2.4
13	32	0	0	8.9	2.1
14	39	0	0	11.0	2.5
15	38	0	0	11.0	3.0
16	36	0	0	11.4	2.5
17	40	0	0	13.2	3.0
18	32	0	0	10.0	2.0
19	36	0	0	12.0	2.0
20	33	0	0	10.0	2.0
21	32	0	0	9.8	2.0
22	33	0	0	11.0	2.0
23	30				
24	43	0	0	13.0	3.0
25	43	0	0	14.0	3.0
26	43	0	0	13.5	2.8
27	47	0	0	13.0	2.8
28	35	0	0	11.5	3.0
29	35	0	0	11.0	2.5
30	33	0	0	9.5	1.9
31	40	0	0	13.5	3.0
32	33				
33	28				
34	23				
35	26				
36	32				
37	33				
38	26				
39	30				
40	37				
41	42				
42	31				
43	29				
44	29	SL			
45	27	51	26		
46	26	52	33		
47	29	53	27		
48	33	54	32		
49	30	55	32		
50	25	56	34		

Date: 28 July 2007

Location: Robin's Nest, Soledad Canyon, Santa Clara River, Los Angeles County

Data Collector(s)

J.N. Baskin

Jason Hwan

Data Transcription

L. Muro

Comments

Santa Ana Suckers				
Fish #	SL	Weight	Lips	Photo
1	59		CS	
2	83		CS	
3	47		CS	
4	108		CS	
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

San Marino Environmental Associates

Date: 28 July 2007

Location: Robin's Nest, Soledad Canyon, Santa Clara River, Los Angeles County

Data Collector(s)

J.N. Baskin

Jason Hwan

Data Transcription

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chubs		
Fish #	Standard Length	Weight
1	19	
2	42	
3	38	
4	33	
5	27	
6	33	
7	30	
8	37	
9	27	
10	40	
11	42	
12	35	
13	46	
14	40	
15	40	
16	35	
17	68	
18	33	
19	37	
20	38	
21	36	
22	33	
23	33	
24	43	
25	52	
26	35	
27	41	
28	35	
29	30	
30	41	
31	31	
32	37	
33	36	
34	70	
35	30	
36	40	
37	35	
38	39	
39	36	
40	33	
41	46	
42	32	
43	59	
44	34	
45	37	
46	30	
47	31	
48	38	
49	31	
50	32	

San Marino Environmental Associates

Date: 28 July 2007

Location: Robin's Nest, Soledad Canyon, Santa Clara River, Los Angeles County

Data Collector(s)

J.N. Baskin

Data Transcription

Comments

Arroyo Chubs		
Fish #	Standard Length	Weight
1	38	
2	57	
3	39	
4	31	
5	43	
6	35	
7	35	
8	24	
9	38	
10	37	
11	35	
12	30	
13	34	
14	53	
15	60	
16	36	
17	33	
18	39	
19	43	
20	42	
21	42	
22	35	
23	32	
24	35	
25	58	
26	35	
27	62	
28	53	
29	30	
30	32	
31	31	
32	30	
33	35	
34	36	
35	35	
36	37	
37	46	
38	41	
39	35	
40	36	
41	39	
42		
43		
44		
45		
46		
47		
48		
49		
50		

San Marino Environmental Associates

Date: 28 July 2007

Location: Robin's Nest, Soledad Canyon, Santa Clara River, Los Angeles County

Data Collector(s)

J.N. Baskin

Data Transcription

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 5 August

2007

General Location Description: Sespe Creek (at north end of Grande Avenue) tributary to the Santa Clara River, Ventura County.
SMEA Site 21

GPS location		Length Seined	25 meters	
		Fish Captured		Number
		Sticklebacks		264
		Santa Ana sucker		1
		Arroyo chub		28

Photographs	Camera owner: J.N. Baskin
# taken	Codes
~5	

Habitat Characterization (seined)	
Bank Vegetation	%
Shrubs	75
Mulefat/Willow	5
Arundo	
Bare	20
Substrate*	%
Mud/Silt	5
Sand	10
Gravel	10
Cobble	15
Boulder	15
Habitat type	%
Edgewater	
Riffle	
Pool	100
Run	
Glide	

Number Seine Hauls 15

Additional stream to collect stickleback sample			
Length	0 m	Hauls	

Habitat Evaluation	stickleback	sucker	chub
Poor		X	
Moderate			
Good			X
Excellent	X		

Life Stages	stickleback	sucker	chub
Fry			
YOY	X	X	X
Subadult/Adult	X		X

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	yes	yes

Temperature	30.4 °C
Time	3:25

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals	~60 cm	0	pool	Vegetation
Stickleback		bank vegetation		instream vegetation	
Santa Ana sucker		Shrub		azola, watercress	
Arroyo chub					
Non-native					

Personnel	J.N. Baskin	Reptiles/Amphibians	Photo?
	Jason Hwan		
	L. Muro		

COMMENTS: *About 45% covered by algae & plant; thick could not see substrate – but silt under veg over cobble/boulder. Virtually no flow at edges..

DO = 12.26; Sal = 0.04; pH = 8.6; Cond = 0.94; Turb = 20

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	22				
2	31	3	3	9.8	2.8
3	32	4	3	8.8	2.3
4	19				
5	20				
6	22				
7	22				
8	33	3	3	9.8	3
9	23				
10	22				
11	18				
12	23				
13	22				
14	22				
15	24				
16	29	3	3	8.3	1.7
17	25				
18	21				
19	29	4	2	9.5	3
20	24.5				
21	25.2				
22	31	3	4	9.0	2.5
23	21				
24	22				
25	22				
26	31	4	3	10.0	3.4
27	24				
28	23				
29	28	0	1	9.0	1.5
30	23				
31	19				
32	21				
33	24				
34	22				
35	19				
36	20				
37	20				
38	22				
39	27	3	2	6.5	2.3
40	21				
41	21				
42	21				
43	22				
44	28	2	3	8.1	2.0
45	21				
46	22				
47	21				
48	23				
49	38	4	4	11.3	3.2
50	22				

Date: 5 August 2007

Location: Sespe Creek (at north end of Grande Avenue) tributary to the Santa Clara River, Ventura County.

Data Collector(s)

Data Transcription

Comments

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	22				
2	23				
3	27	4	3	7.5	2.4
4	22				
5	24				
6	38	5	4	11.0	3.0
7	24				
8	20				
9	30	4	4	10.8	4.2
10	23				
11	24				
12	24				
13	23				
14	22				
15	25				
16	23				
17	18				
18	24				
19	20				
20	32	4	4	9.5	3.6
21	20				
22	23				
23	21				
24	21				
25	31	3	2	9.5	3.1
26	22				
27	21				
28	23				
29	22				
30	29	4	4	9.0	2.4
31	24				
32	23				
33	22				
34	22				
35	20				
36	20				
37	21				
38	23				
39	31	3	4	9.8	2.0
40	23				
41	23				
42	22				
43	20				
44	20				
45	23				
46	22				
47	29	4	4	8.0	2.5
48	21				
49	22				
50	22				

Date: 5 August 2007

Location: Sespe Creek (at north end of Grande Avenue) tributary to the Santa Clara River, Ventura County.

Data Collector(s)

Data Transcription

Comments

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	23				
2	23				
3	24				
4	21				
5	28	3	2	8.6	2.5
6	24				
7	21				
8	22				
9	18				
10	25				
11	19				
12	24				
13	28				
14	29				
15	23				
16	25				
17	23				
18	26				
19	26				
20	26				
21	25				
22	25				
23	24				
24	24				
25	25				
26	23				
27	23				
28	25				
29	23				
30	26				
31	25				
32	26				
33	25				
34	26				
35	21				
36	24				
37	24				
38	24				
39	24				
40	21				
41	27				
42	23				
43	23				
44	19				
45	26				
46	29				
47	28				
48	25				
49	25				
50	29				

Date: 5 August 2007

Location: Sespe Creek (at north end of Grande Avenue) tributary to the Santa Clara River, Ventura County.

Data Collector(s)

Data Transcription

Comments

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	24				
2	28	3	3	8.5	2.5
3	24.5				
4	23				
5	22				
6	24				
7	20				
8	22				
9	18				
10	19				
11	19				
12	28	4	3	8.0	2.0
13	22				
14	28	3	3	8.8	2.2
15	33	4	4	9.9	2.6
16	23				
17	30	4	4	8.0	2.5
18	25				
19	25				
20	18				
21	29	3	2	9.1	2.8
22	31	4	3	9.8	3.1
23	20				
24	22				
25	18				
26	20				
27	20				
28	32	3	1	10.0	3.0
29	25				
30	25				
31	24				
32	24				
33	19				
34	20				
35	24				
36	22				
37	23				
38	23				
39	22				
40	24				
41	24				
42	18				
43	29	3	2	9.2	2.1
44	22				
45	20				
46	20				
47	22				
48	21				
49	20				
50	20				

Date: 5 August 2007

Location: Sespe Creek (at north end of Grande Avenue) tributary to the Santa Clara River, Ventura County.

Data Collector(s)

Data Transcription

Comments

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	27				
2	23				
3	28				
4	22				
5	27				
6	26				
7	28				
8	23				
9	27				
10	29				
11	23				
12	29				
13	17				
14	21				
15	19				
16	21				
17	22				
18	26				
19	30	3	2	9.9	3.0
20	21				
21	21				
22	25				
23	19				
24	26				
25	29	4	2	8.5	2.4
26	20				
27	23				
28	23				
29	24				
30	22				
31	21				
32	23				
33	23				
34	21				
35	30	2	2	8.6	2.1
36	22				
37	24				
38	24				
39	23				
40	26				
41	26				
42	23				
43	28				
44	25				
45	24				
46	29				
47	22				
48	27				
49	22				
50	27				

Date: 5 August 2007

Location: Sespe Creek (at north end of Grande Avenue) tributary to the Santa Clara River, Ventura County.

Data Collector(s)

Data Transcription

Comments

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	20				
2	23				
3	23				
4	26				
5	23				
6	20				
7	23				
8	24				
9	26				
10	18				
11	21				
12	22				
13	21				
14	23				
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

Date: 5 August 2007

Location: Sespe Creek (at north end of Grande Avenue) tributary to the Santa Clara River, Ventura County.

Data Collector(s)

Data Transcription

Comments

Santa Ana Suckers				
Fish #	SL	Weight	Lips	Photo
1	39			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

San Marino Environmental Associates

Date: 5 August 2007

Location: Sespe Creek (at north end of Grande Avenuet) tributary to the Santa Clara River, Los Angeles County.

Data Collector(s)

Data Transcription

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chubs		
Fish #	Standard Length	Weight
1	18	
2	34	
3	25	
4	51	
5	53	
6	23	
7	53	
8	23	
9	25	
10	25	
11	20	
12	21	
13	25	
14	26	
15	20	
16	24	
17	19	
18	23	
19	21	
20	32	
21	54	
22	31	
23	18	
24	49	
25	24	
26	23	
27	18	
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

San Marino Environmental Associates

Date: 5 August 2007

Location: Sespe Creek (at north end of Grande Avenue) tributary to the Santa Clara River, Los Angeles County

Data Collector(s)

J.N. Baskin

Data Transcription

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 28 September

2007

General Location Description: Santa Clara River at Torrey Road, Ventura County**SMEA Site 7**

GPS location NAD 27	11 334744 E	Length Seined	25 meters	
Downstream end	3807180 N		Fish Captured	Number
			Sticklebacks	32
			Santa Ana sucker	0
			Arroyo chub	0

Photographs	Camera owner: T.R. Haglund
# taken	Codes
~6	

Habitat Characterization (seined)	
Bank Vegetation	%
Various emergent	40
Mulefat/Willow/Cottonwood	
Watercress	35
Bare	25
Substrate	%
Mud/Silt	15
Sand	50
Gravel	35
Cobble	
Boulder	
Habitat type	%
Edgewater	78
Riffle	22
Pool	
Run	
Glide	

Number Seine Hauls 16

Additional stream to collect stickleback sample			
Length	0 m	Hauls	

See Comments

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate	X		X
Good		X	
Excellent			

Life Stages	stickleback	sucker	chub
Fry			
YOY	X		
Subadult/Adult	X		

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	no	no

Temperature	18.6 °C
Time	5:00pm

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					

Fish evenly distributed

Personnel	T.R. Haglund	Reptiles/Amphibians		Photo?
	M. Delgrosso			

COMMENTS: Initially seined SCR mainstem, no fish, then tried several good looking areas and no fish. Sample actually taken in small side channel (braid), southside, upstream of bridge. (total ~50m w/o fish)

DO = 9.94; Sal = 0.06; pH = 8.26; Cond = 1.31; Turb = 5

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	51	5	5	10.0	
2	18			3.1	
3	57	5	4	14.4	
4	51	4	3	12.3	
5	21			6.7	
6	19			6.5	
7	51	1	0	12.5	
8	19			6.0	
9	17			5.7	
10	55	4	4	14.1	
11	37	0	1	11.0	
12	49	5	4	12.0	
13	42	5	5	12.5	
14	16			4.5	
15	21			6.2	
16	16			4.2	
17	43	5	4	12.4	
18	16			3.3	
19	23			5.8	
20	17			5.2	
21	51	4	3	13.1	
22	16			4.0	
23	49	4	4	13.0	
24	21			5.0	
25	18			4.6	
26	39	4	5	11.4	
27	52	2	2	16.1	
28	47	2	2	13.0	
29	47	2	3	12.5	
30	44	4	4	11.0	
31	14			3.0	
32	48	3	1	12.0	
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

Date: 28 September 2007

Location: Santa Clara River at Torrey Road,
Ventura County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Hot males and gravid females were present

Trustee Council: Santa Clara River Fish Survey

Date: 29 September 2007

General Location Description: Santa Paula Creek, Route 150, at Thomas Aquinas College, downstream of drop structure, Ventura County

SMEA Site 20

GPS location		Length Seined	25 meters	
Downstream end		Fish Captured	Number	
		Sticklebacks	38	
		Santa Ana sucker	0	
		Arroyo chub	0	

Photographs	Camera owner: J.N. Baskin
# taken	Codes
2	

Habitat Characterization (seined)	
Bank Vegetation	%
Various emergent	95
Mulefat/Willow/Cottonwood	
Watercress	
Bare	5
Substrate	%
Mud/Silt	
Sand	
Gravel	
Cobble	
Boulder	
Habitat type	%
Edgewater	25
Riffle	5
Pool	50
Run	20
Glide	

Number Seine Hauls	8
--------------------	---

Additional stream to collect stickleback sample			
Length	0 m	Hauls	

See Comments

Habitat Evaluation	stickleback	sucker	chub
Poor		X	
Moderate			X
Good	X		
Excellent			

Life Stages	stickleback	sucker	chub
Fry			
YOY	X		
Subadult/Adult	X		

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	no	no

Temperature	17 °C
Time	12:00pm

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals	90mm	slow	edgewater	algae
Stickleback	22	bank vegetation		instream vegetation	
Santa Ana sucker		Emergent vegetation		algae	
Arroyo chub		Fish evenly distributed			
Non-native					

Personnel	J.N. Baskin	Reptiles/Amphibians	Photo?
	R. Packard	Pseudacris cadaverina	No
	J. Hwan		
	C. Stout		

COMMENTS: Entire substrate covered by algae and organic debris, so could not score substrate accurately.

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	28	0	0	9.1	2.0
2	48	1	3	12.5	3.0
3	55	4	4	12.7	3.8
4	53	5	4	12.7	3.8
5	30	5	6	9.5	3.0
6	30	4	4	9.5	2.5
7	24			6.0	1.5
8	29	3	4	11.0	2.1
9	26			9.5	2.5
10	36	4	4	11.5	2.5
11	26	-	-	10.1	broken
12	25	-	-	8.0	1.6
13	27	-	-	8.2	1.9
14	32	3	3	9.8	2.6
15	24	-	-	7.9	1.6
16	29	3	3	10.0	2.2
17	30	4	4		
18	28	3	3		
19	25.5	4	4		
20	26	3	4		
21	28	4	4		
22	26	4	4		
23	27.5	4	4		
24	26.5	4	4		
25	25	5	4		
26	25	4	4		
27	27.5	4	5		
28	25	4	3		
29	28	2	4		
30	26	4	4		
31	26	5	4		
32	27	4	4		
33	25	4	3		
34	26	4	5		
35	25	4	4		
36	25	4	4		
37	25	4	4		
38	26.5	4	4		
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

San Marino Environmental Associates

Date: 29 September 2007

Location: Santa Paula Creek, Route 150, at Thomas Aquinas College, downstream of drop structure, Ventura County

Data Collector(s)

J.N. Baskin

R. Packard

Data Transcription

C. Stout

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 30 September

2007

General Location Description: Sespe Creek at Lion's Gate, Ventura County

SMEA Site 22

GPS location NAD 27	No Signal	Length Seined	25 meters	
Downstream end			Fish Captured	Number
			Sticklebacks	50
			Santa Ana sucker	
			Arroyo chub	
			Rainbow trout	5

Photographs	Camera owner: T.R. Haglund
# taken	Codes
4	

Habitat Characterization (seined)	
Bank Vegetation	%
Trees	10
Mulefat/Willow/Cottonwood	
"Grass"	20
Bare/Rocks	70
Substrate	%
Mud/Silt	5
Sand	15
Gravel	15
Cobble	40
Boulder	25
Habitat type	%
Edgewater	15
Riffle	25
Pool	55
Run	5
Glide	

Number Seine Hauls	17
--------------------	----

Additional stream to collect stickleback sample			
Length	0 m	Hauls	
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate			
Good	X	X	
Excellent			X

Life Stages	stickleback	sucker	chub
Fry			
YOY	X		
Subadult/Adult	X		

Temperature	12.4 °C
Time	10:00am

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	no	no

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					
		Fish evenly distributed			

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	M. Delgrosso		

COMMENTS:

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	35	5	5		
2	35	5	6		
3	38	5	6		
4	41	7	7		
5	45	6	6		
6	32	7	7		
7	33	7	6		
8	33	6	6		
9	32	4	5		
10	42	5	5		
11	43	5	5		
12	34	7	6		
13	36	3	4		
14	37	6	7		
15	36	5	6		
16	36	4	5		
17	36	7	7		
18	19	-	-		
19	21	-	-		
20	32	6	6		
21	36	6	6		
22	39	6	5		
23	41	6	5		
24	41	4	5		
25	47	4	4		
26	45	5	5		
27	42	6	6		
28	38	5	5		
29	36	6	6		
30	21	-	-		
31	22	-	-		
32	40	5	5		
33	39	5	5		
34	39	5	4		
35	44	5	6		
36	43	5	6		
37	40	5	5		
38	42	5	5		
39	42	5	5		
40	23	-	-		
41	43	6	6		
42	41	6	6		
43	35	4	5		
44	21	-	-		
45	24	-	-		
46	39	6	7		
47	29	6	6		
48	24	-	-		
49	24	-	-		
50	22	-	-		

Date: 30 September 2007

Location: Santa Clara River at Lion's Gate,
Ventura County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

SMEA Site 5

Date: 25 November 2007

Location: Santa Clara River in Santa Paula,
South Mountain Road bridge, Ventura County

Data Collector(s)

J.N. Baskin

R. Packard

Data Transcription

J.N. Baskin

Comments

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	41.0	5	5	12.2	2.0
2	39.0	3	3	10.1	2.0
3	28.0	4	5	8.3	2.0
4	26.2	4	4	8.2	1.9
5	26.8	4	3	8.5	2.0
6	28.1	3	4	9.5	2.0
7	29.8	4	4	8.3	1.9
8	30.0	6	6	9.5	2.0
9	27.0	4	5	9.4	1.9
10	26.0	5	5	8.8	2.0
11	25.1	3	4	8.1	1.9
12	25.0	5	5	8.8	2.0
13	25.4	6	5	8.8	1.9
14	28.7	6	5	9.9	2.0
15	25.1	5	4	8.2	1.9
16	24.1	5	5	8.0	1.5
17	24.9	6	6	8.0	1.8
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

Trustee Council: Santa Clara River Fish Survey

Date: 20 June

2008

General Location Description: Santa Clara River, just downstream of Rivers End Campground – first dirt road toward river downstream of Rivers End, Los Angeles County

SMEA Site 16

GPS location	33° 90763 N	Length Seined	25 meters	
Downstream end	118° 59745 W		Fish Captured	Number
			Sticklebacks	98
			Santa Ana sucker	8
			Arroyo chub	2

Photographs	Camera owner: T.R. Haglund
# taken	Codes
2	

Habitat Characterization (seined)	
Bank Vegetation	%
Emergent vegetation	35
Mulefat/Willow/Cottonwood	55
“Grass”	
Bare/Rocks	10
Substrate	%
Mud/Silt	20
Sand	25
Gravel	55
Cobble	
Boulder	
Habitat type	%
Edgewater	10
Riffle	30
Pool	50
Run	10
Glide	

Number Seine Hauls	15
--------------------	----

Additional stream to collect stickleback sample			
Length	0 m	Hauls	

See Comments

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate		X	X
Good			
Excellent	X		

Life Stages	stickleback	sucker	chub
Fry			
YOY	X	X	
Subadult/Adult	X		X

Temperature	17.3 °C
Time	10:00am

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	yes	yes

Characterization of site with abundant fish			depth	velocity	habitat type	substrate
Fish Species	#individuals					
Stickleback			bank vegetation		instream vegetation	
Santa Ana sucker						
Arroyo chub			Fish evenly distributed			
Non-native						

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	M. Delgrosso	Pseudacris cadaverina	No
		Bufo boreas tadpoles	

COMMENTS:

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	35	0	0		
2	36	0	0		
3	28	0	0		
4	34	0	0		
5	32	0	0		
6	44	1	0		
7	30	1	0		
8	23				
9	32	0	0		
10	39	0	0		
11	24				
12	46	0	0		
13	34	0	0		
14	33	0	0		
15	36	0	0		
16	35	0	0		
17	30	0	0		
18	39	0	0		
19	36	0	0		
20	31	0	0		
21	37	0	0		
22	33	0	0		
23	26				
24	29				
25	30	0	0		
26	32	0	0		
27	31	0	1		
28	33	0	0		
29	38	0	0		
30	31	0	0		
31	35	0	0		
32	33	0	0		
33	46	0	0		
34	29	0	0		
35	39	0	0		
36	33	0	0		
37	24				
38	30	0	0		
39	28	0	0		
40	32	0	0		
41	39	0	0		
42	31	0	0		
43	39	0	0		
44	32	0	0		
45	33	0	0		
46	32	0	0		
47	35	0	0		
48	31	0	0		
49	31	0	0		
50	32	0	0		

Date: 20 June 2008

Location: Santa Clara River downstream of
Rivers End Park, Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Page 1 of 2

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	28	0	0		
2	28	0	0		
3	41	0	0		
4	38	0	0		
5	38	0	0		
6	37	0	0		
7	32	0	0		
8	30	0	0		
9	33	0	0		
10	30	0	0		
11	34	0	0		
12	34	0	0		
13	30	0	0		
14	32	0	0		
15	48	0	0		
16	40	0	0		
17	32	0	0		
18	35	0	0		
19	30	0	0		
20	37	0	0		
21	33	0	0		
22	26				
23	44	0	0		
24	35	0	1		
25	41	0	0		
26	24				
27	28	0	0		
28	34	0	0		
29	29	0	0		
30	25				
31	28	0	0		
32	36	0	0		
33	34	0	0		
34	34	0	0		
35	32	0	0		
36	33	0	0		
37	39	0	0		
38	33	0	0		
39	27				
40	24				
41	30	0	0		
42	33	0	0		
43	30	0	0		
44	25				
45	34	0	0		
46	37	0	0		
47	23				
48					
49					
50					

Date: 20 June 2008

Location: Santa Clara River downstream of
Rivers End Park, Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Page 2 of 2

Santa Ana Sucker				
	SL mm	Weight	Lips	Photo
1	51		CS	
2	58		CS	
3	32		CS	
4	46		CS	
5	46		CS	
6	48		CS	
7	45		CS	
8	44		CS	
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

Date: 20 June 2008

Location: Santa Clara River downstream of
Rivers End Park, Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chub		
#	SL mm	Weight
1	48	
2	58	
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

Date: 20 June 2008

Location: Santa Clara River downstream of
Rivers End Park, Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 07 July

2008

General Location Description: Santa Clara River Highway 23 bridge in Fillmore, Ventura County

SMEA Site 6

GPS location	34° 23' 21.09" N	Length Seined	25 meters	
Downstream end	118° 54' 58.33" W		Fish Captured	Number
			Sticklebacks	35
			Santa Ana sucker	12
			Arroyo chub	44

Photographs	Camera owner: T.R. Haglund
# taken	Codes
0	

Habitat Characterization (seined)	
Bank Vegetation	%
Trees	
Mulefat/Willow/Cottonwood	
"Grass"	35
Bare/Rocks	65
Substrate	%
Mud/Silt	5
Sand	60
Gravel	30
Cobble	5
Boulder	
Habitat type	%
Edgewater	20
Riffle	65
Pool	10
Run	5
Glide	

Number Seine Hauls	18
--------------------	----

Additional stream to collect stickleback sample			
Length	20 m	Hauls	5
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate		X	
Good			X
Excellent	X		

Life Stages	stickleback	sucker	chub
Fry			
YOY			
Subadult/Adult	X		

Temperature	21.6 °C
Time	3:00pm

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	yes	yes

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					
		Fish evenly distributed			

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	M. Delgrosso		

COMMENTS:

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	36	3	4		
2	28	4	4		
3	32	4	3		
4	32	3	3		
5	37	4	4		
6	39	3	3		
7	42	5	6		
8	41	6	6		
9	34	3	2		
10	35	3	3		
11	46	4	4		
12	42	5	5		
13	40	5	4		
14	50	2	2		
15	34	3	3		
16	37	4	4		
17	38	4	4		
18	36	4	4		
19	42	2	1		
20	46	3	2		
21	45	3	3		
22	43	3	3		
23	44	3	3		
24	44	3	3		
25	38	3	4		
26	32	6	6		
27	36	1	1		
28	42	2	3		
29	46	4	4		
30	31	4	4		
31	26	3	4		
32	41	4	5		
33	52	3	3		
34	48	3	3		
35	40	4	4		
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

Date: 07 July 2008

Location: Santa Clara River Highway 23 bridge
in Fillmore, Ventura County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Santa Ana Sucker				
	SL mm	Weight	Lips	Photo
1	62		CS	
2	62		CS	
3	58		CS	
4	56		CS	
5	49		CS	
6	60		CS	
7	83		CS	
8	63		CS	
9	76		CS	
10	66		CS	
11	70		H	
12	64		CS	
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

Date: 07 July 2008

Location: Santa Clara River Highway 23 bridge
in Fillmore, Ventura County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chub		
#	SL mm	Weight
1	58	
2	36	
3	37	
4	45	
5	54	
6	36	
7	36	
8	39	
9	32	
10	32	
11	44	
12	46	
13	48	
14	40	
15	43	
16	35	
17	35	
18	44	
19	49	
20	61	
21	68	
22	57	
23	48	
24	54	
25	53	
26	47	
27	47	
28	38	
29	36	
30	42	
31	45	
32	56	
33	56	
34	59	
35	54	
36	49	
37	46	
38	46	
39	42	
40	51	
41	54	
42	66	
43	63	
44	56	
45		
46		
47		
48		
49		
50		

Date: 07 July 2008

Location: Santa Clara River Highway 23 bridge
in Fillmore, Ventura County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 09 July

2008

General Location Description: Santa Clara River at Highway 101, Ventura County

SMEA Site 2

GPS location	34° 14' 36.67" N	Length Seined	25 meters	
Downstream end	119° 11' 29.31" W		Fish Captured	Number
			Sticklebacks	23
			Santa Ana sucker	
			Arroyo chub	36

Photographs	Camera owner: T.R. Haglund
# taken	Codes
0	

Habitat Characterization (seined)	
Bank Vegetation	%
Trees	
Mulefat/Willow/Cottonwood	15
"Grass"	25
Bare/Rocks	60
Substrate	%
Mud/Silt	15
Sand	60
Gravel	25
Cobble	
Boulder	
Habitat type	%
Edgewater	10
Riffle	10
Pool	80
Run	
Glide	

Number Seine Hauls	18
--------------------	----

Additional stream to collect stickleback sample			
Length	m	Hauls	
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor		X	
Moderate			X
Good			
Excellent	X		

Life Stages	stickleback	sucker	chub
Fry			
YOY			
Subadult/Adult	X		X

Temperature	22.6 °C
Time	1:00pm

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	no	yes

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					
		Fish evenly distributed			

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	M. Delgrosso		

COMMENTS:

Pool near bridge

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	36	3	4		
2	28	4	4		
3	32	4	3		
4	32	3	3		
5	37	4	4		
6	39	3	3		
7	42	5	6		
8	41	6	6		
9	34	3	2		
10	35	3	3		
11	46	4	4		
12	42	5	5		
13	40	5	4		
14	50	2	2		
15	34	3	3		
16	37	4	4		
17	38	4	4		
18	36	4	4		
19	42	2	1		
20	46	3	2		
21	45	3	3		
22	43	3	3		
23	44	3	3		
24	44	3	3		
25	38	3	4		
26	32	6	6		
27	36	1	1		
28	42	2	3		
29	46	4	4		
30	31	4	4		
31	26	3	4		
32	41	4	5		
33	52	3	3		
34	48	3	3		
35	40	4	4		
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

Date: 09 July 2008

Location: Santa Clara River at Highway 101,
Ventura County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Arroyo Chub		
#	SL mm	Weight
1	58	
2	36	
3	37	
4	45	
5	54	
6	36	
7	36	
8	39	
9	32	
10	32	
11	44	
12	46	
13	48	
14	40	
15	43	
16	35	
17	35	
18	44	
19	49	
20	61	
21	68	
22	57	
23	48	
24	54	
25	53	
26	47	
27	47	
28	38	
29	36	
30	42	
31	45	
32	56	
33	56	
34	59	
35	54	
36	49	
37	46	
38	46	
39	42	
40	51	
41	54	
42	66	
43	63	
44	56	
45		
46		
47		
48		
49		
50		

Date: 09 July 2008

Location: Santa Clara River at Highway 101,
Ventura County

Data Collector(s)

T.R. Haglund

Data Transcription

M. Delgrosso

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 07 July

2009

General Location Description: Piru Creek, upstream of road, behind city park by old railroad bridge
SMEA Site 23

GPS location	11 N 335555 E	Length Seined	25 meters	
Downstream end	3809844 N		Fish Captured	Number
			Sticklebacks	71
			Santa Ana sucker	
			Arroyo chub	18

Photographs	Camera owner: T.R. Haglund
# taken	Codes
2	

Habitat Characterization (seined)	
Bank Vegetation	%
Grass	90
Mulefat/Willow/Cottonwood	
"Grass"	
Bare/Rocks	10
Substrate	%
Mud/Silt	55
Sand	25
Gravel	18
Cobble	2
Boulder	
Habitat type	%
Edgewater	10
Riffle	25
Pool	65
Run	
Glide	

Number Seine Hauls	17
--------------------	----

Additional stream to collect stickleback sample			
Length	m	Hauls	
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor		X	
Moderate			X
Good			
Excellent	X		

Life Stages	stickleback	sucker	chub
Fry			
YOY	X		X
Subadult/Adult	X	(X)	X

Temperature	24.5 °C
Time	3:00pm

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	no	yes

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					
		Fish evenly distributed			

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	X		

COMMENTS:

Saw two adult suckers in pool at upstream end of section, but no suckers were captured

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	34	1	0		
2	43	0	0		
3	41	5	5		
4	41	0	1		
5	35	3	4		
6	38	1	2		
7	37	0	0		
8	37	0	0		
9	41	4	4		
10	33	1	0		
11	34	1	0		
12	44	5	5		
13	45	1	1		
14	44	0	0		
15	41	0	1		
16	40	0	0		
17	36	0	0		
18	35	1	1		
19	36	0	1		
20	35	4	5		
21	34	0	0		
22	36	0	0		
23	39	0	0		
24	42	2	2		
25	41	0	0		
26	41	1	0		
27	43	3	3		
28	44	1	0		
29	38	0	0		
30	36	0	0		
31	33	0	0		
32	34	0	0		
33	41	2	1		
34	41	0	0		
35	34	0	1		
36	35	1	1		
37	35	0	0		
38	38	0	0		
39	37	0	0		
40	31	0	0		
41	42	1	0		
42	41	0	0		
43	41	4	3		
44	48	2	1		
45	51	3	3		
46	34	0	0		
47	34	1	2		
48	35	2	2		
49	39	3	2		
50	42	1	2		

Date: 07 July 2009

Location: Piru Creek, upstream of road, behind city park by old railroad bridge

Data Collector(s)

T.R. Haglund

Data Transcription

X

Comments

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	41	1	1		
2	35	3	3		
3	38	4	4		
4	32	2	2		
5	35	2	3		
6	36	1	1		
7	40	1	1		
8	41	2	3		
9	46	3	3		
10	34	2	2		
11	21				
12	17				
13	19				
14	17				
15	18				
16	19				
17	19				
18	16				
19	19				
20	18				
21	19				
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41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

Date: 07 July 2009

Location: Piru Creek, upstream of road, behind city park by old railroad bridge

Data Collector(s)

T.R. Haglund

Data Transcription

Comments

Arroyo Chub		
#	SL mm	Weight
1	56	
2	61	
3	55	
4	43	
5	43	
6	41	
7	18	
8	19	
9	18	
10	18	
11	21	
12	22	
13	21	
14	21	
15	21	
16	20	
17	21	
18	22	
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
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43		
44		
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47		
48		
49		
50		

Date: 07 July 2009

Location: Piru Creek, upstream of road, behind city park by old railroad bridge

Data Collector(s)

T.R. Haglund

Data Transcription

X

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 26 August

2009

General Location Description: Santa Clara River, upstream of Interstate 5 – near pipeline crossing, Los Angeles County
SMEA Site 15

GPS location	34° 26' 06.38" N	Length Seined	25 meters	
Downstream end	118° 22' 00.31" W		Fish Captured	Number
			Sticklebacks	38
			Santa Ana sucker	2
			Arroyo chub	67
			Gambusia	present

Photographs	Camera owner: T.R. Haglund
# taken	Codes
2	

Habitat Characterization (seined)	
Bank Vegetation	%
Emergent vegetation	95
Mulefat/Willow/Cottonwood	5
"Grass"	
Bare/Rocks	
Substrate	%
Mud/Silt	60
Sand	35
Gravel	5
Cobble	
Boulder	
Habitat type	%
Edgewater	
Riffle	
Pool	*
Run	
Glide	

Number Seine Hauls	15
--------------------	----

Additional stream to collect stickleback sample			
Length	25 m	Hauls	12
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor		X	
Moderate			X
Good	X		
Excellent			

Life Stages	stickleback	sucker	chub
Fry			
YOY	X	X	X
Subadult/Adult	X		X

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	yes	yes

Temperature	18.3 °C
Time	9:00am

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					
		Fish evenly distributed			

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	M. Delgrosso	Pseudacris regilla	No

COMMENTS:

Captured 21 sticklebacks in the initial 25 meters, the other 13 were captured in the additional seining.

- Habitat totally over grown almost marsh like

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	38	0	0		
2	39	0	0		
3	34	0	0		
4	34	0	0		
5	38	0	0		
6	41	0	0		
7	40	0	0		
8	38	0	0		
9	38	0	0		
10	29	0	0		
11	41	1	1		
12	41	0	0		
13	40	0	0		
14	37	1	2		
15	43	0	0		
16	41	0	0		
17	42	0	1		
18	42	1	0		
19	36	0	0		
20	34	0	0		
21	38	0	0		
22	39	0	0		
23	38	0	0		
24	40	0	0		
25	41	0	0		
26	46	0	0		
27	40	0	0		
28	34	0	0		
29	38	0	0		
30	38	0	0		
31	32	0	0		
32	36	0	0		
33	36	0	0		
34	40	0	0		
35	16				
36	17				
37	16				
38	21				
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

Date: 26 August 2009

Location: Santa Clara River, upstream of
Interstate 5 – near pipeline crossing, Los Angeles
County

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Santa Ana Sucker				
	SL mm	Weight	Lips	Photo
1	48		CS	
2	52		CS	
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

Date: 26 August 2009

Location: Santa Clara River, upstream of Interstate 5 – near pipeline crossing, Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chub		
#	SL mm	Weight
1	68	
2	59	
3	58	
4	58	
5	61	
6	46	
7	44	
8	22	
9	16	
10	17	
11	44	
12	42	
13	44	
14	44	
15	46	
16	62	
17	62	
18	56	
19	50	
20	45	
21	46	
22	45	
23	44	
24	32	
25	31	
26	30	
27	22	
28	19	
29	16	
30	16	
31	16	
32	21	
33	36	
34	36	
35	38	
36	29	
37	56	
38	56	
39	61	
40	48	
41	48	
42	58	
43	57	
44	44	
45	43	
46	43	
47	42	
48	58	
49	57	
50	42	

Date: 26 August 2009

Location: Santa Clara River, upstream of Interstate 5 – near pipeline crossing, Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

17 additional chubs were captured but not measured (in the initial 25 meters)

Trustee Council: Santa Clara River Fish Survey

Date: 26 August

2009

General Location Description: Santa Clara River downstream of Old Road
SMEA Site 13

GPS location	11 N 354180 E	Length Seined	25 meters	
Downstream end	3810595		Fish Captured	Number
			Sticklebacks	39
			Santa Ana sucker	8
			Arroyo chub	41

Photographs	Camera owner: T.R. Haglund
# taken	Codes
2	

Habitat Characterization (seined)	
Bank Vegetation	%
Trees	
Mulefat/Willow/Cottonwood	55
"Grass"	30
Bare/Rocks	15
Substrate	%
Mud/Silt	10
Sand	35
Gravel	50
Cobble	5
Boulder	
Habitat type	%
Edgewater	15
Riffle	35
Pool	50
Run	
Glide	

Number Seine Hauls	16
--------------------	----

Additional stream to collect stickleback sample			
Length	50 m	Hauls	15
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate		X	
Good			X
Excellent	X		

Life Stages	stickleback	sucker	chub
Fry			
YOY		X	X
Subadult/Adult	X	X	X

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	yes	yes

Temperature	17.0 °C
Time	8:00am

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					
		Fish evenly distributed			

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	J.N. Baskin		

COMMENTS:

The additional seine hauls were performed by a group from the USGS, Camm Swift, and Newhall Land and Farming personnel.

pH = 7.49, ORP = 245, Conductivity = 1.27, NTU = 0.8, Dissolved oxygen = 13.33, TDS = 0.815, Salinity = 0.6

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	41	0	0		
2	43	0	0		
3	40	0	1		
4	42	1	1		
5	21	-	-		
6	40	0	0		
7	41	0	0		
8	45	0	0		
9	34	0	0		
10	38	0	0		
11	36	1	1		
12	42	0	0		
13	40	0	0		
14	37	1	0		
15	46	0	0		
16	42	0	0		
17	42	0	1		
18	37	1	2		
19	45	0	0		
20	23	-	-		
21	22	-	-		
22	45	0	0		
23	41	0	0		
24	44	1	1		
25	45	2	3		
26	36	2	2		
27	35	1	1		
28	45	3	3		
29	46	0	0		
30	42	0	0		
31	38	0	0		
32	43	0	0		
33	44	0	0		
34	42	0	0		
35	38	0	0		
36	36	2	2		
37	38	0	0		
38	47	0	0		
39	44	0	0		
40	44	0	0		
41	41	0	0		
42					
43					
44					
45					
46					
47					
48					
49					
50					

Date: 26 August 2009

Location: Santa Clara River downstream of Old Road, Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Santa Ana Sucker				
	SL mm	Weight	Lips	Photo
1	122		CS	
2	58		CS	
3	38		CS	
4	55		CS	
5	45		CS	
6	50		CS	
7	38		CS	
8	45		CS	
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

Date: 26 August 2009

Location: Santa Clara River downstream of Old Road, Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chub		
#	SL mm	Weight
1	46	
2	42	
3	32	
4	24	
5	41	
6	31	
7	30	
8	45	
9	30	
10	46	
11	26	
12	29	
13	29	
14	32	
15	35	
16	25	
17	35	
18	35	
19	32	
20	32	
21	21	
22	28	
23	40	
24	35	
25	32	
26	30	
27	28	
28	20	
29	28	
30	32	
31	24	
32	32	
33	28	
34	19	
35	25	
36	26	
37	14	
38	30	
39	19	
40	14	
41	18	
42		
43		
44		
45		
46		
47		
48		
49		
50		

Date: 26 August 2009

Location: Santa Clara River downstream of Old Road, Los Angeles County

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 2 September

2010

General Location Description: Santa Clara River along Mountain View Golf Course, Santa Paula, Ventura County
SMEA Site 4

GPS location	34° 20' 30.76"	Length Seined	25 meters	
Downstream end	119° 03' 58.62"		Fish Captured	Number
			Sticklebacks	35
			Santa Ana sucker	14
			Arroyo chub	38

Photographs	Camera owner: T.R. Haglund
# taken	Codes
2	

Habitat Characterization (seined)	
Bank Vegetation	%
Emergent vegetation	20
Mulefat/Willow/Cottonwood	65
"Grass"	
Bare/Rocks	15
Substrate	%
Mud/Silt	5
Sand	40
Gravel	50
Cobble	5
Boulder	
Habitat type	%
Edgewater	10
Riffle	75
Pool	5
Run	10
Glide	

Number Seine Hauls	18
--------------------	----

Additional stream to collect stickleback sample			
Length	m	Hauls	
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate			
Good	X		
Excellent		X	X

Life Stages	stickleback	sucker	chub
Fry			
YOY		X	
Subadult/Adult	X	X	X

Temperature	22.2 °C
Time	

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	yes	yes

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					
Fish evenly distributed					

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	J.N. Baskin		

COMMENTS:

Sticklebacks					
Fish #	SL (mm)	Plate Number		Length (mm)	
		Left	Right	Head	1 st Dorsal
1	41	3	3		
2	42	6	6		
3	37	2	3		
4	35	3	2		
5	35	4	4		
6	37	3	3		
7	36	0	0		
8	36	5	4		
9	34	5	5		
10	38	5	6		
11	37	5	6		
12	42	0	1		
13	40	3	2		
14	38	2	1		
15	37	4	4		
16	35	5	5		
17	35	5	5		
18	37	6	6		
19	36	4	4		
20	39	3	4		
21	38	2	2		
22	38	1	1		
23	38	6	6		
24	37	3	2		
25	35	2	2		
26	35	1	1		
27	34	3	4		
28	40	3	3		
29	40	0	0		
30	38	3	3		
31	38	5	4		
32	41	5	5		
33	36	3	3		
34	36	5	4		
35	34	4	4		
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

Date: 2 September 2010

Location: Santa Clara River along Mountain View Golf Course, Santa Paula, Ventura County

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Santa Ana Sucker				
	SL mm	Weight	Lips	Photo
1	119		CS	
2	106		CS	
3	62		CS	
4	58		CS	
5	52		CS	
6	76		CS	
7	54		CS	
8	54		CS	
9	76		H	
10	68		CS	
11	78		CS	
12	84		CS	
13	66		CS	
14	68		CS	
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

Date: 2 September 2010

Location: Santa Clara River along Mountain View Golf Course, Santa Paula, Ventura County

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chub		
#	SL mm	Weight
1	74	
2	65	
3	66	
4	62	
5	58	
6	54	
7	55	
8	55	
9	53	
10	54	
11	55	
12	68	
13	66	
14	64	
15	65	
16	62	
17	62	
18	58	
19	59	
20	78	
21	66	
22	65	
23	65	
24	60	
25	50	
26	52	
27	56	
28	56	
29	58	
30	62	
31	66	
32	65	
33	64	
34	68	
35	64	
36	60	
37	58	
38	44	
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

Date: 2 September 2010

Location: Santa Clara River along Mountain View Golf Course, Santa Paula, Ventura County

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 3 November

2010

General Location Description: Santa Clara River 200m downstream of Freeman Diversion dam, Ventura County
SMEA Site 3

GPS location	11 N 305783 E	Length Seined	25 meters	
Downstream end	3797218 N		Fish Captured	Number
			Sticklebacks	39
			Santa Ana sucker	3
			Arroyo chub	37
			Gambusia	present
			Pimephales promelas	present

Photographs	Camera owner: J.N. Baskin
# taken	Codes

Habitat Characterization (seined)	
Bank Vegetation	%
Emergent vegetation	100
Mulefat/Willow/Cottonwood	
"Grass"	
Bare/Rocks	
Substrate	%
Mud/Silt	100
Sand	
Gravel	
Cobble	
Boulder	
Habitat type	%
Edgewater	
Riffle	
Pool	100
Run	
Glide	

Number Seine Hauls	14
--------------------	----

Additional stream to collect stickleback sample			
Length	m	Hauls	25 fish
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor		X	
Moderate	X		
Good			X
Excellent			

Life Stages	stickleback	sucker	chub
Fry			
YOY	X	X	
Subadult/Adult	X	X	X

Attached Datasheets	stickleback	sucker	chub
yes or no	yes	yes	yes

Temperature	23.5 °C
Time	1:50pm

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback		bank vegetation		instream vegetation	
Santa Ana sucker					
Arroyo chub		Fish evenly distributed			
Non-native					

Personnel	J.N. Baskin	Reptiles/Amphibians	Photo?
	Julie Golla		

COMMENTS:

pH = 7.36, ORP = 225, Conductivity = 2.74, NTU = 69.9, Dissolved oxygen = 15.24, TDS = 1.75, Salinity = 1.4

Sticklebacks		Plate Number		Length (mm)	
Fish #	SL (mm)	Left	Right	Head	1 st Dorsal
1	24				
2	26	2	3		
3	24				
4	27	3	4		
5	22				
6	25	2	1		
7	24				
8	26	4	3		
9	25	4	2		
10	29	4	4		
11	25	3	3		
12	28	5	4		
13	29	5	5		
14	26	4	3		
15	27	4	4		
16	22				
17	27	3	4		
18	27	4	4		
19	27	4	4		
20	28	4	5		
21	24				
22	26	3	3		
23	46	5	5		
24	50	5	5		
25	48	4	5		
26	45	4	5		
27	47	4	5		
28	39	5	5		
29	45	4	3		
30	43	6	6		
31	47	6	5		
32	41	5	5		
33	50	6	5		
34	45	7	6		
35	42	5	5		
36	46	6	5		
37	45	4	4		
38	45	4	5		
39	44				
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

Date: 3 November 2010

Location: Santa Clara River 200m downstream of Freeman Diversion dam, Ventura County

Data Collector(s)

Julie Golla

Data Transcription

J.N. Baskin

Comments

1-22 collected by Baskin
23-39 collected by Steve Howard and Sara

Santa Ana Sucker				
	SL mm	Weight	Lips	Photo
1	70		CS	
2	36		CS	
3	40		CS	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

Date: 3 November 2010

Location: Santa Clara River 200m downstream of Freeman Diversion dam, Ventura County

Data Collector(s)
Julie Golla

Data Transcription
J.N. Baskin

Comments

Lip Codes
 CS – *Catostomus santaanae*
 H – hybrid
 CF – *Catostomus fumeiventris*

Arroyo Chub		
#	SL mm	Weight
1	35	
2	27	
3	35	
4	34	
5	36	
6	30	
7	37	
8	40	
9	36	
10	42	
11	27	
12	59	
13	31	
14	34	
15	40	
16	35	
17	36	
18	31	
19	49	
20	40	
21	35	
22	27	
23	36	
24	34	
25	38	
26	30	
27	43	
28	37	
29	36	
30	33	
31	34	
32	27	
33	35	
34	35	
35	32	
36	30	
37	35	
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

Date: 3 November 2010

Location: Santa Clara River 200m downstream of Freeman Diversion dam, Ventura County

Data Collector(s)

Julie Golla

Data Transcription

J.N. Baskin

Comments

The following Santa Clara River mainstem sites were examined but did not have sticklebacks.

Site	GPS	Comments
Santa Clara River at Harbor Blvd Bridge	34° 14' 07.59" N 119° 15' 23.53" W	
Newhall Land and Farming Co. – Las Brisas Crossing	34° 24' 12.90" N 118° 44' 20.46 W	An additional team as seined in the area.at the same time Attempting to collect sticklebacks. This team was composed of USGS personnel, Camm Swift, and Newhall Land and Farming Company personnel
Newhall Land and Farming Co. – Mayo Crossing	No GPS Data	
Newhall Land and Farming Co. – Alfalfa Crossing	11 N 347976 E 3809517 N	
Newhall Land and Farming Co. – Salt Creek Crossing	11 N 343691 E 3808002 N	
Newhall Land and Farming Co. – Summer Crossing	11 N 342514 E 3807804 N	

These Newhall Land and Farming Company sites follow this page. While sticklebacks were not present, other native fish were present at these sites.

Trustee Council: Santa Clara River Fish Survey

Date: 26 August

2009

General Location Description: Santa Clara River at Newhall Land and Farming Summer Crossing
SMEA Site 9

GPS location	11 N 342514 E	Length Seined	25 meters	
Downstream end	3807804 N		Fish Captured	Number
			Sticklebacks	
Photographs	Camera owner: T.R. Haglund		Santa Ana sucker	3
# taken	Codes		Arroyo chub	77
2			Gambusia	present

Habitat Characterization (seined)	
Bank Vegetation	%
Emergent	100
Mulefat/Willow/Cottonwood	
"Grass"	
Bare/Rocks	
Substrate	%
Mud/Silt	20
Sand	45
Gravel	35
Cobble	
Boulder	
Habitat type	%
Edgewater	20
Riffle	50
Pool	
Run	10
Glide	20

Number Seine Hauls 18

Additional stream to collect stickleback sample			
Length	30 m	Hauls	12
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate	X		
Good		X	
Excellent			X

Life Stages	stickleback	sucker	chub
Fry			
YOY			X
Subadult/Adult		X	X

Temperature	20.68 °C
Time	

Attached Datasheets	stickleback	sucker	chub
yes or no	no	yes	yes

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					
		Fish evenly distributed			

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	J.N. Baskin	Pseudacris regilla	

COMMENTS:

SMEA performed the additional seining noted in the datasheet. Additional seine hauls were performed by a group from the USGS, Camm Swift, and Newhall Land and Farming personnel.

pH = 8.08, ORP = 182, Conductivity = 1.46, NTU = 22.7, Dissolved oxygen = 15.27, TDS = 0.935, Salinity = 0.7

Santa Ana Sucker				
	SL mm	Weight	Lips	Photo
1	72		CS	
2	76		CS	
3	62		CS	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
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24				
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43				
44				
45				
46				
47				
48				
49				
50				

Date: 26 August 2009

Location: Santa Clara River at Newhall Land and Farming Summer Crossing

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chub		
#	SL mm	SL mm
1	59	40
2	40	46
3	48	46
4	41	53
5	35	50
6	49	46
7	45	47
8	42	50
9	43	51
10	42	52
11	47	47
12	41	39
13	32	36
14	30	36
15	26	40
16	37	38
17	41	48
18	47	52
19	45	36
20	46	38
21	56	42
22	26	47
23	47	37
24	47	46
25	54	40
26	45	43
27	46	38
28	46	
29	36	
30	31	
31	46	
32	39	
33	44	
34	55	
35	56	
36	43	
37	50	
38	50	
39	48	
40	58	
41	54	
42	46	
43	45	
44	43	
45	46	
46	54	
47	54	
48	45	
49	43	
50	43	

Date: 26 August 2009

Location: Santa Clara River at Newhall Land and Farming Summer Crossing

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 26 August

2009

General Location Description: Santa Clara River at Newhall Land and Farming's Salt Creek crossing
SMEA Site 10

GPS location	11 N 343691 E	Length Seined	25 meters	
Downstream end	3808002 N		Fish Captured	Number
			Sticklebacks	
			Santa Ana sucker	2
			Arroyo chub	47
			Gambusia	present
			Micropterus salmoides	present
			Cottus asper	present

Photographs	Camera owner: T.R. Haglund
# taken	Codes
2	

Habitat Characterization (seined)	
Bank Vegetation	%
Emergent	100
Mulefat/Willow/Cottonwood	
"Grass"	
Bare/Rocks	
Substrate	%
Mud/Silt	10
Sand	40
Gravel	50
Cobble	
Boulder	
Habitat type	%
Edgewater	5
Riffle	85
Pool	
Run	
Glide	10

Number Seine Hauls	15
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Additional stream to collect stickleback sample			
Length	50 m	Hauls	15
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor	X		
Moderate		X	
Good			
Excellent			X

Life Stages	stickleback	sucker	chub
Fry			
YOY			
Subadult/Adult		X	X

Attached Datasheets	stickleback	sucker	chub
yes or no	no	yes	yes

Temperature	23.12 °C
Time	11:00am

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					
		Fish evenly distributed			

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	J.N. Baskin	Xenopus	No

COMMENTS:

SMEA performed the additional seining noted in the datasheet. Additional seine hauls were performed by a group from the USGS, Camm Swift, and Newhall Land and Farming personnel.

pH = 8.35, ORP = 171, Conductivity = 1.39, NTU = 2.0, Dissolved oxygen = 12.62, TDS = 0.887, Salinity = 0.7

Santa Ana Sucker				
	SL mm	Weight	Lips	Photo
1	73		CS	
2	71		CS	
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
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42				
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48				
49				
50				

Date: 26 August 2009

Location: Santa Clara River at Newhall Land and Farming's Salt Creek crossing

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chub		
#	SL mm	Weight
1	57	
2	56	
3	42	
4	40	
5	87	
6	58	
7	56	
8	58	
9	44	
10	42	
11	49	
12	38	
13	51	
14	48	
15	40	
16	26	
17	52	
18	54	
19	54	
20	60	
21	47	
22	44	
23	42	
24	38	
25	51	
26	54	
27	45	
28	50	
29	32	
30	76	
31	53	
32	38	
33	53	
34	59	
35	54	
36	46	
37	58	
38	50	
39	38	
40	47	
41	47	
42	51	
43	46	
44	55	
45	45	
46	42	
47	49	
48		
49		
50		

Date: 26 August 2009

Location: Santa Clara River at Newhall Land and Farming's Salt Creek crossing

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 26 August

2009

General Location Description: Santa Clara River at Newhall Land and Farming's Alfalfa crossing
SMEA Site 12

GPS location	11 N 347976 E	Length Seined	25 meters	
Downstream end	3809517 N		Fish Captured	Number
			Sticklebacks	
Photographs	Camera owner: T.R. Haglund		Santa Ana sucker	2
# taken	Codes		Arroyo chub	20
2			Gambusia	present

Habitat Characterization (seined)	
Bank Vegetation	%
Trees	
Mulefat/Willow/Cottonwood	55
"Grass"	30
Bare/Rocks	15
Substrate	%
Mud/Silt	10
Sand	35
Gravel	50
Cobble	5
Boulder	
Habitat type	%
Edgewater	15
Riffle	35
Pool	50
Run	
Glide	

Number Seine Hauls 18

Additional stream to collect stickleback sample			
Length	50 m	Hauls	18
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate	X	X	
Good			
Excellent			X

Life Stages	stickleback	sucker	chub
Fry			
YOY		X	
Subadult/Adult		X	X

Temperature	26.18 °C
Time	

Attached Datasheets	stickleback	sucker	chub
yes or no	no	yes	yes

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					
		Fish evenly distributed			

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	J.N. Baskin	Xenopus	No

COMMENTS:

SMEA performed the additional seining noted in the datasheet. Additional seine hauls were performed by a group from the USGS, Camm Swift, and Newhall Land and Farming personnel.

pH = 8.38, ORP = 210, Conductivity = 1.24, NTU = 3.2, Dissolved oxygen = 14.87, TDS = 0.792, Salinity = 0.6

Santa Ana Sucker				
	SL mm	Weight	Lips	Photo
1	72		CS	
2	58		CS	
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
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42				
43				
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47				
48				
49				
50				

Date: 26 August 2009

Location: Santa Clara River at Newhall Land and Farming's Alfalfa crossing

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chub		
#	SL mm	Weight
1	67	
2	58	
3	43	
4	57	
5	53	
6	34	
7	38	
8	24	
9	44	
10	48	
11	49	
12	52	
13	35	
14	61	
15	58	
16	56	
17	31	
18	32	
19	60	
20	40	
21		
22		
23		
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48		
49		
50		

Date: 26 August 2009

Location: Santa Clara River at Newhall Land and Farming's Alfalfa crossing

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 27 August

2009

General Location Description: Santa Clara River at Newhall Land and Farming's Mayo Crossing
SMEA Site 11

GPS location		Length Seined	25 meters	
Downstream end			Fish Captured	Number
			Sticklebacks	
Photographs	Camera owner: T.R. Haglund		Santa Ana sucker	6
# taken	Codes		Arroyo chub	58
2				

Habitat Characterization (seined)	
Bank Vegetation	%
Trees	
Mulefat/Willow/Cottonwood	55
"Grass"	30
Bare/Rocks	15
Substrate	%
Mud/Silt	10
Sand	35
Gravel	50
Cobble	5
Boulder	
Habitat type	%
Edgewater	15
Riffle	35
Pool	50
Run	
Glide	

Number Seine Hauls

17

Additional stream to collect stickleback sample

Length

50 m

Hauls

17

See Comments

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate	X		
Good		X	X
Excellent			

Life Stages	stickleback	sucker	chub
Fry			
YOY			X
Subadult/Adult		X	X

Temperature	18.23 °C
Time	

Attached Datasheets	stickleback	sucker	chub
yes or no	no	yes	yes

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback					
Santa Ana sucker					
Arroyo chub					
Non-native					

Fish evenly distributed

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	J.N. Baskin		

COMMENTS:

SMEA performed the additional seining noted in the datasheet. Additional seine hauls were performed by a group from the USGS, Camm Swift, and Newhall Land and Farming personnel.

pH = 8.21, ORP = 163, Conductivity = 1.74, NTU = 2.6, Dissolved oxygen = 12.11, TDS = 0.725, Salinity = 0.6

Santa Ana Sucker				
	SL mm	Weight	Lips	Photo
1	96		CS	
2	88		CS	
3	84		CS	
4	110		CS	
5	92		CS	
6	84		CS	
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
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39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

Date: 27 August 2009

Location: Santa Clara River at Newhall Land and Farming's Mayo Crossing

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Lip Codes

CS – *Catostomus santaanae*

H – hybrid

CF – *Catostomus fumeiventris*

Arroyo Chub		
#	SL mm	SL mm
1	44	78
2	48	62
3	38	52
4	48	56
5	48	54
6	50	54
7	56	48
8	53	50
9	46	
10	58	
11	59	
12	58	
13	52	
14	68	
15	66	
16	71	
17	64	
18	61	
19	62	
20	64	
21	54	
22	54	
23	58	
24	52	
25	51	
26	48	
27	46	
28	46	
29	56	
30	42	
31	48	
32	49	
33	56	
34	58	
35	53	
36	54	
37	54	
38	48	
39	48	
40	62	
41	64	
42	62	
43	58	
44	57	
45	57	
46	43	
47	46	
48	44	
49	41	
50	57	

Date: 27 August 2009

Location: Santa Clara River at Newhall Land and Farming's Mayo Crossing

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments

Trustee Council: Santa Clara River Fish Survey

Date: 27 August

2009

General Location Description: Santa Clara River at Newhall Land and Farming's Las Brisas crossing
SMEA Site 8

GPS location	11 N 354180 E	Length Seined	25 meters	
Downstream end	3810595		Fish Captured	Number
			Sticklebacks	
			Santa Ana sucker	
			Arroyo chub	29
			Goldfish	present
			Micropterus salmoides	present

Photographs	Camera owner: T.R. Haglund
# taken	Codes
2	

Habitat Characterization (seined)	
Bank Vegetation	%
Emergent vegetation	45
Mulefat/Willow/Cottonwood	
"Grass"	20
Bare/Rocks	35
Substrate	%
Mud/Silt	10
Sand	55
Gravel	35
Cobble	
Boulder	
Habitat type	%
Edgewater	15
Riffle	80
Pool	5
Run	
Glide	

Number Seine Hauls	15
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Additional stream to collect stickleback sample			
Length	50 m	Hauls	19
See Comments			

Habitat Evaluation	stickleback	sucker	chub
Poor			
Moderate	X		
Good		X	
Excellent			X

Life Stages	stickleback	sucker	chub
Fry			
YOY			
Subadult/Adult			X

Attached Datasheets	stickleback	sucker	chub
yes or no	no	no	yes

Temperature	21.65 °C
Time	

Characterization of site with abundant fish		depth	velocity	habitat type	substrate
Fish Species	#individuals				
Stickleback		bank vegetation		instream vegetation	
Santa Ana sucker					
Arroyo chub		Fish evenly distributed			
Non-native					

Personnel	T.R. Haglund	Reptiles/Amphibians	Photo?
	J.N. Baskin	Xenopus adult	No

COMMENTS:

SMEA performed the additional seining noted in the datasheet. Additional seine hauls were performed by a group from the USGS, Camm Swift, and Newhall Land and Farming personnel.

pH = 8.92, ORP = 198, Conductivity = 1.79, NTU = 4.2, Dissolved oxygen = 11.22, TDS = 0.996, Salinity = 0.08

Arroyo Chub		
#	SL mm	Weight
1	62	
2	64	
3	56	
4	58	
5	54	
6	48	
7	48	
8	46	
9	53	
10	53	
11	52	
12	57	
13	58	
14	64	
15	68	
16	66	
17	42	
18	47	
19	48	
20	56	
21	52	
22	58	
23	58	
24	57	
25	42	
26	58	
27	57	
28	42	
29	66	
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43		
44		
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46		
47		
48		
49		
50		

Date: 27 August 2009

Location: Santa Clara River at Newhall Land and Farming's Las Brisas crossing

Data Collector(s)

T.R. Haglund

Data Transcription

J.N. Baskin

Comments