

**San Antonio River, Monterey County
CAP Workbook Threats Assessment Summary Tables
2008**

Assessment of Target Viability

Double-click opens entry form				Indicator Ratings									
				Bold = Current				<i>Italics = Desired</i>					
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				Apr-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				Aug-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.				Oct-05	
1	Egg	Condition	Substrate quality	Avg. percent fines (<0.85mm) in potential spawning areas	> 17% fines	11-17% fines	5-10 % fines	< 5% fines				Apr-07	
1	Egg	Condition	Substrate quality	Embeddedness	> 75% embedded	50-75% embedded	25-49% embedded	< 25% embedded				Apr-07	
2	Fry	Landscape Context	Dispersal	Barriers between redds and rearing habitat	complete barrier	partial barriers common	partial barriers scarce	no barriers				Apr-07	
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				Apr-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				May-03	
3	Juvenile	Landscape Context	Dispersal	Barriers between rearing habitat and estuary	present			absent	San Antonio Dam; groundwater extraction	Poor		Apr-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)				Apr-07	
3	Juvenile	Landscape Context	Non-native species	Non-native juvenile predators	present throughout watershed	present > 50% watershed	present < 50% watershed	absent				Aug-07	
3	Juvenile	Landscape Context	Summer flow	Percent of unimpaired median summer baseflow (based on long-term mean monthly discharge)	< 70% <i>s</i>	70-90%	> 90%	100% over all IP-km				Apr-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.				Oct-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%				Apr-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				Jul-06	
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.)				Apr-07	
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				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	San Antonio Dam; groundwater extraction	Poor		Apr-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%				Apr-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				Apr-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	San Antonio Dam; groundwater pumping	Poor		Apr-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
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%				Apr-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.				Oct-05	
5	Adult	Size	Population size	Mean annual adult spawner abundance		TRT criteria for low extinction risk (by watershed)						Mar-03	
6	Multiple Life Stages	Landscape Context	Barriers/diversions	Stream crossings/stream mile	> two/mile			< two/mile				Apr-07	
6	Multiple Life Stages	Landscape Context	Channel flow and morphology	Percent of total watercourse length channelized	> 25%	16-25%	5-15%	< 5%				Jul-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%					
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				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	San Antonio Dam	Poor		Apr-07	
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				Apr-07	
6	Multiple Life Stages	Landscape Context	Hydrology	Hydrograph	severely modified			natural	San Antonio Dam	Poor		Apr-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	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%				Jun-07	
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					
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				Jun-02	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in agricultural use	> 30%	20-29%	10-19%	< 10%				Jul-06	
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%				Jul-06	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in public ownership	< 25 % public ownership	25-50%	51-75%	> 75%				Mar-07	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in urban/residential use	> 25%	10-25%	5-9%	< 5%				Mar-06	
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				Mar-03	
6	Multiple Life Stages	Landscape Context	Water quality	Percent total impervious surfaces as % of watershed area	>40%	21-40%	5-20%	< 5%				Mar-07	
6	Multiple Life Stages	Condition	Estuarine habitat quality	Current lagoon area as percentage of historic total area	< 25%	26-50%	51-75%	> 75%				Mar-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					Jul-06	
6	Multiple Life Stages	Condition	Riparian corridor quality	Riparian canopy cover	< 25% cover	25-49% cover	50-75% cover	> 75% cover				Mar-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				Mar-03	

Overall Viability Summary San Antonio River, Monterey 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
2	Non-native species present (incl. hatchery fish)	High	High	Medium	-	-	-			High
3	Recreational facilities and activities (ORV use, campgrounds, etc.)	High	High	Medium	-	-	-			High
4	Conversion of watershed lands to row crop agriculture	-	-	Medium	-	-	-			Low
5	Groundwater extraction	-	-	Medium	-	-	-			Low
6	Mining & Quarrying	-	-	Medium	-	-	-			Low
7	Urban development	-	-	Medium	-	-	-			Low
8	Agricultural effluents	-	-	-	-	-	-			-
9	Artificial lagoon breaching	-	-	-	-	-	-			-
10	Channel and/or estuary maintenance, dredging, and vegetation control (incl. flood control activities)	-	-	-	-	-	-			-
11	Culverts, crossings, and bridges	-	-	-	-	-	-			-
12	Gas, water, and/or other utility pipelines	-	-	-	-	-	-			-
13	Illegal collecting, poaching, and/or unauthorized angling	-	-	-	-	-	-			-
14	Invasive non-native plants						-			-
15	Levees and channelization	-	-	-	-	-	-			-
16	Livestock Farming & Ranching	-	-	-	-	-	-			-
Threat Status for Targets and Project		High	High	High	High	High	High	-	-	Very High

Overall Viability Summary
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Threats Across Targets		Egg	Fry	Juvenile	Smolt	Adult	Multiple Life Stages			Overall Threat Rank
		1	2	3	4	5	6	7	8	
Project-specific threats		1	2	3	4	5	6	7	8	
17	Log jams and other removable barriers									-
18	Logging	-	-	-			-			-
19	Natural barriers					-	-			-
20	Non-point pollution from roads	-	-	-	-	-	-			-
21	Oil & Gas Drilling	-	-	-	-	-	-			-
22	Public ownership in watershed									-
23	Roads in watershed and/or within 300 feet of watercourses	-	-	-	-	-	-			-
24	Urban wastewater effluents (incl. industrial and commercial effluents)	-	-	-	-	-	-			-
25	Wildland fires (incl. debris flows following fires)	-	-	-	-	-	-			-
26										-

**Overall Viability Summary
San Antonio River, Monterey 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 land use from natural condition	-	-	-	-	-	Very High	-	-
2	Altered hydrograph	-	-	-	-	-	Very High	-	-
3	Impaired access to rearing and/or spawning habitat	-	-	-	-	-	Very High	-	-
4	Impaired access to spawning areas	-	-	-	-	Very High	-	-	-
5	Impaired access to ocean	-	-	-	Very High	-	-	-	-
6	Impaired access to estuary	-	-	Very High	-	-	-	-	-
7	Non-native predators	-	High	High	-	-	-	-	-
8	Impaired riparian habitat quality	-	-	High	-	-	-	-	-
9	Non-native egg predators	High	-	-	-	-	-	-	-
10	Altered riparian habitat quality	-	-	-	-	-	Low	-	-
11	Dispersal barriers between redds and rearing habitat	-	Low	-	-	-	-	-	-
12	Impaired flows during rearing period	-	-	Low	-	-	-	-	-
13	Altered base flows during incubation	Low	-	-	-	-	-	-	-
14	Impaired habitat complexity/refugia	-	Low	-	-	-	-	-	-
15	Impaired substrate quality (sedimentation and embeddedness)	Low	-	-	-	-	-	-	-
16	Impaired instream habitat complexity/refugia	-	-	Low	-	-	-	-	-

Overall Viability Summary
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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	Altered sediment supply	-	-	-	-	-	-	-	-
18	Impaired food availability	-	-	-	-	-	-	-	-
19	Impaired access to stream from ocean (stream mouth closed)	-	-	-	-	-	-	-	-
20	Impaired water temperature in spawning areas	-	-	-	-	-	-	-	-
21	Impaired water temperatures in migration corridor	-	-	-	-	-	-	-	-
22	Low adult population size	-	-	-	-	-	-	-	-
23	Impaired estuarine inflows	-	-	-	-	-	-	-	-
24	Impaired floodplain connectivity	-	-	-	-	-	-	-	-
25	Altered fire regime/recent fire in watershed	-	-	-	-	-	-	-	-
26	Impaired water temperature	-	-	-	-	-	-	-	-
27	Impaired water quality	-	-	-	-	-	-	-	-
28	Impaired estuarine habitat quality	-	-	-	-	-	-	-	-
29	Impaired summer base flows	-	-	-	-	-	-	-	-
30		-	-	-	-	-	-	-	-

**Overall Viability Summary
San Antonio River, Monterey County**

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

Overall Viability Summary San Antonio River, Monterey County

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