

**San Mateo Creek, Orange and San Diego counties
CAP Workbook Threats Assessment Summary Tables
2008**

**Assessment of Target Viability
San Mateo Creek, Orange and San Diego counties**

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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	intermittent stream	Poor		Jan-98	
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	Poor		Jan-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	sand and gravel common, but silted	Fair		Sep-96	
1 Egg	Condition	Substrate quality	Embeddedness	> 75% embedded	50-75% embedded	25-49% embedded	< 25% embedded	suitable substrate common	Good		Jan-98	
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	present	Poor		Jan-98	
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				May-06	
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	instream complexity low	Fair		Sep-96	
3 Juvenile	Landscape Context	Dispersal	Barriers between rearing habitat and estuary	present			absent	intermittent flow	Poor		Sep-96	
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)	pools common, with refuge pools	Very Good		Sep-96	

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3	Juvenile	Landscape Context	Non-native species	Non-native juvenile predators	present throughout watershed	present > 50% watershed	present < 50% watershed	absent	present	Poor		Jan-98	
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	intermittent	Poor		Jan-98	
3	Juvenile	Landscape Context	Water temperature	Median weekly average temperature (MWAT) in potential rearing habitat	> 21 C.	18-21 C.	< 18 C.	< 17 C.	avg 24.1 C in summer	Poor		Jul-96	
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%	intermittent stream	Poor		Jan-98	
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	probably 1 month or less	Fair		Sep-95	
3	Juvenile	Condition	Food availability	Species richness	< 25 taxa	25-29 taxa	30-40 taxa	> 40 taxa	< 25 taxa	Poor		Mar-97	
3	Juvenile	Condition	Habitat complexity/refugia	Instream refugia	absent			present (boulders, overhanging banks, etc.)	bedrock ledges present	Fair		Sep-96	
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	intermittent stream	Poor		Jan-98	
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%	excessive groundwater pumping	Poor		Sep-96	
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	probably 1 month or less	Poor		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	no barriers	Very Good		Sep-96	
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	probably 1 month or less	Poor		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%	probably good	Good		Jan-98	
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.				Jul-95	
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 0.8 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 5-15%	Good		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%	22%	Fair		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	15-20% channelization	Good		Jan-98	

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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	no barriers	Very Good		Jan-98	
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	> 75% dry reaches	Poor		Jan-98	
6	Multiple Life Stages	Landscape Context	Hydrology	Hydrograph	severely modified			natural	extreme groundwater pumping	Poor		Jan-98	
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%	48% N.F. plus 50% Camp Pendleton	Very Good		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 0.54 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 2.0 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%	0.8% to 2%	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%	avg 0.3%	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%	48% NF; prob 50% Camp Pendleton	Very Good		Jan-08	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in urban/residential use	> 25%	10-25%	5-9%	< 5%	3%	Very 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	low total N and P	Very 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%	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%	76%	Very Good		Jan-08	

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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	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		avg depth 0.9 m; freshwater	Poor		Sep-96	
6	Multiple Life Stages	Condition	Riparian corridor quality	Riparian canopy cover	< 25% cover	25-49% cover	50-75% cover	> 75% cover	avg 20% cover in 1996, higher now (83%)	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				Jun-07	

Overall Viability Summary
San Mateo Creek, Orange and San Diego counties

Summary of Threats Click the page-down icon ▼ to the right to view more summary tables.										
San Mateo Creek, Orange and San Diego counties										
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	High	Very High	Very High	Very High	Very High			Very High
2	Groundwater extraction	Very High	High	Very High	Very High	Very High	Very High			Very High
3	Conversion of watershed lands to row crop agriculture	Very High	Medium	Very High	Very High	-	Very High			Very High
4	Recreational facilities and activities (ORV use, campgrounds, etc.)	Very High	Very High	Very High	-	-	Medium			Very High
5	Non-native species present (incl. hatchery fish)	Very High	Very High	Very High	-	-	-			Very High
6	Livestock Farming & Ranching	High	High	High	-	-	-			High
7	Military exercises	Medium					High			Medium
8	Non-point pollution from roads	High	-	Low	-	-	Low			Medium
9	Levees and channelization	-	Medium	Medium	-	-	Low			Medium
10	Wildland fires (incl. debris flows following fires)	Medium	-	-	-	-	Medium			Medium
11	Culverts, crossings, and bridges	-	-	-	-	-	Medium			Low
12	Roads in watershed and/or within 300 feet of watercourses	-	-	-	-	-	Medium			Low
13	Urban development	-	-	Medium	-	-	-			Low
14	Channel and/or estuary maintenance, dredging, and vegetation control (incl. flood control activities)	-	-	-	-	-	Low			Low
15	Invasive, non-native plants	-	-	Low	-	-	-			Low
16	Agricultural effluents	-	-	-	-	-	-			-
Threat Status for Targets and Project		Very High	-	-	Very High					

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Summary of Threats										
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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	Artificial lagoon breaching	-	-	-	-	-	-			-
18	Gas, water, and/or other utility pipelines	-	-	-	-	-	-			-
19	Illegal collecting, poaching, and/or unauthorized angling	-	-	-	-	-	-			-
20	Mining & Quarrying	-	-	-	-	-	-			-
21	Oil & Gas Drilling	-	-	-	-	-	-			-
22	Public ownership in watershed									-
23	Urban wastewater effluents (incl. industrial and commercial effluents)	-	-	-	-	-	-			-
24										-
25										-
26										-
27										-
28										-
29										-
30										-
31										-
32										-
Threat Status for Targets and Project		Very High	-	-	Very High					

Overall Viability Summary
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Stress Matrix									
San Mateo Creek, Orange and San Diego 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	Altered hydrograph	-	-	-	-	-	Very High	-	-
3	Altered base flows during incubation	Very High	-	-	-	-	-	-	-
4	Non-native egg predators	Very High	-	-	-	-	-	-	-
5	Impaired access to stream from ocean (stream mouth closed)	-	-	-	-	Very High	-	-	-
6	Impaired access to ocean	-	-	-	Very High	-	-	-	-
7	Impaired food availability	-	-	Very High	-	-	-	-	-
8	Impaired estuarine inflows	-	-	Very High	-	-	-	-	-
9	Impaired water temperature	-	-	Very High	-	-	-	-	-
10	Impaired summer base flows	-	-	Very High	-	-	-	-	-
11	Impaired access to estuary	-	-	Very High	-	-	-	-	-
12	Altered fire regime/recent fire in watershed	-	-	-	-	-	High	-	-
13	Impaired substrate quality (sedimentation and embeddedness)	High	-	-	-	-	-	-	-
14	Impaired habitat complexity/refugia	-	High	-	-	-	-	-	-
15	Impaired instream habitat complexity/refugia	-	-	High	-	-	-	-	-
16	Altered riparian habitat quality	-	-	-	-	-	Medium	-	-

Overall Viability Summary
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Stress Matrix									
San Mateo Creek, Orange and San Diego counties									
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 estuarine habitat quality	-	-	-	-	-	Medium	-	-
18	Altered land use from natural condition	-	-	-	-	-	Medium	-	-
19	Impaired flows during rearing period	-	-	Medium	-	-	-	-	-
20	Impaired floodplain connectivity	-	-	-	-	-	Medium	-	-
21	Impaired water quality	-	-	-	-	-	Low	-	-
22	Impaired access to spawning areas	-	-	-	-	Low	-	-	-
23	Impaired access to rearing and/or spawning habitat	-	-	-	-	-	Low	-	-
24	Impaired riparian habitat quality	-	-	-	-	-	-	-	-
25	Impaired water temperatures in migration corridor	-	-	-	-	-	-	-	-
26	Impaired water temperature in spawning areas	-	-	-	-	-	-	-	-
27	Altered sediment supply	-	-	-	-	-	-	-	-
28	Dispersal barriers between redds and rearing habitat	-	-	-	-	-	-	-	-
29	Low adult population size	-	-	-	-	-	-	-	-
30		-	-	-	-	-	-	-	-
31		-	-	-	-	-	-	-	-
32		-	-	-	-	-	-	-	-

**Overall Viability Summary
San Mateo Creek, Orange and San Diego counties**

Overall Viability Summary San Mateo Creek, Orange and San Diego counties								
Conservation Targets		Landscape Context		Condition		Size		Viability Rank
		Grade	Weight	Grade	Weight	Grade	Weight	
1	Egg	Poor	1	Good	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	Fair	1	-	1	-	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

San Mateo Creek, Orange and San Diego counties

Detailed Viability Summary

San Mateo Creek, Orange and San Diego counties

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