Santa Rosa Creek, San Luis Obispo County
CAP Workbook Threats Assessment Summary Tables
2008

Assessment of Target Viability

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	extensive groundwater pumping	Fair		Mar-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	present in probably 50%+ of watershed	Fair		Mar-07	
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.				Mar-07	
1	Egg	Condition	Substrate quality	Avg. percent fines (<0.85mm) in potential spawning areas	> 17% fines	11-17% fines	5-10 % fines	< 5% fines				Aug-04	
1	Egg	Condition	Substrate quality	Embeddedness	> 75% embedded	**50-75% embedded**	25-49% embedded	< 25% embedded	avg 62% embeddedness	Fair		May-06	
2	Fry	Landscape Context	Dispersal	Barriers between redds and rearing habitat	complete barrier	**partial barriers common**	partial barriers scarse	no barriers	extensive groundwater pumping	Fair		Mar-07	
2	Fry	Landscape Context	Non-native species	Non-native fry predators	present throughout watershed	**present > 50% watershed**	present < 50% of watershed	absent	probably > 50% of watershed	Fair		Mar-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				Mar-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	overhanging banks, willow vegetation, boulders, but moderate embeddedness	Fair		May-06	
3	Juvenile	Landscape Context	Dispersal	Barriers between rearing habitat and estuary	present			absent	groundwater pumping but lower main stem is perennial	Fair		Mar-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)	extensive groundwater pumping	Poor		Mar-07	
3	Juvenile	Landscape Context	Non-native species	Non-native juvenile predators	present throughout watershed	present > 50% watershed	present < 50% watershed	absent				Mar-07	

Assessment of Target Viability

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
3	Juvenile	Landscape Context	Summer flow	Percent of unimpaired median summer baseflow (based on long-term mean monthly discharge)	< 70%s	**70-90%**	> 90%	100% over all IP-km	extensive groundwater pumping but lower main stem is perennial	Fair		Aug-04	
3	Juvenile	Landscape Context	Water temperature	Median weekly average temperature (MWAT) in potential rearing habitat	> 21 C.	**18-21 C.**	< 18 C.	< 17 C.	17.2 to 24.2 C between 1 July-10 Sept.	Fair		Aug-04	
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%	significant loss of inflows due to groundwater pumping, but lower main stem is perennial	Fair		Mar-07	
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	lack of inflow due to groundwater extraction	Poor		Mar-07	
3	Juvenile	Condition	Food availability	Species richness	< 25 taxa	25-29 taxa	30-40 taxa	> 40 taxa				Mar-07	
3	Juvenile	Condition	Habitat complexity/refugia	Instream refugia	absent			present (boulders, overhanging banks, etc.)	undercut banks, boulders, woody debris	Good		May-06	
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	significantly damaged	Fair		Mar-07	
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	extensive groundwater pumping but lower main stem is perennial	Fair		May-06	
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%	probably poor	Poor		May-05	

Assessment of Target Viability

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
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				Mar-07	
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	2 main stem barriers	Fair		Mar-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				Mar-07	
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%	probably poor	Poor		Mar-07	
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.				Mar-07	
5	Adult	Size	Population size	Mean annual adult spawner abundance		**TRT criteria for low extinction risk (by watershed)**			significantly reduced	Fair		May-06	
6	Multiple Life Stages	Landscape Context	Barriers/diversions	Stream crossings/stream mile	> two/mile			< two/mile	avg 0.88 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%	probably fair	Fair		Mar-07	
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%**	0.3%	Very Good		Jan-08	

Assessment of Target Viability

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
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	lower watershed fair	Fair		Mar-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	69% accessible, but severe water div and extr.	Fair		Jan-08	
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	groundwater extraction	Poor		Mar-07	
6	Multiple Life Stages	Landscape Context	Hydrology	Hydrograph	**severely modified**			natural	groundwater extraction	Poor		Mar-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%	1%	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 1.1 mi/sq mile	Poor		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 2.8 mi/sq mile	Fair		Jan-08	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in agricultural use	> 30%	20-29%	10-19%	**< 10%**	1.3% to 2.5%	Very Good		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%	floodplain conversion to row crops	Poor		Mar-07	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in public ownership	**< 25 % public ownership**	25-50%	51-75%	> 75%	1%	Poor		Jan-08	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in urban/residential use	> 25%	10-25%	**5-9%**	< 5%	5%	Good		Jan-08	

Assessment of Target Viability

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
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	low total N and P	Good		Jan-08	
6	Multiple Life Stages	Landscape Context	Water quality	Percent total impervious surfaces as % of watershed area	>40%	21-40%	5-20%	**< 5%**	1.1%	Very Good		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%	62%	Good		Jan-08	
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		lack of sufficient inflows	Poor		Mar-07	
6	Multiple Life Stages	Condition	Riparian corridor quality	Riparian canopy cover	< 25% cover	25-49% cover	**50-75% cover**	> 75% cover	avg 67%	Good		May-05	
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				Mar-07	

Overall Viability Summary
Santa Rosa Creek, San Luis Obispo County

	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	High	High	Very High	High	High	Very High			Very High
2	Dams and surface water diversions	High	High	Very High	High	High	Very High			Very High
3	Groundwater extraction	High	High	Very High	High	High	Very High			Very High
4	Urban development	High	High	Very High	High	High	Very High			Very High
5	Levees and channelization	-	High	Very High	High	High	High			Very High
6	Recreational facilities and activities (ORV use, campgrounds, etc.)	High	High	Very High	High	-	Medium			Very High
7	Non-native species present (incl. hatchery fish)	High	Very High	-	-	-	-			High
8	Roads in watershed and/or within 300 feet of watercourses	-	-	High	-	-	High			High
9	Mining & Quarrying	High	-	-	-	-	Low			Medium
10	Culverts, crossings, and bridges	-	-	-	-	-	High			Medium
11	Livestock Farming & Ranching	Medium	-	Medium	-	-	-			Medium
12	Agricultural effluents	-	-	-	-	-	Medium			Low
13	Channel and/or estuary maintenance, dredging, an vegetation control (incl. flood control activities)	-	-	-	-	-	Low			Low
14	Invasive non-native plants						Low			Low
15	Artificial lagoon breaching	-	-	-	-	-	-			-
16	Gas, water, and/or other utility pipelines	-	-	-	-	-	-			-
Threat Status for Targets and Project		Very High	Very High	Very High	Very High	High	Very High	-	-	Very High

Overall Viability Summary
Santa Rosa Creek, San Luis Obispo County

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	Illegal collecting, poaching, and/or unauthorized angling	-	-	-	-	-	-			-
18	Log jams and other removable barriers									-
19	Natural barriers					-	-			-
20	Non-point pollution from roads	-	-	-	-	-	-			-
21	Oil & Gas Drilling	-	-	-	-	-	-			-
22	Public ownership in watershed									-
23	Urban wastewater effluents (incl. industrial and commercial effluents)	-	-	-	-	-	-			-
24	Wildland fires (incl. debris flows following fires)	-	-	-	-	-	-			-

Overall Viability Summary
Santa Rosa Creek, San Luis Obispo County

	Stresses (Altered Key Ecological Attributes) Across Targets	Egg	Fry	Juvenile	Smolt	Adult	Multiple Life Stages		
		1	2	3	4	5	6	7	8
1	Altered hydrograph	-	-	-	-	-	Very High	-	-
2	Impaired flows during rearing period	-	-	Very High	-	-	-	-	-
3	Impaired riparian habitat quality	-	-	High	-	-	-	-	-
4	Non-native egg predators	High	-	-	-	-	-	-	-
5	Impaired estuarine habitat quality	-	-	-	-	-	High	-	-
6	Impaired substrate quality (sedimentation and embeddedness)	High	-	-	-	-	-	-	-
7	Dispersal barriers between redds and rearing habitat	-	High	-	-	-	-	-	-
8	Non-native predators	-	High	-	-	-	-	-	-
9	Altered land use from natural condition	-	-	-	-	-	High	-	-
10	Impaired habitat complexity/refugia	-	High	-	-	-	-	-	-
11	Impaired access to estuary	-	-	High	-	-	-	-	-
12	Altered base flows during incubation	High	-	-	-	-	-	-	-
13	Impaired summer base flows	-	-	High	-	-	-	-	-
14	Impaired water temperature	-	-	High	-	-	-	-	-
15	Impaired estuarine inflows	-	-	High	-	-	-	-	-
16	Impaired floodplain connectivity	-	-	-	-	-	High	-	-

Overall Viability Summary
Santa Rosa Creek, San Luis Obispo County

	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 access to rearing and/or spawning habitat	-	-	-	-	-	High	-	-
18	Impaired access to ocean	-	-	-	High	-	-	-	-
19	Low adult population size	-	-	-	-	High	-	-	-
20	Impaired access to spawning areas	-	-	-	-	High	-	-	-
21	Altered riparian habitat quality	-	-	-	-	-	Medium	-	-
22	Impaired water quality	-	-	-	-	-	Medium	-	-
23	Impaired instream habitat complexity/refugia	-	-	Medium	-	-	-	-	-
24	Altered fire regime/recent fire in watershed	-	-	-	-	-	Low	-	-
25	Impaired water temperature in spawning areas	-	-	-	-	-	-	-	-
26	Impaired access to stream from ocean (stream mouth closed)	-	-	-	-	-	-	-	-
27	Impaired food availability	-	-	-	-	-	-	-	-
28	Altered sediment supply	-	-	-	-	-	-	-	-
29	Impaired water temperatures in migration corridor	-	-	-	-	-	-	-	-

Overall Viability Summary
Santa Rosa Creek, San Luis Obispo County

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

Overall Viability Summary
Santa Rosa Creek, San Luis Obispo County

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