

**Sisquoc River, Santa Barbara County
CAP Workbook Threats Assessment Summary Tables
2008**

**Assessment of Target Viability
Sisquoc River, Santa Barbara County**

**Assessment of Target Viability
Sisquoc River, Santa Barbara County**

Double-click opens entry form

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	probably > 50% of avg annual daily flow	Very Good	Very Good	Dec-02	
1 Egg	Landscape Context	Non-native species	Non-native egg predators	present throughout	present in >50% of stream reaches	present; isolated reaches	<i>absent</i>	present in > 50% of reaches	Fair	Very Good		
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	suitable spawning habitat common	Good	Good	Dec-02	
1 Egg	Condition	Substrate quality	Embeddedness	> 75% embedded	50-75% embedded	25-49% embedded	< 25% embedded	suitable spawning habitat common	Good	Good	Dec-02	
2 Fry	Landscape Context	Dispersal	Barriers between redds and rearing habitat	complete barrier	partial barriers common	partial barriers scarce	<i>no barriers</i>	absent in upper watershed; barrier frequency increases downstream	Good	Very Good	Dec-02	
2 Fry	Landscape Context	Non-native species	Non-native fry predators	present throughout	present in >50% of stream reaches	<i>present; isolated reaches</i>	<i>absent</i>	present in > 50% of reaches	Fair	Good		
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					
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 some rearing habitat is channelized	some	common	abundant	probably abundant	Very Good	Very Good	Dec-02	
3 Juvenile	Landscape Context	Dispersal	Barriers between rearing habitat and estuary	present			<i>absent</i>	present	Poor	Very Good	Dec-02	
3 Juvenile	Landscape Context	Non-native species	Non-native juvenile predators	present throughout	present in >50% of stream reaches	<i>present; isolated reaches</i>	<i>absent</i>	present	Fair	Good		

**Assessment of Target Viability
Sisquoc River, Santa Barbara County**

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	Landscape Context	Spawning habitat accessibility	Pool habitat > 2 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)	low to moderate abundance of pools	Fair	Good	Dec-02	
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					
3 Juvenile	Landscape Context	Water temperature	Median weekly average temperature (MWAT) in potential rearing habitat	> 21 C.	18-21 C.	< 18 C.	< 17 C.					
3 Juvenile	Condition	Estuarine water quality	Percentage of unimpaired freshwater inflow to estuary (necessary for maintaining brackish water < 15 ppt salinity)	< 25%	25-49%	50-75%	> 75%					
3 Juvenile	Condition	Estuarine water quality	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					
3 Juvenile	Condition	Food availability	Species richness	< 25 taxa	25-29 taxa	30-40 taxa	> 40 taxa					
3 Juvenile	Condition	Habitat complexity/refugia	Instream refugia	absent	scarce	common	abundant instream cover	instream cover common	Good	Good	Dec-02	
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	> 10 days	Poor	Very Good	Dec-02	
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%	> 150%	Poor	Very Good	Dec-02	

Assessment of Target Viability
Sisquoc River, Santa Barbara County

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
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					
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	< 25% of all tributaries are accessible	Poor	Very Good	Dec-02	
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					
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%	variable flow	Fair	Very Good	Dec-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.					
5 Adult	Size	Population size	Mean annual adult spawner abundance		TRT criteria for low extinction risk (by watershed)							
6 Multiple Life Stages	Landscape Context	Barriers/diversions	Stream crossings/stream mile	> two crossings/stream mile			< two crossings/stream mile	> two crossings	Poor	Very Good	Dec-02	
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%	0.3	Poor	Very Good	Sep-07	

Assessment of Target Viability
Sisquoc River, Santa Barbara County

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	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					
6	Multiple Life Stages	Landscape Context	Flow and channel morphology	Percent of total watercourse length channelized	> 25%	16-25%	5-15%	< 5%	probably <10% for Sisquoc River, but >25% for Santa Maria River	Fair	Good	Sep-07	
6	Multiple Life Stages	Landscape Context	Flow and channel morphology	Percent total impervious surfaces as % of watershed area	>40%	21-40%	5-20%	< 5%					
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	< 15% available	Poor	Very Good	Dec-02	
6	Multiple Life Stages	Landscape Context	Hydrology	Dry stream reaches	> 75% dry reaches	26-50% dry reaches	1-25% dry reaches	no dry reaches; perennial flows	>75% dry reaches	Poor	Good	Dec-02	
6	Multiple Life Stages	Landscape Context	Hydrology	Modified hydrograph	severe (dams present)			natural	dam present	Poor	Good	Dec-02	
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%	> 75%	Very Good	Very Good	May-07	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in agricultural use	> 30%	20-29%	10-19%	< 10%	probably 10-19%	Good	Good	May-07	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in public ownership	< 25 % public ownership	25-50%	51-75%	> 75%	0.85	Very Good	Very Good	May-07	
6	Multiple Life Stages	Landscape Context	Land use	Percent of watershed area in urban/residential use	> 25%	10-25%	5-9%	< 5%					
6	Multiple Life Stages	Landscape Context	Riparian agriculture	Percent of watershed area in agriculture within 100 meters of watercourse	> 20%	11-20%	5-10%	< 5%					

**Assessment of Target Viability
Sisquoc River, Santa Barbara County**

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	Riparian roads	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	Road density	Miles of roads per square mile of watershed	> 3.0 mi	2.6-3.0 mi	1.6-2.5 mi	< 1.6 mi					
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					
6	Multiple Life Stages	Condition	Estuarine habitat destruction	Current lagoon area as percentage of historic total area	< 25%	26-50%	51-75%	> 75%					
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						
6	Multiple Life Stages	Condition	Riparian corridor quality	Riparian canopy cover	< 25% canopy cover	25-49% cover	50-75% cover	> 75% cover	borderline fair/good throughout watershed	Fair	Good	Dec-02	
6	Multiple Life Stages	Condition	Riparian corridor quality	Riparian habitat condition	< 25% native composition	25-49% native composition	50-75% native composition	> 75% native composition					

Overall Viability Summary
Sisquoc River, Santa Barbara County

Summary of Threats										
Sisquoc River, Santa Barbara 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	Artificial channel maintenance	Medium	Medium	Very High	Very High	Very High	High			Very High
2	Levees and channelization	Medium	Medium	Very High	Very High	Very High	High			Very High
3	Dams & Water Management/Use	Medium	Medium	Very High	Very High	Very High	Medium			Very High
4	Zaca Fire	Very High	Very High	High	-	High	High			Very High
5	Housing & Urban Areas	Medium	Medium	Very High	-	Very High	High			Very High
6	Mining & Quarrying	Medium	High	High	High	High	High			High
7	Droughts	High	High	High	High	High	-			High
8	Agricultural & Forestry Effluents	Medium	Medium	Medium	-	Very High	High			High
9	Storms & Flooding	Very High	High	Medium	-	-	-			High
10	Roads & Railroads	Medium	Medium	High	-	Medium	High			High
11	Commercial & Industrial Areas	Medium	Medium	High	-	-	Medium			Medium
12	Recreational Activities	Medium	Medium	Medium	-	-	High			Medium
13	Utility & Service Lines	Medium	Medium	Medium	-	-	High			Medium
14	Tourism & Recreation Areas	Medium	Medium	Medium	-	-	Medium			Medium
15	Livestock Farming & Ranching	Medium	Medium	Medium	-	-	Low			Medium
16	Fishing & Harvesting Aquatic Resources	Medium	Medium	Medium	-	-	-			Medium
Threat Status for Targets and Project		Very High	-	-	Very High					

Overall Viability Summary
Sisquoc River, Santa Barbara County

Summary of Threats										
Sisquoc River, Santa Barbara 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	Household Sewage & Urban Waste Water	Medium	Medium	Medium	-	-	-			Medium
18	Industrial & Military Effluents	Medium	Medium	Medium	-	-	-			Medium
19	Introduced hatchery fish	Medium	Medium	Medium	-	-	-			Medium
20	Invasive Non-Native/Alien Species	Medium	Medium	Medium	-	-	-			Medium
21										-
22										-
23										-
24										-
25										-
26										-
27										-
28										-
29										-
30										-
31										-
32										-
Threat Status for Targets and Project		Very High	-	-	Very High					

Overall Viability Summary
Sisquoc River, Santa Barbara County

Stress Matrix									
Sisquoc River, Santa Barbara 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	Dispersal barriers	-	Low	Very High	Very High	-	-	-	-
2	Barriers to upstream and downstream movement	-	-	-	-	Very High	-	-	-
3	Inadequate flows to permit downstream passage	-	-	-	Very High	-	-	-	-
4	Scouring flows	-	Very High	-	-	-	-	-	-
5	Increased fine sediment in potential spawning areas	Very High	-	-	-	-	-	-	-
6	Elevated fire frequency	-	-	-	-	-	Very High	-	-
7	Impaired flows during spawning period	-	-	-	-	Very High	-	-	-
8	Increased embeddedness	Very High	-	-	-	-	-	-	-
9	Altered base flows during incubation	Very High	-	-	-	-	-	-	-
10	Increased sedimentation	-	Very High	-	-	-	-	-	-
11	Impaired accessibility to spawning tributaries	-	-	-	-	-	High	-	-
12	Stream crossings	-	-	-	-	-	High	-	-
13	Lack of pool habitat	-	-	High	-	-	-	-	-
14	Lack of suitable riparian canopy cover	-	-	-	-	-	Medium	-	-
15	Agricultural activity in watershed	-	-	-	-	-	Medium	-	-
16	Modified hydrograph causing impaired flows	-	-	-	-	-	Medium	-	-

**Overall Viability Summary
Sisquoc River, Santa Barbara County**

Stress Matrix									
Sisquoc River, Santa Barbara 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	Egg mortality	Medium	-	-	-	-	-	-	-
18	Non-native predators present	-	-	Medium	-	-	-	-	-
19	Fry mortality	-	Medium	-	-	-	-	-	-
20	Loss of instream habitat complexity	-	-	-	-	-	Medium	-	-
21	Active channel disconnected from historic floodplain	-	-	-	-	-	Medium	-	-
22	Urban/residential activity in watershed	-	-	-	-	-	Low	-	-
23	Public ownership of watershed	-	-	-	-	-	Low	-	-
24	Degraded riparian corridor (non-native plants)	-	-	Low	-	-	-	-	-
25	Public ownership along main stem of watercourse	-	-	-	-	-	Low	-	-
26	Elevated water temperatures in migration corridor	-	-	-	-	-	-	-	-
27	Low adult population size	-	-	-	-	-	-	-	-
28	Inadequate flows to maintain open stream mouth	-	-	-	-	-	-	-	-
29	Decreased food resources	-	-	-	-	-	-	-	-
30	Inadequate summer baseflows	-	-	-	-	-	-	-	-
31	Decreased instream habitat complexity	-	-	-	-	-	-	-	-
32	Impervious surfaces in watershed	-	-	-	-	-	-	-	-

**Overall Viability Summary
Sisquoc River, Santa Barbara County**

Stress Matrix									
Sisquoc River, Santa Barbara County									
Stresses (Altered Key Ecological Attributes) Across Targets		Egg	Fry	Juvenile	Smolt	Adult	Multiple Life Stages		
		1	2	3	4	5	6	7	8
33	Degraded estuarine habitat	-	-	-	-	-	-	-	-
34	Degraded riparian habitat	-	-	-	-	-	-	-	-
35	Stream mouth closed during downstream passage	-	-	-	-	-	-	-	-
36	Unsuitable water temperatures in potential spawning areas	-	-	-	-	-	-	-	-
37	Loss/fragmentation of estuarine habitat	-	-	-	-	-	-	-	-
38	Stratification (thermal, salinity, and/or oxygen) in rearing habitat (estuary) due to insufficient inflows	-	-	-	-	-	-	-	-
39	Agriculture within 300 feet of watercourse	-	-	-	-	-	-	-	-
40	Roads within 300 feet of watercourse	-	-	-	-	-	-	-	-
41	High road density in watershed	-	-	-	-	-	-	-	-
42	Water pollution in watershed	-	-	-	-	-	-	-	-
43		-	-	-	-	-	-	-	-
44		-	-	-	-	-	-	-	-
45		-	-	-	-	-	-	-	-
46		-	-	-	-	-	-	-	-
47		-	-	-	-	-	-	-	-
48		-	-	-	-	-	-	-	-

**Overall Viability Summary
Sisquoc River, Santa Barbara County**

Overall Viability Summary Sisquoc River, Santa Barbara County								
Conservation Targets		Landscape Context		Condition		Size		Viability Rank
		Grade	Weight	Grade	Weight	Grade	Weight	
1	Egg	Fair	1	Good	1	-	1	Good
2	Fry	Fair	1	Very Good	1	-	1	Good
3	Juvenile	Poor	1	Good	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	-
Project Biodiversity Health Rank								Fair

Overall Viability Summary

Sisquoc River, Santa Barbara County

Detailed Viability Summary											
Sisquoc River, Santa Barbara County											
Conservation Targets		Key Ecological Attributes				Indicators				Calculated Rank	User Override
		Poor	Fair	Good	Very Good	Poor	Fair	Good	Very Good		
1	Egg									Good	
	Landscape Context		1		1		1		1	Fair	
	Condition			1				2		Good	
	Size									-	
2	Fry									Good	
	Landscape Context		1	1			1	1		Fair	
	Condition				1				1	Very Good	
	Size									-	
3	Juvenile									Fair	
	Landscape Context	1	2			1	2			Poor	
	Condition			1				1		Good	
	Size									-	
4	Smolt									Poor	
	Landscape Context	2				2				Poor	
	Condition									-	
	Size									-	
5	Adult									Poor	
	Landscape Context	1	1			1	1			Poor	
	Condition									-	
	Size									-	
6	Multiple Life Stages									Fair	
	Landscape Context	4	1		1	5	1	1	2	Poor	
	Condition		1				1			Fair	
	Size									-	
7											-
	Landscape Context									-	
	Condition									-	
	Size									-	
8											-
	Landscape Context									-	
	Condition									-	
	Size									-	