

**San Luis Rey River, San Diego County
CAP Workbook Threats Assessment Summary Tables
2008**

**Assessment of Target Viability
San Luis Rey River, San Diego County**

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San Luis Rey River, San Diego County**

Double-click opens entry form

Bold = Current Indicator Ratings *Italics = Desired*

Conservation Target	Category	Key Attribute	Indicator	Indicator Ratings				Current Indicator Status	Current Rating	Desired Rating	Date of Current Rating	Date for Desired Rating
				Poor	Fair	Good	Very Good					
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	excessive groundwater pumping	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				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				May-95	
1 Egg	Condition	Substrate quality	Embeddedness	> 75% embedded	50-75% embedded	25-49% embedded	< 25% embedded				May-95	
2 Fry	Landscape Context	Dispersal	Barriers between redds and rearing habitat	complete barrier	partial barriers common	partial barriers scarce	no barriers				Jun-02	
2 Fry	Landscape Context	Non-native species	Non-native fry predators	present throughout watershed	present > 50% watershed	present < 50% of watershed	absent				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	dams, urban runoff, agric, sand mining	Poor		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				Jan-06	
3 Juvenile	Landscape Context	Dispersal	Barriers between rearing habitat and estuary	present			absent	excessive groundwater extraction	Poor		Sep-07	
3 Juvenile	Landscape Context	Flow during rearing period	Pool habitat > 3 feet in depth	pools scarce or absent	low abundance of pools	high abundance of pools	high abundance of pools with multiple "refuge" pools (> 5 ft deep)				May-95	
3 Juvenile	Landscape Context	Non-native species	Non-native juvenile predators	present throughout watershed	present > 50% watershed	present < 50% watershed	absent				Oct-07	

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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%	70-90%	> 90%	100% over all IP-km	excessive groundwater pumping	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.				May-95	
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%	probably < 25%	Poor		Sep-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				Sep-96	
3	Juvenile	Condition	Food availability	Species richness	< 25 taxa	25-29 taxa	30-40 taxa	> 40 taxa				Mar-95	
3	Juvenile	Condition	Habitat complexity/refugia	Instream refugia	absent			present (boulders, overhanging banks, etc.)	loss of instream flows and sand mining	Fair		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					
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	excessive groundwater pumping	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%	probably > 150% of baseflow	Poor		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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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
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	most spawning habitat blocked	Poor		May-03	
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%				Jun-02	
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.				May-96	
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 1.3 crossings/mile	Fair		Jan-08	
6 Multiple Life Stages	Landscape Context	Channel flow and morphology	Percent of total watercourse length channelized	> 25%	16-25%	5-15%	< 5%	> 15%	Fair		Sep-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%	23%	Poor		Jan-08	
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	> 15% of main stem channelized; sand mining	Fair		Sep-07	

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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	Historic vs Current Spawning Habitat	Fraction of historic spawning tributaries currently accessible to spawners	< 15% available	16-50% available	51-90% available	>90% available	most spawning habitat is blocked	Poor		May-03	
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	much of the main stem is dry most of the year	Poor		Sep-07	
6	Multiple Life Stages	Landscape Context	Hydrology	Hydrograph	severely modified			natural	Lake Henshaw Dam; excessive 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%	11%	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	0.78 to 0.9 mi road/sq mi watershed	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 3.9 mi/sq mile	Poor		Jan-08	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in agricultural use	> 30%	20-29%	10-19%	< 10%	19%	Fair		Feb-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%	8%	Fair		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%	11%	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%	8%	Good		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	high total N and P	Poor		Jan-08	
6	Multiple Life Stages	Landscape Context	Water quality	Percent total impervious surfaces as % of watershed area	>40%	21-40%	5-20%	< 5%	pollution in lower river noted	Fair		Sep-07	

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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	Condition	Estuarine habitat quality	Current lagoon area as percentage of historic total area	< 25%	26-50%	51-75%	> 75%	only about 10% of estuary remains	Poor		Sep-07	
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	57%	Good		Jan-08	
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	giant reed and other spp.	Poor		Sep-07	

Stresses and Threats

San I

Summary of Threats

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

San Luis Rey River, San Diego County

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

Stresses and Threats

San Luis

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

San Luis Rey River, San Diego County

Threats Across Targets		Egg	Fry	Juvenile	Smolt	Adult	Multiple Life Stages			Overall Threat Rank
		1	2	3	4	5	6	7	8	
17	Wildland fires (incl. debris flows following fires)	-	-	-	-	-	High			Medium
18	Artificial lagoon breaching	-	-	-	-	-	-			-
19	Gas, water, and/or other utility pipelines	-	-	-	-	-	-			-
20	Illegal collecting, poaching, and/or unauthorized angling	-	-	-	-	-	-			-
21	Oil & Gas Drilling	-	-	-	-	-	-			-
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					

Stresses and Threats

Stress Matrix

San Luis Rey River, San Diego 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	Impaired estuarine habitat quality	-	-	-	-	-	Very High	-	-
2	Impaired water quality	-	-	-	-	-	Very High	-	-
3	Altered base flows during incubation	Very High	-	-	-	-	-	-	-
4	Altered hydrograph	-	-	-	-	-	Very High	-	-
5	Altered fire regime/recent fire in watershed	-	-	-	-	-	Very High	-	-
6	Impaired access to rearing and/or spawning habitat	-	-	-	-	-	Very High	-	-
7	Impaired access to spawning areas	-	-	-	-	Very High	-	-	-
8	Impaired access to ocean	-	-	-	Very High	-	-	-	-
9	Altered sediment supply	-	Very High	-	-	-	-	-	-
10	Impaired estuarine inflows	-	-	Very High	-	-	-	-	-
11	Impaired access to estuary	-	-	Very High	-	-	-	-	-
12	Impaired flows during rearing period	-	-	Very High	-	-	-	-	-
13	Impaired summer base flows	-	-	Very High	-	-	-	-	-
14	Altered land use from natural condition	-	-	-	-	-	High	-	-
15	Impaired floodplain connectivity	-	-	-	-	-	High	-	-
16	Impaired instream habitat complexity/refugia	-	-	High	-	-	-	-	-

Stresses and Threats

Stress Matrix

San Luis Rey River, San Diego 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	Altered riparian habitat quality	-	-	-	-	-	Medium	-	-
18	Impaired riparian habitat quality	-	-	-	-	-	-	-	-
19	Impaired access to stream from ocean (stream mouth closed)	-	-	-	-	-	-	-	-
20	Non-native predators	-	-	-	-	-	-	-	-
21	Impaired water temperatures in migration corridor	-	-	-	-	-	-	-	-
22	Low adult population size	-	-	-	-	-	-	-	-
23	Dispersal barriers between redds and rearing habitat	-	-	-	-	-	-	-	-
24	Impaired food availability	-	-	-	-	-	-	-	-
25	Impaired substrate quality (sedimentation and embeddedness)	-	-	-	-	-	-	-	-
26	Impaired water temperature in spawning areas	-	-	-	-	-	-	-	-
27	Impaired water temperature	-	-	-	-	-	-	-	-
28	Non-native egg predators	-	-	-	-	-	-	-	-
29	Impaired habitat complexity/refugia	-	-	-	-	-	-	-	-
30		-	-	-	-	-	-	-	-
31		-	-	-	-	-	-	-	-
32		-	-	-	-	-	-	-	-

Stresses and Threats

Overall Viability Summary

San Luis Rey River, San Diego County

Conservation Targets		Landscape Context		Condition		Size		Viability Rank
		Grade	Weight	Grade	Weight	Grade	Weight	
1	Egg	Poor	1	-	1	-	1	Poor
2	Fry	Poor	1	-	1	-	1	Poor
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

Stresses and Threats

Detailed Viability Summary

San Luis Rey River, San Diego County

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