

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

**Assessment of Target Viability  
San Dieguito River, San Diego County**

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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	<b>&lt; 25% of avg. annual daily flow</b>	26-50% of avg. annual daily flow		> 50% of avg. annual daily flow	5 dams; no flow	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				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	<b>present</b>			absent	5 dams	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	
3 Juvenile	Landscape Context	Summer flow	Percent of unimpaired median summer baseflow (based on long-term mean monthly discharge)	<b>&lt; 70%</b>	70-90%	> 90%	100% over all IP-km	5 dams; groundwater pumping	Poor		Sep-07	

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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%	5 dams; groundwater pumping	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	lack of tidal flushing	Fair		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.)				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	dams and 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%	dams and groundwater pumping	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	
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	5 dams	Poor		Sep-07	

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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 1.2 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%	16-25%	Fair		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%	32%	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	50-65%	Fair		Jan-08	
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	12% accessible (5 dams; groundwater extraction)	Poor		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	5 dams; extensive dry reaches in main stem	Poor		Sep-07	

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6	Multiple Life Stages	Landscape Context	Hydrology	Hydrograph	severely modified			natural	5 dams in watershed; groundwater pumping	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	avg 0.71 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 4.0 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%	10%	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%	2.3%	Very Good		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%	18%	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	high total N and P	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%	rapid development in watershed	Fair		Sep-07	
6	Multiple Life Stages	Condition	Estuarine habitat quality	Current lagoon area as percentage of historic total area	< 25%	26-50%	51-75%	> 75%	43%	Fair		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					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
6	Multiple Life Stages	Condition	Riparian corridor quality	Riparian canopy cover	< 25% cover	25-49% cover	50-75% cover	> 75% cover	avg 49%	Fair		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				Sep-07	



**Overall Viability Summary  
San Dieguito River, San Diego County**

Summary of Threats										
San Dieguito River, San Diego 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	Dams and surface water diversions	Very High	-	Very High	Very High	Very High	Very High			Very High
2	Groundwater extraction	Very High	-	Very High	Very High	Very High	Very High			Very High
3	Conversion of watershed lands to row crop agriculture	Very High	-	-	-	-	Very High			Very High
4	Urban development	Very High	-	-	-	-	Very High			Very High
5	Levees and channelization	-	-	-	-	-	Very High			High
6	Non-point pollution from roads	-	-	-	-	-	Very High			High
7	Roads in watershed and/or within 300 feet of watercourses	-	-	-	-	-	Very High			High
8	Urban wastewater effluents (incl. industrial and commercial effluents)	-	-	-	-	-	Very High			High
9	Agricultural effluents	-	-	-	-	-	High			Medium
10	Culverts, crossings, and bridges	-	-	-	-	-	High			Medium
11	Recreational facilities and activities (ORV use, campgrounds, etc.)	-	-	-	-	-	High			Medium
12	Wildland fires (incl. debris flows following fires)	-	-	-	-	-	High			Medium
13	Channel and/or estuary maintenance, dredging, and vegetation control (incl. flood control activities)	-	-	-	-	-	Medium			Low
14	Artificial lagoon breaching	-	-	-	-	-	-			-
15	Gas, water, and/or other utility pipelines	-	-	-	-	-	-			-
16	Illegal collecting, poaching, and/or unauthorized angling	-	-	-	-	-	-			-
<b>Threat Status for Targets and Project</b>		Very High	-	Very High	Very High	Very High	Very High	-	-	Very High

**Overall Viability Summary**  
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Summary of Threats										
San Dieguito River, San Diego 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	Invasive, non-native plants	-	-	-	-	-	-			-
18	Livestock Farming & Ranching	-	-	-	-	-	-			-
19	Mining & Quarrying	-	-	-	-	-	-			-
20	Non-native species present (incl. hatchery fish)	-	-	-	-	-	-			-
21	Oil & Gas Drilling	-	-	-	-	-	-			-
22	Public ownership in watershed									-
23										-
24										-
25										-
26										-
27										-
28										-
29										-
30										-
31										-
32										-
<b>Threat Status for Targets and Project</b>		Very High	-	Very High	Very High	Very High	Very High	-	-	Very High

**Overall Viability Summary**  
**San Dieguito River, San Diego County**

<b>Stress Matrix</b>									
<b>San Dieguito River, San Diego County</b>									
<b>Stresses (Altered Key Ecological Attributes) Across Targets</b>		Egg	Fry	Juvenile	Smolt	Adult	Multiple Life Stages		
		1	2	3	4	5	6	7	8
1	Altered hydrograph	-	-	-	-	-	Very High	-	-
2	Altered fire regime/recent fire in watershed	-	-	-	-	-	Very High	-	-
3	Altered base flows during incubation	Very High	-	-	-	-	-	-	-
4	Impaired access to rearing and/or spawning habitat	-	-	-	-	-	Very High	-	-
5	Impaired access to spawning areas	-	-	-	-	Very High	-	-	-
6	Impaired access to ocean	-	-	-	Very High	-	-	-	-
7	Impaired estuarine inflows	-	-	Very High	-	-	-	-	-
8	Impaired summer base flows	-	-	Very High	-	-	-	-	-
9	Impaired flows during rearing period	-	-	Very High	-	-	-	-	-
10	Impaired access to estuary	-	-	Very High	-	-	-	-	-
11	Altered riparian habitat quality	-	-	-	-	-	High	-	-
12	Impaired estuarine habitat quality	-	-	-	-	-	High	-	-
13	Altered land use from natural condition	-	-	-	-	-	High	-	-
14	Impaired water quality	-	-	-	-	-	High	-	-
15	Impaired floodplain connectivity	-	-	-	-	-	High	-	-
16	Impaired riparian habitat quality	-	-	-	-	-	-	-	-

**Overall Viability Summary**  
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<b>Stress Matrix</b>									
<b>San Dieguito River, San Diego County</b>									
<b>Stresses (Altered Key Ecological Attributes) Across Targets</b>		Egg	Fry	Juvenile	Smolt	Adult	Multiple Life Stages		
		1	2	3	4	5	6	7	8
17	Impaired instream habitat complexity/refugia	-	-	-	-	-	-	-	-
18	Dispersal barriers between redds and rearing habitat	-	-	-	-	-	-	-	-
19	Impaired access to stream from ocean (stream mouth closed)	-	-	-	-	-	-	-	-
20	Impaired substrate quality (sedimentation and embeddedness)	-	-	-	-	-	-	-	-
21	Impaired water temperatures in migration corridor	-	-	-	-	-	-	-	-
22	Low adult population size	-	-	-	-	-	-	-	-
23	Impaired water temperature in spawning areas	-	-	-	-	-	-	-	-
24	Impaired food availability	-	-	-	-	-	-	-	-
25	Non-native egg predators	-	-	-	-	-	-	-	-
26	Non-native predators	-	-	-	-	-	-	-	-
27	Impaired water temperature	-	-	-	-	-	-	-	-
28	Altered sediment supply	-	-	-	-	-	-	-	-
29	Impaired habitat complexity/refugia	-	-	-	-	-	-	-	-
30		-	-	-	-	-	-	-	-
31		-	-	-	-	-	-	-	-
32		-	-	-	-	-	-	-	-

**Overall Viability Summary  
San Dieguito River, San Diego County**

<b>Overall Viability Summary San Dieguito River, San Diego County</b>								
<b>Conservation Targets</b>		<b>Landscape Context</b>		<b>Condition</b>		<b>Size</b>		<b>Viability Rank</b>
		<b>Grade</b>	<b>Weight</b>	<b>Grade</b>	<b>Weight</b>	<b>Grade</b>	<b>Weight</b>	
1	Egg	Poor	1	-	1	-	1	Poor
2	Fry	-	1	-	1	-	1	-
3	Juvenile	Poor	1	Fair	1	-	1	Fair
4	Smolt	Poor	1	-	1	-	1	Poor
5	Adult	Poor	1	-	1	-	1	Poor
6	Multiple Life Stages	Poor	1	Fair	1	-	1	Fair
7		-	1	-	1	-	1	-
8		-	1	-	1	-	1	-
<b>Project Biodiversity Health Rank</b>								<b>Poor</b>

# Overall Viability Summary

## San Dieguito River, San Diego County

Detailed Viability Summary											
San Dieguito 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	<b>Egg</b>										<b>Poor</b>
	Landscape Context	1				1				Poor	
	Condition									-	
	Size									-	
2	<b>Fry</b>										-
	Landscape Context									-	
	Condition									-	
	Size									-	
3	<b>Juvenile</b>										<b>Fair</b>
	Landscape Context	2				2				Poor	
	Condition		1			1	1			Fair	
	Size									-	
4	<b>Smolt</b>										<b>Poor</b>
	Landscape Context	2				2				Poor	
	Condition									-	
	Size									-	
5	<b>Adult</b>										<b>Poor</b>
	Landscape Context	1				1				Poor	
	Condition									-	
	Size									-	
6	<b>Multiple Life Stages</b>										<b>Fair</b>
	Landscape Context	3	5			7	7	1	1	Poor	
	Condition		2				2			Fair	
	Size									-	
7											-
	Landscape Context									-	
	Condition									-	
	Size									-	
8											-
	Landscape Context									-	
	Condition									-	
	Size									-	