

Los Osos Creek, San Luis Obispo County
CAP Workbook Threats Assessment Summary Tables
2008

Assessment of Target Viability

Double-click opens entry form				Indicator Ratings								
				Bold = Current	Indicator Ratings			<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				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	no nn predators found in 2001	Very Good	Nov-01	
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.	9 C in winter	Very Good	Mar-01	
1	Egg	Condition	Substrate quality	Avg. percent fines (<0.85mm) in potential spawning areas	> 17% fines	11-17% fines	5-10 % fines	< 5% fines	low sedimentation in spawning habitat	Good	Nov-01	
1	Egg	Condition	Substrate quality	Embeddedness	> 75% embedded	50-75% embedded	25-49% embedded	< 25% embedded	low embeddedness in spawning areas	Good	Nov-01	
2	Fry	Landscape Context	Dispersal	Barriers between redds and rearing habitat	complete barrier	partial barriers common	partial barriers scarce	no barriers	no barriers	Very Good	Nov-01	
2	Fry	Landscape Context	Non-native species	Non-native fry predators	present throughout watershed	present > 50% of watershed	present < 50% of watershed	absent	no nn predators found in 2001	Very Good	Nov-01	
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	turbidity due to agricultural practices	Fair	Nov-01	
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-06	
3	Juvenile	Landscape Context	Dispersal	Barriers between rearing habitat and estuary	present			absent	dry stream reaches	Fair	Nov-01	
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)	154 pools/23,493 ft	Fair	Nov-01	
3	Juvenile	Landscape Context	Non-native species	Non-native juvenile predators	present throughout watershed	present > 50% watershed	present < 50% watershed	absent	no nn fish found in 2001	Very Good	Nov-01	

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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	very low cfs and extensive dry reaches in summer	Poor		Nov-01	
3	Juvenile	Landscape Context	Water temperature	Median weekly average temperature (MWAT) in potential rearing habitat	> 21 C.	18-21 C.	< 18 C.	< 17 C.	9 C (winter) to 20 C (summer)	Good		Nov-01	
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%				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				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.)				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				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	>>10 days	Poor		Nov-01	
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%				May-05	
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	

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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 during spawning period	Very Good		Nov-01	
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%				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.	9 C	Very Good		Nov-01	
5 Adult	Size	Population size	Mean annual adult spawner abundance		TRT criteria for low extinction risk (by watershed)						May-06	
6 Multiple Life Stages	Landscape Context	Barriers/diversions	Stream crossings/stream mile	> two/mile			< two/mile	avg 1.12 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%	< 5%	Very 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%	2.8%	Very Good		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	> 80%	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	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 during spawning period	Very Good		Nov-01	
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	50%	Fair		Nov-01	
6	Multiple Life Stages	Landscape Context	Hydrology	Hydrograph	severely modified			natural				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%	probably < 25%	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	1.17 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	3.34 mi/square 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%	13%	Fair		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%	16%	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%	probably < 25%	Poor		Mar-01	
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	high total N; low total 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%	3%	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%	87%	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					Mar-07	
6	Multiple Life Stages	Condition	Riparian corridor quality	Riparian canopy cover	< 25% cover	25-49% cover	50-75% cover	> 75% cover	61%	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				Mar-07	

Overall Viability Summary
Los Osos Creek, San Luis Obispo County

Threats Across Targets		Egg	Fry	Juvenile	Smolt	Adult	Multiple Life Stages			Overall Threat Rank
		1	2	3	4	5	6	7	8	
1	Conversion of watershed lands to row crop agriculture	Medium	High	Very High	Very High	-	Very High			Very High
2	Groundwater extraction	-	-	Very High	Very High	-	High			Very High
3	Agricultural effluents	Medium	High	-	-	-	High			High
4	Non-point pollution from roads	Medium	High	-	-	-	High			High
5	Roads in watershed and/or within 300 feet of watercourses	Medium	High	-	-	-	High			High
6	Livestock Farming & Ranching	Low	Medium	-	-	-	High			Medium
7	Culverts, crossings, and bridges	-	-	-	-	-	High			Medium
8	Artificial lagoon breaching	-	-	-	-	-	-			-
9	Channel and/or estuary maintenance, dredging, and vegetation control (incl. flood control activities)	-	-	-	-	-	-			-
10	Dams and surface water diversions	-	-	-	-	-	-			-
11	Gas, water, and/or other utility pipelines	-	-	-	-	-	-			-
12	Illegal collecting, poaching, and/or unauthorized angling	-	-	-	-	-	-			-
13	Invasive non-native plants						-			-
14	Levees and channelization	-	-	-	-	-	-			-
15	Log jams and other removable barriers									-
16	Mining & Quarrying	-	-	-	-	-	-			-
Threat Status for Targets and Project		Medium	High	Very High	Very High	-	Very High	-	-	Very High

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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	Natural barriers			-	-	-	-			-
18	Non-native species present (incl. hatchery fish)	-	-	-	-	-	-			-
19	Oil & Gas Drilling	-	-	-	-	-	-			-
20	Public ownership in watershed									-
21	Recreational facilities and activities (ORV use, campgrounds, etc.)	-	-	-	-	-	-			-
22	Urban development	-	-	-	-	-	-			-
23	Urban wastewater effluents (incl. industrial and commercial effluents)	-	-	-	-	-	-			-
24	Wildland fires (incl. debris flows following fires)	-	-	-	-	-	-			-
25										-

Overall Viability Summary
Los Osos 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	Impaired access to ocean	-	-	-	Very High	-	-	-	-
2	Impaired summer base flows	-	-	Very High	-	-	-	-	-
3	Altered land use from natural condition	-	-	-	-	-	High	-	-
4	Altered hydrograph	-	-	-	-	-	High	-	-
5	Impaired water quality	-	-	-	-	-	High	-	-
6	Impaired flows during rearing period	-	-	High	-	-	-	-	-
7	Impaired access to estuary	-	-	High	-	-	-	-	-
8	Altered sediment supply	-	High	-	-	-	-	-	-
9	Altered riparian habitat quality	-	-	-	-	-	Medium	-	-
10	Impaired floodplain connectivity	-	-	-	-	-	Medium	-	-
11	Impaired substrate quality (sedimentation and embeddedness)	Medium	-	-	-	-	-	-	-
12	Impaired water temperature	-	-	Medium	-	-	-	-	-
13	Non-native predators	-	Low	Low	-	-	-	-	-
14	Impaired estuarine habitat quality	-	-	-	-	-	Low	-	-
15	Non-native egg predators	Low	-	-	-	-	-	-	-
16	Impaired water temperature in spawning areas	Low	-	-	-	-	-	-	-

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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 fire regime/recent fire in watershed	-	-	-	-	-	Low	-	-
18	Dispersal barriers between redds and rearing habitat	-	Low	-	-	-	-	-	-
19	Impaired access to rearing and/or spawning habitat	-	-	-	-	-	Low	-	-
20	Impaired access to spawning areas	-	-	-	-	Low	-	-	-
21	Impaired water temperatures in migration corridor	-	-	-	-	Low	-	-	-
22	Impaired riparian habitat quality	-	-	-	-	-	-	-	-
23	Low adult population size	-	-	-	-	-	-	-	-
24	Altered base flows during incubation	-	-	-	-	-	-	-	-
25	Impaired access to stream from ocean (stream mouth closed)	-	-	-	-	-	-	-	-
26	Impaired instream habitat complexity/refugia	-	-	-	-	-	-	-	-
27	Impaired food availability	-	-	-	-	-	-	-	-
28	Impaired estuarine inflows	-	-	-	-	-	-	-	-
29	Impaired habitat complexity/refugia	-	-	-	-	-	-	-	-
30		-	-	-	-	-	-	-	-

**Overall Viability Summary
Los Osos Creek, San Luis Obispo County**

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

Overall Viability Summary Los Osos Creek, San Luis Obispo County

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