

Exhibit 3: Detailed Project Descriptions

The goal of the Coastal Streamflow Stewardship Project (CSSP) is to work with landowners in coastal California watersheds to develop water management tools and identify projects to protect and reconnect stream flow for fisheries and improve water supply reliability for coastal communities. With CSSP, Trout Unlimited and the Center for Ecosystem Management and Restoration --with our other partners -- have selected several watersheds to test a new approach to cooperative water management.

In these watersheds, we work with individual landowners to identify improvements to their water delivery systems that could restore stream flows and fish habitat, and also improve water supply reliability. At the same time, we gather hydrological data with stream gages and conduct instream flow studies to evaluate the relationship between flows and fish habitat. With this information and our experience in coastal water rights and Fish and Game Code permitting, we can move forward to develop fish and wildlife permit terms and engineering drawings to carry out the projects. The project was funded first by the Coastal Conservancy and has received significant matching funds from the National Fish and Wildlife Foundation, the Fish and Wildlife Service, and many other parties.

Under CSSP, Water Diversion and Streamflow Restoration Plans that pave the way for capital projects to improve streamflow will be finalized for each of the pilot watersheds in 2012. Through our work, we have identified a handful of projects that will be designated as high priorities in the Plans, and we wish to get started on their implementation. Trout Unlimited and CEMAR propose the following streamflow projects as candidates for Coastal Conservancy implementation funding.

Watershed	Project	SCC Request	Matching Funds	Total
Mattole River	School Tank Permitting and Implementation	\$94,999	\$24,962	\$119,961
	Construction Co. Permitting, Design and Implementation	\$150,000	\$42,898	\$192,898
	Post-Project Monitoring	\$28,142		\$28,142
San Gregorio Creek	Pond Enlargement Study	\$18,050		\$18,050
	Off-Stream Ponds Design and Permitting	\$78,656		\$78,656
Little Arthur Creek	Off-Stream Pond Final Design and Permitting	\$45,484	\$314,256	\$359,740
	Residential Tank Permitting and Implementation	\$217,428		\$217,428
	Post-Project Monitoring	\$13,472		\$13,472
Pescadero	Streamflow Project (mult. tasks)	\$75,300		\$75,300
TOTAL		\$721,531	\$382,116	\$1,028,347

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CSSP Implementation - Project Watershed Map

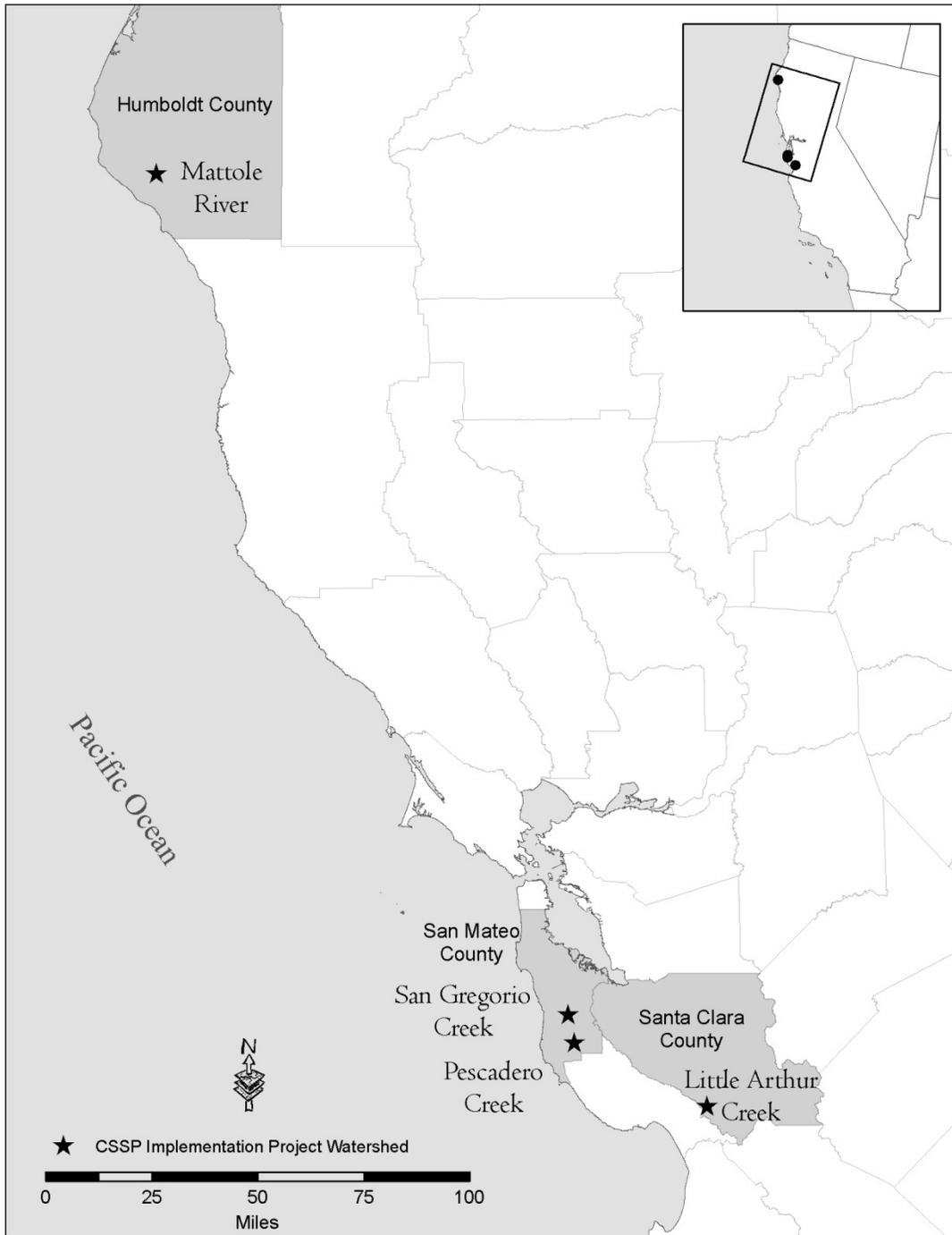


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Mattole River Headwaters

Project Description

The Mattole River Headwaters is defined as the area upstream of Bridge and McKee Creeks near Thorn Junction, a distance along the mainstem Mattole of about 9.4 miles. This area has the most productive and promising rearing habitat for coho salmon and steelhead in the Mattole River, which is traditionally one of the strongholds for those species in Northern California. Dewatering during low flow periods has been identified as the primary issue for salmon and steelhead recovery in the sub-basin. Water use is split between a small number of institutional water users and irrigators, residential landscaping, and residential indoor use. Total demand in the driest months is about two-thirds of supply, or more, depending on water year.

The goal of this project is to restore flow to 4.8 miles the Mattole River Headwaters in the summer and fall by constructing (a) off-stream storage tanks for a school and (b) off-stream storage for a construction company complex. Both the school and the construction company divert water from the Mattole River during the dry season.

The School project includes development of a forbearance agreement that will meet water security requirements specific to the school, approval of a water right permit that allows for storage, and installation of approximately 75,000 gallons of storage. The forbearance agreements, water rights and Fish and Game Code permits will ensure that the water left in stream during the dry season remains in stream for the benefit of fish and aquatic resources.

The construction company maintains a non-community public water system for a complex of businesses and residences forming the commercial center of the village of Whitethorn Junction. This project involves increasing raw water storage capacity by 168,000 gallons to meet summer seasonal demand for a maximum 120 day dry period, installing a water security system to prevent sudden loss of water in the event of a leak, and installing a water treatment system to meet a maximum of 1,750 gpd demand. The Company has already voluntarily installed significant regulatory storage and reduced summer withdrawals to a minimum. However, even this existing diversion (at least 1,000 gpd) can have significant impacts on Mattole summer flows. This new project will resolve those impacts by switching the timing of diversion through an increase in winter storage and a reduction in dry season pumping.

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Budget

Mattole River	Cost	Funding Source	
Whitethorn School	Project Cost	NOAA	SCC
Staff			
Staff Counsel	\$2,280	\$0	\$2,280
Engineer	\$736	\$0	\$736
Permitting			
Liability Insurance	\$500	\$125	\$375
SWRCB permit	\$250	\$62	\$188
County tank permit	\$0	\$0	\$0
County grading permit	\$375	\$93	\$282
DFG 1600 agreement	\$840	\$209	\$631
Forbearance recordation fees	\$150	\$37	\$113
Property chain of title	\$0	\$0	\$0
Flood plain certificates	\$0	\$0	\$0
Subcontractors			
Sanctuary Forest Project Staff (Manager, Coordinator, Monitor)	\$21,192	\$0	\$21,192
Laborers	\$4,186	\$0	\$4,186
Pipe Installers	\$4,186	\$0	\$4,186
Trencher operator	\$2,339	\$0	\$2,339
Installation crew	\$4,186	\$848	\$3,339
Electrician & plumber	\$5,202	\$1,053	\$4,149
Laborers	\$2,616	\$530	\$2,087
Dozer	\$7,388	\$1,795	\$5,593
Heavy Equipment Transport	\$1,108	\$224	\$884
Trencher (equipment rental)	\$1,182	\$239	\$943
Dump Truck (haul sand & gravel)	\$4,876	\$987	\$3,889
Emergency water delivery	\$1,500	\$374	\$1,126
Other travel	\$38	\$9	\$29
Materials & Supplies			
5,000 gallon poly tanks	\$44,950	\$15,687	\$29,263
Source Pump retrofit	\$300	\$300	\$0
Pressure Pump	\$1,400	\$349	\$1,051
2000 ft plastic pipe	\$1,700	\$424	\$1,276
Fittings and valves	\$2,000	\$499	\$1,501
Fish screen	\$600	\$150	\$450
Water clarity filters	\$500	\$125	\$375
Electrical controls and parts	\$500	\$125	\$375
Water meter	\$0	\$0	\$0
Flow meter	\$750	\$187	\$563
Concrete	\$0	\$0	\$0
Sand (per yard)	\$1,480	\$369	\$1,111
Gravel (per yard)	\$300	\$75	\$225
Plywood & misc form materials	\$0	\$0	\$0
Mulch and erosion control	\$150	\$37	\$113
Miscellaneous	\$200	\$50	\$150
Whitethorn School Total Budget	\$119,961	\$24,962	\$94,999

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Whitethorn Construction	Project Cost	NOAA	SCC Request
Staff			
TU Staff	\$10,000.00		\$10,000.00
Permitting			
Liability Insurance	\$1,150.00		\$575.00
SWRCB permit	\$2,127.50		\$1,063.75
County tank permit	\$2,990.00		\$1,495.00
County grading permit	\$862.50		\$431.25
DFG 1600 agreement	\$1,932.00		\$966.00
forbearance recordation fees	\$230.00		\$115.00
property chain of title	\$575.00		\$287.50
flood plain certificates	\$862.50		\$431.25
Subcontractors			
Sanctuary Forest Project Staff (manager, coordinator, monitor, bookkeeper)	\$17,575.50		\$8,787.75
Laborers	\$6,072.00		\$3,036.00
Pipe Installers	\$6,072.00		\$3,036.00
Trencher operator	\$3,422.40		\$1,711.20
Legal Consultant	\$1,500.00		\$750.00
Engineer	\$1,400.00		\$700.00
Installation crew	\$6,000.00		\$3,000.00
Electrician & plumber	\$8,450.00		\$4,225.00
Laborers	\$3,750.00		\$1,875.00
Dozer	\$10,000.00		\$5,000.00
Heavy Equipment Transport	\$900.00		\$450.00
Trencher (equipment rental)	\$1,920.00		\$960.00
Dump Truck (haul sand & gravel)	\$6,300.00		\$3,150.00
Emergency water delivery	\$1,500.00		\$750.00
Mileage	\$75.00		\$37.50
Materials & Supplies			
Tanks (totaling 168,000 gallons)	\$88,400.00		\$44,200.00
1300 gal tank	\$1,035.00		\$517.50
Source Pump retrofit	\$1,380.00		\$690.00
Pressure Pump	\$1,610.00		\$805.00
2000 ft plastic pipe	\$3,910.00		\$1,955.00
Safety manifold & valves	\$4,600.00		\$2,300.00
Fish screen	\$690.00		\$345.00
Water clarity filters	\$575.00		\$287.50
Water Filtration System	\$70,000.00		\$36,582.75
Electrical controls and parts	\$575.00		\$287.50
Water meter	\$402.50		\$201.25
Flow meter	\$1,725.00		\$862.50
Concrete	\$6,334.20		\$3,167.10
Sand (per yard)	\$5,786.80		\$2,893.40
Gravel (per yard)	\$586.50		\$293.25
Plywood & misc form materials	\$2,189.60		\$1,094.80
Mulch and erosion control	\$586.50		\$293.25
Miscellaneous	\$782.00		\$391.00
Total Budget	\$286,834.50	\$42,898.00	\$150,000.00

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Summary Budget: Mattole River	
SCC School Request:	\$94,998.86
SCC Construction Co. Request:	\$150,000.00
SCC Post-Project Monitoring Request:	\$28,142.00
SCC Total Request:	\$273,140.86

Maps

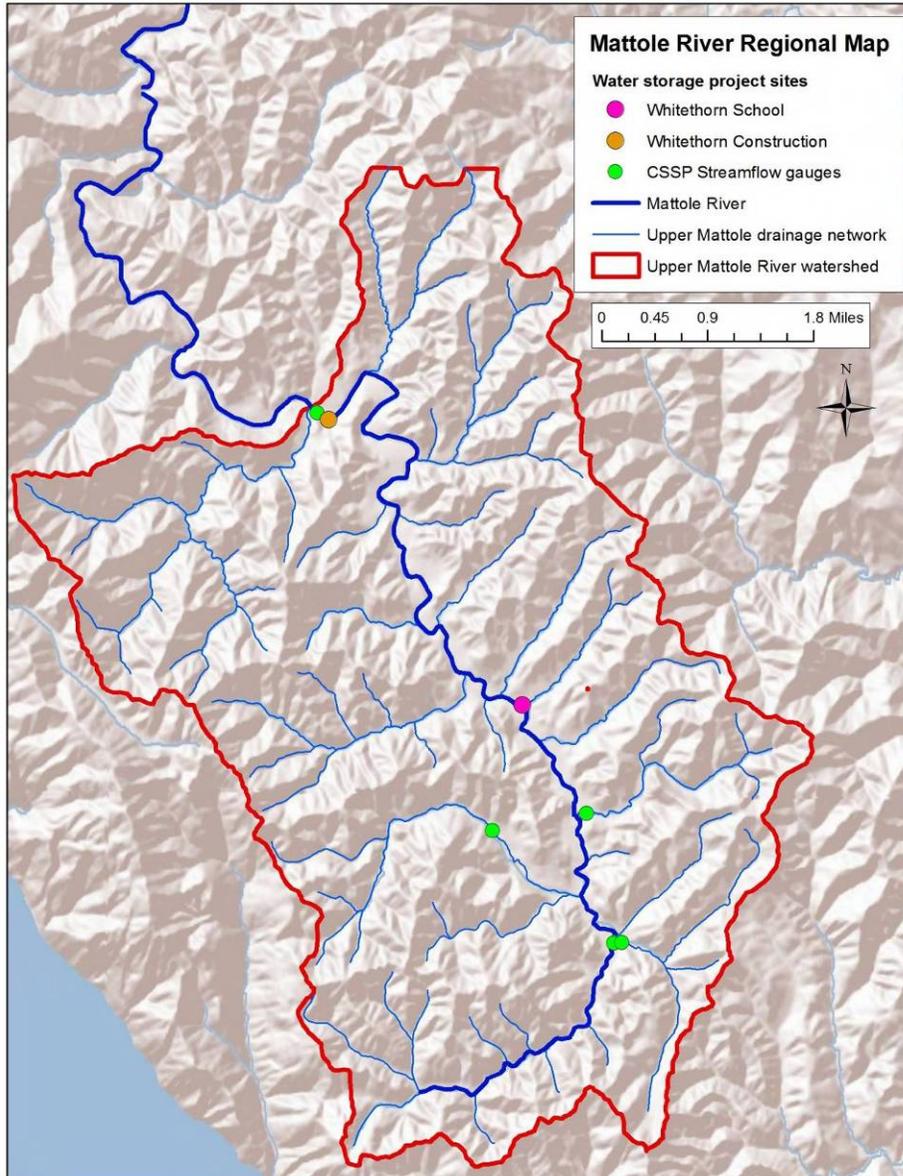


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Photos



Whitethorn School Project Location



Whitethorn School

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Whitethorn Construction Storage Site (1)



Whitethorn Construction Storage Site (2)

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San Gregorio Creek

Project Description

San Gregorio Creek drains about 50 square miles of the Santa Cruz Mountains in San Mateo County. It is an important stream for steelhead and Central Coast Coho recovery. Coho were thought to be extirpated from the basin, but have been recently documented in small numbers. Summer streamflows are a critically important factor for recovery, as indicated by its status in the federal Draft Coho Recovery Plan as the stream ranked highest in threats from water diversions. It is also an adjudicated stream and the location of past failed efforts to construct off-stream ponds. Our success there will represent an important signal that we can succeed anywhere.

The goal of this project is to complete the planning and design for two off-stream storage projects that will result in increased streamflow in the lower portion of San Gregorio Creek. The first project involves an engineering evaluation of the potential to enlarge an existing off-stream pond so that the water user could reduce his rate of diversion and avoid diversions from San Gregorio Creek during the driest period of the year. It currently provides only a few weeks of storage. The plan will involve, first, a reconnaissance level engineering evaluation to assess whether enlargement might be possible. If it seems possible, we will pursue a deeper engineering analysis to ascertain how much bigger it could be made, and at what cost. The second is the planning, design, and permitting for two large off-stream ponds. This property has the largest water right and the least storage (effectively none) in the lower part of San Gregorio Creek. The objective is to shift as much of the water demand to the rainy season as possible, with constraints that may be placed on the project by land availability, water availability, and permit terms and conditions.

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Budget

San Gregorio Creek	Cost	
	Project Costs	Needed
Off-Stream Ponds (2)		
Pond Permitting/Project Management		
Director, California Water Project (Johnson)	\$7,856	\$7,856
Stewardship Coordinator (Daniels & King)	\$15,981	\$15,981
CEMAR (Gauge, Installation, Rating, Hydrographs)	\$8,490	\$8,490
Mileage	\$1,329	\$1,329
Permitting	\$20,000	\$20,000
Pond Engineering/Design		
30% Design	\$25,000	\$25,000
Final Design		
Noble Consultants Engineer (Storesund)	\$23,800	\$23,800
CEMAR Hydrologist (Deitch)	\$2,000	\$2,000
Reservoir Sub-Total	\$104,456	\$104,456
Pond Enlargement		
Engineering	\$ 18,050.00	\$ 18,050.00
Post-Project Monitoring		
CEMAR Streamflow Measurements and Data Processing	\$13,472	\$13,472
Grand Total		
	\$135,978	\$135,978

Summary Budget: San Gregorio Creek	
SCC Permitting /Design Request:	\$78,656
SCC Pond Study Request:	\$18,050
SCC Total Request:	\$96,706

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Maps

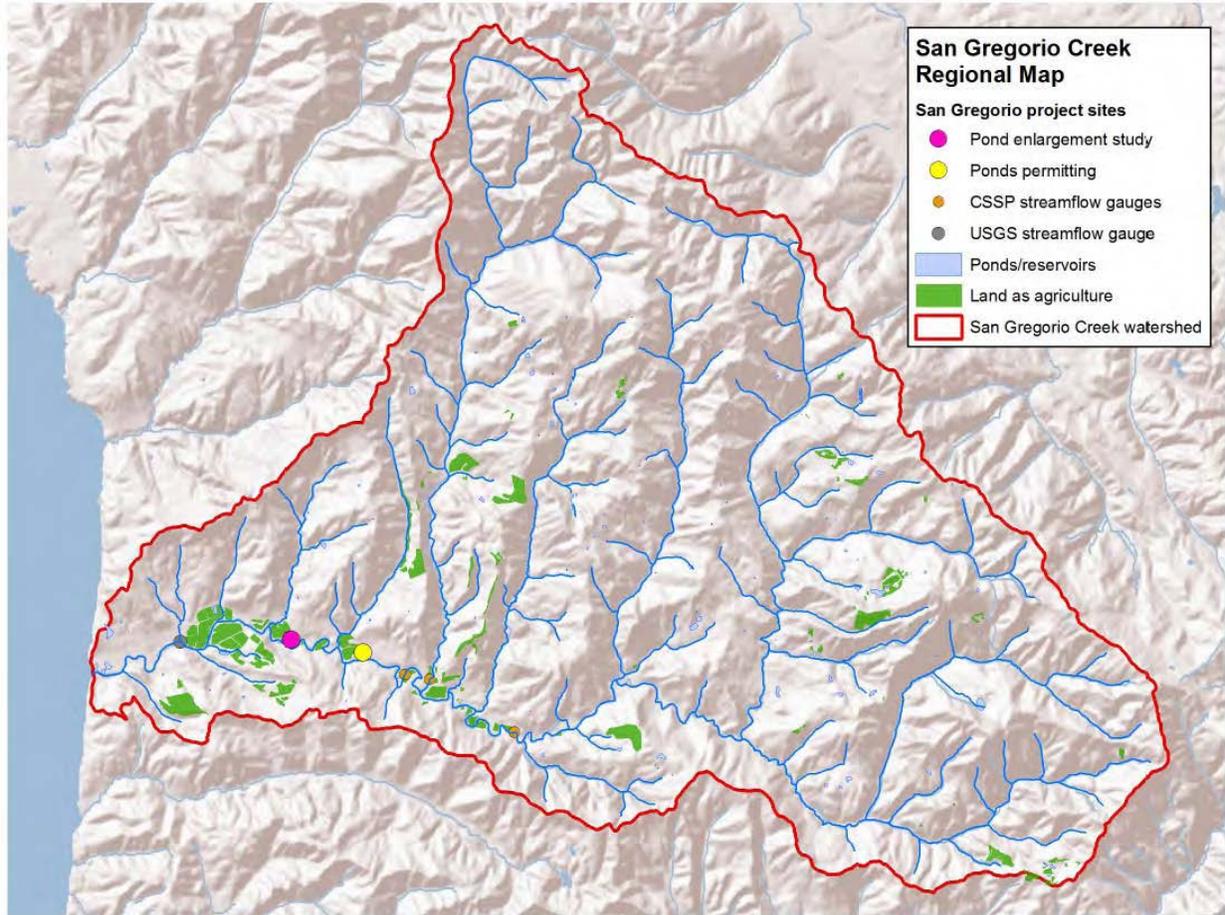


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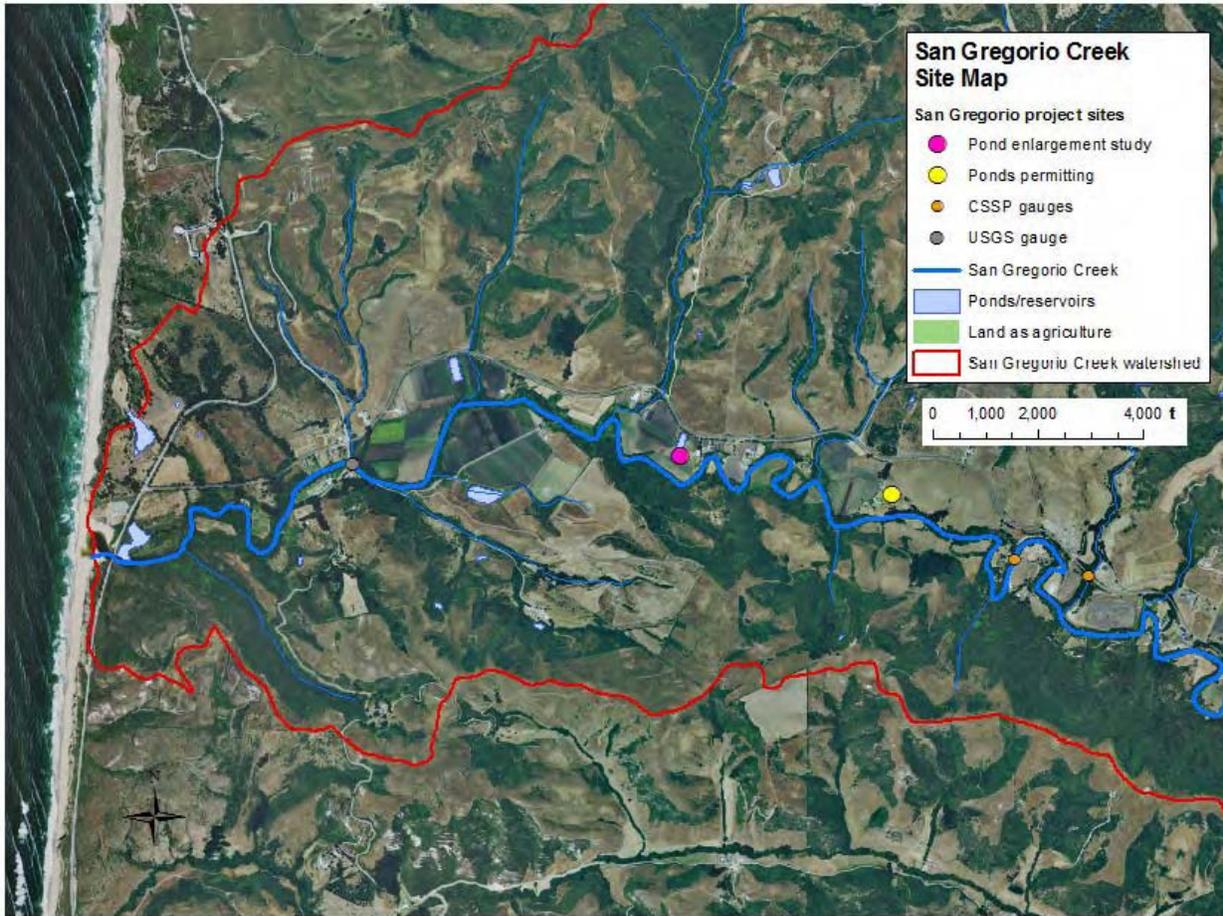


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Site of Pond Enlargement Study



Site of Pond Enlargement Study (Pond is in Background)

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Off-Stream Pond Design and Permitting (Site 1)



Off-Stream Pond Design and Permitting (Alternative Site)

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Little Arthur Creek

Project Description

Little Arthur Creek is one of the last remaining "inland" central coast steelhead streams with viable runs of fish and it is vital to the recovery of the population. The 6-mile stream drains the eastern side of the Santa Cruz Mountains above Gilroy before entering Uvas Creek and then the Pajaro River, which drains to Monterey Bay. The upper part of the watershed is characterized by steep, densely forested slopes with sparse rural development. Low density residential and vineyard development increase in the valley floor. Except for the inadequacy of instream flows, Little Arthur Creek is a prime location for all freshwater life stages of steelhead. The riparian zone is mostly intact with adequate canopy, plentiful high quality instream gravels, adequate water temperatures in the upstream reaches, stable streambanks, and high quality pools. Land use is a mix of rural residential and about a half dozen small agricultural parcels of wine grapes. NMFS asked us to apply the tools of CSSP to address low streamflow, which they understand as "the most significant limiting factor to the Little Arthur steelhead fishery." Little Arthur Creek is important because effective rearing habitat in the Pajaro River watershed is limited to only a few tributaries (including Little Arthur), especially in drought years. NMFS has also noted that the frequency and extent of dewatering has increased since the 1970s, as the number of water diversions has increased. Aside from low streamflow, Little Arthur maintains some of the better conditions for all steelhead freshwater life history stages.

The goal of this project is to maintain summer habitat through 1.6 miles of Little Arthur Creek by (a) construction of off-stream storage for a small vineyard with approximately sixteen acres of wine grapes and (b) construction of three rural residential tanks for riparian landowners. The off-stream pond project will allow the vineyard to discontinue summer diversion from the stream and off-set irrigation water needs through stored winter water. We believe this is the highest priority flow project in the watershed; the property has the largest acreage under irrigation and the least storage in the watershed, and is located at the top of the steelhead-rearing reach. Since there is very little cultivated acreage within the watershed, tanks for rural residential landowners are an integral part of the solution to enhancing streamflow in Little Arthur Creek. We believe the potential is much greater than three tanks, but for the immediate future we request funding for three pilot tank projects.

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Budget

Little Arthur Creek	Cost	Funding Source							
	Project Costs	Storesund Consulting (in-kind)	CHEER (secured)	Witter Foundation (secured)	SCVWD (secured)	SCC - CSSP (secured)	DFG FRGP (request)	SCVWD (secured)	SCC Request
Pond Permitting/Project Management									
Director, California Water Project (Johnson)	\$14,856			\$10,320	\$1,600			\$454	\$2,482
Stewardship Coordinator (Daniels & King)	\$15,981			\$6,880	\$940			\$936	\$7,225
Indirect Costs	\$390				\$254			\$136	\$0
CHEER Director (Garcia) (Outreach)	\$7,500		\$6,000		\$1,500			\$0	\$0
CEMAR (Gauge, Installation, Rating, Hydrographs)	\$16,100				\$1,900	\$14,200		\$0	\$0
Mileage	\$1,329			\$800	\$279	\$250		\$0	\$0
Permitting	\$19,998						\$4,021		\$15,977
Pond Engineering/Design									\$0
30% Design	\$52,262	\$34,212			\$18,050				\$0
Final Design									\$0
Noble Consultants Engineer (Storesund)	\$23,800			\$7,000				\$0	\$16,800
CEMAR Hydrologist (Deitch)	\$2,000							\$0	\$2,000
CHEER Director (Garcia)	\$1,000							\$0	\$1,000
Pond Construction									
Mobilization/Demobilization	\$15,000							\$10,500	\$4,500
Reservoir									
Clearing & Grubbing	\$16,800							\$11,760	\$5,040
Excavation	\$64,200							\$44,940	\$19,260
Embankment Construction	\$96,300							\$67,410	\$28,890
Piping Installation	\$28,500							\$19,950	\$8,550
Liner Installation	\$23,100							\$16,170	\$6,930
Anchor Trench	\$10,000							\$7,000	\$3,000
Overflow Swale	\$5,900							\$4,130	\$1,770
Hydroseeding and Planting	\$4,200							\$2,940	\$1,260
Reservoir Construction Support									
Construction Staking	\$6,300							\$4,410	\$1,890

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Construction Observations	\$24,000							\$16,800	\$7,200
Construction Materials Testing	\$4,000							\$2,800	\$1,200
Construction Engineering	\$2,920							\$2,044	\$876
As-Built Survey	\$5,800							\$4,060	\$1,740
Reporting	\$5,800							\$4,060	\$1,740
Pond Sub-Total	\$468,036	\$34,212	\$6,000	\$25,000	\$24,523	\$14,450	\$4,021	\$220,500	\$139,330
Tank Permitting/Project Management									
Labor and Permitting	\$12,960								\$12,960
Permit Fees	\$10,668								\$10,668
Tank Construction									
50,000 gallon Pioneer Tanks	\$78,000								\$78,000
Subcontractor Costs (Labor + Equipment)	\$73,500								\$73,500
Materials & Supplies (Peripheral Equipment + Pad)	\$42,300								\$42,300
Tank - Sub-Total	\$217,428	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$217,428
CEMAR Streamflow Measurements and Data Processing	\$13,472								\$13,472
Grand Total									
Grand Total	\$698,936	\$34,212	\$6,000	\$25,000	\$24,523	\$14,450	\$4,021	\$220,500	\$370,231

Summary Budget: Little Arthur	
SCC Pond Request:	\$45,484
SCC Tanks Request:	\$217,428
SCC Post-Project Monitoring Request:	\$13,472
SCC Total Request:	\$276,385

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Maps

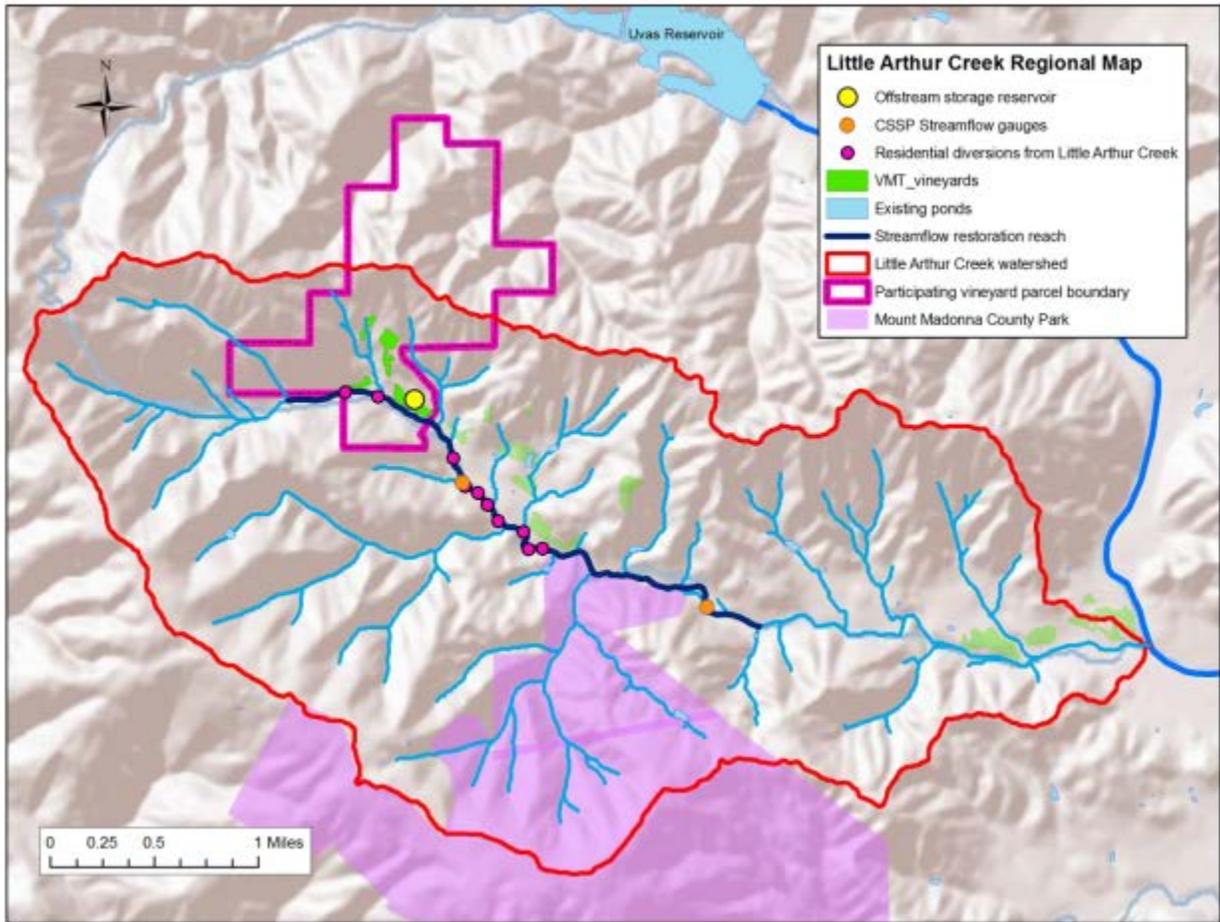


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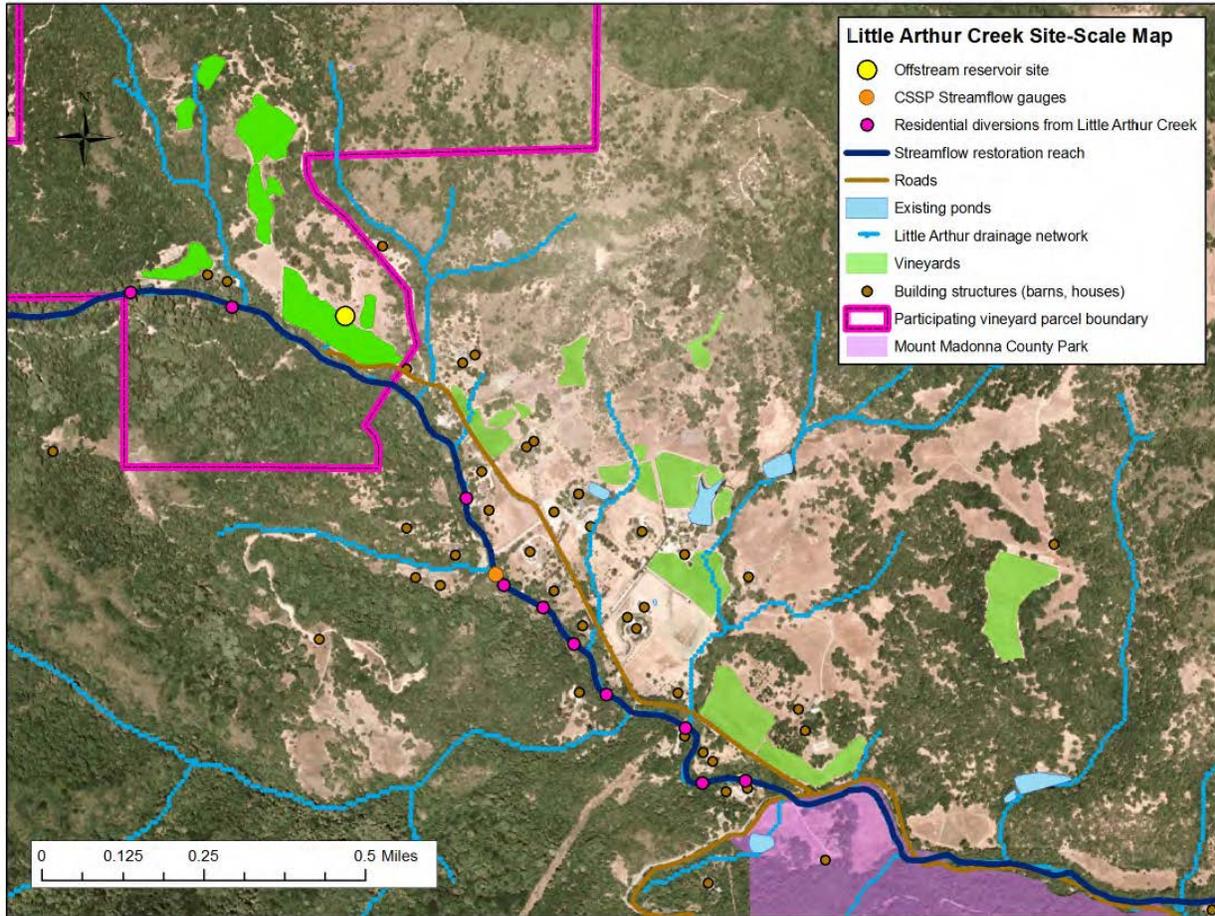


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Photos



Pond Project Location (1)



Pond Project Location (2)

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Pescadero Creek Streamflow Project

Project Description

This project was developed based on an examination of streamflow and fisheries in the Pescadero Creek watershed prepared by the Center for Ecosystem Management and Restoration (CEMAR) for the California State Coastal Conservancy. The study concluded that low summer flows are limiting to steelhead and salmon habitat both in the mainstem creek and in the Pescadero Marsh. In cooperation with the San Mateo County Resource Conservation District, local landowners and San Mateo County, CEMAR and its partners identified opportunities to enhance summer streamflow and established a work-plan to produce the necessary information regarding hydrology, fisheries, water rights and site considerations to design streamflow enhancement projects in the lower creek (near Pescadero) and the middle creek (near Loma Mar).

The project involves five tasks:

1. *Measure streamflow.* We will install two gages to measure streamflow in middle and lower Pescadero Creek. We will measure streamflow approximately monthly for about two years with a flow meter to create the relationship between the gage data (stage) and flow (discharge). These data provide necessary quantitative support to answer the questions, “Why are conservation projects necessary?” and “How will conservation projects affect streamflow?” and will provide the basis for such projects as part of the current effort as well as possible future projects. This task and the following tasks are modeled on previous successful efforts by the TU/CEMAR team to provide meaningful dry season streamflow enhancement projects in the subject watersheds.
2. *Determine the amount of water available for appropriation in middle and lower Pescadero Creek (near Pescadero) by using historical streamflow records and GIS tools produced for CSSP projects.* The location-based flow information we produce provides the basis for evaluating streamflow enhancement projects associated with the current study as well as possible future projects in the Pescadero Creek watershed.
3. *Evaluate habitat effects of potential diversion reoperations in middle) and lower Pescadero Creek.* The plan will describe the location of study reaches, the parameters to be measured, analytical methods and evaluation thresholds. We will solicit Department of Fish and Game and State Water Board review prior to implementation. The project team then will measure flow and habitat parameters at middle and upper Pescadero Creek reaches. This step correlates biological criteria to particular flow magnitudes. In particular, we will determine the range of flows at which suitable water depth and velocity conditions for fish occur and identify the minimum flows necessary to allow for salmon and steelhead migration.
4. *Present streamflow enhancement opportunities to the project partners.* In this task, CEMAR, TU, and our project partners will review and evaluate opportunities to improve streamflow in Pescadero Creek based on the information developed in tasks 1-3. We will present those opportunities to IWRP and SCC staff, as well as the IRWP TAC and other interested parties. Preliminary candidate projects for the middle mainstem include reconstruction/expansion of storage at San Mateo County Memorial Park

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(Figure 1), increased storage at Redwood Glen Camp, conservation measures at the park and the camp, irrigation efficiency at the camp, and irrigation water storage at the camp. Preliminary candidate projects in the lower mainstem (near Pescadero) include irrigation water storage expansion on property newly associated with Harley Farm (Figure 1) and on neighboring properties, and expanding existing efforts to replace direct diversion with groundwater extraction. With guidance from IRWP and other stakeholders, a select group of conservation and storage projects will be advanced to design phase (Task 5).

5. Provide designs for demonstration projects in the middle and lower portions of Pescadero Creek that improve dry season flow conditions. Designs will identify the project sponsor, location, technical specifications such as storage capacity, storage type (*e.g.*, tank, pond), permitting requirements, estimated cost, and other information as needed to form the basis for implementation or preparing implementation grant proposals. We will summarize the information developed in Tasks 1-3 that relates to the enhancement projects including associated flow and biological effects of reoperating diversions, provisions needed to maintain a flow regime that is protective of stream habitat, and other site-specific changes to existing diversion practices and facilities.

Project designs also will identify any changes needed to existing water rights including point of diversion, diversion rates, water right type, allowable quantity and period of storage, and measures to ensure that dry season flow enhancements are conserved downstream. The project engineer will develop the sizing, siting and other design criteria for storage facilities. Additional modifications to present diversion practices will be described including pumping methods, rates and timing, and conservation practices.

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Budget

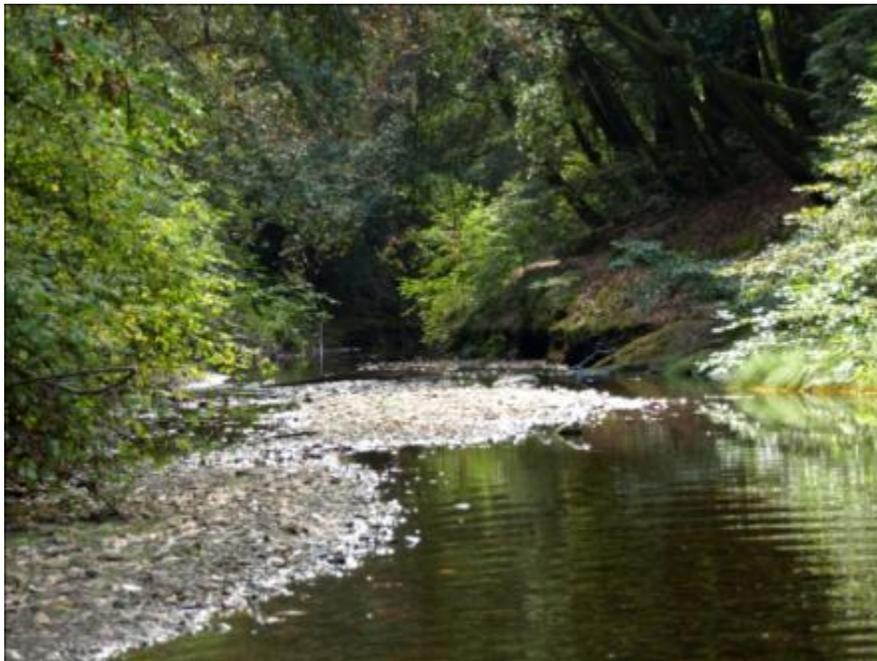
Pescadero Creek Streamflow Project	Project Costs						Sources	
	TU Labor	TU Travel	CEMAR Labor	CEMAR Travel	Equip. & Subs	Task Total	IWRP Request	SCC Request
Task 1. Streamflow measurement			\$26,920.00	\$1,650.00	\$4,415.00	\$32,985.00	\$32,985.00	
Task 2. Water availability/GIS analysis	\$1,625.00		\$4,930.00			\$6,555.00		\$6,555.00
Task 3. Instream flow-habitat evaluation			\$12,450.00			\$12,450.00		\$12,450.00
Task 4. Present Project Opportunities	\$18,377.50	\$277.50	\$4,080.00		\$4,000.00	\$26,735.00		\$26,735.00
Task 5. Project Conceptual Designs	\$1,233.50		\$4,420.00	\$275.00	\$17,003.00	\$22,931.50		\$22,931.50
Other (Grant Administration, meetings)	\$3,268.50		\$3,360.00			\$6,628.50		\$6,628.50
Total	\$24,504.50	\$277.50	\$56,160.00	\$1,925.00	\$25,418.00	\$108,285.00	\$32,985.00	\$75,300.00

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Photos



Leaking Park Tank: Candidate for Replacement and Expansion



Pescadero Creek at Memorial Park