Santa Clara River main stem, Ventura and Los Angeles Counties
CAP Workbook Threats Assessment Summary Tables
2008

Assessment of Target Viability

Santa Clara River main stem, Ventura and Los Angeles counties

Double-click opens entry form

						Bold = Current	Indicator Ratings		*Italics = Desired*					
	Conservation Target	Category	Key Attribute	Indicator	Poor	Fair	Good	Very Good	Current Indicator Status	Current Rating	Desired Rating	Date of Current Rating	Date for Desired Rating
1	Egg	Landscape Context	Flow during incubation period	Baseflow in relation to avg. annual daily flow	**< 25% of avg. annual daily flow**	26-50% of avg. annual daily flow		> 50% of avg. annual daily flow	intermittent flows	Poor		Sep-07	
1	Egg	Landscape Context	Non-native species	Non-native egg predators	**present throughout watershed**	present in >50% of watershed	present in < 50% of watershed	absent	many nn predators	Poor		Oct-98	
1	Egg	Landscape Context	Water temperature	Mean weekly avg. temperature in redds	< 5 C. and > 13 C.	11.1-13 C.	10.1-11 C.	6-10 C.					
1	Egg	Condition	Substrate quality	Avg. percent fines (<0.85mm) in potential spawning areas	> 17% fines	11-17% fines	5-10 % fines	< 5% fines				Sep-07	
1	Egg	Condition	Substrate quality	Embeddedness	> 75% embedded	**50-75% embedded**	25-49% embedded	< 25% embedded	avg 69.2%	Fair		May-05	
2	Fry	Landscape Context	Dispersal	Barriers between redds and rearing habitat	**complete barrier**	partial barriers common	partial barriers scarse	no barriers	intermittent flows	Poor		Sep-07	
2	Fry	Landscape Context	Non-native species	Non-native fry predators	**present throughout watershed**	present > 50% watershed	present < 50% of watershed	absent	many species	Poor		Aug-07	
2	Fry	Landscape Context	Sediment supply	Turbidity (no. days turbidity is > 25 NTUs)	> 30 days during fry development period	20-30 days	10-19 days	< 10 days				Sep-07	
2	Fry	Condition	Habitat complexity/refugia	Amount of functional high velocity refuge habitat with flows < 15 cm/sec (boulders, overhanging banks, etc.)	none; watercourse in rearing habitat is channelized	**some**	common	abundant		Fair		Jan-07	
3	Juvenile	Landscape Context	Dispersal	Barriers between rearing habitat and estuary	**present**			absent	main stem perennial, but surface diversions reduce flow	Poor		Sep-07	
3	Juvenile	Landscape Context	Flow during rearing period	Pool habitat > 3 feet in depth	pools scarse or absent	**low abundance of pools**	high abundance of pools	high abundance of pools with muliple "refuge" pools (> 5 ft deep)	spatially variable, but generally low	Fair		Sep-05	
3	Juvenile	Landscape Context	Non-native species	Non-native juvenile predators	**present throughout watershed**	present > 50% watershed	present < 50% watershed	absent	many species	Poor		Oct-07	

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3	Juvenile	Landscape Context	Summer flow	Percent of unimpaired median summer baseflow (based on long-term mean monthly discharge)	**< 70%**	70-90%	> 90%	100% over all IP-km		Poor		Sep-07	
3	Juvenile	Landscape Context	Water temperature	Median weekly average temperature (MWAT) in potential rearing habitat	> 21 C.	18-21 C.	< 18 C.	**< 17 C.**	about 14-15 C	Very Good		May-05	
3	Juvenile	Condition	Estuarine inflows	Percentage of unimpaired freshwater inflow to estuary (necessary for maintaining brackish water < 15 ppt salinity)	< 25%	**25-49%**	50-75%	> 75%	surface flows highly regulated; subsurface inflows?	Fair		Sep-05	
3	Juvenile	Condition	Estuarine inflows	Persistence of hypoxic or anoxic saline layer (> 15 ppt) in potential rearing habitat areas between May and onset of winter rains	3 months	1 month	1 week	< 3 days				Sep-96	
3	Juvenile	Condition	Food availability	Species richness	< 25 taxa	25-29 taxa	30-40 taxa	> 40 taxa				Sep-07	
3	Juvenile	Condition	Habitat complexity/refugia	Instream refugia	absent			present (boulders, overhanging banks, etc.)	low amount of cover	Fair		Sep-05	
3	Juvenile	Condition	Riparian corridor species composition and structure	Mean percent native, undisturbed composition and structure in 100-foot riparian buffer	**< 25%**	25-50%	51-75%	historic conditions	9.2% avg canopy cover	Poor		Sep-05	
4	Smolt	Landscape Context	Dispersal	Number of days when depths are < 0.4 ft anywhere in migration corridor during outmigration period (March through June)	**> 10 days**	6-10 days	1-5 days	0 days		Poor		Sep-07	
4	Smolt	Landscape Context	Flow for downstream passage March through June	Maximum potential rate of diversion by pumping during April and May (expressed as percent of estimate unimpaired median flow in April)	> 150%	**100-150%**	50-99%	< 50%	intermittent flows	Fair		Sep-07	
4	Smolt	Landscape Context	Passage to ocean	Number of days stream mouth is open with adequate flow during outmigration period (March through June)	< 30 days	30-60 days	60-90 days	> 90 days				Sep-96	

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5	Adult	Landscape Context	Dispersal	Accessibility of suitable spawning areas (based on TRT criteria)	**accessible sites are clumped in one location or < 25% of all tributaries are accessible**	25-50% of all tributaries are accessible	50-75% of all tributaries are accessible	> 75% of all tributaries are accessible	Vern Freeman Diversion Dam	Poor		Sep-05	
5	Adult	Landscape Context	Dispersal	Number of days stream mouth is open with adequate flow during entry period (1 November to 1 June)	< 30 days	30-60 days	60-90 days	> 90 days				Sep-96	
5	Adult	Landscape Context	Flow during spawning period (spawning and upstream/downstream passage)	Percent of net discharge (unimpaired flow minus total diversions) occurring between 1 December to 1 June, in all water years	**> 10%**	6-10%	3-5%	< 3%	highly regulated flows	Poor		Jun-05	
5	Adult	Landscape Context	Water temperature	Median weekly average temperature in migration corridor	> 17 C.	**15-16.9 C.**	13-14.9 C.	10-12.9 C.	probably relatively high due to lack of shade	Fair		May-05	
5	Adult	Size	Population size	Mean annual adult spawner abundance		TRT criteria for low extinction risk (by watershed)						May-07	
6	Multiple Life Stages	Landscape Context	Barriers/diversions	Stream crossings/stream mile	> two/mile			< two/mile	avg 0.86 crossings/mile	Good		Jan-08	
6	Multiple Life Stages	Landscape Context	Channel flow and morphology	Percent of total watercourse length channelized	**> 25%**	16-25%	5-15%	< 5%	prob > 25%	Poor		Jan-08	
6	Multiple Life Stages	Landscape Context	Fire regime/vegetation maturity	Percent of watershed affected by high intensity fire within previous 100 yrs	**> 25%**	10-24%	5-9%	< 5%	51%	Poor		Jan-08	

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6	Multiple Life Stages	Landscape Context	Floodplain connectivity	Floodplain connectivity	**< 50% of response reaches in watershed have inundation of historic floodplains by bankfull flows (connectivity)**	50-65% of response reaches in watershed demonstrate floodplain connectivity	66-80% of response reaches in watershed demonstrate floodplain connectivity	> 80% of response reaches in watershed demonstrate connectivity		Poor		Sep-07	
6	Multiple Life Stages	Landscape Context	Historic vs Current Spawning Habitat	Fraction of historic spawning tributaries currently accessible to spawners	**< 15% available**	16-50% available	51-90% available	>90% available	Vern Freeman Diversion Dam	Poor		Sep-05	
6	Multiple Life Stages	Landscape Context	Hydrology	Dry stream reaches	**> 75% dry reaches**	26-75% dry reaches	1-25% dry reaches	no dry reaches; perennial surface flows	extensive dry reaches	Poor		Sep-07	
6	Multiple Life Stages	Landscape Context	Hydrology	Hydrograph	**severely modified**			natural	dams and groundwater extraction	Poor		Sep-07	
6	Multiple Life Stages	Landscape Context	Land use	Distribution of public ownership along main stem of watercourse	**< 25% of land bordering main stem of drainage is publicly owned**	25-50%	51-75%	> 75%	<< 25%	Poor		Jan-08	
6	Multiple Life Stages	Landscape Context	Land use	Miles of road per square mile of watershed within 100 meters of watercourse	> 1 mi	**0.5-1.0 mi**	0.1-0.49 mi	< 0.1 mi	avg 0.59 mi/sq mile	Fair		Jan-08	
6	Multiple Life Stages	Landscape Context	Land use	Miles of roads per square mile of watershed	> 3.0 mi	2.6-3.0 mi	**1.6-2.5 mi**	< 1.6 mi	avg 2.24 mi/sq mile	Good		Jan-08	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in agricultural use	**> 30%**	20-29%	10-19%	< 10%	main stem floodplain heavy agriculture	Poor		Jan-08	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in agriculture within 100 meters of watercourse	**> 20%**	11-20%	5-10%	< 5%	main stem floodplain heavy agriculture	Poor		Jan-08	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in public ownership	**< 25 % public ownership**	25-50%	51-75%	> 75%	< 25%	Poor		Jan-08	

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6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in urban/residential use	> 25%	**10-25%**	5-9%	< 5%	7%, but concentrated along main stem floodplain	Fair		Jan-08	
6	Multiple Life Stages	Landscape Context	Water quality	General index of toxicity based on severity of adverse effects on fish	Acute lethal effects (fish kill)	**Sublethal effects (reduced growth, altered behavior, etc.)**	Toxins detected but no sublethal effects	No toxins or contaminants detected	Agriculture and urbanization of floodplain; estuary polluted	Fair		Jan-08	
6	Multiple Life Stages	Landscape Context	Water quality	Percent total impervious surfaces as % of watershed area	>40%	**21-40%**	5-20%	< 5%		Fair		Jan-08	
6	Multiple Life Stages	Condition	Estuarine habitat quality	Current lagoon area as percentage of historic total area	**< 25%**	26-50%	51-75%	> 75%	15% remaining	Poor		Sep-05	
6	Multiple Life Stages	Condition	Estuarine habitat quality	Depth, LWD, and other habitat elements (e.g. eelgrass)	depth < 1 meter; LWD and/or overhanging banks absent		depth > 1 meter; LWD and/or overhanging banks present					Sep-96	
6	Multiple Life Stages	Condition	Riparian corridor quality	Riparian canopy cover	**< 25% cover**	25-49% cover	50-75% cover	> 75% cover	9.2% cover; riparian corridor mostly in poor condition	Poor		Sep-07	
6	Multiple Life Stages	Condition	Riparian corridor quality	Riparian corridor species composition	< 25% native composition	25-50% native composition	50-75% native composition	> 75% native composition				Sep-07	

Overall Viability Summary
Santa Clara River main stem, Ventura and Los Angeles counties

Summary of Threats

Click the page-down icon ▼to the right to view more summary tables.

Santa Clara River main stem, Ventura and Los Angeles counties

	Threats Across Targets	Egg	Fry	Juvenile	Smolt	Adult	Multiple Life Stages			Overall Threat Rank
	Project-specific threats	1	2	3	4	5	6	7	8	
1	Conversion of watershed lands to row crop agriculture	Very High	Very High	Very High	Very High	Very High	Very High			Very High
2	Dams and surface water diversions	Very High	Very High	Very High	Very High	Very High	Very High			Very High
3	Groundwater extraction	Very High	Very High	Very High	Very High	Very High	Very High			Very High
4	Urban development	Very High	Very High	Very High	Very High	Medium	Very High			Very High
5	Non-native species present (incl. hatchery fish)	Very High	Very High	Very High	-	-	Very High			Very High
6	Recreational facilities and activities (ORV use, campgrounds, etc.)	Very High	High	Very High	-	-	Very High			Very High
7	Levees and channelization	-	High	Very High	-	-	Very High			Very High
8	Invasive, non-native plants	-	Medium	Very High	-	-	Very High			Very High
9	Roads in watershed and/or within 300 feet of watercourses	-	-	Very High	-	-	Very High			Very High
10	Mining & Quarrying	High	High	High	High	Low	High			High
11	Agricultural effluents	High	-	High	-	-	Very High			High
12	Channel and/or estuary maintenance, dredging, and vegetation control (incl. flood control activities)	Medium	Medium	High	-	-	Very High			High
13	Non-point pollution from roads	High	-	-	-	-	Very High			High
14	Wildland fires (incl. debris flows following fires)	Medium	-	-	-	-	Very High			High
15	Culverts, crossings, and bridges	-	-	-	-	-	Very High			High
16	Urban wastewater effluents (incl. industrial and commercial effluents)	-	-	-	-	-	Very High			High
Threat Status for Targets and Project		Very High	Very High	Very High	Very High	Very High	Very High	-	-	Very High

Overall Viability Summary
Santa Clara River main stem, Ventura and Los Angeles counties

	Threats Across Targets	Egg	Fry	Juvenile	Smolt	Adult	Multiple Life Stages			Overall Threat Rank
	Project-specific threats	1	2	3	4	5	6	7	8	
17	Livestock Farming & Ranching	High	-	-	-	-	High			High
18	Oil & Gas Drilling	-	-	-	-	-	Medium			Low
19	Artificial lagoon breaching	-	-	-	-	-	-			-
20	Gas, water, and/or other utility pipelines	-	-	-	-	-	-			-
21	Illegal collecting, poaching, and/or unauthorized angling	-	-	-	-	-	-			-
22	Public ownership in watershed									-
23										-
24										-
25										-
26										-
27										-
28										-
29										-
30										-
31										-
32										-
Threat Status for Targets and Project		Very High	Very High	Very High	Very High	Very High	Very High	-	-	Very High

Overall Viability Summary
Santa Clara River main stem, Ventura and Los Angeles counties

	Stresses (Altered Key Ecological Attributes) Across Targets	Egg	Fry	Juvenile	Smolt	Adult	Multiple Life Stages		
		1	2	3	4	5	6	7	8
1	Non-native predators	-	Very High	Very High	-	-	-	-	-
2	Impaired riparian habitat quality	-	-	Very High	-	-	-	-	-
3	Altered base flows during incubation	Very High	-	-	-	-	-	-	-
4	Non-native egg predators	Very High	-	-	-	-	-	-	-
5	Altered riparian habitat quality	-	-	-	-	-	Very High	-	-
6	Impaired estuarine habitat quality	-	-	-	-	-	Very High	-	-
7	Dispersal barriers between redds and rearing habitat	-	Very High	-	-	-	-	-	-
8	Altered hydrograph	-	-	-	-	-	Very High	-	-
9	Altered fire regime/recent fire in watershed	-	-	-	-	-	Very High	-	-
10	Impaired floodplain connectivity	-	-	-	-	-	Very High	-	-
11	Impaired access to estuary	-	-	Very High	-	-	-	-	-
12	Impaired access to rearing and/or spawning habitat	-	-	-	-	-	Very High	-	-
13	Impaired summer base flows	-	-	Very High	-	-	-	-	-
14	Impaired access to spawning areas	-	-	-	-	Very High	-	-	-
15	Impaired access to ocean	-	-	-	Very High	-	-	-	-
16	Impaired substrate quality (sedimentation and embeddedness)	High	-	-	-	-	-	-	-

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	Stresses (Altered Key Ecological Attributes) Across Targets	Egg	Fry	Juvenile	Smolt	Adult	Multiple Life Stages		
		1	2	3	4	5	6	7	8
17	Impaired instream habitat complexity/refugia	-	-	High	-	-	-	-	-
18	Impaired water quality	-	-	-	-	-	High	-	-
19	Altered land use from natural condition	-	-	-	-	-	High	-	-
20	Impaired estuarine inflows	-	-	High	-	-	-	-	-
21	Impaired habitat complexity/refugia	-	High	-	-	-	-	-	-
22	Impaired flows during rearing period	-	-	High	-	-	-	-	-
23	Impaired water temperature	-	-	Low	-	-	-	-	-
24	Impaired water temperature in spawning areas	-	-	-	-	-	-	-	-
25	Low adult population size	-	-	-	-	-	-	-	-
26	Altered sediment supply	-	-	-	-	-	-	-	-
27	Impaired water temperatures in migration corridor	-	-	-	-	-	-	-	-
28	Impaired access to stream from ocean (stream mouth closed)	-	-	-	-	-	-	-	-
29	Impaired food availability	-	-	-	-	-	-	-	-
30		-	-	-	-	-	-	-	-
31		-	-	-	-	-	-	-	-
32		-	-	-	-	-	-	-	-

Overall Viability Summary
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	Conservation Targets	Landscape Context		Condition		Size		Viability Rank
		Grade	Weight	Grade	Weight	Grade	Weight	
1	Egg	Poor	1	Fair	1	-	1	**Fair**
2	Fry	Poor	1	Fair	1	-	1	**Fair**
3	Juvenile	Poor	1	Poor	1	-	1	**Poor**
4	Smolt	Poor	1	-	1	-	1	**Poor**
5	Adult	Poor	1	-	1	-	1	**Poor**
6	Multiple Life Stages	Poor	1	Poor	1	-	1	**Poor**
7		-	1	-	1	-	1	**-**
8		-	1	-	1	-	1	**-**
Project Biodiversity Health Rank								**Poor**

Overall Viability Summary
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Detailed Viability Summary

Santa Clara River main stem, Ventura and Los Angeles counties

	Conservation Targets	Key Ecological Attributes				Indicators					
		Poor	Fair	Good	Very Good	Poor	Fair	Good	Very Good	Calculated Rank	User Override
1	**Egg**									**Fair**	
	Landscape Context	2				2				Poor	
	Condition		1				1			Fair	
	Size									-	
2	**Fry**									**Fair**	
	Landscape Context	2				2				Poor	
	Condition		1				1			Fair	
	Size									-	
3	**Juvenile**									**Poor**	
	Landscape Context	3	1		1	3	1		1	Poor	
	Condition	1	2			1	2			Poor	
	Size									-	
4	**Smolt**									**Poor**	
	Landscape Context	1	1			1	1			Poor	
	Condition									-	
	Size									-	
5	**Adult**									**Poor**	
	Landscape Context	2	1			2	1			Poor	
	Condition									-	
	Size									-	
6	**Multiple Life Stages**									**Poor**	
	Landscape Context	5	2	1		10	4	2		Poor	
	Condition	2				2				Poor	
	Size									-	
7										**-**	
	Landscape Context									-	
	Condition									-	
	Size									-	
8										**-**	
	Landscape Context									-	
	Condition									-	
	Size									-	