PESCADERO CREEK

Pescadero Creek

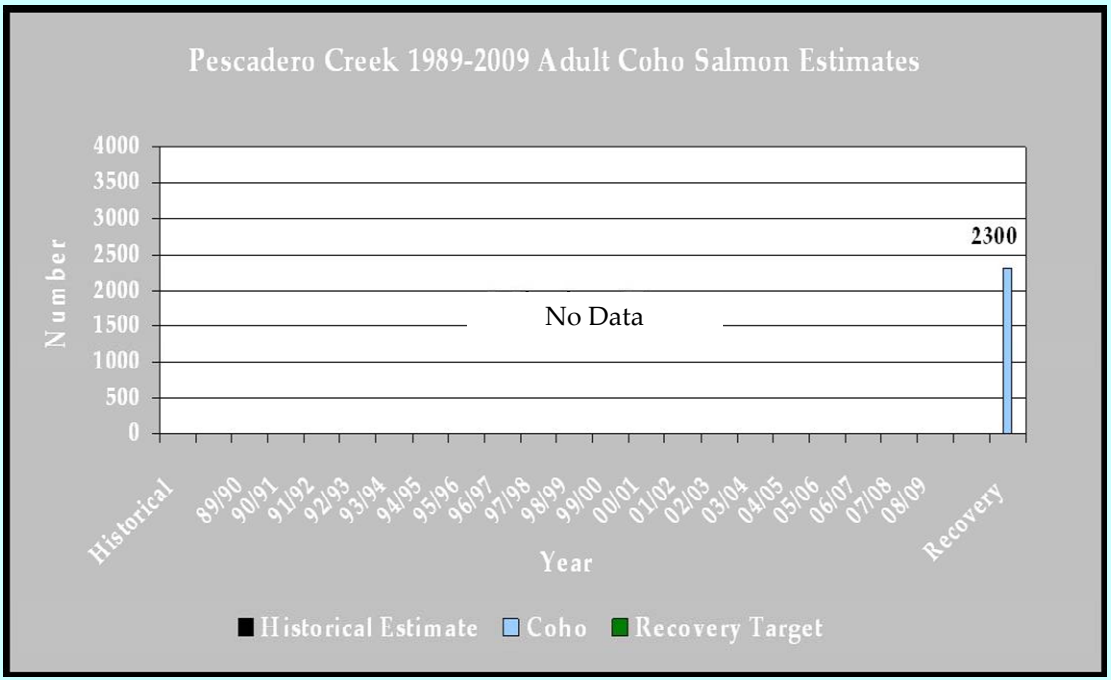
Independent Population
60.6 IP-km of potential coho salmon habitat
Coho salmon extirpated and steelhead present

Pescadero Creek drains approximately 81 square miles of the Santa Cruz Mountains in western San Mateo and Santa Cruz Counties. Pescadero Creek enters the Pacific Ocean near the town of Pescadero. The watershed contains steep forested slopes, deep canyons with steep inner gorges, a fertile coastal valley, and grasslands near the coast. The Pescadero Creek watershed has moderate to high erodibility after considering slope, precipitation, and the susceptibility of failure of underlying geology. The SWRCB listed the Pescadero Creek as having water quality impaired for sediment in 2003. The water quality impairment listing determined that sediment was impairing habitats beneficial to coho salmon including migration, spawning and rearing habitats, and identified non-point sources as the probable cause. Pescadero has a large amount of rural residential housing adjacent to Pescadero Creek and its tributaries, likely contributing to degraded water quality. Coho salmon are believed to be extirpated from the watershed, although some smolts have been outplanted from the NMFS SWFSC and Monterey Bay Salmon and Trout Project captive broodstock program in recent years in an attempt to reestablish the population.

Pescadero Creek
Photo by Joel Casagrande

The Watershed at a Glance

Spawning Quantity & Quality	**POOR to GOOD**
Summer Water Temperatures	**POOR**
Depth & Shelter of Pools	**POOR**
Large Wood Frequency	**POOR**
Riparian Canopy	**POOR to GOOD**
Off channel/Floodplain Quality	**POOR**
Estuary Function	**POOR**



Pescadero Creek

Recovery Target: 2,300 Adult Coho Salmon

Increasing the survival of coho salmon

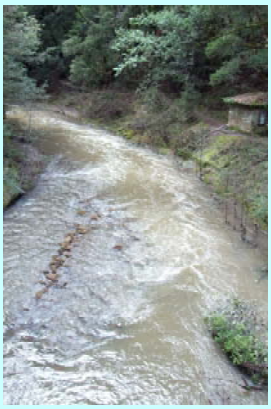
requires **protecting** all individuals from threats that are jeopardizing coho salmon. The highest ranked threats are:

- Droughts
- Storms and Flooding
- Agricultural practices
- Roads and Railroads
- Disease, Predation, Competition
- Fire and Fuel Management
- Logging and Wood Harvest
- Water Diversion and Impoundments

Preventing the extinction of coho salmon

means **restoring** many key habitat attributes within the Pescadero Creek watershed that are in poor condition. The highest priorities for restoration are to:

- Increase spawning habitat
- Improve and increase the frequency of pools
- Increase the amount of large wood in streams
- Increase the number of off channel habitats
- Improve hydrologic connectivity
- Increase riparian shading to cool streams
- Decrease the number of roads near the stream and reduce impacts from remaining roads



Pescadero Creek
Photo by San Mateo County PW Dept

Advancing recovery of coho

salmon in Pescadero Creek requires these priority **recovery actions:**

- Increase the frequency and functionality of off channel and pool habitats.
- Promote restoration projects designed to create or restore alcove, backchannel, ephemeral tributary, or seasonal pond habitats.
- Promote, via technical assistance and/or regulatory action the development of discharge bypass requirements for water diversions, impoundments, and protection of riparian and floodplain areas.
- Maintain and restore hydrologic function to improve and minimize adverse affects to water quality and protect riparian and floodplain areas
- Conduct erosion site assessments to identify chronic sediment sources.

. . . **throughout:** the Teawater and Peters Creek planning watersheds.

Conservation Highlights

- There are actions underway to include a multidisciplinary task force to address yearly fish kills that appear to result in significant mortality rates of federally listed CCC steelhead.

We Need Your Photo Here

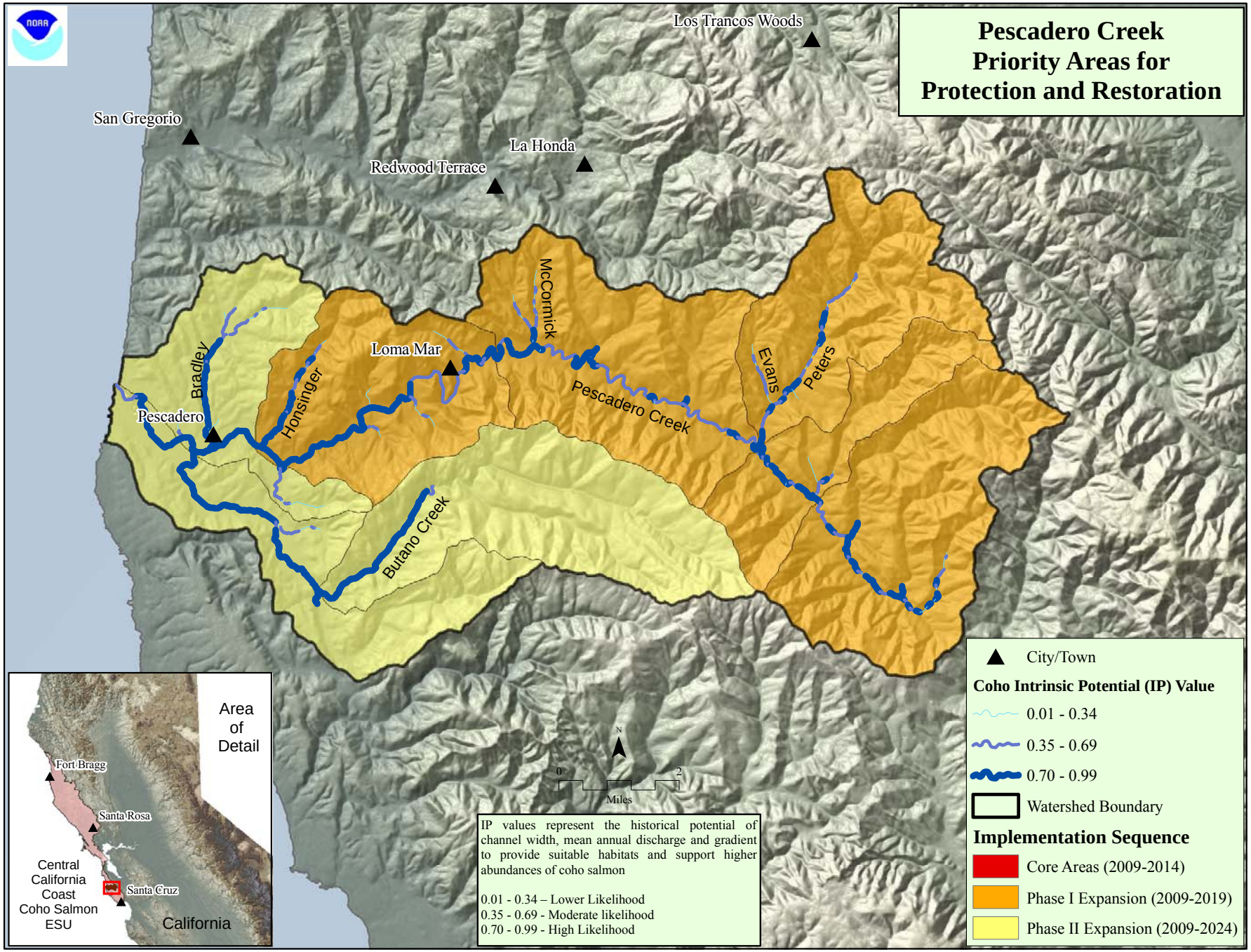
Pescadero Creek
Photo © Your Name Here, AFFIL

Recovery Partners

San Mateo County
State Parks
Big Creek Lumber Company
San Mateo RCD
San Jose State University
DFG
Farm Bureau

Immediate Needs

Install instream structures √
Protect the core sub-watersheds √
Develop water conservation practices √
Continue task force to address fish kills in the lagoon √


Pescadero Creek
Priority Areas for
Protection and Restoration
Los Trancos Woods
San Gregorio
La Honda
Redwood Terrace
Loma Mar
Pescadero
Bradley
Honsinger
McCormick
Pescadero Creek
Evans
Peters
Butano Creek
Area
of
Detail
Fort Bragg
Santa Rosa
Santa Cruz
Central
California
Coast
Coho Salmon
ESU
California
N
0
2
Miles
IP values represent the historical potential of channel width, mean annual discharge and gradient to provide suitable habitats and support higher abundances of coho salmon
0.01 - 0.34 – Lower Likelihood
0.35 - 0.69 - Moderate likelihood
0.70 - 0.99 - High Likelihood
City/Town
Coho Intrinsic Potential (IP) Value
0.01 - 0.34
0.35 - 0.69
0.70 - 0.99
Watershed Boundary
Implementation Sequence
Core Areas (2009-2014)
Phase I Expansion (2009-2019)
Phase II Expansion (2009-2024)

CCC Coho Salmon
Pescadero Creek
CAP Viability Table Results

Analyst	Source	Result	Rating	Target	Habitat Attribute	Indicator	Poor	Fair	Good	Very Good
Flow Panel	Decision Matrix	67	Fair	Spawning Adults	Hydrology	Passage Flows	>75 (score)	51-75	35-50	<35
SEC	PSMFC Database	89%	Good	Spawning Adults	Passage	Physical Barriers	<50% of IP-km	50-70% of IP-km	70-90% of IP-km	>90% of IP-km
NCWAP	Decision Matrix	60-90 days	Good	Spawning Adults	Passage	Passage at Mouth	<30 days	30-60 days	60-90 days	>90 days
SEC	CDFG HAB 8	<300 m^2	Poor	Spawning Adults	Sediment	Amount of Gravel*	<300 m^2	300-3100 m^2	3100-6000 m^2	>6000 m^2
NMFS	Best Prof. judgment	>10% of pop.	Poor	Spawning Adults	Viability	Freshwater Harvest	>10% of pop.	5-10%	<5%	
Flow Panel	Decision Matrix	42	Good	Eggs	Hydrology	Instantaneous Condition	>75 (score)	51-75	35-50	<35
Flow Panel	Decision Matrix	75	Fair	Eggs	Hydrology	Redd Scour	>75 (score)	51-75	35-50	<35
SEC	Many Sources	NA	Poor	Eggs	Sediment	Gravel Quality	>17% 0.85mm and or >30% 6.3mm	15-17% 0.85	12-14% 0.85mm and or <30% 6.3mm	<12% 0.85
SEC	CDFG HAB 8	NA	NA	Eggs	Sediment	Gravel Quality (Embeddedness)	<25% of scores 1s&2s	25-50% of scores 1s&2s	>50% of scores 1s&2s	
Flow Panel	Decision Matrix	75	Fair	Summer Rearing	Hydrology	Baseflow	>75 (score)	51-75	35-50	<35
SEC	CDFG HAB 8	<60 avg. rating	Poor	Summer Rearing	Pool Habitat	Shelter Rating	<60 avg. rating	60-80	80-100	>100
SEC	CDFG HAB 8	<30% pools by length	Poor	Summer Rearing	Pool Habitat	Primary Pools	<30% pools by length	30-40%	40-50%	>50%
SEC/NMFS	Many Sources	NA	Poor	Summer Rearing	Water Quality	Temperature	>30% of IP > 17 C MWMT	Does not meet Good or Very Good	30-60% of IP < 15C MWMT	>60% of IP < 15C MWMT
SEC	CDFG HAB 8	Poor	Poor	Winter Rearing	Floodplain	Complex Habitat**	<50% Connected	50-80% connected	>80% connected	
NMFS	NCWAP	Poor	Poor	Smolts	Estuary	Estuary				
Flow Panel	Decision Matrix	75	Fair	Smolts	Hydrology	Passage Flows	>75 (score)	51-75	35-50	<35
SEC	SWRCB	9.07/10 IP-km	Poor	Smolts	Passage	# of Diversions**	>5 / 10 IP km	1.1-5	0.01-1	0
SEC	CDFG HAB 8	<60 avg. rating	Poor	Multiple Life Stages	Pool Habitat	Shelter Rating	<60 avg. rating	60-80	80-100	>100
NMFS	Best Prof. judgment	<50%	Poor	Multiple Life Stages	Floodplain	Floodplain Connectivity	<50%	50-80%	>80%	not defined
NMFS	CDF CWHR	59%	Good	Multiple Life Stages	Hydrology	Stand Age			>40 years old	
SEC	NLCDB	0.28%	Very Good	Multiple Life Stages	Hydrology	Impervious Surfaces	>12.01% of WS by area	7.01-12%	3.01-7%	0-3%
SEC	FMMP	3.11%	Good	Multiple Life Stages	Land disturbance	Agriculture	>30% of WS by area	10-30%	0.1-10%	<0.1%
NMFS	CDF THP Dataset	11%	Good	Multiple Life Stages	Land disturbance	Timber Harvest	>35% of WS by area	25 - 35%	10 - 25%	<10%
SEC	Many Sources	6.8	Poor	Multiple Life Stages	Pool Habitat	LWD Freq. (BFW 0-10)	<4key pcs/100m	4-6/100m	6-11/100m	>11/100m
SEC	Best Prof. judgment	NA	Poor	Multiple Life Stages	Pool Habitat	LWD Freq. (BFW 10-100)	<1/100m	1-1.3/100m	1.3-4/100m	>4/100m
NMFS	CDF CWHR	25-50%	Fair	Multiple Life Stages	Riparian Veg.	Species Composition	<25%	25-50%	>50%	Historical Conditions
NMFS	CDF CWHR	69%	Good	Multiple Life Stages	Riparian Veg.	DBH	<39% Class 5 and 6	40-54%	55-69%	>69%
SEC	CDFG HAB 8	60-70%	Poor	Multiple Life Stages	Riparian Veg.	Canopy Cover	≤ 69% density "D" across IP-km	70 -79%	> 80%	
NMFS	CDF THP Dataset	3 mi/sq.mi.	Fair	Multiple Life Stages	Sediment Transport	Road Density	>3 miles/sq. mile	3 to 2.5	2.5 to 1.6	<1.6
NMFS	CDF THP Dataset	3.3 mi/sq.mi.	Poor	Multiple Life Stages	Sediment Transport	Road density 100	>1 miles/sq. mile	1-0.5	0.5-0.1	<0.1
NMFS	Many Sources	Good	Good	Multiple Life Stages	Water Quality	Toxicity	Acute	Sublethal or Chronic	No Acute or Chronic	No evidence of toxins or Contaminants
NMFS	Best Prof. judgment	<1 per IP-km	Poor	Spawning Adults	Viability	Adult Density	<1 per IP-km	1-20 per IP-km	20-40 per IP-km	>40 per IP-km
NMFS	Best Prof. judgment	< 0.2 fish/m^2	Poor	Summer Rearing	Viability	Juvenile Density	< 0.2 fish/m^2	0.2-0.5 fish/m^2	0.5-1.0 fish/m^2	>1.0 fish/m^2
NMFS	Best Prof. judgment	<20% IP-km occupied	Poor	Summer Rearing	Viability	Juvenile Distribution	<20% IP-km occupied	20-34%	35-50%	>50%

See Appendix C for a full description of the analysis methods for the Viability Table Reports

* = watershed specific numbers

** = Ratings defined by the distribution of results

Pescadero Creek Threats Across Targets		Spawning Adults	Eggs	Summer Rearing Juveniles	Winter Rearing Juveniles	Smolts	Multiple Life Stages			Overall Threat Rank
Project-specific threats		1	2	3	4	5	6	7	8	
1	Droughts	Medium	Medium	Very High	Medium	Very High	High			Very High
2	Storms and Flooding	High	High	Medium	High	High	Medium			High
3	Agricultural Practices	High	High	High	Medium	Medium	Medium			High
4	Roads and Railroads	High	High	Medium	Medium	Medium	High			High
5	Disease, Predation, and Competition	High	-	High	-	High	-			High
6	Fire and Fuel Management	High	High	Medium	Medium	Medium	Medium			High
7	Logging and Wood Harvesting	High	High	Medium	Medium	Medium	Medium			High
8	Residential and Commercial Development	Medium	Medium	Medium	Medium	Medium	High			High
9	Channel Modification	Medium	Low	Medium	Medium	Medium	High			Medium
10	Water Diversion and Impoundment	Medium	Low	High	Medium	Medium	Medium			Medium
11	Fishing and Collecting	High	-	Medium	Low	Medium	-			Medium
12	Climate Change	Medium	Medium	Medium	Medium	Medium	Medium			Medium
13	Livestock Farming and Ranching	Medium	Medium	Medium	Medium	Medium	Medium			Medium
14	Recreational Areas and Activities	Medium	Low	Medium	Medium	Medium	Medium			Medium
15	Mining	Medium	Low	Medium	Medium	Medium	Low			Medium
16	Hatcheries and Aquaculture	Medium	-	Medium	Low	Medium	Low			Medium
Threat Status for Targets and Project		Very High	High	Very High	High	Very High	High	-	-	Very High

Pescadero Creek (Santa Cruz Mountains) Threats and Associated Recovery Actions

Recovery Strategy Number	Level	Targeted Attribute or Threat	Action Description	Priority Number	Action Duration (Years)	Recovery Partners	Costs ($K)						Comments
							FY1	FY2	FY3	FY4	FY5	Entire Duration	
PeC-A-1.1	Objective	Estuary	Restore and enhance estuary habitat in the watershed.										
PeC-A-1.1.1	Recovery Action	Estuary	Develop Estuary Protection and Enhancement Guidelines to restore estuarine function.	2	20	California Department of Mines and Geology, Campbell Timberland Management, CDFG, Private Landowners						TBD	
PeC-A-1.1.2	Recovery Action	Estuary	Encourage State Parks/DFG/NOAA Fisheries to take a proactive role in resolving the yearly fish kills in Pescadero lagoon. Fish kills in the lagoon are currently affecting steelhead, however – until this issue is resolved – the lagoon is also considered unsuitable for coho salmon.	2	3	CDFG, County of San Mateo, NMFS, State Parks, USFWS	33.33	33.33	33.33			100	Staffing is considered the main cost. Close coordination among stakeholders and regulatory agencies is essential to resolving this issue.
PeC-A-1.1.2.1	Action Step	Estuary	Encourage State Parks to fund and implement restoration actions that benefit CCC coho and CCC steelhead and other special status species in the lagoon. Requirements and goals will vary by species.	3	5	CA Coastal Commission, California Coastal Conservancy, CalTrans, CDFG, County of San Mateo, NMFS, Private Landowners, State Parks, USACE, USFWS	200	200	200	200	200	1,000	Primary life stages targeted for this action are over-wintering and smolt out migration for CCC coho. This cost estimate includes necessary maintenance actions such as culvert gate operations.
PeC-A-1.1.2.2	Action Step	Estuary	Restore the timing of sandbar closure so that it closes in June / July (as it did prior to reconstruction of the Highway 1 bridge) so as to provide adequate time for de-stratification and conversion to freshwater. Early closure is believed necessary to prevent fish kills and maximize lagoon productivity.	2	3	CA Coastal Commission, California Coastal Conservancy, CDFG, County of San Mateo, NMFS, State Parks, USACE, USFWS	23.33	23.33	23.33			70	Three years of experimentation should be adequate to ascertain whether this action produces favorable results in regard to yearly fish kills. If this experiment results in desired results it should be incorporated into ongoing Pescadero operations by State Parks during most water years. This action has a potential to produce significant benefits to rearing steelhead (listed as threatened under the ESA).
PeC-A-1.1.2.3	Action Step	Estuary	Evaluate benefits of temporarily plugging large culverts in spring to determine if blocking tidal flow would reduce the tidal prism and/or alter tidal velocity and timing to a condition resulting in early sandbar formation. If experiments prove successful replace failing culverts in the estuary with fewer, smaller, and/or closable culverts to allow State Parks to maintain functional rearing habitat.	2	5	CDFG, NMFS, RWQCB, State Parks	5.00	5.00	5.00	5.00	5.00	25	Cost are an estimate of the amount of agency personnel time necessary to initiate this project and producing the necessary report. The actual work would likely be very inexpensive.
PeC-A-1.1.2.4	Action Step	Estuary	Evaluate replacement of rusted culverts from North Marsh to facilitate water level and salinity management of the North Marsh.	3	5	CDFG, State Parks, USACE	6.00	6.00	6.00	6.00	6.00	30	
PeC-A-1.1.2.5	Action Step	Estuary	Evaluate existing conservation easements in the Estuary to ensure they are in conformance with original terms and conditions of the easement.	1	5	County of San Mateo, Private Landowners, State Parks						0	This cost should be minimal and should be considered a standard business practice by the entity that has granted conservation easements for private properties in the estuary.
PeC-A-1.1.3	Recovery Action	Estuary	Evaluate reconnection of hydraulic connectivity under Highway 1 at northern end of Pescadero Marsh.										
PeC-A-1.1.3.1	Action Step	Estuary	Encourage State Parks to remove parking lot at north end of Pescadero Marsh if hydraulic connectivity is determined to be a biologically beneficial and viable option for restoring lagoon function.	3	10	CA Coastal Commission, NMFS, State Parks, USFWS	20.00	20.00	20.00	20.00	20.00	200	Parking lot removal should be relatively inexpensive. The total parking lot holds parking spaces for less than 30 cars. Costs can be reduced if nearby disposal areas for asphalt are available.
PeC-A-2.1	Objective	Floodplain	Improve over-winter survival by increasing the frequency and functionality of off-channel habitats.										
PeC-A-2.1.1	Recovery Action	Floodplain	Create flood refuge habitat, such as hydrologically connected floodplains with riparian forest, or remove or setback levees, and use streamway concept where appropriate.										

Pescadero Creek (Santa Cruz Mountains) Threats and Associated Recovery Actions

Recovery Strategy Number	Level	Targeted Attribute or Threat	Action Description	Priority Number	Action Duration (Years)	Recovery Partners	Costs ($K)						Comments
							FY1	FY2	FY3	FY4	FY5	Entire Duration	
PeC-A-2.1.1.1	Action Step	Floodplain	Delineate reaches possessing both potential winter rearing habitat and floodplain areas.	2	5	California Coastal Conservancy, CDFG, County of San Mateo, NMFS, Private Landowners, State Parks	8.00	8.00	8.00	8.00	8.00	40	Standardized assessment methods should be used for this evaluation. Cost may vary depending on landowner access issues and existing data.
PeC-A-2.1.1.2	Action Step	Floodplain	Target habitat restoration and enhancement that will function between winter base flow and flood stage.	2	10	California Coastal Conservancy, CDFG, County of San Mateo, NMFS HCD, NOAA RC, State Parks, USACE						TBD	An evaluation of feasibility is needed to determine where these areas may exist. This action could have direct benefits to coho during the winter period.
PeC-A-2.1.2	Recovery Action	Floodplain	Promote restoration projects designed to create or restore alcove, backchannel, ephemeral tributary, or seasonal pond habitats.	1	60	California Coastal Conservancy, CalTrans, CDFG, County of San Mateo, FEMA, FishNet 4C, NMFS, NRCS, San Mateo RCD, State Parks, USACE, USFWS						TBD	Costs cannot be determined at this time. Costs may be significant and will depend on number of projects constructed. The number of projects will vary depending on landowner participation and acceptance.
PeC-A-2.1.3	Recovery Action	Floodplain	San Mateo County should adopt a policy of "managed retreat" (removal of problematic infrastructure and replacement with native vegetation or flood tolerant land uses) for areas highly susceptible to, or previously damaged from, flooding.										
PeC-A-2.1.3.1	Action Step	Floodplain	Evaluate watershed for infrastructure at high risk of flooding.	2	5	CalTrans, County of San Mateo, FEMA, Private Landowners	15.00	15.00	15.00	15.00	15.00	75	Many of these structures have been identified. FEMA maps of the area should facilitate review.
PeC-A-2.1.3.2	Action Step	Floodplain	Encourage San Mateo County to develop a property easement acquisition funds and acquire grant monies to purchase, through a buyout program, eroding private properties in riparian corridors or properties subject to frequent flooding.	2	60	County of San Mateo, FEMA, Private Landowners, San Mateo RCD, State Parks						TBD	
PeC-A-3.1	Objective	Hydrology	Improve survival at all life stages by restoring the historical spatial and temporal pattern of surface flows throughout spawning, rearing, and migration areas.										
PeC-A-3.1.1	Recovery Action	Hydrology	Work with SWRCB and landowners to improve over summer survival of juveniles by re-establishing summer baseflows (from July 1 to October 1) in rearing reaches that are currently impacted by water use.										
PeC-A-3.1.1.1	Action Step	Hydrology	Promote, via technical assistance and/or regulatory action, the reduction of water use affecting the natural hydrograph, development of alternative water sources, and implementation of diversion regimes protective of the natural hydrograph.	1	60	CDFG, NMFS, San Mateo RCD, SWRCB, Trout Unlimited						TBD	Cost will vary depending on land owner participation and types of projects identified.
PeC-A-3.1.1.2	Action Step	Hydrology	Develop more efficient and coordinated use of water resources to provide increased supply, restore groundwater levels, and increase dry weather baseflows through conjunctive management, use of reclaimed wastewater, and increased storage or utilization of excess winter stream flows.	1	60	CDFG, NMFS, San Mateo RCD, SWRCB						TBD	Costs will vary depending on landowner participation.
PeC-A-3.1.2	Recovery Action	Hydrology	Re-establish natural flow regime to improve adult migration to spawning habitats.										
PeC-A-3.1.2.1	Action Step	Hydrology	Conduct water supply pumping overnight to the extent feasible, particularly for upstream diversions.	2	60	CDFG, County of San Mateo, NMFS						0	Cost should be minimal once legal diversions and their impacts are determined.

Pescadero Creek (Santa Cruz Mountains) Threats and Associated Recovery Actions

Recovery Strategy Number	Level	Targeted Attribute or Threat	Action Description	Priority Number	Action Duration (Years)	Recovery Partners	Costs ($K)						Comments
							FY1	FY2	FY3	FY4	FY5	Entire Duration	
PeC-A-3.1.2.2	Action Step	Hydrology	Promote off-channel storage to reduce impacts of water diversion (e.g. storage tanks for rural residential users).	2	60	CDFG, County of San Mateo, Farm Bureau, Mid Penninsula Open Space District, NMFS HCD, NOAA RC, NRCS, POST, Private Landowners, San Mateo RCD, State Parks, SWRCB, Trout Unlimited						TBD	Water augmentation costs were estimated in regards to the Shasta-Scott Pilot Program (DFG 2004). These results indicated potentially significant costs. Off channel storage cost will vary depending on landowner participation, regulatory agency participation, and permitting requirements. Costs cannot be estimated for Pescadero at this time.
PeC-A-3.1.3	Recovery Action	Hydrology	Institutionalize programs to purchase easements on water rights to encourage the maintenance of surface flows.										
PeC-A-3.1.3.1	Action Step	Hydrology	Provide incentives to water rights holders willing to convert some or all of their water right to instream use via petition change of use and §1707 (DFG 2004).	1	20	CDFG, NMFS, Private Landowners, SWRCB						TBD	The price at which water is sold on environmental water markets is determined by negotiations between landowners and purchasing entities. The aggregate fiscal cost of water acquisition will depend on the quantity of water acquired and whether water rights will be permanently transferred or purchased for single periods of time.
PeC-A-3.1.4	Recovery Action	Hydrology	To improve connectivity of surface flows with groundwater reduce aggradation and overall sediment load at the watershed scale by treating roads and sources of mass wasting.	2	60	CalFire, CalTrans, County of San Mateo, Mid Penninsula Open Space District, San Mateo RCD, State Parks						TBD	Costs are estimated under Roads
PeC-A-5.1	Objective	Passage	Identify and remove existing passage barriers.										
PeC-A-5.1.1	Recovery Action	Passage	Use NMFS Guidelines for Salmonid Passage at Stream Crossings (NMFS 2001a) and appropriate barrier databases when developing new or retrofitting existing road crossings.	3	60	CalFire, California Coastal Conservancy, CalTrans, CDFG, County of San Mateo, FEMA, FishNet 4C, Mid Penninsula Open Space District, NMFS, NRCS, RWQCB, San Mateo RCD, State Parks						TBD	Replacement of culverts/bridges and upgrading to NMFS standards will result in increased cost for materials and construction but will likely result in structures that can withstand large storm events better than many existing structures.
PeC-A-6.1	Objective	Pool Habitat	Improve summer rearing, winter rearing, and smolt survival by increasing instream channel complexity in potential rearing and migration reaches. Additionally, improve egg survival by reducing redd scour in streams characterized by high bedload mobility.										
PeC-A-6.1.1	Recovery Action	Pool Habitat	Encourage the development and implementation of large woody debris supplementation programs to increase stream complexity and gravel retention, and improve pool frequency and depth (DFG 2004).										

Pescadero Creek (Santa Cruz Mountains) Threats and Associated Recovery Actions

Recovery Strategy Number	Level	Targeted Attribute or Threat	Action Description	Priority Number	Action Duration (Years)	Recovery Partners	Costs ($K)						Comments
							FY1	FY2	FY3	FY4	FY5	Entire Duration	
PeC-A-6.1.1.1	Action Step	Pool Habitat	Identify historic CCC coho salmon habitats lacking in channel complexity, and promote restoration projects designed to create or restore complex habitat features that provide for localized pool scour, velocity refuge, and cover. Prioritize Phase 1 areas and lower mainstem reaches of Pescadero Creek.	1	10	California Coastal Conservancy, CalTrans, CDFG, County of San Mateo, FEMA, Mid Penninsula Open Space District, NMFS, NRCS, Private Landowners, RWQCB, San Mateo RCD, State Parks, USACE, USFWS	4.00	4.00	4.00	4.00	4.00	40	
PeC-A-6.1.1.2	Action Step	Pool Habitat	Incorporate large woody material into stream bank protection projects, where appropriate. Do not use aqua logs (cylindrical concrete rip rap).	2	60	CDFG, County of San Mateo, FEMA, NMFS, Private Consultants, Private Landowners, San Mateo RCD, USACE						0	Costs should be minimal. This recommendation would be implemented only when an existing problem has been identified and is in needed of protection.
PeC-A-6.1.1.3	Action Step	Pool Habitat	Educate landowners, land managers, and County and municipal staffs on the importance of LWD to coho survival and recovery, and watershed processes.	1	2	CalTrans, CDFG, County of San Mateo, FEMA, FishNet 4C, NMFS, San Mateo RCD, State Parks	7.50	7.50				15	Information in this recovery plan may serve as a source of information regarding the importance of LWD
PeC-A-6.1.1.4	Action Step	Pool Habitat	Install properly sized large woody debris to appropriate viability table targets.	1	20	CalFire, California Coastal Conservancy, CalTrans, CDFG, County of San Mateo, FEMA, FishNet 4C, Mid Penninsula Open Space District, NOAA RC, NRCS, Private Landowners, San Mateo RCD, USACE	85.00	85.00	85.00	85.00	85.00	1,700	Estimates in the State Coho Plan indicate that LWD placement costs about $20,000 per stream mile; costs rise as the width of the water bodies increase and as the size of the material to be placed in channels grows. Currently, the Pescadero watershed lacks a LWD inventory but available information indicates LWD is lacking. Assuming universal landowner approval and permission, the cost to install LWD in the 61 IP-km (38mi) = $760,000. We believe this cost would be significantly more in the Pescadero watershed due to concerns regarding LWD stability and flooding that would require more engineering. Additionally, the LWD targets proposed in this plan likely exceed those estimated in the State Plan resulting in increased costs.
PeC-A-6.1.2	Recovery Action	Pool Habitat	Encourage landowners to implement restoration projects as part of their ongoing operations in stream reaches where large woody debris is lacking.	1	60	CalFire, California Coastal Conservancy, CalTrans, CDFG, County of San Mateo, FEMA, FishNet 4C, Mid Penninsula Open Space District, NMFS, NRCS, Private Landowners, RWQCB, San Mateo RCD, USACE						TBD	Cost should be minimal. This recommendation should be adopted as a reoccurring recommendation for all restoration projects by individuals, agencies, and organizations that fund restoration projects.

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Recovery Strategy Number	Level	Targeted Attribute or Threat	Action Description	Priority Number	Action Duration (Years)	Recovery Partners	Costs ($K)						Comments
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PeC-A-6.1.3	Recovery Action	Pool Habitat	Encourage retention and natural rates of recruitment of large woody debris for all historic CCC coho salmon streams to maintain and enhance current stream complexity, pool frequency, and depth. Consult a hydrologist and qualified fisheries biologist before removing wood from streams.	1	60	CalFire, California Coastal Conservancy, CalTrans, CDFG, County of San Mateo, FEMA, FishNet 4C, Mid Penninsula Open Space District, NMFS, NRCS, Private Consultants, RWQCB, San Mateo RCD, USACE						0	Cost should be minimal. This recommendation should be adopted as a reoccurring recommendation for all restoration projects by individuals, agencies, and organizations that fund restoration projects.
PeC-A-7.1	Objective	Riparian Vegetation	Improve the structure and composition of riparian areas to provide shade, large woody debris input, nutrient input, bank stabilization, and other CCC coho salmon needs.										
PeC-A-7.1.1	Recovery Action	Riparian Vegetation	Promote streamside conservation measures, including conservation easements, setbacks, and riparian buffers (DFG 2004).	2	60	CalFire, CalTrans, CDFG, County of San Mateo, FEMA, FishNet 4C, Mid Penninsula Open Space District, NMFS, San Mateo RCD						TBD	Cost will vary depending on landowner participation and market conditions. Conservation easements should be easements should be acquired opportunistically in high priority subbasins within the Pescadero Creek watershed.
PeC-A-7.1.2	Recovery Action	Riparian Vegetation	Assess riparian canopy and impacts of exotic vegetation (e.g., Arundo donax, etc.), prioritize and develop riparian habitat reclamation and enhancement programs (DFG 2004).	3	20	CalFire, County of San Mateo, Mid Penninsula Open Space District, NRCS, Private Landowners, San Mateo RCD, State Parks						TBD	Estimated cost of watershed wide inventory. Reports should assess risk, impacts, and removal priorities.
PeC-A-8.1	Objective	Sediment	Improve habitat conditions at multiple life stages by reducing sediment inputs to the stream at the watershed scale.										
PeC-A-8.1.1	Recovery Action	Sediment	Work with landowners to assess the effectiveness of erosion control measures throughout the winter period.	2	10	CalFire, County of San Mateo, Mid Penninsula Open Space District, NRCS, Private Landowners, San Mateo RCD, State Parks	4.00	4.00	4.00	4.00	4.00	40	Rough estimate for outreach efforts. These efforts should be directed towards landowners in high risk areas. This does not include the cost for a similar effort directed specifically to the Agricultural community.
PeC-A-8.1.1.1	Action Step	Sediment	Permitting agencies (State, Federal, and local) should evaluate all authorized erosion control measures during the winter period.	2	60	CalFire, California Department of Mines and Geology, CalTrans, CDFG, County of San Mateo, FEMA, NMFS PRD, NRCS, San Mateo RCD						0	This should be considered a standard business practice.
PeC-A-8.1.2	Recovery Action	Sediment	Restore the number and function of log jams to store fine sediment to improve the quality of substrate for salmonids.	1	20	CalFire, CalTrans, CDFG, County of San Mateo, NMFS, Private Landowners, RWQCB, San Mateo RCD						TBD	The recommendation will facilitate the sorting and routing of gravels and improve instream rearing conditions. Costs are estimated under Pool Habitat.

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PeC-A-9.1	Objective	Viability	Develop and implement a monitoring program to evaluate the performance of recovery efforts.										
PeC-A-9.1.1	Recovery Action	Viability	Measure or estimate response of key habitat attributes to recovery efforts across the watershed.	2	12								Other monitoring efforts are occurring in the Santa Cruz Mtns Diversity Stratum and therefore, Pescadero ranks lower in overall priority in the immediate future. However, it will ultimately be important to begin assessing the overall run size in Pescadero. Redd monitoring may be less expensive than establishing a site to count migrating adults and smolts.
PeC-A-9.1.1.1	Action Step	Viability	Develop standardized watershed assessments within sub-watersheds to define limiting factors specific to those areas. Encourage all major landowners to develop similar assessment methods.	2	10	CalFire, CDFG, NMFS, RWQCB, USFWS						TBD	All assessments should use standardized methods. Methods should be consistent across the ESU or at a minimum the Santa Cruz Mtns Diversity Stratum. Results from past assessments can be used in some circumstances to jump start restoration actions and need not necessarily wait upon completion of a standardized assessment protocol.
PeC-A-9.1.2	Recovery Action	Viability	Monitor population status for response to recovery actions.										
PeC-A-9.1.2.1	Action Step	Viability	Establish a life cycle station in Pescadero Creek or utilize assessment methods that comport to those of Gallagher and Gallagher (2005) or the Coastwide Monitoring Plan.	2	12	CDFG, NOAA SWFSC, Private Consultants, Private Landowners, State Parks	50.00	50.00	50.00	50.00	50.00	600	Costs may vary significantly. This estimate assumes redd/carcass counts on a subset of streams within the watershed.
PeC-A-10.1	Objective	Water Quality	Improve summer rearing survival by reducing instream temperatures in potential rearing reaches. See also strategies for restoring and enhancing riparian vegetation.										
PeC-A-10.1.1	Recovery Action	Water Quality	Implement actions to maintain and restore water temperatures to meet habitat requirements for CCC coho salmon in specific streams (DFG 2004).										
PeC-A-10.1.1.1	Action Step	Water Quality	Implement education programs and modify policies and procedures to improve riparian corridor protection, maintain channel integrity, implement alternatives to hard bank protection, and retain large woody debris.	2	10	CalFire, CalTrans, County of San Mateo, Mid Penninsula Open Space District, San Mateo RCD	2.00	2.00	2.00	2.00	2.00	20	
PeC-A-10.1.1.2	Action Step	Water Quality	Encourage County of San Mateo to establish wider riparian buffers in residential and urban areas for Pescadero Creek (and other historic CCC coho salmon coastal drainages.	2	10	County of San Mateo						TBD	Other monitoring efforts are occurring in the Santa Cruz Mtns Diversity Stratum and therefore, Pescadero ranks lower in overall priority in the immediate future. However, it will ultimately be important to begin assessing the overall run size in Pescadero. Redd monitoring may be less expensive than establishing a site to count migrating adults and smolts.
PeC-A-10.1.1.3	Action Step	Water Quality	Plant native vegetation to promote streamside shade.	3	60	CalFire, County of San Mateo, Farm Bureau, FishNet 4C, Mid Penninsula Open Space District, NOAA RC, NRCS, Private Landowners, San Mateo RCD	2.50	2.50	2.50	2.50	2.50	150	Costs are difficult to estimate until and evaluation of candidate areas is conducted. Initial focus should be in lower reaches lacking streamside shade. Costs will vary depending on landowner participation and cost sharing.
PeC-A-11.1	Objective	Agricultural Practices	Ensure current populations of CCC coho salmon are protected from harm or take and protect all historical habitats from further habitat degradation.										
PeC-A-11.1.1	Recovery Action	Agricultural Practices	Reduce impacts of sediment inputs related to agricultural practices.										

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PeC-A-11.1.1.1	Action Step	Agricultural Practices	Work with landowners to assess the effectiveness of erosion control measures throughout the winter period.	2	60	County of San Mateo, Farm Bureau, NRCS, San Mateo RCD							This is a focused strategy to control sediment. Additional sediment control recommendations are presented under Sediment. Cost estimate would only apply to outreach to the agricultural community.
PeC-A-11.1.1.2	Action Step	Agricultural Practices	Encourage Regional Water Quality Control Board to extend greater oversight regarding effectiveness of erosion control measures.	2	60	RWQCB						0	This should be a standard business practice of the RWQCB.
PeC-A-11.1.1.3	Action Step	Agricultural Practices	Implement programs similar to the Sotoyome Resource Conservation District's Fish Friendly Farming practices (DFG 2004).	2	10	County of San Mateo, Farm Bureau, FishNet 4C, Private Landowners, San Mateo RCD	10.00	10.00	10.00	10.00	10.00	100	Cost is a rough estimate and could be significantly reduced if Sotoyome recommendations are directly adopted with minimal site specific adaptations. More site specific issues will likely increase costs. A large portion of the estimated cost would likely be incurred from outreach activities. These cost estimates do not include matching funding or land owner expenses. Note that these programs and take minimization measures and are not a no take standard.
PeC-A-11.1.1.4	Action Step	Agricultural Practices	Promote the re-vegetation of the native riparian plant community within inset floodplains and riparian corridors.	2	60	County of San Mateo, Farm Bureau, FishNet 4C, Mid Penninsula Open Space District, Private Landowners, San Mateo RCD						TBD	Re-vegetation would also facilitate amelioration of instream temperatures and would provide a source for future LWD recruitment. This recommendation will likely be received with some resistance by some landowners. Costs will vary depending on landowner participation and existing landuse.
PeC-A-11.1.1.5	Action Step	Agricultural Practices	Maintain intact and properly functioning riparian buffers to filter and prevent fine sediment input from entering streams.	1	60	CDFG, County of San Mateo, FishNet 4C, Mid Penninsula Open Space District, Private Landowners, San Mateo RCD						0	Maintaining intact buffers will incur no additional costs.
PeC-A-11.1.1.6	Action Step	Agricultural Practices	Purchase conservation easements from landowners that currently have ongoing grazing or agricultural operations along the estuary.	3	60	CDFG, County of San Mateo, Farm Bureau, Mid Penninsula Open Space District, NMFS, POST, Private Landowners, San Mateo RCD, State Parks						TBD	Costs will vary depending on the amount of willing landowners participating in the program.
PeC-A-12.1	Objective	Channel Modification	Restore or minimize impacts to watershed processes (e.g., riparian, sediment transport, hydrology and estuary function).										
PeC-A-12.1.1	Recovery Action	Channel Modification	Thoroughly investigate the ultimate cause of channel instability prior to engaging in site specific channel modifications and maintenance. Identify and target remediation of watershed process disruption as an overall priority.										
PeC-A-12.1.1.1	Action Step	Channel Modification	Evaluate whether proposed stabilization projects will lead to additional instability either up- or downstream.	1	60	California Department of Mines and Geology, CalTrans, CDFG, County of San Mateo, FEMA, Mid Penninsula Open Space District, NMFS, NRCS, POST, Private Consultants, RWQCB, San Mateo RCD, USACE						0	This should be considered a standard business practice for all practitioners of instream bank stabilization.

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							FY1	FY2	FY3	FY4	FY5	Entire Duration	
PeC-A-12.1.1.2	Action Step	Channel Modification	Eliminate the use of gabion baskets and undersized rock within the bankfull channel.	1	60	CalFire, CDFG, County of San Mateo, FEMA, FishNet 4C, Mid Penninsula Open Space District, NOAA RC, POST, Private Landowners, RWQCB, San Mateo RCD, USACE						0	
PeC-A-12.1.1.3	Action Step	Channel Modification	Where feasible, remove obsolete bank stabilization structures from the channel which contribute to channel incision and reduced habitat complexity.	2	60	CalFire, CalTrans, County of San Mateo, FishNet 4C, Mid Penninsula Open Space District, NOAA RC, POST, Private Landowners, San Mateo RCD						TBD	Costs cannot be determined at this time. An evaluation of the number of structures is needed and costs will vary depending on site specific conditions.
PeC-A-12.1.2	Recovery Action	Channel Modification	Develop a mitigation policy that requires in-kind replacement of removed large woody debris at a 3:1 ratio.	2	5	CDFG, NMFS, San Mateo County	8.00	8.00	8.00	8.00	8.00	40	Policy could be applied to all targeted San Mateo County streams. Estimated cost of developing a new policy and staff time.
PeC-A-14.1	Objective	Disease, Predation, and Competition	Evaluate suitable methods and levels of marine mammal control when predation is identified as a significant limiting factor to recovery on an individual watershed basis.	3	20	CDFG, NMFS, NMFS OLE, NOAA SWFSC, Public						TBD	Marine mammal control likely to be a very expensive action depending on method of control and due to significant permitting requirements. Costs cannot be determined at this time. This action should only be considered as an option of last resort and where a problematic situation is clearly documented.
PeC-A-14.2	Objective	Disease, Predation, and Competition	Implement regulatory, abatement, and education measures to prevent the invasion of exotic species, (including exotic plants and potentially striped bass).	2	10	CA Coastal Commission, California Coastal Conservancy, CDFG, County of San Mateo, NRCS, Private Landowners, San Mateo RCD						TBD	Costs will vary depending on abatement methods used which will vary depending on problems identified.
PeC-A-15.1	Objective	Droughts	All Federal, State and local, planning should include considerations and allowances that ensure continued operations during droughts while also providing for CCC coho salmon recovery needs.										
PeC-A-15.1.1	Recovery Action	Droughts	Identify and eliminate depletion of base flows from unauthorized water uses.										
PeC-A-15.1.1.1	Action Step	Droughts	Encourage SWRCB to bring illegal water diverters and out-of-compliance diverters into compliance with State law.	1	5	CDFG, County of San Mateo, NMFS, SWRCB	60.00	60.00	60.00	60.00	60.00	300	Cost will likely be staff time expense.
PeC-A-15.1.1.2	Action Step	Droughts	Work with water diverters streams to assure adequate and proper consideration is given to fish needs. Develop agreements that will minimize water-use conflicts and impacts on fish and wildlife resources during drought conditions.	2	20	CDFG, County of San Mateo, NMFS, SWRCB						TBD	Critical flow values should include minimum bypass flow requirements to support upstream adult migration during winter months and rearing habitat conditions in summer and fall months.
PeC-A-15.1.2	Recovery Action	Droughts	Implement water conservation strategies that provide for drought contingencies without relying on interception of surface flows or groundwater depletion.										
PeC-A-15.1.2.1	Action Step	Droughts	Critical flow values should include minimum bypass flow requirements to support upstream adult migration during winter months and juvenile rearing in the summer and fall months.	1	5	CDFG, NMFS HCD, SWRCB						TBD	This cost may be significant and will require development of a water budget for Pescadero Creek.

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PeC-CCC-15.1.3	Recovery Action	Droughts	Increase enforcement patrols by DFG and NMFS OLE in sensitive spawning and rearing areas.	2	60	CDFG Law Enforcement, NMFS OLE							
PeC-CCC-16.1	Objective	Fire and Fuels Management	Develop measures protective of salmonids during fire suppression activities.										
PeC-CCC-16.1.1	Recovery Action	Fire and Fuels Management	Establish fire contingency plan developed by experts from CalFire, local fire districts, San Mateo RCD, and regulatory agencies with expertise in fisheries issues.										
PeC-CCC-16.1.1.1	Action Step	Fire and Fuels Management	Encourage CalFire to provide plan to all non-County fire fighters when providing fire fighting assistance in the Pescadero Creek watershed (and all other watersheds in the County).	1	5	CalFire						0	Cost of providing the plan is minimal.
PeC-CCC-16.1.1.2	Action Step	Fire and Fuels Management	In the event of a wildfire, we recommend CalFire Resource Advisors contact the resource agencies for ESA consultation (or technical assistance) regarding the incident. The resource agencies can provide guidance regarding critical resources in the area that may be affected by fire fighting actions.	2	60	CalFire						0	Guidance could include informing CalFire of sensitive biological resources in the watershed as well as recommendations regarding watersource locations (e.g., picking up water from areas other than (Pescadero lagoon when using helicopters). Protocols, similar to those developed between USFWS/USFS/BLM/NMFS could serve as a template.
PeC-CCC-16.1.1.3	Action Step	Fire and Fuels Management	Implement sedimentation reduction techniques in concert with prescribed fire techniques to minimize sediment impacts to various coho salmon life stages.	1	60	CalFire						0	This recommendation should be considered a standard practice.
PeC-CCC-16.1.1.4	Action Step	Fire and Fuels Management	Immediately implement appropriate sediment control measures following completion of fire suppression while fire fighters and fire fighting equipment are on site.	1	60	CalFire						0	This recommendation will result in a net cost savings. Reduce erosion from building fire lines by: out sloping, installing waterbars at appropriate intervals, breaks in fire lines (pick up blades on dozers occasionally, especially where fuels are sparse0, minimize gradient of fire lines, change fire-line alignment onto occasional flats as often as possible. To maximum extent possible maintain the ground topography.
PeC-CCC-16.1.1.5	Action Step	Fire and Fuels Management	Re-contour any new facility sites as soon as possible after site clean up and fire.	3	60	CalFire						0	Standard business practice.
PeC-CCC-16.2	Objective	Fire and Fuels Management	Identify historical fire frequency, intensities and durations and manage fuel loads in a manner consistent with historical parameters.										
PeC-CCC-16.2.1	Recovery Action	Fire and Fuels Management	Conduct fuel load monitoring and compare the results to estimated historical fuel loads.										
PeC-CCC-16.2.1.1	Action Step	Fire and Fuels Management	Use managed fire to promote revegetation of species that filter out fine sediment.	3	60	CalFire						TBD	
PeC-CCC-16.2.1.2	Action Step	Fire and Fuels Management	Review prescribed fire plans to ensure they provide adequate protection for riparian corridors.	2	5	CalFire	4.00	4.00	4.00	4.00	4.00	20	
PeC-CCC-16.2.1.3	Action Step	Fire and Fuels Management	Reassess fire risk every ten years.	3	60	CalFire, County of San Mateo						TBD	
PeC-CCC-16.2.1.4	Action Step	Fire and Fuels Management	Work with County planners to define future impacts of proposed urban and infrastructure development on fire suppression and fuel load buildup.	3	60	CalFire, County of San Mateo						TBD	
PeC-CCC-17.1	Objective	Fishing and Collecting	Minimize bycatch of CCC coho salmon from offshore commercial and sport fishing.										
PeC-CCC-17.1.1	Recovery Action	Fishing and Collecting	Conduct outreach and education to anglers to reduce hook-and-release injury and mortality, and on methods to reduce salmonid gut hooking.	2	3	CDFG, NMFS						TBD	
PeC-CCC-17.1.2	Recovery Action	Fishing and Collecting	Prohibit offshore fishing until January 15 (or until sandbar opens naturally) within one mile of the river mouth.	2	3	CDFG, NMFS						TBD	If sandbar breeches due to unauthorized human actions and drought conditions do not provide adequate flows in Pescadero for upmigration, consider waiting until the first significant rainfall event and/or January 15.

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PeC-CCC-17.1.2.1	Action Step	Fishing and Collecting	Work with DFG to monitor the river mouth until river flows naturally breach the sandbar.	2	60	CDFG, NMFS						0	Some fishing has been documented in waterways prior to breaching. Cost should be minimal and this should be considered a standard DFG business practice.
PeC-CCC-17.2	Objective	Fishing and Collecting	Minimize interception of CCC coho salmon during the trout and steelhead freshwater sport fishing season.										
PeC-CCC-17.2.1	Recovery Action	Fishing and Collecting	Work with DFG to improve the Fishing Regulation manual to clearly identify differences in body morphology of all potentially present adult salmonids with color photos of diagnostic features (e.g., caudal fin spotting, caudal fin shape, coloration of lower jaw, peduncle width, etc.).	2	3	CDFG, NMFS						TBD	Cost should be minimal.
PeC-CCC-17.2.2	Recovery Action	Fishing and Collecting	Work with DFG to conduct correlative flow studies that assess critical riffles or other passage impediments in the watershed.	2	3	CDFG, NMFS	16.67	16.67	16.67			50	This cost may be less than projected depending on the quality of existing habitat typing information for the watershed
PeC-CCC-17.2.3	Recovery Action	Fishing and Collecting	Promote CalTip to discourage poaching (DFG 2004).	2	3	CDFG, NMFS						TBD	
PeC-CCC-19.1	Objective	Livestock Farming and Ranching	Promote grazing and ranching practices that protect and restore CCC coho salmon habitats.										
PeC-CCC-19.1.1	Recovery Action	Livestock Farming and Ranching	Aid landowners willing to fence off riparian areas in choosing alternatives water source sites (preferably ones that are hydrologically disconnected from stream flows).	3	60	Farm Bureau, NOAA RC, Private Landowners, RWQCB, San Mateo RCD						TBD	DFG 2004 estimates fencing costs in 2002 dollars at $4 per LF. Costs may be higher in the Pescadero watershed. Total costs are unknown and may vary depending on landowner participation and total amount of habitat fenced.
PeC-CCC-19.1.2	Recovery Action	Livestock Farming and Ranching	To minimize gully initiation, grazing should be kept at relatively low intensities on the steeper slopes in this area.	3	60	Farm Bureau, FishNet 4C, RWQCB, San Mateo RCD, State Parks						0	The lower Pescadero is vulnerable to gully initiation. Establishing conservative targets would reduce the total number of AUM but would also reduce restoration costs to address gullies.
PeC-CCC-19.1.2.1	Action Step	Livestock Farming and Ranching	Establish conservative residual dry matter (RDM) target per acre that ensures area is not overgrazed with 1000 lbs RDM (residual dry matter)/acre left at end of grazing season. Remove cattle from pasture before soils dry out.	3	5	CDFG, NMFS HCD, SWRCB						TBD	
PeC-CCC-19.1.3	Recovery Action	Livestock Farming and Ranching	Locate water sources away from riparian areas.	3	60	Farm Bureau, FishNet 4C, NRCS, Private Landowners, San Mateo RCD						TBD	DFG estimated water control structures at $15,000 each. The cost of moving a water source for grazing cattle is likely much lower. However, costs cannot be estimated because landowner participation is unknown and site specific conditions are currently unknown.
PeC-CCC-19.1.4	Recovery Action	Livestock Farming and Ranching	Reduce the adverse effects of grazing and ranching to water quality in the Bradley Creek subwatershed.	3	30	Farm Bureau, FishNet 4C, Private Landowners, San Mateo RCD						TBD	
PeC-CCC-20.1	Objective	Logging and Wood Harvesting	Ensure current populations of CCC coho salmon are protected from harm or take and protect all historical habitats from further habitat degradation.										
PeC-CCC-20.1.1	Recovery Action	Logging and Wood Harvesting	Provide information to the appropriate regulatory bodies regarding the status of CCC coho salmon, priority watershed processes needing consideration, and recommendations that provide no take or incidental take assurances.	2	60	Board of Forestry, CalFire, CDFG, County of San Mateo, NMFS, SWRCB, USACE, USEPA, USFWS						0	This recovery plan could serve as a source of information for outreach.
PeC-CCC-20.1.2	Recovery Action	Logging and Wood Harvesting	Establish greater oversight and post-harvest monitoring by the permitting agency of operations within Core, Phase I and Phase II CCC coho salmon areas.										
PeC-CCC-20.1.2.1	Action Step	Logging and Wood Harvesting	Assign NMFS staff to conduct THP reviews of the highest priority areas using revised "Guidelines for NMFS Staff when Reviewing Timber Operations: Avoiding Take and Harm of Salmon and Steelhead" (NMFS 2004).	2	10	NMFS						0	See San Lorenzo River for an estimate of costs for the Santa Cruz Mountains Diversity Stratum.

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PeC-A-20.2.1	Recovery Action	Logging and Wood Harvesting	Coordinate with the agencies that authorize conversions to minimize conversions in key watersheds and discourage forestland conversions.										
PeC-A-20.2.1.1	Action Step	Logging and Wood Harvesting	Discourage San Mateo County from rezoning forestlands to rural residential or other land uses (e.g., vineyards).	2	3	CDFG, NMFS						0	
PeC-A-20.2.1.2	Action Step	Logging and Wood Harvesting	Discourage home building or other incompatible land use in areas identified as timber production zones (TPZ).	2	3	CDFG, NMFS						TBD	Cost should be minimal and long-term savings due to reduced watershed impacts should be significant.
PeC-A-20.3	Objective	Logging and Wood Harvesting	Provide for properly functioning watershed processes (e.g., cycles of wood, water and sediment) by promoting long term sustainable forestry practices that support coho salmon habitats.										
PeC-A-20.3.1	Recovery Action	Logging and Wood Harvesting	Address sediment and runoff sources from road networks and other actions that deliver sediment and runoff to stream channels.	2	60	Board of Forestry, CalFire, CDFG, County of San Mateo, NMFS, SWRCB, USACE, USEPA, USFWS						0	This recovery plan could serve as a source of information for outreach. See Roads and Railroads strategies for more detail on sediment control recommendations.
PeC-A-20.3.1.1	Action Step	Logging and Wood Harvesting	Extend the monitoring period and upgrade THP road maintenance after harvest.	2	60	Board of Forestry, CalFire, Private Landowners						TBD	Cost is contingent on future rate of harvest and road network.
PeC-A-20.3.1.2	Action Step	Logging and Wood Harvesting	New THPs should identify problematic legacy roads within WLPZ's, decommission them, and revegetate the area with appropriate native species.	2	60	CalFire, CDFG, Private Landowners, SWRCB						TBD	Most of these costs will likely be associated with planned ongoing harvest plans.
PeC-A-20.3.1.3	Action Step	Logging and Wood Harvesting	Encourage tree retention on the axis of headwall swales. Any deviations should be reviewed and receive written approval by a licensed engineering geologist.	2	60	CalFire, CDFG, Private Landowners						TBD	Cost should be minimal.
PeC-A-20.3.2	Recovery Action	Logging and Wood Harvesting	Allow trees in riparian areas to age, die, and recruit into the stream naturally.										
PeC-A-20.3.2.1	Action Step	Logging and Wood Harvesting	Manage riparian areas for their site potential composition and structure.	3	60	CalFire, Private Landowners						TBD	Cost of managing riparian areas is anticipated to be minimal.
PeC-A-20.3.3	Recovery Action	Logging and Wood Harvesting	Conduct conifer release to promote growth of larger diameter trees where appropriate.	3	30	CalFire, Private Landowners						TBD	
PeC-A-23.1	Objective	Residential and Commercial Development	Improve stream maintenance practices to protect instream complexity, hydrologic processes and riparian functions.										
PeC-A-23.1.1	Recovery Action	Residential and Commercial Development	Maintain current LWD, boulders, and other structure-providing features to maintain current stream complexity, pool frequency, and depth (DFG 2004). Removal should only occur after careful review and consideration.										
PeC-A-23.1.1.1	Action Step	Residential and Commercial Development	Educate county and city public works departments, flood control districts, and planning departments, etc., on the critical importance of maintaining riparian vegetation, instream LWD, and LWD recruitment.	1	60	CDFG, County of San Mateo, FishNet 4C, NMFS, USACE						TBD	
PeC-A-23.1.1.2	Action Step	Residential and Commercial Development	Remove logs and debris from streams only as a “last resort” (i.e., failure to remove them will certainly cause the loss of an essential facility) after consultation with a hydrologist and/or qualified fisheries biologist.	1	60	CalTrans, CDFG, County of San Mateo, FEMA, NMFS PRD, Private Landowners, USACE						TBD	Costs may be highly variable depending on water year and flooding. Years of lower rainfall will likely have less need for site by site evaluation and costs will be less in those years. Cost will be significantly greater in wet years.
PeC-A-23.2	Objective	Residential and Commercial Development	Maintain and restore hydrologic function, protect riparian and floodplain areas, and minimize adverse effects to water quality and instream rearing habitats resulting from commercial and urban development.										
PeC-A-23.2.1	Recovery Action	Residential and Commercial Development	Existing areas with floodplains or off channel habitats should be protected from future urban development of any kind.										See recommended strategies for Floodplains and Riparian areas.

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Recovery Strategy Number	Level	Targeted Attribute or Threat	Action Description	Priority Number	Action Duration (Years)	Recovery Partners	Costs ($K)						Comments
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PeC-A-23.2.1.1	Action Step	Residential and Commercial Development	Encourage San Mateo to develop property easement acquisition funds and acquire grant monies to purchase eroding private properties in riparian corridors or properties subject to frequent flooding though a buyout program.	2	60	County of San Mateo						TBD	
PeC-A-23.2.1.2	Action Step	Residential and Commercial Development	Design new development to allow streams to meander in historical patterns, Protecting riparian zones and their floodplains or channel migration zones averts the need for bank erosion control in most situations.	1	60	CalTrans, County of San Mateo, FEMA, Private Landowners, USACE						0	Costs should be minimal if this concept is adopted early in the planning process for all new development.
PeC-A-23.2.1.3	Action Step	Residential and Commercial Development	Land use zoning should be appropriate to the site and be tolerant to anticipated conditions (e.g., tolerant to frequent flooding).	1	60	County of San Mateo, FEMA, Private Landowners, Public, USACE						0	
PeC-A-23.2.2	Recovery Action	Residential and Commercial Development	Support the development and implementation of regulations for activities that intercept groundwater recharge (e.g., use of subsurface tiles in vineyards, impervious surfaces, etc.).	2	5	CDFG, County of San Mateo, Public, SWRCB						0	Costs of changing existing regulations should be minimal. Many existing templates for this type of action already exist and could be incorporated into new regulations.
PeC-A-23.2.3	Recovery Action	Residential and Commercial Development	Avoid, or at a minimum regulate, the use of commercial and industrial products (e.g. pesticides) with high potential for contamination of local waterways.										
PeC-A-23.2.3.1	Action Step	Residential and Commercial Development	Work with jurisdictional agencies to prohibit and or restrict transport of toxic chemicals on the Pescadero road corridor through the Pescadero Creek watershed.	2	60	CalTrans, CDFG, County of San Mateo, NMFS						TBD	
PeC-A-23.2.3.2	Action Step	Residential and Commercial Development	Encourage increased oversight by appropriate regulatory agencies of activities that use hazardous commercial and industrial products in the watershed.	2	60	CalTrans, CDFG, County of San Mateo, RWQCB, USEPA						TBD	
PeC-A-23.2.4	Recovery Action	Residential and Commercial Development	Sediment from existing and future commercial and urban development should be reduced to magnitudes appropriate to the geological setting of the watershed, resulting in no net increase in sedimentation over natural limits.										
PeC-A-23.2.4.1	Action Step	Residential and Commercial Development	Maintain intact and properly functioning riparian buffers to filter and prevent fine sediment input from entering streams.	1	60	CalFire, CalTrans, County of San Mateo, Mid Penninsula Open Space District, POST, RWQCB, USACE						0	Costs should be minimal if this concept is adopted early in the planning process for all new development.
PeC-A-23.2.4.2	Action Step	Residential and Commercial Development	Encourage counties and local municipalities to expand riparian buffer widths for new development (including redevelopment).	2	60	County of San Mateo						TBD	Costs cannot be determined at this time
PeC-A-23.2.4.3	Action Step	Residential and Commercial Development	Design new developments to avoid unstable slopes, wetlands, areas of high habitat value, and similarly constrained sites that occur adjacent to a CCC coho salmon watercourse.	2	60	CalTrans, CDFG, County of San Mateo, FEMA, Private Landowners, Public, RWQCB, USACE						TBD	Stringent review by permitting agencies is expected to reduce costs associated with poorly planned and poorly located developments.
PeC-A-23.2.4.4	Action Step	Residential and Commercial Development	Disperse discharge from new or upgraded commercial and residential areas into a spatially distributed network rather than a few point discharges, which can result in locally severe erosion and disruption of riparian vegetation and instream habitat.	2	60	BLM, County of San Mateo, Private Landowners, USACE						TBD	Cost to upgrade stormwater discharge points cannot be determined at this time, but it may be significant.
PeC-A-23.3	Objective	Residential and Commercial Development	Minimize rate, and subsequent adverse affects, of land conversion to residential and commercial development.										
PeC-A-23.3.1	Recovery Action	Residential and Commercial Development	Encourage the use of native vegetation in new landscaping to reduce the need for watering and application of herbicides, pesticides, and fertilizers.	2	60	County of San Mateo, FishNet 4C						0	

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PeC-A-23.3.2	Recovery Action	Residential and Commercial Development	Encourage all permitting agencies to evaluate projects during construction, including erosion controls during the winter period for permitted projects in Core, Phase 1, and Phase 2 areas, emphasizing areas with sandy soils.	1	60	CDFG, County of San Mateo, FEMA, NMFS, RWQCB, SWRCB, USACE, USEPA, USFWS						0	This should be considered a standard business practice for all agencies that act in a regulatory role.
PeC-A-23.3.3	Recovery Action	Residential and Commercial Development	Flood control projects or other modifications facilitating new development (as opposed to protecting existing infrastructure) should be avoided.	1	60	CalTrans, County of San Mateo, FEMA, NRCS, RWQCB, USACE						0	Cost of avoiding development within the floodplain should result in a long term cost savings.
PeC-A-23.3.4	Recovery Action	Residential and Commercial Development	New development in all historic CCC coho salmon watersheds should meet a zero net increase in storm-water runoff, changes in duration, or magnitude of peak flow.	3	60	County of San Mateo, USACE						TBD	These costs are likely minimal because of the relatively low rate of development in the watershed likely precludes the necessity of significant flood detention basins, etc.
PeC-A-23.3.5	Recovery Action	Residential and Commercial Development	Work with counties to develop and implement ordinances (e.g. Santa Cruz County Code 2008) to restrict subdivisions by requiring a minimum acreage limit for parcelization in concert with limits on water supply and groundwater recharge areas.	3	3	County of San Mateo	50.00	50.00	50.00			150	Cost is a rough estimate of time and effort, including staff outreach, to develop new ordinances.
PeC-A-23.4	Objective	Residential and Commercial Development	Standards and recommendations regarding development should apply to all jurisdictions, including school districts and other special districts not subject to county and/or state related ordinances or policies.	1	60	County of San Mateo, USACE						TBD	
PeC-A-24.1	Objective	Roads and Railroads	Conduct outreach and education regarding the adverse effects of roads, and the types of best management practices protective of salmonids.										
PeC-A-24.1.1	Recovery Action	Roads and Railroads	Continue education of Caltrans, County road engineers, and County maintenance staff regarding watershed processes and the adverse effects of improper road construction and maintenance on salmonids and their habitats.	3	20	CalFire, CalTrans, County of San Mateo	1.00	1.00	1.00	1.00	1.00	20	Similar existing programs could be modified and implemented at minimal cost.
PeC-A-24.2	Objective	Roads and Railroads	Assess and implement actions that hydrologically disconnect roads or reduce sediment sources in Core CCC coho salmon areas within five years, Phase I within 10 years, and Phase II areas within 15 years (from 2010).										
PeC-A-24.2.1	Recovery Action	Roads and Railroads	Address sediment and runoff sources from road networks and other actions that deliver sediment and runoff to stream channels.										
PeC-A-24.2.1.1	Action Step	Roads and Railroads	Implement a sediment reduction program for private roads.	1	10	CalFire, CDFG, Coastside Land Trust, County of San Mateo, Farm Bureau, Mid Penninsula Open Space District, POST, San Mateo RCD						TBD	Cost will vary depending on landowner participation and site specific conditions.
PeC-A-24.2.1.2	Action Step	Roads and Railroads	Design and implement a program of BMPs for road maintenance on private roads similar to the proposed program for public roads.	3	10	CalFire, Coastside Land Trust, County of San Mateo, Farm Bureau, Mid Penninsula Open Space District, NRCS, POST, San Mateo RCD						TBD	Implementation costs cannot be determined at this time but are likely significant.
PeC-A-24.2.2	Recovery Action	Roads and Railroads	Develop a Road Sediment Reduction Plan that prioritizes sites and outlines implementation and a timeline of necessary actions. Begin with a road survey focused on inner gorge roads followed by roads in other settings.										

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PeC-A-24.2.2.1	Action Step	Roads and Railroads	Licensed engineering geologists should review and approve grading on inner gorge slopes.	2	60	CalFire, California Department of Mines and Geology, CalTrans, County of San Mateo						TBD	This is a cost that is frequently absorbed into new road projects and should be considered a standard business practice.
PeC-A-24.2.2.2	Action Step	Roads and Railroads	Conduct a road survey beginning with inner gorge roads in sandy soils followed by roads in other settings.	2	20	CalFire, CalTrans, County of San Mateo, Farm Bureau, FishNet 4C, NRCS, San Mateo RCD	25.00	25.00	25.00	25.00	25.00	500	Costs are based on the fact that this work has been conducted in many subbasins in the watershed and additional assessments for these areas are not needed.
PeC-A-24.2.2.3	Action Step	Roads and Railroads	Evaluate and remove roadside berms that lead to increased runoff velocities and result in increased sediment discharge.	2	20	CalTrans, County of San Mateo, FishNet 4C, RWQCB, San Mateo RCD	25.00	25.00	25.00	25.00	25.00	500	Roadside berms are common on many private and county roads in San Mateo County.
PeC-A-24.2.2.4	Action Step	Roads and Railroads	Install sediment traps for pretreatment, and a modified culvert system that can act as an efficient detention system.	3	60	CalFire, CalTrans, County of San Mateo, Farm Bureau, FEMA, Mid Penninsula Open Space District, NRCS, POST, Private Landowners, San Mateo RCD						TBD	Costs will vary depending on number of culvert upgrades occur on a road network and the inefficiency of the current drainage system.
PeC-A-24.2.2.5	Action Step	Roads and Railroads	Establish adequate spoils storage sites throughout the watershed so that material from landslides and road maintenance can be stored safely away from coho streams. Coordinate these efforts with all landowners in the watershed, CalTrans, and county road maintenance staff as appropriate.	1	60	CalFire, CalTrans, County of San Mateo, FEMA, NRCS						0	Cost should be minimal as most of these sites are likely identified.
PeC-A-24.2.3	Recovery Action	Roads and Railroads	Limit winter use of unsurfaced roads and recreational trails by unauthorized and impacting uses to decrease fine sediment loads.										
PeC-A-24.2.3.1	Action Step	Roads and Railroads	Conduct annual inspections of all roads prior to winter. Correct conditions that are likely to deliver sediment to streams. Hydrologically disconnect roads.	1	60	CalFire, CalTrans, CDFG, County of San Mateo, FishNet 4C, Mid Penninsula Open Space District, POST, Private Landowners, San Mateo RCD						TBD	This should be a standard business practice for landowners with roads and/or road managers. Costs of annual inspections should be minimal but costs of repairs can be significant depending on timing and site specific conditions.
PeC-A-24.2.4	Recovery Action	Roads and Railroads	Use available best management practices for road construction, maintenance, management and decommissioning (e.g. Hagans & Weaver, 1994; Sommarstrom, 2002; Oregon Department of Transportation, 1999).	1	60	CalFire, CalTrans, CDFG, Coastside Land Trust, County of San Mateo, Farm Bureau, FEMA, FishNet 4C, NRCS, POST, Private Consultants, RWQCB, San Mateo RCD, State Parks, USACE						TBD	Cost cannot be determined at this time but should be adopted as part of future road actions.
PeC-A-24.3	Objective	Roads and Railroads	Substantially reduce road densities over the next ten years prioritizing high risk areas in Phase 1 watersheds.										
PeC-A-24.3.1	Recovery Action	Roads and Railroads	Decommission riparian road systems and/or upgrade roads (and skid trails on forestlands) that deliver sediment into adjacent watercourses (DFG 2004).										

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PeC-A-24.3.1.1	Action Step	Roads and Railroads	Assess and redesign transportation network to minimize road density and maximize transportation efficiency.	3	20	CalFire, CalTrans, County of San Mateo, FishNet 4C, Private Landowners, RWQCB, San Mateo RCD						TBD	Cost associated with assessment and redesign cannot be determined at this time. Costs would likely be significant due to large amount of infrastructure already in place.
PeC-A-24.3.1.2	Action Step	Roads and Railroads	Establish a moratorium on new road construction within floodplains, riparian areas, unstable soils or other sensitive areas until a watershed specific and/or agency/company specific road management plan is created and implemented.	2	20	CalFire, CalTrans, County of San Mateo, USACE						TBD	Cost may vary significantly. However, a well designed road management plan should result in overall cost savings.
PeC-A-25.1	Objective	Storms and Flooding	Conduct outreach and education regarding how local, city, county, State and Federal planning can put in place mechanisms that provide community resiliency to storms and flooding.										
PeC-A-25.1.1	Recovery Action	Storms and Flooding	Agencies should develop large woody debris retention programs and move away from the practice of removing instream large woody debris under high flow "emergencies".	1	5	County of San Mateo, FEMA						TBD	
PeC-A-25.1.2	Recovery Action	Storms and Flooding	Land use zoning should be appropriate to the site and be tolerant to anticipated conditions (e.g., tolerant to frequent flooding).	2	60	County of San Mateo, FEMA, FishNet 4C, NRCS, POST, RWQCB						TBD	
PeC-A-25.1.3	Recovery Action	Storms and Flooding	Develop Bank Stabilization and Floodplain Guidelines for use by private and public entities.	2	5	CDFG, FEMA, FishNet 4C, NMFS, NRCS, San Mateo County, San Mateo RCD, USACE, USFWS	4.00	4.00	4.00	4.00	4.00	20	Existing documents and policies can be used for this recommendation. Costs would increase if a number of site specific conditions and criteria are developed.
PeC-A-25.1.4	Recovery Action	Storms and Flooding	Patterns of water runoff, including surface and subsurface drainage, should match, to the greatest extent possible, the natural hydrologic pattern for the watershed in timing, quantity, and quality.	1	60	CalFire, CalTrans, County of San Mateo, FEMA, RWQCB, San Mateo RCD, USACE						TBD	Costs will vary significantly depending on site specific conditions and landowner willingness to have roads and other infrastructure addressed to improve hydrologic function. As a general recommendation for future development cost may vary depending on existing infrastructure and site specific conditions.
PeC-A-25.1.5	Recovery Action	Storms and Flooding	Work with local governments to incorporate protection of CCC coho salmon in any flood management activity (DFG 2004).	2	10	CDFG, County of San Mateo, FEMA, NMFS, USACE						0	Outreach and education are ongoing, and additional costs are expected to be minimal.
PeC-A-26.1	Objective	Water Diversion and Impoundment	Improve current laws and policies to control diversions and water use in order to maintain and restore surface flows.										
PeC-A-26.1.1	Recovery Action	Water Diversion and Impoundment	Avoid and/or minimize the adverse effects of water diversion on CCC coho salmon by establishing a more natural hydrograph, by-pass flows, season of diversion, and off-stream storage (DFG 2004).										
PeC-A-26.1.1.1	Action Step	Water Diversion and Impoundment	Develop and enforce stream flow bypass requirements for diversions in Pescadero Creek and its tributaries.	1	10	CDFG, NMFS HCD, RWQCB, SWRCB, USFWS						TBD	Cost may vary considerably depending on existing baseflow and existing uses of water being diverted.
PeC-A-26.1.2	Recovery Action	Water Diversion and Impoundment	Evaluate requests for on-stream dams above coho migratory reaches for effects on the natural hydrograph and the supply of spawning gravel for recruitment downstream (DFG 2004).	2	60	CDFG, NMFS, SWRCB, USFWS						0	This should be considered a standard business practice for all reviewing agencies.
PeC-A-26.1.3	Recovery Action	Water Diversion and Impoundment	Improve compliance with existing water resource regulations via monitoring and enforcement.	1	60	CDFG, County of San Mateo, Farm Bureau, FishNet 4C, NMFS, NRCS, Private Landowners, RWQCB, SWRCB, USFWS						TBD	Costs will vary depending on degree of flow impairment, landowner participation, and quality of available data. This information is unknown at this time and cost cannot be estimated.

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PeC-A-26.1.4	Recovery Action	Water Diversion and Impoundment	Monitor, identify problems, and prioritize needed changes to water diversion on current or potential coho streams that go dry in some years (DFG 2004).										
PeC-A-26.1.4.1	Action Step	Water Diversion and Impoundment	Establish a comprehensive stream flow evaluation program to determine instream flow needs for coho salmon.	1	5	California Coastal Conservancy, CDFG, Coastside Land Trust, County of San Mateo, Mid Penninsula Open Space District, NMFS, NRCS, POST, Private Landowners, Public, San Mateo RCD, SWRCB, USFWS	60.00	60.00	60.00	60.00	60.00	300	Costs are a rough estimate and may be reduced depending on the availability of previous data and analysis.
PeC-A-26.1.4.2	Action Step	Water Diversion and Impoundment	Use developed exceedence probability curves to predict late summer flow conditions.	1	5	CDFG, NMFS HCD, SWRCB	20.00	20.00	20.00	20.00	20.00	100	Cost should be minimal as most of these sites are likely identified.
PeC-A-26.1.4.3	Action Step	Water Diversion and Impoundment	If predicted flows are below a level considered critical to maintain viable rearing habitat for salmonids, measures to reduce water consumption should be initiated by users in the watershed through conservation programs.	1	60	CDFG, County of San Mateo, NMFS, San Mateo RCD, SWRCB						TBD	Costs can be determined pending completion of evaluation of summer flows and impacts to historical hydrology from existing diversions.
PeC-A-26.1.5	Recovery Action	Water Diversion and Impoundment	Promote passive diversion devices designed to allow diversion of water only when minimum streamflow requirements are met or exceeded (DFG 2004).	2	30	California Coastal Conservancy, CDFG, Coastside Land Trust, County of San Mateo, Farm Bureau, Mid Penninsula Open Space District, NMFS HCD, NOAA RC, NRCS, POST, RWQCB, San Mateo RCD, SWRCB, USFWS						TBD	Costs may be significant depending on site conditions and number of devices installed
PeC-A-26.1.6	Recovery Action	Water Diversion and Impoundment	Request that SWRCB review and/or modify water use based on the needs of coho salmon and authorized diverters (DFG 2004).										
PeC-A-26.1.6.1	Action Step	Water Diversion and Impoundment	Require the SWRCB to conduct interagency consultation with the California Department of Fish and Game and technical assistance with NMFS on the issuance of water rights permits.	1	60	CDFG, NMFS HCD, SWRCB						0	
PeC-A-26.2	Objective	Water Diversion and Impoundment	Promote water conservation by the public, water agencies, agriculture, private industry, and the citizenry.										
PeC-A-26.2.1	Recovery Action	Water Diversion and Impoundment	Promote conjunctive use of water with water projects whenever possible to maintain or restore coho salmon habitat.	2	30	CDFG, Coastside Land Trust, County of San Mateo, Farm Bureau, FEMA, FishNet 4C, Mid Penninsula Open Space District, NMFS HCD, Private Landowners, RWQCB, San Mateo RCD, SWRCB, USFWS						TBD	
PeC-A-26.3	Objective	Water Diversion and Impoundment	Develop new policies and regulations to provide suitable flow conditions for CCC coho salmon.										

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PeC-A-26.3.1	Recovery Action	Water Diversion and Impoundment	Avoid and/or minimize the adverse effects of water diversion on CCC coho salmon.										
PeC-A-26.3.1.1	Action Step	Water Diversion and Impoundment	Assess and map water diversions (DFG 2004).	2	60	CDFG, County of San Mateo, NMFS HCD, NMFS OLE, RWQCB, SWRCB						0	This data base should already exist for the Pescadero Creek and costs to maintain it are likely minimal.
PeC-A-26.3.1.2	Action Step	Water Diversion and Impoundment	Determine and monitor 1600 program compliance related to water diversions (DFG 2004).	1	60	CDFG, SWRCB						TBD	This should be adopted as a standard practice by DFG.