

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

## Assessment of Target Viability

Double-click opens entry form				Indicator Ratings									
				<b>Bold = Current</b>				<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	perennial flow in N Fork	Good		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				Mar-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.				Mar-07	
1	Egg	Condition	Substrate quality	Avg. percent fines (<0.85mm) in potential spawning areas	> 17% fines	11-17% fines	<b>5-10 % fines</b>	< 5% fines		Good		Aug-04	
1	Egg	Condition	Substrate quality	Embeddedness	> 75% embedded	50-75% embedded	<b>25-49% embedded</b>	< 25% embedded		Good		May-06	
2	Fry	Landscape Context	Dispersal	Barriers between redds and rearing habitat	complete barrier	partial barriers common	partial barriers scarce	<b>no barriers</b>	no barriers	Very Good		Mar-07	
2	Fry	Landscape Context	Non-native species	Non-native fry predators	present throughout watershed	present > 50% watershed	present < 50% of watershed	absent				Mar-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				Mar-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-06	
3	Juvenile	Landscape Context	Dispersal	Barriers between rearing habitat and estuary	present			absent	dry stream reaches	Fair		Mar-07	
3	Juvenile	Landscape Context	Flow during rearing period	Pool habitat > 3 feet in depth	pools scarce or absent	low abundance of pools	<b>high abundance of pools</b>	high abundance of pools with multiple "refuge" pools (> 5 ft deep)		Good		Mar-07	
3	Juvenile	Landscape Context	Non-native species	Non-native juvenile predators	present throughout watershed	present > 50% watershed	present < 50% watershed	absent				Mar-07	
3	Juvenile	Landscape Context	Summer flow	Percent of unimpaired median summer baseflow (based on long-term mean monthly discharge)	< 70% <b>s</b>	70-90%	<b>&gt; 90%</b>	100% over all IP-km	North Fork perennial	Good		Aug-04	
3	Juvenile	Landscape Context	Water temperature	Median weekly average temperature (MWAT) in potential rearing habitat	> 21 C.	18-21 C.	< 18 C.	< 17 C.				Aug-04	

## Assessment of Target Viability

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	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.)		Good		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		Good		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		Fair		May-06	
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	
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		Mar-07	

## Assessment of Target Viability

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%				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.				Mar-07	
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 0.53 crossings/mile	Very 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%	< 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%	0.1%	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	
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	100%	Very Good		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	45% dry reaches in summer	Fair		Mar-07	
6	Multiple Life Stages	Landscape Context	Hydrology	Hydrograph	severely modified			natural	natural hydrograph	Very Good		Jan-08	

## Assessment of Target Viability

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%	0.3%	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 0.3 mi/square mile	Good	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 1.3 mi/square mile	Very 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%	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%	0%	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%	0.3%	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%	1.1%	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%	0.2%	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%	62%	Good	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				Mar-07	
6	Multiple Life Stages	Condition	Riparian corridor quality	Riparian canopy cover	< 25% cover	25-49% cover	50-75% cover	> 75% cover	84%	Very 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  
Pico 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	Natural barriers			High	High	-	Low			High
2	Culverts, crossings, and bridges	-	Low	-	-	Low	Medium			Low
3	Urban development	Low	Low	Low	Low	Low	-			Low
4	Conversion of watershed lands to row crop agriculture	Low	-	Low	-	Low	Low			Low
5	Livestock Farming & Ranching	Low	Low	Low	-	-	Low			Low
6	Dams and surface water diversions	-	-	Low	-	-	-			Low
7	Groundwater extraction	-	-	Low	-	-	-			Low
8	Agricultural effluents	-	-	-	-	-	-			-
9	Artificial lagoon breaching	-	-	-	-	-	-			-
10	Channel and/or estuary maintenance, dredging, and vegetation control (incl. flood control activities)	-	-	-	-	-	-			-
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	-	-	-	-	-	-			-
<b>Threat Status for Targets and Project</b>		Low	Low	Medium	Medium	Low	Low	-	-	Medium

**Overall Viability Summary**  
**Pico Creek, San Luis Obispo 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	Non-native species present (incl. hatchery fish)	-	-	-	-	-	-			-
18	Non-point pollution from roads	-	-	-	-	-	-			-
19	Oil & Gas Drilling	-	-	-	-	-	-			-
20	Public ownership in watershed									-
21	Recreational facilities and activities (ORV use, campgrounds, etc.)	-	-	-	-	-	-			-
22	Roads in watershed and/or within 300 feet of watercourses	-	-	-	-	-	-			-
23	Urban wastewater effluents (incl. industrial and commercial effluents)	-	-	-	-	-	-			-
24	Wildland fires (incl. debris flows following fires)	-	-	-	-	-	-			-
25										-

**Overall Viability Summary  
Pico 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	-	-	-	High	-	-	-	-
2	Impaired access to estuary	-	-	High	-	-	-	-	-
3	Impaired riparian habitat quality	-	-	Medium	-	-	-	-	-
4	Impaired estuarine habitat quality	-	-	-	-	-	Medium	-	-
5	Impaired instream habitat complexity/refugia	-	-	Medium	-	-	-	-	-
6	Impaired summer base flows	-	-	Medium	-	-	-	-	-
7	Impaired flows during rearing period	-	-	Medium	-	-	-	-	-
8	Altered riparian habitat quality	-	-	-	-	-	Low	-	-
9	Altered land use from natural condition	-	-	-	-	-	Low	-	-
10	Altered hydrograph	-	-	-	-	-	Low	-	-
11	Altered base flows during incubation	Low	-	-	-	-	-	-	-
12	Altered fire regime/recent fire in watershed	-	-	-	-	-	Low	-	-
13	Dispersal barriers between redds and rearing habitat	-	Low	-	-	-	-	-	-
14	Impaired water temperature	-	-	Low	-	-	-	-	-
15	Impaired floodplain connectivity	-	-	-	-	-	Low	-	-
16	Impaired access to rearing and/or spawning habitat	-	-	-	-	-	Low	-	-

**Overall Viability Summary**  
**Pico 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
17	Impaired substrate quality (sedimentation and embeddedness)	Low	-	-	-	-	-	-	-
18	Impaired water quality	-	-	-	-	-	Low	-	-
19	Impaired access to spawning areas	-	-	-	-	Low	-	-	-
20	Non-native egg predators	-	-	-	-	-	-	-	-
21	Impaired water temperatures in migration corridor	-	-	-	-	-	-	-	-
22	Low adult population size	-	-	-	-	-	-	-	-
23	Impaired access to stream from ocean (stream mouth closed)	-	-	-	-	-	-	-	-
24	Impaired food availability	-	-	-	-	-	-	-	-
25	Impaired estuarine inflows	-	-	-	-	-	-	-	-
26	Non-native predators	-	-	-	-	-	-	-	-
27	Impaired habitat complexity/refugia	-	-	-	-	-	-	-	-
28	Impaired water temperature in spawning areas	-	-	-	-	-	-	-	-
29	Altered sediment supply	-	-	-	-	-	-	-	-

**Overall Viability Summary**  
**Pico Creek, San Luis Obispo County**

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

## Overall Viability Summary Pico 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	<b>Egg</b>	<b>Good</b>									
	Landscape Context			1				1		Good	
	Condition			1				2		Good	
	Size									-	
2	<b>Fry</b>	<b>Very Good</b>									
	Landscape Context				1				1	Very Good	
	Condition									-	
	Size									-	
3	<b>Juvenile</b>	<b>Good</b>									
	Landscape Context		1	2			1	2		Fair	
	Condition			2				2		Good	
	Size									-	
4	<b>Smolt</b>	<b>Fair</b>									
	Landscape Context		1				1			Fair	
	Condition									-	
	Size									-	
5	<b>Adult</b>	<b>Very Good</b>									
	Landscape Context				1				1	Very Good	
	Condition									-	
	Size									-	
6	<b>Multiple Life Stages</b>	<b>Very Good</b>									
	Landscape Context			2	6	2	1	1	12	Very Good	
	Condition			1	1			1	1	Good	
	Size									-	
7											
	Landscape Context									-	
	Condition									-	
	Size									-	
8											
	Landscape Context									-	
	Condition									-	
	Size									-	