

**APPENDIX G**

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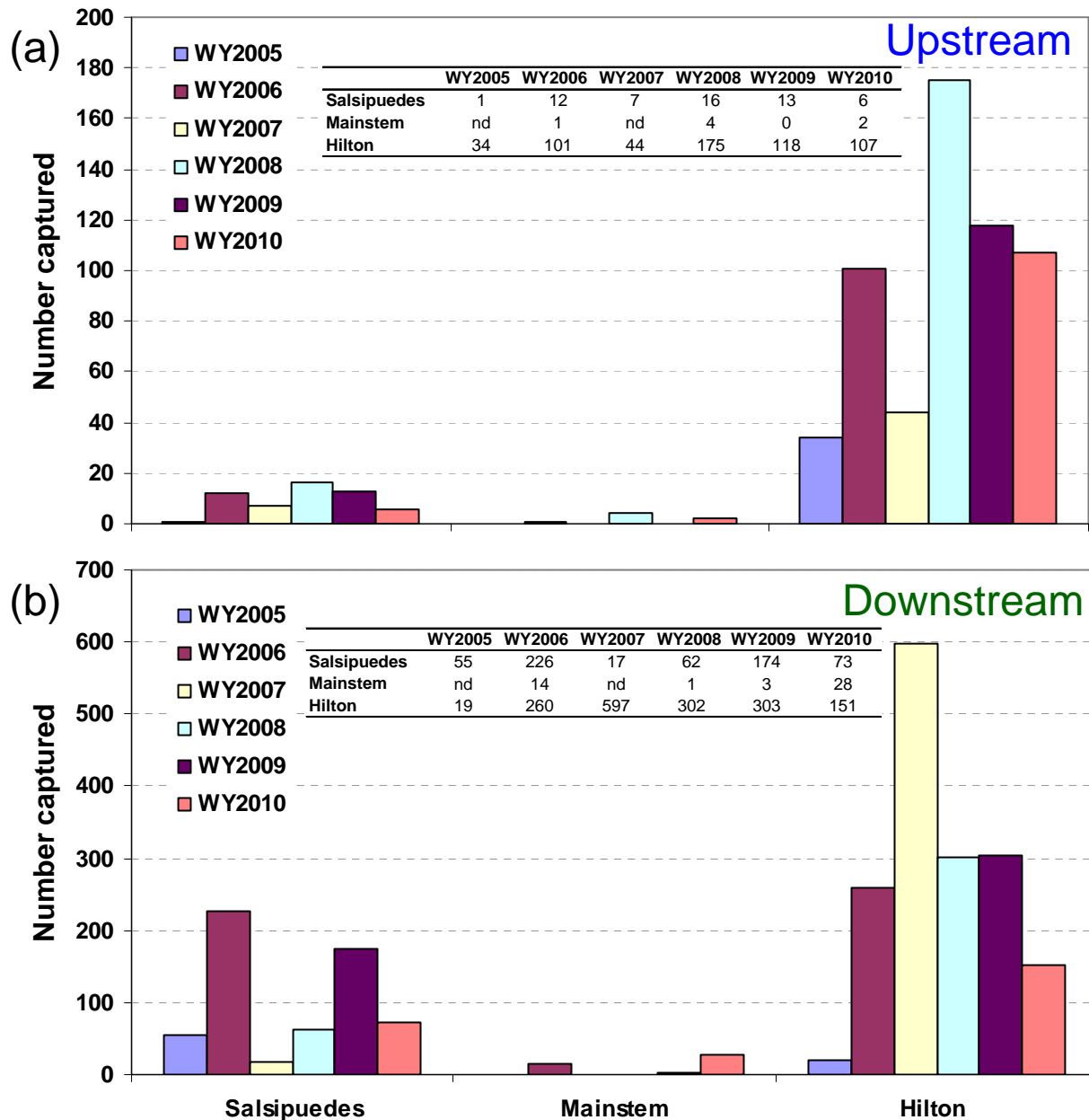
**Data from the Lower Santa Ynez River Steelhead / Rainbow Trout  
Monitoring and Habitat Restoration Program**

Requested Data from the Lower Santa Ynez River  
Steelhead / Rainbow Trout Monitoring and Habitat  
Restoration Program

July 28, 2010

This dataset is only to be used by Rosi Dagit in the  
review process of the SWRCB EIR for the Cachuma  
Project.

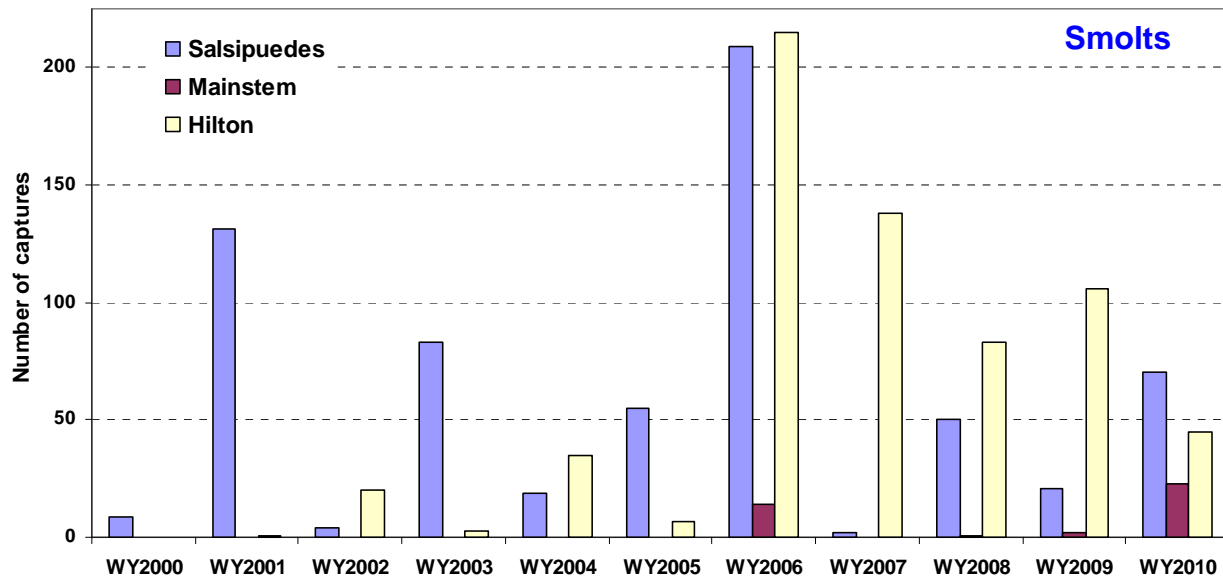
If you have any questions, please contact  
Tim Robinson at COMB/CCRB 805-687-4011.



**Figure 1:** Migrant capture (a) upstream and (b) downstream totals for WY2005-WY2010 at the Salsipuedes Creek, LSYR Mainstem and Hilton Creek traps. The LSYR Mainstem traps were first deployed in March of 2006 and not deployed WY2007 due to low flow conditions.

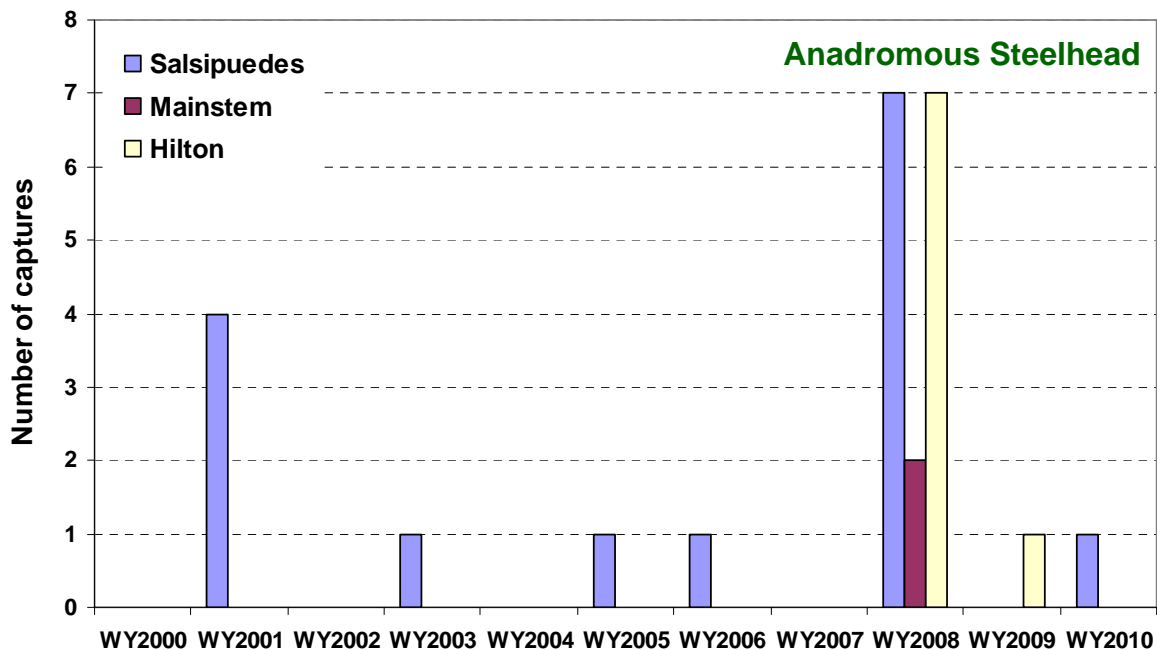
**Table 1 and Figure 2:** Number of smolts captures in WY2000 to the present at the three trapping locations within the Lower Santa Ynez River. The mainstem trap was first installed in the spring of 2006 and was not deployed in WY2007 due to low flow conditions.

	WY2000	WY2001	WY2002	WY2003	WY2004	WY2005	WY2006	WY2007	WY2008	WY2009	WY2010
Salsipuedes	9	131	4	83	19	55	209	2	50	21	70
Mainstem	-	-	-	-	-	-	14	-	1	2	23
Hilton	-	1	20	3	35	7	215	138	83	106	45
<b>Total</b>	<b>9</b>	<b>132</b>	<b>24</b>	<b>86</b>	<b>54</b>	<b>62</b>	<b>438</b>	<b>140</b>	<b>134</b>	<b>129</b>	<b>138</b>



**Table 2 and Figure 3:** Number of anadromous adult captures in WY2000 to the present at the three trapping locations within the Lower Santa Ynez River

	WY2000	WY2001	WY2002	WY2003	WY2004	WY2005	WY2006	WY2007	WY2008	WY2009	WY2010
Salsipuedes	0	4	0	1	0	1	1	0	7	0	1
Mainstem	-	-	-	-	-	-	0	0	2	0	0
Hilton	0	0	0	0	0	0	0	0	7	1	0
<b>Total</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>16</b>	<b>1</b>	<b>1</b>



**Table 3:** WY2005 Tributary upstream and downstream migrant captures for Hilton and Salsipuedes Creek.

Hilton Captures (#)	Size (mm)	Salsipuedes Captures (#)
<b>Upstream Traps</b>		
0	>700	0
0	650-699	1
0	600-649	0
0	550-599	0
2	500-549	0
7	450-499	0
8	400-450	0
7	300-399	0
6	200-299	0
4	101-199	0
0	<100	0
<b>34</b>	<b>Total</b>	<b>1</b>
<b>Downstream Traps</b>		
0	>700	0
0	650-699	0
0	600-649	0
0	550-599	0
2	500-549	0
0	450-499	0
5	400-449	0
3	300-399	0
2	200-299	9
	1 Smolts	9
	0 Pre-Smolt	0
	1 Res	0
6	101-199	46
	6 Smolts	45
	0 Pre-Smolt	1
	0 Res	0
1	<100	0
	0 Smolts	0
	0 Pre-Smolt	0
	1 Res	0
<b>19</b>	<b>Total</b>	<b>55</b>

**Table 4:** WY2006 Tributary upstream and downstream migrant captures for Hilton and Salsipuedes Creek.

<b>Hilton Captures (#)</b>	<b>Size (mm)</b>	<b>Salsipuedes Captures (#)</b>
<b>Upstream Traps</b>		
0	>700	0
0	650-699	0
0	600-649	0
1	550-599	0
2	500-549	1
9	450-499	0
20	400-450	0
28	300-399	5
9	200-299	5
17	101-199	1
15	<100	0
<b>101</b>	<b>Total</b>	<b>12</b>
<b>Downstream Traps</b>		
0	>700	0
0	650-699	0
0	600-649	0
0	550-599	0
2	500-549	0
4	450-499	0
5	400-449	0
15	(300-399mm)	2
13	(200-299mm)	17
	11 <i>Smolts</i>	11
	0 <i>Pre-Smolt</i>	2
	2 <i>Res</i>	4
45	(101-199mm)	184
	33 <i>Smolts</i>	130
	5 <i>Pre-Smolt</i>	49
	7 <i>Res</i>	5
176	(<100mm)	23
	1 <i>Smolts</i>	4
	166 <i>Pre-Smolt</i>	16
	9 <i>Res</i>	3
<b>260</b>	<b>Total</b>	<b>226</b>

**Table 5:** WY2007 Tributary upstream and downstream migrant captures for Hilton and Salsipuedes Creek.

<b>Hilton Captures (#)</b>	<b>Size (mm)</b>	<b>Salsipuedes Captures (#)</b>
<b>Upstream Traps</b>		
0	>700	0
0	650-699	0
0	600-649	0
0	550-599	0
0	500-549	0
0	450-499	0
2	400-450	0
11	300-399	0
4	200-299	2
15	101-199	5
12	<100	0
<b>44</b>	<b>Total</b>	<b>7</b>
<b>Downstream Traps</b>		
0	>700	0
0	650-699	0
0	600-649	0
0	550-599	0
0	500-549	0
0	450-499	0
4	400-449	0
16	(300-399	1
9	200-299	3
	6 Smolts	0
	0 Pre-Smolt	0
	3 Res	3
362	101-199	12
	92 Smolts	1
	40 Pre-Smolt	1
	229 Res	10
206	<100	1
	0 Smolts	0
	0 Pre-Smolt	0
	206 Res	1
<b>597</b>	<b>Total</b>	<b>17</b>

**Table 6:** WY2008 Tributary upstream and downstream migrant captures for Hilton and Salsipuedes Creek.

Hilton Captures	Size	Salsipuedes Captures
(#)	(mm)	(#)
<b>Upstream Traps</b>		
0	>700	1
4	650-699	2
0	600-649	3
2	550-599	0
2	500-549	0
13	450-499	0
6	400-450	0
31	300-399	0
22	200-299	7
63	101-199	1
32	<100	2
<b>175</b>	<b>Total</b>	<b>16</b>
<b>Downstream Traps</b>		
0	>700	0
2	650-699	0
1	600-649	0
1	550-599	0
1	500-549	0
14	450-499	1
13	400-450	0
27	300-399	1
18	200-299	13
	4 Smolt	9
	2 Pre-Smolt	1
	12 Resident	3
176	101-199	41
	57 Smolt	33
	18 Pre-Smolt	7
	101 Resident	1
49	<100	6
	0 Smolt	0
	1 Pre-Smolt	0
	48 Resident	6
<b>302</b>	<b>Total</b>	<b>62</b>



**Table 7:** WY2009 Tributary upstream and downstream migrant captures for Hilton and Salsipuedes Creek.

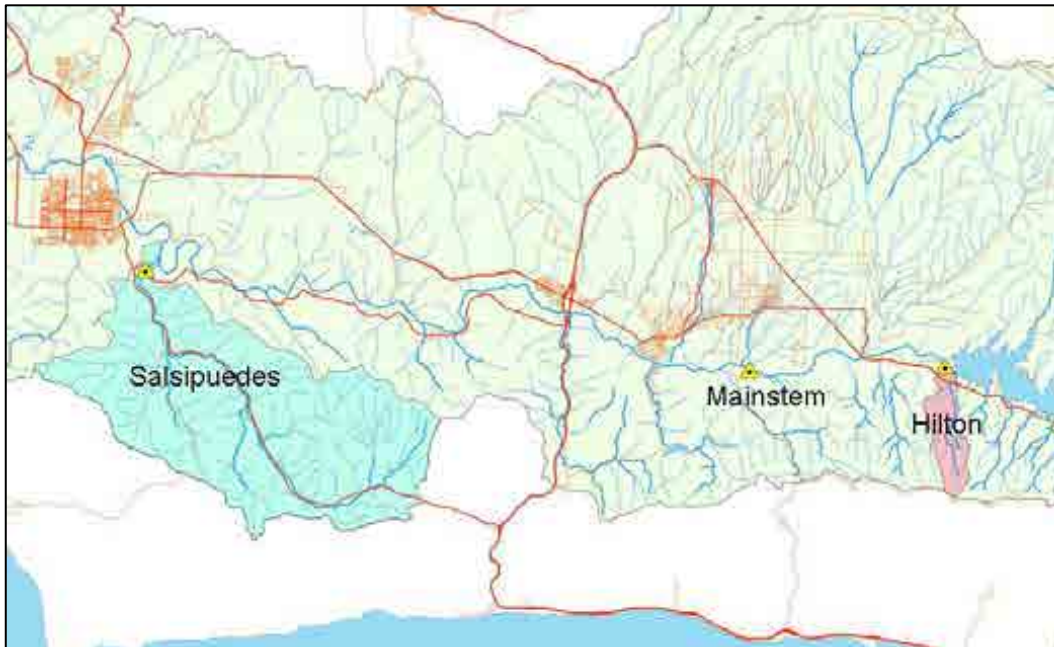
Hilton Captures (#)	Size (mm)	Salsipuedes Captures (#)
<b>Upstream Traps</b>		
0	>700	0
0	650-699	0
1	600-649	0
0	550-599	0
1	500-549	0
1	450-499	0
2	400-450	0
27	300-399	0
29	200-299	1
33	101-199	9
24	<100	3
<b>118</b>	<b>Total</b>	<b>13</b>
<b>Downstream Traps</b>		
0	>700	0
0	650-699	0
0	600-649	0
0	550-599	0
0	500-549	0
1	450-499	0
0	400-449	0
26	00-399	0
24	200-299	2
	6 Smolts	1
	0 Pre-Smolt	0
	18 Res	1
218	101-199	61
	70 Smolts	16
	30 Pre-Smolt	4
	118 Res	41
34	<100	111
	0 Smolts	0
	0 Pre-Smolt	1
	34 Res	110
<b>303</b>	<b>Total</b>	<b>174</b>

**Table 8:** WY2010 Tributary upstream and downstream migrant captures for Hilton and Salsipuedes Creek.

Hilton Captures (#)	Size (mm)	Salsipuedes Captures (#)
<b>Upstream Traps</b>		
0	>700	0
0	650-699	0
0	600-649	0
0	550-599	0
0	500-549	0
2	450-499	0
1	400-450	0
11	300-399	0
39	200-299	4
39	101-199	2
15	<100	0
<b>107</b>	<b>Total</b>	<b>6</b>
<b>Downstream Traps</b>		
0	>700	0
0	650-699	0
0	600-649	1
0	550-599	0
0	500-549	0
2	450-499	0
3	400-450	0
9	300-399	0
38	200-299	20
	1 Smolts	18
	1 Pre-Smolt	2
	36 Res	0
84	101-199	50
	39 Smolts	49
	4 Pre-Smolt	1
	40 Res	0
15	<100	2
	0 Smolts	0
	0 Pre-Smolt	0
	15 Res	2
<b>151</b>	<b>Total</b>	<b>73</b>



**Figure 4:** Watersheds within or near by the Southern California Steelhead ESU/DPS with observed anadromous steelhead in WY2008.

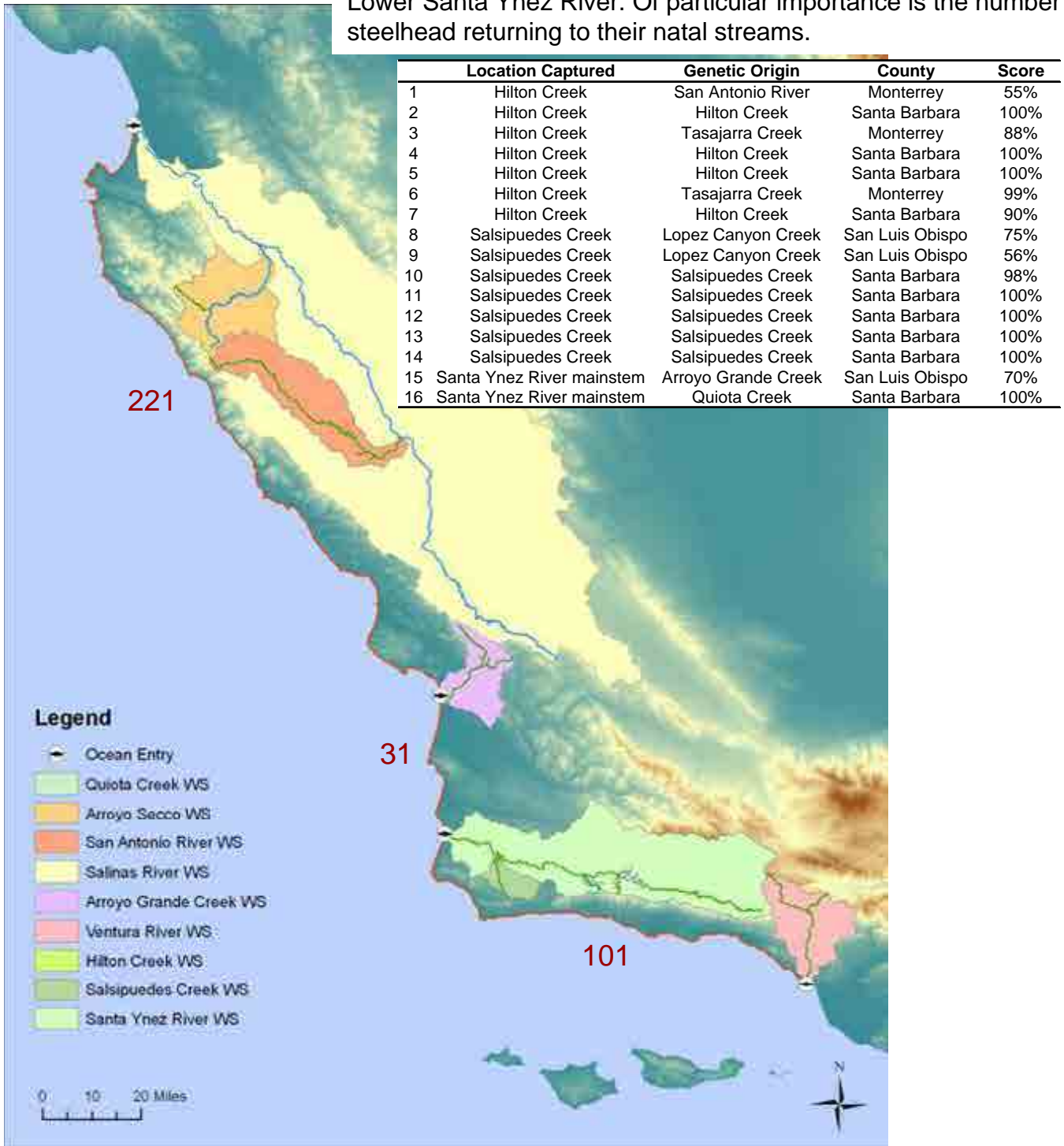


**Figure 5:** Trapping locations on the Lower Santa Ynez River during WY2008.

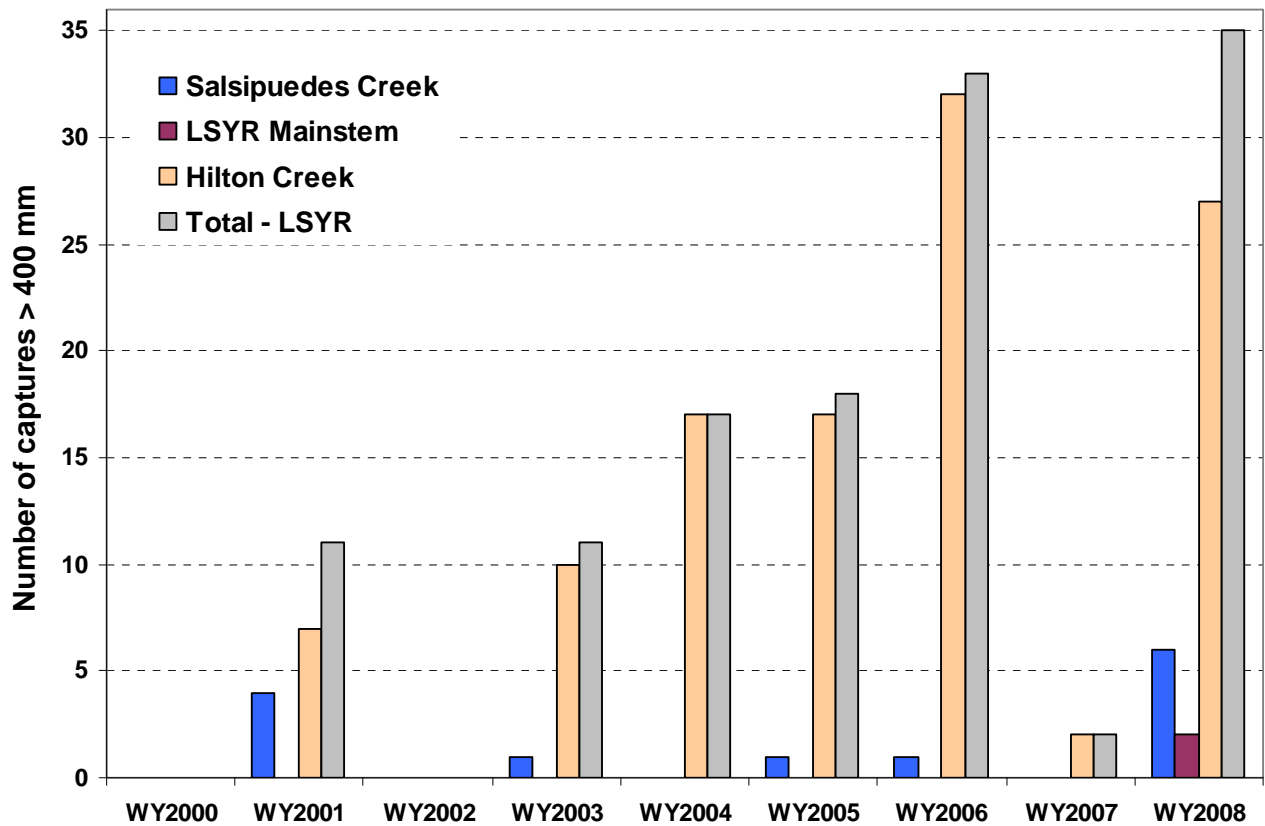
**Table 9:** The 16 anadromous steelhead migrants observed in the Lower Santa Ynez River in WY2008 with notes on the significance of some of those fish.

#	#	Location	Direction	Size	Date	Notes
1	1	Salsipuedes	US	640	2/4	
2	2	Salsipuedes	US	701	2/5	Largest Std capture
3	3	Salsipuedes	DS	496	2/7	
4	4	Salsipuedes	US	635	2/17	
5	5	Salsipuedes	US	663	3/25	
6	6	Salsipuedes	US	675	3/29	
7	7	Salsipuedes	US	608	4/14	
8	1	Mainstem	US	678	2/10	First Std capture on mainstem
9	2	Mainstem	US	600	3/18	Second Std capture on mainstem
10	1	Hilton	US	659	2/7	First Std capture on Hilton
11	2	Hilton	DS	578	2/11	Second Std capture on Hilton
12	3	Hilton	US	691	2/16	
13	4	Hilton	DS	617	3/4	
14	5	Hilton	US	563	3/5	
15	6	Hilton	US	660	3/7	
16	7	Hilton	US	688	3/23	

**Table 10:** The capture location, genetic origin with county, and the confidence score of the genetic determination for the 16 anadromous steelhead migrants observed in WY2008 within the Lower Santa Ynez River. Of particular importance is the number of steelhead returning to their natal streams.



**Figure 6:** Location of the watersheds and the specific stream in green that contributed steelhead to the Santa Ynez River in WY2008. The numbers in red indicate the coastal distance from the outlet of the watershed of genetic origin to the outlet of the Santa Ynez River (See Table 10 for genetic origin watersheds; the Ventura River watershed was included due to being second on percentage score for one steelhead .



**Figure 7:** Migrant captures equal to or larger than 400 mm (15.7 inches) observed at the three trap sites from WY2000 through WY2008. The LSYSR Mainstem trap was first installed in WY2006. The increased number of larger fish indicate a greater reproduction potential which is particularly evident at Hilton Creek.

**Table 11:** Spring, summer and fall snorkel survey totals within the Lower Santa Ynez River at the Refugio and Alisal reaches and certain long-term monitoring reaches on Hilton, Quiota, Salsipuedes and El Jaro creeks during Water Years 2005 to the present.

<b>Snorkel Survey</b>	<b>WY2005</b>	<b>WY2006</b>	<b>WY2007</b>	<b>WY2008</b>	<b>WY2009</b>	<b>WY2010</b>
<b>Refugio and Alisal Reaches</b>						
Spring	67	345	89	216	78	38
Summer	84	331	58	646	49	
Fall	91	293	21	305	26	
<b>Hilton Creek</b>						
Spring	1517	2740	1316	2210	545	1256
Summer	1303	1891	1319	1519	863	
Fall	1272	2016	n/a	738*	746	
<b>Quiota Creek</b>						
Spring	n/a	n/a	n/a	243	189	114
Summer	n/a	142	201	81	101	
Fall	n/a	84	78	67	39	
<b>Salsipuedes Creek</b>						
Spring	n/a	109	202	n/a	95	305
Summer	110	131	0	308	46	
Fall	134	74	76	226	26	
<b>El Jaro Creek</b>						
Spring	n/a	35	30	n/a	75	105
Summer	25	35	n/a	405	n/a	
Fall	3	18	n/a	151	11	
<b>Water Year Type</b>						
	Wet	Wet	Dry	Wet	Dry	Wet

n/a= conditions too turbid to snorkel.





**Table 14:** WY2006 LSYR mainstem snorkel results broken out by three inch size classes.

Survey	Reach	Length Class (inches)									Total
		0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24	24-27	
Spring	Hwy 154	Not snorkeled due to turbidity									
	Refugio	0	10	11	4	3	2	2	0	0	<b>32</b>
	Alisal	0	3	47	14	8	4	2	1	0	<b>79</b>
	Avenue	Not snorkeled									
Summer	Cadwell	Not snorkeled									
	Hwy 154	Not snorkeled due to turbidity									
	Refugio	5	45	68	56	28	8	0	1	0	<b>211</b>
	Alisal	3	44	21	57	7	2	0	0	0	<b>134</b>
	Avenue	0	2	11	13	6	1	0	0	0	<b>33</b>
Fall	Cadwell	Not snorkeled									
	Hwy 154	Not snorkeled due to turbidity									
	Refugio	0	29	56	64	31	24	3	1	0	<b>208</b>
	Alisal	0	9	42	29	4	1	0	0	0	<b>85</b>
	Avenue	Not snorkeled									
	Cadwell	Not snorkeled									

**Table 15:** WY2006 tributary snorkel results broken out by three inch size classes.

Survey	Creek	Length Class (inches)									Total
		0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24	24-27	
Spring	Hilton	1386	1181	143	20	4	5	1	0	0	<b>2740</b>
	Quiota	Not snorkeled									
	Salsipuedes (R1-4)	Not snorkeled due to turbidity									
	Salsipuedes (R-5)	40	42	22	3	2	0	0	0	0	<b>109</b>
Summer	El Jaro	2	15	17	1	0	0	0	0	0	<b>35</b>
	Hilton	1044	764	65	11	5	1	1	0	0	<b>1891</b>
	Quiota	97	34	7	4	0	0	0	0	0	<b>142</b>
	Salsipuedes (R1-4)	Not snorkeled due to turbidity									
	Salsipuedes (R-5)	41	53	29	6	1	1	0	0	0	<b>131</b>
Fall	El Jaro	11	10	11	1	0	0	0	0	0	<b>33</b>
	Hilton	620	1260	116	16	1	2	1	0	0	<b>2016</b>
	Quiota	12	66	5	1	0	0	0	0	0	<b>84</b>
	Salsipuedes (R1-4)	Not snorkeled due to turbidity									
	Salsipuedes (R-5)	11	28	26	7	2	0	0	0	0	<b>74</b>
	El Jaro	0	7	10	1	0	0	0	0	0	<b>18</b>

**Table 16:** WY2007 LSYR mainstem snorkel results broken out by three inch size classes.

Survey	Reach	Length Class (inches)								Total		
		0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24		24-27	
Spring	Hwy 154	Not snorkeled-turbidity										
	Refugio	0	0	3	12	14	6	0	0	0	<b>35</b>	
	Alisal	0	0	0	5	25	18	6	0	0	<b>54</b>	
	Avenue	0	0	0	0	0	0	0	0	0	<b>0</b>	
Summer	Cadwell	0	0	0	0	0	0	0	0	0	<b>0</b>	
	Hwy 154	14	55	7	0	0	0	0	0	0	<b>76</b>	
	Refugio	1	0	3	5	5	1	0	0	0	<b>15</b>	
	Alisal	0	0	0	10	21	8	0	0	0	<b>39</b>	
Fall	Avenue	0	0	0	0	0	0	0	0	0	<b>0</b>	
	Cadwell	0	0	0	0	0	0	0	0	0	<b>0</b>	
	Hwy 154	0	17	20	0	0	0	0	0	0	<b>37</b>	
	Refugio	0	0	0	3	6	3	0	0	0	<b>12</b>	
		Alisal	0	0	0	4	3	2	0	0	0	<b>9</b>
		Avenue	0	0	0	0	0	0	0	0	0	<b>0</b>
		Cadwell	0	0	0	0	0	0	0	0	0	<b>0</b>

**Table 17:** WY2007 tributary snorkel results broken out by three inch size classes.

Survey	Creek	Length Class (inches)								Total	
		0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24		24-27
Spring	Hilton	463	670	171	10	2	0	0	0	0	<b>1316</b>
	Quiota	59	129	12	1						<b>201</b>
	Salsipuedes (R1-4)	n/s-poor visibility from beaver activity									
	Salsipuedes (R-5)	151	14	27	9	1					<b>202</b>
Summer	El Jaro	9	5	9	6	1					<b>30</b>
	Hilton	318	802	168	26	5	0	0	0	0	<b>1319</b>
	Quiota	32	39	6	1						<b>78</b>
	Salsipuedes (R1-4)	n/s-poor visibility from beaver activity									
Fall	Salsipuedes (R-5)	n/s-poor visibility from beaver activity									
	El Jaro	n/s-turbidity									
	Hilton	n/s-poor visibility from lake turnover									
	Quiota	n/s-poor visibility									
	Salsipuedes (R1-4)	n/s-poor visibility from beaver activity									
	Salsipuedes (R-5)	26	26	13	8	2	1				<b>76</b>
	El Jaro	n/s-poor visibility									



**Table 20:** WY2009 LSYR mainstem snorkel results broken out by three inch size classes.

Survey	Reach	Length Class (inches)									Total
		0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24	24-27	
Spring	Hwy 154	Not snorkeled due to turbidity									
	Refugio	0	2	14	13	3	6	1	0	0	39
	Alisal	1	1	25	8	4	0	0	0	0	39
	Avenue	Not snorkeled									0
	Cadwell	Not snorkeled									0
Summer	Hwy 154	Not snorkeled due to turbidity									
	Refugio	0	1	11	12	4	4	0	0	0	32
	Alisal	0	1	7	6	3	0	0	0	0	17
	Avenue	Not snorkeled									0
	Cadwell	Not snorkeled									0
Fall	Hwy 154	1	34	6	0	0	0	0	0	0	41
	Refugio	0	0	5	9	5	0	0	0	0	19
	Alisal	0	0	1	3	3	0	0	0	0	7
	Avenue	Not snorkeled									0
	Cadwell	Not snorkeled									0

**Table 21:** WY2009 tributary snorkel results broken out by three inch size classes.

Survey	Reach	Length Class (inches)									Total
		0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24	24-27	
Spring	Hilton	227	224	88	5	0	0	0	1	0	545
	Quiota	185	4	0	0	0	0	0	0	0	189
	Salsipuedes (R2)	Not snorkeled due to turbidity									0
	Salsipuedes (R-5)	28	61	6	0	0	0	0	0	0	95
	El Jaro	34	35	6	0	0	0	0	0	0	75
Summer	Hilton	319	380	140	21	3	0	0	0	0	863
	Quiota	89	11	1	0	0	0	0	0	0	101
	Salsipuedes (R2)	13	2	2	1	0	0	0	0	0	18
	Salsipuedes (R-5)	11	15	2	0	0	0	0	0	0	28
	El Jaro	Not snorkeled									0
Fall	Hilton	167	482	93	4	0	0	0	0	0	746
	Quiota	27	10	2	0	0	0	0	0	0	39
	Salsipuedes (R2)	0	5	1	0	0	0	0	0	0	6
	Salsipuedes (R-5)	3	14	2	1	0	0	0	0	0	20
	El Jaro	2	7	1	1	0	0	0	0	0	11

**Table 22:** Biological Opinion (BO) tributary project inventory with the anticipated completion date specified in the BO and their status to date.

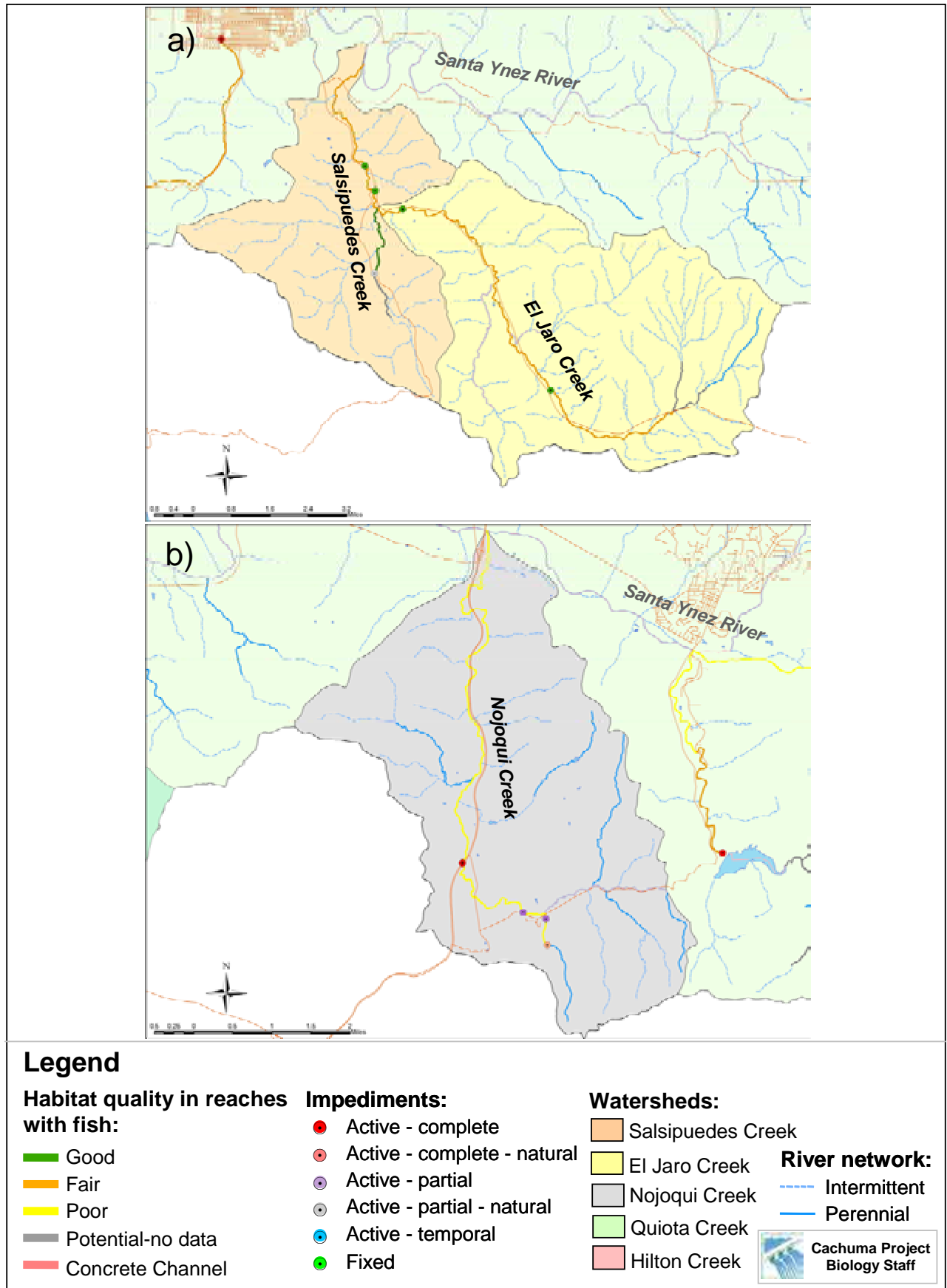
<b>Tributary Projects</b>	<b>BO Completion Date</b>	<b>Status</b>
Hwy 1 Bridge on Salispuedes Creek	2001	Completed (2002)
Cross Creek Ranch on El Jaro Creek	2005	Completed (2009)
Hwy 101 Culvert on Nojoqui Creek	2005	Proposed removal from BO
Quiota Creek Crossing 1	2003	In design*
Quiota Creek Crossing 3	2003	In design
Quiota Creek Crossing 4	2003	In design
Quiota Creek Crossing 5	2003	In design
Quiota Creek Crossing 7	2003	In design
Quiota Creek Crossing 9	2003	In design
Cascade/Chute Passage on Hilton Creek	2000	Completed (2005)
Hwy 154 Culvert on Hilton Creek	2002	Proposed removal from BO
<b>Total:</b>	<b>11</b>	
<b><i>Projects completed and in design:</i></b>	<b>9</b>	
<b><i>Projects suggested to be removed:</i></b>	<b>2</b>	

\* Grant applications submitted.

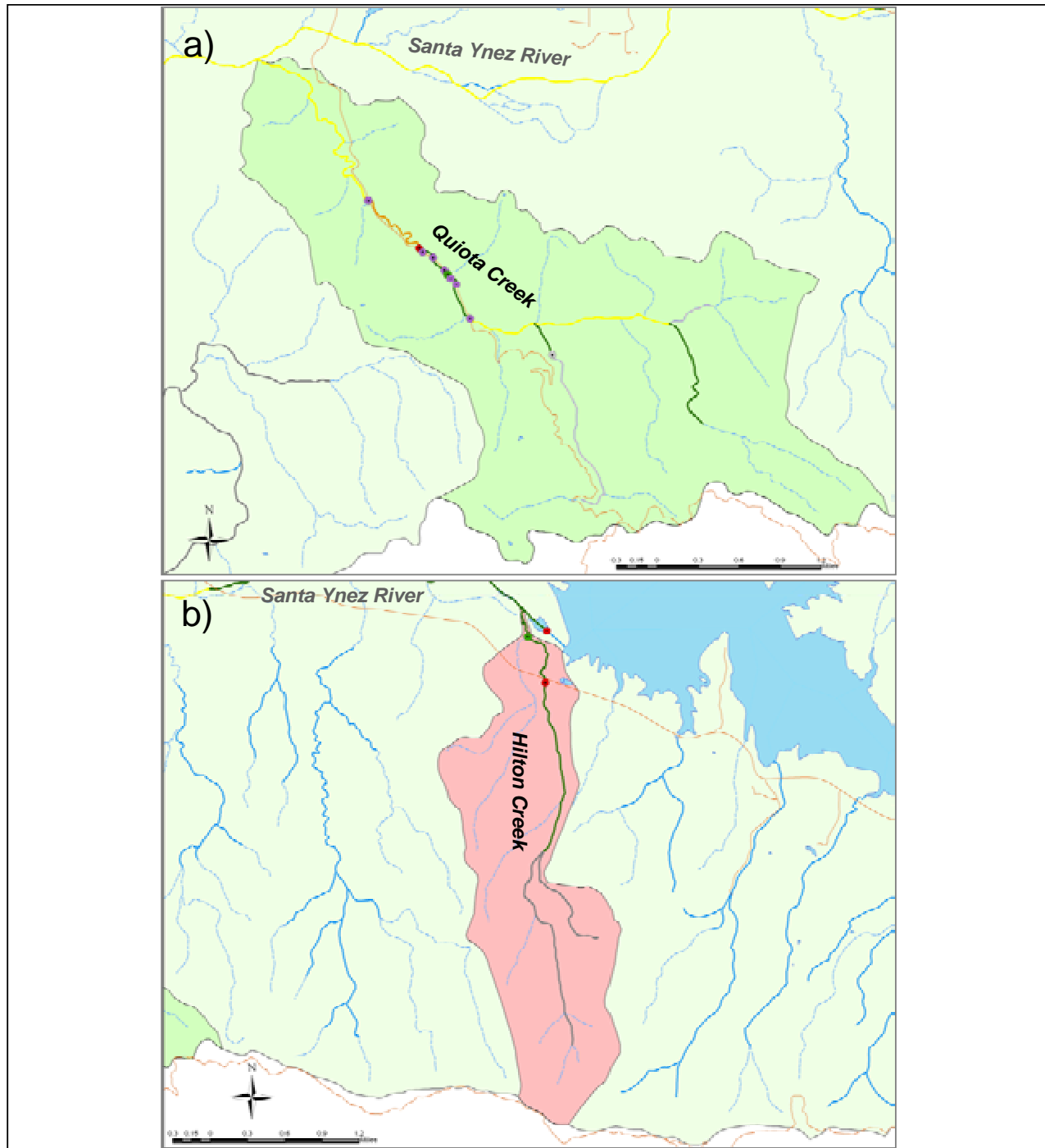
**Table 23:** Non-BO tributary projects already completed or scheduled for completion.

<b>Tributary Projects</b>	<b>Status</b>
Jalama Road Bridge on Salsipuedes Creek	Completed (2004)
San Julian Ranch on El Jaro Creek	Completed (2008)
Quiota Creek Crossing 2	In design*
Quiota Creek Crossing 6	Completed (2008)
Quiota Creek Crossing 8	In design
<b>Total:</b>	<b>5</b>
<b><i>Projects completed:</i></b>	<b>3</b>
<b><i>Projects remaining:</i></b>	<b>2</b>

\* Grant applications submitted.



**Figure 8:** Tributaries of the Lower Santa Ynez River that are identified in the Biological Opinion to have steelhead habitat: a) Salsipuedes and El Jaro creeks, and b) Nojoqui Creek. Stream habitat quality and impediments with their status have been included.



**Legend**

**Habitat quality in reaches with fish:**

- █ Good
- █ Fair
- █ Poor
- █ Potential-no data
- █ Concrete Channel

**Impediments:**

- Active - complete
- Active - complete - natural
- Active - partial
- Active - partial - natural
- Active - temporal
- Fixed

**Watersheds:**

- █ Salsipuedes Creek
- █ El Jaro Creek
- █ Nojoqui Creek
- █ Quiota Creek
- █ Hilton Creek

**River network:**

- Intermittent
- Perennial



**Figure 9:** Tributaries of the Lower Santa Ynez River that are identified in the Biological Opinion to have steelhead habitat: a) Quiota Creek, and b) Hilton Creek. Stream habitat quality and impediments with their status have been included.



**Figure 10:** Fish passage and habitat restoration in the fall of 2008 at Rancho San Julian on El Jaro Creek.





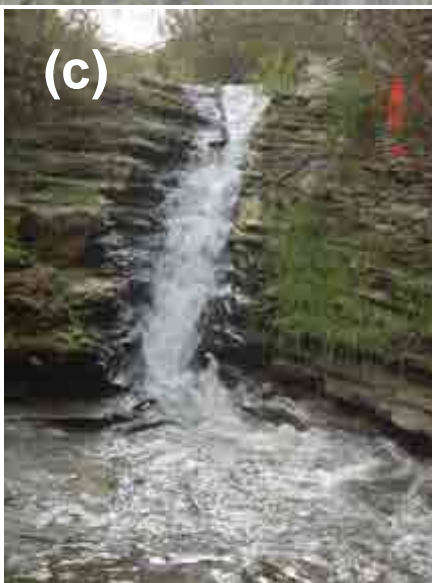
**Figure 11:** Fish passage and habitat restoration in the fall of 2008 at Refugio Road on Quiota Creek Crossing 6.



**Figure 12:** Fish passage and habitat restoration in the fall of 2009 at Cross Creek Ranch on El Jaro Creek, a tributary of Salsipuedes Creek and the Santa Ynez River.

**Before**

**After**



**Figure 13:** Fish passage and habitat restoration at (a) Hwy 1 Bridge on Salsipuedes Creek (completed in 2002), (b) Jalama Road Bridge on Salsipuedes Creek (completed in 2004), and (c) Cascade Chute barrier on Hilton Creek.