



**NOAA FISHERIES**

# COASTAL MULTISPECIES PLAN

## APPENDIX D: COST ESTIMATES

2016



Photo Courtesy: Cahill Dam and defunct fish ladder removal on Branciforte Creek, Santa Cruz. *Before photo: Roy Torres, NMFS. After photo: Jonathan Ambrose, NMFS*

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### **California Coastal Chinook Salmon Action Step Cost Estimates**

#### *ESU Level Recovery Actions   pg. 12*

#### *North Coastal Diversity Stratum   pg. 16*

- Bear River
- Humboldt Bay Tributaries
- Little River (Humboldt County)
- Lower Mainstem/ South Fork Eel River
- Mad River
- Mattole River
- Redwood Creek (Humboldt Co)

#### *North Mountain-Interior Diversity Stratum   pg. 23*

- Larabee Creek
- Upper Eel River
- Van Duzen River

#### *North-Central Diversity Stratum   pg. 26*

- Big River,
- Noyo River
- North-Central Coast Diversity Stratum Rapid Assessment
  - Albion River
  - Ten Mile River

#### *Central Coastal Diversity Stratum   pg. 32*

- Garcia River
- Russian River
- Central Coastal Diversity Stratum Rapid Assessment
  - Gualala River
  - Navarro River

## **Northern California Steelhead Action Step Cost Estimates**

### ***DPS Level Recovery Actions* pg. 42**

#### ***Northern Coastal Diversity Stratum* pg. 46**

- Bear River
- Humboldt Bay Tributaries
- Little River (Humboldt Co.)
- Mad River (Lower and Upper)
- Maple Creek/Big Lagoon
- Mattole River
- Redwood Creek (Humboldt Co) (Lower and Upper)
- South Fork Eel River
- Northern Coastal Diversity Stratum Rapid Assessment
  - Big Creek
  - Big Flat Creek
  - Guthrie Creek
  - Jackass Creek
  - McNutt Gulch
  - Oil Creek
  - Shipman Creek
  - Spanish Creek
  - Telegraph Creek
- Northern Coastal Eel River Rapid Assessment
  - Lower Mainstem Eel River Tributaries
  - Howe Creek

#### ***North Mountain Interior Diversity Stratum* pg. 68**

- Larabee Creek
- Middle Fork Eel River
- North Fork Eel River
- Upper Mainstem Eel River
- Van Duzen River
- Lower Interior/North Mountain Interior Rapid Assessment
  - Dobbyn Creek (See Lower Interior Diversity Stratum)

#### ***Lower Interior Diversity Stratum* pg. 73**

- Chamise Creek
- Outlet Creek
- Tomki Creek
- Woodman Creek
- Lower Interior/North Mountain Interior Rapid Assessment
  - Bell Springs Creek
  - Bucknell Creek

- Dobbyn Creek (North Mountain Interior)
- Jewett Creek
- Garcia Creek
- Soda Creek

***North-Central Coastal Diversity Stratum* pg. 83**

- Big River
- Caspar Creek
- Noyo River
- Ten Mile River
- Usal Creek
- Wages Creek
- North-Central Coastal Diversity Stratum Rapid Assessment
  - Albion River
  - Cottaneva Creek
  - Pudding Creek

***Central Coastal Diversity Stratum* pg. 100**

- Garcia River
- Gualala River
- Navarro River
- Central Coastal Diversity Stratum Rapid Assessment
  - Brush Creek
  - Elk Creek
  - Schooner Gulch

**Central California Coast Steelhead Action Step Cost Estimates**

***DPS Level Recovery Actions* pg. 111**

***North Coastal Diversity Stratum* pg. 115**

- Austin Creek
- Green Valley Creek
- Lagunitas Creek
- Salmon Creek
- Walker Creek
- North Coastal Diversity Strata Rapid Assessment
  - Drakes Bay Tributaries
  - Estero Americano Creek
  - Pine Gulch
  - Redwood Creek (Marin Co.)
- North Coastal Diversity Strata: Russian River Populations Rapid Assessment
  - Dutch Bill Creek
  - Freezeout Creek
  - Hulbert Creek

- Porter Creek
- Sheephouse Creek
- Willow Creek

***Interior Diversity Stratum*** pg. 144

- Dry Creek
- Maacama Creek
- Mark West Creek
- Upper Russian River
- Interior Diversity Stratum Rapid Assessment
  - Crocker Creek
  - Gill Creek
  - Miller Creek (Russian)
  - Sausal Creek

***Coastal San Francisco Bay Diversity Stratum*** pg. 159

- Corte Madera Creek
- Guadalupe River
- Novato Creek
- San Francisquito Creek
- Stevens Creek
- Coastal S.F. Bay Rapid Assessment
  - Arroyo Corte Madera del Presidio
  - Miller Creek (Marin Co.)
  - San Mateo Creek

***Interior San Francisco Bay Diversity Stratum*** pg. 175

- Alameda Creek
- Coyote Creek
- Green Valley/Suisun Creek
- Napa River
- Petaluma River
- Sonoma Creek
- Interior SF Bay Diversity Stratum Rapid Assessment
  - Codornices Creek
  - Pinole Creek
  - San Leandro Creek
  - San Lorenzo Creek
  - San Pablo Creek
  - Wildcat Creek

***Santa Cruz Mountains Diversity Stratum*** pg. 200

- Aptos Creek
- Pescadero Creek
- Pilarcitos Creek
- San Gregorio Creek

- San Lorenzo River
- Scott Creek
- Soquel Creek
- Waddell Creek
- Santa Cruz Mountains Diversity Stratum Rapid Assessment
  - Gazos Creek
  - Laguna Creek
  - San Pedro Creek
  - San Vicente Creek
  - Tunitas Creek

## ESTIMATING THE COST OF RECOVERY ACTIONS

We assigned costs to the lowest level actions (*e.g.* specific action steps). Our cost estimates are presented in five year intervals out to 25 years and include a total cost for the duration of the action. Costs are aggregated to estimate a total cost for recovery. Cost estimates are provided wherever practicable. The accuracy of recovery cost estimates will vary and are governed by many factors such as the specificity of the recovery action step, labor, materials, site location, duration, and timing of action. As a result, predicting costs into the future becomes increasingly imprecise due to a lack of information regarding these various constraints. We have rounded the cost estimated in most places to the thousandth to account for the inaccuracy of the estimates. Furthermore, many actions either build on previous actions to create cost benefits or are required under mandates other than the ESA, such as other federal, state and local laws. For some actions the total cost to complete the action is unknown at this time because an assessment is needed first to determine the scope of what must be done to complete the action. In those cases, only the cost of the assessment was estimated; the cost of completing the action is still to be determined after the assessment is completed. In some cases, information essential to the development of even the roughest of cost estimates are unavailable. In these situations, “To Be Determined” or TBD was used. Examples of these situations include:

- Costs are known by a third party, but such information has not been provided to NMFS;
- Action is so novel that no comparable actions can be identified;
- Action involves new technology and it is impracticable to provide a reasonable estimate;
- Action is based on broad government directives/guidelines; and
- Site specific investigations and adaptive management approaches are needed.

To account for uncertainties, we developed a framework to estimate costs. The framework was based on *Habitat Restoration Cost References for Salmon Recovery Planning* ([Thomson and Pinkerton 2008](#)) and *Cost and Socioeconomic Impacts of Implementing the California Coho Recovery Strategy* ([see Appendix I in CDFG 2004](#)). Costs developed for actions to recover coho salmon are considered similar (if not identical) to similar actions for steelhead and Chinook salmon. Where the species overlap, all may benefit from the actions taken. Due to the varying degree of

specificity for most identified recovery actions, assumptions about the type, magnitude, number, or extent of individual recovery action steps were necessary. Assumptions on the costs of recovery action steps were based on various information sources that estimated the cost of similar activities.

Assumption tables were adjusted for the NCCC Domain to include information from CDFW's cost estimates in the State Coho Salmon Recovery Strategy (CDFG 2004) and reflect regional variability in costs for labor wage, materials, and inflation. To account for regional variability in costs, a multiplier was applied to standard costs. For example, Mendocino and Sonoma counties have an average county wage similar to the average of all counties in California and no multiplier was applied to costs in those areas. The San Francisco Bay Area and San Mateo County have an average county wage 20 percent higher than the average of all California counties; thus, a multiplier of 0.20 was adjusted for these areas. For Santa Cruz County, a multiplier of 0.14 was added since the average county wage is 14 percent higher than the average across California. Assumption tables were also adjusted to current values.

Cost estimates are mainly focused on the direct expenditure required to physically perform the task and may not always include secondary costs associated with administrative needs and permitting. In instances where the timing or extent of recommended action steps was not available or was undetermined, assumptions were developed from the CAP or Rapid Assessment ratings and the projected amount of potential habitat requiring improvements.

These assumptions include:

- Large wood placement in 50 percent of potential habitats;
- Off-channel habitat improvements are one project per mile across 25 percent of potential habitats;
- Water projects are assumed at one per mile across 55 percent of potential habitats;
- Riparian thinning assumes 80 acres/mile planted across 5 percent of potential habitats;
- Road decommissioning should reduce road density to two miles per square mile;
- 25 percent of roads are upgraded;

- Levee setback for 1 percent of potential habitat and cost of breach for 1 percent of potential habitat at a rate of one project per mile;
- Barrier removal assumes 1 barrier per five miles of potential habitat;
- Stabilizing banks assumes 1 percent of potential habitat;
- Purchasing or leasing water rights assumes 10 percent of low flow volume affected;
- Fuel reduction assumes 25 percent of potential habitat treated with mechanical thinning and 25 percent of potential habitat fuel management; and
- Invasive vegetation species control assumed 80 acres/mile treated in 5 percent of potential habitats.

Actions were grouped into four categories, in-kind, planning, monitoring, and implementation, as described in more detail below (Table 18).

Table 1: Recovery Action Categories

<b>Recovery Action Categories and Types</b>	
<b>Category</b>	<b>Action Type</b>
<b>In-Kind Actions</b>	Existing Requirement/Actions
<b>Planning</b>	Scoping
	Design
	Permitting
<b>Monitoring</b>	Pre-project
	Post-Project
	Effectiveness
	Biological/Ecological
<b>Implementation</b>	Habitat Complexity
	Riparian Vegetation Structure
	Species Diversity
	Floodplain Connectivity
	Species Migration Pattern

	Sediment Transport
	Estuarine Restoration

**In-Kind Actions**

In an effort to identify only the additional cost of species recovery, we considered what is already required under local, State, or Federal regulation, or settlement agreements, to be required actions, and thereby estimated them at \$0. For example, the cost of an action required by a Reasonable and Prudent Alternative action which has already been adopted by an action agency is listed as \$0. Also, actions were assumed to have no additional cost to recovery if the action would be accomplished under the existing work programs of government agencies and would not require an agency or group to acquire funding beyond their existing budgets. Because several federal and state agencies have significant budgets directed to natural resource protection in general, and anadromous salmonids in particular, many of the actions identified in this recovery plan will be implemented through those existing programs; as such, many actions are identified to cost \$0, since the action will not cause agency budgets to expand.

**PLANNING**

Planning actions were included in the cost of implementing the action. They were assigned a cost estimate when known. Planning actions include scoping, designing, and permitting.

**MONITORING**

Specific habitat and fish monitoring costs are provided in the Monitoring and Adaptive Management Chapter (Chapter 6). Actions organized into monitoring include pre-project, post-project, effectiveness, and biological/ecological. Costs were calculated by mile, year, and acre or project level. Costs were applied but may vary substantially between populations depending on level of intensity, duration, and protocol.

## IMPLEMENTATION

These actions have a specific focus on improving freshwater habitat conditions and were assigned costs based on the type of action as described below:

### *Habitat Complexity*

Cost of in-stream habitat complexity varies with techniques implemented. To determine the cost of increasing habitat complexity for recovery actions, such as increasing LWD frequency, shelter ratings, and primary pools, a flat rate of \$26,000 per mile was applied. This assumes a minimum of one project per mile (involving multiple structures along the targeted stream reach). In instances when placement of LWD was not feasible, the cost of an engineered log jam at a rate of \$104,000 per jam was applied.

### *Riparian Vegetation Structure*

To rehabilitate riparian composition and distribution, an estimated cost of \$20,057 per acre was used. The variability in riparian buffers is difficult to determine, therefore, we assumed that an average of 80 acres per mile (40 acres per stream bank) would be treated to achieve the desired recovery targets.

### *Species Diversity*

The variability in vegetative composition between regions and populations is diverse. Therefore, NMFS established a standard rate of \$1,422 per acre with the assumption of 80 acres per mile treated for upslope vegetative management. Non-native species recovery actions consist of several distinct activities, including assessment, control, education and outreach, as well as development of monitoring programs. The costs for controlling and removing non-native species were derived on a per acre basis.

### *Floodplain Connectivity*

The costs to reconnect floodplains are contingent upon the restoration method implemented. Removing or setting back levees, creating alcove and backwater habitat, or off-channel wetlands

are some methods used to reconnect floodplains; each with a varying degree of planning, design, and implementation. A rate of \$36,046 per mile, assuming one project per mile, was considered the average across the various implementation methods outlined in this recovery plan.

#### *Species Migration Patterns*

The costs of recovery actions associated with dams and diversions were calculated using the CalFish.org mapping viewer when available. When specific information was unavailable, the assumption table for fish passage improvement was used. Culvert replacement costs were calculated from the assumption that a minimum of one culvert would be replaced in each identified watershed, or sub-watershed, annually for the first five years of Recovery Plan implementation.

#### *Sediment Transport*

Costs to execute recovery actions associated with road upgrades or decommissioning were calculated from \$12,000 per mile to \$21,000 per mile depending on method. If number of miles to be upgraded or decommissioned were unknown, then road densities were reduced to 2 mi/sq mile to meet viable criteria.

#### *Estuarine Restoration*

Costs to implement estuarine recovery actions were calculated at a rate of \$272,120 per acre. Estimates incorporate components of wetland restoration, LWD placement, and riparian planting. Each estuary was mapped for the current extent of acres, and a total of 10 percent of total estuarine habitat was estimated for treatment.

## **COST ASSUMPTION TABLES**

The following tables were used to assign costs to specific action steps for the population specific implementation tables. Costs have been adjusted to reflect inflation rates (using a standard 3.3% annual rate, for 2014).

<b>Table 1. Recovery Implementation Cost</b>			
<b>Action</b>	<b>Sub-Category</b>	<b>Cost (\$)</b>	<b>Unit</b>
Stream Complexity	Large Wood Placement	26,000	Mile
	Engineered Log Jam	104,000	ELJ
	Spawning Gravel	32.94	cubic yard
Vegetative Ground Cover	Riparian Planting	20,719	Acre
	Riparian Thinning	1,468	Acre
	Invasive Species Control	41,000 <sup>1</sup>	Acre
Floodplain Connectivity	Alcoves, Side-Channels	37,200	Acre
Sediment Control	Road Inventory	957	Mile
	Erosion Assessment	12.62	Acre
Fish Passage & Protection	Fish Screen	53,465	Screen
	Culvert Replacement	230,411	Culvert
Estuarine Ecology <sup>2</sup>	Estuarine Restoration	41,000	Acre

<sup>1</sup> Source: CDFG 2004 (p. 1-16)

<sup>2</sup> Source: NMFS 2008, p. 43-44

Estimates in the above table were used as a standard when a recovery action lacked specificity. For example, if a recovery action called for improving riparian cover and could not specify the acreage or type of riparian plants to revegetate, then the standard of \$20,719/acre was used to calculate the cost for that action step. In rare instances, detailed information may have been available. When this occurred, estimates from NMFS (2008) and CDFW (2004) were used. Below are tables of estimates for certain types of recovery action steps.

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<sup>1</sup> Cost for treating non-native species in freshwater and riparian environments.

<sup>2</sup> No references are available for specific estuarine restoration projects targeting salmonid habit conditions. NMFS estimate based on large wood placement and wetland/riparian planting per acre.

<b>Table 2. Floodplain and Tributary Reconnection (\$/acre)<sup>1</sup></b>			
<b>Materials</b>	<b>Extent of Earth Moving</b>		
	<b>Minimal</b>	<b>Moderate</b>	<b>Substantial</b>
<b>Minimal</b>	8,721	17,442	40,698
<b>Moderate</b>	17,442	29,070	58,140
<b>Substantial</b>	40,698	58,140	81,395

<sup>1</sup>Source: NMFS 2008, p.26

<b>Table 3. Riparian Planting (\$/acre)<sup>1</sup></b>			
<b>Materials/Site Accessibility</b>	<b>Level of Site Preparation*</b>		
	<b>Flat/Light Clearing</b>	<b>Avg. Slope/Avg. Clearing</b>	<b>Steep/Heavy Clearing</b>
Low Cost	17,442	40,698	93,023
Medium Cost	26,163	63,954	110,465
High Cost	46,512	78,488	1,366,279

<sup>1</sup> Source: NMFS 2008, p. 32

<b>Table 4. Upslope Riparian Thinning<sup>1</sup></b>	
<b>Type</b>	<b>\$/acre*</b>
Mechanical	876
Hand 15-30% slope 40-60% cover	928
Hand 30-50% slope 60-90% cover	1,237
Chemical	155
Average	799

<sup>1</sup>Source: NMFS 2008, p. 64

<b>Table 5. Road Inventories<sup>1</sup></b>	
<b>Location</b>	<b>\$/mi</b>
Humboldt County	829
Eel River	538

Mattole River	635
Russian River	936
Salmon Creek	1068
Gualala River	837
Avg. all Inventories	807

<sup>1</sup>Source: NMFS 2008, p. 61

<b>Table 6. Erosion Assessments<sup>1</sup></b>	
<b>Location</b>	<b>\$/acre*</b>
Humboldt County	9.5
Del Norte County	11.9
Average all assessments in CA**	10.7

<sup>1</sup>Source: NMFS 2008, pg. 61

<b>Table 7. Removal of Invasive Plant Species<sup>1</sup></b>		
<b>Species</b>	<b>\$/acre*</b>	<b>Source</b>
<i>Arundo</i>	29,762	Neil 2002
Himalayan Blackberry	990	Bennet 2007 (avg)
Purple Loosestrife and Water Chestnut	361	USFWS 2001
Pepperweed and Giant Reed	1,000	Northern California Conservation Center 2010
Average (excluding outlier of <i>Arundo</i> )	784	

## RECOGNIZING UNCERTAINTY

While NMFS utilized the best available reference documents, evaluated a variety of other sources (including suggestions from co-managers), and applied inflation and location adjustments, we recognize there is uncertainty in the estimation of the costs associated with implementing recovery actions. It is our hope that the costs associated with recovery

implementation will be repaid in full when the benefits of healthy salmon and steelhead populations are evaluated.

Healthy salmon and steelhead populations provide significant economic, societal, and environmental benefits (Baker and Quinn-Davidson 2011, Nieme *et al.* 1999). Entire communities, businesses, jobs, and even cultures have been built around salmonids in California (Michael *et al.* 2010, Nieme *et al.* 1999, Southwick Associates 2009). Monetary investments in watershed restoration projects can promote the economic vitality in a myriad of ways. In addition, viable salmonid populations provide ongoing direct and indirect economic benefits as a resource for fishing, recreation, and tourist-related activities (Michael 2010). Dollars spent on salmonid recovery will promote local, state, Federal, and tribal economies, and should be viewed as an investment that yields a spectrum of valuable returns (Nieme *et al.* 1999, Southwick Associates 2009).

Importantly, the general model for viewing cost versus benefits should be viewed in terms of long-term benefits derived from short-term costs. Salmonid recovery is an investment and opportunity to diversify and strengthen the economy while enhancing the quality of life for present and future generations. The dollars necessary to recover salmonids should be made available without delay such that the suite of benefits can begin to accrue as soon as possible.

## **ESU/DPS LEVEL AND POPULATION LEVEL COST ESTIMATES**

The cost estimate for each action step are in the tables following the literature cited. They are organized by species 1) Chinook salmon, 2) NC steelhead, and 3) CCC steelhead. For each species first is the ESU/DPS level cost estimates and then populations organized by diversity strata, please see the table of contents for the exact order of populations. The costs estimates can be cross walked for each population by its unique Action ID number and linked to the action step found in Volumes 2-4.

## LITERATURE CITED

Baker, J. M., and L. N. Quinn-Davidson. 2011. Jobs and community in Humboldt County, California. Pages 221-237 in D. Egan, E.E. Hjerpe, and J. Abrams, editors. Human dimensions of ecological restoration: Integrating science, nature, and culture. Island Press.

Michael, J. 2010. Employment Impacts of California Salmon Fishery Closures in 2008 and 2009. Business Forecasting Center, University of Pacific, Stockton, CA.

Michael, J., R. Howitt, J. Medellín-Azuara, and D. MacEwan. 2010. A Retrospective Estimate of the Economic Impacts of Reduced Water Supplies to the San Joaquin Valley in 2009. Business Forecasting Center, University of Pacific, Stockton, CA.

Nieme, E., E. Whitelaw, M. Gall, and A. Fifield. 1999. Salmon, timber, and the economy. Prepared for the Pacific Rivers Council, Oregon Trout, Audubon Society of Portland, and the Institute for Fisheries Resources. ECONorthwest, Eugene, OR.

Southwick Associates. 2009. Calculation of the Projected Economics and Jobs Impact of Salmon Recovery in California.

California Coastal Chinook Salmon ESU Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ESU-CCCh-1.1.1.1						TBD	Cost is dependent on the infrastructure and fill to be removed
ESU-CCCh-1.1.1.2						0	Action is considered In-Kind
ESU-CCCh-1.2.1.1						0	Action is considered In-Kind
ESU-CCCh-1.2.1.2						0	Action is considered In-Kind
ESU-CCCh-2.1.1.1						TBD	In-Kind for the evaluation, TBD for the implementation of the plan
ESU-CCCh-2.2.1.1						0	Action is considered In-Kind
ESU-CCCh-3.1.1.1						0	Action is considered In-Kind
ESU-CCCh-3.1.1.2						0	Action is considered In-Kind
ESU-CCCh-3.1.1.3						0	Action is considered In-Kind
ESU-CCCh-3.1.1.4						0	Action is considered In-Kind
ESU-CCCh-3.1.1.5						TBD	Costs for implementing this action will depend on the number, location and duration of gages across the ESU and DPS. See also Monitoring Chapter.
ESU-CCCh-3.1.1.6						0	Implementation costs should be covered under existing laws or should be the responsibility of the entity that owns the diversion.
ESU-CCCh-3.1.1.7						TBD	
ESU-CCCh-3.1.1.8						TBD	Some of this would be In-Kind
ESU-CCCh-3.1.1.9						0	Action is considered In-Kind
ESU-CCCh-3.1.1.10						TBD	
ESU-CCCh-3.1.1.11						0	Action is considered In-Kind
ESU-CCCh-3.1.1.12						0	Action is considered In-Kind
ESU-CCCh-3.2.1.1						0	Action is In-Kind
ESU-CCCh-3.2.1.2						0	Action is In-Kind
ESU-CCCh-3.2.1.3						0	Action is considered In-Kind
ESU-CCCh-3.2.1.4						0	Action is considered In-Kind
ESU-CCCh-3.2.1.5						0	Action is considered In-Kind
ESU-CCCh-3.2.1.6						0	Action is considered In-Kind
ESU-CCCh-3.2.1.7						0	Action is considered In-Kind
ESU-CCCh-3.2.1.8						TBD	
ESU-CCCh-3.2.1.9						0	Action is considered In-Kind
ESU-CCCh-5.1.1.1						TBD	
ESU-CCCh-5.1.1.2						0	The data that is collected is often part of another survey and is forwarded to CDFW. CDFW maintenance of the database is considered In-Kind
ESU-CCCh-6.2.1.1						0	Action is considered In-Kind
ESU-CCCh-6.2.1.2						0	Action is considered In-Kind
ESU-CCCh-6.2.1.3						0	Action is considered In-Kind
ESU-CCCh-6.2.1.4						0	Action is considered In-Kind
ESU-CCCh-6.2.1.5						TBD	
ESU-CCCh-6.2.1.6						0	Action is considered In-Kind
ESU-CCCh-6.2.1.7						0	Action is considered In-Kind
ESU-CCCh-6.2.1.8						TBD	
ESU-CCCh-7.1.1.1						0	Action is considered In-Kind
ESU-CCCh-7.1.1.2						0	Action is considered In-Kind
ESU-CCCh-7.1.1.3						0	Action is considered In-Kind
ESU-CCCh-8.1.1.1						TBD	
ESU-CCCh-8.1.1.2						TBD	
ESU-CCCh-10.1.1.1						0	Action is considered In-Kind
ESU-CCCh-10.1.1.2						0	Action is considered In-Kind
ESU-CCCh-10.1.1.3						0	Action is considered In-Kind
ESU-CCCh-10.1.1.4						0	Action is considered In-Kind
ESU-CCCh-10.1.1.5						0	Action is considered In-Kind
ESU-CCCh-10.1.1.6						0	Action is considered In-Kind
ESU-CCCh-10.1.1.7						0	Action is considered In-Kind
ESU-CCCh-10.1.1.8						0	Action is considered In-Kind
ESU-CCCh-10.1.1.9						0	Action should be considered standard practice and is in-kind
ESU-CCCh-10.1.1.10						TBD	Cost will based on feasible recommendations to research and treat pathogens.
ESU-CCCh-10.1.2.1						0	Action is considered In-Kind
ESU-CCCh-10.2.1.1						0	Action is considered In-Kind
ESU-CCCh-11.1.1.1						TBD	
ESU-CCCh-11.1.1.2						0	Action is considered In-Kind
ESU-CCCh-11.1.1.3						0	Action is considered In-Kind
ESU-CCCh-11.1.1.4						TBD	
ESU-CCCh-11.1.1.5						TBD	
ESU-CCCh-11.1.1.6						TBD	

California Coastal Chinook Salmon ESU Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ESU-CCCh-11.1.1.7						0	Action is considered In-Kind
ESU-CCCh-11.2.1.1						TBD	
ESU-CCCh-11.2.1.2						0	Cost estimates for these types of monitoring would be included in the total cost of individual restoration actions (see recovery actions). Action is considered in-kind.
ESU-CCCh-11.2.1.3						TBD	
ESU-CCCh-11.2.1.4						TBD	
ESU-CCCh-11.2.1.5						TBD	Temperature data loggers (e.g., Onset HOBO v2 Data Loggers) cost approximately \$130 per unit. Cost estimates per population would depend on the size of the watershed and number of units needed within each watershed. Also, cost for data management and analysis would need to be considered.
ESU-CCCh-11.2.1.6						TBD	
ESU-CCCh-11.2.1.7						TBD	
ESU-CCCh-11.2.1.8						TBD	
ESU-CCCh-11.3.1.1						53,000	Cost estimates likely to be higher with greater sampling effort. However, costs of spawning ground surveys will be shared across species for populations with multiple species (including coho salmon).
ESU-CCCh-11.3.1.2						TBD	Annual cost estimate is based on 1 LCM per diversity stratum in a large watershed. Annual cost estimates for LCM station monitoring could range from \$819,000 (1 LCM per diversity stratum in a small watershed) to \$3,696,000 (2 LCMs per diversity stratum in large watersheds). Final costs will depend on watershed size and number of LCMs per stratum. See the Monitoring and Adaptive Management Chapter in Volume 1 of the Multi-Species Recovery Plan for additional information on LCM cost estimates.
ESU-CCCh-11.3.1.3						0	Juvenile Chinook salmon are generally not present in freshwater during late summer and fall and their rare presence during this period would be observed while conducting spatially balanced surveys for juvenile steelhead. See DPS-NCSW-11.3.1.3 and DPS-CCCS-11.3.1.3
ESU-CCCh-11.3.1.4						TBD	Costs will be determined at a later date.
ESU-CCCh-11.3.1.5						0	Action is considered in-kind.
ESU-CCCh-11.3.1.6						0	Action is considered in-kind.
ESU-CCCh-11.3.2.1						TBD	
ESU-CCCh-11.3.2.2						0	Action is considered in-kind.
ESU-CCCh-11.3.2.3						0	Action is considered in-kind.
ESU-CCCh-11.3.2.4						0	Action is considered in-kind.
ESU-CCCh-11.4.1.1						TBD	Cost estimates for mortality rates would require further study and estimates of costs for these studies are unknown at this time. These would depend on the extent (severity and distribution) of the pathogens.
ESU-CCCh-11.4.1.2						TBD	
ESU-CCCh-11.4.1.3						0	Action is considered in-kind.
ESU-CCCh-11.4.1.4						0	Action is considered in-kind.
ESU-CCCh-11.4.1.5						0	Action is considered in-kind.
ESU-CCCh-11.4.1.6						TBD	
ESU-CCCh-11.5.1.1						0	Action is considered in-kind.
ESU-CCCh-11.5.1.2						0	Action is considered in-kind.
ESU-CCCh-11.5.1.3						TBD	
ESU-CCCh-11.5.1.4						0	Action is considered in-kind.
ESU-CCCh-11.6.1.1						TBD	
ESU-CCCh-11.6.1.2						0	Action is considered in-kind.
ESU-CCCh-11.6.1.3						0	Action is considered in-kind.
ESU-CCCh-12.1.1.1						TBD	
ESU-CCCh-12.1.1.2						0	Action is considered In-Kind
ESU-CCCh-12.1.1.3						0	In-Kind to develop the program, TBD depending on what incentives are provided
ESU-CCCh-12.1.1.4						0	In-Kind, should be considered standard practice, but implementation is ultimately up to the landowner
ESU-CCCh-12.1.2.1						0	Action is considered In-Kind
ESU-CCCh-12.1.2.2						0	Action is considered In-Kind
ESU-CCCh-12.1.2.3						TBD	
ESU-CCCh-12.1.2.4						0	Action is considered In-Kind
ESU-CCCh-12.2.1.1						0	Action is considered In-Kind
ESU-CCCh-12.2.1.2						0	Action is considered In-Kind
ESU-CCCh-12.2.1.3						0	Action is considered In-Kind
ESU-CCCh-12.2.1.4						0	Action is considered In-Kind
ESU-CCCh-12.2.1.5						0	Action is considered In-Kind
ESU-CCCh-12.2.2.1						0	Action is considered In-Kind
ESU-CCCh-13.1.1.1						TBD	
ESU-CCCh-13.1.1.2						TBD	
ESU-CCCh-13.1.1.3						TBD	
ESU-CCCh-13.1.1.4						TBD	
ESU-CCCh-13.2.1.1						0	Action is considered In-Kind
ESU-CCCh-13.2.1.2						0	Action is considered In-Kind
ESU-CCCh-14.1.1.1						TBD	

California Coastal Chinook Salmon ESU Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ESU-CCCh-14.1.1.2						TBD	See Monitoring Chapter
ESU-CCCh-14.1.1.3						0	Action is considered In-Kind
ESU-CCCh-14.1.1.4						0	Action is considered In-Kind
ESU-CCCh-14.1.1.5						0	Action is considered In-Kind
ESU-CCCh-14.1.1.6						0	Action is considered In-Kind
ESU-CCCh-14.1.1.7						TBD	
ESU-CCCh-15.1.1.1						0	Action is considered In-Kind
ESU-CCCh-15.1.1.2						0	Action is considered In-Kind
ESU-CCCh-15.1.1.3						0	Action is considered In-Kind
ESU-CCCh-15.1.1.4						0	Action is considered In-Kind
ESU-CCCh-15.1.1.5						0	Action is considered In-Kind
ESU-CCCh-15.1.2.1						0	Action is considered In-Kind
ESU-CCCh-15.1.2.2						0	Action is considered In-Kind
ESU-CCCh-15.1.3.1						TBD	
ESU-CCCh-16.1.1.1						0	Action is considered In-Kind
ESU-CCCh-16.1.1.2						0	Action is considered In-Kind
ESU-CCCh-16.1.1.3						0	Action is considered In-Kind
ESU-CCCh-16.1.1.4						0	Action is considered In-Kind
ESU-CCCh-16.1.1.5						0	Action is considered In-Kind
ESU-CCCh-16.1.1.6						0	Action is considered In-Kind
ESU-CCCh-16.1.1.7						TBD	
ESU-CCCh-16.1.1.8						0	Action is considered In-Kind
ESU-CCCh-16.1.1.9						0	Action is considered In-Kind
ESU-CCCh-16.1.1.10						TBD	
ESU-CCCh-16.1.1.11						0	Action is considered In-Kind
ESU-CCCh-16.1.1.12						TBD	
ESU-CCCh-16.1.1.13						0	Action is considered In-Kind
ESU-CCCh-17.1.1.1						0	Action is considered In-Kind
ESU-CCCh-17.1.1.2						TBD	
ESU-CCCh-17.1.1.3						TBD	
ESU-CCCh-18.1.1.1						TBD	
ESU-CCCh-18.1.1.2						0	Action is considered In-Kind
ESU-CCCh-18.1.1.3						0	Action is considered In-Kind
ESU-CCCh-18.1.1.4						0	
ESU-CCCh-18.1.1.5						TBD	
ESU-CCCh-18.1.2.1						TBD	
ESU-CCCh-18.1.2.2						TBD	
ESU-CCCh-19.1.1.1						0	Action is considered In-Kind
ESU-CCCh-19.1.1.2						0	Action is considered In-Kind
ESU-CCCh-19.1.1.3						0	Action is considered In-Kind
ESU-CCCh-19.1.1.4						TBD	
ESU-CCCh-19.2.1.1						0	Action is considered In-Kind
ESU-CCCh-19.2.1.2						0	Action is considered In-Kind
ESU-CCCh-19.2.1.3						0	Action is considered In-Kind
ESU-CCCh-19.2.1.4						0	Action is considered In-Kind
ESU-CCCh-19.2.1.5						TBD	
ESU-CCCh-20.1.1.1						TBD	
ESU-CCCh-20.1.1.2						TBD	
ESU-CCCh-20.2.1.1						0	Action is considered In-Kind
ESU-CCCh-20.2.1.2						0	Action is considered In-Kind
ESU-CCCh-20.2.1.3						0	Action is considered In-Kind
ESU-CCCh-21.1.1.1						0	Action is considered In-Kind
ESU-CCCh-22.1.1.1						0	Action is considered In-Kind
ESU-CCCh-22.1.2.1						0	Action is considered In-Kind
ESU-CCCh-22.1.2.2						0	Action is considered In-Kind
ESU-CCCh-22.2.1.1						0	Action is considered In-Kind
ESU-CCCh-22.2.1.2						0	Action is considered In-Kind
ESU-CCCh-22.2.1.3						0	Action is considered In-Kind
ESU-CCCh-22.2.2.1						0	Action is considered In-Kind
ESU-CCCh-22.2.2.2						0	Action is considered In-Kind
ESU-CCCh-22.2.2.3						TBD	Price depends on the type of incentive provided

California Coastal Chinook Salmon ESU Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ESU-CCCh-22.2.2.4						0	Action is considered In-Kind
ESU-CCCh-22.2.2.5						0	Action is considered In-Kind
ESU-CCCh-23.1.1.1						0	Action is considered In-Kind
ESU-CCCh-23.1.1.2						0	Action is considered In-Kind
ESU-CCCh-23.1.1.3						0	Action is considered In-Kind
ESU-CCCh-23.1.1.4						0	Action is considered In-Kind
ESU-CCCh-23.1.1.5						0	Action is considered In-Kind
ESU-CCCh-23.1.1.6						TBD	
ESU-CCCh-23.1.2.1						0	Action is considered In-Kind
ESU-CCCh-23.1.2.2						0	Action is considered In-Kind
ESU-CCCh-23.1.2.3						TBD	
ESU-CCCh-23.1.3.1						TBD	
ESU-CCCh-23.2.1.1						0	Action is considered In-Kind
ESU-CCCh-23.2.1.2						0	Action is considered In-Kind
ESU-CCCh-24.1.1.1						0	Action is considered In-Kind
ESU-CCCh-24.1.1.2						TBD	
ESU-CCCh-24.1.1.3						TBD	
ESU-CCCh-24.1.1.4						0	Action is considered In-Kind
ESU-CCCh-24.1.1.5						0	Action is considered In-Kind
ESU-CCCh-24.1.1.6						TBD	
ESU-CCCh-24.1.1.7						0	Action is considered In-Kind
ESU-CCCh-24.1.1.8						TBD	
ESU-CCCh-24.1.1.9						TBD	
ESU-CCCh-24.1.2.1						TBD	
ESU-CCCh-25.1.1.1						0	Action is considered In-Kind
ESU-CCCh-25.1.1.2						0	
ESU-CCCh-25.1.1.3						0	Action is considered In-Kind
ESU-CCCh-25.1.1.4						0	Action is considered In-Kind
ESU-CCCh-25.1.1.5						0	Action is considered In-Kind
ESU-CCCh-25.1.1.6						0	Action is considered In-Kind
ESU-CCCh-25.1.1.7						0	Action is considered In-Kind
ESU-CCCh-25.1.1.8						0	Action is considered In-Kind
ESU-CCCh-25.1.1.9						0	Action is considered In-Kind
ESU-CCCh-25.2.1.1						0	Action is considered In-Kind
ESU-CCCh-25.2.1.2						0	Action is considered In-Kind
ESU-CCCh-25.2.1.3						0	Action is considered In-Kind
ESU-CCCh-25.2.1.4						0	Action is considered In-Kind
ESU-CCCh-25.2.1.5						0	Action is considered In-Kind
ESU-CCCh-25.2.1.6						0	Action is considered In-Kind
ESU-CCCh-25.2.1.7						0	Action is considered In-Kind
ESU-CCCh-25.2.1.8						0	Action is considered In-Kind
ESU-CCCh-25.2.1.9						0	Action is considered In-Kind
ESU-CCCh-25.2.1.10						0	Action is considered In-Kind
ESU-CCCh-25.2.2.1						TBD	
ESU-CCCh-25.2.2.2						TBD	

Bear River Chinook Salmon (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
BeaR-CCCh-1.1.1.1						0	Cost accounted for in Monitoring Chapter
BeaR-CCCh-2.1.1.1	115.00					115	Cost for fish/habitat restoration assessment at a rate of \$115,000/project.
BeaR-CCCh-2.1.1.2	103	103				205	Cost estimate taken from SONCC coho salmon recovery plan, \$205,000
BeaR-CCCh-6.1.1.1						115	Cost for fish/habitat restoration assessment at a rate of \$115,000/project.
BeaR-CCCh-6.1.1.2	274.00	274.00	274.00	274.00		1,096	Cost estimate taken from SONCC coho salmon recovery plan, \$1,096,000
BeaR-CCCh-6.1.2.1						0	Action is considered In-Kind
BeaR-CCCh-6.2.1.1						0	Action is considered In-Kind
BeaR-CCCh-7.1.1.1						0	Existing programs and outreach are considered In-Kind.
BeaR-CCCh-7.2.1.1						0	Action is considered in-kind
BeaR-CCCh-7.2.1.2						0	Action is considered in-kind
BeaR-CCCh-7.2.1.3						0	Action is considered in-kind
BeaR-CCCh-7.2.1.4						0	Action is considered in-kind
BeaR-CCCh-8.1.1.1						0	Existing programs and outreach are considered In-Kind.
BeaR-CCCh-8.1.1.2						0	Existing programs and outreach are considered In-Kind.
BeaR-CCCh-11.1.1.1						0	Cost accounted for in Monitoring Chapter
BeaR-CCCh-16.1.1.1						0	Action is considered In-Kind
BeaR-CCCh-16.1.1.2						0	Action is considered In-Kind
BeaR-CCCh-16.1.1.3						0	Action is considered In-Kind
BeaR-CCCh-18.1.1.1						0	Action is considered In-Kind
BeaR-CCCh-18.1.2.1	122					122	Cost estimate taken from SONCC coho salmon recovery plan, \$122,000
BeaR-CCCh-18.1.2.2	7					7	Cost estimate taken from SONCC coho salmon recovery plan, \$7,000
BeaR-CCCh-18.1.3.1	0.60					0.60	Cost estimate taken from SONCC coho salmon recovery plan, \$600
BeaR-CCCh-18.2.1.1						0	Action is considered In-Kind
BeaR-CCCh-19.1.1.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
BeaR-CCCh-19.1.1.2						0	Operations conducted normally or with minor modifications are considered In-Kind.
BeaR-CCCh-19.1.1.3						0	Operations conducted normally or with minor modifications are considered In-Kind.
BeaR-CCCh-19.1.1.4						0	Operations conducted normally or with minor modifications are considered In-Kind.
BeaR-CCCh-23.1.1.1						79	Cost based on road inventory for 82 miles of road at a rate of \$957/mile.
BeaR-CCCh-23.1.1.2	2,273	2,273	2,273	2,273		9,092	Cost estimate taken from SONCC coho salmon recovery plan, \$9,092,000
BeaR-CCCh-23.1.1.3	101	101	101			302	Cost estimate taken from SONCC coho salmon recovery plan, \$302,000
BeaR-CCCh-23.1.1.4	200	200	200	200		798	Cost estimate taken from SONCC coho salmon recovery plan, \$798,000
BeaR-CCCh-23.2.1.1						0	Action is considered In-Kind
BeaR-CCCh-25.1.1.1						0	Existing programs and outreach are considered In-Kind.
BeaR-CCCh-25.1.1.2						0	Existing programs and outreach are considered In-Kind.
BeaR-CCCh-25.1.1.3						0	Existing programs and outreach are considered In-Kind.
BeaR-CCCh-25.1.1.4						0	Existing programs and outreach are considered In-Kind.

Humboldt Bay Tributaries Chinook Salmon (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
HumB-CCCh-1.1.1.1	240.2	240.2	240.2	240.2	240.2	1,201	Cost estimate taken from SONCC coho salmon recovery plan, \$1,201,000
HumB-CCCh-1.1.1.2	115					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project.
HumB-CCCh-1.1.1.3	600.5	600.5				1,201	Cost estimate taken from SONCC coho salmon recovery plan, \$1,201,000.
HumB-CCCh-2.1.1.1	115					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project.
HumB-CCCh-2.1.1.2	468	468	468	468		1,871	Cost estimate taken from SONCC coho salmon recovery plan, \$1,871,321
HumB-CCCh-6.1.1.1	115					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project.
HumB-CCCh-6.1.1.2	5,013	5,013				10,026	Cost estimate taken from SONCC coho salmon recovery plan, \$10,026,000
HumB-CCCh-7.1.1.1						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
HumB-CCCh-7.1.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
HumB-CCCh-7.2.1.1						0	Action is considered in-kind
HumB-CCCh-7.2.1.2						0	Action is considered in-kind
HumB-CCCh-7.2.1.3						0	Action is considered in-kind
HumB-CCCh-7.2.1.4						0	Action is considered in-kind
HumB-CCCh-8.1.1.1						0	Action is considered In-Kind
HumB-CCCh-8.1.1.2	207					207	Estimated cost of assessment is \$207,000
HumB-CCCh-8.1.1.3						TBD	Cost will vary with assessment methods and level of detail.
HumB-CCCh-8.1.1.4	207					207	Estimated cost of assessment is \$207,000
HumB-CCCh-8.1.1.5	207					207	Estimated cost of assessment is \$207,000. Final costs will vary depending on methods implemented and extent of rehabilitation.
HumB-CCCh-12.1.1.1	41.4	41.4	41.4	41.4	41.4	207	Estimated cost of assessment is \$207,000. Final costs will vary depending on methods implemented and extent of rehabilitation.
HumB-CCCh-18.1.1.1						0	Cost likely accounted for in above action step for fish/habitat restoration assessment.
HumB-CCCh-18.1.1.2						TBD	Cost based on the amount of linear feet to fence. Cost estimated at a rate of \$3.63/ft.
HumB-CCCh-18.1.1.3						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
HumB-CCCh-19.1.1.1						0	Action is considered In-Kind
HumB-CCCh-19.1.1.2	5,107					5,107	Cost estimate taken from SONCC coho salmon recovery plan, \$5,107,000
HumB-CCCh-19.1.1.3	702					702	Cost estimate taken from SONCC coho salmon recovery plan, \$702,000
HumB-CCCh-19.2.1.1						0	Action is considered In-Kind
HumB-CCCh-19.2.1.2						0	Operations conducted normally or with minor modifications are considered In-Kind.
HumB-CCCh-23.1.1.1	1,642					1,642	Cost based on amount of road network not identified in tributary streams to Humboldt Bay.
HumB-CCCh-23.1.1.2						0	Cost accounted for in above action step
HumB-CCCh-23.1.1.3	13,287	13,287	13,287	13,287	13,287	66,437	Cost estimate taken from SONCC coho salmon recovery plan, \$66,437,000
HumB-CCCh-23.1.1.4	570					570	Cost estimate taken from SONCC coho salmon recovery plan, \$570,000
HumB-CCCh-23.1.1.5	301	301	301	301	301	1,506	Cost estimate taken from SONCC coho salmon recovery plan, \$1,506,000
HumB-CCCh-23.1.1.6						0	Action is considered In-Kind
HumB-CCCh-23.1.1.7	207					207	Estimated cost of assessment is \$207,000. Final costs will vary depending on methods implemented and extent of rehabilitation.

Little River Chinook Salmon (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
LR-CCCh-1.1.1.1	34.11					34	
LR-CCCh-1.1.1.2	420					420	Cost eN7:N39estimate taken from SONCC coho salmon recovery plan, \$420,000
LR-CCCh-1.1.1.3	34.11					34	
LR-CCCh-1.1.1.4	357					357	Cost estimate taken from SONCC coho salmon recovery plan, \$357,000
LR-CCCh-1.1.1.5	207					207	Estimated cost of assessment is \$207,000
LR-CCCh-6.1.1.1	115					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project.
LR-CCCh-6.1.1.2						0	Cost accounted for in another action step.
LR-CCCh-6.1.2.1	115					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project.
LR-CCCh-6.1.2.2	334	334				668	Cost estimate taken from SONCC coho salmon recovery plan, \$668,000
LR-CCCh-7.1.1.1	10					10	Cost estimate taken from SONCC coho salmon recovery plan, \$10,000
LR-CCCh-7.1.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
LR-CCCh-7.1.2.1						0	Action is considered in-kind
LR-CCCh-7.1.2.2	698					698	Cost estimate taken from SONCC coho salmon recovery plan, \$698,000
LR-CCCh-7.1.2.3	96					96	Cost estimate taken from SONCC coho salmon recovery plan, \$96,000
LR-CCCh-7.1.2.4						TBD	Cost dependent on the amount of fencing and water sources needed.
LR-CCCh-8.1.1.1						0	Cost accounted for in Monitoring Chapter
LR-CCCh-8.1.1.2	115					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project.
LR-CCCh-8.1.1.3						0	Cost accounted for in above action step.
LR-CCCh-8.1.1.4	91.00					91	Cost based on erosion assessment for 25% of total watershed acres at a rate of \$12.62/acre.
LR-CCCh-8.1.1.5	207					207	Cost of assessment estimated at \$207,000
LR-CCCh-8.1.1.6						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
LR-CCCh-8.1.1.7	103.5	103.5				207	Cost of assessment estimated at \$207,000
LR-CCCh-23.1.1.1						0	Cost accounted for in above action step.
LR-CCCh-23.1.1.2						0	Cost accounted for in above actions step.
LR-CCCh-23.1.1.3						0	Cost accounted for in above action step.

South Fork and Lower Eel River Chinook Salmon (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SFER-CCCh-1.1.1.1						TBD	Cost based on amount of habitat to acquire to restore estuarine conditions. Cost based on fair market value and landowner participation.
SFER-CCCh-1.1.1.2						0	Action is considered In-Kind
SFER-CCCh-1.1.1.3						0	Cost accounted for below in PASSAGE.
SFER-CCCh-1.1.1.4						0	Action is considered In-Kind
SFER-CCCh-1.1.1.5						0	Action is considered In-Kind
SFER-CCCh-1.1.1.6						0	Cost accounted for in the monitoring chapter.
SFER-CCCh-1.1.2.1	4,350	4,350				8,700	Cost estimate taken from SONCC coho salmon recovery plan, \$8,700,000
SFER-CCCh-1.1.2.2	1,740	1,740	1,740	1,740	1,740	8,700	Cost estimate taken from SONCC coho salmon recovery plan, \$8,700,000
SFER-CCCh-1.1.2.3	1,220	1,220				2,439	Cost based on erosion assessment of 10% of total watershed acres. Combined acreage of Middle and Upper Subbasins equals 1,932,960 acres.
SFER-CCCh-1.1.2.4						0	Action is considered In-Kind
SFER-CCCh-1.1.2.5	20.00					20	Cost based on installing continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance. May be considered an In-Kind action
SFER-CCCh-1.1.3.1						TBD	Cost based on amount of area to be treated at a rate of \$3.63/ft.
SFER-CCCh-1.1.4.1	214.00					214	Cost based on wetland restoration at a rate of \$214,000/project.
SFER-CCCh-1.1.4.2						0	Action is considered In-Kind
SFER-CCCh-1.1.5.1						0	Cost accounted for in another action step.
SFER-CCCh-2.1.1.1	287.00					287	Cost based on riparian and wetland restoration model at a rate of \$74,000 and \$213,000/project, respectively.
SFER-CCCh-2.1.1.2	552	552	552	552		2,209	Cost estimate taken from SONCC coho salmon recovery plan, \$2,209,000
SFER-CCCh-3.1.1.1						0	Action is considered in-kind
SFER-CCCh-5.1.1.1	7,863					7,863	Cost based on assessing 35 barriers for adult escapement and juvenile migration model at a rate of \$36,000 and \$188,000/project, respectively.
SFER-CCCh-5.1.1.2	742	742				1,483	Cost estimate taken from SONCC coho salmon recovery plan, \$1,483,000
SFER-CCCh-6.1.1.1	115.00					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
SFER-CCCh-6.1.1.2	2,574	2,574				5,148	Cost based on treating 198 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
SFER-CCCh-6.1.2.1						0	Cost accounted for in above action step.
SFER-CCCh-6.2.1.1						0	Action is considered in-kind
SFER-CCCh-7.1.1.1						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
SFER-CCCh-7.1.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
SFER-CCCh-7.2.1.1						0	Action is considered in-kind
SFER-CCCh-7.2.1.2						0	Action is considered in-kind
SFER-CCCh-7.2.1.3						0	Action is considered in-kind
SFER-CCCh-7.2.1.4						0	Action is considered in-kind
SFER-CCCh-10.1.1.1	150.00					150	Cost based on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
SFER-CCCh-14.1.1.1						0	Action is considered In-Kind
SFER-CCCh-14.1.1.2						0	Action is considered In-Kind
SFER-CCCh-16.1.1.1						0	Action is considered In-Kind
SFER-CCCh-16.1.1.2						0	Action is considered In-Kind
SFER-CCCh-19.1.1.1						0	Action is considered In-Kind
SFER-CCCh-19.1.1.2	1,507	1,507	1,507	1,507		6,028	Cost estimate taken from SONCC coho salmon recovery plan, \$6,028,000
SFER-CCCh-19.1.1.3	416	416				831	Cost estimate taken from SONCC coho salmon recovery plan, \$831,000
SFER-CCCh-23.1.1.1	768	768				1,535	Cost based on conducting a road inventory of 1,604 miles of road network at a rate of \$957/mile.
SFER-CCCh-23.1.1.2	1,496					1,496	Cost based on road inventory of 1563 miles of road at a rate of \$957/mile.
SFER-CCCh-23.1.1.3	1,047					1,047	Cost estimate taken from SONCC coho salmon recovery plan, \$1,047,000
SFER-CCCh-23.1.1.4	17,374	17,374	17,374			52,121	Cost estimate taken from SONCC coho salmon recovery plan, \$52,121,000
SFER-CCCh-23.1.1.5	1,500	1,500	1,500			4,500	Cost estimate taken from SONCC coho salmon recovery plan, \$4,500,000
SFER-CCCh-23.1.1.6						0	Action is considered In-Kind
SFER-CCCh-25.1.1.1	1,317	1,317	1,317	1,317	1,317	6,584	Cost estimate taken from SONCC coho salmon recovery plan, \$6,584,000
SFER-CCCh-25.1.1.2						0	Action is considered In-Kind
SFER-CCCh-25.1.2.1	107	107	107	107	107	535	Cost based on amount of fish screens needed to be screened. Cost for fish screen on large tributary estimated for 10 screens at \$53,000/screen for a total of \$535,000

Mad River Chinook Salmon (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
MdR-CCCh-1.1.1.1	283					283	Cost based on estuary use/residence time model at a rate of \$283,000/project.
MdR-CCCh-1.1.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
MdR-CCCh-1.1.1.3						0	Cost accounted for in above action step.
MdR-CCCh-1.1.1.4	296.50	296.50				593	Cost should be coordinated with other action steps above to reduce cost and redundancy. Cost estimate taken from SONCC coho salmon recovery plan, \$593,000
MdR-CCCh-2.1.1.1	74.00					74	Cost based on riparian restoration model at a rate of \$74,000/project.
MdR-CCCh-2.1.1.2	17	17				34	Cost estimate taken from SONCC coho salmon recovery plan, \$34,000
MdR-CCCh-5.1.1.1	44.54					45	
MdR-CCCh-5.1.1.2	218.00	218.00				436	Cost estimate taken from SONCC coho salmon recovery plan, \$436,000
MdR-CCCh-6.1.1.1	34.11					34	
MdR-CCCh-6.1.1.2	3452.50	3452.50				6,903	Cost estimate taken from SONCC coho salmon recovery plan, \$6,903,000
MdR-CCCh-6.2.1.1						0	Action is considered in-kind
MdR-CCCh-7.1.1.1						0	Action is considered In-Kind
MdR-CCCh-7.1.1.2	3,530					3,530	Cost estimate taken from SONCC coho salmon recovery plan, \$3,530,000
MdR-CCCh-8.1.1.1	115.00					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project.
MdR-CCCh-10.1.1.1	207					TBD	
MdR-CCCh-10.1.1.2	207					TBD	
MdR-CCCh-14.1.1.1	160					160	Cost estimate taken from SONCC coho salmon recovery plan, \$160,000
MdR-CCCh-16.1.1.1						0	Action is considered In-Kind
MdR-CCCh-16.1.1.2						0	Action is considered In-Kind
MdR-CCCh-18.1.1.1	74.00					74	Cost based on riparian restoration model at a rate of \$74,000/project.
MdR-CCCh-18.1.1.2						0	Cost accounted for in previous action step
MdR-CCCh-18.1.1.3	41					41	Cost estimate taken from SONCC coho salmon recovery plan, \$41,000
MdR-CCCh-18.1.1.4	760					760	Cost estimate taken from SONCC coho salmon recovery plan, \$760,000
MdR-CCCh-18.1.1.5	2					2	Cost estimate taken from SONCC coho salmon recovery plan, \$2,000
MdR-CCCh-19.1.1.1						0	Action is considered In-Kind
MdR-CCCh-19.1.1.2						0	Action is considered In-Kind
MdR-CCCh-23.1.1.1	2,107					2,107	
MdR-CCCh-23.1.1.2	31,005	31,005				62,010	Cost estimate taken from SONCC coho salmon recovery plan, \$62,010,000
MdR-CCCh-23.1.1.3	894	894				1,787	Cost estimate taken from SONCC coho salmon recovery plan, \$1,787,000
MdR-CCCh-23.1.1.4						0	Action is considered In-Kind
MdR-CCCh-23.2.1.1						0	Action is considered In-Kind

**Mattole River Chinook Salmon (North Coastal) Recovery Action Costs**

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
MtR-CCCh-1.1.1.1	214					214	Cost based wetland restoration at a rate of \$214,000/project.
MtR-CCCh-1.1.1.2	148					148	Cost estimate taken from SONCC coho salmon recovery plan, \$148,000.
MtR-CCCh-2.1.1.1	115					115	Cost based on fish/habitat restoration at a rate of \$115,000/project.
MtR-CCCh-2.1.1.2	941					941	Cost estimate taken from SONCC coho salmon recovery plan, \$941,000
MtR-CCCh-2.1.1.3						0	Cost accounted for in above action step.
MtR-CCCh-2.1.1.4						0	Cost accounted for in above action step.
MtR-CCCh-2.1.1.5						TBD	
MtR-CCCh-3.1.1.1						0	Action is considered In-Kind
MtR-CCCh-5.1.1.1	318					318	Cost estimate taken from SONCC coho salmon recovery plan, \$318,000
MtR-CCCh-6.1.1.1						0	Action is considered In-Kind
MtR-CCCh-6.1.1.2	641.8	641.8	641.8	641.8		2,567	Cost estimate taken from SONCC coho salmon recovery plan, \$2,567,000
MtR-CCCh-6.1.1.3	176.5	176.5				353	Cost estimate taken from SONCC coho salmon recovery plan, \$353,000
MtR-CCCh-6.1.2.1	115					115	Cost based on fish/habitat restoration. Cost estimated at \$115,000/project..
MtR-CCCh-6.1.2.3						0	Cost accounted for in above action step.
MtR-CCCh-6.2.1.1						0	Action is considered in-kind and could be accomplished by outreach and increased enforcement.
MtR-CCCh-7.1.1.1						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
MtR-CCCh-7.1.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
MtR-CCCh-7.1.2.1	207					207	Estimated cost of assessment is \$207,000
MtR-CCCh-7.1.2.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
MtR-CCCh-7.2.1.1						0	Action is considered in-kind
MtR-CCCh-7.2.1.2						0	Action is considered in-kind
MtR-CCCh-7.2.1.3						0	Action is considered in-kind
MtR-CCCh-7.2.1.4						0	Action is considered in-kind
MtR-CCCh-8.1.1.1	451					451	Cost estimate taken from SONCC coho salmon recovery plan, \$451,000
MtR-CCCh-8.1.1.2	207					207	Estimated cost to develop a plan is \$207,000
MtR-CCCh-10.1.1.1	103.5	103.5				207	Estimated cost to develop a plan is \$207,000
MtR-CCCh-12.1.1.1	18.5	18.5	18.5	18.5		74	Cost estimate taken from SONCC coho salmon recovery plan, \$74,000
MtR-CCCh-12.1.1.2	9.3	9.3	9.3	9.3		37	Cost estimate taken from SONCC coho salmon recovery plan, \$37,000
MtR-CCCh-12.1.1.3	18.5	18.5	18.5	18.5		74	Cost estimate taken from SONCC coho salmon recovery plan, \$74,000
MtR-CCCh-18.1.1.1	60.00	60.00				120	Cost based on erosion assessment of 5% of total acres at a rate of \$12.62/acre.
MtR-CCCh-18.1.1.2	30.00					30	Cost estimate taken from SONCC coho salmon recovery plan, \$30,000
MtR-CCCh-19.1.1.1						0	Action is considered In-Kind
MtR-CCCh-19.1.1.2						0	Action is considered In-Kind
MtR-CCCh-23.1.1.1	364.76	364.76				730	
MtR-CCCh-23.1.1.2						0	Cost accounted for in above action step.
MtR-CCCh-23.1.1.3	568	568	568	568	568	2,838	Cost estimate taken from SONCC coho salmon recovery plan, \$2,838,000
MtR-CCCh-23.1.1.4	1,952					1,952	Cost estimate taken from SONCC coho salmon recovery plan, \$1,952,000
MtR-CCCh-23.1.1.5						0	Cost accounted for in above action step.
MtR-CCCh-23.1.1.6	11,405					11,405	Cost estimate taken from SONCC coho salmon recovery plan, \$11,405,000
MtR-CCCh-23.1.1.7						0	Cost accounted for in above action step.
MtR-CCCh-23.2.1.1						0	Action is considered In-Kind
MtR-CCCh-25.1.1.1						0	Action is considered In-Kind
MtR-CCCh-25.1.1.2						TBD	Cost for amount of incentives necessary to reduce diversions during the summer is unknown. Several incentive programs currently exist and should be explored as potential collaborators.
MtR-CCCh-25.1.1.3						0	Action is considered In-Kind
MtR-CCCh-25.1.1.4						0	Action is considered In-Kind
MtR-CCCh-25.1.1.5						0	Action is considered In-Kind
MtR-CCCh-25.1.2.1	350	350				700	Cost estimate taken from SONCC coho salmon recovery plan, \$700,000
MtR-CCCh-25.1.2.2	7.5	7.5				15	Cost estimate taken from SONCC coho salmon recovery plan, \$16,000
MtR-CCCh-25.1.2.3	3					3	Cost based on a minimum of 3 gauges at a rate of \$1,000/gauge. Cost does not account for data management or maintenance.

Redwood Creek Chinook Salmon (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
RC-CCCh-1.1.1.1	115.00					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project.
RC-CCCh-1.1.1.2	234.5	234.5				469	Cost estimate taken from SONCC coho salmon recovery plan, \$469,000
RC-CCCh-1.1.1.3	215					215	Cost based on providing passage at 5 stream crossings at a rate of \$43,000
RC-CCCh-1.1.1.4	43.00					43	Cost based on improving passage at a rate of \$43,000/project.
RC-CCCh-1.1.2.1	282					282	Cost based on estuary use/residence time monitoring at a rate of \$282,000/project.
RC-CCCh-1.1.2.2	383.5	383.5				767	Cost estimate taken from SONCC coho salmon recovery plan, \$767,000
RC-CCCh-1.2.1.1	115.00					115	Cost based on fish/habitat restoration monitoring at \$115,000/project.
RC-CCCh-1.2.1.2						TBD	Cost based on practices and projects to address design flaws.
RC-CCCh-2.1.1.1	115.00					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project. This action step should coordinate with other action steps.
RC-CCCh-2.1.1.2	460.0	460.0				920	Cost estimate taken from SONCC coho salmon recovery plan, \$920,000
RC-CCCh-2.2.1.1	115					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project. This action step should coordinate with other action steps.
RC-CCCh-2.2.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
RC-CCCh-5.1.1.1						436	Cost estimate taken from SONCC coho salmon recovery plan, \$436,000
RC-CCCh-6.1.1.1	115.00					115	Cost based on fish/habitat restoration monitoring at a rate of \$114,861/project. This recommendation should be coordinated with other action steps to reduce redundancy.
RC-CCCh-6.1.1.2						TBD	Cost based on amount of habitat needed to be restored. Cost estimated at \$26,000/mile with in project/mile in 50% high IP.
RC-CCCh-6.1.2.1	341.0	341.0				682	Cost estimate taken from SONCC coho salmon recovery plan for 1 full time biologist for half a year. Estimated cost of \$34,000 for half a year. Total cost over ten years is \$682,000.
RC-CCCh-6.1.3.1						0	This recommendation is based on permitting and management actions and no direct cost of implementation are accounted for. Action is considered In-Kind
RC-CCCh-6.2.1.1						0	Action is considered in-kind.
RC-CCCh-7.1.1.1	188					188	Cost estimate taken from SONCC coho salmon recovery plan, \$188,000.
RC-CCCh-7.1.1.2	52					52	Cost estimate taken from SONCC coho salmon recovery plan, \$52,000
RC-CCCh-10.1.1.1	229.00					229	Cost based on erosion assessment of 10% of total watershed acres at a rate of \$12.62/acre.
RC-CCCh-10.1.1.2	528					528	Cost estimate taken from SONCC coho salmon recovery plan, \$528,000
RC-CCCh-14.1.1.1						0	Cost should be minimal as this recommendation is a management decision. Action is considered In-Kind
RC-CCCh-14.1.1.2	103.5	103.5				207	Estimated cost of assessment is \$207,000
RC-CCCh-14.1.1.3						TBD	
RC-CCCh-18.1.1.1	74.00					74	Cost based on riparian restoration monitoring at a rate of \$74,000/project.
RC-CCCh-18.1.1.2	29					29	Cost estimate taken from SONCC coho salmon recovery plan, \$29,000
RC-CCCh-19.2.1.1						0	Cost accounted for in WATER QUALITY
RC-CCCh-19.2.1.2						0	This recommendation should be standard practice. Action is considered In-Kind
RC-CCCh-23.1.1.1	35,492	35,492				70,983	Cost estimate taken from SONCC coho salmon recovery plan, \$70,983,000
RC-CCCh-23.1.1.2						0	Cost accounted for in above action step.
RC-CCCh-23.1.1.3						0	Action is considered In-Kind
RC-CCCh-23.1.1.4	531.5	531.5				1,063	Cost estimate taken from SONCC coho salmon recovery plan, \$1,063,000
RC-CCCh-25.1.1.1	65.00					65	Cost based on hydrological modeling at a rate of \$65,000/project.
RC-CCCh-25.1.1.2						TBD	Cost based on amount of diversions impacting salmonids and actions needed to reduce diversions. Subsequent actions could include off-channel storage, improved irrigation efficiency, etc.

Larabee Creek Chinook Salmon (North Mountain Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
LbC-CCCh-2.1.1.1	115.00					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000
LbC-CCCh-2.1.1.2	372					372	Based on amount of habitat identified to be reconnected from fish/habitat restoration assessment in action step above. Cost estimated at \$37,200/acre and is estimated being needed for 10 acres for a total of \$372,000.
LbC-CCCh-3.1.1.1						0	Action is considered in-kind
LbC-CCCh-5.1.1.1	260					260	Cost based on replacing culvert at a rate of 260,000/culvert.
LbC-CCCh-5.1.1.2						0	Action is considered In-Kind
LbC-CCCh-6.1.1.1	115					115	Mainstem Larabee Creek and lower tributaries. Cost based on fish/habitat restoration assessment at a rate of \$115,000/project.
LbC-CCCh-6.1.1.2	130	130				260	Mainstem Larabee Creek and lower tributaries. Costs will vary depending on methods implemented and extent of rehabilitation. Cost for stream habitat complexity estimated at \$26,000/mile and is estimated for 10 miles for a total of \$260,000.
LbC-CCCh-7.1.1.1						0	Action is considered in-kind
LbC-CCCh-7.1.1.2						0	Action is considered in-kind
LbC-CCCh-7.1.1.3						0	Action is considered in-kind
LbC-CCCh-7.1.1.4						0	Action is considered in-kind
LbC-CCCh-14.1.1.1	207					207	Cost of assessment is estimated at \$207,000
LbC-CCCh-14.1.1.2	207					207	Cost of assessment is estimated at \$207,000
LbC-CCCh-14.1.1.3	207					207	Cost of assessment is estimated at \$207,000
LbC-CCCh-14.1.1.4						TBD	
LbC-CCCh-16.1.1.1						0	Action is considered In-Kind
LbC-CCCh-19.1.1.1						0	Lower mainstem Larabee Creek. Action is considered In-Kind
LbC-CCCh-19.1.1.2	7.5	7.5				15	Lower mainstem Larabee Creek. Costs will vary depending on methods implemented and extent of rehabilitation. Riparian thinning estimated at \$15,000/acre and estimated for 10 acres
LbC-CCCh-19.1.1.3	103.5	103.5				207	Lower mainstem Larabee Creek. Costs will vary depending on methods implemented and extent of rehabilitation. Cost for riparian planting estimated at \$20,719/acre and estimated for 10 acres for a total of \$207,000.
LbC-CCCh-23.1.1.1	207					207	Cost of assessment estimated at \$207,000
LbC-CCCh-23.1.1.2						TBD	Cost for number of miles of road to decommission is unknown. Cost to decommission is estimated at \$12,000/mile.
LbC-CCCh-23.1.1.3						TBD	Miles to upgrade is unknown. Cost to upgrade is estimated at \$21,000/mile.
LbC-CCCh-23.1.1.4						0	Action is considered In-Kind
LbC-CCCh-23.2.1.1						0	Action is considered In-Kind

Upper Eel River, Chinook Salmon (North Mountain Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
UER-CCCh-3.1.1.1	65					65	Cost based on stream flow/precipitation model at a rate of \$65,000/project and should be completed within the first 5 years. Total cost to restore unimpaired flows based on a variety of methods such as conservation, storage, and water lease/acquisition.
UER-CCCh-3.1.1.2						0	Cost accounted for in other action steps.
UER-CCCh-3.1.1.3						0	Action is considered In-Kind
UER-CCCh-3.1.1.4	500					500	
UER-CCCh-3.1.1.5	50.00					50	
UER-CCCh-3.1.1.6	0.75	0.75	0.75	0.75		3	Cost based on installing a minimum of 3 stream flow gauges at a rate of \$1,000/gauge. Cost does not account for data management or maintenance.
UER-CCCh-5.1.1.1	207					207	Cost of assessment estimated at \$207,000
UER-CCCh-5.1.1.2	207					207	Cost of assessment estimated at \$207,000
UER-CCCh-5.1.1.3	134.00					134	Cost based on abundance/distribution model at a rate of \$134,000/project.
UER-CCCh-5.1.1.4	25.00					25	
UER-CCCh-5.1.1.5						0	Cost accounted for in below action step.
UER-CCCh-5.1.1.6	213.00					213	Cost based on providing passage at rate of \$213,000/project.
UER-CCCh-5.1.1.7	213.00					213	Cost based on providing passage at rate of \$213,000/project.
UER-CCCh-5.1.1.8	213.00					213	Cost based on providing passage at rate of \$213,000/project.
UER-CCCh-5.1.1.9	213.00					213	Cost based on providing passage at rate of \$213,000/project.
UER-CCCh-5.1.1.10	213.00					213	Cost based on providing passage at rate of \$213,000/project.
UER-CCCh-5.1.1.11	213.00					213	Cost based on providing passage at rate of \$213,000/project.
UER-CCCh-6.1.1.1	2,535	2,535	2,535	2,535		10,140	Cost based on treating 39 miles (assume 1 project/mile in 50%high IP) at a rate of \$260,000/mile. (Cost revised by information provided by Mendocino National Forest).
UER-CCCh-6.1.1.2	115					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
UER-CCCh-6.1.1.3						0	Action is considered In-Kind
UER-CCCh-7.1.1.1						TBD	Cost based on amount of habitat needed, fair market value, and landowner participation.
UER-CCCh-7.1.1.2						0	Action is considered In-Kind
UER-CCCh-7.1.1.3	37.50	37.50				75	Cost based on treating 3.9 miles (assume 1 project/mile in 5% high IP) at a rate of \$3.63/ft.
UER-CCCh-10.1.1.1	207					TBD	
UER-CCCh-10.1.1.2	207					TBD	
UER-CCCh-11.1.1.1						0	Costs considered in previous actions
UER-CCCh-11.1.1.2	50.00					50	
UER-CCCh-11.1.1.3	30.00					30	
UER-CCCh-11.1.1.4	37.50	37.50				75	
UER-CCCh-11.1.1.5						0	Cost accounted for in Monitoring Chapter
UER-CCCh-14.1.1.1						TBD	Cost based on amount of exotic piscivorous fish species to be removed. Cost for pikeminnow eradication estimated at \$9.38/fish.
UER-CCCh-14.1.1.2						0	Cost accounted for in above action step.
UER-CCCh-14.1.1.3	207					207	Cost of assessment estimated at \$207,000
UER-CCCh-15.1.1.1						0	Action is considered In-Kind
UER-CCCh-15.1.1.2	100.00	100.00				200	
UER-CCCh-15.1.1.3	250.00	250.00				500	
UER-CCCh-16.1.1.1						0	Action is considered In-Kind
UER-CCCh-16.1.1.2	50.00	50.00				100	
UER-CCCh-16.1.1.3	25.00	25.00				50	
UER-CCCh-23.1.1.1						TBD	Cost based on conducting a road inventory. Estimate for road inventory is \$957/mile.
UER-CCCh-23.1.1.2						TBD	Can not make cost estimate at this time.
UER-CCCh-23.1.1.3	100.00	100.00				200	Very rough guess based on estimates from similar areas of US Forest Service land.
UER-CCCh-23.1.1.4	2,500	2,500				5,000	This estimate based on CDFW and USFS rough estimates. (Cost revised based on comments from the Mendocino National Forest).
UER-CCCh-23.1.1.5	103.5	103.5				207	Estimated cost of assessment for the need of projects is \$207,000
UER-CCCh-23.1.1.6	400.00					400	Estimate 20 miles at 20k
UER-CCCh-23.1.1.7	400.00	400.00				800	Estimate 40 miles at 20k

Van Duzen River, Chinook Salmon (North Mountain Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
VDR-CCCh-2.1.1.1	115					115	Cost based on amount of habitat to be restored. Cost for fish/habitat restoration monitoring estimated at \$115,000/project.
VDR-CCCh-2.1.1.2	198					198	Cost estimate taken from SONCC coho salmon recovery plan, \$198,000
VDR-CCCh-3.1.1.1						0	Action is considered in-kind
VDR-CCCh-5.1.1.1	58	58				115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project. Additional cost expected for implementation of the plan once finalized.
VDR-CCCh-5.1.1.2	58	58				115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project. Additional cost expected once plan is finalized.
VDR-CCCh-5.1.1.3	58	58				115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project.
VDR-CCCh-5.1.1.4	22	22				43	Cost based on treating unknown partial barrier at a rate of \$43,000/project.
VDR-CCCh-5.1.1.5	22	22				43	Cost based on improving passage at unknown partial barrier at a rate of \$43,000/project.
VDR-CCCh-5.1.1.6	22	22				43	Cost based on improving passage at unknown partial barrier at a rate of \$43,000/project.
VDR-CCCh-5.1.1.7	267	267				533	Cost based on improving passage at unknown partial barrier at a rate of \$533,000/project.
VDR-CCCh-5.1.1.8	267	267				533	Cost based on improving passage at unknown partial barrier at a rate of \$533,000/project.
VDR-CCCh-5.1.1.9						0	Cost accounted for in above action steps.
VDR-CCCh-6.1.1.1	115					115	Cost based on fish/habitat monitoring at a rate of \$115,000/project. This action step should be coordinated with above action step, which can reduce redundancy and cost.
VDR-CCCh-6.1.1.2	16,709					16,709	Cost estimate taken from SONCC coho salmon recovery plan, \$16,709,000
VDR-CCCh-6.2.1.1						0	Action is considered in-kind
VDR-CCCh-7.1.1.1						0	Action is considered in-kind
VDR-CCCh-7.1.1.2						0	Action is considered in-kind
VDR-CCCh-7.1.1.3						0	Action is considered in-kind
VDR-CCCh-7.1.1.4						0	Action is considered in-kind
VDR-CCCh-16.1.1.1						0	Action is considered In-Kind
VDR-CCCh-18.1.1.1	173					173	Cost based erosion assessment of 5% of total acres at a rate of \$12.62/acre.
VDR-CCCh-18.1.1.2						TBD	Cost based on amount of area to be fenced identified from assessment. Cost estimated at \$3.63/ft.
VDR-CCCh-19.1.1.1	74.00					74	Cost based on riparian restoration monitoring at a rate of \$74,000/project.
VDR-CCCh-19.1.1.2						0	Action is considered In-Kind
VDR-CCCh-23.1.1.1	2,902					2,902	Cost estimate taken from SONCC coho salmon recovery plan, \$2,902,000
VDR-CCCh-23.1.1.2	157,199					157,199	Cost estimate taken from SONCC coho salmon recovery plan, \$157,199,000
VDR-CCCh-23.1.1.3	4,735					4,735	Cost estimate taken from SONCC coho salmon recovery plan, \$4,735,000
VDR-CCCh-23.1.1.4						0	Action is considered In-Kind
VDR-CCCh-23.1.1.5						TBD	Cost based on size of unstable hillslope. Cost for erosion assessment estimated at \$12.62/acre.
VDR-CCCh-23.1.1.6						TBD	Cost based on size of unstable hillslope. Cost for erosion assessment estimated at \$12.62/acre.
VDR-CCCh-23.1.1.7						TBD	Cost based on size of unstable hillslope. Cost for erosion assessment estimated at \$12.62/acre.
VDR-CCCh-23.2.1.1						0	Action is considered In-Kind
VDR-CCCh-25.1.1.1						TBD	Cost based on amount of incentives to provide to reduce diversions during the summer. Some incentive programs are currently in place and this recommendation should coordinate with those efforts.
VDR-CCCh-25.1.1.2	65.00					65	Cost based on stream flow/precipitation monitoring at a rate of \$65,000/project.
VDR-CCCh-25.1.1.3						0	Action is considered In-Kind
VDR-CCCh-25.1.1.4	65.00					65	Cost based on stream flow/precipitation monitoring at a rate of \$65,000/project. This recommendation could be coordinated with above action steps.
VDR-CCCh-25.1.1.5						0	Action is considered In-Kind
VDR-CCCh-25.1.1.6	207					207	Estimated cost of assessment is \$207,000
VDR-CCCh-25.1.1.7						0	Action is considered In-Kind
VDR-CCCh-25.2.1.1						0	Action is considered In-Kind
VDR-CCCh-25.2.1.2						0	Action is considered In-Kind
VDR-CCCh-25.2.1.3						0	Action is considered In-Kind

**Big River Chinook Salmon (North-Central Coastal) Recovery Action Costs**

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
BR-CCCh-2.1.1.1	50.00	50.00				100	Existing program could be expanded at minimal cost. Estimate additional monitoring costs at \$10K/year.
BR-CCCh-2.1.1.2	50	50				100	Costs depend on level of technical assistance required and types of projects proposed. Many salmon recovery efforts and management programs are currently ongoing. It is possible that there could be additional salmon restoration costs identified based on recovery needs of the species; however, at this time we do not have sufficient information to estimate those potential costs or identify the actions under which they might fall. Cost of assessment estimated at \$100,000.
BR-CCCh-2.1.1.3	103.5	103.5				207	Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
BR-CCCh-2.1.1.4						TBD	TBD, cost based on amount of habitat. Cost estimate for floodplain connectivity estimated at a rate of \$41,000/acre. Cost of assessment is estimated in above action step.
BR-CCCh-5.1.1.1						TBD	Cost could be partially accounted for in fish/habitat monitoring. A total of 4 impassable barriers are currently known.
BR-CCCh-6.1.1.1	57.50	57.50				115	Cost for fish/habitat monitoring is estimated at \$115,000/project.
BR-CCCh-6.1.1.2	300.00	300.00				600	
BR-CCCh-6.1.1.3	232.50	232.50	232.50	232.50		930	Cost based on treating 36 miles (assume 50% High IP) at a rate of \$26,000/mile. Costs may vary significantly due to access, varying paucity of large wood between sub-watersheds, and installation techniques. Much of Big River has been habitat typed and thus the stream reaches lacking wood can be readily identified. Permitting should be streamlined because of programmatic biological opinions for these types of actions. Many key areas in Big River have been targeted for LWD enhancement through the MRC HCP and on JDSF and total costs may be significantly less than projected.
BR-CCCh-6.1.1.4						0	Costs will vary with site specific conditions (such as access and availability of materials). However, significant cost saving could result if projects are implemented when other land management action are planned. Action is considered In-Kind
BR-CCCh-6.1.1.5						0	Cost are likely part of other action steps.
BR-CCCh-7.1.1.1						TBD	Cost cannot be estimated because overall amount of landowner participation is unknown (particularly for conservation easements).
BR-CCCh-7.1.1.2						0	Action is considered In-Kind
BR-CCCh-7.1.1.3	416.50	416.50	416.50	416.50		1,666	Recommendation from CDFW coastal watershed report. Cost based on treating 1 mile (assume 80 acres/mile in 5% High IP with a 1 mile minimum) at a rate of \$21,000/acre.
BR-CCCh-7.1.1.4						0	Action is considered In-Kind
BR-CCCh-8.1.1.1	207					207	Cost of assessment is estimated at \$207,000
BR-CCCh-8.1.1.2						TBD	A sediment assessment will identify high priority slides and landings. Cost of assessment accounted for in earlier action step.
BR-CCCh-8.1.1.3						0	This infrastructure is likely present in much of the Big River subwatersheds. Additional sites may be installed as part of the timber harvest plan process and the cost for construction will likely be absorbed on a harvest plan by harvest plan basis. Ongoing maintenance will likely occur as part of yearly evaluation prior to the winter period. Maintenance costs are estimated at \$50,000/yr. Most of these costs are not anticipated to be additional costs to landowners but should be viewed as expenses incurred for maintenance of existing infrastructure. Action is considered in-kind
BR-CCCh-11.1.1.1						0	Cost accounted for in the Monitoring Chapter.
BR-CCCh-11.1.1.2						0	Most of the watershed has been habitat typed according to CDFW stream protocols. New habitat assessment methods may result in additional (but unknown) costs for Big River. Cost accounted for in the Monitoring Chapter.
BR-CCCh-11.1.1.3						0	Cost accounted for in the Monitoring Chapter.
BR-CCCh-11.1.1.4						0	Cost accounted for in the Monitoring Chapter.
BR-CCCh-11.1.1.5						0	Action is considered In-Kind
BR-CCCh-11.1.1.6	50.00					50	Rough estimate for committee costs and report preparation.
BR-CCCh-19.1.1.1						0	Action is considered In-Kind
BR-CCCh-19.1.1.2						0	Action is considered In-Kind
BR-CCCh-19.1.1.3						0	Action is considered In-Kind
BR-CCCh-19.1.1.4						0	Action is considered In-Kind
BR-CCCh-23.1.1.1	300.00	300.00				600	This plan should leverage the Big River TMDL. If most of the TMDL recommendations are adopted the total cost of this plan would likely be significantly less than that estimated here. Cost for road inventory is estimated at \$1000/mile (assume 50% of road network).
BR-CCCh-23.1.1.2						0	Cost likely accounted for in other action steps.
BR-CCCh-23.1.1.3	18.50	18.50				37	Cost based on decommissioning 3.1 miles of riparian road network at a rate of \$12,000/mile. If upgraded, cost would be \$66,000
BR-CCCh-23.1.1.4						0	Action is considered In-Kind
BR-CCCh-23.1.1.5						0	Action is considered In-Kind
BR-CCCh-23.1.1.6	15.50	15.50				31	Cost based on sediment assessment for 5% of road network at a rate of \$1,400/mile.
BR-CCCh-23.1.1.7						0	Action is considered In-Kind
BR-CCCh-24.1.1							
BR-CCCh-24.1.1.1						0	Action is considered In-Kind
BR-CCCh-24.2.1.1	103.5	103.5				207	Cost based on amount of high-risk shallow-seeded landslide areas needed to be protected. Cost to protect vary depending on methods applied. Cost of assessment is estimated at \$207,000 and should be done within the first ten years.

Noyo River Chinook Salmon (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NR-CCCh-1.1.1.1	20.00					20	
NR-CCCh-2.1.1.1	10.00					10	Rough estimate for consultant to use existing data and conduct some ground truthing.
NR-CCCh-2.1.1.2						0	Action is considered In-Kind
NR-CCCh-2.1.1.3	94.00	94.00				188	Cost based on treating 5 miles, with 1 project/mile in high IP, at a rate of \$37,607/mile.
NR-CCCh-5.1.1.1	362.00	362.00				724	Cost based on treating 1 barrier at a rate of \$724,000/unit.
NR-CCCh-5.1.1.2						0	Action is considered In-Kind and the Fish Passage Forum discusses priorities
NR-CCCh-5.1.1.3						TBD	
NR-CCCh-6.1.1.1						0	Action is considered In-Kind
NR-CCCh-6.1.1.2						0	There will be no cost when leaving remaining instream structures in place. Action is considered In-Kind
NR-CCCh-6.1.1.3	65.00	65.00				130	Projects such as this are directly aimed at improving long-term survival for all freshwater life stages of salmonids. Cost is based on treating 5 miles, assuming 50% of high IP, at a rate of \$26,000/mile. If ELJ are used, total cost would be \$506,000.
NR-CCCh-6.1.1.4						0	Cost of educating the railroad regarding the importance of large woody debris and their CDFW 1600 program is expected to be part of conducting business. Action is considered In-Kind
NR-CCCh-6.1.1.5						0	Cost accounted for in install or enhance existing LWD, boulders or other instream features.
NR-CCCh-6.1.1.6						0	Action is considered In-Kind
NR-CCCh-7.1.1.1						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
NR-CCCh-7.1.2.1						0	As most of the land is used for forest management, most of this cost will be absorbed as part of on going forestry practices. Additional cost may be incurred across the areas of the watershed where industrial land management actions occur. Action is considered In-Kind
NR-CCCh-7.1.2.2						0	As most of the land is used for forest management, most of this cost will be absorbed as part of on going forestry practices. Cost of easements cannot be made without specific information. Action is considered In-Kind
NR-CCCh-8.1.1.1						0	Cost difficult to estimate because assessments for the magnitude of the problem were not available. Additionally, many sediment sources in high priority watersheds have been addressed, often through the timber harvest process and these costs should be considered an ongoing operation expense and thus considered in-kind
NR-CCCh-8.1.1.2						0	Since majority of watershed is owned by private timber companies, much of the road network has likely been assessed. Action is considered In-Kind
NR-CCCh-8.1.1.3	250.00	250.00	250.00	250.00	250.00	3,000	This infrastructure is likely present in many of the Noyo subwatersheds. Additional sites may be installed as part of the timber harvest plan process and the cost for construction will likely be absorbed on a harvest plan by harvest plan basis. Ongoing maintenance will likely occur as part of yearly evaluation prior to the winter period. Maintenance costs are estimated at \$50,000/yr.
NR-CCCh-8.1.1.4						0	Cost is likely to be low, since agency staff time will likely cover much of the work.
NR-CCCh-10.1.1.1						TBD	Cost dependent upon fair market value, landowner participation, and amount of habitat needed for recovery of species.
NR-CCCh-10.1.2.1						0	Cost accounted for in riparian recovery actions.
NR-CCCh-10.1.2.2						0	Cost of this action step is likely covered through future THPs in the watershed. Action is considered In-Kind
NR-CCCh-10.1.2.3						0	Action is considered In-Kind
NR-CCCh-10.1.2.4						TBD	Cost will depend upon landowner willingness and fair market value.
NR-CCCh-10.1.2.5							
NR-CCCh-11.1.1.1						0	Action is considered In-Kind
NR-CCCh-11.1.1.2						0	Cost accounted for in the Monitoring Chapter.
NR-CCCh-11.1.1.3						0	Cost accounted for in the Monitoring Chapter.
NR-CCCh-11.1.1.4						0	Action is considered In-Kind
NR-CCCh-11.1.1.5						0	Action is considered In-Kind
NR-CCCh-11.1.1.6						0	Action is considered In-Kind
NR-CCCh-11.1.1.7						0	Action is considered In-Kind
NR-CCCh-11.1.1.8						0	Action is considered In-Kind
NR-CCCh-11.1.1.9						0	Action is considered In-Kind
NR-CCCh-11.1.1.10						0	Action is considered In-Kind
NR-CCCh-11.1.1.11						0	Action is considered In-Kind
NR-CCCh-19.1.1.1	30.00					30	
NR-CCCh-19.1.1.2						0	Action is considered In-Kind
NR-CCCh-19.1.1.3						0	Action is considered In-Kind
NR-CCCh-19.1.1.4						0	Action is considered In-Kind
NR-CCCh-19.1.1.5						0	Action is considered In-Kind
NR-CCCh-19.1.1.6						0	Similar existing programs could be modified and implemented at minimal cost. Action is considered In-Kind
NR-CCCh-19.1.1.7						0	The cost in considering development of the above mentioned plan is unlikely to cost much. Action is considered In-Kind
NR-CCCh-19.2.1.1						0	Discouraging incompatible land uses can likely be done through existing regulatory channels utilizing staff time. Action is considered In-Kind
NR-CCCh-19.2.1.2						0	Action is considered In-Kind
NR-CCCh-19.2.1.3						0	Action is considered In-Kind
NR-CCCh-19.2.1.4						0	Similar existing programs could be modified and implemented at minimal cost. Action is considered In-Kind
NR-CCCh-19.2.1.5						0	Action is considered In-Kind
NR-CCCh-19.2.1.6	30.00					30	The cost in considering development of the above mentioned plan is unlikely to cost much.
NR-CCCh-23.1.1.1	50.00					50	
NR-CCCh-23.1.1.2						0	Action is considered In-Kind

Noyo River Chinook Salmon (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NR-CCCh-23.1.1.3						0	Action is considered In-Kind
NR-CCCh-23.1.1.4	102.50	102.50				205	Cost for road inventory estimated at \$1000/mile. Assume 25% of road network inventoried per year.
NR-CCCh-23.1.1.5						0	This likely already exists for large timberland owners in the basin. Action is considered In-Kind
NR-CCCh-23.1.1.6						0	Work with Mendocino County DOT to develop cost estimate for BMP cost in Noyo River watershed. Action is considered In-Kind
NR-CCCh-23.1.1.7	500	500				1,000	Based on 100 miles od upgrades and decommissioning.
NR-CCCh-23.1.1.8						0	Action is considered In-Kind
NR-CCCh-23.1.2.1						0	Action is considered In-Kind
NR-CCCh-23.1.2.2						0	Action is considered In-Kind
NR-CCCh-23.1.3.1						TBD	Difficult to assess without further information.
NR-CCCh-23.1.3.2						TBD	Costs may vary depending on number of road crossings. Road assessment should identify key stream crossings (NR-CCCh-23.2.1.3)
NR-CCCh-23.2.1.1						0	Action is considered In-Kind
NR-CCCh-23.2.1.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
NR-CCCh-23.2.1.3	17.3	17.3	17.3	17.3	17.3	207	Costs may vary depending on number of road crossings. Cost of assessment estimated at \$207,000.
NR-CCCh-23.2.1.4						0	Action is considered In-Kind
NR-CCCh-24.1.1.1	31.50	31.50				63	Cost for stream flow model estimated at \$63,000/project.
NR-CCCh-24.1.1.2	1.7	1.7	1.7	1.7	1.7	20	This action is predicated on above actions. Cost is expected to be minimal due to relatively few diversions in the watershed. Cost is estimated at \$20,000
NR-CCCh-24.1.1.3						TBD	Cost depends upon landowner participation.

Albion River Chinook Salmon (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
AlbR-CCCh-1.1.1.1	100					100	Cost determined by extent of riprap and gabion rock to be removed and suitable bioengineered solution to employ. Cost of assessment and design estimated at \$100,000
AlbR-CCCh-1.1.1.2	125.00	125.00				250	Based on implementing 10 LWD at a rate of \$25,000/mile.
AlbR-CCCh-2.1.1.1	20.00					20	
AlbR-CCCh-2.1.1.2	5.50	5.50				11	Cost based on treating 3 miles (assume 1 project per mile in 5% High IP) at a rate of \$36,000/mile.
AlbR-CCCh-3.1.1.1	100.00	100.00				200	Based on 2 gages for 10 years.
AlbR-CCCh-3.1.1.2	50.00					50	Cost based on small number of landowners participating in program during the first five years.
AlbR-CCCh-5.1.1.1	126.00					126	Cost based on treating non-structural element at a rate of \$126,000/unit.
AlbR-CCCh-5.1.1.2	75.00					75	Cost based on estimate by NMFS staff.
AlbR-CCCh-5.1.1.3						0	Action is considered In-Kind
AlbR-CCCh-6.1.1.1						0	Action is considered In-Kind
AlbR-CCCh-6.1.1.2						0	Action is considered In-Kind
AlbR-CCCh-6.1.1.3	84.00	84.00				168	Cost based on treating 6.5 miles (assume 50% High IP) at a rate of \$26,000/mile.
AlbR-CCCh-6.1.1.4						0	Action is considered In-Kind
AlbR-CCCh-7.1.1.1						TBD	Cost will depend on size and scope of easements, current market value, and rate of turnover.
AlbR-CCCh-8.1.1.1	35	35				70	Need additional analysis to estimate. Cost for sediment assessment is estimated at 70,000.
AlbR-CCCh-8.1.1.2						0	Action is considered In-Kind
AlbR-CCCh-11.1.1.1						0	Cost accounted for in Monitoring Chapter
AlbR-CCCh-11.1.1.2						0	Cost accounted for in Monitoring Chapter
AlbR-CCCh-11.1.1.3						0	Cost accounted for in above action step. Cost could be less with community involvement.
AlbR-CCCh-11.2.1.1	10	10				20	Costs vary depending on source material and associated costs. Estimated cost of development is \$20,000. Cost of implementation is considered In-Kind.
AlbR-CCCh-19.1.1.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
AlbR-CCCh-19.1.1.2						0	Action is considered In-Kind
AlbR-CCCh-19.1.1.3						0	Action is considered In-Kind
AlbR-CCCh-19.2.1.1						0	Action is considered In-Kind
AlbR-CCCh-19.2.1.2						0	Action is considered In-Kind
AlbR-CCCh-23.1.1.1	10	10				20	Cost of assessment is estimated at \$20,000. Total cost of upgrades is unknown at this time.
AlbR-CCCh-23.1.1.2	50.00					50	
AlbR-CCCh-23.1.1.3						0	Action is considered In-Kind
AlbR-CCCh-23.2.1.1	52	52	52	52		207	Cost associated with increased costs for land managers is unknown at this time, additional analysis needed to determine. Cost of assessment is estimated at \$207,000
AlbR-CCCh-23.2.1.2	50.00					50	Estimated cost for materials to block roads and trails, large rock and gates.
AlbR-CCCh-23.2.1.3						TBD	Number of rural roads and associated costs are unknown at this time. Cost could be determined after the amount of roads are determined
AlbR-CCCh-23.2.1.4	103.5	103.5				207	Many road upgrades have been done in this watershed. Additional information needed on the remaining road segments that need work to estimate cost. Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
AlbR-CCCh-23.2.1.5	300.00	300.00	300.00	300.00		1,200	Costs may be significant and benefits should be weighed against additional upland disturbance and overall costs. Indiscriminate road density reduction should be avoided so as not to preclude inhibiting future road realignments that could also effectively reduce sediment delivery. Cost based on decommissioning 93 miles of road network at a rate of \$12,000/mile.
AlbR-CCCh-24.1.1.1						TBD	Cost for a stream flow model estimated at \$63,000. Acquiring or leasing water is contingent upon landowner participation and extent of protection for base flows.

Ten Mile River Chinook Salmon (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
TMR-CCCh-1.1.1.1	282.00					282	Estimate based on a three year study period and relative costs from other estuary studies. Cost based on estuary use/residence timing at a cost of \$282,000.
TMR-CCCh-1.1.1.2	103.5	103.5				207	Costs are difficult to determine until after an evaluation is conducted outlines the extent of the habitat impairment. Cost of assessment is estimated at \$207,000
TMR-CCCh-1.1.1.3	106.50	106.50				213	Cost based on wetland restoration at a cost of \$213,000
TMR-CCCh-2.1.1.1	1029.00	1029.00	1029.00			3,088	Cost based on treating 8.3 miles (assume 1 project/mile in 25% High IP with 10 acres/mile treated) at a rate of \$37,200/acres.
TMR-CCCh-6.1.1.1	260.00					260	Cost based on treating 10 miles (assume 1 project/mile in 50% High IP) at a rate of \$26,000/mile. Additional features such as riparian vegetation and boulders will increase cost.
TMR-CCCh-6.1.1.2	103.5	103.5				207	Cost of assessment is estimated at \$207,000.
TMR-CCCh-6.1.1.3						0	Action is considered In-Kind
TMR-CCCh-6.1.1.4						0	Action is considered In-Kind
TMR-CCCh-7.1.1.1	104.00	104.00	104.00	104.00		415	Most of these lands (inset floodplains and riparian corridors) are used for forest management and it is anticipated that most of this cost will be absorbed as part of on going forestry practices. Additional cost may be incurred in the lower watershed where other land management actions occur, including minimal farming and minimal grazing. Cost based on treating 1 mile (assume 20 acres/mile treated in 5% High IP) at a rate of \$21,000/acre.
TMR-CCCh-7.1.1.2	177.00	177.00				354	Cost based on riparian thinning 3 miles (assume 80 acres/mile in 15% High IP) at a rate of \$1,500/acre. Cost is expected to be minimal because most of the watershed is subject to active timber management. Additional cost may be incurred in the lower watershed where other land management actions occur.
TMR-CCCh-10.1.1.1						0	Action is considered In-Kind
TMR-CCCh-10.1.1.2						0	It is anticipated most cost will be included as part of upgrades associated with future timber harvest actions. Ten Mile River TMDL does not have time lines specified. Rapid implementation will result in greater cost, but it could result in significant benefits. It is anticipated most cost will be included as part of upgrades associated with future timber harvest actions. Action is considered In-Kind
TMR-CCCh-10.1.1.3	119.00	119.00				238	Cost for erosion assessment estimated at \$13/acre (assume 25% of total watershed acres)
TMR-CCCh-10.1.1.4						TBD	
TMR-CCCh-11.1.1.1						0	Action is considered In-Kind
TMR-CCCh-11.1.1.2	10	10				20	Costs vary depending on source material and associated costs. Estimated cost of development is \$20,000. Cost of implementation is considered In-Kind.
TMR-CCCh-11.2.1.1						0	Costs for monitoring status and trends of the population in the Ten Mile River are accounted for in the Monitoring Chapter.
TMR-CCCh-11.2.1.2	1.7	1.7	1.7	1.7	1.7	20	The watershed has been habitat typed and has had extensive instream monitoring occur in the past and thus the estimated cost is low at \$20,000
TMR-CCCh-15.1.1.1						0	This recommendation should be considered a standard practice. Action is considered In-Kind
TMR-CCCh-15.1.1.2						0	This recommendation will result in a net cost savings. This recommendation should be considered a standard practice and no additional financial costs are anticipated. Action is considered In-Kind
TMR-CCCh-15.1.2.1						0	Implementing erosion control measures when constructing firebreaks (if possible) or shortly thereafter will likely result in a net cost savings. It is much more financially efficient to implement these measures while the fire crews are present rather than months later after the fire is out. Action is considered In-Kind
TMR-CCCh-15.1.2.2						0	Action is considered In-Kind
TMR-CCCh-15.1.3.1						0	Action is considered In-Kind
TMR-CCCh-15.1.4.1						0	Action is considered In-Kind
TMR-CCCh-18.1.1.1	103.5	103.5				207	Total costs may vary with methods utilized (e.g. permanent fencing, or other techniques). Cost of assessment is estimated at \$206,600 and should be done within the first ten years.
TMR-CCCh-19.1.1.1						0	Action is considered In-Kind
TMR-CCCh-19.1.2.1						0	Road surface treatment options will vary widely on road use and geology. Action is considered In-Kind
TMR-CCCh-19.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
TMR-CCCh-19.1.3.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
TMR-CCCh-19.1.3.3						0	Action is considered In-Kind
TMR-CCCh-19.1.3.4						0	This recommendation should be considered standard practice. Action is considered In-Kind
TMR-CCCh-19.1.4.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
TMR-CCCh-19.1.4.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
TMR-CCCh-19.1.4.3						0	This recommendation should be considered standard practice. Action is considered In-Kind
TMR-CCCh-19.1.5.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
TMR-CCCh-19.1.6.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
TMR-CCCh-19.1.6.2						0	Action is considered In-Kind
TMR-CCCh-19.2.1.1						0	Action is considered In-Kind
TMR-CCCh-19.2.1.2						0	Action is considered In-Kind
TMR-CCCh-19.2.1.3						0	Cost accounted for in HABITAT COMPLEXITY.
TMR-CCCh-19.2.1.4						0	
TMR-CCCh-19.2.1.5						0	
TMR-CCCh-23.1.1.1	230.00					230	Cost based on treating 1 stream crossing (assume minor 2 lane road) at a rate of \$230,000/unit.
TMR-CCCh-23.1.1.2						0	These will likely be replaced as part of future timber harvest plans in Ten Mile watershed and is considered in-kind
TMR-CCCh-23.1.2.1						0	Cost accounted for LANDSCAPE PATTERNS.

Ten Mile River Chinook Salmon (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
TMR-CCCh-23.1.2.2						0	Action is considered In-Kind
TMR-CCCh-23.1.2.3	103.5	103.5				207	Cost of assessment and design is estimated at \$207,000 and should be done within the first ten years.
TMR-CCCh-23.1.2.4						TBD	
TMR-CCCh-23.1.2.5						TBD	Cost will be determined once an assessment is completed.
TMR-CCCh-23.1.2.6	397.50	397.50				795	Cost based on road assessment for 830 miles (assume 75% of road network) at a cost of \$957/mile.
TMR-CCCh-23.1.2.7	306.00	306.00				612	Cost based on decommissioning 51 miles of riparian road network at a rate of \$12,000/mile.
TMR-CCCh-23.1.2.8						0	Action is considered In-Kind
TMR-CCCh-23.1.2.9						TBD	
TMR-CCCh-23.1.2.10	660	660				1,320	Costs may be significant and benefits should be weighed against additional upland disturbance and overall costs. Cost based on decommissioning 110 miles of road network at a rate of \$12,000/mile.
TMR-CCCh-23.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
TMR-CCCh-23.1.4.1						0	Action is considered In-Kind
TMR-CCCh-23.2.1.1						0	A well designed road management plan should result in overall cost savings due to lower maintenance costs. Action is considered In-Kind
TMR-CCCh-23.2.2.1						0	This action is part of ongoing road maintenance and should be directed at the entire road network.
TMR-CCCh-23.2.2.2						0	Cost should be considered part of land owner road management plans.
TMR-CCCh-23.2.2.3						0	Action is considered In-Kind
TMR-CCCh-23.2.2.4						0	Action is considered In-Kind
TMR-CCCh-23.2.2.5						0	Action is considered In-Kind
TMR-CCCh-24.1.1.1						TBD	Cost is unknown because it will depend on the amount of landowners involved.
TMR-CCCh-24.1.2.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
TMR-CCCh-24.1.3.1						TBD	

Garcia River Chinook Salmon (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GarR-CCCh-1.1.1.1	150.00					150	Cost based on best professional judgement.
GarR-CCCh-1.1.1.2						TBD	Cost will be based on strategies developed
GarR-CCCh-1.1.2.1						0	Cost accounted for above.
GarR-CCCh-1.1.2.2						TBD	Cost to re-align lower estuary channel is contingent upon necessity identified from above action step.
GarR-CCCh-1.1.3.1	115.50	115.50				231	Cost for sediment assessment is estimated at \$12.62/acre
GarR-CCCh-1.1.3.2						0	Cost accounted for in above action steps.
GarR-CCCh-1.1.3.3	26.00	26.00				52	Cost based on treating 1 mile of stream (assume 1 project/mile) at a rate of \$26,000/mile.
GarR-CCCh-1.1.3.4	2,811					2,811	Cost based on treating 10 acres (assume 10% of estuarine habitat) at a rate of \$281,100/acre.
GarR-CCCh-1.1.3.5						0	Cost coincides with above action steps.
GarR-CCCh-1.1.4.1						0	Cost accounted for in other action steps.
GarR-CCCh-1.1.4.2						0	Cost accounted for in other action steps.
GarR-CCCh-1.1.4.3						0	Action is considered In-Kind
GarR-CCCh-1.1.5.1	1					1	Cost for stream flow gauges estimated at \$1000/gauge. Cost estimate does not account for maintenance or data management.
GarR-CCCh-1.1.5.2						0	Cost accounted for in estuary use/residence timing monitoring.
GarR-CCCh-1.1.5.3	32.50	32.50				65	Cost for stream flow modeling estimated at \$65,000/project.
GarR-CCCh-1.1.6.1	35.00					35	Cost for continuous water quality monitoring stations estimated at \$5,000/station with a total of 7 gauges. Cost does not account for maintenance and data management.
GarR-CCCh-1.1.6.2						0	Cost accounted for in other action steps.
GarR-CCCh-1.1.7.1						0	Cost accounted for other action steps.
GarR-CCCh-2.1.1.1	150.00					150	Cost based on best professional judgement.
GarR-CCCh-2.1.1.2						0	Action is considered In-Kind
GarR-CCCh-2.1.1.3	261.00					261	Cost based on treating 7 miles (assume 1 project/mile in 25% High IP) at a rate of \$37,000/mile.
GarR-CCCh-3.1.1.1						0	Action is considered In-Kind
GarR-CCCh-3.1.1.2	3.50	3.50				7	Cost for 7 stream flow gauges estimated at \$1000/gauge. Cost does not account for maintenance or data management.
GarR-CCCh-3.1.1.3	103.5	103.5				207	Cost are difficult to determine because based on landowner participation and extent of off-channel storage facilities needed. Cost of assessment estimated at \$207,000 and should be done within the first 10 years.
GarR-CCCh-3.1.1.4						0	Action is considered In-Kind
GarR-CCCh-4.1.1.1						0	Action is considered In-Kind
GarR-CCCh-4.1.1.2						TBD	Cost are difficult to determine because of fair market value and land use turnover.
GarR-CCCh-4.1.1.3						0	Action is considered In-Kind
GarR-CCCh-5.1.1.1	52.00					52	Cost based on treating 8 acres at a rate of \$6,400/acre.
GarR-CCCh-5.1.1.2	653					653	Cost based on treating passage for major 2 lane road at a rate of \$653,000/unit.
GarR-CCCh-5.1.1.3	653					653	Cost based on providing passage for a small waterway at a rate of \$653,000/unit.
GarR-CCCh-5.1.1.4	653					653	Cost based on providing passage for a small waterway at a rate of \$653,000/unit.
GarR-CCCh-5.1.1.5	254					254	Cost based on treating a minor 2 lane road at a rate of \$254,000/unit.
GarR-CCCh-5.1.1.6	254					254	Cost based on treating a minor 2 lane road at a rate of \$254,000/unit.
GarR-CCCh-5.1.1.7	653					653	Cost based on providing passage on a small waterway at a rate of \$653,000/unit.
GarR-CCCh-5.1.1.8	254					254	Cost based on treating a minor 2 lane road at a rate of \$254,000/unit.
GarR-CCCh-5.1.1.9	468					468	Cost based on treating major 2 lane road at a rate of \$468,000/unit.
GarR-CCCh-5.1.1.10	254					254	Cost based on treating a minor 2 lane road at a rate of \$254,000/unit.
GarR-CCCh-5.1.1.11	254					254	Cost based on treating a minor 2 lane road at a rate of \$254,000/unit.
GarR-CCCh-5.1.1.12	254					254	Cost based on treating a minor 2 lane road at a rate of \$254,000/unit.
GarR-CCCh-5.1.1.13						0	Action is considered In-Kind
GarR-CCCh-5.1.1.14						0	Action is considered In-Kind
GarR-CCCh-5.1.1.15						0	Action is considered In-Kind
GarR-CCCh-6.1.1.1	130.00	130.00				260	Cost based on treating 10 miles of stream at a rate of \$26,000/mile. If ELJ projects implemented, cost could be \$1,040,000.
GarR-CCCh-6.1.1.2						0	Cost accounted for in increase wood frequency in spawning in rearing habitat.
GarR-CCCh-6.1.2.1	169.00	169.00				338	Cost based on treating 13 miles of stream at a rate of \$26,000/mile. Cost to treat 13 miles of stream with ELJ would be \$1,352,000.
GarR-CCCh-6.1.2.2						0	Cost accounted for in increase wood frequency in seasonal habitat.
GarR-CCCh-6.1.2.3						0	Cost likely to be included as part of the restoration action and or required as part of the permitting process.
GarR-CCCh-6.1.2.4						0	Cost accounted for in increase wood frequency in seasonal habitat.
GarR-CCCh-6.1.2.5						0	Action is considered In-Kind
GarR-CCCh-6.1.3.1	169.00	169.00				338	Cost based on treating 13 miles (50% of High IP) at a rate of \$26,000/mile. This may be combined with increasing LWD, reducing overall cost.
GarR-CCCh-6.1.3.2						0	Cost accounted for in increase the number of primary pools.
GarR-CCCh-6.1.4.1						0	Cost are likely associated with other recovery action such as increase LWD and increasing primary pools.
GarR-CCCh-6.1.4.2	169.00	169.00				338	Cost are likely associated with other recovery action such as increase LWD and increasing primary pools.
GarR-CCCh-6.1.5.1						TBD	
GarR-CCCh-6.1.5.2	364.00					364	Cost based on treating 14 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
GarR-CCCh-7.1.1.1	101	101	101	101		404	Cost based on treating 2 miles (assume 10 acres/mile treated in 5% High IP) at a rate of \$21,000/acre.
GarR-CCCh-7.1.1.2						0	Cost accounted for in increase average stream canopy.
GarR-CCCh-7.1.1.3						0	Cost accounted for in increase average stream canopy.

Garcia River Chinook Salmon (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GarR-CCCh-7.1.1.4						0	Action is considered In-Kind
GarR-CCCh-7.1.2.1						0	Cost accounted for in increase canopy cover.
GarR-CCCh-7.1.2.2	235.00	235.00				470	Cost based on treating 4 miles (assume 80 acres/mile in 15% High IP) at a rate of \$1,500/acre.
GarR-CCCh-7.1.2.3	80.00					80	Cost based on \$20K in each high priority subbasin over a two year period.
GarR-CCCh-7.1.2.4						TBD	Costs can not be determined without additional information on the potential projects within this basin.
GarR-CCCh-8.1.1.1	3.8	3.8	3.8	3.8		15	Cost for habitat survey estimated at \$353/IP km. Assume survey High IP, cost estimated at \$15,000. This action step could be incorporated in other monitoring and assessment actions.
GarR-CCCh-8.1.1.2							Cost should be accounted for in ESTUARY.
GarR-CCCh-8.1.1.3						TBD	Need cost estimates from project proponents.
GarR-CCCh-8.1.1.4	500	500				1,000	Based on \$1 million estimate for Garcia river forest sites.
GarR-CCCh-8.1.1.5	200					200	Rough estimate for erosion control in affected area.
GarR-CCCh-8.1.1.6						0	Action is considered In-Kind
GarR-CCCh-8.1.1.7	11.50	11.50				23	Cost based on treating 0.5 mile of bank at a rate of \$25,000/mile for bank erosion and \$21,000/mile for riparian planting.
GarR-CCCh-10.1.1.1						0	Cost accounted for in development of stream flow model.
GarR-CCCh-10.1.1.2						TBD	Cost will depend on the length of reaches identified for planting.
GarR-CCCh-10.1.1.3						0	See Riparian section above.
GarR-CCCh-11.1.1.1						0	Action is considered In-Kind
GarR-CCCh-11.1.1.2						0	Action is considered In-Kind
GarR-CCCh-11.1.1.3						0	Action is considered In-Kind
GarR-CCCh-11.1.1.4						0	Action is considered In-Kind
GarR-CCCh-11.1.1.5						0	Action is considered In-Kind
GarR-CCCh-11.1.1.6						0	Action is considered In-Kind
GarR-CCCh-11.1.1.7						0	Action is considered In-Kind
GarR-CCCh-16.1.1.1						0	Action is considered In-Kind
GarR-CCCh-16.1.1.2						0	Action is considered In-Kind
GarR-CCCh-16.2.1.1						0	Action is considered In-Kind
GarR-CCCh-18.1.1.1						0	Action is considered In-Kind
GarR-CCCh-19.1.1.1						0	Action is considered In-Kind
GarR-CCCh-19.1.2.1						0	Action is considered In-Kind
GarR-CCCh-19.1.3.1						0	Action is considered In-Kind
GarR-CCCh-19.1.3.2						0	Action is considered In-Kind
GarR-CCCh-19.1.3.3						TBD	Cost will vary with THP development near streams with legacy roads.
GarR-CCCh-19.1.4.1						TBD	Cost estimates are difficult to determine as this action step is driven by current market value and rate of turnover.
GarR-CCCh-19.1.4.2						TBD	
GarR-CCCh-19.1.4.3	51.8	51.8	51.8	51.8		207	NCWP/Coastal Watershed Program needs to implement assessment in the Garcia River basin. Cost of assessment estimated at \$207,000.
GarR-CCCh-19.1.4.4						0	Action is considered In-Kind
GarR-CCCh-19.2.1.1						0	Cost expected to be minimal to improve coordination with Mendocino County. Action is considered In-Kind
GarR-CCCh-19.2.1.2						0	Action is considered In-Kind
GarR-CCCh-19.2.1.3	10	10				20	Cost of assessment is likely low and is estimated at \$20,000.
GarR-CCCh-19.2.1.4	25.00	25.00	25.00	25.00		100	Assumes data for the Garcia River portion of the database can be maintained for \$5k per year.
GarR-CCCh-19.2.1.5						0	Action is considered In-Kind
GarR-CCCh-19.2.1.6						0	This is underway. Action is considered In-Kind
GarR-CCCh-19.2.1.7						0	Need to determine the number of regulatory staff to control rural development in Mendocino County. Action is considered In-Kind
GarR-CCCh-19.2.1.8						0	Action is considered In-Kind
GarR-CCCh-19.2.1.9						0	Action is considered In-Kind
GarR-CCCh-23.1.1.1	495.00	495.00				990	Cost based on treating 82 miles of road network at a rate of \$12,000/mile.
GarR-CCCh-23.1.1.2	39.50	39.50				79	Number of culverts and specific details to upgrade are needed to estimate cost. Cost based on road inventory of 82 miles at a rate of \$957/mile.
GarR-CCCh-23.1.1.3						0	Action is considered In-Kind
GarR-CCCh-23.1.1.4						0	Costs minimal to prioritize projects. Action is considered In-Kind
GarR-CCCh-23.1.1.5	19.00	19.00	19.00	19.00		76	Cost based on decommissioning 6.2 miles of riparian roads at a rate of \$12,000/mile. Cost may be less than other basins due to TMDLs in place since 1997.
GarR-CCCh-23.1.1.6						0	Costs are related to maintenance and enforcement of gates and other closure techniques. Action is considered In-Kind
GarR-CCCh-23.1.2.1	50.00					50	Cost estimate for entire basin.
GarR-CCCh-23.1.2.2						0	Action is considered In-Kind
GarR-CCCh-23.1.2.3						0	Action is considered In-Kind
GarR-CCCh-23.1.2.4	335.00	335.00				670	Cost based on replacing 3 stream crossings at a rate of \$223,000/unit.
GarR-CCCh-23.1.2.5	250.00					250	Based on approximately \$50k to do inspections for a five year period.
GarR-CCCh-23.1.3.1						0	Action is considered In-Kind
GarR-CCCh-23.1.3.2						0	Action is considered In-Kind
GarR-CCCh-24.1.1.1						0	Costs addressed in Hydrology section.

Garcia River Chinook Salmon (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GarR-CCCh-25.1.1.1						0	Action is considered in-kind
GarR-CCCh-25.1.1.2						TBD	Cost will vary with the number of water rights holders willing to participate.
GarR-CCCh-25.1.2.1						TBD	Cost will depend on the optimum flows for adult and smolt migration.
GarR-CCCh-25.1.3.1						0	Action is considered In-Kind
GarR-CCCh-25.1.4.1						0	Action is considered In-Kind
GarR-CCCh-25.2.1.1						0	Action is considered In-Kind
GarR-CCCh-25.2.1.2						0	Action is considered In-Kind
GarR-CCCh-25.2.1.3						0	Action is considered In-Kind
GarR-CCCh-25.2.1.4						0	Action is considered In-Kind
GarR-CCCh-25.2.1.5						0	Action is considered In-Kind
GarR-CCCh-25.2.1.6						0	Action is considered In-Kind
GarR-CCCh-25.2.1.7						0	Action is considered In-Kind

Russian River Chinook Salmon (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
RR-CCCh-1.1.1.1	282.00					282	Cost based on estuary use/residence time at a rate of \$282,000/project.
RR-CCCh-1.1.1.2						0	Action is considered In-Kind
RR-CCCh-1.1.2.1						0	Action is considered In-Kind
RR-CCCh-2.1.1.1	7,100	7,100	7,100	7,100	7,100	35,500	Estimated costs based on similar projects in geographic area - true costs are site specific.
RR-CCCh-2.1.1.2						0	Cost accounted for in above action step.
RR-CCCh-5.1.1.1	103	103				207	Cost of assessment is estimated at 207,000. Cost to remove barrier could not be calculated at this time.
RR-CCCh-5.1.1.2						TBD	Cost of assessing passage should be conducted by NMFS and CDFW specialist at a low to no cost. However, implementation is TBD since the scope and size of future designs is unknown at this time.
RR-CCCh-5.1.1.3						0	Fish passage evaluation would likely be done by NMFS or CDFW personnel at a low or no cost basis. Action is considered In-Kind
RR-CCCh-5.1.1.4	207					207	Implementation is TBD since the scope and size of future designs is unknown at this time. Cost of assessment is estimated at 207,000
RR-CCCh-5.1.1.5	51.75	51.75	51.75	51.75		207	Final total cost is hard to determine since scope, size and number of potential future restoration projects is unknown at this time. Estimated cost of assessment is \$207,000.
RR-CCCh-5.1.2.1						0	Assessing passage needs would likely be done by CDFW or NMFS fish passage specialists at a low or no cost basis. Action is considered In-Kind
RR-CCCh-5.1.2.2						TBD	Cost will be based on investigation and methods used.
RR-CCCh-6.1.1.1						0	Action is considered In-Kind
RR-CCCh-6.1.1.2	103.5	103.5				207	Cost is TBD since scope, size and number of potential future restoration projects is unknown at this time. Cost of assessment is estimated at \$207,000 to located priority treatment areas. Assessment should be completed within the first ten years.
RR-CCCh-6.1.1.3						0	Action is considered In-Kind
RR-CCCh-6.1.2.1	67.50	67.50				135	Cost based on treating 5.2 miles (assume 1 project/mile in 25% high IP) at a rate of \$26,000/mile.
RR-CCCh-6.1.2.2	136.00					136	Cost based on treating 5.2 miles (assume 1 project/mile in 25% high IP) at a rate of \$26,000/mile. This is action should be coordinated with other action step to reduce cost and redundancy.
RR-CCCh-6.1.2.3						0	Cost of maintaining existing structures are usually incorporated within the restoration construction cost. Action is considered In-Kind
RR-CCCh-10.1.1.1	3.5	3.5				7	Cost estimated at \$700/site and an estimated ten sites would need to be studied for a total of \$7,000.
RR-CCCh-10.1.1.2						TBD	Cost based on feasible recommendations to treat turbidity.
RR-CCCh-10.1.1.3	103.5	103.5				207	Total cost based on feasible recommendations to research and treat pathogens. Estimated cost of research is \$207,000.
RR-CCCh-11.1.1.1						0	Action is considered In-Kind
RR-CCCh-11.1.1.2	28.75	28.75	28.75	28.75		115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
RR-CCCh-11.1.1.3	50	50	50	50	50	1,000	Total cost is uncertain since the number, location and scope of future restoration actions is unknown. However, the cost per individual project is approximately \$100k and we estimated 10 projects would need to be monitored for a total of 1,000,000.
RR-CCCh-11.1.1.4						0	Cost accounted for in monitoring chapter
RR-CCCh-12.1.1.1						0	Soliciting cooperation not expected to cost much outside of already existing federal and state and local salaries. Action is considered In-Kind
RR-CCCh-12.1.1.2						0	Streamlining permit processing is not expected to cost much, and may save money through future efficiencies. Action is considered In-Kind
RR-CCCh-12.1.2.1						0	Action is considered In-Kind
RR-CCCh-12.1.2.2						0	Coordination efforts are expected to be low, mainly comprising already in place staff salaries at the state and federal level. Action is considered In-Kind
RR-CCCh-12.1.3.1						0	Action is considered In-Kind
RR-CCCh-12.1.3.2	50.00	50.00				100	Cost of completing Farm Conservation Plan estimated at approximately \$50,000 per plan.
RR-CCCh-13.1.1.1	104	104				207	Cost uncertain since number, scope and location of future projects is unknown at this time. Cost of assessment is estimated at 207,000 and should be completed within 10 years.
RR-CCCh-13.1.1.2						0	BMP that is not expected to increase project costs. Action is considered In-Kind
RR-CCCh-13.1.1.3						0	BMP not expected to have any associated costs. Action is considered In-Kind
RR-CCCh-13.2.1.1						TBD	Cost is TBD since the number and size of future levee development is unknown at this time.
RR-CCCh-13.2.1.2						0	Avoiding development in sensitive habitat is not expected to appreciably increase project costs. Action is considered In-Kind
RR-CCCh-13.2.1.3						0	Action is considered In-Kind
RR-CCCh-13.2.1.4	0.00					0	Cost would be 0 if CDFW or NMFS were to produce the guidelines.
RR-CCCh-13.2.2.1						0	Program development may be at a small cost. Implementing program not expected to result in additional cost. Action is considered In-Kind
RR-CCCh-13.2.2.2						0	Action is considered in-kind and already standard practice with CDFW.
RR-CCCh-13.2.3.1						0	Action is considered In-Kind
RR-CCCh-13.2.3.2						0	Action is considered In-Kind
RR-CCCh-16.1.1.1						0	Cost expected to be low and consist of existing agency staff time. Action is considered In-Kind
RR-CCCh-16.1.1.2						0	Cost expected to be low and consist of existing agency staff time. Action is considered In-Kind
RR-CCCh-17.1.1.1						0	Action is considered In-Kind
RR-CCCh-17.1.1.2						0	Action is considered In-Kind
RR-CCCh-17.1.1.3						0	Action is considered In-Kind
RR-CCCh-17.1.1.4						0	Action is considered In-Kind
RR-CCCh-17.1.1.5						0	Action is considered In-Kind
RR-CCCh-20.1.1.1						0	Action is considered In-Kind
RR-CCCh-20.1.1.2						0	Cost accounted for in other action steps.
RR-CCCh-20.1.1.3						TBD	
RR-CCCh-20.1.2.1						0	Action is considered In-Kind

Russian River Chinook Salmon (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
RR-CCCh-20.1.2.2						0	Cost accounted for in FLOODPLAIN CONNECTIVITY.
RR-CCCh-22.1.1.1						0	Action is considered In-Kind
RR-CCCh-22.1.1.2						0	Cost of training and encouraging partners to maintain riparian health is expected to be low. Action is considered In-Kind
RR-CCCh-22.1.1.3	75.00					75	Cost estimate from CDFW 2004.
RR-CCCh-22.1.1.4						0	Action is considered In-Kind
RR-CCCh-22.1.2.1						TBD	Investigating funding larger detention devices is not expected to cost much. Implementing the devices will be much more expensive.
RR-CCCh-22.1.2.2						0	Number, location and scope of future projects is uncertain at this time. Cost accounted for in FLOODPLAIN CONNECTIVITY.
RR-CCCh-22.1.2.3						0	Encouraging landowners to restore floodplain areas is not expected to cost much. Action is considered In-Kind
RR-CCCh-22.1.2.4						TBD	Cost of purchasing land/conservation easements is highly variable and driven by fair market value, size of easement, and landowner participation.
RR-CCCh-22.1.2.5						0	Cost of identifying and developing incentives to landowners expected to be low. Action is considered In-Kind
RR-CCCh-22.1.2.6						TBD	The cost of implementing the above BMP is uncertain at this time.
RR-CCCh-22.1.2.7						TBD	Cost of adopting a new policy is uncertain at this time.
RR-CCCh-22.1.2.8						0	Encouraging the county on the above issue is not likely to incur any costs outside of the duties of already salaried state and federal workers. Action is considered In-Kind
RR-CCCh-22.1.3.1						0	Implementing the above BMP is not expected to be very costly. Action is considered In-Kind
RR-CCCh-22.2.1.1						0	Cost of implementing performance standards is likely low. Action is considered In-Kind
RR-CCCh-22.2.2.1						0	Implementing the above BMP is expected to be low cost. Action is considered In-Kind
RR-CCCh-22.2.2.2						0	Implementing above BMP is expected to be low cost. Action is considered In-Kind
RR-CCCh-22.2.3.1						0	Institutionalizing programs to purchase land is not expected to be much cost. Action is considered In-Kind
RR-CCCh-22.2.3.2						0	The cost of discouraging forestland conversion is expected to be low. Action is considered In-Kind
RR-CCCh-22.2.3.3						0	Cost of ensuring enforcement of existing building permits is expected to be low (i.e., covered as part of already existing enforcement programs). Action is considered In-Kind
RR-CCCh-22.2.3.4						0	Action is considered In-Kind
RR-CCCh-22.2.3.5						0	Action is considered In-Kind
RR-CCCh-22.2.3.6						0	Cost is expected to be low since work will largely be carried out by federal, state and local staff. Action is considered In-Kind
RR-CCCh-22.2.3.7						0	Encouraging the county is not expected to result in a high cost basis. Action is considered In-Kind
RR-CCCh-24.1.1.1						0	Action is considered In-Kind
RR-CCCh-24.1.1.2						0	Action is considered In-Kind
RR-CCCh-24.1.1.3						TBD	Cost difficult to estimate due to uncertainty with the cost of water, number of participants, etc.
RR-CCCh-24.1.1.4						0	Action is considered In-Kind
RR-CCCh-24.1.1.5						0	Action is considered In-Kind
RR-CCCh-24.1.1.6						0	Action is considered In-Kind
RR-CCCh-25.1.1.1						0	Action is considered In-Kind
RR-CCCh-25.1.1.2						0	Coordination done largely by agency staff and affected landowners. Action is considered In-Kind
RR-CCCh-25.1.1.3						0	Promotion is likely a low cost action. Action is considered In-Kind
RR-CCCh-25.1.1.4						0	Promotion is likely a low cost action. Action is considered In-Kind
RR-CCCh-25.1.2.1						0	Action is considered In-Kind
RR-CCCh-25.1.2.2						0	Encouraging would be done by already employed federal and state workers. Action is considered In-Kind
RR-CCCh-25.1.2.3						0	No cost expected to encourage the SWRCB. Encouragement would largely arise through already employed CDFW and NMFS staff. Action is considered In-Kind
RR-CCCh-25.1.3.1						0	The project is part of the 2008 Russian River RPA, and will be funded through the SCWA and USACE, these types of cost are not included in the recovery plan
RR-CCCh-25.1.3.2						0	Cost likely accounted for in above action step.
RR-CCCh-25.1.3.3						0	Action is considered In-Kind
RR-CCCh-25.1.4.1						0	Action is considered In-Kind
RR-CCCh-25.2.1.1						TBD	The details of the potential incentives to be used are unknown. Currently, incentives exist and should be explored and expanded.
RR-CCCh-25.2.1.2						0	Action is considered In-Kind
RR-CCCh-25.2.1.3						0	Action is considered In-Kind
RR-CCCh-25.2.1.4	65.00					65	Cost based on stream flow/precipitation model at a rate of \$65,084/project. This cost is likely fairly conservative considering the size and complexities of the watershed and water issues at hand.
RR-CCCh-25.2.1.5						0	Request would be done by already employed federal and state workers. Action is considered In-Kind
RR-CCCh-25.2.1.6						TBD	Cost is TBD, since the number, location and scope of future actions is unknown at this time.
RR-CCCh-25.2.1.7						TBD	Cost is TBD.
RR-CCCh-25.2.1.8						0	Evaluation likely done by state or federal workers. Action is considered In-Kind
RR-CCCh-25.2.1.9						0	Cost will be incurred by staff currently employed by the state and NOAA enforcement. Action is considered In-Kind
RR-CCCh-25.2.1.10						0	Action is considered In-Kind
RR-CCCh-25.2.1.11						0	Support would likely come from local, state and Federal employees. Action is considered In-Kind

Gualala River Chinook Salmon (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GuR-CCCh-1.1.1.1	117.00	117.00				234	Cost based on sediment assessment estimated at \$12/acre. Assume 10% of total watershed acres.
GuR-CCCh-1.1.1.2						0	Cost accounted for in other action steps. Feasibility of re-establishing wetland marsh habitat should be identified in estuary monitoring.
GuR-CCCh-1.1.1.3	680	680				1,360	Cost based on treating 5 acres (assume 5% of total estuarine habitat) at a rate of \$272,000/acre.
GuR-CCCh-1.1.1.4	141.00	141.00				282	Cost based on estuary use/residence monitoring at a rate of \$282,000/project.
GuR-CCCh-1.1.2.1	126					126	Cost based on stream complexity recovery action at \$101,000/mile from estuary mouth to Highway 1 bridge (approximately 1.25 miles)
GuR-CCCh-1.1.2.2	103.5	103.5				207	Costs associated with installation of LWD would be encompassed by increasing the percentage of area high value habitat. Cost of assessment estimated at \$207,000.
GuR-CCCh-1.1.3.1	15.00					15	Cost based on continuous monitoring gauges estimated at \$5,000/unit. Assume a minimum of 3 for lagoon. Cost does not account for maintenance or data management.
GuR-CCCh-1.1.4.1	1.00					1	Cost based on stream gauges estimated at \$1,000/gauge. Cost does not account for maintenance or data management.
GuR-CCCh-1.1.4.2	136.6	136.6				273	Cost based estuary use estimated at \$273,000/project.
GuR-CCCh-1.1.4.3	63.00					63	Cost based on stream flow model estimated at \$63,000/project.
GuR-CCCh-3.1.1.1						0	Action is considered In-Kind
GuR-CCCh-3.1.1.2	2	2	2	2	2	20	Costs may be minimal due to the low number of diversers in this basin. Cost of assessment estimated at \$20,000.
GuR-CCCh-3.1.1.3						0	Problems should be identified through mapping diversion and developing stream flow model (other action steps). All other costs are in-kind
GuR-CCCh-3.1.1.4	0.50	0.50				1	Provide consistent funding for the North Fork Gualala River and possible funding for the Wheatfield Forks of the Gualala River. Cost of installing stream gage is \$1000/unit. Cost does not account for maintenance or data management.
GuR-CCCh-3.1.1.5						0	Cost accounted for in stream flow model.
GuR-CCCh-3.1.1.6	0.50	0.50				1	Cost based on stream gauge estimated at \$1,000/gauge. Cost does not account for maintenance or data management.
GuR-CCCh-3.1.1.7	0.50	0.50				1	Cost based on stream gauge estimated at \$1,000/gauge. Cost does not account for maintenance or data management.
GuR-CCCh-3.1.1.8	0.50	0.50				1	Cost based on stream flow gauge estimated at \$1,000/gauge. Cost does not account for maintenance or data management.
GuR-CCCh-3.1.1.9	103.5	103.5				207	Cost difficult to estimated because of participation of landowners and feasibility of off-channel storage facilities. Cost of assessment estimated at \$207,000 and should be completed within 10 years.
GuR-CCCh-4.1.1.1						0	Action is considered In-Kind
GuR-CCCh-4.2.1.1						0	Action is considered In-Kind
GuR-CCCh-4.2.1.2						0	Action is considered In-Kind
GuR-CCCh-5.1.1.1	32.50	32.50				65	Cost based on stream crossing at \$65,000/unit.
GuR-CCCh-5.1.1.2	995	995				1,990	Cost based on implementing two fish passage facilities at a rate of \$993,000/unit.
GuR-CCCh-6.1.1.1	350.00	350.00				700	Cost based on treating 28 miles (assume 1 project/mile in 50% High IP) at a rate of \$25,000/mile.
GuR-CCCh-6.1.1.2						0	Cost accounted for in above action step
GuR-CCCh-6.1.2.1	130.00	130.00				260	Cost based on treating 10 miles (assume 1 project/mile in 50% High IP) at a rate of \$26,000/mile.
GuR-CCCh-6.1.2.2						0	Cost accounted for in above action step.
GuR-CCCh-6.1.2.3	130.00					130	Cost based on treating 5 miles (assume 1 project /mile in 50% high IP) at a rate of \$26,000/mile. Cost for fish/habitat restoration model accounted for in other action steps.
GuR-CCCh-6.1.2.4	115.00					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
GuR-CCCh-6.1.3.1	175.00	175.00	175.00	175.00		700	Cost based on treating 28 miles (assume 1 project/mile in 50% High IP) at a rate of \$25,000/mile. This action step should be in concert with increasing LWD frequency and therefore cost could be lower.
GuR-CCCh-6.1.4.1						0	Cost accounted for in other action steps.
GuR-CCCh-6.1.4.2						TBD	Continue current restoration projects in progress.
GuR-CCCh-6.1.4.3						0	Action is considered In-Kind
GuR-CCCh-6.1.4.4						0	Action is considered In-Kind
GuR-CCCh-6.1.4.5						0	Action is considered In-Kind
GuR-CCCh-7.1.1.1	1,205	1,205	1,205	1,205		4,820	Cost based on treating 3 miles (assume 80 acres/mile in 5% High IP) at a rate of \$20,000/acre.
GuR-CCCh-7.1.1.2						0	Action is considered In-Kind
GuR-CCCh-7.1.1.3	550	550				1,100	Cost based on treating 9 miles (assume 80 acres/mile in 15% High IP) at a rate of \$1,500/acre.
GuR-CCCh-7.1.2.1	301	301	301	301		1,203	Cost based on treating 3 miles (assume 20 acres/mile treated in 5% High IP) at a rate of \$20,000/acre. This action step should be in concert with increasing tree diameter to a minimum of 80% CWHR.
GuR-CCCh-7.1.2.2						0	Action is considered In-Kind
GuR-CCCh-7.1.2.3						0	Cost accounted for in above action steps.
GuR-CCCh-7.1.2.4						0	Cost accounted for in above action steps.
GuR-CCCh-7.1.2.5						0	Cost likely accounted for in above action steps.
GuR-CCCh-8.1.1.1						TBD	Site specific information needed for a accurate cost estimate.
GuR-CCCh-8.1.1.2	30.00	30.00				60	Cost based on decommissioning 5 miles of road network at a rate of \$12,000/mile.
GuR-CCCh-10.1.1.1	1.50					2	Cost based on deploying 5 temperature loggers at a rate of \$500/logger.
GuR-CCCh-10.1.1.2						0	Action is considered In-Kind
GuR-CCCh-10.1.1.3						0	Cost accounted for in above action steps.
GuR-CCCh-11.1.1.1						0	Cost accounted for in the monitoring chapter.
GuR-CCCh-11.1.1.2						0	Action is considered In-Kind
GuR-CCCh-11.1.1.3						0	Action is considered In-Kind
GuR-CCCh-12.1.1.1						0	This action is considered part of ongoing regulatory activities of regulatory agencies. Action is considered In-Kind
GuR-CCCh-12.1.2.1	60.50	60.50				121	Cost based on sediment assessment for 9,550 acres (assume 5% of total watershed acres) at a rate of \$13/mile.

Gualala River Chinook Salmon (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GuR-CCCh-12.1.2.2	50.00					50	Cost estimate for field work by agency or other staff.
GuR-CCCh-12.1.2.3						0	Action is considered In-Kind
GuR-CCCh-12.1.2.4						0	Action is considered In-Kind
GuR-CCCh-12.1.3.1						TBD	Additional information needed on the size and scope of projects in order to estimate cost.
GuR-CCCh-12.1.4.1	500	500				1,000	Low cost to promote. Implementation likely 1-2 million based on recent Russian River costs to develop off-channel storage.
GuR-CCCh-12.1.5.1						0	Relatively low cost is expected to work with agricultural community. Action is considered In-Kind
GuR-CCCh-12.1.5.2						0	Action is considered In-Kind
GuR-CCCh-12.2.1.1						0	Action is considered In-Kind
GuR-CCCh-12.2.1.2						0	Action is considered In-Kind
GuR-CCCh-12.2.1.3						0	Action is considered In-Kind
GuR-CCCh-12.2.2.1	32.50	32.50				65	Development of stream flow model will identify summer base flow levels. Cost based on stream flow/precipitation model at a rate of \$65,000/project.
GuR-CCCh-12.2.2.2						0	Action is considered In-Kind
GuR-CCCh-16.1.1.1						0	Action is considered In-Kind
GuR-CCCh-18.1.1.1	140.00	140.00				280	Cost based on treating 7 miles (assume 5% of high IP) at a rate of \$3.60/ft.
GuR-CCCh-19.1.1.1						0	Action is considered In-Kind
GuR-CCCh-19.1.2.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
GuR-CCCh-19.1.2.2						0	Action is considered In-Kind
GuR-CCCh-19.1.3.1						0	Cost accounted for in ROADS
GuR-CCCh-19.1.3.2	5	5	5	5		20	Cost expected to be low because much of this mapping has been completed. Cost estimated at \$20,000
GuR-CCCh-19.1.3.3						0	Action is considered In-Kind
GuR-CCCh-19.1.3.4	137.50	137.50	137.50	137.50		550	Cost to decommission 40 miles (assume 10% of road network) at a rate of \$12,000/mile.
GuR-CCCh-19.1.4.1						0	Action is considered In-Kind
GuR-CCCh-19.1.4.2						0	Action is considered In-Kind
GuR-CCCh-19.1.5.1						0	Action is considered In-Kind
GuR-CCCh-19.1.5.2						TBD	Cost of reducing timber available in riparian areas needs to be calculated for estimating cost of this action.
GuR-CCCh-19.1.6.1						0	A database is currently in development and being performed in-house. Outsourcing may be needed at future developmental stages. Cost is currently considered in-kind
GuR-CCCh-19.1.6.2						TBD	Cost are difficult to estimate because of fair market value and rate of turnover.
GuR-CCCh-19.1.6.3						0	Action is considered In-Kind
GuR-CCCh-19.1.6.4						TBD	Not able to estimate cost at this time.
GuR-CCCh-19.1.6.5						0	Costs is in-kind if conducted with existing federal, state and county staff.
GuR-CCCh-19.2.1.1						0	Cost low if conducted with current regulatory and County staff. Action is considered In-Kind
GuR-CCCh-19.2.1.2						0	Action is considered In-Kind
GuR-CCCh-19.2.1.3						0	Action is considered In-Kind
GuR-CCCh-19.2.1.4						0	The recovery action will likely be done by existing agency staff. Action is considered In-Kind
GuR-CCCh-19.2.1.5						0	Action is considered In-Kind
GuR-CCCh-19.2.1.6						0	Action is considered In-Kind
GuR-CCCh-19.2.1.7						0	Action is considered In-Kind
GuR-CCCh-23.1.1.1	300.00	300.00				600	Based on remaining number of miles of roads that have not been upgraded (500 miles) in high priority recovery areas. Cost to decommission roads based on \$12,000/mile for 500 miles. If roads were upgraded, costs would be \$21,000/mile for an estimated total of \$1,050,000.
GuR-CCCh-23.1.1.2						TBD	Cost of maintaining upgraded roads will depend on severity of previous winter.
GuR-CCCh-23.1.1.3	20					20	Cost expected to be low because most areas have been surveyed. Cost estimated at \$20,000
GuR-CCCh-23.1.1.4						TBD	Five years may be sufficient to determine problem segments that would be storm proofed. Cost will depend on the amount of roads needing to be surveyed.
GuR-CCCh-23.1.1.5						TBD	Cost will depend on the amount of roads needing to be rocked. Encouragement and discussion is in-kind.
GuR-CCCh-23.1.1.6						0	Cost accounted for in other action steps.
GuR-CCCh-23.1.1.7						0	Cost accounted for in other action steps.
GuR-CCCh-23.1.1.8						0	Cost accounted for in other action steps.
GuR-CCCh-23.1.1.9						0	This recommendation should be considered standard practice. Action is considered In-Kind
GuR-CCCh-23.1.1.10						TBD	TBD, cost based on number and type of locked gates to prevent 4wd vehicles.
GuR-CCCh-23.1.2.1						0	Action is considered In-Kind
GuR-CCCh-23.1.2.2						0	Action is considered In-Kind
GuR-CCCh-23.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
GuR-CCCh-23.1.4.1	1,100	1,100				2,200	Cost based on decommissioning 176 miles of road at a cost of \$12,000/mile. Recovery action related to prevent or minimize impairment to instream substrate by decommissioning riparian roads.
GuR-CCCh-23.1.4.2	1,538					1,538	Cost based on road inventory of 1,607 miles of road at a rate of \$957/mile.
GuR-CCCh-23.1.4.3						0	Action is considered In-Kind
GuR-CCCh-23.1.4.4						0	Action is considered In-Kind
GuR-CCCh-24.1.1.1						TBD	Need additional analysis to estimate cost which will vary with drought frequency.
GuR-CCCh-24.1.1.2						0	Cost expected to be low if conducted by existing agency staff. Action is considered In-Kind

Gualala River Chinook Salmon (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GuR-CCCh-25.1.1.1						0	Action is considered In-Kind
GuR-CCCh-25.1.1.2						TBD	TBD, cost based on amount of incentives needed to change instream use to benefit aquatic species.
GuR-CCCh-25.1.2.1	32.50	32.50				65	Cost based on stream flow/precipitation model at a rate of \$65,000/project.
GuR-CCCh-25.1.3.1						0	Action is considered In-Kind
GuR-CCCh-25.1.3.2						0	Cost accounted for in other action steps.
GuR-CCCh-25.1.4.1						0	Action is considered In-Kind
GuR-CCCh-25.2.1.1						0	Action is considered In-Kind
GuR-CCCh-25.2.1.2						0	Action is considered In-Kind
GuR-CCCh-25.2.1.3						0	Action is considered In-Kind

Navarro River Chinook Salmon (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NavR-CCCh-2.1.1.1	253.00					253	Cost based on treating 7 miles of High IP (assume 1 project per mile in 25% high IP) at a rate of \$36,000/mile.
NavR-CCCh-2.1.1.2	1,592					1,592	Cost to evaluate existing passage database and plan restoration of culvert crossings on Hwy128. Cost to treat 8 crossings at a rate of \$199,000/crossing would total \$1,592,000. Costs should be lower if minor modifications are needed at each crossing.
NavR-CCCh-3.1.1.1						0	Cost accounted for in action step below.
NavR-CCCh-3.1.1.2						TBD	Estimate based on landowner cooperation to assess diversion sites.
NavR-CCCh-3.1.1.3						0	Action is considered In-Kind
NavR-CCCh-3.1.1.4						0	Action is considered In-Kind
NavR-CCCh-3.1.1.5	3.00					3	Cost for stream flow gauges estimated at \$1,000/gauge. Cost does not account for maintenance or data management.
NavR-CCCh-3.1.1.6							5 year period to get methods and actions in place to minimize stranding. Costs may be high in Anderson Valley.
NavR-CCCh-3.1.1.7	200.00					200	Additional regulatory staff to support improved regulation of groundwater.
NavR-CCCh-3.1.1.8						TBD	Number of water rights holders willing to participate is unknown at this time.
NavR-CCCh-3.1.1.9						0	Action is considered In-Kind
NavR-CCCh-3.1.1.10						0	Action is considered In-Kind
NavR-CCCh-3.1.1.11						0	Action is considered In-Kind
NavR-CCCh-3.1.2.1						TBD	Total cost for basin will need additional analysis. Cost per landowner is estimated to be 10-50k.
NavR-CCCh-3.1.2.2						0	Action is considered In-Kind
NavR-CCCh-6.1.1.1	625	625				1,250	Cost based on treating 50 miles at a rate of \$25,000/mile. Based on an estimate of 50 miles in the next 10 years at 20k.
NavR-CCCh-6.1.1.2						0	Action is considered In-Kind
NavR-CCCh-6.1.1.3						0	Action is considered In-Kind
NavR-CCCh-6.1.2.1	56.00	56.00				112	These data would be most effective if combined into a central repository and restoration projects were prioritized according to highest restoration priority. Cost for fish/habitat monitoring is estimated at \$112,000/project.
NavR-CCCh-8.1.1.1						TBD	More information is needed for large projects such as large slides and landings.
NavR-CCCh-11.1.1.1						0	Cost accounted for in the monitoring chapter.
NavR-CCCh-11.1.1.2						0	Cost accounted for in the monitoring chapter.
NavR-CCCh-11.1.1.3						0	Action is considered In-Kind
NavR-CCCh-11.1.1.4						0	Action is considered In-Kind
NavR-CCCh-12.1.1.1						TBD	
NavR-CCCh-12.1.1.2	407.00	407.00				814	Cost accounted for in above action step.
NavR-CCCh-12.1.1.3						TBD	
NavR-CCCh-12.1.1.4						0	Action is considered In-Kind
NavR-CCCh-12.1.2.1						0	Action is considered In-Kind
NavR-CCCh-12.1.2.2						0	Action is considered In-Kind
NavR-CCCh-12.1.2.3						0	Action is considered In-Kind
NavR-CCCh-12.1.3.1						0	Action is considered In-Kind
NavR-CCCh-12.1.4.1						0	Action is considered In-Kind
NavR-CCCh-12.2.1.1						0	Cost is expected to be minimal for existing county staff. Action is considered In-Kind
NavR-CCCh-12.2.1.2						TBD	Cost of implementing BMPs to agriculture producers is not known at this time. The cost BMPs for reducing sediment production, riparian protection, and water use will need to be determined.
NavR-CCCh-12.2.1.3						0	Action is considered In-Kind
NavR-CCCh-23.1.1.1	60	60				120	Cost based on treating roads at a rate of \$10,000/mile.
NavR-CCCh-23.1.1.2	50	50				100	Cost accounted for in road and sediment assessment.
NavR-CCCh-23.1.1.3						TBD	
NavR-CCCh-23.1.1.4						0	Action is considered In-Kind
NavR-CCCh-23.1.1.5						0	Action is considered In-Kind
NavR-CCCh-23.1.1.6						0	Action is considered In-Kind
NavR-CCCh-23.1.1.7						0	Cost accounted for in restoration projects that upgrade or decommission riparian roads.
NavR-CCCh-23.1.1.8						TBD	
NavR-CCCh-23.1.2.1						0	Cost based on annual training for certification of entities in Navarro watershed.
NavR-CCCh-23.1.2.2	50.00					50	
NavR-CCCh-23.1.3.1	50.00					50	
NavR-CCCh-23.1.3.2						0	Action is considered In-Kind
NavR-CCCh-23.1.4.1	150.00	150.00				300	Cost estimate for maintaining database for the Navarro watershed for 10 years.
NavR-CCCh-23.1.4.2	25.00	25.00				50	
NavR-CCCh-23.2.1.1						0	Action is considered In-Kind
NavR-CCCh-23.2.2.1	100.00					100	
NavR-CCCh-24.1.1.1						TBD	Cost of providing bypass flow can not be estimated without further analysis.
NavR-CCCh-24.1.1.2						TBD	
NavR-CCCh-24.1.1.3						0	Action is considered In-Kind
NavR-CCCh-24.1.1.4						TBD	Cost is based on amount of water to acquire or lease and participation of water diverters. Estimate for water purchase/lease is \$155/acre ft/yr. The main benefit of this action is to improve flow conditions in stream reaches where the majority of home owners and agricultural use occurs.
NavR-CCCh-24.1.1.5						TBD	

Navarro River Chinook Salmon (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NavR-CCCh-24.1.2.1						TBD	
NavR-CCCh-24.1.2.2						0	Action is considered In-Kind
NavR-CCCh-24.1.2.3						0	Action is considered In-Kind
NavR-CCCh-24.1.2.4						0	Action is considered In-Kind

Northern California Steelhead DPS Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DPS-NCSW-1.1.1.1						TBD	Cost is dependent on the infrastructure and fill to be removed
DPS-NCSW-1.1.1.2						0	Action is considered In-Kind
DPS-NCSW-1.2.1.1						0	Action is considered In-Kind
DPS-NCSW-1.2.1.2						0	Action is considered In-Kind
DPS-NCSW-2.1.1.1						TBD	In-Kind for the evaluation, TBD for the implementation of the plan
DPS-NCSW-2.2.1.1						0	Action is considered In-Kind
DPS-NCSW-3.1.1.1						0	Action is considered In-Kind
DPS-NCSW-3.1.1.2						0	Action is considered In-Kind
DPS-NCSW-3.1.1.3						0	Action is considered In-Kind
DPS-NCSW-3.1.1.4						0	Action is considered In-Kind
DPS-NCSW-3.1.1.5						TBD	Costs for implementing this action will depend on the number, location and duration of gages across the ESU and DPS. See also Monitoring Chapter.
DPS-NCSW-3.1.1.6						0	Implementation costs should be covered under existing laws or should be the responsibility of the entity that owns the diversion.
DPS-NCSW-3.1.1.7						TBD	
DPS-NCSW-3.1.1.8						TBD	Some of this would be In-Kind
DPS-NCSW-3.1.1.9						0	Action is considered In-Kind
DPS-NCSW-3.1.1.10						TBD	
DPS-NCSW-3.1.1.11						0	Action is considered In-Kind
DPS-NCSW-3.1.1.12						0	Action is considered In-Kind
DPS-NCSW-3.2.1.1						0	Action is In-Kind
DPS-NCSW-3.2.1.2						0	Action is In-Kind
DPS-NCSW-3.2.1.3						0	Action is In-Kind
DPS-NCSW-3.2.1.4						0	Action is considered In-Kind
DPS-NCSW-3.2.1.5						0	Action is considered In-Kind
DPS-NCSW-3.2.1.6						0	Action is considered In-Kind
DPS-NCSW-3.2.1.7						0	Action is considered In-Kind
DPS-NCSW-3.2.1.8						TBD	
DPS-NCSW-3.2.1.9						0	Action is considered In-Kind
DPS-NCSW-5.1.1.1						TBD	
DPS-NCSW-5.1.1.2						0	The data that is collected is often part of another survey and is forwarded to CDFW. CDFW maintenance of the database is considered In-Kind
DPS-NCSW-6.2.1.1						0	Action is considered In-Kind
DPS-NCSW-6.2.1.2						0	Action is considered In-Kind
DPS-NCSW-6.2.1.3						0	Action is considered In-Kind
DPS-NCSW-6.2.1.4						0	Action is considered In-Kind
DPS-NCSW-6.2.1.5						TBD	
DPS-NCSW-6.2.1.6						0	Action is considered In-Kind
DPS-NCSW-6.2.1.7						0	Action is considered In-Kind
DPS-NCSW-6.2.1.8						TBD	
DPS-NCSW-7.1.1.1						0	Action is considered In-Kind
DPS-NCSW-7.1.1.2						0	Action is considered In-Kind
DPS-NCSW-7.1.1.3						0	Action is considered In-Kind
DPS-NCSW-8.1.1.1						TBD	
DPS-NCSW-8.1.1.2						TBD	
DPS-NCSW-10.1.1.1						0	Action is considered In-Kind
DPS-NCSW-10.1.1.2						0	Action is considered In-Kind
DPS-NCSW-10.1.1.3						0	Action is considered In-Kind
DPS-NCSW-10.1.1.4						0	Action is considered In-Kind
DPS-NCSW-10.1.1.5						0	Action is considered In-Kind
DPS-NCSW-10.1.1.6						0	Action is considered In-Kind
DPS-NCSW-10.1.1.7						0	Action is considered In-Kind
DPS-NCSW-10.1.1.8						0	Action is considered In-Kind
DPS-NCSW-10.1.1.9						0	Action should be considered standard practice and is in-kind
DPS-NCSW-10.1.1.10						TBD	Cost will based on feasible recommendations to research and treat pathogens.
DPS-NCSW-10.1.2.1						0	Action is considered In-Kind
DPS-NCSW-10.2.1.1						0	Action is considered In-Kind
DPS-NCSW-11.1.1.1						TBD	
DPS-NCSW-11.1.1.2						0	Action is considered In-Kind
DPS-NCSW-11.1.1.3						0	Action is considered In-Kind
DPS-NCSW-11.1.1.4						TBD	
DPS-NCSW-11.1.1.5						TBD	
DPS-NCSW-11.1.1.6						TBD	
DPS-NCSW-11.1.1.7						0	Action is considered In-Kind

Northern California Steelhead DPS Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DPS-NCSW-11.2.1.1						TBD	
DPS-NCSW-11.2.1.2						0	Cost estimates for these types of monitoring would be included in the total cost of individual restoration actions (see recovery actions). Action is considered in-kind.
DPS-NCSW-11.2.1.3						TBD	
DPS-NCSW-11.2.1.4						TBD	
DPS-NCSW-11.2.1.5						TBD	Temperature data loggers (e.g., Onset HOBO v2 Data Loggers) cost approximately \$130 per unit. Cost estimates per population would depend on the size of the watershed and number of units needed within each watershed. Also, cost for data management and analysis would need to be considered.
DPS-NCSW-11.2.1.6						TBD	
DPS-NCSW-11.2.1.7						TBD	
DPS-NCSW-11.2.1.8						TBD	
DPS-NCSW-11.3.1.1						131,000	Cost estimates likely to be higher with greater sampling effort. However, costs of spawning ground surveys will be shared across species for populations with multiple species (including coho salmon).
DPS-NCSW-11.3.1.2						TBD	Annual cost estimate is based on 1 LCM per diversity stratum in a large watershed. Annual cost estimates for LCM station monitoring could range from \$819,000 (1 LCM per diversity stratum in a small watershed) to \$3,696,000 (2 LCMs per diversity stratum in large watersheds). Final costs will depend on watershed size and number of LCMs per stratum. See the Monitoring and Adaptive Management Chapter in Volume 1 of the Multi-Species Recovery Plan for additional information on LCM cost estimates.
DPS-NCSW-11.3.1.3						22,300	Cost estimates are for 50 years of implementation. Annual cost estimate for juvenile spatial distribution, abundance and diversity would cost approximately \$2,000 per reach. This estimate assumes a 10% sampling effort of the IP-km.
DPS-NCSW-11.3.1.4						TBD	Costs will be determined at a later date.
DPS-NCSW-11.3.1.5						0	Action is considered in-kind.
DPS-NCSW-11.3.1.6						0	Action is considered in-kind.
DPS-NCSW-11.3.2.1						TBD	
DPS-NCSW-11.3.2.2						0	Action is considered in-kind.
DPS-NCSW-11.3.2.3						0	Action is considered in-kind.
DPS-NCSW-11.3.2.4						0	Action is considered in-kind.
DPS-NCSW-11.4.1.1						TBD	Cost estimates for mortality rates would require further study and estimates of costs for these studies are unknown at this time. These would depend on the extent (severity and distribution) of the pathogens.
DPS-NCSW-11.4.1.2						TBD	
DPS-NCSW-11.4.1.3						0	Action is considered in-kind.
DPS-NCSW-11.4.1.4						0	Action is considered in-kind.
DPS-NCSW-11.4.1.5						0	Action is considered in-kind.
DPS-NCSW-11.4.1.6						TBD	
DPS-NCSW-11.5.1.1						0	Action is considered in-kind.
DPS-NCSW-11.5.1.2						0	Action is considered in-kind.
DPS-NCSW-11.5.1.3						TBD	
DPS-NCSW-11.5.1.4						0	Action is considered in-kind.
DPS-NCSW-11.6.1.1						TBD	
DPS-NCSW-11.6.1.2						0	Action is considered in-kind.
DPS-NCSW-11.6.1.3						0	Action is considered in-kind.
DPS-NCSW-12.1.1.1						TBD	
DPS-NCSW-12.1.1.2						0	Action is considered In-Kind
DPS-NCSW-12.1.1.3						0	In-Kind to develop the program, TBD depending on what incentives are provided
DPS-NCSW-12.1.1.4						0	In-Kind, should be considered standard practice, but implementation is ultimately up to the landowner
DPS-NCSW-12.1.2.1						0	Action is considered In-Kind
DPS-NCSW-12.1.2.2						0	Action is considered In-Kind
DPS-NCSW-12.1.2.3						TBD	
DPS-NCSW-12.1.2.4						0	Action is considered In-Kind
DPS-NCSW-12.2.1.1						0	Action is considered In-Kind
DPS-NCSW-12.2.1.2						0	Action is considered In-Kind
DPS-NCSW-12.2.1.3						0	Action is considered In-Kind
DPS-NCSW-12.2.1.4						0	Action is considered In-Kind
DPS-NCSW-12.2.1.5						0	Action is considered In-Kind
DPS-NCSW-12.2.2.1						0	Action is considered In-Kind
DPS-NCSW-13.1.1.1						TBD	
DPS-NCSW-13.1.1.2						TBD	
DPS-NCSW-13.1.1.3						TBD	
DPS-NCSW-13.1.1.4						TBD	
DPS-NCSW-13.2.1.1						0	Action is considered In-Kind
DPS-NCSW-13.2.1.2						0	Action is considered In-Kind
DPS-NCSW-14.1.1.1						TBD	
DPS-NCSW-14.1.1.2						TBD	See Monitoring Chapter

Northern California Steelhead DPS Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DPS-NCSW-14.1.1.3						0	Action is considered In-Kind
DPS-NCSW-14.1.1.4						0	Action is considered In-Kind
DPS-NCSW-14.1.1.5						0	Action is considered In-Kind
DPS-NCSW-14.1.1.6						0	Action is considered In-Kind
DPS-NCSW-14.1.1.7						TBD	
DPS-NCSW-15.1.1.1						0	Action is considered In-Kind
DPS-NCSW-15.1.1.2						0	Action is considered In-Kind
DPS-NCSW-15.1.1.3						0	Action is considered In-Kind
DPS-NCSW-15.1.1.4						0	Action is considered In-Kind
DPS-NCSW-15.1.1.5						0	Action is considered In-Kind
DPS-NCSW-15.1.2.1						0	Action is considered In-Kind
DPS-NCSW-15.1.2.2						0	Action is considered In-Kind
DPS-NCSW-15.1.3.1						TBD	
DPS-NCSW-16.1.1.1						0	Action is considered In-Kind
DPS-NCSW-16.1.1.2						0	Action is considered In-Kind
DPS-NCSW-16.1.1.3						0	Action is considered In-Kind
DPS-NCSW-16.1.1.4						0	Action is considered In-Kind
DPS-NCSW-16.1.1.5						0	Action is considered In-Kind
DPS-NCSW-16.1.1.6						TBD	Example: Oregon DFW holds a drawing each year for anglers that return their salmon/steelhead/sturgeon/halibut harvest cards before the pre-determined date. Prizes are substantial, typically including a drift boat etc.
DPS-NCSW-16.1.1.7						0	Action is considered In-Kind
DPS-NCSW-16.1.1.8						0	Action is considered In-Kind
DPS-NCSW-16.1.1.9						TBD	
DPS-NCSW-16.1.1.10						0	Action is considered In-Kind
DPS-NCSW-17.1.1.1						0	Action is considered In-Kind
DPS-NCSW-17.1.1.2						TBD	
DPS-NCSW-17.1.1.3						TBD	
DPS-NCSW-18.1.1.1						TBD	
DPS-NCSW-18.1.1.2						0	Action is considered In-Kind
DPS-NCSW-18.1.1.3						0	Action is considered In-Kind
DPS-NCSW-18.1.1.4						0	
DPS-NCSW-18.1.1.5						TBD	
DPS-NCSW-18.1.2.1						TBD	
DPS-NCSW-18.1.2.2						TBD	
DPS-NCSW-19.1.1.1						0	Action is considered In-Kind
DPS-NCSW-19.1.1.2						0	Action is considered In-Kind
DPS-NCSW-19.1.1.3						0	Action is considered In-Kind
DPS-NCSW-19.1.1.4						TBD	
DPS-NCSW-19.2.1.1						0	Action is considered In-Kind
DPS-NCSW-19.2.1.2						0	Action is considered In-Kind
DPS-NCSW-19.2.1.3						0	Action is considered In-Kind
DPS-NCSW-19.2.1.4						0	Action is considered In-Kind
DPS-NCSW-19.2.1.5						TBD	
DPS-NCSW-20.1.1.1						TBD	
DPS-NCSW-20.1.1.2						TBD	
DPS-NCSW-20.2.1.1						0	Action is considered In-Kind
DPS-NCSW-20.2.1.2						0	Action is considered In-Kind
DPS-NCSW-20.2.1.3						0	Action is considered In-Kind
DPS-NCSW-21.1.1.1						0	Action is considered In-Kind
DPS-NCSW-22.1.1.1						0	Action is considered In-Kind
DPS-NCSW-22.1.2.1						0	Action is considered In-Kind
DPS-NCSW-22.1.2.2						0	Action is considered In-Kind
DPS-NCSW-22.2.1.1						0	Action is considered In-Kind
DPS-NCSW-22.2.1.2						0	Action is considered In-Kind
DPS-NCSW-22.2.1.3						0	Action is considered In-Kind
DPS-NCSW-22.2.2.1						0	Action is considered In-Kind
DPS-NCSW-22.2.2.2						0	Action is considered In-Kind
DPS-NCSW-22.2.2.3						TBD	Price depends on the type of incentive provided
DPS-NCSW-22.2.2.4						0	Action is considered In-Kind
DPS-NCSW-22.2.2.5						0	Action is considered In-Kind
DPS-NCSW-23.1.1.1						0	For roads subject to the California Forest Practices Rules, this action is considered In-Kind."

Northern California Steelhead DPS Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DPS-NCSW-23.1.1.2						0	This action is consistent with requirements in California Forest Practices Rules at 14 CCR §§ 923 - 923.9.1. Action is considered In-Kind.
DPS-NCSW-23.1.1.3						0	This action is consistent with requirements in California Forest Practices Rules at 14 CCR §§ 923 - 923.9.1. Action is considered In-Kind.
DPS-NCSW-23.1.1.4						0	Action is considered In-Kind
DPS-NCSW-23.1.1.5						0	Action is considered In-Kind
DPS-NCSW-23.1.1.6						TBD	
DPS-NCSW-23.1.2.1						0	Action is considered In-Kind
DPS-NCSW-23.1.2.2						0	Action is considered In-Kind
DPS-NCSW-23.1.2.3						TBD	
DPS-NCSW-23.1.3.1						TBD	
DPS-NCSW-23.2.1.1						0	Action is considered In-Kind
DPS-NCSW-23.2.1.2						0	Action is considered In-Kind
DPS-NCSW-24.1.1.1						0	Action is considered In-Kind
DPS-NCSW-24.1.1.2						TBD	
DPS-NCSW-24.1.1.3						TBD	
DPS-NCSW-24.1.1.4						0	Action is considered In-Kind
DPS-NCSW-24.1.1.5						0	Action is considered In-Kind
DPS-NCSW-24.1.1.6						TBD	
DPS-NCSW-24.1.1.7						0	Action is considered In-Kind
DPS-NCSW-24.1.1.8						TBD	
DPS-NCSW-24.1.1.9						TBD	
DPS-NCSW-24.1.2.1						TBD	
DPS-NCSW-25.1.1.1						0	Action is considered In-Kind
DPS-NCSW-25.1.1.2						0	
DPS-NCSW-25.1.1.3						0	Action is considered In-Kind
DPS-NCSW-25.1.1.4						0	Action is considered In-Kind
DPS-NCSW-25.1.1.5						0	Action is considered In-Kind
DPS-NCSW-25.1.1.6						0	Action is considered In-Kind
DPS-NCSW-25.1.1.7						0	Action is considered In-Kind
DPS-NCSW-25.1.1.8						0	Action is considered In-Kind
DPS-NCSW-25.1.1.9						0	Action is considered In-Kind
DPS-NCSW-25.2.1.1						0	Action is considered In-Kind
DPS-NCSW-25.2.1.2						0	Action is considered In-Kind
DPS-NCSW-25.2.1.3						0	Action is considered In-Kind
DPS-NCSW-25.2.1.4						0	Action is considered In-Kind
DPS-NCSW-25.2.1.5						0	Action is considered In-Kind
DPS-NCSW-25.2.1.6						0	Action is considered In-Kind
DPS-NCSW-25.2.1.7						0	Action is considered In-Kind
DPS-NCSW-25.2.1.8						0	Action is considered In-Kind
DPS-NCSW-25.2.1.9						0	Action is considered In-Kind
DPS-NCSW-25.2.1.10						0	Action is considered In-Kind
DPS-NCSW-25.2.2.1						TBD	
DPS-NCSW-25.2.2.2						TBD	

Bear River, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
BearR-NCSW-1.1.1.1						0	Cost accounted for in Monitoring Chapter
BearR-NCSW-2.1.1.1	115.00					115	Focus on High IP subwatersheds. Cost for fish/habitat restoration assessment at a rate of \$115,000/project.
BearR-NCSW-2.1.1.2	103	103				205	Cost estimate taken from SONCC coho salmon recovery plan, \$205,000
BearR-NCSW-3.1.1.1						0	Action is considered In-Kind
BearR-NCSW-6.1.1.1						0	Action is considered In-Kind
BearR-NCSW-6.1.2.1	115					115	Cost for fish/habitat restoration assessment at a rate of \$115,000/project.
BearR-NCSW-6.1.2.2	274.00	274.00	274.00	274.00		1,096	Cost estimate taken from SONCC coho salmon recovery plan, \$1,096,000
BearR-NCSW-6.1.3.1						0	Action is considered In-Kind
BearR-NCSW-7.1.1.1						0	Action is considered In-Kind
BearR-NCSW-7.1.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
BearR-NCSW-7.2.1.1						0	Action is considered in-kind
BearR-NCSW-7.2.1.2						0	Action is considered in-kind
BearR-NCSW-7.2.1.3						0	Action is considered in-kind
BearR-NCSW-7.2.1.4						0	Action is considered in-kind
BearR-NCSW-8.1.1.1						0	Action is considered In-Kind
BearR-NCSW-8.1.1.2						0	Action is considered In-Kind
BearR-NCSW-11.1.1.1						0	Cost accounted for in Monitoring Chapter
BearR-NCSW-16.1.1.1						0	Action is considered In-Kind
BearR-NCSW-16.1.1.2						0	Action is considered In-Kind
BearR-NCSW-16.1.1.3						0	Action is considered In-Kind
BearR-NCSW-16.1.1.4						0	Action is considered In-Kind
BearR-NCSW-18.1.1.1						0	Action is considered In-Kind
BearR-NCSW-18.1.2.1	31	31	31	31		122	Cost estimate taken from SONCC coho salmon recovery plan, \$122,000
BearR-NCSW-18.1.2.2	1.4	1.4	1.4	1.4	1.4	7	Cost estimate taken from SONCC coho salmon recovery plan, \$7,000
BearR-NCSW-18.1.3.1	0.2	0.2	0.2	0.2	0.2	1	Cost estimate taken from SONCC coho salmon recovery plan, \$1000
BearR-NCSW-18.2.1.1						0	Action is considered In-Kind
BearR-NCSW-19.1.1.1						0	Action is considered In-Kind
BearR-NCSW-19.1.1.2						0	Action is considered In-Kind
BearR-NCSW-19.1.1.3						0	Action is considered In-Kind
BearR-NCSW-19.1.1.4						0	Action is considered In-Kind
BearR-NCSW-23.1.1.1	82.00					82	Cost based on road inventory for 82 miles of road at a rate of \$1000/mile.
BearR-NCSW-23.1.1.2	2,273	2,273	2,273	2,273		9,092	Action is considered In-Kind
BearR-NCSW-23.1.1.3	101	101	101			302	Cost estimate taken from SONCC coho salmon recovery plan, \$302,000
BearR-NCSW-23.1.1.4	200	200	200	200		798	Cost estimate taken from SONCC coho salmon recovery plan, \$798,000
BearR-NCSW-23.2.1.1						0	Action is considered In-Kind
BearR-NCSW-24.1.1.1						0	Action is considered In-Kind
BearR-NCSW-24.1.1.2						0	Action is considered In-Kind. Cost estimate taken from SONCC coho salmon recovery plan
BearR-NCSW-25.1.1.1						0	Action is considered In-Kind. Cost estimate taken from SONCC coho salmon recovery plan
BearR-NCSW-25.1.1.2						0	Action is considered In-Kind
BearR-NCSW-25.1.1.3						0	Action is considered In-Kind. Cost estimate taken from SONCC coho salmon recovery plan

Humboldt Bay Tributaries, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
HumbB-NCSW-1.1.1.1	55	55	55	55	55	275	Cost estimate taken from SONCC coho salmon recovery plan, \$275,000
HumbB-NCSW-1.1.1.2	240.2	240.2	240.2	240.2	240.2	1,201	Cost estimate taken from SONCC coho salmon recovery plan, \$1,201,000
HumbB-NCSW-2.1.1.1	57.50	57.50				115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project.
HumbB-NCSW-2.1.1.2	468	468	468	468		1,871	Cost estimate taken from SONCC coho salmon recovery plan, \$1,871,000
HumbB-NCSW-3.1.1.1						0	Action is considered in-kind
HumbB-NCSW-6.1.1.1	115					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project.
HumbB-NCSW-6.1.1.2	5,013	5,013				10,026	Cost estimate taken from SONCC coho salmon recovery plan, \$10,026,000
HumbB-NCSW-6.2.1.1						0	Action is considered in-kind
HumbB-NCSW-7.1.1.1						TBD	
HumbB-NCSW-7.1.1.2						TBD	
HumbB-NCSW-7.2.1.1						0	Action is considered in-kind
HumbB-NCSW-7.2.1.2						0	Action is considered in-kind
HumbB-NCSW-7.2.1.3						0	Action is considered in-kind
HumbB-NCSW-7.2.1.4						0	Action is considered in-kind
HumbB-NCSW-8.1.1.1	103.5	103.5				207	Cost of study estimated at \$207,000
HumbB-NCSW-18.1.1.1						0	Cost likely accounted for in above action step for fish/habitat restoration assessment.
HumbB-NCSW-18.1.1.2						0	Action is considered In-Kind
HumbB-NCSW-18.1.1.3						TBD	Cost based on the amount of linear feet to fence. Cost estimated at a rate of \$4/ft.
HumbB-NCSW-18.1.1.4						TBD	Cost will vary with assessment methods and level of detail.
HumbB-NCSW-19.1.1.1						0	Action is considered In-Kind
HumbB-NCSW-19.1.1.2	1,021	1,021	1,021	1,021	1,021	5,107	Cost estimate taken from SONCC coho salmon recovery plan, \$5,107,000.
HumbB-NCSW-19.1.1.3	176	176	176	176	176	702	Cost estimate taken from SONCC coho salmon recovery plan, \$702,000.
HumbB-NCSW-19.2.1.1						0	Action is considered In-Kind
HumbB-NCSW-19.2.1.2						0	This should be considered standard practice. Action is considered In-Kind
HumbB-NCSW-23.1.1.1	411	411	411	411		1,642	Cost estimate taken from SONCC coho salmon recovery plan, \$1,642,000.
HumbB-NCSW-23.1.1.2						0	Cost accounted for in above action step.
HumbB-NCSW-23.1.1.3	33,219	33,219				66,437	Cost estimate taken from SONCC coho salmon recovery plan, \$66,437,000
HumbB-NCSW-23.1.1.4	301	301	301	301	301	1,506	Cost estimate taken from SONCC coho salmon recovery plan, \$1,506,000
HumbB-NCSW-23.1.1.5	143	143	143	143		570	Cost estimate taken from SONCC coho salmon recovery plan, \$570,000

Little River, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
LTRNC-NCSW-1.1.1.1	34.11					34	
LTRNC-NCSW-1.1.1.2	420					420	Cost estimate taken from SONCC coho salmon recovery plan, \$420,000
LTRNC-NCSW-1.1.1.3	34.11					34	
LTRNC-NCSW-1.1.1.4	357					357	Cost estimate taken from SONCC coho salmon recovery plan, \$357,360
LTRNC-NCSW-1.1.1.5	207					207	Estimated cost of assessment is \$207,000
LTRNC-NCSW-6.1.1.1	1,335					1,335	
LTRNC-NCSW-6.1.1.2						0	Cost accounted for in another action step.
LTRNC-NCSW-6.1.2.1	1,335					1,335	
LTRNC-NCSW-6.1.2.2	334	334				668	Cost estimate taken from SONCC coho salmon recovery plan, \$668,000
LTRNC-NCSW-7.1.1.1	10					10	Cost estimate taken from SONCC coho salmon recovery plan, \$10,000
LTRNC-NCSW-7.1.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
LTRNC-NCSW-7.1.2.1						0	Action is considered In-Kind
LTRNC-NCSW-7.1.2.2	698					698	Cost estimate taken from SONCC coho salmon recovery plan, \$698,000
LTRNC-NCSW-7.1.2.3	96					96	Cost estimate taken from SONCC coho salmon recovery plan, \$96,000
LTRNC-NCSW-8.1.1.1						0	Cost accounted for in Monitoring Chapter
LTRNC-NCSW-8.1.1.2	115					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project.
LTRNC-NCSW-8.1.1.3						0	Cost accounted for in above action step.
LTRNC-NCSW-8.1.1.4	91.00					91	Cost based on erosion assessment for 25% of total watershed acres at a rate of \$13/acre.
LTRNC-NCSW-8.1.1.5	207					207	Cost of assessment estimated at \$207,000.
LTRNC-NCSW-8.1.1.6						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
LTRNC-NCSW-8.1.1.7	103.5	103.5				207	Cost of assessment estimated at \$207,000.
LTRNC-NCSW-23.1.1.1						0	Cost accounted for in above action step.
LTRNC-NCSW-23.1.1.2						0	Cost accounted for in above actions step.
LTRNC-NCSW-23.1.1.3						0	Cost accounted for in above action step.

Mad River (Lower and Upper), Northern California Steelhead (Northern Coastal/North Mountain Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
MadR-NCSW-1.1.1.1	282					282	Cost based on estuary use/residence time model at a rate of \$282,000/project.
MadR-NCSW-1.1.1.2	282					282	Cost based on estuary use/residence time model at a rate of \$282,000/project.
MadR-NCSW-1.1.1.3						0	Cost accounted for in above action step.
MadR-NCSW-1.1.1.4	296.50	296.50				593	Cost should be coordinated with other action steps above to reduce cost and redundancy. Cost estimate taken from SONCC coho salmon recovery plan, \$593,000
MadR-NCSW-2.1.1.1	74.00					74	Cost based on riparian restoration model at a rate of \$74,000/project.
MadR-NCSW-2.1.1.2	17	17				34	Cost estimate taken from SONCC coho salmon recovery plan, \$34,000
MadR-NCSW-3.1.1.1						0	Action is considered In-Kind
MadR-NCSW-5.1.1.1	34					34	
MadR-NCSW-5.1.1.2	218.00	218.00				436	Cost estimate taken from SONCC coho salmon recovery plan, \$436,000
MadR-NCSW-5.1.1.3						TBD	
MadR-NCSW-5.1.1.4						TBD	
MadR-NCSW-6.1.1.1	115					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
MadR-NCSW-6.1.1.2	3452.50	3452.50				6,903	Cost estimate taken from SONCC coho salmon recovery plan, \$6,903,000
MadR-NCSW-6.2.1.1						0	Action is considered in-kind
MadR-NCSW-7.1.1.1						0	Action is considered In-Kind
MadR-NCSW-7.1.1.2	3,530					3,530	Cost estimate taken from SONCC coho salmon recovery plan, \$3,530,000
MadR-NCSW-10.1.1.1	207					TBD	
MadR-NCSW-10.1.1.2	207					TBD	
MadR-NCSW-14.1.1.1	160					160	Cost estimate taken from SONCC coho salmon recovery plan, \$160,000
MadR-NCSW-17.1.1.1						0	Action is considered In-Kind
MadR-NCSW-17.1.1.2						0	Action is considered In-Kind
MadR-NCSW-17.1.1.3						0	Action is considered In-Kind
MadR-NCSW-18.1.1.1	74.00					74	Cost based on riparian restoration model at a rate of \$74,000/project.
MadR-NCSW-18.1.1.2						0	Action is considered In-Kind
MadR-NCSW-18.1.1.3	41					41	Cost estimate taken from SONCC coho salmon recovery plan, \$41,000
MadR-NCSW-18.1.1.4	760					760	Cost estimate taken from SONCC coho salmon recovery plan, \$760,000
MadR-NCSW-18.1.1.5	2					2	Cost estimate taken from SONCC coho salmon recovery plan, \$2,000
MadR-NCSW-19.1.1.1						0	Action is considered In-Kind
MadR-NCSW-19.1.1.2						0	Action is considered In-Kind
MadR-NCSW-23.1.1.1	400.00					400	Cost based on erosion reduction across 10% total watershed acres.
MadR-NCSW-23.1.1.2	2,107					2,107	
MadR-NCSW-23.1.1.3	31,005	31,005				62,010	Action is considered In-Kind
MadR-NCSW-23.1.1.4	894	894				1,787	Cost estimate taken from SONCC coho salmon recovery plan, \$1,787,000
MadR-NCSW-23.1.1.5						TBD	Cost based on amount of road network to relocate.
MadR-NCSW-23.1.1.6						0	Action is considered In-Kind
MadR-NCSW-23.2.1.1						0	Action is considered In-Kind
MadR-NCSW-25.1.1.1						TBD	Cost based on amount of participation from water users. Cost estimate at \$70,000/landowner.
MadR-NCSW-25.1.1.2						0	Action is considered In-Kind
MadR-NCSW-25.1.1.3						TBD	Cost based on amount of incentives to provide to reduce summer low-flow. Currently, incentive programs exist and should be expanded and explored.
MadR-NCSW-25.1.1.4						0	Action is considered In-Kind
MadR-NCSW-25.2.1.1						0	Action is considered In-Kind

Maple Creek/Big Lagoon, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
MapC-NCSW-1.1.1.1	282.00					282	Cost based on estuary assessment at a rate of \$282,000/project.
MapC-NCSW-1.1.2.1	685					685	Cost based on treating 1 dam, unknown height; partial/temporal barrier at a rate of \$685,000
MapC-NCSW-1.1.2.2						0	Cost accounted for in above action step.
MapC-NCSW-2.1.1.1	115.00					115	Cost based on fish/habitat restoration at a rate of 115,000/project.
MapC-NCSW-2.1.1.2						TBD	Cost based on amount of habitat to restore. Cost estimated at a rate of \$37,000/acre.
MapC-NCSW-6.1.1.1	103.5	103.5				207	Estimated cost to develop a plan is \$207,000. Final cost depends on methods and implementation.
MapC-NCSW-8.1.1.1						TBD	Cost should be in coordination with habitat complexity action steps.
MapC-NCSW-14.1.1.1	70.50	70.50	70.50	70.50		282	Cost based on estuary assessment at a rate of \$282,000/project.
MapC-NCSW-14.1.1.2	16	16	16	16	16	94	Cost estimate taken from SONCC coho salmon recovery plan, \$94,000.
MapC-NCSW-14.1.1.3	17	17				34	Cost estimate taken from SONCC coho salmon recovery plan, \$34,000
MapC-NCSW-14.1.1.4	20	20	20	20	20	120	Cost estimate taken from SONCC coho salmon recovery plan, \$120,000.
MapC-NCSW-16.1.1.1						0	Action is considered In-Kind
MapC-NCSW-16.1.1.2						0	Action is considered In-Kind
MapC-NCSW-16.1.1.3						0	Action is considered In-Kind
MapC-NCSW-16.1.1.4						0	Action is considered In-Kind
MapC-NCSW-16.1.1.5						0	Action is considered In-Kind
MapC-NCSW-16.1.1.6						0	Action is considered In-Kind
MapC-NCSW-16.1.1.7						0	Action is considered In-Kind
MapC-NCSW-19.1.1.1						0	Action is considered In-Kind
MapC-NCSW-19.1.1.2	146.00					146	Cost estimate taken from SONCC coho salmon recovery plan, \$146,000.
MapC-NCSW-23.1.1.1	70.50	70.50				141	Cost based on road inventory 141 miles of road network at a rate of \$1000/mile.
MapC-NCSW-23.1.1.2	7178	7178				14,356	Cost estimate taken from SONCC coho salmon recovery plan, \$14,356,000
MapC-NCSW-23.1.1.3	42.50	42.50	42.50	42.50		170	Cost estimate taken from SONCC coho salmon recovery plan, \$170,000
MapC-NCSW-23.1.1.4						0	Action is considered In-Kind
MapC-NCSW-23.1.2.1						0	Action is considered In-Kind
MapC-NCSW-23.1.2.2	311.20	311.20	311.20	311.20	311.20	1,556	Cost estimate taken from SONCC coho salmon recovery plan, \$1,556,000
MapC-NCSW-23.2.1.1						0	Action is considered In-Kind

Mattole River, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
MatIR-NCSW-1.1.1.1	213					213	Cost based wetland restoration at a rate of \$213,000/project.
MatIR-NCSW-2.1.1.1	57.50	57.50				115	Cost based on fish/habitat restoration assessment estimated at \$115,00/project. Cost should be in coordination with other action steps.
MatIR-NCSW-2.1.1.2	941					941	Cost estimate taken from SONCC coho salmon recovery plan, \$941,000.
MatIR-NCSW-2.1.1.3						0	Cost accounted for in action steps above.
MatIR-NCSW-3.1.1.1						0	Action is considered In-Kind
MatIR-NCSW-5.1.1.1	318					318	Cost estimate taken from SONCC coho salmon recovery plan, \$318,000.
MatIR-NCSW-6.1.1.1	57.50	57.50				115	Cost based on fish/habitat restoration. Cost estimated at \$115,000/project..
MatIR-NCSW-6.1.1.2						0	Action is considered in-kind
MatIR-NCSW-6.1.1.3						0	Action is considered in-kind
MatIR-NCSW-6.1.1.4	641.8	641.8	641.8	641.8		2,567	Cost estimate taken from SONCC coho salmon recovery plan, \$2,567,000
MatIR-NCSW-6.1.1.5	176.5	176.5				353	Cost estimate taken from SONCC coho salmon recovery plan, \$353,000
MatIR-NCSW-6.1.1.6						TBD	Cost is dependent on the amount of large wood added
MatIR-NCSW-6.1.1.7	115					115	Cost based on fish/habitat restoration. Cost estimated at \$115,000/project.
MatIR-NCSW-6.1.1.8	115					115	Cost based on fish/habitat restoration. Cost estimated at \$115,000/project.
MatIR-NCSW-6.1.2.1						0	Cost accounted for in FLOODPLAIN CONNECTIVITY.
MatIR-NCSW-6.1.2.2						0	Cost accounted for in FLOODPLAIN CONNECTIVITY.
MatIR-NCSW-6.2.1.1						0	Action is considered in-kind
MatIR-NCSW-7.1.1.1						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
MatIR-NCSW-7.1.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
MatIR-NCSW-7.2.1.1							
MatIR-NCSW-7.2.1.2							
MatIR-NCSW-8.1.1.1						TBD	
MatIR-NCSW-8.1.1.2						TBD	Cost will depend on methods used and amount of area needing to be treated.
MatIR-NCSW-10.1.1.1	103.5	103.5				207	Estimated cost of assessment is \$207,000
MatIR-NCSW-12.1.1.1	18.5	18.5	18.5	18.5		74	Cost estimate taken from SONCC coho salmon recovery plan, \$74,000
MatIR-NCSW-12.1.1.2	9.3	9.3	9.3	9.3		37	Cost estimate taken from SONCC coho salmon recovery plan, \$37,000
MatIR-NCSW-12.1.1.3	18.5	18.5	18.5	18.5		74	Cost estimate taken from SONCC coho salmon recovery plan, \$74,000
MatIR-NCSW-16.1.1.1						0	Action is considered In-Kind
MatIR-NCSW-16.1.1.2						0	Action is considered In-Kind
MatIR-NCSW-16.1.1.3						0	Action is considered In-Kind
MatIR-NCSW-18.1.1.1	60.00	60.00				120	Cost based erosion assessment of 5% of total acres at a rate of \$13/acre.
MatIR-NCSW-19.2.1.1						0	Action is considered In-Kind
MatIR-NCSW-19.2.1.2						0	Action is considered In-Kind
MatIR-NCSW-23.1.1.1						0	Cost accounted for in below action step
MatIR-NCSW-23.1.1.2	364.76	364.76				730	An inventory of roads will prioritize entire road network and identify roads no longer needed for silvicultural operations.
MatIR-NCSW-23.1.1.3						0	This recommendation should be considered standard practice. Cost to maintain roads should be part of ongoing practices.
MatIR-NCSW-23.1.1.4	1,952					1,952	Cost estimate taken from SONCC coho salmon recovery plan, \$1,952,000
MatIR-NCSW-23.1.1.5						0	Cost accounted for in another action step.
MatIR-NCSW-23.1.1.6						0	Cost accounted for in road inventory.
MatIR-NCSW-23.1.1.7	11,405					11,405	Cost estimate taken from SONCC coho salmon recovery plan, \$11,405,000
MatIR-NCSW-23.2.1.1						0	Action is considered In-Kind
MatIR-NCSW-25.1.1.1						0	Action is considered In-Kind
MatIR-NCSW-25.1.1.2						TBD	Cost for amount of incentives necessary to reduce diversions during the summer is unknown. Several incentive programs currently exist and should be explored as potential collaborators.
MatIR-NCSW-25.1.1.3						0	Action is considered In-Kind
MatIR-NCSW-25.1.1.4						0	
MatIR-NCSW-25.1.1.5						0	Action is considered In-Kind
MatIR-NCSW-25.2.1.1	350	350				700	Cost estimate taken from SONCC coho salmon recovery plan, \$700,000
MatIR-NCSW-25.2.1.2	7.5	7.5				16	Cost estimate taken from SONCC coho salmon recovery plan, \$16,000
MatIR-NCSW-25.2.1.3	3.00					3	Cost based on a minimum of 3 gauges at a rate of \$1,000/gauge. Cost does not account for data management or maintenance.

Redwood Creek (Lower and Upper), Northern California Steelhead (Northern Coastal/North Mountain Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NnCRd-NCSW-1.1.1.1	115.00					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project.
NnCRd-NCSW-1.1.1.2	234.5	234.5				469	Cost estimate taken from SONCC coho salmon recovery plan, \$469,000
NnCRd-NCSW-1.1.1.3	215					215	Cost based on providing passage at 5 stream crossings at a rate of \$43,000
NnCRd-NCSW-1.1.1.4	43.00					43	Cost based on improving passage at a rate of \$43,000/project.
NnCRd-NCSW-1.1.2.1	282.00					282	Cost based on estuary use/residence time monitoring at a rate of \$282,000/project.
NnCRd-NCSW-1.1.2.2	383.5	383.5				767	Cost estimate taken from SONCC coho salmon recovery plan, \$767,000
NnCRd-NCSW-1.2.1.1	115.00					115	Cost based on fish/habitat restoration monitoring at \$115,000/project.
NnCRd-NCSW-1.2.1.2						TBD	Cost based on practices and projects to address design flaws.
NnCRd-NCSW-2.1.1.1	115.00					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project. This action step should coordinate with other action steps.
NnCRd-NCSW-2.1.1.2	460.0	460.0				920	Cost estimate taken from SONCC coho salmon recovery plan, \$920,000
NnCRd-NCSW-2.1.2.1						0	Cost accounted for in above action step.
NnCRd-NCSW-2.1.2.2						0	Cost accounted for in action step above.
NnCRd-NCSW-5.1.1.1	215					215	Cost based on providing passage at 5 stream crossings at a rate of \$43,000.
NnCRd-NCSW-6.1.1.1	115.00					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project. This recommendation should be coordinated with other action steps to reduce redundancy.
NnCRd-NCSW-6.1.1.2						TBD	Cost based on amount of habitat needed to be restored. Cost estimated at \$26,000/mile with in project/mile in 50% high IP.
NnCRd-NCSW-6.1.1.3						0	Cost accounted for in action steps above.
NnCRd-NCSW-6.1.2.1	341.0	341.0				682	Cost estimate taken from SONCC coho salmon recovery plan for 1 full time biologist for half a year. Estimated cost of \$34,000 for half a year. Total cost over ten years is \$682,000.
NnCRd-NCSW-6.1.3.1						0	This recommendation is based on permitting and management actions and no direct cost of implementation are accounted for. Action is considered In-Kind
NnCRd-NCSW-6.2.1.1						0	Action is considered in-kind
NnCRd-NCSW-7.1.1.1	188					188	Cost estimate taken from SONCC coho salmon recovery plan, \$188,000.
NnCRd-NCSW-7.1.1.2	52					52	Cost estimate taken from SONCC coho salmon recovery plan, \$52,000
NnCRd-NCSW-8.1.1.1	229					229	Cost based on erosion assessment of 10% of total watershed acres at a rate of \$13/acre.
NnCRd-NCSW-8.1.1.2	528					528	Cost estimate taken from SONCC coho salmon recovery plan, \$528,000
NnCRd-NCSW-10.1.1.1						0	Action is considered In-Kind
NnCRd-NCSW-14.1.1.1						0	Cost should be minimal as this recommendation is a management decision. Action is considered In-Kind
NnCRd-NCSW-14.1.1.2	103.5	103.5				207	Estimated cost of assessment is \$207,000
NnCRd-NCSW-14.1.1.3						TBD	
NnCRd-NCSW-16.1.1.1						0	Action is considered In-Kind
NnCRd-NCSW-16.1.1.2						0	Action is considered In-Kind
NnCRd-NCSW-18.1.1.1	74.00					74	Cost based on riparian restoration monitoring at a rate of \$74,000/project.
NnCRd-NCSW-18.1.1.2	29					29	Cost estimate taken from SONCC coho salmon recovery plan, \$29,000
NnCRd-NCSW-19.1.1.1						0	Action is considered In-Kind
NnCRd-NCSW-19.1.1.2						0	This recommendation should be standard practice. Action is considered In-Kind
NnCRd-NCSW-23.1.1.1	35,492	35,492				70,983	Cost estimate taken from SONCC coho salmon recovery plan, \$70,983,000
NnCRd-NCSW-23.1.1.2						0	Cost accounted for in above action step.
NnCRd-NCSW-23.1.1.3						0	Action is considered In-Kind
NnCRd-NCSW-23.1.1.4	531.5	531.5				1,063	Cost estimate taken from SONCC coho salmon recovery plan, \$1,063,000
NnCRd-NCSW-25.1.1.1	65.00					65	Cost based on hydrological modeling at a rate of \$65,000/project.
NnCRd-NCSW-25.1.1.2						TBD	Cost based on amount of diversions impacting salmonids and actions needed to reduce diversions. Subsequent actions could include off-channel storage, improved irrigation efficiency, etc.

South Fork Eel River, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SFEeR-NCSW-2.1.1.1	287					287	Cost based on riparian and wetland restoration model at a rate of \$74,000 and \$213,000/project, respectively.
SFEeR-NCSW-2.1.1.2	1,105	1,105				2,209	Cost estimate taken from SONCC coho salmon recovery plan, \$2,209,000
SFEeR-NCSW-3.1.1.1						0	Action is considered in-kind
SFEeR-NCSW-5.1.1.1	1,573					1,573	Cost based on adult escapement and juvenile migration model at 40 barriers at a rate of \$36,000 and \$188,000/project, respectively.
SFEeR-NCSW-5.1.1.2	742	742				1,483	Cost estimate taken from SONCC coho salmon recovery plan, \$1,483,000
SFEeR-NCSW-6.1.1.1	57.50	57.50				115	Cost based on fish/habitat restoration model at a rate of \$115,000/project. Cost may be higher if greater level of design and planning needed.
SFEeR-NCSW-6.1.1.2	2,574	2,574				5,148	Cost based on treating 198 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
SFEeR-NCSW-6.1.1.3	1,507	1,507	1,507	1,507		6,028	Cost estimate taken from SONCC coho salmon recovery plan, \$6,028,000
SFEeR-NCSW-6.2.1.1						0	Action is considered in-kind
SFEeR-NCSW-7.1.1.1						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
SFEeR-NCSW-7.1.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
SFEeR-NCSW-7.2.1.1						0	Action is considered in-kind
SFEeR-NCSW-7.2.1.2						0	Action is considered in-kind
SFEeR-NCSW-7.2.1.3						0	Action is considered in-kind
SFEeR-NCSW-7.2.1.4						0	Action is considered in-kind
SFEeR-NCSW-10.1.1.1						0	Action is considered In-Kind
SFEeR-NCSW-14.1.1.1						0	Action is considered In-Kind
SFEeR-NCSW-14.1.1.2						0	Action is considered In-Kind
SFEeR-NCSW-16.1.1.1						0	Action is considered In-Kind
SFEeR-NCSW-16.1.1.2						0	Action is considered In-Kind
SFEeR-NCSW-16.1.1.3						0	Action is considered In-Kind
SFEeR-NCSW-18.1.1.1						0	Cost accounted for in above action step.
SFEeR-NCSW-19.1.1.1						0	Action is considered In-Kind
SFEeR-NCSW-19.1.1.2	416	416				831	Cost estimate taken from SONCC coho salmon recovery plan, \$831,000
SFEeR-NCSW-19.1.1.3	74.00					74	Cost based on riparian restoration model at a rate of \$74,000/project.
SFEeR-NCSW-19.1.1.4						0	Action is considered In-Kind
SFEeR-NCSW-21.1.1.1	141.00					141	Cost based on 141 signs at a rate of \$1,000/sign.
SFEeR-NCSW-23.1.1.1						0	Action is considered In-Kind
SFEeR-NCSW-23.1.1.2						0	Action is considered In-Kind
SFEeR-NCSW-23.1.1.3	782	782				1,563	Cost based on road inventory of 1563 miles of road at a rate of \$1000/mile.
SFEeR-NCSW-23.1.1.4						0	Cost accounted for in above action step.
SFEeR-NCSW-23.1.1.5						0	Action is considered In-Kind
SFEeR-NCSW-23.1.1.6						0	Action is considered In-Kind
SFEeR-NCSW-23.1.1.7						0	Action is considered In-Kind
SFEeR-NCSW-23.1.1.8						0	Action is considered In-Kind
SFEeR-NCSW-23.1.1.9						0	Cost accounted for in the Monitoring Chapter
SFEeR-NCSW-25.1.1.1						TBD	Cost based on amount of participation from water users. Cost estimate at \$70,000/landowner.
SFEeR-NCSW-25.1.1.2						0	Action is considered In-Kind

Big Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
BigC-NCSW-6.1.1.1	115.00					115	Cost based on developing a fish/habitat restoration assessment at a rate of \$115,000/project. Additional parameters will likely increase cost of the assessment.
BigC-NCSW-6.1.1.2						TBD	Costs will be based on the conclusions of the Plan to be developed, and will vary with extent and method of implementation.
BigC-NCSW-16.1.1.1						0	Action is considered In-Kind
BigC-NCSW-16.1.1.2						0	Action is considered In-Kind
BigC-NCSW-18.1.1.1	103.5	103.5				207	Total cost based on amount of riparian restoration projects. Cost estimated for 5% high IP at a rate of \$20,719/acre. Estimated cost to develop plan is \$207,000.
BigC-NCSW-21.1.1.1	10.00					10	Cost based on supplying 10 signs at rate of \$1,000/sign.

Big Flat Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
BigFC-NCSW-6.1.1.1	115.00					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project.
BigFC-NCSW-6.1.1.2	207.00					TBD	Implementation costs will be based on the conclusions of the assessment (in above action step) and will vary with extent and method of implementation.
BigFC-NCSW-16.1.1.1						0	Action is considered In-Kind
BigFC-NCSW-16.1.1.2						0	Action is considered In-Kind
BigFC-NCSW-18.1.1.1	103.5	103.5				207	Implementation costs will be based on the conclusions of the plan developed and will vary with extent and method of implementation. Estimated cost of planning is \$207,000
BigFC-NCSW-18.1.2.1						0	Action is considered In-Kind
BigFC-NCSW-21.1.1.1	5.00	5.00				10	Cost based on 10 signs at a rate of \$1,000/sign.

Guthrie Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GutC-NCSW-2.1.1.1	186	186				370	Cost based on treating 0.5 miles (assume 1 project/mile in 25% high IP with 20 acres/mile treated) at a rate of \$37,000/acre.
GutC-NCSW-2.1.1.2	74.00					74	Cost based on riparian restoration monitoring at a rate of \$74,000/project.
GutC-NCSW-2.1.1.3						0	Action is considered In-Kind
GutC-NCSW-2.1.1.4						0	Action is considered In-Kind
GutC-NCSW-2.1.1.5						0	Cost accounted for in above action steps. Increase LWD frequency and habitat complexity addressed in previous action steps.
GutC-NCSW-2.1.1.6						0	Action is considered In-Kind
GutC-NCSW-2.1.1.7						0	Cost accounted for in above action steps.
GutC-NCSW-6.1.1.1	115.00					115	Cost based on fish/habitat restoration at a rate of \$115,000/project.
GutC-NCSW-6.1.1.2						0	Action is considered In-Kind
GutC-NCSW-6.1.2.1						0	Action is considered In-Kind
GutC-NCSW-6.1.3.1						0	Action is considered In-Kind
GutC-NCSW-6.1.3.2	26.00					26	Cost based to treat 1 mile (assume 1 project per mile in 25% high IP with a minimum of 1 mile) at a rate of \$26,000/mile. Cost could be significantly high if use ELJ at a rate of \$104,000/ELJ
GutC-NCSW-6.1.3.3						0	Action is considered In-Kind
GutC-NCSW-6.1.3.4						0	Action is considered In-Kind
GutC-NCSW-6.1.4.1	26.00					26	Cost based on treating 1 mile (assume 1 project/mile in 25% high IP) at a rate of \$26,000/mile. This action should be in conjunction with above action steps.
GutC-NCSW-6.1.4.2						0	Cost likely accounted for in above action steps.
GutC-NCSW-7.1.1.1	59.00	59.00				118	Cost based on treating 1 mile (assume 1 project/mile in 15% high IP with 80 acres/mile) at a rate of \$1500/acre.
GutC-NCSW-7.1.1.2	166.00	166.00				332	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$21,000/acre.
GutC-NCSW-7.1.2.1						TBD	Fair market value, land turnover, and easement size will determine the cost and success of this action step.
GutC-NCSW-7.1.2.2						0	Action is considered In-Kind
GutC-NCSW-7.1.2.3						0	Action is considered In-Kind
GutC-NCSW-7.1.2.4	6					6	Cost based on treating 0.3 miles (assume 5% high IP) at a rate of \$4/ft.
GutC-NCSW-7.1.2.5						0	Action is considered In-Kind
GutC-NCSW-7.1.3.1						0	Costs in this action step are associated with costs accounted for in above action steps and management actions, such as timber harvest permitting and review, which are considered In-Kind.
GutC-NCSW-8.1.1.1	3.35	3.35				7	Cost for sediment assessment for 133 acres (assume 10% of total acres) at a rate of \$13/acre.
GutC-NCSW-8.1.1.2						TBD	Cost will be associated with appropriate actions once plan has been developed.
GutC-NCSW-8.1.1.3							Cost accounted for in above action step.
GutC-NCSW-8.1.2.1							Cost accounted for in another action step.
GutC-NCSW-8.1.2.2						0	Cost are accounted for through implementation of other action steps to reduce sedimentation into instream habitat.
GutC-NCSW-8.1.2.3						0	Action is considered In-Kind
GutC-NCSW-8.1.2.4						0	Cost accounted for in HABITAT COMPLEXITY
GutC-NCSW-11.1.1.1						0	Action is considered In-Kind
GutC-NCSW-11.1.1.2						0	Costs for adult spawning ground surveys are covered in the Monitoring Chapter.
GutC-NCSW-11.1.1.3						0	Costs for juvenile surveys are covered in the Monitoring Chapter.
GutC-NCSW-11.2.1.1	2.00					2	Cost based on treating 1 mile at a rate of \$2,000/mile.
GutC-NCSW-18.1.1.1	414.50	414.50	414.50	414.50		1,658	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP with a minimum of 1 and 20 acres/mile) at a rate of \$21,000/acre.
GutC-NCSW-18.1.2.1						0	Cost accounted for in above action step.
GutC-NCSW-18.1.2.2	20.00					20	Cost based on treating 1 mile (assume 1 project/mile in 5% high IP) at a rate of \$4/ft.
GutC-NCSW-18.1.2.3						0	Action is considered In-Kind
GutC-NCSW-18.1.2.4						TBD	TBD, cost based on amount of surface water diversions in place, need for livestock water, and landowner participation.
GutC-NCSW-18.1.2.5						TBD	Cost difficult to determine due to fair market value and landowner participation. Several programs currently in place provide incentives through other mechanisms.
GutC-NCSW-18.1.2.6						TBD	Cost based on number and type of stream crossings needed.
GutC-NCSW-19.1.1.1						0	Action is considered In-Kind
GutC-NCSW-19.1.1.2						0	Action is considered In-Kind
GutC-NCSW-19.1.1.3						0	Action is considered In-Kind
GutC-NCSW-19.1.1.4						0	Action is considered In-Kind
GutC-NCSW-19.1.1.5						0	Action is considered In-Kind
GutC-NCSW-19.1.2.1						0	Action is considered In-Kind
GutC-NCSW-19.1.2.2						0	Action is considered In-Kind
GutC-NCSW-19.1.2.3						0	Action is considered In-Kind
GutC-NCSW-19.1.2.4						0	Action is considered In-Kind
GutC-NCSW-19.1.2.5						0	Action is considered In-Kind
GutC-NCSW-19.1.2.6						0	Action is considered In-Kind
GutC-NCSW-19.1.2.7						0	Action is considered In-Kind
GutC-NCSW-23.1.1.1	6					6	Cost based on road inventory of 5.7 miles at a rate of \$1000/mile.
GutC-NCSW-23.1.1.2						0	Action is considered In-Kind
GutC-NCSW-23.1.1.3						0	Action is considered In-Kind

Guthrie Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GutC-NCSW-23.1.1.4						0	Cost accounted for in above action step.
GutC-NCSW-23.1.1.5						TBD	Cost based on the amount of roads needing to be disconnected. Assessment accounted for in other action steps.
GutC-NCSW-23.1.1.6						0	Action is considered In-Kind
GutC-NCSW-23.1.1.7						0	Action is considered In-Kind
GutC-NCSW-23.1.1.8						0	Action is considered In-Kind
GutC-NCSW-23.1.1.9						0	Action is considered In-Kind
GutC-NCSW-23.1.1.10						0	Action is considered In-Kind
GutC-NCSW-23.1.1.11	103.5	103.5				207	Sites need to be identified to determine the accurate cost to implement this action step. Estimated cost of assessment is \$207,000.
GutC-NCSW-25.1.1.1						0	Action is considered In-Kind
GutC-NCSW-25.1.1.2						0	Action is considered In-Kind
GutC-NCSW-25.1.1.3						0	Action is considered In-Kind
GutC-NCSW-25.1.1.4	3.00					3	Cost base on a minimum of 3 stream flow gauges estimated cost of \$1000/gauge. Cost does not include setup hardware or maintenance.

Jackass Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
JacAC-NCSW-6.1.1.1	115.00					115	Cost based for fish/habitat restoration assessment at a rate of \$115,000/project.
JacAC-NCSW-6.1.1.2						0	Action in considered In-Kind
JacAC-NCSW-6.1.2.1	372.00	372.00				744	Cost based to treat 1 mile (assume 1 project/mile in 25% high IP with 20 acres/mile treated at a rate of \$37,000/acre)
JacAC-NCSW-6.1.3.1						0	Action in considered In-Kind
JacAC-NCSW-6.1.3.2	26.00					26	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
JacAC-NCSW-6.1.3.3						0	Action in considered In-Kind
JacAC-NCSW-6.1.3.4						0	Action in considered In-Kind
JacAC-NCSW-6.1.4.1						0	Cost likely accounted for in above action step.
JacAC-NCSW-6.1.4.2	26.00					26	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. This recommendation should be in conjunction with other action steps to increase habitat complexity.
JacAC-NCSW-7.1.1.1	59.00	59.00				118	Cost based to treat 1 mile (assume 1 project/mile in 15% high IP with 80 acres/mile) at a rate of \$1,500/acre.
JacAC-NCSW-7.1.1.2	207	207				414	Cost based on treating 1 mile (assume 1 project/mile in 5% high IP with 20 acres/mile treated) at a rate of \$21,000/acre.
JacAC-NCSW-7.1.2.1						TBD	TBD, cost based on amount of habitat needed to be purchased, fair market value, and land turnover.
JacAC-NCSW-7.1.2.2						0	Action in considered In-Kind
JacAC-NCSW-7.1.2.3						0	Action in considered In-Kind
JacAC-NCSW-7.1.2.4						0	Cost accounted for in action step for LIVESTOCK.
JacAC-NCSW-7.1.2.5						0	Cost accounted for in action step for LIVESTOCK.
JacAC-NCSW-7.1.2.6						0	Action in considered In-Kind
JacAC-NCSW-7.1.3.1						0	Cost associated with management actions, such as timber harvest permitting and review. Action in considered In-Kind
JacAC-NCSW-11.1.1.1						0	Costs for adult spawning ground surveys are covered in the Monitoring Chapter.
JacAC-NCSW-11.1.1.2						0	Costs for juvenile surveys are covered in the Monitoring Chapter.
JacAC-NCSW-11.2.1.1	1.00	1.00				2	Cost based on treating 1 mile at a rate of \$2,000/mile.
JacAC-NCSW-16.1.1.1						0	Action in considered In-Kind
JacAC-NCSW-16.1.1.2						0	Action in considered In-Kind
JacAC-NCSW-18.1.1.1	20.72					21	Cost based on treating 1 mile (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$21,000/acre.
JacAC-NCSW-18.1.2.1						0	Cost accounted for in above action step
JacAC-NCSW-18.1.2.2						TBD	Cost based on amount of stream miles needing to be fenced from livestock. Estimate for exclusion fencing is \$4/ft.
JacAC-NCSW-18.1.2.3						0	Action in considered In-Kind
JacAC-NCSW-18.1.2.4						TBD	Cost based on amount of off-channel water sources needed. Estimate for off-channel water sources is \$5,000/site.
JacAC-NCSW-18.1.2.5						0	Cost based on amount of incentive to provide, willingness of participants, and amount of fencing needed. Currently, existing incentive programs are in place and should be explored and expanded. Cost likely accounted for in above action step.
JacAC-NCSW-18.1.2.6						TBD	Cost based on amount of crossings needed. Cost savings should be high priority by incorporating this action step with riparian exclusion fencing.
JacAC-NCSW-19.1.1.1						0	Action in considered In-Kind
JacAC-NCSW-19.1.1.2						0	Action is considered In-Kind
JacAC-NCSW-19.1.1.3						0	Action in considered In-Kind
JacAC-NCSW-19.1.1.4						0	Action in considered In-Kind
JacAC-NCSW-19.1.1.5						0	This recommendation should be standard practice. Action in considered In-Kind
JacAC-NCSW-19.1.2.1						0	Action in considered In-Kind
JacAC-NCSW-19.1.2.2						0	Action in considered In-Kind
JacAC-NCSW-19.1.2.3						0	This recommendation should be standard practice. Action in considered In-Kind
JacAC-NCSW-19.1.2.4						0	Action in considered In-Kind
JacAC-NCSW-19.1.2.5						0	Action in considered In-Kind
JacAC-NCSW-19.1.2.6						0	Action in considered In-Kind
JacAC-NCSW-19.1.2.7						0	Action in considered In-Kind
JacAC-NCSW-21.1.1.1	5.00					5	Cost based on providing 5 signs at a rate of \$1000/sign.
JacAC-NCSW-23.1.1.1	11.00					11	Cost based on road inventory of 11 miles of road at a rate of \$1000/mile.
JacAC-NCSW-23.1.1.2						0	Action in considered In-Kind
JacAC-NCSW-23.1.1.3						0	Action in considered In-Kind
JacAC-NCSW-23.1.1.4						0	Cost accounted for in above action step.
JacAC-NCSW-23.1.1.5						0	Cost would be likely be minimal part of road maintenance. Action in considered In-Kind
JacAC-NCSW-23.1.1.6						0	Action in considered In-Kind
JacAC-NCSW-23.1.1.7						0	Action in considered In-Kind
JacAC-NCSW-23.1.1.8						0	Action in considered In-Kind
JacAC-NCSW-23.1.1.9						0	Action in considered In-Kind
JacAC-NCSW-23.1.1.10						0	Cost accounted for in development of a road inventory.
JacAC-NCSW-25.1.1.1						0	Action in considered In-Kind
JacAC-NCSW-25.1.1.2						0	Action in considered In-Kind
JacAC-NCSW-25.1.1.3						0	Action in considered In-Kind
JacAC-NCSW-25.1.1.4						3	Cost based on deploying 3 stream flow gauges at a rate of \$1000/gauge. Cost does not account for data management or maintenance.

McNutt Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
McNC-NCSW-2.1.1.1	372.00	372.00				744	Cost based on treating 1 mile (assume 1 project/mile in 25% high IP with 20 acres/mile treated) at a rate of \$37,000/acre.
McNC-NCSW-2.1.1.2	115.00					115	Cost based on fish/habitat restoration monitoring estimated at a rate of \$115,000/project.
McNC-NCSW-2.1.1.3						0	Action is considered In-Kind
McNC-NCSW-2.1.1.4						0	Action is considered In-Kind
McNC-NCSW-2.1.1.5						0	Cost accounted for in above action step
McNC-NCSW-2.1.1.6						0	Action is considered In-Kind
McNC-NCSW-2.1.1.7						0	Cost accounted for in above action step.
McNC-NCSW-6.1.1.1	115.00					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project. This action step could be coordinated with floodplain connectivity actions to reduce cost and redundancy.
McNC-NCSW-6.1.1.2						0	Action is considered In-Kind
McNC-NCSW-6.1.2.1						0	Cost accounted for in above action step.
McNC-NCSW-6.1.3.1						0	Action is considered In-Kind
McNC-NCSW-6.1.3.2	26.00					26	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. Cost for ELJ estimated at \$104,000/ELJ.
McNC-NCSW-6.1.3.3						0	Action is considered In-Kind
McNC-NCSW-6.1.3.4						0	Action is considered In-Kind
McNC-NCSW-6.1.4.1	26.00					26	Cost based on treating 1 mile (assume 1 project/mile in 50%high IP) at a rate of \$26,000/mile. This action step should be coordinated with above action step to reduce redundancy.
McNC-NCSW-6.1.4.2						0	Cost accounted for in above action step.
McNC-NCSW-7.1.1.1	27.00					27	Cost based on treating 0.9 miles (assume 1 project/mile in 15% high IP with 20 acres/mile treated) at a rate of \$1500/acre.
McNC-NCSW-7.1.1.2	62.00	62.00				124	Cost based on treating 0.3 (assume 5% high IP with 20 acres/mile) at a rate of \$21,000/acre.
McNC-NCSW-7.1.2.1						TBD	Cost based on amount of habitat needed to be purchased, fair market value, and land turnover.
McNC-NCSW-7.1.2.2						0	Action is considered In-Kind
McNC-NCSW-7.1.2.3						0	Action is considered In-Kind
McNC-NCSW-7.1.2.4						0	Cost accounted for in action step below.
McNC-NCSW-7.1.2.5	50					50	Cost for number of water sources unknown. Estimate for off-channel water sources is for 10 sites at \$5,000/site for a total of \$50,000.
McNC-NCSW-7.1.2.6						0	Action is considered In-Kind
McNC-NCSW-7.1.3.1						0	Costs in this action step are associated with costs accounted for in above action steps and management actions, such as timber harvest permitting and review, which are considered In-Kind.
McNC-NCSW-8.1.1.1	1.70					2	Cost based on assessing 133 acres (assume 25% of total acres) at a rate of \$13/acre.
McNC-NCSW-8.1.1.2						TBD	Cost based on amount of slides and gullies needing treatment. Above action step should identify number, magnitude, and potential alternatives to address sources of sediment. Estimate for landslide restoration is \$3,000/acre.
McNC-NCSW-8.1.1.3	103.5	103.5				207	Total cost will vary depending on extent and method of mapping and remediation. Cost of assessment is estimated at \$207,000.
McNC-NCSW-8.1.1.4						TBD	Cost will vary depending on extent and method of remediation. Assessment done in the Sediment Reduction Plan action step.
McNC-NCSW-8.1.2.1						0	Action is considered In-Kind
McNC-NCSW-8.1.2.2	78.00					78	Cost based on treating 3 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
McNC-NCSW-11.1.1.1						0	Action is considered In-Kind
McNC-NCSW-11.1.1.2						0	Costs for juvenile surveys are covered in the Monitoring Chapter.
McNC-NCSW-11.2.1.1	2.00					2	Cost based on treating 1 mile at a rate of \$2,000/mile.
McNC-NCSW-18.1.1.1	207	207				414	Cost based on treating 1 mile (assume 1 project/mile in 5% in high IP with 20 acres/mile treated) at a rate of \$21,000/acre)
McNC-NCSW-18.1.2.1	74.00					74	Cost based on riparian restoration model at a rate of \$74,000/project.
McNC-NCSW-18.1.2.2	5.80					6	Cost based on treating 0.3 miles (assume 5% high IP) at a rate of \$4/ft.
McNC-NCSW-18.1.2.3						0	Action is considered In-Kind
McNC-NCSW-18.1.2.4	50					50	Cost based on number of water sources to be relocated. Estimate for off-stream water for ten sites at \$5,000/site is \$50,000
McNC-NCSW-18.1.2.5						TBD	Cost based on incentives to provide and landowner participation. Currently, incentives programs exist and should be explored and expanded.
McNC-NCSW-18.1.2.6						TBD	This action step should be combined with riparian exclusion fencing to reduce cost.
McNC-NCSW-19.1.1.1						0	Action is considered In-Kind
McNC-NCSW-19.1.1.2						0	Action is considered In-Kind
McNC-NCSW-19.1.1.3						0	Action is considered In-Kind
McNC-NCSW-19.1.1.4						0	Action is considered In-Kind
McNC-NCSW-19.1.1.5						0	This recommendation should be considered standard practice. Action is considered In-Kind
McNC-NCSW-19.1.2.1						0	Action is considered In-Kind
McNC-NCSW-19.1.2.2						0	Action is considered In-Kind
McNC-NCSW-19.1.2.3						0	Action is considered In-Kind
McNC-NCSW-19.1.2.4						0	Action is considered In-Kind
McNC-NCSW-19.1.2.5						0	Action is considered In-Kind
McNC-NCSW-19.1.2.6						0	Action is considered In-Kind
McNC-NCSW-19.1.2.7						0	Action is considered In-Kind
McNC-NCSW-23.1.1.1	6					6	Cost based on road inventory for 5.6 miles of road at a rate of \$1000/mile.
McNC-NCSW-23.1.1.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
McNC-NCSW-23.1.1.3						TBD	Cost for amount of conditions needed to be corrected is unknown. Cost estimated at a rate of \$3,000/mile for maintenance.
McNC-NCSW-23.1.1.4						0	Cost accounted for in above action step.

McNutt Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
McNC-NCSW-23.1.1.5						0	Cost likely accounted for in above action steps.
McNC-NCSW-23.1.1.6						0	Action is considered In-Kind
McNC-NCSW-23.1.1.7						0	Action is considered In-Kind
McNC-NCSW-23.1.1.8						0	Action is considered In-Kind
McNC-NCSW-23.1.1.9						0	Action is considered In-Kind
McNC-NCSW-23.1.1.10	103.5	103.5				207	Total cost will vary with level of detail and extent of plan. Estimated cost of assessment is \$207,000
McNC-NCSW-23.1.1.11	103.5	103.5				207	Cost for number and size of spoils storage sites is variable. Cost of assessment is \$207,000.
McNC-NCSW-25.1.1.1						0	Action is considered In-Kind
McNC-NCSW-25.1.1.2						0	Action is considered In-Kind
McNC-NCSW-25.1.1.3						0	Action is considered In-Kind
McNC-NCSW-25.1.1.4	3.00					3	Cost based on installing 3 stream flow gauges estimated at \$1000/gauge. Cost does not account for installation hardware or maintenance.

Oil Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
OIC-NCSW-2.1.1.1	744.00					744	Cost based on treating 1 mile (assume 1 project/mile in 25% high IP with 20 acres/mile treated) at a rate of \$37,000/acre.
OIC-NCSW-2.1.1.2	115.00					115	Cost based on fish/habitat restoration monitoring estimated at a rate of \$115,000/project.
OIC-NCSW-2.1.1.3						0	Action is considered In-Kind
OIC-NCSW-2.1.2.1						0	Action is considered In-Kind
OIC-NCSW-2.1.2.2						0	Cost accounted for in above action step
OIC-NCSW-2.1.2.3						0	Action is considered In-Kind
OIC-NCSW-2.1.2.4						0	Cost accounted for in above action step.
OIC-NCSW-6.1.1.1	115.00					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project. This action step could be coordinated with floodplain connectivity actions to reduce cost and redundancy.
OIC-NCSW-6.1.1.2						0	Action is considered In-Kind
OIC-NCSW-6.1.2.1						0	Cost accounted for in above action step.
OIC-NCSW-6.1.3.1						0	Action is considered In-Kind
OIC-NCSW-6.1.3.2	26.00					26	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. Cost for ELJ estimated at \$104,000/ELJ.
OIC-NCSW-6.1.3.3						0	Action is considered In-Kind
OIC-NCSW-6.1.3.4						0	Action is considered In-Kind
OIC-NCSW-6.1.4.1	26.00					26	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. This action step should be coordinated with above action step to reduce redundancy.
OIC-NCSW-6.1.4.2						0	Cost accounted for in above action step.
OIC-NCSW-7.1.1.1	13.50	13.50				27	Cost based on treating 0.9 miles (assume 1 project/mile in 15% high IP with 20 acres/mile treated) at a rate of \$1500/acre.
OIC-NCSW-7.1.1.2	62.00	62.00				124	Cost based on treating 0.3 (assume 5% high IP with 20 acres/mile treated) at a rate of \$21,000/acre.
OIC-NCSW-7.1.2.1						TBD	Cost based on amount of habitat needed to be purchased, fair market value, and land turnover.
OIC-NCSW-7.1.2.2						0	Action is considered In-Kind
OIC-NCSW-7.1.2.3						0	Action is considered In-Kind
OIC-NCSW-7.1.2.4						0	Cost accounted for in action step below.
OIC-NCSW-7.1.2.5	50					50	Cost for number of water sources unknown. Estimate for off-channel water sources is for 10 sites at \$5,000/site for a total of \$50,000.
OIC-NCSW-7.1.2.6						0	Action is considered In-Kind
OIC-NCSW-7.1.3.1						0	Costs in this action step are associated with costs accounted for in above action steps and management actions, such as timber harvest permitting and review, which are considered in-kind.
OIC-NCSW-8.1.1.1	1.70					2	Cost based on assessing 133 acres (assume 25% of total acres) at a rate of \$13/acre.
OIC-NCSW-8.1.1.2						TBD	Cost based on amount of slides and gullies needing treatment. Above action step should identify number, magnitude, and potential alternatives to address sources of sediment. Estimate for landslide restoration is \$3,000/acre.
OIC-NCSW-8.1.1.3						TBD	Cost will vary depending on extent and method of mapping and remediation. Additional sediment assessment directed at road design estimated to cost \$1000/mile.
OIC-NCSW-8.1.1.4						TBD	Cost based on sediment assessment action above to rank high and medium priority sites.
OIC-NCSW-8.1.2.1						0	Action is considered In-Kind
OIC-NCSW-8.1.2.2	78.00					78	Cost based on treating 3 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
OIC-NCSW-11.1.1.1						0	Action is considered In-Kind
OIC-NCSW-11.1.1.2						0	Costs for juvenile surveys are covered in the Monitoring Chapter.
OIC-NCSW-11.2.1.1	2.00					2	Cost based on treating 1 mile at a rate of \$2,000/mile.
OIC-NCSW-18.1.1.1	828	828				1,656	Cost based on treating 1 mile (assume 1 project/mile in 5% in high IP with 80 acres/mile) at a rate of \$21,000/acre)
OIC-NCSW-18.1.2.1	74.00					74	Cost based on riparian restoration model at a rate of \$74,000/project.
OIC-NCSW-18.1.2.2	5.80					6	Cost based on treating 0.3 miles (assume 5% high IP) at a rate of \$4/ft.
OIC-NCSW-18.1.2.3						0	Action is considered In-Kind
OIC-NCSW-18.1.2.4	50					50	Cost based on number of water sources to be relocated. Estimate for off-stream water for ten sites at \$5,000/site is \$50,000
OIC-NCSW-18.1.2.5						TBD	Cost based on incentives to provide and landowner participation. Currently, incentives programs exist and should be explored and expanded.
OIC-NCSW-18.1.2.6						TBD	This action step should be combined with riparian exclusion fencing to reduce cost.
OIC-NCSW-19.1.1.1						0	Action is considered In-Kind
OIC-NCSW-19.1.1.2						0	Action is considered In-Kind
OIC-NCSW-19.1.1.3						0	Action is considered In-Kind
OIC-NCSW-19.1.1.4						0	Action is considered In-Kind
OIC-NCSW-19.1.1.5						0	This recommendation should be considered standard practice. Action is considered In-Kind
OIC-NCSW-19.1.2.1						0	Action is considered In-Kind
OIC-NCSW-19.1.2.2						0	Action is considered In-Kind
OIC-NCSW-19.1.2.3						0	Action is considered In-Kind
OIC-NCSW-19.1.2.4						0	Action is considered In-Kind
OIC-NCSW-19.1.2.5						0	Action is considered In-Kind
OIC-NCSW-19.1.2.6						0	Action is considered In-Kind
OIC-NCSW-19.1.2.7						0	Action is considered In-Kind
OIC-NCSW-23.1.1.1	6.00					6	Cost based on road inventory for 5.6 miles of road at a rate of \$1000/mile.
OIC-NCSW-23.1.1.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
OIC-NCSW-23.1.1.3						TBD	Cost for amount of conditions needed to be corrected is unknown. Cost estimated at a rate of \$3,000/mile for maintenance.

Oil Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
OiC-NCSW-23.1.1.4						0	Cost accounted for in above action step.
OiC-NCSW-23.1.1.5						0	Cost accounted for in above action steps.
OiC-NCSW-23.1.1.6						0	Action is considered In-Kind
OiC-NCSW-23.1.1.7						0	Action is considered In-Kind
OiC-NCSW-23.1.1.8						0	Action is considered In-Kind
OiC-NCSW-23.1.1.9						0	Action is considered In-Kind
OiC-NCSW-23.1.1.10						0	Cost accounted for in action step below.
OiC-NCSW-23.1.1.11	103.5	103.5				207	Cost for number and size of spoils storage sites is variable. Cost of assessment is \$207,000.
OiC-NCSW-25.1.1.1						0	Action is considered In-Kind
OiC-NCSW-25.1.1.2						0	Action is considered In-Kind
OiC-NCSW-25.1.1.3						0	Action is considered In-Kind
OiC-NCSW-25.1.1.4	3.00					3	Cost based on installing 3 stream flow gauges estimated at \$1000/gauge. Cost does not account for installation hardware or maintenance.

Shipman Creek (Northern Coastal) Threats and Associated Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ShipC-NCSW-6.1.1.1	6.50	6.50				13	Cost based on treating 0.5 miles (assume 1 project/mile in 25% high IP) at a rate of \$26,000/mile.
ShipC-NCSW-16.1.1.1						0	Action is considered In-Kind
ShipC-NCSW-16.1.1.2						0	Action is considered In-Kind
ShipC-NCSW-18.1.1.1	104.00	104.00				208	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP with 20 acres/mile treated) at a rate of \$21,000/acre.
ShipC-NCSW-18.1.2.1						0	Cost accounted for in above action step.
ShipC-NCSW-21.1.1.1	1.50	1.50				3	Cost based on placing a minimum of 3 signs at a estimated cost of \$1000/sign.

Spanish Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SpanC-NCSW-6.1.1.1	6.50	6.50				13	Cost based on treating 0.5 miles (assume 1 project/mile in 25% high IP) at a rate of \$26,000/mile.
SpanC-NCSW-16.1.1.1						0	Action is considered In-Kind
SpanC-NCSW-16.1.1.2						0	Action is considered In-Kind
SpanC-NCSW-18.1.1.1	104.00	104.00				208	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP with 20 acres/mile treated) at a rate of \$21,000/acre.
SpanC-NCSW-18.1.2.1						0	Cost accounted for in above action step.
SpanC-NCSW-21.1.1.1	1.50	1.50				3	Cost based for a minimum of 3 signs estimated at \$1,000/sign.
SpanC-NCSW-23.1.1.1	1.00					1	Cost based on road inventory of 0.4 miles of road at a rate of \$1000/mile.
SpanC-NCSW-23.1.1.2						0	Action is considered In-Kind
SpanC-NCSW-23.1.1.3						0	Action is considered In-Kind
SpanC-NCSW-23.1.1.4	600	600				1,200	Cost based on road inventory of 1.2 miles of road at a rate of \$1000/mile.
SpanC-NCSW-23.1.1.5						TBD	Cost based on amount of road network to hydrologically disconnect.
SpanC-NCSW-23.1.1.6						0	Action is considered In-Kind
SpanC-NCSW-23.1.1.7						0	Action is considered In-Kind
SpanC-NCSW-23.1.1.8						0	Action is considered In-Kind
SpanC-NCSW-23.1.1.9						0	Action is considered In-Kind
SpanC-NCSW-23.1.1.10						0	Action is considered In-Kind
SpanC-NCSW-23.1.1.11						0	Cost accounted for in above action step for road inventory.
SpanC-NCSW-23.1.1.12						0	Cost accounted for in road inventory.
SpanC-NCSW-23.1.1.13						0	Action is considered In-Kind

Telegraph Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
TGC-NCSW-3.1.1.1						0	Action is considered In-Kind
TGC-NCSW-3.1.1.2						0	Action is considered In-Kind
TGC-NCSW-3.1.1.3	32.50	32.50				65	Cost based on stream flow/precipitation monitoring at a rate of \$65,000/project.
TGC-NCSW-3.1.1.4						0	Action is considered In-Kind
TGC-NCSW-5.1.1.1	663					663	Cost based on dam removal estimated at a cost of \$663,000/project.
TGC-NCSW-5.1.1.2	38.00	38.00				76	Cost based on annual average spawner survey cost for northern central diversity stratum estimated at \$76,000.
TGC-NCSW-5.1.1.3	230.00					230	Cost based on replacing a culvert at a rate of \$230,000.
TGC-NCSW-6.1.1.1	115.00					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project.
TGC-NCSW-6.1.1.2						0	Action is considered In-Kind
TGC-NCSW-6.1.2.1						0	Action is considered In-Kind
TGC-NCSW-6.1.3.1	26.00					26	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile
TGC-NCSW-6.1.3.2						0	Action is considered In-Kind
TGC-NCSW-6.1.4.1	26.00					26	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. This action step should be coordinated with other action steps to improve habitat conditions.
TGC-NCSW-6.1.4.2						0	Cost accounted for in above action step.
TGC-NCSW-8.1.1.1						TBD	Cost based on length of trails in the watershed. Cost anticipated to be significantly less than cost of decommissioning a road, estimated at \$12,000/mile.
TGC-NCSW-8.1.1.2	13.50	13.50				30	Cost based on road inventory of 21 miles of road network at a rate of \$1000/mile and erosion assessment of 25% of total watershed acres at a rate of \$13/acre.
TGC-NCSW-8.1.1.3	0.60	0.60				1	Cost based erosion assessment for 5% of total watershed acres at a rate of \$13/acre.
TGC-NCSW-8.1.1.4						TBD	Erosion assessment will identify high and medium priority sites.
TGC-NCSW-8.1.2.1						0	Action is considered In-Kind
TGC-NCSW-8.1.2.2	1.00					1	Cost based on spawning gravel supplementation in 0.5 miles (assume 1 project/mile in 25% high IP with 10 cu yds./project) at a rate of \$35/cu. yd.
TGC-NCSW-8.1.2.3	26.00					26	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
TGC-NCSW-11.1.1.1	115.00	115.00				230	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project.
TGC-NCSW-11.1.1.2						0	Costs for adult spawning ground surveys are covered in the Monitoring Chapter.
TGC-NCSW-11.1.1.3						0	Costs for juvenile surveys are covered in the Monitoring Chapter.
TGC-NCSW-11.1.1.4						0	Costs for smolt out-migration monitoring are covered in the Monitoring Chapter.
TGC-NCSW-25.1.1.1						0	Action is considered In-Kind
TGC-NCSW-25.1.1.2						0	Action is considered In-Kind
TGC-NCSW-25.1.1.3						0	Action is considered In-Kind
TGC-NCSW-25.1.1.4	3.00					3	Cost based on a minimum of 3 stream flow gauges estimated at \$1000/gauge. Cost does not account for data management or maintenance.

Lower Eel River Tributaries, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
LMER-NCSW-1.1.1.1						TBD	Cost based on amount of habitat to acquire to restore estuarine conditions. Cost based on fair market value and landowner participation.
LMER-NCSW-1.1.1.2						0	Action is considered In-Kind
LMER-NCSW-1.1.1.3						0	Action is considered In-Kind
LMER-NCSW-1.1.1.4						0	Action is considered In-Kind
LMER-NCSW-1.1.1.5	115.00					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project.
LMER-NCSW-1.1.2.1						0	Cost accounted for in other action steps: CHANNEL MODIFICATION.
LMER-NCSW-1.1.2.2	7,833	7,833	7,833	7,833	7,833	39,163	Cost based on treating 10% total estuarine habitat at a rate of \$41,000/acre.
LMER-NCSW-1.1.2.3						0	Cost accounted for in above action steps.
LMER-NCSW-1.1.2.4	1,220	1,220				2,439	Cost based on erosion assessment of 10% of total watershed acres. Combined acreage of Middle and Upper Subbasins equals 1,932,960 acres.
LMER-NCSW-1.1.2.5						0	Action is considered In-Kind
LMER-NCSW-1.1.2.6	20.00					20	Cost based on installing continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
LMER-NCSW-1.1.3.1	77.00	77.00				154	Cost based on treating 8 miles (assume 1 project/mile in 5% high IP) at a rate of 4/ft.
LMER-NCSW-1.1.4.1	213.00					213	Cost based on wetland restoration at a rate of \$213,000/project.
LMER-NCSW-1.1.4.2						0	Action is considered In-Kind, as programs are developed as part of normal agency operations.
LMER-NCSW-1.1.5.1	1,740	1,740				3,479	Cost based on treating 133 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
LMER-NCSW-5.1.1.1	224.00					224	Cost based on escapement and juvenile migration monitoring at a rate of \$36,000 and 188,000/project, respectively.
LMER-NCSW-5.1.1.2	71.00	71.00				142	Cost based on removal of tidegates at a rate of \$141,000/tidegate.
LMER-NCSW-5.1.1.3	3,108	622				3,729	Cost based on providing passage at 7 crossings (assume partial barrier) at a rate of \$533,000/barrier.
LMER-NCSW-5.1.1.4	112.50	112.50				225	Cost based on adult escapement and juvenile migration model at a rate of \$37,000 and \$188,000/project. Cost may be higher if more assessments are needed.
LMER-NCSW-5.1.1.5	500.00					500	Rough estimate of 100,000 for each site.
LMER-NCSW-5.1.1.6	200					200	Rough estimate of 100,000 for each site.
LMER-NCSW-5.1.1.7	50.00					50	
LMER-NCSW-6.1.1.1						TBD	Costs will vary depending on extent and methods applied.
LMER-NCSW-6.1.1.2						TBD	Costs will vary depending on extent and methods applied.
LMER-NCSW-7.1.1.1						TBD	Costs will vary depending on methods implemented and extent of rehabilitation
LMER-NCSW-7.1.1.2	74.00					74	Cost based on riparian restoration model at a rate of \$74,000/project.
LMER-NCSW-7.1.1.3						0	Action is considered In-Kind
LMER-NCSW-8.1.1.1	50.00					50	Estimate 50k per assessment.
LMER-NCSW-8.1.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation
LMER-NCSW-10.1.1.1						TBD	
LMER-NCSW-10.1.1.2						0	Action is considered In-Kind
LMER-NCSW-10.1.1.3						0	Action is considered In-Kind
LMER-NCSW-10.1.1.4						0	Action is considered In-Kind
LMER-NCSW-10.1.1.5						0	Action is considered In-Kind
LMER-NCSW-13.1.1.1	250.00	250.00				500	
LMER-NCSW-13.1.1.2	100.00					100	
LMER-NCSW-13.1.1.3						TBD	Cost based on number and type of tidegates to remove or modify. Cost to replace tidegates estimated at \$141,000/tidegate.
LMER-NCSW-13.1.1.4	75.00					75	
LMER-NCSW-13.1.1.5	9,791	9,791	9,791	9,791		39,164	Cost based on treating 10% of total estuarine habitat at a rate of \$41,000/acre.
LMER-NCSW-13.1.1.6	50.00	50.00				100	
LMER-NCSW-16.1.1.1						0	Action is considered In-Kind
LMER-NCSW-16.1.1.2						0	Action is considered In-Kind
LMER-NCSW-18.1.1.1	25.00	25.00				50	
LMER-NCSW-18.1.2.1						0	Action is considered In-Kind
LMER-NCSW-19.1.1.1						0	Action is considered In-Kind

Howe Creek, Northern California Steelhead (Northern Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
HowC-NCSW-5.1.1.1	50.00					50	
HowC-NCSW-6.1.1.1	100.00	100.00				200	
HowC-NCSW-7.1.1.1	74.00					74	Cost based on riparian restoration model at a rate of \$74,000/project.
HowC-NCSW-7.1.1.2						0	Action is considered In-Kind
HowC-NCSW-7.1.1.3						TBD	
HowC-NCSW-8.1.1.1	50.00					50	Estimate 50k per assessment.
HowC-NCSW-16.1.1.1						0	Action is considered In-Kind
HowC-NCSW-16.1.1.2						0	Action is considered In-Kind
HowC-NCSW-18.1.1.1						TBD	
HowC-NCSW-18.1.1.2	25.00	25.00				50	
HowC-NCSW-19.1.1.1						0	Action is considered In-Kind

Larabee Creek, Northern California Steelhead (North Mountain Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
LarbC-NCSW-2.1.1.1	115					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project.
LarbC-NCSW-2.1.1.2	185	185				370	Based on amount of habitat identified to be reconnected from fish/habitat restoration assessment in action step above. Cost estimated at \$37,000/acre and is estimated being needed for 10 acres for a total of \$370,000.
LarbC-NCSW-5.1.1.1	260					260	Cost based on replacing culvert at a rate of 260,000/culvert.
LarbC-NCSW-5.1.1.2	207					207	Cost of assessment is estimated at \$207,000
LarbC-NCSW-6.1.1.1	115					115	Cost based on fish/habitat restoration assessment at a rate of \$115,000/project.
LarbC-NCSW-6.1.1.2	260					260	Costs will vary depending on methods implemented and extent of rehabilitation. Cost for stream habitat complexity estimated at \$26,000/mile and is estimated for 10 miles for a total of \$260,000.
LarbC-NCSW-7.1.1.1						0	Action is considered in-kind
LarbC-NCSW-7.1.1.2						0	Action is considered in-kind
LarbC-NCSW-7.1.1.3						0	Action is considered in-kind
LarbC-NCSW-7.1.1.4						0	Action is considered in-kind
LarbC-NCSW-14.1.1.1	207					207	Cost of assessment is estimated at \$207,000
LarbC-NCSW-14.1.1.2	207					207	Cost of assessment is estimated at \$207,000
LarbC-NCSW-14.1.1.3	207					207	Cost of assessment is estimated at \$207,000
LarbC-NCSW-14.1.1.4						TBD	
LarbC-NCSW-16.1.1.1						0	Action is considered In-Kind
LarbC-NCSW-16.1.1.2						0	Action is considered In-Kind
LarbC-NCSW-19.1.1.1						0	Action is considered In-Kind
LarbC-NCSW-19.1.1.2	7.5	7.5				15	Costs will vary depending on methods implemented and extent of rehabilitation. Riparian thinning estimated at \$15,000/acre and estimated for 10 acres
LarbC-NCSW-19.1.1.3	105.0	105.0				210	Costs will vary depending on methods implemented and extent of rehabilitation. Cost for riparian planting estimated at \$21,000/acre and estimated for 10 acres for a total of \$210,000.
LarbC-NCSW-23.1.1.1	207					207	Cost of assessment estimated at \$207,000
LarbC-NCSW-23.1.1.2						TBD	Cost for number of miles of road to decommission is unknown. Cost to decommission is estimated at \$12,000/mile.
LarbC-NCSW-23.1.1.3						TBD	Miles to upgrade is unknown. Cost to upgrade is estimated at \$21,000/mile.
LarbC-NCSW-23.1.1.4						0	Action is considered In-Kind
LarbC-NCSW-23.2.1.1						0	Action is considered In-Kind

Middle Fork Eel River, Northern California Steelhead (North Mountain Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
MFER-NCSW-5.1.1.1						0	Action is considered In-Kind
MFER-NCSW-5.1.1.2						0	Action is considered In-Kind
MFER-NCSW-6.1.1.1	115					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
MFER-NCSW-6.1.1.2	610	610				1,220	Cost originally based on treating 47 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. However, cost was modified based on conditions and actual experience and increased by a factor of 10.
MFER-NCSW-6.1.1.3						0	Action is considered In-Kind
MFER-NCSW-7.1.1.1	1,243	1,243	1,243	1,243		4,972	Cost based on treating 10 miles (assume 1 project/mile in 5% high IP with 24 acres/mile) at a rate of \$21,000/acre.
MFER-NCSW-7.1.1.2						TBD	No cost estimate can be made at this time.
MFER-NCSW-7.1.1.3						0	Action is considered In-Kind
MFER-NCSW-7.1.1.4	20					20	Cost estimate for fencing cannot be made at this time. Cost for riparian exclusion fencing estimated at \$4/ft. Estimated cost of assessment of priority areas is \$20,000 and should be completed within the first 5 years.
MFER-NCSW-10.1.1.1						0	Cost accounted for in Monitoring Chapter
MFER-NCSW-15.1.1.1						0	Action is considered In-Kind
MFER-NCSW-15.1.1.2						0	Action is considered In-Kind
MFER-NCSW-15.1.1.3						0	Action is considered In-Kind
MFER-NCSW-16.1.1.1	25.00	25.00				50	
MFER-NCSW-16.1.1.2						0	Action is considered In-Kind
MFER-NCSW-16.1.1.3						0	Action is considered In-Kind
MFER-NCSW-16.1.1.4						TBD	
MFER-NCSW-16.1.1.5	250	250	250	250		1,000	Estimate of 50K for 20 years.
MFER-NCSW-23.1.1.1	531	531				1,108	Cost based on road inventory of 1108 miles of road network at a rate of \$1000/mile.
MFER-NCSW-23.1.1.2	2,909	2,909				5,817	Cost based on upgrading 25% of road network at a rate of \$21,000/mile.
MFER-NCSW-23.1.1.3						0	Cost accounted for in above action step.
MFER-NCSW-23.1.1.4	10,000	10,000				20,000	This estimate based on CDFW and USFS rough estimates.
MFER-NCSW-23.1.1.5						400	Estimate 20 miles at 20k
MFER-NCSW-23.1.1.6	400.00	400.00				800	Estimate 40 miles at 20k
MFER-NCSW-25.1.1.1	32.50	32.50				65	Cost based on stream flow/precipitation model at a rate of \$65,000/project. Conservation measures and additional action steps will be determined once a flow model is conducted.
MFER-NCSW-25.1.1.2	125.00	125.00	125.00	125.00		500	Estimate a minimum of 100 participants at 5K.
MFER-NCSW-25.1.1.3						0	Action is considered In-Kind
MFER-NCSW-25.2.1.1						0	Action is considered In-Kind
MFER-NCSW-25.2.1.2	1,000	1,000				2,000	Rough estimate based on proposed actions to eradicate cannabis in the Mendocino National Forest in 2011.

North Fork Eel River, Northern California Steelhead (North Mountain Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NFER-NCSW-2.1.1.1	287					287	Cost based on riparian and wetland restoration model at a rate of \$74,000 and \$213,000/project, respectively.
NFER-NCSW-2.1.1.2	115	115				230	Cost estimate taken from SONCC coho salmon recovery plan, \$230,000
NFER-NCSW-3.1.1.1	207					207	Cost of assessment estimated at 207,000.
NFER-NCSW-3.1.1.2						0	Action is considered In-Kind
NFER-NCSW-3.2.1.1						0	Action is considered in-kind.
NFER-NCSW-6.1.1.1	115					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
NFER-NCSW-6.1.1.2	617	617				1,233	Cost estimate taken from SONCC coho salmon recovery plan, \$1,233,000
NFER-NCSW-7.1.1.1	52	52	52	52		207	Final costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment is estimated at \$207,000
NFER-NCSW-7.1.1.2	52	52	52	52		207	Final costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment is estimated at \$207,000
NFER-NCSW-7.2.1.1						0	Action is considered in-kind
NFER-NCSW-7.2.1.2						0	Action is considered in-kind
NFER-NCSW-7.2.1.3						0	Action is considered in-kind
NFER-NCSW-7.2.1.4						0	Action is considered in-kind
NFER-NCSW-14.1.1.1						0	Action is considered In-Kind
NFER-NCSW-14.1.1.2						0	Action is considered In-Kind
NFER-NCSW-15.1.1.1						0	Cost is accounted for in the below action steps.
NFER-NCSW-15.1.1.2	18					18	Cost estimate taken from SONCC coho salmon recovery plan, \$18,000.
NFER-NCSW-15.1.1.3	419	419	419	419	419	8,387	Cost estimate taken from SONCC coho salmon recovery plan, \$8,387,000
NFER-NCSW-16.1.1.1						0	Action is considered In-Kind
NFER-NCSW-16.1.1.2						0	Action is considered In-Kind
NFER-NCSW-18.1.1.1	34					34	Cost estimate taken from SONCC coho salmon recovery plan, \$34,000.
NFER-NCSW-18.1.1.2						TBD	Cost based on amount of livestock exclusion fencing needed. Cost estimate for livestock fencing is \$4/ft.
NFER-NCSW-23.1.1.1	450					450	Cost estimate taken from SONCC coho salmon recovery plan, \$450,000
NFER-NCSW-23.1.1.2	5,424	5,424				10,847	Cost estimate taken from SONCC coho salmon recovery plan, \$10,847,000
NFER-NCSW-23.1.1.3	928	928	928	928	928	4,642	Cost estimate taken from SONCC coho salmon recovery plan, \$4,642,000
NFER-NCSW-23.1.1.4	369	369	369	369	369	1,845	Cost estimate taken from SONCC coho salmon recovery plan, \$1,845,000.
NFER-NCSW-25.1.1.1						TBD	Cost based on amount of participation from landowners to increase instream flow. Cost for forbearance program estimated at \$70,000/landowner.
NFER-NCSW-25.1.1.2						0	Action is considered In-Kind

Upper Mainstem Eel River, Northern California Steelhead (North Mountain Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
UMER-NCSW-3.1.1.1	32.50	32.50				65	Cost based on stream flow/precipitation model at a rate of \$65,000/project. Additional cost likely to incur for methods to restore unimpaired flows such as water conservation, storage, or water lease/acquisition.
UMER-NCSW-3.1.1.2						0	Action is considered In-Kind
UMER-NCSW-3.1.1.3						0	Action is considered In-Kind
UMER-NCSW-3.1.1.4						TBD	
UMER-NCSW-3.1.1.5	3.00					3	Cost based on installing a minimum of 3 stream flow gauges at a rate of \$1,000/gauge. Cost does not account for data management or maintenance.
UMER-NCSW-3.1.1.6	3.00					3	Cost based on installing a minimum of 3 stream flow gauges at a rate of \$1,000/gauge. Cost does not account for data management or maintenance.
UMER-NCSW-5.1.1.1	1,279	1,279				2,558	Cost based on providing passage at 2 dams (assume partial barrier) and 4 road crossings (total barriers) at a rate of \$533,000 and \$373,000/project, respectively.
UMER-NCSW-5.1.1.2	3,500					3,500	Cost based on comments from the Mendocino National Forest, to address 1 bridge replacement and two bottomless arches
UMER-NCSW-5.1.1.3	115.00					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
UMER-NCSW-5.1.1.4	207					207	Cost estimated at \$207,000
UMER-NCSW-5.1.1.5						TBD	
UMER-NCSW-5.1.1.6						TBD	
UMER-NCSW-6.1.1.1	115.00					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
UMER-NCSW-6.1.1.2	598	598				1,196	Cost estimate from Mendocino National Forest
UMER-NCSW-6.1.1.3						0	Action is considered In-Kind
UMER-NCSW-7.1.1.1						TBD	Cost based on amount of conservation measures to employ, fair market value, and landowner participation.
UMER-NCSW-7.1.1.2						0	Action is considered In-Kind, as these recovery partners have responsibility and authority to address this action.
UMER-NCSW-7.1.1.3	46.00	46.00				92	Cost based on treating 4.8 miles (assume 1 project/mile in 5% high IP) at a rate of \$4/ft.
UMER-NCSW-7.1.1.4	74.00					74	Cost based on riparian restoration model at a rate of \$74,000/project.
UMER-NCSW-8.1.1.1	100.00					100	Rough estimate
UMER-NCSW-10.1.1.1	207					TBD	
UMER-NCSW-10.1.1.2	207					TBD	
UMER-NCSW-11.1.1.1						0	Costs for spawning ground surveys are accounted for in the Monitoring Chapter
UMER-NCSW-11.1.1.2						0	Action is considered In-Kind
UMER-NCSW-11.1.1.3						0	Costs for spawning ground surveys are accounted for in the Monitoring Chapter
UMER-NCSW-11.1.1.4	224.00					224	Cost based on adult escapement and juvenile migration at a rate of \$36,000 and \$188,000/project, respectively.
UMER-NCSW-11.1.1.5						0	This action is largely already being conducted. Action is considered In-Kind
UMER-NCSW-14.1.1.1	103.5	103.5				207	Cost based on amount of predatory fish species to be removed. Cost of assessment to determine best away of removing fish estimated at \$207,000 and should be completed within the first ten years.
UMER-NCSW-14.1.1.2						0	Cost accounted for in above action step.
UMER-NCSW-14.1.1.3						0	Cost likely accounted for in another action step.
UMER-NCSW-14.1.1.4						0	Cost likely accounted for in another action step.
UMER-NCSW-15.1.1.1	25.00					25	
UMER-NCSW-15.1.1.2						0	Action is considered In-Kind
UMER-NCSW-15.1.1.3						0	Action is considered In-Kind
UMER-NCSW-16.1.1.1	100.00	100.00				200	
UMER-NCSW-16.1.1.2						0	Action is considered In-Kind
UMER-NCSW-23.1.1.1	103.5	103.5				207	Cost estimated at \$207,000
UMER-NCSW-23.1.1.2	536	536	536	536		2,142	Cost based on upgrading 102 miles of road at a rate of \$21,000/mile. Cost likely to be less if high priority sites are less than 102 miles of road network. Some costs may be accounted for in other actions.
UMER-NCSW-23.1.1.3	2,500	2,500				5,000	Cost from the Mendocino National Forest.
UMER-NCSW-23.1.1.4						400	Estimate 20 miles at 20k
UMER-NCSW-23.1.1.5	400.00	400.00				800	Estimate 40 miles at 20k
UMER-NCSW-25.1.1.1	100.00					100	rough estimate

Van Duzen River, Northern California Steelhead (North Mountain Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
VaDR-NCSW-2.1.1.1	115.00					115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project.
VaDR-NCSW-2.1.1.2	198					198	Cost estimate taken from SONCC coho salmon recovery plan, \$198,000
VaDR-NCSW-3.1.1.1						0	Action is considered in-kind
VaDR-NCSW-5.1.1.1	57.50	57.50				115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project. Additional cost expected once plan is finalized.
VaDR-NCSW-5.1.1.2	57.50	57.50				115	Cost based on fish/habitat restoration monitoring at a rate of \$115,000/project.
VaDR-NCSW-5.1.1.3	21.50	21.50				43	Cost based on treating unknown partial barrier at a rate of \$43,000/project.
VaDR-NCSW-5.1.1.4	21.50	21.50				43	Cost based on improving passage at unknown partial barrier at a rate of \$43,000/project.
VaDR-NCSW-5.1.1.5	21.50	21.50				43	Cost based on improving passage at unknown partial barrier at a rate of \$43,000/project.
VaDR-NCSW-5.1.1.6	266.50	266.50				533	Cost based on improving passage at unknown partial barrier at a rate of \$533,000/project.
VaDR-NCSW-5.1.1.7	266.50	266.50				533	Cost based on improving passage at unknown partial barrier at a rate of \$533,000/project.
VaDR-NCSW-5.1.1.8						0	Cost accounted for in above action step.
VaDR-NCSW-6.1.1.1	115.00					115	Cost based on fish/habitat monitoring at a rate of \$115,000/project. This action step should be coordinated with above action step, which can reduce redundancy and cost.
VaDR-NCSW-6.1.1.2	16,709					16,709	Cost estimate taken from SONCC coho salmon recovery plan, \$16,709,000
VaDR-NCSW-6.2.1.1						0	Action is considered in-kind
VaDR-NCSW-7.1.1.1						0	Action is considered in-kind
VaDR-NCSW-7.1.1.2						0	Action is considered in-kind
VaDR-NCSW-7.1.1.3						0	Action is considered in-kind
VaDR-NCSW-7.1.1.4						0	Action is considered in-kind
VaDR-NCSW-16.1.1.1						0	Action is considered In-Kind
VaDR-NCSW-16.1.1.2						0	Action is considered In-Kind
VaDR-NCSW-16.2.1.1						0	Action is considered In-Kind
VaDR-NCSW-18.1.1.1	173.00					173	Cost based erosion assessment of 5% of total acres at a rate of \$13/acre.
VaDR-NCSW-18.1.1.2						TBD	Cost based on amount of riparian area fencing needed. Cost for exclusion fencing estimated at \$4/ft.
VaDR-NCSW-7.1.1.1	74.00					74	Cost based on riparian restoration monitoring at a rate of \$74,000/project.
VaDR-NCSW-7.1.1.2						0	Action is considered In-Kind
VaDR-NCSW-23.1.1.1	2,902					2,902	Cost estimate taken from SONCC coho salmon recovery plan, \$2,902,000
VaDR-NCSW-23.1.1.2	157,199					157,199	Cost estimate taken from SONCC coho salmon recovery plan, \$157,199,000
VaDR-NCSW-23.1.1.3	4,735					4,735	Cost estimate taken from SONCC coho salmon recovery plan, \$4,735,000
VaDR-NCSW-23.1.1.4	694	694	694	694	694	6,938	Cost estimate taken from SONCC coho salmon recovery plan, \$6,938,000
VaDR-NCSW-23.1.1.5						TBD	Cost based on size of unstable hillslope. Cost for erosion assessment estimated at \$13/acre.
VaDR-NCSW-23.2.1.1						0	Action is considered In-Kind
VaDR-NCSW-25.1.1.1						TBD	Cost based on amount of incentives to provide to reduce diversions during the summer. Some incentive programs are currently in place and this recommendation should coordinate with those efforts.
VaDR-NCSW-25.1.1.2	65.00					65	Cost based on stream flow/precipitation monitoring at a rate of \$65,000/project.
VaDR-NCSW-25.1.1.3						0	Action is considered In-Kind
VaDR-NCSW-25.1.1.4	65.00					65	Cost based on stream flow/precipitation monitoring at a rate of \$65,000/project. This recommendation could be coordinated with above action steps.
VaDR-NCSW-25.1.1.5						0	Action is considered In-Kind
VaDR-NCSW-25.1.1.6	207					207	Estimated cost of assessment is \$207,000
VaDR-NCSW-25.1.1.7						0	Action is considered In-Kind
VaDR-NCSW-25.2.1.1						0	Action is considered In-Kind
VaDR-NCSW-25.2.1.2						0	Action is considered In-Kind

Chamise Creek, Northern California Steelhead (Lower Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ChC-NCSW-3.1.1.1						TBD	
ChC-NCSW-6.1.1.1	232.00					232	Cost based on treating 8.9 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
ChC-NCSW-6.1.1.2	115.00					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
ChC-NCSW-6.1.1.3	10	10				20	If done through CDFW stream habitat survey program, the cost would likely be a part of CDFW personnel costs. Estimated cost is \$20,000.
ChC-NCSW-6.1.1.4						0	Cost will largely be covered through already existing personnel costs for CDFW and NMFS. Cost is considered In-Kind
ChC-NCSW-6.1.2.1						0	Cost is considered In-Kind
ChC-NCSW-6.1.2.2	58.00	58.00	58.00	58.00		232	Cost based on treating 8.9 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. This action step should be coordinated with other similar action steps to reduce cost and redundancy. □
ChC-NCSW-6.1.2.3						0	Cost to encourage landowners expected to low and largely covered by CDFW and NMFS personnel costs. Cost is considered In-Kind
ChC-NCSW-7.1.1.1						0	Cost accounted for in other action steps.
ChC-NCSW-7.1.1.2	37.00	37.00				74	Cost based on riparian restoration model at a rate of \$74,000/project.
ChC-NCSW-7.1.1.3						0	Action is considered In-Kind
ChC-NCSW-7.1.1.4	20					20	Total costs are unknown since size, scope and location of future fencing efforts are unknown. Cost estimate for livestock exclusion fencing is \$4/ft. Approximate cost of performing priority assessment is \$20,000.
ChC-NCSW-7.1.1.5	25.00	25.00	25.00	25.00		100	Approximate cost of performing assessment and developing reclamation and enhancement program.
ChC-NCSW-7.1.2.1	52	52	52	52		207	Cost of assessment is estimated at \$207,000.
ChC-NCSW-7.1.2.2						0	Cost is considered In-Kind
ChC-NCSW-7.1.2.3	51.75	51.75	51.75	51.75		207	Cost based on the amount of conifer release that is needed. Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
ChC-NCSW-8.1.1.1	103.5	103.5				207	Cost based on sediment sources and amount of sediment contributed from these sources. Methods to reduce sediment vary depending on type and locale. Cost of assessment estimated at \$207,000 and should be completed within the first ten years.
ChC-NCSW-8.1.1.2	5	5	5	5		20	Cost based on identifying sediment sources. Erosion assessment and road inventory costs accounted for and any other assessment would likely be low and is estimated at \$20,000.
ChC-NCSW-8.1.1.3						0	Incentives likely to be provided by state, local and federal agencies, and the cost of developing these incentives is likely to be low. Cost is considered In-Kind
ChC-NCSW-8.1.1.4						0	Cost is considered In-Kind
ChC-NCSW-10.1.1.1						0	Cost accounted for in other action steps: HABITAT COMPLEXITY & RIPARIAN.
ChC-NCSW-10.1.1.2	0.75	0.75				2	Cost based on installing a minimum of 3 stream temperature gauges at a rate of \$500/gauge. Cost does not account for data management or maintenance.
ChC-NCSW-10.1.1.3	52	52	52	52		207	Total cost is TBD since the number, location and scope of future projects is unknown at this time. Cost of assessment is estimated at \$207,000.
ChC-NCSW-11.1.1.1	100.00					100	Estimated cost.
ChC-NCSW-11.1.1.2						0	Cost accounted for in Monitoring Chapter
ChC-NCSW-11.1.1.3						0	Cost is expected to be low, and largely absorbed through future restoration funding. Cost is considered In-Kind
ChC-NCSW-16.1.1.1						0	Cost is considered In-Kind
ChC-NCSW-22.1.1.1						0	Promoting regeneration is a low cost endeavor, undertaken mainly by already employed CDFW and NMFS staff. Cost is considered In-Kind
ChC-NCSW-22.1.1.2						0	Cost is considered In-Kind
ChC-NCSW-22.1.1.3						0	Cost is expected to be small and part of policy and land use management. Cost is considered In-Kind
ChC-NCSW-22.2.1.1						0	Cost is considered In-Kind
ChC-NCSW-22.2.1.2						0	Action is considered In-Kind
ChC-NCSW-22.2.2.1						0	Cost is considered In-Kind
ChC-NCSW-22.2.2.2	11.50	11.50				23	Cost based on erosion assessment of 10% of total watershed acres at a rate of \$12.62/acre.
ChC-NCSW-22.2.3.1						0	Cost is considered In-Kind
ChC-NCSW-22.2.3.2						0	Discouragement likely to be done primarily by CDFW and NMFS staff, and the cost is likely to be low. Cost is considered In-Kind
ChC-NCSW-22.2.3.3						TBD	The cost of purchasing conservation easements is unknown at this time.
ChC-NCSW-22.2.3.4						0	Cost expected to be covered largely by local, state and federal personnel. Cost is considered In-Kind. Cost of purchasing conservation easements is accounted for above.
ChC-NCSW-22.2.4.1						0	Cost is considered In-Kind
ChC-NCSW-22.2.4.2						0	Cost is considered In-Kind
ChC-NCSW-22.2.4.3						0	Cost is considered In-Kind
ChC-NCSW-22.2.4.4						0	Encouragement likely to be done by NMFS and CDFW employees. Cost is considered In-Kind
ChC-NCSW-22.2.4.5						0	Cost is expected to be low, and largely covered by CDFW and NMFS staff. Cost is considered In-Kind
ChC-NCSW-23.1.1.1	10.50	10.50	10.50	10.50		43	Cost based on road inventory for 43 miles of road at a rate of \$1000/mile.
ChC-NCSW-23.1.1.2						TBD	Cannot make cost estimate at this time. Number of road miles to upgrade will be identified from road inventory.
ChC-NCSW-23.1.1.3						TBD	Cannot make cost estimate at this time. Number of road miles to upgrade will be identified from road inventory.
ChC-NCSW-23.1.1.4						TBD	Cannot make cost estimate at this time. Number of road miles to upgrade will be identified from road inventory.

Outlet Creek, Northern California Steelhead (Lower Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
OC-NCSW-2.1.1.1	223.50	223.50				447	Cost based on treating 12 miles (assume 1 project/mile in 25% high IP with 80 acres/mile) at a rate of \$37,000/acre.
OC-NCSW-2.1.1.2						0	Cost accounted for in above action step.
OC-NCSW-2.1.1.3						0	Cost account for in above action step
OC-NCSW-3.1.1.1						0	Action is considered In-Kind
OC-NCSW-3.1.1.2						0	Action is considered In-Kind
OC-NCSW-3.1.2.1						0	Action is considered In-Kind
OC-NCSW-5.1.1.1						0	Action is considered In-Kind
OC-NCSW-5.1.1.2						TBD	Estimate can not be made at this time but is likely to be low if not considered in-kind
OC-NCSW-5.1.1.3	4,930					4,930	Cost based on 5 known passage barriers assuming standard rate of passage estimated at \$986,000/mile
OC-NCSW-5.1.1.4						0	Action is considered In-Kind
OC-NCSW-5.1.1.5	653					653	Cost based on treating double box culverts with a new fish ladder at a rate of \$653,000/ladder.
OC-NCSW-5.1.1.6	653					653	Cost based on implementing a new fish ladder estimated at \$653,000/ladder.
OC-NCSW-5.1.1.7	1,959					1,959	Cost based on installing 3 new fish ladders at an estimate of \$653,000/ladder. Cost can vary depending on feasible alternatives.
OC-NCSW-5.1.1.8	231.00					231	Cost based on replacing culvert at an estimated rate of \$230,00.
OC-NCSW-5.1.1.9	653					653	Cost based to replace culvert at an estimate \$653,000
OC-NCSW-5.1.1.10	65.00					65	Cost based on improving species migration pattern at a road crossing for a tributary at an estimate of \$65,000/unit.
OC-NCSW-5.1.1.11	65.00					65	Cost based on improving species migration pattern at a road crossing for a tributary at an estimate of \$65,000/unit.
OC-NCSW-5.1.1.12	65.00					65	Cost based on improving species migration pattern at a road crossing for a tributary at an estimate of \$65,000/unit.
OC-NCSW-6.1.1.1	500	500	500			1,500	Estimate based on 30 miles of LWD and boulder structures at 50K.
OC-NCSW-6.1.1.2	309.00	309.00				618	Cost based on treating 24 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. Cost should be coordinated with above action step.
OC-NCSW-6.1.1.3						0	Action is considered In-Kind
OC-NCSW-7.1.1.1	298	298	298	298		1,193	Cost based on treating 2.4 miles (assume 1 project/mile in 5% high IP with 24 acres/mile) at a rate of \$21,000/mile
OC-NCSW-7.1.1.2						TBD	No cost estimate can be made at this time. Cost based on fair market value, landowner participation, and amount of streamside conservation measures necessary to recovery species.
OC-NCSW-7.1.1.3						0	Action is standard practice, and is considered In-Kind
OC-NCSW-7.1.1.4	23.00	23.00				46	Cost based on riparian fencing 2.4 miles (assume 1 project/mile in 5% high IP) at a rate of 4/ft.
OC-NCSW-15.1.1.1						0	Action is considered In-Kind
OC-NCSW-15.1.1.2						0	Action is considered In-Kind
OC-NCSW-16.1.1.1						0	Action is considered In-Kind
OC-NCSW-23.1.1.1	200.50	200.50				401	Cost based on road inventory of 401 miles at a rate of \$1000/mile.
OC-NCSW-23.1.1.2	125.00	125.00				250	Cost based on treating 12 miles of road (assume 25% high IP) at a rate of \$21,000/mile.
OC-NCSW-23.1.1.3	200.00	200.00				400	Estimate based on 20 miles at \$20k
OC-NCSW-23.1.1.4	200.00	200.00				400	Action is considered In-Kind
OC-NCSW-24.1.1.1						0	Action is considered In-Kind.
OC-NCSW-24.1.1.2						0	Action is considered In-Kind
OC-NCSW-24.1.1.3	250.00					250	Very rough estimate for acquiring water. We assume 100 acre feet is acquired at 500 dollars per acre foot which equals \$50K. We assume 5 drought years over the next 20 years to arrive at 250K estimate.
OC-NCSW-25.1.1.1						0	Action is considered In-Kind
OC-NCSW-25.1.1.2	125.00	125.00	125.00	125.00		500	Estimate a minimum of 100 participants at 5K.
OC-NCSW-25.2.1.1						TBD	Cost based on amount of summer base flow needed. Cost estimated at \$150/acre ft./yr.
OC-NCSW-25.2.1.2						0	Action is considered In-Kind
OC-NCSW-25.2.1.3						0	Action is considered In-Kind
OC-NCSW-25.2.1.4						0	Action is considered In-Kind

Tomki Creek, Northern California Steelhead (Lower Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ToC-NCSW-5.1.1.1						0	This action largely relies on State and Federal regulatory staff. Action is considered In-Kind
ToC-NCSW-5.1.1.2	1000.00	1000.00				2,000	Cost based on providing passage improvements at 10 crossings on forested roads at a rate of \$ 200,000/project.
ToC-NCSW-5.1.1.3	103.5	103.5				207	Total cost based on the amount of natural barriers needing modification and feasible alternatives to apply. Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
ToC-NCSW-6.1.1.1	175.50	175.50				351	Cost based on treating 13.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
ToC-NCSW-6.1.1.2						TBD	Cost will vary depending on type of methods and extent.
ToC-NCSW-6.1.1.3						500	Estimate 10 miles of LWD and boulder structures at 50K.
ToC-NCSW-6.1.1.4						0	Action is considered In-Kind
ToC-NCSW-7.1.1.1						0	Action is considered standard practice and is In-Kind
ToC-NCSW-7.1.1.2						0	Action is considered In-Kind
ToC-NCSW-7.1.1.3						TBD	
ToC-NCSW-7.1.1.4	174	174	174	174		696	Cost based on treating 1.4 miles (assume 1 project/mile in 5% high IP with 24 acres/mile) at a rate of \$21,000/acre.
ToC-NCSW-16.1.1.1						0	Action is considered In-Kind
ToC-NCSW-16.1.1.2	150.00	150.00				300	Assumption of partial time of one warden assigned to this watershed. Over a ten-year period, viewpoints and actions of local poachers may be changed.
ToC-NCSW-22.1.1.1						0	Action is considered In-Kind
ToC-NCSW-22.1.1.2						0	Action is considered In-Kind
ToC-NCSW-22.1.1.3						0	Action is considered In-Kind
ToC-NCSW-22.1.1.4						0	Action is considered In-Kind
ToC-NCSW-23.1.1.1	60.50	60.50				121	Cost based on road inventory of 121 miles at a rate of \$1000/mile.
ToC-NCSW-23.1.1.2						TBD	Can not make cost estimate at this time.
ToC-NCSW-23.1.1.3	200	200				400	Estimate based on 20 miles at \$20k
ToC-NCSW-23.1.1.4	400.00	400.00				800	Estimate based on 40 miles at \$20k
ToC-NCSW-25.1.1.1						0	Action is considered In-Kind
ToC-NCSW-25.1.1.2	125.00	125.00	125.00	125.00		500	Estimate a minimum of 100 participants at 5K.
ToC-NCSW-25.2.1.1						0	Action is considered In-Kind
ToC-NCSW-25.2.1.2						0	Action is considered In-Kind

Woodman Creek, Northern California Steelhead (Lower Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
WmC-NCSW-3.1.1.1						TBD	
WmC-NCSW-5.1.1.1						0	Action is considered In-Kind
WmC-NCSW-5.1.1.2	5	5				10	Estimate will depend on priority projects from list developed by CDFW but is likely to be low if not considered in-kind. Estimated at \$10,000
WmC-NCSW-5.1.1.3	533					533	Highest priority action within watershed. Cost based on providing passage (assume partial barrier) at a rate of \$533,000/project.
WmC-NCSW-6.1.1.1						0	Action is considered In-Kind
WmC-NCSW-6.1.1.2	10	10				20	If done through CDFW stream habitat survey program, the cost would likely be a part of CDFW personnel costs, if not then the estimate is \$20,000
WmC-NCSW-6.1.1.3						0	Cost will largely be covered through already existing personnel costs for CDFW and NMFS. Action is considered In-Kind
WmC-NCSW-6.1.2.1						0	Maintenance of restoration structures is usually included within the grant contract, and is therefore a cost of the overall project. Action is considered In-Kind
WmC-NCSW-6.1.2.2	114.50	114.50				229	Cost based on treating 8.8 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. This action step should be coordinate with above action steps to reduce cost and redundancy.
WmC-NCSW-6.1.2.3						0	Cost to encourage landowners expected to low and largely covered by CDFW and NMFS personnel costs. Action is considered In-Kind
WmC-NCSW-7.1.1.1						0	Action is considered In-Kind
WmC-NCSW-7.1.1.2	144.00	144.00				288	Cost based on riparian and wetland restoration model at a rate of \$74,000 and \$213,000/project.
WmC-NCSW-7.1.1.3						TBD	Cost is unknown at this time since the number, location and scope of future projects is not known.
WmC-NCSW-7.1.1.4	20.00					20	Cost based on treating 1 mile (assume 1 project/mile in 5% high IP) at a rate of \$3.63/ft.
WmC-NCSW-7.1.1.5	25.00	25.00	25.00	25.00		100	Approximate cost of performing assessment and developing reclamation and enhancement program.
WmC-NCSW-7.1.2.1						0	Action is considered In-Kind
WmC-NCSW-7.1.2.2						TBD	Cost based on amount of conifer to be released.
WmC-NCSW-8.1.1.1						0	Cost is expected to be low. Action is considered In-Kind
WmC-NCSW-8.1.1.2						0	Cost will be determined by the type of incentives offered, but is expected to be low. Currently, incentive programs exist and should be explored and expanded.
WmC-NCSW-11.1.1.1						0	Cost covered in Monitoring Chapter
WmC-NCSW-11.1.1.2						0	Cost covered in Monitoring Chapter
WmC-NCSW-11.1.1.3						0	Cost is expected to be low, and largely absorbed through future restoration funding. Action is considered In-Kind
WmC-NCSW-16.1.1.1						0	Action is considered In-Kind
WmC-NCSW-23.1.1.1	22.50	22.50				45	Cost based on conducting a road inventory of 45 miles of road network at a rate of \$1000/mile.
WmC-NCSW-23.1.1.2	79.33	79.33	79.33			238	Cost based on treating 11.3 miles of road (assume 25% of road network) at a rate of \$21,000/mile.

**Bell Springs Creek, Northern California Steelhead (Lower Interior) Recovery Action Costs**

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
BSprC-NCSW-3.1.1.1						0	Action is considered In-Kind
BSprC-NCSW-3.1.1.2	50.00					50	Estimate based on 50K for each stream.
BSprC-NCSW-3.1.1.3	50.00	50.00				100	
BSprC-NCSW-3.1.1.4	100.00					100	Estimate based on 50 percent of time for two law enforcement officers each year.
BSprC-NCSW-5.1.1.1						0	Action is considered In-Kind
BSprC-NCSW-5.1.1.2	224.00					224	Cost based on adult escapement and juvenile migration model at a rate of \$36,000 and \$188,000/project, respectively.
BSprC-NCSW-6.1.1.1	207					207	Costs vary with type and extent of actions undertaken and could be partially in-kind. Cost of assessment estimated at \$207,000
BSprC-NCSW-6.1.1.2	63.00	63.00				126	Cost based on treating 4.8 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
BSprC-NCSW-7.1.1.1						0	Action is considered In-Kind
BSprC-NCSW-7.1.1.2						0	Action is considered In-Kind
BSprC-NCSW-16.1.1.1						0	Action is considered In-Kind
BSprC-NCSW-23.1.1.1	207					207	Cost of assessment estimated at \$207,000 and should be completed within 5 years. Final costs will vary depending on methods implemented and extent of rehabilitation but could be very expensive.
BSprC-NCSW-24.1.1.1						0	Action is considered In-Kind
BSprC-NCSW-24.1.1.2						0	Action is considered In-Kind
BSprC-NCSW-25.1.1.1						TBD	Cost based on participation of landowners to decrease low-flow diversions. Cost for forbearance program estimated at \$70,000/landowner.
BSprC-NCSW-25.2.1.1						0	Action is considered In-Kind
BSprC-NCSW-25.2.1.2						0	Action is considered In-Kind

Bucknell Creek, Northern California Steelhead (Lower Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
BC-NCSW-3.1.1.1						0	Action is considered In-Kind
BC-NCSW-3.1.1.2	50.00					50	Estimate based on 50K for each stream.
BC-NCSW-3.1.1.3	50.00	50.00				100	
BC-NCSW-3.1.1.4	100.00					100	Estimate based on 50 percent of time for two law enforcement officers each year.
BC-NCSW-5.1.1.1						0	Actions are considered in-kind. Many passage databases exist and the fish passage forum is working to prioritize barriers.
BC-NCSW-5.1.1.2	224.00					224	Cost based on adult escapement and juvenile migration model at a rate of \$36,000 and \$188,000/project, respectively.
BC-NCSW-6.1.1.1						0	Action is considered In-Kind
BC-NCSW-6.1.1.2	630	630				1,260	Cost based on treating 4.8 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. However, after personal communication with Lee Morgan (USFS), cost were multiplied by 10.
BC-NCSW-7.1.1.1						0	Action is considered In-Kind
BC-NCSW-7.1.1.2						0	Action is considered In-Kind
BC-NCSW-15.1.1.1	100.00					100	
BC-NCSW-16.1.1.1						0	Action is considered In-Kind
BC-NCSW-23.1.1.1	50.00	50.00				100	Cost based on estimate for development of a plan and cost to implement will depend on the plan that will be developed.
BC-NCSW-23.1.1.2						0	Action is considered In-Kind
BC-NCSW-24.1.1.1						0	Action is considered In-Kind
BC-NCSW-25.1.1.1						TBD	Cost based on participation of landowners to decrease low-flow diversions. Cost for forbearance program estimated at \$70,000/landowner.
BC-NCSW-25.2.1.1						0	Action is considered In-Kind
BC-NCSW-25.2.1.2						0	Action is considered In-Kind

Dobbyn Creek, Northern California Steelhead (North Mountain Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DobC-NCSW-3.1.1.1						0	Action is considered In-Kind
DobC-NCSW-3.1.1.2	50.00					50	Estimate based on 50K for each stream.
DobC-NCSW-3.1.1.3	50.00	50.00				100	
DobC-NCSW-3.1.1.4	100.00					100	Estimate based on 50 percent of time for two law enforcement officers each year.
DobC-NCSW-5.1.1.1						0	Action is considered In-Kind
DobC-NCSW-5.1.1.2	224.00					224	Cost based on adult escapement and juvenile migration model at a rate of \$36,000 and \$188,000/project, respectively.
DobC-NCSW-5.1.1.3	115.00					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
DobC-NCSW-6.1.1.1						0	Action is considered In-Kind
DobC-NCSW-6.1.1.2	63.00	63.00				126	Cost based on treating 4.8 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
DobC-NCSW-7.1.1.1						0	Action is considered In-Kind
DobC-NCSW-7.1.1.2						0	Action is considered In-Kind
DobC-NCSW-7.1.1.3	0.58	0.58	0.58	0.58		2	Cost based on treating 1.4 miles (assume 1 project/mile in 15% high IP with 80 acres/mile) at a rate of \$21,000/acre.
DobC-NCSW-23.1.1.1	250.00	250.00				500	Cost based on treating 50 miles at \$10,000/mile
DobC-NCSW-24.1.1.1						0	Action is considered In-Kind
DobC-NCSW-24.1.1.2						0	Action is considered In-Kind
DobC-NCSW-25.1.1.1						TBD	Cost based on participation of landowners to decrease low-flow diversions. Cost for forbearance program estimated at \$70,000/landowner.
DobC-NCSW-25.2.1.1						0	Action is considered In-Kind
DobC-NCSW-25.2.1.2						0	Action is considered In-Kind

Jewett Creek, Northern California Steelhead (Lower Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
JewC-NCSW-3.1.1.1						0	Action is considered In-Kind
JewC-NCSW-3.1.1.2	50.00					50	Estimate based on 50K for each stream.
JewC-NCSW-3.1.1.3	50.00	50.00				100	
JewC-NCSW-3.1.1.4	100.00					100	Estimate based on 50 percent of time for two law enforcement officers each year.
JewC-NCSW-5.1.1.1						0	Action is considered In-Kind
JewC-NCSW-5.1.1.2	224.00					224	Cost based on adult escapement and juvenile migration model at a rate of \$36,000 and \$188,000/project, respectively.
JewC-NCSW-6.1.1.1	20					20	Total costs vary with type and extent of actions undertaken. Cost of assessment could be partially in-kind, estimated at \$20,000
JewC-NCSW-6.1.1.2	63.00	63.00				126	Cost based on treating 4.8 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
JewC-NCSW-7.1.1.1						0	Action is considered In-Kind
JewC-NCSW-7.1.1.2						0	Action is considered In-Kind
JewC-NCSW-16.1.1.1						0	Action is considered In-Kind
JewC-NCSW-23.1.1.1	207					207	Cost of assessment estimated at \$207,000 and should be completed within 5 years. Final costs will vary depending on methods implemented and extent of rehabilitation but could be very expensive.
JewC-NCSW-24.1.1.1						0	Action is considered In-Kind
JewC-NCSW-24.1.1.2						0	Action is considered In-Kind
JewC-NCSW-25.1.1.1						TBD	Cost based on participation of landowners to decrease low-flow diversions. Cost for forbearance program estimated at \$70,000/landowner.
JewC-NCSW-25.2.1.1						0	Action is considered In-Kind
JewC-NCSW-25.2.1.2						0	Action is considered In-Kind

Garcia Creek, Northern California Steelhead (Lower Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GaC-NCSW-3.1.1.1						0	Action is considered In-Kind
GaC-NCSW-3.1.1.2	50.00					50	Estimate based on 50K for each stream.
GaC-NCSW-3.1.1.3	50.00	50.00				100	
GaC-NCSW-3.1.1.4	100.00					100	Estimate based on 50 percent of time for two law enforcement officers each year.
GaC-NCSW-5.1.1.1						0	Action is considered In-Kind
GaC-NCSW-5.1.1.2	224.00					224	Cost based on adult escapement and juvenile migration model at a rate of \$36,000 and \$188,000/project, respectively.
GaC-NCSW-6.1.1.1	20					20	Total costs vary with type and extent of actions undertaken. Cost of assessment could be partially in-kind, estimated at \$20,000
GaC-NCSW-6.1.1.2	63.00	63.00				126	Cost based on treating 4.8 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
GaC-NCSW-7.1.1.1						0	Action is considered In-Kind
GaC-NCSW-7.1.1.2						0	Action is considered In-Kind
GaC-NCSW-7.1.1.3						0	Action is considered In-Kind
GaC-NCSW-16.1.1.1						0	Action is considered In-Kind
GaC-NCSW-23.1.1.1	207					207	Cost of assessment estimated at \$207,000 and should be completed within 5 years. Final costs will vary depending on methods implemented and extent of rehabilitation but could be very expensive.
GaC-NCSW-24.1.1.1						0	Action is considered In-Kind
GaC-NCSW-24.1.1.2						0	Action is considered In-Kind
GaC-NCSW-25.1.1.1						TBD	Cost based on participation of landowners to decrease low-flow diversions. Cost for forbearance program estimated at \$70,000/landowner.
GaC-NCSW-25.2.1.1						0	Action is considered In-Kind
GaC-NCSW-25.2.1.2						0	Action is considered In-Kind

Soda Creek, Northern California Steelhead (Lower Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SodC-NCSW-3.1.1.1						0	Action is considered In-Kind
SodC-NCSW-3.1.1.2	50.00					50	Estimate based on 50K for each stream.
SodC-NCSW-3.1.1.3	50.00	50.00				100	
SodC-NCSW-3.1.1.4	65.00					65	Cost based on stream flow/precipitation model at a rate of \$65,000/project.
SodC-NCSW-3.1.1.5	100.00					100	Estimate based on 50 percent of time for two law enforcement officers each year.
SodC-NCSW-5.1.1.1						0	Action is considered In-Kind
SodC-NCSW-5.1.1.2	300.00					300	Cost based on personal communication from Lee Morgan, USFS.
SodC-NCSW-6.1.1.1	207					207	Cost of assessment is estimated at \$207,000
SodC-NCSW-6.1.1.2	300.00					300	Work should focus in Panther Creek; because Soda is mainly intermittent and Welch has very limited stream flow. □ Cost based on personal communication from Lee Morgan (USFS)
SodC-NCSW-7.1.1.1						0	Action is considered In-Kind
SodC-NCSW-7.1.1.2						0	Action is considered In-Kind
SodC-NCSW-15.1.1.1	150.00					150	
SodC-NCSW-16.1.1.1						0	Action is considered In-Kind
SodC-NCSW-23.1.1.1	10.75	10.75	10.75	10.75		43	Cost based on road inventory for 43 miles of road at a rate of \$1000/mile.
SodC-NCSW-23.1.1.2	250.00	250.00				500	Cost based on road inventory of 24 miles of road. Cost for upgrading roads estimated at \$21,000/mile and \$12,000/mile for decommissioning. However cost was revised based on personal communication and the local knowledge of Lee Morgan (USFS)
SodC-NCSW-24.1.1.1						0	Action is considered In-Kind
SodC-NCSW-24.1.1.2						0	Action is considered In-Kind
SodC-NCSW-25.1.1.1						TBD	Cost based on participation of landowners to decrease low-flow diversions. Cost for forbearance program estimated at \$70,000/landowner.
SodC-NCSW-25.2.1.1						0	Action is considered In-Kind
SodC-NCSW-25.2.1.2						0	Action is considered In-Kind

Big River, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
BigR-NCSW-2.1.1.1	50.00	50.00				100	Existing program (e.g. SPAWN) could be expanded at minimal cost. Estimate additional monitoring costs at \$10K/year.
BigR-NCSW-2.1.1.2	5	5				10	Costs depend on level of technical assistance required and types of projects proposed. Many salmonid recovery efforts and management programs are currently ongoing. It is possible that there could be additional salmon restoration costs identified based on recovery needs of the species; however, at this time we do not have sufficient information to estimate those potential costs or identify the actions under which they might fall. Estimated cost of assessment is \$100,000.
BigR-NCSW-2.1.1.3	103.5	103.5				207	Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
BigR-NCSW-2.1.1.4	103.5	103.5				207	TBD, cost based on amount of habitat. Cost estimate for floodplain connectivity estimated at a rate of \$41,000/acre. Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
BigR-NCSW-5.1.1.1	306.00					306	Cost based on providing passage at the mouth of James Creek at a rate of \$102,000/unit and passage at Highway 20 at a rate of \$204,000/unit.
BigR-NCSW-5.1.1.2						TBD	Cost could be partially accounted for in fish/habitat monitoring. A total of 4 impassable barriers are currently known.
BigR-NCSW-6.1.1.1	57.50	57.50				115	Cost for fish/habitat monitoring is estimated at \$115,000/project.
BigR-NCSW-6.1.1.2	300.00	300.00				600	
BigR-NCSW-6.1.1.3	232.50	232.50	232.50	232.50		930	Cost based on treating 36 miles (assume 50% High IP) at a rate of \$25,825/mile. Costs may vary significantly due to access, varying paucity of large wood between sub-watersheds, and installation techniques. Many key areas in Big River have been targeted for LWD enhancement through the MRC HCP and on JDSF and total costs may be significantly less than projected.
BigR-NCSW-6.1.1.4						0	Costs will vary with site specific conditions (such as access and availability of materials). However, significant cost saving could result if projects are implemented when other land management action are planned. Action is considered In-Kind
BigR-NCSW-6.1.1.5						0	Cost are likely part of other action steps.
BigR-NCSW-6.1.2.1						0	Cost should be accounted for in increase LWD frequency and primary pools.
BigR-NCSW-7.1.1.1						TBD	Cost cannot be estimated because overall amount of landowner participation is unknown (particularly for conservation easements).
BigR-NCSW-7.1.1.2	248	248	248	248		994	Cost based on treating 2 miles (assume 24 acres/mile in 5% High IP) at a rate of \$21,000/acre.
BigR-NCSW-7.1.1.3						0	Action is considered In-Kind
BigR-NCSW-7.1.1.4	124.00	124.00	124.00	124.00		497	Cost based on treating 1 mile (assume 24 acres/mile in 5% High IP with a 1 mile minimum) at a rate of \$21,000/acre.
BigR-NCSW-7.1.1.5						0	Action is considered In-Kind
BigR-NCSW-8.1.1.1	207					207	Cost of assessment is estimated at \$207,000
BigR-NCSW-8.1.1.2						TBD	
BigR-NCSW-8.1.1.3						0	Additional sites may be installed as part of the timber harvest plan process and the cost for construction will likely be absorbed on a harvest plan by harvest plan basis. Ongoing maintenance will likely occur as part of yearly evaluation prior to the winter period. Maintenance costs are estimated at \$50,000/yr. Most of these costs are not anticipated to be additional costs to landowners but should be viewed as expenses incurred for maintenance of existing infrastructure. Action is considered in-kind
BigR-NCSW-10.1.1.1						0	Cost accounted for in RIPARIAN.
BigR-NCSW-11.1.1.1						0	Cost accounted for in the Monitoring Chapter.
BigR-NCSW-11.1.1.2	2	2	2	2	2	20	New habitat assessment methods may result in additional (but unknown) costs for Big River. Estimated cost of assessment could be in-kind if CDFW staff are used or \$20,000
BigR-NCSW-11.1.1.3						0	Cost accounted for in the Monitoring Chapter.
BigR-NCSW-11.1.1.4						0	Cost accounted for in the Monitoring Chapter.
BigR-NCSW-19.1.1.1						0	Action is considered In-Kind
BigR-NCSW-19.1.1.2						0	Action is considered In-Kind
BigR-NCSW-19.1.1.3						0	Action is considered In-Kind
BigR-NCSW-19.1.1.4						0	Action is considered In-Kind
BigR-NCSW-23.1.1.1	305.00	305.00				610	If most of the TMDL recommendations are adopted the total cost of this plan would likely be significantly less than that estimated here. Cost for road inventory is estimated at \$1000/mile (assume 50% of road network).
BigR-NCSW-23.1.1.2						0	Cost likely accounted for in other action steps.
BigR-NCSW-23.1.1.3	19.00	19.00				38	Action is considered In-Kind
BigR-NCSW-23.1.1.4						0	Action is considered In-Kind
BigR-NCSW-23.1.1.5						0	Action is considered In-Kind
BigR-NCSW-23.1.1.6						0	Action is considered In-Kind
BigR-NCSW-24.1.1.1						0	Action is considered In-Kind
BigR-NCSW-24.1.1.2	66.00					66	Cost for stream flow modeling estimated at \$65,000/project
BigR-NCSW-24.1.1.3						TBD	Cost of storage tanks already accounted for in another action step.
BigR-NCSW-24.1.1.4						0	Action is considered In-Kind
BigR-NCSW-24.2.1.1	103.5	103.5				207	Cost based on amount of high-risk shallow-seeded landslide areas needed to be protected. Cost to protect vary depending on methods applied. Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
BigR-NCSW-25.1.1.1						0	Action considered In-Kind
BigR-NCSW-25.1.1.2						0	Cost of additional coordination is expected to be minimal. Action is considered In-Kind
BigR-NCSW-25.1.1.3						TBD	Further analysis is needed to determine cost to landowners to comply with guidelines for new diversions.
BigR-NCSW-25.1.1.4	20.00					20	Rough cost estimate for Big River watershed only. This exercise should include Riparian and Appropriative diversions. The majority of the estimated cost would result from attempting to identify unreported Riparian diversions.
BigR-NCSW-25.1.1.5						0	Additional analysis needed. Action is considered In-Kind
BigR-NCSW-25.1.1.6	150.00	150.00				300	Cost based on 30k per year for two stations.

Big River, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
BigR-NCSW-25.1.1.7						0	Action is considered In-Kind
BigR-NCSW-25.1.1.8						0	Action is considered In-Kind
BigR-NCSW-25.1.1.9						0	Action is considered In-Kind
BigR-NCSW-25.2.1.1	25	25				50	Estimated cost to purchase 10 water tanks estimated at \$5000/tank for a total of \$50,000
BigR-NCSW-25.2.1.2	66.00					66	Cost based on stream flow/precipitation monitoring at a rate of \$65,000/project.

Caspar Creek, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
CaC-NCSW-1.1.1.1	75.00					75	
CaC-NCSW-1.1.1.2	375.00					375	Monitoring of salmonid use in estuaries will become a component of the Coastal Monitoring Plan. Costs will be determined at that time. In the interim, annual costs are estimated at \$75,000.
CaC-NCSW-1.1.1.3	50.00					50	Cost estimates may be on the high range and should not exceed this estimate. Sampling in the lagoon should be relatively straight forward due to the relatively small tidal prism of the Caspar estuary.
CaC-NCSW-2.1.1.1	360.00	360.00				721	Cost based on treating 1 mile (assume 1 project/mile in 25% High IP with 20 acres/mile treated) at a rate of \$36,000/acre.
CaC-NCSW-2.1.1.2	62.50					63	Cost based on treating 2.5 miles (assume 1 project/mile in 50% High IP) at a rate of \$25,000/mile.
CaC-NCSW-2.1.1.3	12.00	12.00				24	Cost based on decommissioning 2 miles of riparian road network at a rate of \$12,000/mile.
CaC-NCSW-2.1.1.4	26.00	26.00				52	Cost based on treating 1.4 miles (assume 1 project/mile in 25% high IP) at a rate of \$37,000/mile.
CaC-NCSW-2.1.1.5						0	Action is considered In-Kind
CaC-NCSW-6.1.1.1						0	Cost are minimal if passive management of key habitat features are left intact. Action is considered In-Kind
CaC-NCSW-6.1.1.2	50.00					50	It is anticipated that significant cost savings (and ecological benefits) would be realized if unsecured woody material (sized at 1.5 to 2 times bankfull) is used over engineered structures. Large woody material should be targeted to reach density and volume outlined in the Viability table in this document. Additional and very significant cost savings would be realized if natural recruitment into the watershed was allowed to stay in place. Supplementation programs that are a part of future timber harvest plans may result in significantly reduced costs. Due to the lack of downstream infrastructure in Caspar Creek, unsecured techniques should be used. Cost for treating 2 miles (assume 1 project/mile in 50% High IP) at a rate of \$25,000/mile. This action step may be in concert with targeting restoration of winter base flow.
CaC-NCSW-6.1.1.3	36.50	36.50				73	Cost based on treating 2.8 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
CaC-NCSW-6.1.1.4						0	Cost accounted for in above action step.
CaC-NCSW-8.1.1.1						0	Action is considered In-Kind
CaC-NCSW-8.1.1.2						0	Cost will likely be low since work will likely be absorbed by agency personnel. Action is considered In-Kind
CaC-NCSW-8.1.1.3	5	5	5	5		20	TBD, cost is difficult to estimate at this time but should be minimal if incorporated into the overall Caspar watershed study. Cost of assessment estimated at \$20,000.
CaC-NCSW-10.1.1.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
CaC-NCSW-10.1.1.2						TBD	Due to the uncertainty of future actions that may be necessary and status of current site conditions no costs were estimated.
CaC-NCSW-10.1.1.3	33.00	33.00				66	Cost accounted for in other recovery actions. Cost for sediment assessment estimated at \$12/acre.
CaC-NCSW-11.1.1.1						0	Costs for continuing adult and smolt monitoring are covered under the Monitoring Chapter.
CaC-NCSW-15.1.1.1						0	Action is considered In-Kind
CaC-NCSW-15.1.1.2						0	Action is considered In-Kind
CaC-NCSW-15.1.1.3						0	Action is considered In-Kind
CaC-NCSW-15.1.1.4						0	Action is considered In-Kind
CaC-NCSW-15.1.1.5						0	Action is considered In-Kind
CaC-NCSW-15.1.1.6						0	Sediment control is a requirement for all post fire fighting actions. Immediately implementing these measures (when feasible) when equipment and crews are available will minimize mobilization costs and result in a long term cost savings. Action is considered In-Kind
CaC-NCSW-15.1.1.7						0	Action is considered In-Kind
CaC-NCSW-15.1.1.8						0	Action is considered In-Kind
CaC-NCSW-19.1.1.1	0.57	0.57				114.00	Cost based on treating 1 mile (assume 80 acres/mile in 15% High IP with a minimum of 1 mile) at a rate of \$1,400/acre.
CaC-NCSW-19.1.1.2						0	Action is considered In-Kind
CaC-NCSW-19.1.2.1						0	Costs will vary with THP activity and additional maintenance needed. Since the Caspar watershed is subject to extensive monitoring, this recommendation should fit well into the overall study design of the USFS monitoring efforts. Action is considered In-Kind
CaC-NCSW-19.1.2.2						0	Action is considered In-Kind
CaC-NCSW-19.1.2.3						0	Action is considered In-Kind
CaC-NCSW-19.1.2.4						0	Action is considered In-Kind
CaC-NCSW-19.1.2.5						0	Timber management is the primary landuse in the watershed and this recommendation is a standard business practice. This recommendation is more likely to be implemented due to the research role that Caspar serves for the USFS and Calfire.
CaC-NCSW-19.1.2.6						0	This should be standard practice. Action is considered In-Kind
CaC-NCSW-19.1.2.7						0	This recommendation should be considered standard practice. Action is considered In-Kind
CaC-NCSW-19.1.2.8						0	This recommendation should be considered standard practice. Action is considered In-Kind
CaC-NCSW-19.1.2.9						0	This should be considered an appropriate mitigation measure for future timber harvest plans in the watershed. Action is considered In-Kind
CaC-NCSW-19.1.2.10						0	Action is considered In-Kind
CaC-NCSW-19.1.3.1						0	Action is considered In-Kind
CaC-NCSW-19.1.3.2						TBD	
CaC-NCSW-19.1.3.3						TBD	The cost of this action may be minimal or substantial depending on the land-use philosophy of landowner.
CaC-NCSW-19.1.3.4						0	Costs accounted for in above action steps.
CaC-NCSW-19.1.3.5						0	Costs of this type of program will likely be minimal and could fit well into the demonstration requirements on JDSF. Action is considered In-Kind
CaC-NCSW-19.2.1.1						0	Action is considered In-Kind
CaC-NCSW-19.2.1.2						0	Action is considered In-Kind
CaC-NCSW-19.2.1.3						0	Action is considered In-Kind
CaC-NCSW-19.2.2.1						0	Action is considered In-Kind

Caspar Creek, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
CaC-NCSW-19.2.2.2	103.5	103.5				207	Final cost of future sampling efforts is dependent on the number, location and frequency of sampling efforts. Estimated cost of assessment is \$206,600.
CaC-NCSW-19.2.2.3						0	This recommendation should be considered standard practice. Action is considered In-Kind
CaC-NCSW-23.1.1.1						0	Action is considered In-Kind
CaC-NCSW-23.1.1.2						TBD	These areas are likely already established. Efforts should be made to coordinate storage with all landowners in the basin to minimize costs and impacts.
CaC-NCSW-23.1.1.3						0	Not building problematic roads will likely result in a net cost savings. It is anticipated that little future road construction is planned for the Caspar watershed. Existing floodplains without roads should be avoided under all circumstances. Action is considered In-Kind
CaC-NCSW-23.1.1.4	50.00					50	Costs could be blended with other program on JDSF and other forest land managers. If costs are combined a significant reduction in projected costs are likely due to economies of scale.
CaC-NCSW-23.1.1.5						0	Action is considered In-Kind
CaC-NCSW-23.1.1.6						0	Action is considered In-Kind
CaC-NCSW-23.1.1.7						0	This action could be implemented as part of future timber harvest activities in the watershed.
CaC-NCSW-23.1.1.8						0	Since the majority of the watershed is in timber management it is anticipated that the majority of these actions will occur as part of future road upgrades and therefore no costs are assigned to this action.
CaC-NCSW-23.1.1.9						0	No costs were estimated because this should be considered a business practice for land managers with extensive road networks.
CaC-NCSW-23.1.1.10						0	Cost were estimated above.
CaC-NCSW-23.1.1.11						0	This should be considered a standard practices on lands with timber management as the primary landuse and therefore no costs are assigned to this recommendation.
CaC-NCSW-23.1.1.12						0	This should be considered a standard business practice for all timber management operations and it is anticipated that the majority of such crossing will be upgraded during future harvest operations.
CaC-NCSW-23.1.1.13						TBD	Difficult to estimate cost because assessments for the magnitude of the problem were not available. Additionally, some roads have been addressed - often through the timber harvest process - and these costs should be considered an ongoing operation expense. This estimate should be considered separate from the ongoing BMP recommendation below. Riparian roads, especially those located in the SF Caspar should be high priorities for decommissioning.
CaC-NCSW-23.1.1.14	41.00	41.00				82	Riparian roads should be targeted for decommissioning. Cost based on decommissioning 7 miles of road network at a rate of \$12,000/mile.
CaC-NCSW-23.1.1.15						0	The plan already exists and costs should be included into planned management activities. Action is considered In-Kind
CaC-NCSW-23.1.1.16						TBD	Many high priority sites are identified in the JDSF EIR.
CaC-NCSW-23.2.1.1						0	Action is considered In-Kind
CaC-NCSW-23.2.1.2						0	Action is considered In-Kind
CaC-NCSW-23.2.1.3						0	Costs likely to be incurred as part of timber harvest operations. However, in some circumstances this may be a stand alone cost. Action is considered In-Kind
CaC-NCSW-24.1.1.1						0	These agencies should consider existing regulations or other mechanisms when evaluating alternatives to water as a dust palliative (including EPA-certified compounds) that are consistent with maintaining or improving water quality.
CaC-NCSW-24.1.2.1						0	Action is considered In-Kind
CaC-NCSW-24.1.2.2						TBD	Sediment assessment should identify high-risk shallow-seeded landslide areas. Cost for protective measures cannot be determined until prioritization of landslide areas is identified.
CaC-NCSW-24.1.3.1						0	Action is standard practice and is considered In-Kind.

Noyo River, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NoyoR-NCSW-1.1.1.1	20.00					20	
NoyoR-NCSW-2.1.1.1	10.00					10	Rough estimate for consultant to use existing data and conduct some ground truthing.
NoyoR-NCSW-2.1.1.2						0	Action is considered In-Kind
NoyoR-NCSW-2.1.1.3	95.00	95.00				190	Cost based on treating 5 miles, with 1 project/mile in high IP, at a rate of \$38,000/mile.
NoyoR-NCSW-3.1.1.1	4	4	4	4	4	50	Estimated cost to purchase 10 water tanks estimated at \$5000/tank for a total of \$50,000
NoyoR-NCSW-3.1.1.2						0	Action is considered In-Kind
NoyoR-NCSW-3.1.1.3						TBD	Cost for incentives will vary depending on fair market value and landowner participation.
NoyoR-NCSW-3.1.1.4						0	Action is considered In-Kind
NoyoR-NCSW-3.2.1.1	65.00					65	Cost for hydrologic model estimated at \$65,000/project.
NoyoR-NCSW-3.2.1.2						0	The cost of this strategy is difficult to estimate at this time. Investigation will likely include CDFW/NMFS biologists and enforcement officers, as well as SWRCB. Action is considered In-Kind
NoyoR-NCSW-3.2.1.3						0	Resources to promote this strategy will likely be addressed by NMFS/CDFW/RWQCB staff. Difficult to estimate the amount of time required by water rights staff at these agencies at this time. Action is considered In-Kind
NoyoR-NCSW-3.2.1.4						0	Action is considered In-Kind
NoyoR-NCSW-5.1.1.1	362.00	362.00				724	Cost based on treating 1 barrier at a rate of \$724,000/unit.
NoyoR-NCSW-5.1.1.2						TBD	Costs will vary with number of high priority barriers identified and methods of remediation.
NoyoR-NCSW-5.1.1.3	103.5	103.5				207	Cost of assessment and design is estimated at \$207,000. Total cost will depend on the amount of barriers and methods to remove or modify them.
NoyoR-NCSW-6.1.1.1						0	Action is considered In-Kind
NoyoR-NCSW-6.1.1.2						0	There will be no cost when leaving remaining instream structures in place.
NoyoR-NCSW-6.1.1.3	65.00	65.00				130	Cost is based on treating 5 miles, assuming 50% of high IP, at a rate of \$26,000/mile. If ELJ are used, total cost would be \$506,000.
NoyoR-NCSW-6.1.1.4						0	Cost of educating the railroad regarding the importance of large woody debris and their CDFW Lake and Streambed Alteration Agreement program is expected to be implemented by existing staff. Action is considered In-Kind
NoyoR-NCSW-6.1.1.5						0	Cost accounted for in install or enhance existing LWD, boulders or other instream features.
NoyoR-NCSW-6.1.1.6						0	Action is considered In-Kind
NoyoR-NCSW-7.1.1.1	994	994	994	994		3,978	Cost based on treating 8 miles of high IP, at 24 acres/mile, at a rate of \$21,000/acre.
NoyoR-NCSW-7.1.2.1						0	As most of the land is used for forest management, most of this cost will be absorbed as part of on going forestry practices. Action is considered in-kind
NoyoR-NCSW-7.1.2.2						TBD	As most of the land is used for forest management, most of this cost will be absorbed as part of on going forestry practices. Cost of easements cannot be made without specific information.
NoyoR-NCSW-8.1.1.1						TBD	Additionally, many sediment sources in high priority watersheds have been addressed, often through the timber harvest process and these costs should be considered an ongoing operation expense.
NoyoR-NCSW-8.1.1.2						0	Since majority of watershed is owned by private timber companies, much of the road network has likely been assessed. Action is considered In-Kind
NoyoR-NCSW-8.1.1.3	250.00	250.00	250.00	250.00	250.00	3,000	This infrastructure is likely present in many of the Noyo subwatersheds. Additional sites may be installed as part of the timber harvest plan process and the cost for construction will likely be absorbed on a harvest plan by harvest plan basis. Ongoing maintenance will likely occur as part of yearly evaluation prior to the winter period. Maintenance costs are estimated at \$50,000/yr.
NoyoR-NCSW-8.1.1.4						0	Cost is likely to be low, since agency staff time will likely cover much of the work. Action is considered In-Kind
NoyoR-NCSW-10.1.1.1						0	Cost covered in other action steps.
NoyoR-NCSW-10.1.2.1						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
NoyoR-NCSW-10.1.2.2						0	Cost of this action step is likely covered through future THPs in the watershed. Action is considered In-Kind
NoyoR-NCSW-10.1.2.3						0	Action is considered In-Kind
NoyoR-NCSW-10.1.2.4						TBD	Cost will depend upon landowner willingness and fair market value.
NoyoR-NCSW-10.1.2.5							
NoyoR-NCSW-11.1.1.1						0	Action is considered In-Kind
NoyoR-NCSW-11.1.1.2						0	Cost accounted for in the monitoring chapter.
NoyoR-NCSW-11.1.1.3	250.00	250.00	250.00	250.00	250.00	3,000	Estimate of \$50,000 over 60 years. Cost would be lower if much of the area is monitored by local timber companies.
NoyoR-NCSW-11.1.1.4						0	Action is considered In-Kind
NoyoR-NCSW-11.1.1.5						0	Action is considered In-Kind
NoyoR-NCSW-11.1.1.6						0	Action is considered In-Kind
NoyoR-NCSW-19.1.1.1						0	Action is considered In-Kind
NoyoR-NCSW-19.1.1.2						0	Action is considered In-Kind
NoyoR-NCSW-19.1.1.3						0	Action is considered In-Kind
NoyoR-NCSW-19.1.1.4						0	Action is considered In-Kind
NoyoR-NCSW-19.1.1.5						0	Similar existing programs could be modified and implemented at minimal cost. Action is considered In-Kind
NoyoR-NCSW-19.1.1.6							The cost in considering development of the above mentioned plan is unlikely to cost much.
NoyoR-NCSW-19.2.1.1						0	Action is considered In-Kind
NoyoR-NCSW-19.2.1.2						0	Action is considered In-Kind
NoyoR-NCSW-19.2.1.3						0	Action is considered In-Kind
NoyoR-NCSW-19.2.1.4						0	Similar existing programs could be modified and implemented at minimal cost. Action is considered In-Kind
NoyoR-NCSW-19.2.1.5	30.00					30	

Noyo River, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NoyoR-NCSW-23.1.1.1	50.00					50	
NoyoR-NCSW-23.1.1.2						0	Costs will vary with specific road segments, but should be minimal. Action is considered In-Kind
NoyoR-NCSW-23.1.1.3						0	Action is considered In-Kind
NoyoR-NCSW-23.1.1.4	102.50	102.50				205	Cost for road inventory estimated at \$900/mile. Assume 25% of road network inventoried per year.
NoyoR-NCSW-23.1.1.5						0	Action is considered In-Kind
NoyoR-NCSW-23.1.1.6						0	Work with existing staff from the Mendocino County DOT to develop cost estimate for BMP cost in Noyo River watershed. Action is considered In-Kind
NoyoR-NCSW-23.1.1.7	525	525				1,050	Cost based on decommissioning 25 miles of riparian road network at a rate of \$12,000/mile. Also upgrading 75 miles of riparian roads at \$10,000/mile.
NoyoR-NCSW-23.1.1.8						0	Action is considered In-Kind
NoyoR-NCSW-23.1.2.1						0	Action is considered In-Kind
NoyoR-NCSW-23.1.2.2						0	Action is considered in-kind
NoyoR-NCSW-23.1.2.3						0	Action is considered in-kind
NoyoR-NCSW-23.1.3.1						TBD	Difficult to assess without further information, as costs will vary with type of bridges and rate of replacement.
NoyoR-NCSW-23.1.3.2						0	Cost accounted for in another action step.
NoyoR-NCSW-23.2.1.1						0	Action is considered In-Kind
NoyoR-NCSW-23.2.1.2	17	17	17	17	17	207	Total costs may vary depending on number of road crossings. Cost of assessment is estimated at \$207,000
NoyoR-NCSW-23.2.1.3						0	Action is considered In-Kind
NoyoR-NCSW-24.1.1.1	31.50	31.50				63	Cost for stream flow model estimated at \$63,000/project.
NoyoR-NCSW-24.1.1.2	10	10				20	Total cost depends upon landowner participation. Cost of identifying landowners is estimated at \$20,000

Ten Mile River, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
TenMR-NCSW-1.1.1.1	282.00					282	Estimate based on a three year study period and relative costs from other estuary studies. Cost based on estuary use/residence timing at a cost of \$282,000.
TenMR-NCSW-1.1.1.2						0	Action is considered In-Kind
TenMR-NCSW-1.1.1.3						TBD	Costs are difficult to determine until after an evaluation is conducted outlines the extent of the habitat impairment.
TenMR-NCSW-1.1.1.4	106.50	106.50				213	Cost based on wetland restoration at a cost of \$213,000.
TenMR-NCSW-2.1.1.1	307.00					307	Cost based on treating 8.3 miles (assume 1 project/mile in 25% High IP with 10 acres/mile treated) at a rate of \$37,000/acres.
TenMR-NCSW-2.1.1.2						0	Action is considered In-Kind
TenMR-NCSW-6.1.1.1						TBD	Campbell Timberlands (now Lyme Timberlands) has implemented numerous LWD projects at relatively low cost due their use of non-anchored material. This is significantly less expensive than engineered approaches.
TenMR-NCSW-6.1.1.2						0	Action is considered In-Kind
TenMR-NCSW-6.1.1.3						0	Action is considered In-Kind
TenMR-NCSW-6.1.1.4						0	Action is considered In-Kind
TenMR-NCSW-6.1.1.5						TBD	Coordinating instream large wood placement with future timber harvest activities in the watershed could result in substantial cost savings and serve as an opportunity for effective timber harvest plan mitigation. Costs may vary significantly due to stream access, varying paucity of large wood between sub-watersheds, and installation techniques. Ten Mile has been habitat typed and thus the stream reaches lacking wood can be readily identified.
TenMR-NCSW-6.1.2.1						0	No costs are associated with retention of existing instream structures.
TenMR-NCSW-6.1.2.2	260.00					260	Cost based on treating 10 miles (assume 1 project/mile in 50% High IP) at a rate of \$26,000/mile. Additional features such as riparian vegetation and boulders will increase cost.
TenMR-NCSW-6.1.2.3						0	This recommendation should be considered standard practice. Action is considered In-Kind
TenMR-NCSW-7.1.1.1						0	Cost accounted for in below action step.
TenMR-NCSW-7.1.1.2						0	Action is considered In-Kind
TenMR-NCSW-7.1.1.3						TBD	CDFG (2004) estimated costs for easements on Site I soils is \$300 per acre and ranges down to \$60 per acre for Site V soils.
TenMR-NCSW-7.1.1.4						TBD	Costs were not estimated due to (1) unknown size of buffers necessary to facilitate properly functioning watershed conditions on a reach specific basis and (2) the economic impact to landowners if this recommendation were widely adopted. If these lands were placed into conservation easements NMFS estimated costs could range between \$300 per acre on Site I soils to \$60 per acre for Site V soils.
TenMR-NCSW-7.1.2.1	104.00	104.00	104.00	104.00		415	Most of these lands (inset floodplains and riparian corridors) are used for forest management and it is anticipated that most of this cost will be absorbed as part of on going forestry practices. Additional cost may be incurred in the lower watershed where other land management actions occur, including minimal farming and minimal grazing. Cost based on treating 1 mile (assume 20 acres/mile treated in 5% High IP) at a rate of \$21,000/acre.
TenMR-NCSW-7.1.2.2	177.00	177.00				354	Cost based on riparian thinning 3 miles (assume 80 acres/mile in 15% High IP) at a rate of \$1,500/acre. Cost is expected to be minimal because most of the watershed is subject to active timber management. Additional cost may be incurred in the lower watershed where other land management actions occur.
TenMR-NCSW-8.1.1.1						0	It is anticipated most cost will be included as part of upgrades associated with future timber harvest actions. Ten Mile River TMDL does not have time lines specified. Rapid implementation will result in greater cost, but it could result in significant benefits. It is anticipated most cost will be included as part of upgrades associated with future timber harvest actions. Action is considered In-Kind
TenMR-NCSW-8.1.1.2	119.00	119.00				238	Cost for erosion assessment estimated at \$13/acre (assume 25% of total watershed acres)
TenMR-NCSW-8.1.2.1						TBD	
TenMR-NCSW-8.1.2.2	207					207	Total costs cannot be determined until a plan is developed to stabilize the dam. Cost likely to be minimal since the structure will not need to be replaced. Cost of assessment is estimated at \$207,000.
TenMR-NCSW-10.1.1.1						0	Cost accounted for in RIPARIAN.
TenMR-NCSW-10.1.2.1						0	Action is considered In-Kind
TenMR-NCSW-11.1.1.1						0	Cost accounted for in other action steps.
TenMR-NCSW-11.1.1.2						0	Costs for spawning ground surveys are covered in the Monitoring Chapter.
TenMR-NCSW-11.1.1.3						0	Costs for smolt outmigration monitoring are covered in the Monitoring Chapter.
TenMR-NCSW-15.1.1.1						0	This recommendation should be considered a standard practice. Action is considered In-Kind
TenMR-NCSW-15.1.1.2						0	This recommendation will result in a net cost savings. This recommendation should be considered a standard practice and no additional financial costs are anticipated. Action is considered In-Kind
TenMR-NCSW-15.1.1.3						0	Action is considered In-Kind
TenMR-NCSW-15.1.1.4						0	This is considered a standard practice. Action is considered In-Kind
TenMR-NCSW-15.1.2.1						0	Action is considered In-Kind
TenMR-NCSW-15.1.2.2						0	Action is considered In-Kind
TenMR-NCSW-15.1.2.3						0	Action is considered In-Kind
TenMR-NCSW-15.1.2.4						0	Action is considered In-Kind
TenMR-NCSW-15.1.3.1						0	Action is considered In-Kind
TenMR-NCSW-15.1.4.1						0	Action is considered In-Kind
TenMR-NCSW-15.1.4.2						0	Action is considered In-Kind
TenMR-NCSW-15.2.1.1						0	Action is considered In-Kind
TenMR-NCSW-19.1.1.1						0	Action is considered In-Kind.
TenMR-NCSW-19.1.1.2						0	Action is considered In-Kind
TenMR-NCSW-19.1.2.1						0	Action is considered In-Kind

Ten Mile River, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
TenMR-NCSW-19.1.3.1						0	Action is considered In-Kind
TenMR-NCSW-19.1.3.2						0	Cost accounted for in other recovery action steps - see Riparian. This strategy can be implemented at relatively little costs in areas zoned for timber production as a component of future harvest plans. Since the majority of the watershed is in timber management, costs are considered nominal.
TenMR-NCSW-19.1.4.1						0	This recommendation should be considered standard practice.
TenMR-NCSW-19.1.4.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
TenMR-NCSW-19.1.4.3						0	Action is considered In-Kind
TenMR-NCSW-19.1.4.4						0	This recommendation should be considered standard practice. Action is considered In-Kind
TenMR-NCSW-19.1.5.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
TenMR-NCSW-19.1.5.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
TenMR-NCSW-19.1.6.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
TenMR-NCSW-19.1.6.2						0	Action is considered In-Kind
TenMR-NCSW-19.1.6.3						0	Action is considered In-Kind
TenMR-NCSW-19.1.6.4						0	Action is considered In-Kind
TenMR-NCSW-19.1.7.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
TenMR-NCSW-19.1.7.2						0	Action is considered In-Kind
TenMR-NCSW-19.1.7.3						0	Action is considered In-Kind
TenMR-NCSW-19.1.7.4							
TenMR-NCSW-19.2.1.1						0	Action is considered In-Kind
TenMR-NCSW-19.2.1.2						0	Action is considered In-Kind
TenMR-NCSW-19.2.1.3						0	Action is considered In-Kind
TenMR-NCSW-19.2.1.4						0	
TenMR-NCSW-19.2.1.5						0	Action is considered In-Kind
TenMR-NCSW-19.2.1.6						0	Action is considered In-Kind
TenMR-NCSW-23.1.1.1	230.00					230	Cost based on treating 1 stream crossing (assume minor 2 lane road) at a rate of \$230,000/unit.
TenMR-NCSW-23.1.1.2						TBD	
TenMR-NCSW-23.1.1.3						0	Action is considered In-Kind
TenMR-NCSW-23.1.1.4						0	Action is considered In-Kind
TenMR-NCSW-23.1.2.1						0	Cost accounted for LANDSCAPE PATTERNS.
TenMR-NCSW-23.1.2.2						0	Cost should be considered part of road maintenance costs. Action is considered In-Kind
TenMR-NCSW-23.1.2.3						0	Action is considered In-Kind
TenMR-NCSW-23.1.2.4						TBD	
TenMR-NCSW-23.1.2.5						TBD	
TenMR-NCSW-23.1.2.6	207					207	Assess the feasibility and extent of spoils storage site. Total costs will be determined once an assessment is completed. Cost of assessment is estimated at \$207,000
TenMR-NCSW-23.1.2.7	415.00	415.00				830	Cost based on road assessment for 830 miles (assume 75% of road network) at a cost of \$1000
TenMR-NCSW-23.1.2.8	306.00	306.00				612	Costs may vary widely depending on number of riparian roads and the magnitude of the problem associated with the roads. Additionally, many roads in high priority watersheds have been addressed and hydrologically disconnected - often through the timber harvest process - and these costs should be considered an ongoing operation expense. Cost based on decommissioning 51 miles of riparian road network at a rate of \$12,000/mile.
TenMR-NCSW-23.1.2.9						0	Action is considered In-Kind
TenMR-NCSW-23.1.2.10						TBD	Costs associated with assessment and redesign cannot be determined at this time. Costs may be significant and should be weighed against additional upland disturbance and overall costs.
TenMR-NCSW-23.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
TenMR-NCSW-23.1.4.1						0	Action is considered In-Kind
TenMR-NCSW-23.2.1.1						0	Action is considered In-Kind
TenMR-NCSW-23.2.1.2						0	Action is considered In-Kind
TenMR-NCSW-23.2.2.1						0	Action is considered In-Kind
TenMR-NCSW-23.2.2.2						0	Action is considered In-Kind
TenMR-NCSW-23.2.2.3						0	Action is considered In-Kind
TenMR-NCSW-23.2.3.1						0	This should be considered a standard practice by regulatory agencies. Action is considered In-Kind
TenMR-NCSW-23.2.3.2						0	It is anticipated that CalFire can implement this action immediately at minimal cost. Action is considered In-Kind
TenMR-NCSW-23.2.4.1						0	Rapid implementation will result in greater cost, but it could result in significant benefits for sediment reduction. It is anticipated most cost will be absorbed as part of upgrades associated with future timber harvest actions. Action is considered In-Kind
TenMR-NCSW-24.1.1.1						0	Action is considered In-Kind
TenMR-NCSW-24.1.2.1	3,850	3,850				7,700	Total cost is unknown and based on fair market value, optimum flow conditions, and landowner participation. Cost are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
TenMR-NCSW-24.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
TenMR-NCSW-24.1.3.2	93.50	93.50				187	Cost based on treating 5 miles (assume 1 project/mile in 25% High IP) at a rate of \$37,000/mile.
TenMR-NCSW-24.1.4.1						TBD	Cost for erosion assessment estimated at \$13/acre.

Ten Mile River, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
TenMR-NCSW-24.1.5.1	5.00	5.00	5.00	5.00	5.00	100	
TenMR-NCSW-24.1.5.2						0	Action is considered In-Kind
TenMR-NCSW-24.1.5.3	65					65	Cost for stream flow modeling estimated at \$65,000/project
TenMR-NCSW-24.1.5.4						TBD	Cost will depend on measures implemented

Usal Creek, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
UC-NCSW-1.1.1.1	41.00	41.00				82	Cost based on treating 2 acres (assume 25% of estuarine habitat) at a rate of \$41,000/acre.
UC-NCSW-1.1.1.2	30.00					30	Cost cannot be accurately determined without assessing the volume of sediment to be removed on an annual basis. Assume flat rate of \$60,000/ mile for 0.5 miles.
UC-NCSW-1.1.1.3						0	Cost accounted for in above action step.
UC-NCSW-1.1.1.4	51.33	51.33	51.33	51.33	51.33	308	Cost based on treating 7.5 acres (assume 1 project in 10% total estuarine habitat) at a rate of \$41,000/acre.
UC-NCSW-1.1.2.1	30.00					30	Cost would be almost completely for personnel. Little permitting costs anticipated. The lower reaches have a heavy alder overstory component that slows the growth of understory conifers and ultimately impedes the rate of future conifer recruitment to the wetted channel. Cost based on riparian thinning for 1 mile (assume 20 acres/mile in 25% High IP) at a rate of \$1,500/acre.
UC-NCSW-1.1.2.2						0	Cost accounted for in FLOODPLAIN CONNECTIVITY.
UC-NCSW-1.2.1.1	1.50	1.50				3	Cost of signs can vary widely depending on materials. Average cost estimated to be \$1,000/sign. Assume minimum of 3 signs located at key points along the estuary.
UC-NCSW-1.2.1.2						0	Cost for signs accounted for in other actions.
UC-NCSW-1.2.1.3						0	Close coordination by all parties would likely comprise the majority of the costs. Action is considered In-Kind
UC-NCSW-2.1.1.1	595	595				1,190	Cost based on treating 1.6 miles (assume 1 project/mile in 25% high IP with 20 acres/mile treated) at a rate of \$37,000/acre.
UC-NCSW-2.1.1.2	20.00					20	
UC-NCSW-2.1.1.3	103.5	103.5				207	Difficult to estimate cost until an evaluation of habitat enhancement opportunities are conducted. Cost of assessment estimated at \$207,000, and should be completed within the first 10 years.
UC-NCSW-2.1.1.4	104.00	104.00	104.00	104.00		415	Cost based on treating 1 miles (assume 1 project/mile with 20 acres/mile treated) at a rate of \$21,000/acre.
UC-NCSW-5.1.1.1	75.00	75.00				150	Cost for conducting study to determine adequate summer low flows needed to support rearing juveniles.
UC-NCSW-5.1.1.2	120.00					120	
UC-NCSW-6.1.1.1						0	Action to develop a plan is considered In-Kind
UC-NCSW-6.1.1.2	39.00					39	Significant cost savings (and ecological benefits) would likely be realized if unsecured woody material (sized at 1.5 to 2 times bankfull) is used. Costs can be reduced by using onsite materials and coordinating efforts and equipment associated with other land management actions. Cost based on treating 1.5 miles (assume 1 project/mile in 50% High IP) at a rate of \$26,000/mile.
UC-NCSW-6.1.1.3	15.00					15	
UC-NCSW-6.1.1.4	38.33	38.33	38.33			115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
UC-NCSW-6.1.1.5						0	This recommendation should be a standard practice. Action is considered In-Kind
UC-NCSW-6.1.1.6						0	This recommendation should be adopted as a reoccurring recommendation for all timber harvest plans. Action is considered In-Kind
UC-NCSW-6.1.1.7						0	Action is considered In-Kind
UC-NCSW-6.1.1.8						0	Retention of wood could result in cost savings for future restoration projects. Action is considered In-Kind
UC-NCSW-6.1.1.9						0	Action is considered In-Kind
UC-NCSW-6.1.1.10	5.90	5.90	5.90	5.90	5.90	118	Cost could be minimal if incorporated into ongoing timber harvest plans. Some cost for conifer release accounted for in ESTUARY recovery actions. Cost based on treating 1 mile (assume 1 project/mile in 15% high IP with 80 acres/mile) at a rate of \$1,500/acre.
UC-NCSW-6.1.1.11						0	Action is considered In-Kind
UC-NCSW-6.1.2.1	37.50	37.50				75	
UC-NCSW-8.1.1.1						TBD	Cost will vary with extent and methods applied.
UC-NCSW-8.1.2.1						TBD	Cost for this recovery action cannot be determined at this time. Assessment of feasibility and need for catchment basins will determine the extent of costs.
UC-NCSW-8.1.2.2	50.00	50.00				100	CDFW estimated LWD structures cost approximately \$20K each (CDFG 2004). Assumed 50 structures would be needed. Significant cost reduction could be realized in Waddell if less engineered structures (felling of riparian trees into watercourses) are used in the watershed. This approach may be more applicable in this watershed due to the paucity of near stream infrastructure.
UC-NCSW-15.1.1.1						0	This recommendation should be considered a standard practice. Action is considered In-Kind
UC-NCSW-15.1.1.2						0	Action is considered In-Kind
UC-NCSW-15.1.1.3						0	Implementing erosion control measures when constructing firebreaks (if possible) or shortly thereafter will likely result in a net cost savings. It is much more financially efficient to implement these measures while the fire crews are present rather than months later after the fire is out. Action is considered In-Kind
UC-NCSW-15.1.1.4						0	Standard business practice.
UC-NCSW-15.1.2.1						0	Action is considered In-Kind
UC-NCSW-15.1.3.1						0	Action is considered In-Kind
UC-NCSW-15.2.1.1						0	Action is considered In-Kind
UC-NCSW-23.1.1.1	393.00	393.00				786	All new and replacement culverts should be sized to accommodate a 100 year flow event. Cost based on upgrading 3 stream crossing (assume minor 2 lane rural road) at a rate \$262,000/unit.
UC-NCSW-23.1.1.2						0	These will likely be replaced as part of future timber harvest plans in Usal watershed. Action is considered In-Kind
UC-NCSW-23.1.1.3						TBD	Costs will likely be significant. However, the cost is currently difficult to determine pending a road assessment and prioritization effort. Cost for a road inventory accounted for in other action steps. NMFS (2008) estimated road decommissioning in Mendocino County cost approximately \$35,000 per mile. DOT (2010) estimated road construction for relocation of non-paved roads could cost \$175,000 per mile.
UC-NCSW-23.1.2.1						0	Cost associated with future implementation of THPs. Action is considered In-Kind
UC-NCSW-23.1.2.2						0	Action is considered In-Kind
UC-NCSW-23.1.2.3						0	Action is considered In-Kind
UC-NCSW-23.1.2.4	90.00	90.00	90.00	90.00		360	Cost based on treating 30 miles of road (assume reduce road density to 2.0mi/mi square) at a rate of \$12,000/mile.
UC-NCSW-23.1.2.5	39.50	39.50				79	Cost based on assessment of 68 miles (assume 75% of total road network) at a rate of \$1,100/mile.

Usal Creek, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
UC-NCSW-23.1.2.6	103.5	103.5				207	An assessment of adequate spoils storage sites needs to be completed before determining costs. Cost of assessment estimated at \$207,000.
UC-NCSW-23.1.2.7						TBD	
UC-NCSW-23.1.3.1						0	Action is considered In-Kind
UC-NCSW-23.1.4.1	257.00					257	Since the road receives light use a replacement bridge could be constructed on railcars which would result in a significant cost savings over other types of bridges. Cost based on upgrading crossing with bottomless/open arch crossing at a rate of \$257,000/unit
UC-NCSW-23.1.4.2						0	Action is considered In-Kind
UC-NCSW-23.1.5.1						0	Action is considered In-Kind
UC-NCSW-23.2.1.1						0	Action is considered In-Kind
UC-NCSW-23.2.1.2						0	Action is considered In-Kind
UC-NCSW-23.2.1.3						0	This recommendation is specifically directed at the County of Mendocino for the Usal County Road and State Parks for the Sinkyone Campground at Usal Beach. Action is considered In-Kind
UC-NCSW-23.2.2.1						0	Action is considered In-Kind
UC-NCSW-23.2.3.1						0	Cost accounted for in another action step.
UC-NCSW-23.2.3.2						0	Costs should be considered part of ongoing road maintenance. Action is considered In-Kind
UC-NCSW-23.2.3.3						0	Costs should be considered part of ongoing road maintenance. Action is considered In-Kind
UC-NCSW-23.2.3.4						0	Action is considered In-Kind
UC-NCSW-23.2.3.5						0	Action is considered In-Kind
UC-NCSW-23.2.3.6						TBD	Costs are unknown and will likely vary depending on permitting constraints.
UC-NCSW-23.2.4.1						0	Action is considered In-Kind
UC-NCSW-24.1.1.1	141.00	141.00				282	Cost based on monitoring estuary use, residence timing at a rate of \$282,000/project
UC-NCSW-24.1.2.1	32.50	32.50				65	Cost for stream flow model estimated at \$65,000/project.
UC-NCSW-24.1.3.1						TBD	
UC-NCSW-24.1.3.2						0	Creation and restoration of offchannel habitat features could be used as a demonstration project and reference point for future actions in regards to costs, feasibility, biological effectiveness, and appropriate construction techniques. Cost accounted for in other action steps.
UC-NCSW-24.1.4.1						0	Action is considered In-Kind
UC-NCSW-24.1.4.2						TBD	
UC-NCSW-24.2.1.1						0	Costs of not developing floodplain will be minimal. Action is considered In-Kind

Wages Creek, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
WgC-NCSW-1.1.1.1	136.50	136.50				273	Cost based on evaluating estuarine habitat at a cost of \$273,000/project..
WgC-NCSW-1.1.1.2	0.50					1	Cost of each sign estimated at \$1000
WgC-NCSW-1.1.1.3						TBD	
WgC-NCSW-2.1.1.1	58	58				115	Cost based on fish/habitat restoration monitoring at a cost of \$115,000/project.
WgC-NCSW-2.1.1.2	670	670				1,339	Cost based on treating 1.8 miles (assume 1 project/mile in 25% in high IP with 20 acres/mile treated) at a rate of \$37,000/acre.
WgC-NCSW-6.1.1.1						TBD	Costs can be reduced by using onsite materials and coordinating efforts and equipment associated with other land management actions.
WgC-NCSW-6.1.1.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
WgC-NCSW-6.1.1.3						0	Action is considered In-Kind
WgC-NCSW-6.1.2.1						0	Action is considered In-Kind
WgC-NCSW-6.1.2.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
WgC-NCSW-6.1.2.3	52.00	52.00				104	Cost based on treating 4 miles (assume 1 project/mile in 50% High IP) at a rate of \$26,000/mile. If ELJ used in replacement of placing LWD, cost would be \$404,000.
WgC-NCSW-6.1.2.4	144.00	144.00				288	Cost based on riparian and wetland restoration model at a rate of \$74,000 and \$213,000/project, respectively.
WgC-NCSW-6.1.2.5						0	Action is considered In-Kind
WgC-NCSW-7.1.1.1						0	Cost accounted for in other recovery actions.
WgC-NCSW-7.1.1.2						0	Most of the watershed is in timber management so a large portion of this cost will be absorbed into ongoing operations. However, this practice would have major benefits if implemented in the lower floodplain where numerous small landowners live. Riparian vegetation in these areas have been heavily impacted and it is likely costs will be proportionately greater than in the upper portions of the watershed. Cost accounted for below.
WgC-NCSW-7.1.1.3	202	202				404	Cost based on planting 1 mile (assume 20 acres/mile treated in 5% High IP with 1 mile minimum) at a rate of \$21,000/acre.
WgC-NCSW-7.1.2.1	59.00	59.00				118	Cost to treat 1 mile (assume 80 acres/mile in 15% High IP with a 1 mile minimum) at a rate of \$1,500/acre.
WgC-NCSW-8.1.1.1						0	Minimal- difficult to estimate cost because assessments for the magnitude of the problem were not available. Additionally, many roads have been rocked - often through the timber harvest process - and these costs should be considered an ongoing operation expense. Action is considered In-Kind
WgC-NCSW-8.1.1.2	50.00	50.00				100	This estimate was taken from the Ten Mile Creek watershed. Ongoing maintenance will likely occur as part of a yearly evaluation prior to the winter period. Maintenance costs were estimated at \$10,000/yr.
WgC-NCSW-15.1.1.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
WgC-NCSW-15.1.1.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
WgC-NCSW-15.1.2.1						0	Action is considered In-Kind
WgC-NCSW-15.1.3.1						0	Action is considered In-Kind
WgC-NCSW-15.2.1.1						0	Action is considered In-Kind
WgC-NCSW-19.1.1.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
WgC-NCSW-19.1.2.1						TBD	Cost cannot be determined until the feasibility of road surface treatments account for number of miles to be treated.
WgC-NCSW-19.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
WgC-NCSW-19.1.3.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
WgC-NCSW-19.1.3.3						0	Action is considered In-Kind
WgC-NCSW-19.1.4.1						0	Action is considered In-Kind
WgC-NCSW-19.1.5.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
WgC-NCSW-19.1.6.1						0	Action is considered In-Kind
WgC-NCSW-19.2.1.1						0	Action is considered In-Kind
WgC-NCSW-19.2.1.2						0	Action is considered In-Kind
WgC-NCSW-19.2.1.3						0	Action is considered In-Kind
WgC-NCSW-19.2.2.1	35.50	35.50				71	Cost based on sediment assessment for 6,438 acres (assume 75% of total watershed acres) at a cost of \$11/acre. Cost may be lower if incorporated into other recover action recommendations.
WgC-NCSW-19.2.2.2						0	Action is considered In-Kind
WgC-NCSW-19.2.2.3						0	Action is considered In-Kind
WgC-NCSW-23.1.1.1						0	Cost should be standard practice and is considered in-kind.
WgC-NCSW-23.1.1.2						0	Action is considered In-Kind
WgC-NCSW-23.1.1.3	12.00	12.00				24	Cost based on decommissioning 2 miles of riparian road network at a rate of \$12,000/mile.
WgC-NCSW-23.1.1.4						TBD	Cost based on number and type of appropriate spoils sites. These should be identified from the road assessment.
WgC-NCSW-23.1.2.1						0	Action is considered In-Kind
WgC-NCSW-23.1.3.1	21.00	21.00	21.00	21.00		84	Cost based on decommissioning 7 miles of road network at a rate of \$12,000/mile.
WgC-NCSW-23.1.3.2	76.00					76	Costs will likely be significant. However, the cost is currently difficult to determine pending a road assessment and prioritization effort. Some upgrades on Hawthorne lands have already occurred. Estimate for road inventory is \$1000/mile for 76 miles of road network.
WgC-NCSW-23.2.1.1						0	Action is considered In-Kind
WgC-NCSW-23.2.1.2						0	Action is considered In-Kind
WgC-NCSW-23.2.1.3						0	Action is considered In-Kind
WgC-NCSW-23.2.1.4						0	Action is considered In-Kind
WgC-NCSW-23.2.1.5						0	Action is considered In-Kind
WgC-NCSW-23.2.1.6						TBD	Cost will vary with detail of the plan and the extent and methods of implementation.
WgC-NCSW-23.2.2.1						0	Action is considered In-Kind

Wages Creek, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
WgC-NCSW-23.2.2.2						0	Action is considered In-Kind
WgC-NCSW-24.1.1.1						0	Action is considered In-Kind
WgC-NCSW-24.1.1.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
WgC-NCSW-24.1.1.3	3,850	3,850				7,700	The price at which water is sold on environmental markets is determined by negotiations between landowners and purchasing entity. Total cost will vary depending on water availability and landowner participation. It is unknown if this program will gain widespread acceptance in the watershed. Cost are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
WgC-NCSW-24.1.2.1						0	An inventory of high-risk shallow-seeded landslide areas needs to be conducted to prioritize and develop costs for treatment. Action is considered standard practice, and is In-Kind
WgC-NCSW-24.1.3.1						0	Action is considered In-Kind
WgC-NCSW-24.1.3.2						0	This recommendation should be considered standard practice. Action is considered In-Kind

Albion River, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
AlbnR-NCSW-1.1.1.1	207					207	Total cost determined by extent of riprap and gabion rock to be removed and suitable bioengineered solution to employ. Cost of assessment is estimated at \$207,000
AlbnR-NCSW-1.1.1.2	125.00	125.00				250	Based on implementing 10 LWD at a rate of \$25,000/mile.
AlbnR-NCSW-2.1.1.1	20.00					20	Use existing MRC watershed analysis, and channel typing information from habitat typing with field verification to determine floodplain restoration sites.
AlbnR-NCSW-2.1.1.2	5.60	5.60				11	Use information from Action Step #1 to determine reaches for restoration. Cost based on treating 3 miles (assume 1 project per mile in 5% High IP) at a rate of \$37,200/mile.
AlbnR-NCSW-3.1.1.1	50.00					50	Cost based on small number of landowners participating in program during the first five years.
AlbnR-NCSW-3.1.1.2						TBD	Cost based on amount of willing participants and incentives to provide. Some programs are already in place.
AlbnR-NCSW-3.1.1.3						0	Continued enforcement will likely be required. Action is considered In-Kind
AlbnR-NCSW-3.1.1.4	100.00	100.00				200	Based on 2 gages for 10 years.
AlbnR-NCSW-5.1.1.1	130.00					130	Cost based on treating earthen dam at a rate of \$130,000/unit.
AlbnR-NCSW-6.1.1.1	207					207	Cost of assessment is estimated at \$207,000
AlbnR-NCSW-6.1.1.2						0	This recommendation will direct other action steps. Action is considered In-Kind
AlbnR-NCSW-6.1.1.3						0	Action is considered In-Kind
AlbnR-NCSW-6.1.2.1						0	Cost should be accounted for in increase LWD frequency and primary pools.
AlbnR-NCSW-7.1.1.1	481	481	481	481		1,925	Cost based on treating 4 miles (assume 24 acres/mile in 5% High IP) at a rate of \$20,000/acre.
AlbnR-NCSW-8.1.1.1	35	35				70	Need additional analysis to estimate total cost. Cost for sediment assessment is estimated at 70,000.
AlbnR-NCSW-8.1.1.2						TBD	Additional information needed.
AlbnR-NCSW-11.1.1.1						0	Cost accounted for in monitoring chapter
AlbnR-NCSW-11.1.1.2						0	Cost accounted for in monitoring chapter
AlbnR-NCSW-11.1.1.3						0	Cost accounted for in above action step. Cost could be less with community involvement.
AlbnR-NCSW-19.1.1.1						0	Working with the corporate companies is considered in-kind. No estimate made in revenue loss
AlbnR-NCSW-19.1.1.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
AlbnR-NCSW-19.1.1.3						0	Action is considered In-Kind
AlbnR-NCSW-23.1.1.1						20	Cost for road upgrade estimated at \$21,000/mile. Cost of assessment estimated at \$20,000 and should be completed within the first 5 years.
AlbnR-NCSW-23.1.1.2	50.00					50	May be possible to use some existing Mendocino County DOT road data.
AlbnR-NCSW-23.1.1.3						0	Action is considered In-Kind
AlbnR-NCSW-23.2.1.1	52	52	52	52		207	Cost associated with increased costs for land managers is unknown at this time, additional analysis needed to determine. Cost of assessment is estimated at \$207,000
AlbnR-NCSW-23.2.1.2	50.00					50	Estimated cost for materials to block roads and trails, large rock and gates.
AlbnR-NCSW-23.2.1.3						TBD	Number of rural roads and associated costs are unknown at this time.
AlbnR-NCSW-23.2.1.4	103.5	103.5				207	Many road upgrades have been done in this watershed. Additional information needed on the remaining road segments that need work to estimate cost. Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
AlbnR-NCSW-24.1.1.1	500	500				1,000	Estimate based on 100 land owners at 10k per water storage system.
AlbnR-NCSW-24.1.1.2						0	Cost accounted for in HYDROLOGY
AlbnR-NCSW-25.1.1.1	32.50	32.50				65	Action is considered In-Kind
AlbnR-NCSW-25.1.1.2	13	13	13	13		50	Program will be driven by hydrological monitoring and optimum base flows needed for fish. Estimated cost to purchase 10 water tanks estimated at \$5000/tank for a total of \$50,000
AlbnR-NCSW-25.1.1.3						0	Action is considered In-Kind
AlbnR-NCSW-25.2.1.1						0	Initial focus should be concentrated in the Comptche area. Action is considered In-Kind
AlbnR-NCSW-25.2.1.2						0	Action is considered In-Kind
AlbnR-NCSW-25.2.1.3						0	Action is considered In-Kind
AlbnR-NCSW-25.2.1.4						0	Action is considered In-Kind

Cottaneva Creek, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
CotC-NCSW-1.1.1.1	70.50	70.50	70.50	70.50		282	Cost based on estuary use/residence time model at a rate of \$282,000/project.
CotC-NCSW-1.1.1.2						0	Cost accounted for in ROADS
CotC-NCSW-2.1.1.1	103.5	103.5				207	TBD, cost based on amount of habitat. Cost estimate for floodplain connectivity estimated at a rate of \$41,000/acre. Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
CotC-NCSW-2.1.1.2						0	Costs to promote and support restoration efforts depend on level of technical assistance provided and the types of projects proposed. Action is considered In-Kind
CotC-NCSW-2.1.1.3	103.5	103.5				207	Total costs depend on level of technical assistance required and types of projects proposed. Cost of assessment is estimated at \$207,000
CotC-NCSW-2.1.1.4	40.00					40	This may be a GIS exercise with ground truthing. Available information exists from past habitat typing that may streamline this analysis and further reduce the overall cost.
CotC-NCSW-6.1.1.1	103.5	103.5				207	Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
CotC-NCSW-6.1.1.2						0	No costs are associated with retention of existing instream structures. Action is considered In-Kind
CotC-NCSW-6.1.1.3						0	Action is considered In-Kind
CotC-NCSW-6.1.1.4	22.75	22.75	22.75	22.75		91	Cost based on treating 3.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
CotC-NCSW-6.1.1.5						0	Action is considered In-Kind
CotC-NCSW-6.1.1.6						0	Action is considered In-Kind
CotC-NCSW-6.1.1.7						0	Action is considered In-Kind
CotC-NCSW-7.1.1.1						0	Action is considered In-Kind
CotC-NCSW-7.1.1.2						0	Most of the watershed is in timber management so a large portion of this cost will be absorbed into ongoing operations. However, this practice would have major benefits if implemented in the lower floodplain where numerous small landowners live. Riparian vegetation in these areas have been heavily impacted and it is likely costs will be proportionately greater than in the upper portions of the watershed. Action is considered In-Kind
CotC-NCSW-7.1.1.3	414.50	414.50	414.50	414.50		1,658	Cost based on treating 1 mile (assume 5% high IP with 80 acres/mile and a minimum of 1 mile) at a rate of \$21,000/acre.
CotC-NCSW-7.1.1.4	103.5	103.5				207	Total cost dependent on the amount of restoration and methods used. Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
CotC-NCSW-7.1.1.5	1.50	1.50	1.50	1.50	1.50	30	Cost is directed to those areas not subject to timber harvest actions. Cost is directed at site specific actions to release suppressed conifers, particularly in the lower floodplain areas.
CotC-NCSW-8.1.1.1						0	This should be considered a standard practice for all regulatory and oversight agencies. Action is considered In-Kind
CotC-NCSW-8.1.1.2	8.00	8.00	8.00	8.00	8.00	48	Cost based on decommissioning 4 miles of road network at a rate of \$12,000/mile.
CotC-NCSW-11.1.1.1						0	Costs for population status and trends, including adult and juvenile monitoring, are covered in the Monitoring Chapter.
CotC-NCSW-11.1.1.2						0	Action is considered In-Kind
CotC-NCSW-11.1.1.3						0	Costs for population status and trends, including adult and juvenile monitoring, are covered in the Monitoring Chapter.
CotC-NCSW-15.1.1.1						0	This recommendation should be considered a standard practice. Implementing erosion control measures when constructing firebreaks (if possible) or shortly thereafter will likely result in a net cost savings. It is much more financially efficient to implement these measures while the fire crews are present rather than months later after the fire is out. Action is considered In-Kind
CotC-NCSW-15.1.1.2						0	Action is considered In-Kind
CotC-NCSW-15.1.2.1						0	Action is considered In-Kind
CotC-NCSW-15.2.1.1						0	Action is considered In-Kind
CotC-NCSW-15.2.1.2						0	Action is considered In-Kind
CotC-NCSW-15.2.1.3	2.50	2.50	2.50	2.50		10	
CotC-NCSW-15.2.2.1						0	Action is considered In-Kind
CotC-NCSW-16.1.1.1						0	Action is considered In-Kind
CotC-NCSW-19.1.1.1						0	Action is considered In-Kind
CotC-NCSW-19.1.2.1						0	Action is considered In-Kind
CotC-NCSW-19.1.2.2						TBD	Costs will vary depending on landowner participation and site specific needs. This strategy can be implemented at relatively little costs in areas zoned for timber production as a component of future harvest plans. Estimate is \$1,500/acre.
CotC-NCSW-19.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
CotC-NCSW-19.1.3.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
CotC-NCSW-19.1.3.3						0	Action is considered In-Kind
CotC-NCSW-19.1.4.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
CotC-NCSW-19.1.5.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
CotC-NCSW-19.1.5.2						0	Action is considered In-Kind
CotC-NCSW-19.1.6.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
CotC-NCSW-19.1.6.2						0	Action is considered In-Kind
CotC-NCSW-19.1.6.3							
CotC-NCSW-19.2.1.1						0	Action is considered In-Kind
CotC-NCSW-19.2.1.2						0	Action is considered In-Kind
CotC-NCSW-19.2.1.3						0	Action is considered In-Kind
CotC-NCSW-19.2.1.4						0	Action is considered In-Kind
CotC-NCSW-23.1.1.1						0	Action is considered In-Kind
CotC-NCSW-23.1.1.2						TBD	Cost based on number and type of dissipators to install. These should be identified through a road assessment.
CotC-NCSW-23.1.1.3						0	Action is considered In-Kind

Cottaneva Creek, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
CotC-NCSW-23.1.1.4						0	Cost accounted for in above action step.
CotC-NCSW-23.1.1.5						0	This is a best management practice for forestlands. Action is considered In-Kind
CotC-NCSW-23.1.1.6						0	This should be adopted as standard practice for highly erodible areas. Action is considered In-Kind
CotC-NCSW-23.1.1.7						0	Standard business practice on forestlands. The practice should be encouraged for floodplain properties as well. Action is considered In-Kind
CotC-NCSW-23.1.1.8						0	Costs should be minimal and it is likely that many sites have already been identified. This activity should occur over the entire recovery duration. Action is considered In-Kind
CotC-NCSW-23.1.1.9						0	Standard practice. Action is considered In-Kind
CotC-NCSW-23.1.1.10	54.00					54	Cost based on conducting a road inventory for 54 miles of road at a rate of \$1000/mile.
CotC-NCSW-23.1.2.1						0	Action is considered In-Kind
CotC-NCSW-23.1.2.2						0	Action is considered In-Kind
CotC-NCSW-23.2.1.1	30.00	30.00				60	Cost based on decommissioning 5 miles of road network at a rate of \$12,000/mile.
CotC-NCSW-23.2.1.2						0	This is a cost that is frequently absorbed into new road projects and should be considered a standard practice. Action is considered In-Kind
CotC-NCSW-23.2.1.3						TBD	These practices should be adopted as part of future road actions and maintenance practices.
CotC-NCSW-23.2.1.4						0	This recommendation may involve increased intra-watershed coordination among the landowners (locking and installing gates, etc.). Cost accounted for in road inventory.
CotC-NCSW-24.1.1.1						0	Action is considered In-Kind
CotC-NCSW-24.1.1.2							
CotC-NCSW-24.1.1.3						TBD	The price at which water is sold on environmental markets is determined by negotiations between landowners and purchasing entity. Cost will vary depending on water availability and landowner participation. It is unknown if this program will gain widespread acceptance in the watershed and therefore costs cannot be estimated.
CotC-NCSW-24.1.2.1	103.5	103.5				207	An assessment of the quantity and extent of high-risk shallow-seeded landslide areas needs to be conducted prior to developing cost for this recovery action. Cost of assessment is estimated at \$207,000 and should be done within the first ten years.

Pudding Creek, Northern California Steelhead (North-Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PudC-NCSW-1.1.1.1	184.00					184	Cost based on juvenile migration monitoring at a rate of \$184,000.
PudC-NCSW-1.1.1.2	653					653	Cost based on new fish ladder estimated at \$653,000
PudC-NCSW-1.1.2.1	103.5	103.5				207	Cost of assessment is estimated at \$207,000
PudC-NCSW-1.1.2.2	103.5	103.5				TBD	Cost will be based upon assessment
PudC-NCSW-1.1.3.1						0	Action is considered In-Kind
PudC-NCSW-2.1.1.1	744.00	744.00	744.00			2,232	Cost based on treating 3 miles (assume 1 project/mile in 25% High IP with 20 acres/mile treated) at a rate of \$37,000/acre.
PudC-NCSW-2.1.1.2	6.00	6.00	6.00	6.00		24	Cost based on decommissioning 2 miles of riparian road network at a rate of \$12,000/mile.
PudC-NCSW-2.1.1.3	21.43	8.57				30	
PudC-NCSW-6.1.1.1	156.00					156	Some large woody debris supplementation has already occurred in the watershed. Supplementation programs that are a part of future timber harvest plans may result in significantly reduced costs. Cost based on treating 6 miles (assume 1 project/mile in 50% High IP) at a rate of \$26,000/mile.
PudC-NCSW-6.1.1.2						0	Action is considered In-Kind
PudC-NCSW-6.1.1.3						0	Retention of wood could result in cost savings for future restoration projects. Significant oversight and evaluation should occur prior to removal of any large wood structure. Action is considered In-Kind
PudC-NCSW-6.1.2.1						0	Cost of initial dialog is expected to be minimal. Action is considered In-Kind
PudC-NCSW-6.1.2.2						0	Action is considered In-Kind
PudC-NCSW-6.1.2.3						0	Action is considered In-Kind
PudC-NCSW-7.1.1.1	106.00	106.00				212	Cost based on treating 1.8 miles (assume 80 acres/mile in 15% High IP) at a rate of \$1,500/acre. Cost could be minimal if incorporated into ongoing timber harvest plans.
PudC-NCSW-7.1.1.2	103.00	103.00	103.00	103.00		415	Cost based on treating 1 mile (assume 20 acres/mile treated in 5% High IP) at a rate of \$21,000/acre.
PudC-NCSW-8.1.1.1						TBD	
PudC-NCSW-8.1.1.2	25.00	25.00				50	Total cost is not expected to exceed \$50K.
PudC-NCSW-8.1.1.3						0	This should be considered a standard practice. Action is considered In-Kind
PudC-NCSW-8.1.1.4						0	This recommendation should be considered standard practice. Action is considered In-Kind
PudC-NCSW-11.1.1.1						0	Costs for life cycle station monitoring are accounted for in the Monitoring Chapter.
PudC-NCSW-11.1.1.2						0	Costs for spawning ground surveys are accounted for in the Monitoring Chapter.
PudC-NCSW-11.1.1.3						0	Costs for juvenile monitoring are accounted for in the Monitoring Chapter.
PudC-NCSW-19.1.1.1						0	Action is considered In-Kind
PudC-NCSW-19.1.2.1						0	This recommendation should be a standard practice. Action is considered In-Kind
PudC-NCSW-19.1.2.2						0	This recommendation should be a standard practice. Action is considered In-Kind
PudC-NCSW-19.1.2.3	18.00	18.00				36	Cost based on erosion assessment monitoring (assume 25% of total watershed acres) at a rate of \$13/acre.
PudC-NCSW-19.1.3.1						0	Action is considered In-Kind
PudC-NCSW-19.1.4.1						0	Action is considered In-Kind
PudC-NCSW-19.2.1.1						0	Action is considered In-Kind
PudC-NCSW-19.2.1.2						0	Action is considered In-Kind
PudC-NCSW-23.1.1.1						0	Action is considered In-Kind
PudC-NCSW-23.1.1.2						0	Cost should be considered part of road maintenance costs. Action is considered In-Kind
PudC-NCSW-23.1.1.3	103.5	103.5				207	Cost of assessment is estimated at \$207,000 and should be done within the first ten years.
PudC-NCSW-23.1.1.4						TBD	
PudC-NCSW-23.1.2.1						0	Action is considered In-Kind
PudC-NCSW-23.2.1.1						0	Action is considered In-Kind
PudC-NCSW-23.2.1.2						0	Action is considered In-Kind
PudC-NCSW-24.1.1.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
PudC-NCSW-24.1.1.2	32.50	32.50				65	Few if any water diversions are present along mainstem Pudding Creek aside from the diversion lower in the watershed at the Pudding Creek dam. Cost based on stream flow gauging at a cost of \$65,000
PudC-NCSW-24.1.2.1						0	Population level monitoring will help ensure proper function of the ladder. See monitoring chapter
PudC-NCSW-24.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
PudC-NCSW-24.1.3.2						TBD	Cost for erosion assessment estimated at \$13/acre.

Garcia River, Northern California Steelhead (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GarcR-NCSW-1.1.1.1	150.00					150	Cost based on estimate for investigations of river mouth dynamics.
GarcR-NCSW-1.1.1.2						TBD	TBD, the alternatives to address adverse passage conditions will be determined from the above action steps, if necessary.
GarcR-NCSW-1.1.2.1						0	Cost accounted for above.
GarcR-NCSW-1.1.2.2	8	8				16	Cost to re-align lower estuary channel is contingent upon necessity identified from above action step. Cost estimated at \$16,000/breach (NMFS 2008, pg. 20)
GarcR-NCSW-1.1.3.1	115.50	115.50				231	Cost for sediment assessment is estimated at \$13/acre
GarcR-NCSW-1.1.3.2						0	Cost accounted for in above action steps.
GarcR-NCSW-1.1.3.3	26.00	26.00				52	Cost based on treating 1 mile of stream (assume 1 project/mile) at a rate of \$26,000/mile.
GarcR-NCSW-1.1.3.4	2,811					2,810	Cost based on treating 10 acres (assume 10% of estuarine habitat) at a rate of \$281,000/acre.
GarcR-NCSW-1.1.3.5						0	Cost coincides with above action steps.
GarcR-NCSW-1.1.4.1						0	Cost accounted for in other action steps.
GarcR-NCSW-1.1.4.2						0	Cost accounted for in other action steps.
GarcR-NCSW-1.1.4.3						0	Action is considered In-Kind
GarcR-NCSW-1.1.5.1	1					1	Cost for stream flow gauges estimated at \$1000/gauge. Cost estimate does not account for maintenance or data management.
GarcR-NCSW-1.1.5.2						0	Cost accounted for in estuary use/residence timing monitoring.
GarcR-NCSW-1.1.5.3	32.50	32.50				65	Cost for stream flow modeling estimated at \$65,000/project.
GarcR-NCSW-1.1.6.1	35.00					35	Cost for continuous water quality monitoring stations estimated at \$5,000/station with a total of 7 gauges. Cost does not account for maintenance and data management.
GarcR-NCSW-1.1.6.2						0	Cost accounted for in other action steps.
GarcR-NCSW-1.1.7.1						0	Cost accounted for in other action steps.
GarcR-NCSW-2.1.1.1	150.00					150	Cost based on estimate for habitat assessment of a limited reach of the river.
GarcR-NCSW-2.1.1.2						0	Action is considered In-Kind
GarcR-NCSW-2.1.1.3	260.00					260	Cost based on treating 7 miles (assume 1 project/mile in 25% High IP) at a rate of \$37,000/mile.
GarcR-NCSW-3.1.1.1						0	Action is considered In-Kind
GarcR-NCSW-3.1.1.2	3.50	3.50				7	Cost for 7 stream flow gauges estimated at \$1000/gauge. Cost does not account for maintenance or data management.
GarcR-NCSW-3.1.1.3						TBD	Cost are difficult to determine because based on landowner participation and extent of off-channel storage facilities needed.
GarcR-NCSW-3.1.1.4						0	Action is considered In-Kind
GarcR-NCSW-4.1.1.1						0	Action is considered In-Kind
GarcR-NCSW-4.1.1.2						TBD	Cost will depend on fair market value and land use turnover.
GarcR-NCSW-4.1.1.3						0	Action is considered In-Kind
GarcR-NCSW-5.1.1.1	48.00					48	Cost based on treating 8 acres at a rate of \$6,000/acre.
GarcR-NCSW-5.1.1.2	654.00					654	Cost based on treating passage for major 2 lane road at a rate of \$654,000/unit.
GarcR-NCSW-5.1.1.3	654					654	Cost based on providing passage for a small waterway at a rate of \$654,000/unit.
GarcR-NCSW-5.1.1.4	654					654	Action is considered In-Kind
GarcR-NCSW-5.1.1.5	254.00					254	Cost based on treating a minor 2 lane road at a rate of \$254,000/unit.
GarcR-NCSW-5.1.1.6	254.00					254	Cost based on treating a minor 2 lane road at a rate of \$254,000/unit.
GarcR-NCSW-5.1.1.7	654					654	Cost based on providing passage for a small waterway at a rate of \$654,000/unit.
GarcR-NCSW-5.1.1.8	254.00					254	Cost based on treating minor 2 lane road at a rate of \$254,000/unit.
GarcR-NCSW-5.1.1.9	254.00					254	Cost based on treating minor 2 lane road at a rate of \$254,000/unit.
GarcR-NCSW-5.1.1.10						0	Action is considered In-Kind
GarcR-NCSW-5.1.1.11						0	Action is considered standard practice and is In-Kind
GarcR-NCSW-5.1.1.12						0	Action is considered standard practice and is In-Kind
GarcR-NCSW-6.1.1.1	130.00	130.00				260	Cost based on treating 10 miles of stream at a rate of \$26,000/mile. If ELJ projects implemented, cost could be \$1,040,000.
GarcR-NCSW-6.1.1.2						0	Cost accounted for in increase wood frequency in spawning in rearing habitat.
GarcR-NCSW-6.1.2.1	169.00	169.00				338	Cost based on treating 13 miles of stream at a rate of \$26,000/mile. Cost to treat 13 miles of stream with ELJ would be \$1,352,000.
GarcR-NCSW-6.1.2.2						0	Cost accounted for in increase wood frequency in seasonal habitat.
GarcR-NCSW-6.1.2.3						0	Cost likely to be included as part of the restoration action and/or required as part of the permitting process.
GarcR-NCSW-6.1.2.4						0	Cost accounted for in increase wood frequency in seasonal habitat.
GarcR-NCSW-6.1.2.5						0	Action is considered standard practice and is In-Kind
GarcR-NCSW-6.1.3.1	169.00	169.00				338	Cost based on treating 13 miles (50% of High IP) at a rate of \$26,000/mile. This may be combined with increasing LWD, reducing overall cost.
GarcR-NCSW-6.1.3.2						0	Cost accounted for in increase the number of primary pools.
GarcR-NCSW-6.1.4.1						0	Cost are associated with other recovery actions such as increase LWD and increasing primary pools.
GarcR-NCSW-6.1.4.2						0	Cost based on treating 13 miles (50% of High IP), assuming this recovery action is separate from increase large wood and primary pools, at a rate of \$26,000/mile.
GarcR-NCSW-7.1.1.1	101	101	101	101		404	Cost based on treating 2 miles (assume 10 acres/mile treated in 5% High IP) at a rate of \$21,000/acre.
GarcR-NCSW-7.1.1.2						0	Cost accounted for in increase average stream canopy.
GarcR-NCSW-7.1.1.3						0	Cost accounted for in increase average stream canopy.
GarcR-NCSW-7.1.1.4						0	Action is considered In-Kind
GarcR-NCSW-7.1.2.1						0	Cost accounted for in increase canopy cover.
GarcR-NCSW-7.1.2.2	235.00	235.00				470	Cost based on treating 4 miles (assume 80 acres/mile in 15% High IP) at a rate of \$1,500/acre.
GarcR-NCSW-7.1.2.3	80.00					80	Cost based on \$20K in each high priority subbasin over a two year period.

Garcia River, Northern California Steelhead (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GarcR-NCSW-7.1.2.4						TBD	Costs can not be determined without additional information on the potential projects within this basin.
GarcR-NCSW-8.1.1.1							Cost for habitat survey estimated at \$353/IP km. Assume survey High IP, cost estimated at \$15,000. This action step could be incorporated in other monitoring and assessment actions.
GarcR-NCSW-8.1.1.2	103.5	103.5				207	Costs will vary with methods and extent of gravel enhancement and sediment control projects. Cost of assessment estimated at \$207,000 and should be completed within the first 10 years.
GarcR-NCSW-8.1.1.3	103.5	103.5				207	Cost will vary with methods and extent of treatments. Cost of assessment estimated at \$207,000.
GarcR-NCSW-8.1.1.4						TBD	Need cost estimates from project proponents.
GarcR-NCSW-8.1.1.5	500	500				1,000	Based on \$1 million estimate for Garcia river forest sites.
GarcR-NCSW-8.1.1.6	200					200	Rough estimate for erosion control in affected area.
GarcR-NCSW-8.1.1.7						0	Action is considered In-Kind
GarcR-NCSW-8.1.1.8	11.50	11.50				23	Cost based on treating 0.5 mile of bank at a rate of \$25,000/mile for bank erosion and \$21,000/mile for riparian planting.
GarcR-NCSW-10.1.1.1						0	Cost accounted for in development of stream flow model.
GarcR-NCSW-10.1.1.2						TBD	Cost will depend on the length of reaches identified for planting.
GarcR-NCSW-10.1.1.3	103.5	103.5				207	Costs will vary with methods and extent of actions taken. Cost of assessment estimated at \$207,000.
GarcR-NCSW-16.1.1.1						0	Action is considered In-Kind
GarcR-NCSW-16.1.1.2						0	Action is considered In-Kind
GarcR-NCSW-16.1.1.3						0	Action is considered In-Kind
GarcR-NCSW-16.2.1.1						0	Action is considered In-Kind
GarcR-NCSW-16.2.1.2						0	Action is considered In-Kind
GarcR-NCSW-18.1.1.1						0	Action is considered In-Kind
GarcR-NCSW-19.1.1.1						0	Action is considered In-Kind
GarcR-NCSW-19.1.2.1						0	Action is considered In-Kind
GarcR-NCSW-19.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
GarcR-NCSW-19.1.3.2						0	Action is considered In-Kind
GarcR-NCSW-19.1.3.3	103.5	103.5				207	Cost will vary with THP development near streams with legacy roads. Cost of assessment estimated at \$207,000 and should be completed within the ten years.
GarcR-NCSW-19.1.4.1						TBD	Cost estimates are difficult to determine as this action step is driven by current market value and rate of turnover.
GarcR-NCSW-19.1.4.2						TBD	
GarcR-NCSW-19.1.4.3	51.8	51.8	51.8	51.8		207	NCWP/Coastal Watershed Program needs to implement assessment in the Garcia River basin. Cost of assessment estimated at \$207,000.
GarcR-NCSW-19.1.4.4						0	Action is considered In-Kind
GarcR-NCSW-19.2.1.1						0	Cost expected to be minimal to improve coordination with Mendocino County. Action is considered In-Kind
GarcR-NCSW-19.2.1.2						0	Action is considered In-Kind
GarcR-NCSW-19.2.1.3	10	10				20	Cost of assessment is likely low and is estimated at \$20,000.
GarcR-NCSW-19.2.1.4	25.00	25.00	25.00	25.00		100	Assumes data for the Garcia River portion of the database can be maintained for \$5k per year.
GarcR-NCSW-19.2.1.5						0	Action is considered In-Kind
GarcR-NCSW-19.2.1.6						0	This is underway. Action is considered In-Kind
GarcR-NCSW-19.2.1.7						0	Need to determine the number of regulatory staff to control rural development in Mendocino County. Action is considered In-Kind
GarcR-NCSW-19.2.1.8						0	Action is considered In-Kind
GarcR-NCSW-19.2.1.9						0	Action is considered In-Kind
GarcR-NCSW-23.1.1.1	495.00	495.00				990	Cost based on treating 82 miles of road network at a rate of \$12,000/mile.
GarcR-NCSW-23.1.1.2	39.50	39.50				82	Number of culverts and specific details to upgrade are needed to estimate cost. Cost based on road inventory of 82 miles at a rate of \$1000/mile.
GarcR-NCSW-23.1.1.3						0	Ten year duration to accommodate changes in BMPs. Action is considered In-Kind
GarcR-NCSW-23.1.1.4						0	Costs considered In-Kind to prioritize projects.
GarcR-NCSW-23.1.1.5	19.00	19.00	19.00	19.00		76	Cost based on decommissioning 6.2 miles of riparian roads at a rate of \$12,000/mile. Cost may be less than other basins due to TMDLs in place since 1997.
GarcR-NCSW-23.1.1.6						0	Costs are related to maintenance and enforcement of gates and other closure techniques. Action is considered In-Kind
GarcR-NCSW-23.1.2.1	50.00					50	Cost estimate for entire basin.
GarcR-NCSW-23.1.2.2						0	Action is considered In-Kind
GarcR-NCSW-23.1.2.3						0	Action is considered In-Kind
GarcR-NCSW-23.1.2.4	335.00	335.00				670	Cost based on replacing 3 stream crossings at a rate of \$223,000/unit.
GarcR-NCSW-23.1.2.5	250.00					250	Based on approximately \$50k to do inspections for a five year period.
GarcR-NCSW-23.1.3.1						0	Action is considered In-Kind
GarcR-NCSW-23.1.3.2						0	Action is considered In-Kind
GarcR-NCSW-24.1.1.1						TBD	Costs will vary based on methods and extent of conservation strategies.
GarcR-NCSW-25.1.1.1						TBD	Costs will vary based on methods and extent of remediation actions.
GarcR-NCSW-25.1.1.2						TBD	Cost will vary with the number of water rights holders willing to participate.
GarcR-NCSW-25.1.2.1						TBD	Cost will depend on the optimum flows for adult and smolt migration.
GarcR-NCSW-25.1.3.1						0	Action is considered In-Kind
GarcR-NCSW-25.1.4.1						0	Action is considered In-Kind
GarcR-NCSW-25.2.1.1						0	Action is considered In-Kind

Garcia River, Northern California Steelhead (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GarcR-NCSW-25.2.1.2						0	Action is considered In-Kind
GarcR-NCSW-25.2.1.3						0	Action is considered In-Kind
GarcR-NCSW-25.2.1.4						0	Action is considered In-Kind
GarcR-NCSW-25.2.1.5						0	Action is considered In-Kind
GarcR-NCSW-25.2.1.6						0	Action is considered In-Kind
GarcR-NCSW-25.2.1.7						0	Action is considered In-Kind

Gualala River, Northern California Steelhead (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GualR-NCSW-1.1.1.1	117.00	117.00				234	Cost based on sediment assessment estimated at \$12/acre. Assume 10% of total watershed acres.
GualR-NCSW-1.1.1.2						0	Cost accounted for in other action steps. Feasibility of re-establishing wetland marsh habitat should be identified in estuary monitoring.
GualR-NCSW-1.1.1.3	680	680				1,360	Cost based on treating 5 acres (assume 5% of total estuarine habitat) at a rate of \$272,000/acre.
GualR-NCSW-1.1.1.4	141.50	141.50				283	Cost based on estuary use/residence monitoring at a rate of \$282,233/project.
GualR-NCSW-1.1.2.1						126	Cost based on stream complexity recovery action at \$101,000/mile from estuary mouth to Highway 1 bridge (approximately 1.25 miles)
GualR-NCSW-1.1.2.2						0	Costs associated with installation of LWD would be encompassed by increasing the percentage of area high value habitat.
GualR-NCSW-1.1.3.1	15.00					15	Cost based on continuous monitoring gauges estimated at \$5,000/unit. Assume a minimum of 3 for lagoon. Cost does not account for maintenance or data management.
GualR-NCSW-1.1.4.1	1.00					1	Cost based on stream gauges estimated at \$1,000/gauge. Cost does not account for maintenance or data management.
GualR-NCSW-1.1.4.2	136.61	136.61				273	Cost based estuary use estimated at \$273,000/project.
GualR-NCSW-1.1.4.3	63.01					63	Cost based on stream flow model estimated at \$63,000/project.
GualR-NCSW-3.1.1.1						0	Action is considered In-Kind
GualR-NCSW-3.1.1.2	2	2	2	2	2	20	Costs may be minimal due to the low number of diverters in this basin. Estimated cost of assessment is \$20,000.
GualR-NCSW-3.1.1.3	103.5	103.5				207	Estimated stream flow model of assessment is \$207,000.
GualR-NCSW-3.1.1.4	0.50	0.50				1	Cost of installing stream gage is \$1000/unit. Cost does not account for maintenance or data management.
GualR-NCSW-3.1.1.5						0	Cost accounted for in stream flow model.
GualR-NCSW-3.1.1.6	0.50	0.50				1	Cost based on stream gauge estimated at \$1,000/gauge. Cost does not account for maintenance or data management.
GualR-NCSW-3.1.1.7	1.00					1	Cost based on installing a stream flow gauge at a rate of \$1,000/station. Cost does not account for data management or maintenance.
GualR-NCSW-3.1.1.8	0.50	0.50				1	Cost based on stream flow gauge estimated at \$1,000/gauge. Cost does not account for maintenance or data management.
GualR-NCSW-3.1.1.9						TBD	Cost difficult to estimate because of participation of landowners and feasibility of off-channel storage facilities.
GualR-NCSW-4.1.1.1						TBD	Cost difficult to estimate because of fair market value and land use turnover.
GualR-NCSW-4.1.1.2						TBD	Cost difficult to estimate because of fair market value and land use turnover.
GualR-NCSW-4.2.1.1						0	Action is considered In-Kind
GualR-NCSW-4.2.1.2						0	Action is considered In-Kind
GualR-NCSW-5.1.1.1	31.50	31.50				63	Cost based on stream crossing at \$63,000/unit.
GualR-NCSW-5.1.1.2	950	950				1,900	Cost based on implementing two fish passage facilities at a rate of \$961,000/unit.
GualR-NCSW-6.1.1.1	350.00	350.00				700	Cost based on treating 28 miles (assume 1 project/mile in 50% High IP) at a rate of \$25,000/mile.
GualR-NCSW-6.1.1.2						0	Cost accounted for in above.
GualR-NCSW-6.1.2.1	130.00	130.00				260	Cost based on treating 10 miles (assume 1 project/mile in 50% High IP) at a rate of \$26,000/mile.
GualR-NCSW-6.1.2.2						0	Cost accounted for in above action step.
GualR-NCSW-6.1.2.3	130.00					130	Cost based on treating 5 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. Cost for fish/habitat restoration model accounted for in other action steps.
GualR-NCSW-6.1.2.4	115.00					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
GualR-NCSW-6.1.3.1	175.00	175.00	175.00	175.00		700	Action is considered In-Kind
GualR-NCSW-6.1.4.1						0	Cost accounted for in other action steps.
GualR-NCSW-6.1.4.2	103.5	103.5				207	Continue current restoration projects in progress. Cost of assessment estimated at 207,000.
GualR-NCSW-6.1.4.3						0	Action is considered In-Kind
GualR-NCSW-6.1.4.4						0	Action is considered In-Kind
GualR-NCSW-6.1.4.5						0	Action is considered In-Kind
GualR-NCSW-6.1.5.1						0	Cost should be accounted for in increase LWD frequency and primary pools.
GualR-NCSW-7.1.1.1	1,205	1,205	1,205	1,205		4,820	Cost based on treating 3 miles (assume 80 acres/mile in 5% High IP) at a rate of \$20,000/acre.
GualR-NCSW-7.1.1.2						0	Action is considered In-Kind
GualR-NCSW-7.1.1.3	550	550				1,100	Cost based on treating 9 miles (assume 80 acres/mile in 15% High IP) at a rate of \$1,400/acre.
GualR-NCSW-7.1.2.1	301	301	301	301		1,203	Cost based on treating 3 miles (assume 20 acres/mile treated in 5% High IP) at a rate of \$20,000/acre. This action step should be in concert with increasing tree diameter to a minimum of 80% CWHR.
GualR-NCSW-7.1.2.2						0	Action is considered In-Kind
GualR-NCSW-7.1.2.3						0	Cost accounted for in above action steps.
GualR-NCSW-7.1.2.4						0	Cost accounted for in above action steps.
GualR-NCSW-7.1.2.5						0	Cost accounted for in above action steps.
GualR-NCSW-8.1.1.1						TBD	Site specific information needed for a accurate cost estimate.
GualR-NCSW-8.1.1.2	30.00	30.00				60	Cost based on decommissioning 5 miles of road network at a rate of \$12,000/mile.
GualR-NCSW-10.1.1.1	1.50					2	Cost based on installing a minimum of 3 continuous stream temperature gauges at a rate of \$500/station
GualR-NCSW-10.1.1.2						0	Cost accounted for through implementation of other action steps.
GualR-NCSW-10.1.1.3						0	Cost accounted for in above action steps.
GualR-NCSW-12.1.1.1						0	Action is considered In-Kind
GualR-NCSW-12.1.2.1	60.50	60.50				121	Cost based on sediment assessment for 9,550 acres (assume 5% of total watershed acres) at a rate of \$13/mile. Additional costs of addressing sources will vary depending on methods and extent of actions.
GualR-NCSW-12.1.2.2	50.00					50	Cost estimate for field work by agency or other staff.
GualR-NCSW-12.1.2.3						0	Action is considered In-Kind
GualR-NCSW-12.1.2.4						TBD	Costs will vary depending on extent of buffers.
GualR-NCSW-12.1.3.1						TBD	Additional information needed on the size and scope of projects in order to estimate cost.

Gualala River, Northern California Steelhead (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GualR-NCSW-12.1.4.1	500	500				1,000	Low cost to promote. Implementation likely 1-2 million based on recent Russian River costs to develop off-channel storage.
GualR-NCSW-12.1.5.1						0	Action is considered In-Kind
GualR-NCSW-12.1.5.2						0	Action is considered In-Kind
GualR-NCSW-12.2.1.1						0	Action is considered In-Kind
GualR-NCSW-12.2.1.2						0	Action is considered In-Kind
GualR-NCSW-12.2.1.3						0	Action is considered In-Kind
GualR-NCSW-12.2.2.1	32.50	32.50				65	Development of stream flow model will identify summer base flow levels. Cost based on stream flow/precipitation model at a rate of \$65,000/project.
GualR-NCSW-12.2.2.2						0	Action is considered In-Kind
GualR-NCSW-16.1.1.1						0	Action is considered In-Kind
GualR-NCSW-18.1.1.1						TBD	Costs will vary with methods and extent of actions.
GualR-NCSW-19.1.1.1						0	Action is considered In-Kind
GualR-NCSW-19.1.2.1						0	Action is considered In-Kind
GualR-NCSW-19.1.2.2						0	Action is considered In-Kind
GualR-NCSW-19.1.3.1						TBD	Costs will vary with extent and methods of treatments.
GualR-NCSW-19.1.3.2	5	5	5	5		20	Cost expected to be low because much of this mapping has been completed. Cost of assessment is estimated at \$20,000.
GualR-NCSW-19.1.3.3						0	Action is considered In-Kind
GualR-NCSW-19.1.3.4	137.50	137.50	137.50	137.50		550	Cost to decommission 40 miles (assume 10% of road network) at a rate of \$12,000/mile. Costs to upgrade and rehabilitate are likely to be less, but will depend on methods and extent of actions.
GualR-NCSW-19.1.4.1						0	Action is considered In-Kind
GualR-NCSW-19.1.4.2						0	Action is considered In-Kind
GualR-NCSW-19.1.5.1						0	Action is considered In-Kind
GualR-NCSW-19.1.5.2						TBD	Cost of reducing timber available in riparian areas needs to be calculated for estimating cost of this action.
GualR-NCSW-19.1.6.1						0	A database is currently in development and being performed in-house. Action is considered in-kind
GualR-NCSW-19.1.6.2						TBD	Cost are difficult to estimate because of fair market value and rate of turnover.
GualR-NCSW-19.1.6.3						0	Action is considered In-Kind
GualR-NCSW-19.1.6.4						0	Action is considered In-Kind
GualR-NCSW-19.1.6.5						0	Action is considered In-Kind
GualR-NCSW-19.2.1.1						0	Cost low if conducted with current regulatory and County staff. Action is considered In-Kind
GualR-NCSW-19.2.1.2						0	Cost low if conducted with current regulatory and County staff. Action is considered In-Kind
GualR-NCSW-19.2.1.3						0	Cost low if conducted with current regulatory and County staff. Action is considered In-Kind
GualR-NCSW-19.2.1.4						0	The recovery action is considered In-Kind.
GualR-NCSW-19.2.1.5						TBD	Cost can not be determined without information on the number of acres and cost of merchantable timber retention.
GualR-NCSW-19.2.1.6						0	Action is considered In-Kind
GualR-NCSW-19.2.1.7						0	Action is considered In-Kind
GualR-NCSW-23.1.1.1	300.00	300.00				600	Based on remaining number of miles of roads that have not been upgraded (500 miles) in high priority areas. Cost to decommission roads based on \$12,000/mile for 500 miles. If roads were upgraded, costs would be \$21,000/mile for an estimated total of \$1,050,000.
GualR-NCSW-23.1.1.2						0	Action is considered In-Kind
GualR-NCSW-23.1.1.3	20					20	Cost expected to be low because most areas have been surveyed. Estimated cost of assessment is \$20,000.
GualR-NCSW-23.1.1.4						TBD	Five years may be sufficient to determine problem segments that would be stormproofed.
GualR-NCSW-23.1.1.5						TBD	Twenty years is suggested to institutionalize these practices.
GualR-NCSW-23.1.1.6						0	Cost accounted for in other action steps.
GualR-NCSW-23.1.1.7						0	Cost likely accounted for in other action steps.
GualR-NCSW-23.1.1.8						0	Cost accounted for in other action steps.
GualR-NCSW-23.1.1.9						0	Action is considered In-Kind
GualR-NCSW-23.1.1.10						TBD	TBD, cost based on number and type of locked gates to prevent 4wd vehicles.
GualR-NCSW-23.1.2.1						0	Action is considered In-Kind
GualR-NCSW-23.1.2.2						0	Action is considered In-Kind
GualR-NCSW-23.1.3.1						0	Action is considered In-Kind
GualR-NCSW-23.1.4.1	1,100	1,100				2,200	Cost based on decommissioning 176 miles of road at a cost of \$12,000/mile. Recovery action related to prevent impairment to instream substrate by decommissioning riparian roads.
GualR-NCSW-23.1.4.2	1,538					1,607	Cost based on road inventory of 1,607 miles of road at a rate of \$1000/mile.
GualR-NCSW-23.1.4.3						0	Action is considered In-Kind
GualR-NCSW-23.1.4.4						0	Action is considered In-Kind
GualR-NCSW-24.1.1.1						TBD	Need additional analysis to estimate cost which will vary with drought frequency.
GualR-NCSW-24.1.1.2						0	Prioritizing existing funding mechanisms is not expected to add additional cost to the process.
GualR-NCSW-25.1.1.1						0	Action is considered In-Kind
GualR-NCSW-25.1.1.2	65.00					65	Cost based on stream flow/precipitation model at a rate of \$65,000/project.

Gualala River, Northern California Steelhead (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GualR-NCSW-25.1.1.3	3,850	3,850				7,700	Cost based on amount and type of incentives to provide to water diverters. Currently, existing programs exist and should be explored and expanded. Cost are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
GualR-NCSW-25.1.2.1						0	Cost accounted for in above action step for stream flow model.
GualR-NCSW-25.1.3.1						0	Action is considered In-Kind
GualR-NCSW-25.1.3.2						0	Cost accounted for in above action step for stream flow model.
GualR-NCSW-25.1.4.1						0	Action is considered In-Kind
GualR-NCSW-25.2.1.1						0	Action is considered In-Kind
GualR-NCSW-25.2.1.2						0	Action is considered In-Kind
GualR-NCSW-25.2.1.3						0	Action is considered In-Kind

Navarro River, Northern California Steelhead (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NvroR-NCSW-2.1.1.1	253.00					253	Cost based on treating 7 miles of High IP (assume 1 project per mile in 25% high IP) at a rate of \$36,000/mile.
NvroR-NCSW-2.1.1.2	1,584					1,584	Cost to evaluate existing passage database and plan restoration of culvert crossings on Hwy128. Cost to treat 8 crossings at a rate of \$198,000/crossing would total \$1,584,000. Costs should be lower if minor modifications are needed at each crossing.
NvroR-NCSW-3.1.1.1	32.50	32.50				65	Cost based on hydrologic model at a rate of \$65,000/project.
NvroR-NCSW-3.1.1.2	207					207	Estimated cost of assessment is \$207,000.
NvroR-NCSW-3.1.1.3						0	Action is considered In-Kind
NvroR-NCSW-3.1.1.4						0	Action is considered In-Kind
NvroR-NCSW-3.1.1.5	3.00					3	Cost for stream flow gauges estimated at \$1,000/gauge. Cost does not account for maintenance or data management.
NvroR-NCSW-3.1.1.6	65.00					65	Cost for stream flow model estimated at \$65,000/project.
NvroR-NCSW-3.1.1.7						TBD	Costs for acquisition of water rights and developing alternatives will need to be developed. Cost of water is reported to average 500 dollars or more per acre foot (Sunding and Zwane 2004).
NvroR-NCSW-3.1.1.8						TBD	Costs may be high in Anderson Valley.
NvroR-NCSW-3.1.1.9						0	Action is considered In-Kind
NvroR-NCSW-3.1.1.10						0	Action is considered In-Kind
NvroR-NCSW-3.1.1.11						TBD	
NvroR-NCSW-3.1.1.12						0	Action is considered In-Kind
NvroR-NCSW-3.1.1.13						0	Action is considered In-Kind
NvroR-NCSW-3.1.1.14						0	Need additional analysis to determine costs of upgrading and maintaining system. Action is considered In-Kind
NvroR-NCSW-3.1.2.1						0	Cost of development is in-kind.
NvroR-NCSW-3.1.2.2						0	Action is considered In-Kind
NvroR-NCSW-5.1.1.1	820	820				1,640	Cost based on treating 8 barriers in high IP at a rate of \$205,000/barrier. Cost may be less depending on updated database.
NvroR-NCSW-6.1.1.1	625	625				1,250	Cost based on treating 50 miles at a rate of \$25,000/mile. Based on an estimate of 50 miles in the next 10 years at 20k for high priority areas.
NvroR-NCSW-6.1.1.2						0	Action is considered In-Kind
NvroR-NCSW-6.1.1.3						0	Action is considered In-Kind
NvroR-NCSW-6.1.2.1						0	Cost accounted for in above action step.
NvroR-NCSW-6.1.3.1						0	Cost should be accounted for in increase LWD frequency and primary pools.
NvroR-NCSW-7.1.1.1	74.00					74	Cost based on riparian restoration monitoring/assessment at a rate of \$74,000/project
NvroR-NCSW-7.1.1.2	47.00	47.00				94	Cost based on treating 5 miles at a rate of \$19,000/mile.
NvroR-NCSW-7.1.1.3						0	Action is considered In-Kind
NvroR-NCSW-7.1.1.4	50.00					50	Cost based on estimate of 5 projects at 10k per project.
NvroR-NCSW-7.1.1.5	40.00	40.00				80	Cost based on treating 2 acres at a rate of \$40,000/acre.
NvroR-NCSW-7.1.1.6						0	Action is considered In-Kind
NvroR-NCSW-7.1.1.7						0	Action is considered In-Kind
NvroR-NCSW-7.1.2.1						0	Action is considered In-Kind
NvroR-NCSW-7.1.2.2						0	Cost accounted for in above action steps.
NvroR-NCSW-8.1.1.1	103.5	103.5				207	More information is needed for large projects such as large slides and landings. Cost estimated at \$3,000/acre. Cost of assessment estimated at \$207,000 and should be completed within the first ten years.
NvroR-NCSW-10.1.1.1						0	Action is considered In-Kind
NvroR-NCSW-10.1.1.2	20.00					20	Cost is only to determine site specific recommendations using existing data.
NvroR-NCSW-10.1.1.3	10	10				20	Total cost will vary with extent and type of plantings. Cost of assessment is likely low and estimated at \$20,000 and should be completed within the first 10 years.
NvroR-NCSW-10.1.1.4							
NvroR-NCSW-11.1.1.1						0	Efforts are currently underway and may be expanded in the future. Action is considered In-Kind
NvroR-NCSW-11.1.1.2						0	Cost accounted for in the monitoring chapter.
NvroR-NCSW-11.1.1.3						0	Cost accounted for in the monitoring chapter.
NvroR-NCSW-11.1.1.4						0	Type and effort of future population monitoring is not known. Cost likely accounted for in above action step.
NvroR-NCSW-11.1.1.5						0	Cost of a lifecycle station is accounted for in the monitoring chapter.
NvroR-NCSW-12.1.1.1	103.5	103.5				207	Estimated cost of assessment is \$207,000.
NvroR-NCSW-12.1.1.2	394.00	394.00				790	Cost base on road inventory of 550 miles (assume 25% of road network) estimated at \$1000/mile and sediment assessment (assume 10% of road network) estimated at \$1,400/mile.
NvroR-NCSW-12.1.1.3						0	Cost accounted for in above action step.
NvroR-NCSW-12.1.1.4						0	Action is considered In-Kind
NvroR-NCSW-12.1.1.5						TBD	Cost of implementing BMPs to agriculture producers is not known at this time. The cost BMPs for reducing sediment production, riparian protection, and water use will need to be determined.
NvroR-NCSW-12.1.2.1						0	Action is considered In-Kind
NvroR-NCSW-12.1.2.2	60.00					60	Additional staff time for RCDs and NRCS to conduct education programs for landowners.
NvroR-NCSW-12.1.2.3						0	Action is considered In-Kind
NvroR-NCSW-12.1.3.1						0	Cost is expected to minimal for agency staff to encourage restoration projects. Action is considered In-Kind
NvroR-NCSW-12.1.4.1						0	Action is considered In-Kind
NvroR-NCSW-12.2.1.1	103.5	103.5				207	Cost of implementing is unknown at this time. Estimated cost of assessment is \$207,000
NvroR-NCSW-12.2.1.2	16	16	16	16		65	Cost based on amount of critical low flow to restore for salmonids. Suggest conducting a hydrologic model at a rate of \$65,000/project.

Navarro River, Northern California Steelhead (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NvroR-NCSW-12.2.2.1						0	Action is considered In-Kind
NvroR-NCSW-12.2.2.2						0	Action is considered In-Kind
NvroR-NCSW-12.2.2.3						0	Action is considered In-Kind
NvroR-NCSW-16.1.1.1						0	Action is considered In-Kind
NvroR-NCSW-16.1.1.2						0	Action is considered In-Kind
NvroR-NCSW-16.1.1.3						0	Action is considered In-Kind
NvroR-NCSW-19.1.1.1						TBD	Will vary with specific tract and current market value.
NvroR-NCSW-19.1.1.2						TBD	Cost to acquire parcels cannot be determined at this time due to fluctuations in market value and rate of turnover.
NvroR-NCSW-19.1.1.3						TBD	Cost to acquire parcels cannot be determined at this time due to fluctuations in market value and rate of turnover.
NvroR-NCSW-19.1.2.1						0	Costs accounted for in roads and sediment actions.
NvroR-NCSW-19.1.2.2						0	Cost are accounted for in sediment reduction actions and roads actions.
NvroR-NCSW-19.1.2.3						0	These action occur now in CA THP process, therefore cost is expected to be minimal. Action is considered In-Kind
NvroR-NCSW-19.1.2.4						TBD	Additional cost of retaining trees is not known at this time. Landowners need to estimate timber volumes that would be lost.
NvroR-NCSW-19.1.3.1						TBD	Cost difficult to determine because of fair market value and rate of turnover.
NvroR-NCSW-19.1.3.2						0	Action is considered In-Kind
NvroR-NCSW-19.2.1.1						0	Action is considered In-Kind
NvroR-NCSW-19.2.1.2						0	Action is considered In-Kind
NvroR-NCSW-19.2.1.3						0	Action is considered In-Kind
NvroR-NCSW-19.2.1.4						0	Action is considered In-Kind
NvroR-NCSW-23.1.1.1	750	750				1,500	Cost based on upgrading 150 miles of riparian road network at a rate of \$10,000/mile.
NvroR-NCSW-23.1.1.2	1,000	1,000				2,000	Cost based on treating 200 miles of road at a rate of \$10,000/mile.
NvroR-NCSW-23.1.1.3						0	Cost accounted for in road and sediment assessment.
NvroR-NCSW-23.1.1.4						0	Action is considered In-Kind
NvroR-NCSW-23.1.1.5						0	Action is considered In-Kind
NvroR-NCSW-23.1.1.6	75.00	75.00	75.00	75.00		300	Cost based on decommissioning riparian road network at a rate of \$12,000/mile.
NvroR-NCSW-23.1.2.1						0	Action is considered in-kind
NvroR-NCSW-23.1.2.2	50.00					50	Cost based on annual training for certification of entities in Navarro watershed.
NvroR-NCSW-23.1.3.1	50.00					50	Rough estimate to develop database for Navarro watershed.
NvroR-NCSW-23.1.3.2						0	Action is considered In-Kind
NvroR-NCSW-23.1.4.1	150.00	150.00				300	Based on estimate for 3 projects per year and each would have an additional 10k in cost.
NvroR-NCSW-23.1.4.2	25.00	25.00				50	Cost estimate for maintaining database for the Navarro watershed for 10 years.
NvroR-NCSW-23.2.1.1						0	Action is considered in-kind
NvroR-NCSW-23.2.2.1	100.00					100	Estimate based on using existing data from various sources to develop road plan for the watershed.
NvroR-NCSW-24.1.1.1						TBD	TBD, cost based on amount of acquired water needed, fair market value, and rate of turnover.
NvroR-NCSW-24.1.1.2	5.42	5.42	5.42	5.42	5.42	65	An analysis of critical flow levels is needed to determine amount of water to determine extent of reduced in water consumption. Cost for hydrological model estimated at \$65,000/project. Reduction of consumptive uses of water will contribute to costs, but will vary with measure implemented and extent.
NvroR-NCSW-24.1.1.3						0	Action is considered In-Kind
NvroR-NCSW-24.1.1.4						0	Action is considered In-Kind
NvroR-NCSW-24.1.1.5						0	Action is considered In-Kind
NvroR-NCSW-24.1.1.6						TBD	Cost will depend on the number of willing sellers and costs of leasing or acquiring water rights in specific areas.
NvroR-NCSW-24.1.2.1	103.5	103.5				207	Cost of protecting high risk areas is unknown at this time. Cost estimated at a rate of \$3,000/acre. Cost of assessment of area and development of methods is estimated at \$207,000 and should be done within the first 10 years.
NvroR-NCSW-24.1.2.2						0	Action is considered In-Kind
NvroR-NCSW-24.1.2.3						0	Action is considered In-Kind
NvroR-NCSW-24.1.2.4						0	Action is considered In-Kind
NvroR-NCSW-24.1.2.5							
NvroR-NCSW-25.1.1.1						0	Action is considered In-Kind
NvroR-NCSW-25.1.1.2						0	Action is considered In-Kind
NvroR-NCSW-25.1.1.3						0	Action is considered In-Kind
NvroR-NCSW-25.1.1.4						0	Action is considered In-Kind

Brush Creek, Northern California Steelhead (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
BrC-NCSW-6.1.1.1						0	Action is considered In-Kind
BrC-NCSW-6.1.1.2	22.75	22.75	22.75	22.75		91	Cost based on treating 3.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
BrC-NCSW-6.1.1.3						0	Action is considered In-Kind
BrC-NCSW-8.1.1.1						TBD	Costs will vary on landowner participation and year to year variation in rainfall patterns.
BrC-NCSW-8.1.1.2						0	This should be considered a standard practice for all regulatory and oversight agencies. Action is considered In-Kind
BrC-NCSW-8.1.1.3						0	Cost accounted for in other action steps requiring road decommissioning.
BrC-NCSW-15.1.1.1						0	Action is considered In-Kind
BrC-NCSW-15.1.1.2						0	Cost of providing the plan is minimal. Action is considered In-Kind
BrC-NCSW-15.1.1.3						0	Action is considered In-Kind
BrC-NCSW-15.1.1.4						0	Action is considered In-Kind
BrC-NCSW-15.1.2.1						0	Action is considered In-Kind
BrC-NCSW-15.1.3.1						0	Action is considered In-Kind
BrC-NCSW-15.2.1.1						TBD	
BrC-NCSW-15.2.1.2						0	This should be considered business practice. Action is considered In-Kind
BrC-NCSW-15.2.1.3						0	Action is considered In-Kind
BrC-NCSW-15.2.2.1						0	Action is considered In-Kind
BrC-NCSW-15.2.2.2						0	Action is considered In-Kind
BrC-NCSW-16.1.1.1						0	Action is considered In-Kind
BrC-NCSW-16.1.1.2						0	Action is considered In-Kind
BrC-NCSW-19.1.1.1						0	Action is considered In-Kind
BrC-NCSW-19.1.2.1						0	Action is considered In-Kind
BrC-NCSW-19.1.2.2						TBD	Costs will vary depending on landowner participation and site specific needs. This strategy can be implemented at relatively little costs in areas zoned for timber production as a component of future harvest plans. Estimate for riparian thinning is \$1,500/acre.
BrC-NCSW-19.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
BrC-NCSW-19.1.3.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
BrC-NCSW-19.1.3.3						0	Action is considered In-Kind
BrC-NCSW-19.1.4.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
BrC-NCSW-19.1.5.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
BrC-NCSW-19.1.5.2						0	Action is considered In-Kind
BrC-NCSW-19.1.6.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
BrC-NCSW-19.1.6.2						0	Action is considered In-Kind
BrC-NCSW-19.1.6.3							
BrC-NCSW-19.2.1.1						0	Action is considered In-Kind
BrC-NCSW-19.2.1.2						0	Action is considered In-Kind
BrC-NCSW-19.2.1.3						0	Action is considered In-Kind
BrC-NCSW-19.2.1.4						0	Action is considered In-Kind
BrC-NCSW-23.1.1.1						0	Action is considered In-Kind
BrC-NCSW-23.1.1.2						0	Action is considered In-Kind
BrC-NCSW-23.1.1.3	5	5	5	5	5	23	Cost based on \$15,000/mile to decommission 1.5 miles of riparian roads.
BrC-NCSW-23.1.2.1						TBD	Cost will vary with number of crossings and methods of replacement or retrofit.
BrC-NCSW-23.1.2.2						0	Action is considered In-Kind
BrC-NCSW-23.1.3.1						0	Action is considered in-kind
BrC-NCSW-23.1.4.1	103.5	103.5				207	Cost will vary depending on the number of culvert upgrades on the road network and the maintenance requirements and accessibility. An inventory of the culvert system is necessary before costs can be estimated. Cost of assessment is estimated at 207,000 and should be completed within the first 10 years.
BrC-NCSW-23.1.4.2						0	Action is considered in-kind
BrC-NCSW-23.2.1.1	18.00	18.00				36	Cost based on decommissioning 3 miles of road at a rate of \$12,000/mile.
BrC-NCSW-23.2.1.2						0	Action is considered In-Kind
BrC-NCSW-23.2.1.3						0	This should be considered a standard road management practice for all landowners. Action is considered In-Kind
BrC-NCSW-23.2.1.4						0	This is a cost that is frequently absorbed into new road projects and should be considered a standard practice. Action is considered In-Kind
BrC-NCSW-23.2.1.5						0	These practices should be adopted as part of future road actions and maintenance practices.
BrC-NCSW-23.2.1.6						0	This recommendation may involve increased intra-watershed coordination among the landowners (locking and installing gates, etc.). Cost accounted for in road inventory.
BrC-NCSW-25.1.1.1						0	Action is considered In-Kind
BrC-NCSW-25.1.1.2						0	Currently, incentive programs exist and should be explored and expanded upon.
BrC-NCSW-25.1.1.3						0	Action is considered In-Kind
BrC-NCSW-25.1.2.1						0	Action is considered In-Kind
BrC-NCSW-25.2.1.1						0	Action is considered In-Kind
BrC-NCSW-25.2.1.2						0	Action is considered In-Kind
BrC-NCSW-25.2.1.3						0	Action is considered In-Kind

Elk Creek, Northern California Steelhead (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ElkC-NCSW-6.1.1.1						0	Action is considered In-Kind
ElkC-NCSW-6.1.1.2	29.25	29.25	29.25	29.25		117	Cost based on treating 4.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
ElkC-NCSW-6.1.1.3						0	Action is considered In-Kind
ElkC-NCSW-8.1.1.1	103.5	103.5				207	Total costs will vary on landowner participation and year to year variation in rainfall patterns. Cost of assessment is estimated at 207,000 and should be done within the first 10 years.
ElkC-NCSW-8.1.1.2						0	This should be considered a standard practice for all regulatory and oversight agencies. Action is considered In-Kind
ElkC-NCSW-8.1.1.3	36.00	36.00				72	Cost based on decommissioning 6 miles of riparian road network at a rate of \$12,000/mile.
ElkC-NCSW-15.1.1.1						0	Action is considered In-Kind
ElkC-NCSW-15.1.1.2						0	Action is considered In-Kind
ElkC-NCSW-15.1.1.3						0	Action is considered In-Kind
ElkC-NCSW-15.1.1.4						0	Action is considered In-Kind
ElkC-NCSW-15.1.2.1						0	Action is considered In-Kind
ElkC-NCSW-15.1.3.1						0	Action is considered In-Kind
ElkC-NCSW-15.2.1.1						0	Action is considered In-Kind
ElkC-NCSW-15.2.1.2						0	This should be considered a standard practice. Action is considered In-Kind
ElkC-NCSW-15.2.1.3						0	Action is considered In-Kind
ElkC-NCSW-15.2.2.1						0	Action is considered In-Kind
ElkC-NCSW-16.1.1.1						0	
ElkC-NCSW-19.1.1.1						0	Action is considered In-Kind
ElkC-NCSW-19.1.2.1						0	Action is considered In-Kind
ElkC-NCSW-19.1.2.2						0	Costs will vary depending on landowner participation and site specific needs. This strategy can be implemented at relatively little costs in areas zoned for timber production as a component of future harvest plans. Action is considered In-Kind
ElkC-NCSW-19.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
ElkC-NCSW-19.1.3.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
ElkC-NCSW-19.1.3.3						0	Action is considered In-Kind
ElkC-NCSW-19.1.4.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
ElkC-NCSW-19.1.5.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
ElkC-NCSW-19.1.5.2						0	Action is considered In-Kind
ElkC-NCSW-19.1.6.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
ElkC-NCSW-19.1.6.2						0	Action is considered In-Kind
ElkC-NCSW-19.1.6.3							
ElkC-NCSW-19.2.1.1						0	Action is considered In-Kind
ElkC-NCSW-19.2.1.2						0	Action is considered In-Kind
ElkC-NCSW-19.2.1.3						0	Action is considered In-Kind
ElkC-NCSW-19.2.1.4						0	Action is considered In-Kind
ElkC-NCSW-23.1.1.1						0	Action is considered In-Kind
ElkC-NCSW-23.1.1.2						0	Action is considered In-Kind
ElkC-NCSW-23.1.1.3	24.00	24.00	24.00			72	Cost based on decommissioning 6 miles of riparian road network at a rate of \$12,000/mile.
ElkC-NCSW-23.1.2.1						0	Action is considered In-Kind
ElkC-NCSW-23.1.2.2						TBD	Cost will vary with number of crossings and methods of replacement or retrofit.
ElkC-NCSW-23.2.1.1	3.60	3.60	3.60	3.60	3.60	72	Cost based on decommissioning 6 miles of road network at a rate of \$12,000/mile.
ElkC-NCSW-23.2.1.2						0	Action is considered In-Kind
ElkC-NCSW-23.2.1.3						0	This should be considered a standard road management practice for all landowners. Action is considered In-Kind
ElkC-NCSW-23.2.1.4						0	This is a cost that is frequently absorbed into new road projects and should be considered a standard practice. Action is considered In-Kind
ElkC-NCSW-23.2.1.5						0	These practices should be adopted as part of future road actions and maintenance practices. Action is considered in-kind.
ElkC-NCSW-23.2.1.6						0	Cost likely accounted for in road inventory.
ElkC-NCSW-25.1.1.1						0	Action is considered In-Kind
ElkC-NCSW-25.1.1.2						0	Action is considered In-Kind

Schooner Gulch, Northern California Steelhead (Central Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SchG-NCSW-6.1.1.1						0	Action is considered In-Kind
SchG-NCSW-6.1.1.2	13.00	13.00				26	Cost based on treating 0.8 miles (assume 1 project /mile in 25% high IP) at a rate of \$26,000/mile.
SchG-NCSW-6.1.1.3						0	Action is considered In-Kind
SchG-NCSW-8.1.1.1	103.5	103.5				207	Total costs will vary on landowner participation and year to year variation in rainfall patterns. Cost of assessment is estimated at \$207,000 and should be completed within the first 10 years.
SchG-NCSW-8.1.1.2						0	This should be considered a standard practice for all regulatory and oversight agencies. Action is considered In-Kind
SchG-NCSW-8.1.1.3						0	Cost accounted for in ROADS/RAILROADS
SchG-NCSW-15.1.1.1						0	This recommendation should be considered a standard practice and considered in-kind. Implementing erosion control measures when constructing firebreaks (if possible) or shortly thereafter will likely result in a net cost savings. It is much more financially efficient to implement these measures while the fire crews are present rather than months later after the fire is out.
SchG-NCSW-15.1.1.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
SchG-NCSW-15.1.1.3						0	Action is considered In-Kind
SchG-NCSW-15.1.2.1						0	Action is considered In-Kind
SchG-NCSW-15.2.1.1						0	Action is considered In-Kind
SchG-NCSW-15.2.1.2						0	Cost of providing the plan is minimal. Action is considered In-Kind
SchG-NCSW-15.2.1.3						0	Action is considered In-Kind
SchG-NCSW-15.2.1.4						0	Action is considered In-Kind
SchG-NCSW-15.2.2.1						0	Action is considered In-Kind
SchG-NCSW-15.2.3.1						0	Action is considered In-Kind
SchG-NCSW-19.1.1.1						0	Action is considered In-Kind
SchG-NCSW-19.1.2.1						0	Action is considered In-Kind
SchG-NCSW-19.1.2.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
SchG-NCSW-19.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
SchG-NCSW-19.1.3.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
SchG-NCSW-19.1.3.3						0	Action is considered In-Kind
SchG-NCSW-19.1.4.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
SchG-NCSW-19.1.5.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
SchG-NCSW-19.1.5.2						0	Action is considered In-Kind
SchG-NCSW-19.1.6.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
SchG-NCSW-19.1.6.2						0	Action is considered In-Kind
SchG-NCSW-19.1.6.3							
SchG-NCSW-19.2.1.1						0	Action is considered In-Kind
SchG-NCSW-19.2.1.2						0	Action is considered In-Kind
SchG-NCSW-19.2.1.3						0	Action is considered In-Kind
SchG-NCSW-19.2.1.4						0	Action is considered In-Kind
SchG-NCSW-23.1.1.1						TBD	Cost are likely to be minimal part of road maintenance.
SchG-NCSW-23.1.1.2						0	Action is considered In-Kind
SchG-NCSW-23.1.1.3	1.70	1.70	1.70	1.70	1.70	17	Cost based on decommissioning 1.4 miles of riparian road at a rate of \$12,000/mile.
SchG-NCSW-23.1.2.1						0	Action is considered In-Kind
SchG-NCSW-23.1.2.2						TBD	Cost will vary with number of crossings and methods of replacement or retrofit.
SchG-NCSW-23.2.1.1	8.50	8.50				17	Cost based on decommissioning 1.4 miles of road at a rate of \$12,000/mile.
SchG-NCSW-23.2.1.2						0	Action is considered In-Kind
SchG-NCSW-23.2.1.3						0	This should be considered a standard road management practice for all landowners. Action is considered In-Kind
SchG-NCSW-23.2.1.4						0	This is a cost that is frequently absorbed into new road projects and should be considered a standard practice. Action is considered In-Kind
SchG-NCSW-23.2.1.5						0	These practices should be adopted as part of future road actions and maintenance practices. Action is considered in-kind
SchG-NCSW-23.2.1.6						TBD	Cost likely accounted for in road inventory.
SchG-NCSW-25.1.1.1						0	Action is considered In-Kind
SchG-NCSW-25.1.1.2						0	Action is considered In-Kind

Central California Coast Steelhead DPS Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DPS-CCCS-1.1.1.1						TBD	Cost is dependent on the infrastructure and fill to be removed
DPS-CCCS-1.1.1.2						0	Action is considered In-Kind
DPS-CCCS-1.2.1.1						0	Action is considered In-Kind
DPS-CCCS-1.2.1.2						0	Action is considered In-Kind
DPS-CCCS-2.1.1.1						TBD	In-Kind for the evaluation, TBD for the implementation of the plan
DPS-CCCS-2.2.1.1						0	Action is considered In-Kind
DPS-CCCS-3.1.1.1						0	Action is considered In-Kind
DPS-CCCS-3.1.1.2						0	Action is considered In-Kind
DPS-CCCS-3.1.1.3						0	Action is considered In-Kind
DPS-CCCS-3.1.1.4						0	Action is considered In-Kind
DPS-CCCS-3.1.1.5						TBD	Costs for implementing this action will depend on the number, location and duration of gages across the ESU and DPS. See also Monitoring Chapter.
DPS-CCCS-3.1.1.6						0	Implementation costs should be covered under existing laws or should be the responsibility of the entity that owns the diversion.
DPS-CCCS-3.1.1.7						TBD	
DPS-CCCS-3.1.1.8						TBD	Some of this would be In-Kind
DPS-CCCS-3.1.1.9						0	Action is considered In-Kind
DPS-CCCS-3.1.1.10						TBD	
DPS-CCCS-3.1.1.11						0	Action is considered In-Kind
DPS-CCCS-3.1.1.12						0	Action is considered In-Kind
DPS-CCCS-3.2.1.1						0	Action is In-Kind
DPS-CCCS-3.2.1.2						0	Action is In-Kind
DPS-CCCS-3.2.1.3						0	Action is In-Kind
DPS-CCCS-3.2.1.4						0	Action is considered In-Kind
DPS-CCCS-3.2.1.5						0	Action is considered In-Kind
DPS-CCCS-3.2.1.6						0	Action is considered In-Kind
DPS-CCCS-3.2.1.7						0	Action is considered In-Kind
DPS-CCCS-3.2.1.8						TBD	
DPS-CCCS-3.2.1.9						0	Action is considered In-Kind
DPS-CCCS-5.1.1.1						TBD	
DPS-CCCS-5.1.1.2						0	The data that is collected is often part of another survey and is forwarded to CDFW. CDFW maintenance of the database is considered In-Kind
DPS-CCCS-6.2.1.1						0	Action is considered In-Kind
DPS-CCCS-6.2.1.2						0	Action is considered In-Kind
DPS-CCCS-6.2.1.3						0	Action is considered In-Kind
DPS-CCCS-6.2.1.4						0	Action is considered In-Kind
DPS-CCCS-6.2.1.5						TBD	
DPS-CCCS-6.2.1.6						0	Action is considered In-Kind
DPS-CCCS-6.2.1.7						0	Action is considered In-Kind
DPS-CCCS-6.2.1.8						TBD	
DPS-CCCS-7.1.1.1						0	Action is considered In-Kind
DPS-CCCS-7.1.1.2						0	Action is considered In-Kind
DPS-CCCS-7.1.1.3						0	Action is considered In-Kind
DPS-CCCS-8.1.1.1						TBD	
DPS-CCCS-8.1.1.2						TBD	
DPS-CCCS-10.1.1.1						0	Action is considered In-Kind
DPS-CCCS-10.1.1.2						0	Action is considered In-Kind
DPS-CCCS-10.1.1.3						0	Action is considered In-Kind
DPS-CCCS-10.1.1.4						0	Action is considered In-Kind
DPS-CCCS-10.1.1.5						0	Action is considered In-Kind
DPS-CCCS-10.1.1.6						0	Action is considered In-Kind
DPS-CCCS-10.1.1.7						0	Action is considered In-Kind
DPS-CCCS-10.1.1.8						0	Action is considered In-Kind
DPS-CCCS-10.1.1.9						0	Action should be considered standard practice and is in-kind
DPS-CCCS-10.1.1.10						TBD	Cost will based on feasible recommendations to research and treat pathogens.
DPS-CCCS-10.1.2.1						0	Action is considered In-Kind
DPS-CCCS-10.2.1.1						0	Action is considered In-Kind
DPS-CCCS-11.1.1.1						TBD	
DPS-CCCS-11.1.1.2						0	Action is considered In-Kind
DPS-CCCS-11.1.1.3						0	Action is considered In-Kind
DPS-CCCS-11.1.1.4						TBD	
DPS-CCCS-11.1.1.5						TBD	
DPS-CCCS-11.1.1.6						TBD	

Central California Coast Steelhead DPS Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DPS-CCCS-11.1.1.7						0	Action is considered In-Kind
DPS-CCCS-11.2.1.1						TBD	
DPS-CCCS-11.2.1.2						0	Cost estimates for these types of monitoring would be included in the total cost of individual restoration actions (see recovery actions). Action is considered in-kind.
DPS-CCCS-11.2.1.3						TBD	
DPS-CCCS-11.2.1.4						TBD	
DPS-CCCS-11.2.1.5						TBD	Temperature data loggers (e.g., Onset HOBO v2 Data Loggers) cost approximately \$130 per unit. Cost estimates per population would depend on the size of the watershed and number of units needed within each watershed. Also, cost for data management and analysis would need to be considered.
DPS-CCCS-11.2.1.6						TBD	
DPS-CCCS-11.2.1.7						TBD	
DPS-CCCS-11.2.1.8						TBD	
DPS-CCCS-11.3.1.1						99,000	Cost estimates likely to be higher with greater sampling effort. However, costs of spawning ground surveys will be shared across species for populations with multiple species (including coho salmon).
DPS-CCCS-11.3.1.2						TBD	Annual cost estimate is based on 1 LCM per diversity stratum in a large watershed. Annual cost estimates for LCM station monitoring could range from \$819,000 (1 LCM per diversity stratum in a small watershed) to \$3,696,000 (2 LCMs per diversity stratum in large watersheds). Final costs will depend on watershed size and number of LCMs per stratum. See the Monitoring and Adaptive Management Chapter in Volume 1 of the Multi-Species Recovery Plan for additional information on LCM cost estimates.
DPS-CCCS-11.3.1.3						9,000	Cost estimates are for 50 years of implementation. Annual cost estimate for juvenile spatial distribution, abundance and diversity would cost approximately \$2,000 per reach. This estimate assumes a 10% sampling effort of the IP-km.
DPS-CCCS-11.3.1.4						TBD	Costs will be determined at a later date.
DPS-CCCS-11.3.1.5						0	Action is considered in-kind.
DPS-CCCS-11.3.1.6						0	Action is considered in-kind.
DPS-CCCS-11.3.2.1						TBD	
DPS-CCCS-11.3.2.2						0	Action is considered in-kind.
DPS-CCCS-11.3.2.3						0	Action is considered in-kind.
DPS-CCCS-11.3.2.4						0	Action is considered in-kind.
DPS-CCCS-11.4.1.1						TBD	Cost estimates for mortality rates would require further study and estimates of costs for these studies are unknown at this time. These would depend on the extent (severity and distribution) of the pathogens.
DPS-CCCS-11.4.1.2						TBD	
DPS-CCCS-11.4.1.3						0	Action is considered in-kind.
DPS-CCCS-11.4.1.4						0	Action is considered in-kind.
DPS-CCCS-11.4.1.5						0	Action is considered in-kind.
DPS-CCCS-11.4.1.6						TBD	
DPS-CCCS-11.5.1.1						0	Action is considered in-kind.
DPS-CCCS-11.5.1.2						0	Action is considered in-kind.
DPS-CCCS-11.5.1.3						TBD	
DPS-CCCS-11.5.1.4						0	Action is considered in-kind.
DPS-CCCS-11.6.1.1						TBD	
DPS-CCCS-11.6.1.2						0	Action is considered in-kind.
DPS-CCCS-11.6.1.3						0	Action is considered in-kind.
DPS-CCCS-12.1.1.1						TBD	
DPS-CCCS-12.1.1.2						0	Action is considered In-Kind
DPS-CCCS-12.1.1.3						0	In-Kind to develop the program, TBD depending on what incentives are provided
DPS-CCCS-12.1.1.4						0	In-Kind, should be considered standard practice, but implementation is ultimately up to the landowner
DPS-CCCS-12.1.2.1						0	Action is considered In-Kind
DPS-CCCS-12.1.2.2						0	Action is considered In-Kind
DPS-CCCS-12.1.2.3						TBD	
DPS-CCCS-12.1.2.4						0	Action is considered In-Kind
DPS-CCCS-12.2.1.1						0	Action is considered In-Kind
DPS-CCCS-12.2.1.2						0	Action is considered In-Kind
DPS-CCCS-12.2.1.3						0	Action is considered In-Kind
DPS-CCCS-12.2.1.4						0	Action is considered In-Kind
DPS-CCCS-12.2.1.5						0	Action is considered In-Kind
DPS-CCCS-12.2.2.1						0	Action is considered In-Kind
DPS-CCCS-13.1.1.1						TBD	
DPS-CCCS-13.1.1.2						TBD	
DPS-CCCS-13.1.1.3						TBD	
DPS-CCCS-13.1.1.4						TBD	
DPS-CCCS-13.2.1.1						0	Action is considered In-Kind
DPS-CCCS-13.2.1.2						0	Action is considered In-Kind
DPS-CCCS-14.1.1.1						TBD	

Central California Coast Steelhead DPS Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DPS-CCCS-14.1.1.2						TBD	See Monitoring Chapter
DPS-CCCS-14.1.1.3						0	Action is considered In-Kind
DPS-CCCS-14.1.1.4						0	Action is considered In-Kind
DPS-CCCS-14.1.1.5						0	Action is considered In-Kind
DPS-CCCS-14.1.1.6						0	Action is considered In-Kind
DPS-CCCS-14.1.1.7						TBD	
DPS-CCCS-15.1.1.1						0	Action is considered In-Kind
DPS-CCCS-15.1.1.2						0	Action is considered In-Kind
DPS-CCCS-15.1.1.3						0	Action is considered In-Kind
DPS-CCCS-15.1.1.4						0	Action is considered In-Kind
DPS-CCCS-15.1.1.5						0	Action is considered In-Kind
DPS-CCCS-15.1.2.1						0	Action is considered In-Kind
DPS-CCCS-15.1.2.2						0	Action is considered In-Kind
DPS-CCCS-15.1.3.1						TBD	
DPS-CCCS-16.1.1.1						0	Action is considered In-Kind
DPS-CCCS-16.1.1.2						0	Action is considered In-Kind
DPS-CCCS-16.1.1.3						0	Action is considered In-Kind
DPS-CCCS-16.1.1.4						0	Action is considered In-Kind
DPS-CCCS-16.1.1.5						0	Action is considered In-Kind
DPS-CCCS-16.1.1.6						TBD	Example: Oregon DFW holds a drawing each year for anglers that return their salmon/steelhead/sturgeon/halibut harvest cards before the pre-determined date. Prizes are substantial, typically including a drift boat etc.
DPS-CCCS-16.1.1.7						0	Action is considered In-Kind
DPS-CCCS-16.1.1.8						0	Action is considered In-Kind
DPS-CCCS-16.1.1.9						TBD	
DPS-CCCS-16.1.1.10						0	Action is considered In-Kind
DPS-CCCS-17.1.1.1						0	Action is considered In-Kind
DPS-CCCS-17.1.1.2						TBD	
DPS-CCCS-17.1.1.3						TBD	
DPS-CCCS-18.1.1.1						TBD	
DPS-CCCS-18.1.1.2						0	Action is considered In-Kind
DPS-CCCS-18.1.1.3						0	Action is considered In-Kind
DPS-CCCS-18.1.1.4						0	
DPS-CCCS-18.1.1.5						TBD	
DPS-CCCS-18.1.2.1						TBD	
DPS-CCCS-18.1.2.2						TBD	
DPS-CCCS-19.1.1.1						0	Action is considered In-Kind
DPS-CCCS-19.1.1.2						0	Action is considered In-Kind
DPS-CCCS-19.1.1.3						0	Action is considered In-Kind
DPS-CCCS-19.1.1.4						TBD	
DPS-CCCS-19.2.1.1						0	Action is considered In-Kind
DPS-CCCS-19.2.1.2						0	Action is considered In-Kind
DPS-CCCS-19.2.1.3						0	Action is considered In-Kind
DPS-CCCS-19.2.1.4						0	Action is considered In-Kind
DPS-CCCS-19.2.1.5						TBD	
DPS-CCCS-20.1.1.1						TBD	
DPS-CCCS-20.1.1.2						TBD	
DPS-CCCS-20.2.1.1						0	Action is considered In-Kind
DPS-CCCS-20.2.1.2						0	Action is considered In-Kind
DPS-CCCS-20.2.1.3						0	Action is considered In-Kind
DPS-CCCS-21.1.1.1						0	Action is considered In-Kind
DPS-CCCS-22.1.1.1						0	Action is considered In-Kind
DPS-CCCS-22.1.2.1						0	Action is considered In-Kind
DPS-CCCS-22.1.2.2						0	Action is considered In-Kind
DPS-CCCS-22.2.1.1						0	Action is considered In-Kind
DPS-CCCS-22.2.1.2						0	Action is considered In-Kind
DPS-CCCS-22.2.1.3						0	Action is considered In-Kind
DPS-CCCS-22.2.2.1						0	Action is considered In-Kind
DPS-CCCS-22.2.2.2						0	Action is considered In-Kind
DPS-CCCS-22.2.2.3						TBD	Price depends on the type of incentive provided
DPS-CCCS-22.2.2.4						0	Action is considered In-Kind
DPS-CCCS-22.2.2.5						0	Action is considered In-Kind

Central California Coast Steelhead DPS Level Recovery Actions Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DPS-CCCS-23.1.1.1						0	For roads subject to the California Forest Practices Rules, this action is considered In-Kind."
DPS-CCCS-23.1.1.2						0	This action is consistent with requirements in California Forest Practices Rules at 14 CCR §§ 923 - 923.9.1. Action is considered In-Kind.
DPS-CCCS-23.1.1.3						0	This action is consistent with requirements in California Forest Practices Rules at 14 CCR §§ 923 - 923.9.1. Action is considered In-Kind.
DPS-CCCS-23.1.1.4						0	Action is considered In-Kind
DPS-CCCS-23.1.1.5						0	Action is considered In-Kind
DPS-CCCS-23.1.1.6						TBD	
DPS-CCCS-23.1.2.1						0	Action is considered In-Kind
DPS-CCCS-23.1.2.2						0	Action is considered In-Kind
DPS-CCCS-23.1.2.3						TBD	
DPS-CCCS-23.1.3.1						TBD	
DPS-CCCS-23.2.1.1						0	Action is considered In-Kind
DPS-CCCS-23.2.1.2						0	Action is considered In-Kind
DPS-CCCS-24.1.1.1						0	Action is considered In-Kind
DPS-CCCS-24.1.1.2						TBD	
DPS-CCCS-24.1.1.3						TBD	
DPS-CCCS-24.1.1.4						0	Action is considered In-Kind
DPS-CCCS-24.1.1.5						0	Action is considered In-Kind
DPS-CCCS-24.1.1.6						TBD	
DPS-CCCS-24.1.1.7						0	Action is considered In-Kind
DPS-CCCS-24.1.1.8						TBD	
DPS-CCCS-24.1.1.9						TBD	
DPS-CCCS-24.1.2.1						TBD	
DPS-CCCS-25.1.1.1						0	Action is considered In-Kind
DPS-CCCS-25.1.1.2						0	
DPS-CCCS-25.1.1.3						0	Action is considered In-Kind
DPS-CCCS-25.1.1.4						0	Action is considered In-Kind
DPS-CCCS-25.1.1.5						0	Action is considered In-Kind
DPS-CCCS-25.1.1.6						0	Action is considered In-Kind
DPS-CCCS-25.1.1.7						0	Action is considered In-Kind
DPS-CCCS-25.1.1.8						0	Action is considered In-Kind
DPS-CCCS-25.1.1.9						0	Action is considered In-Kind
DPS-CCCS-25.2.1.1						0	Action is considered In-Kind
DPS-CCCS-25.2.1.2						0	Action is considered In-Kind
DPS-CCCS-25.2.1.3						0	Action is considered In-Kind
DPS-CCCS-25.2.1.4						0	Action is considered In-Kind
DPS-CCCS-25.2.1.5						0	Action is considered In-Kind
DPS-CCCS-25.2.1.6						0	Action is considered In-Kind
DPS-CCCS-25.2.1.7						0	Action is considered In-Kind
DPS-CCCS-25.2.1.8						0	Action is considered In-Kind
DPS-CCCS-25.2.1.9						0	Action is considered In-Kind
DPS-CCCS-25.2.1.10						0	Action is considered In-Kind
DPS-CCCS-25.2.2.1						TBD	
DPS-CCCS-25.2.2.2						TBD	

Austin Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
AuC-CCCS-1.1.1.1	283.00					283	Cost based on estuary use/residence time at a rate of \$283,000/project
AuC-CCCS-5.1.1.1	533	533				1,066	Cost based on providing passage at 2 barriers at a rate of \$533,000/project.
AuC-CCCS-5.1.1.2	32					0	Action is considered In-Kind
AuC-CCCS-5.1.2.1	115.00					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
AuC-CCCS-5.1.2.2	224.00					224	Cost based on adult escapement and juvenile migration monitoring at a rate of \$36,000 and \$188,000/project, respectively.
AuC-CCCS-6.1.1.1	117.00	117.00				234	Cost based on treating 9 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
AuC-CCCS-6.1.1.2						0	Cost accounted for in above action step.
AuC-CCCS-6.1.2.1	117.00	117.00				234	Cost based on treating 9 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
AuC-CCCS-6.1.3.1						0	Cost accounted for in above action steps.
AuC-CCCS-7.1.1.1	32.80	32.80				66	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
AuC-CCCS-7.1.1.2	166	166				331	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
AuC-CCCS-7.1.2.1						0	Cost accounted for in above action step.
AuC-CCCS-7.1.2.2						0	Action is considered In-Kind
AuC-CCCS-7.1.2.3	33.50	33.50				67	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
AuC-CCCS-8.1.1.1						0	Cost to reduce embeddedness levels associated with other action steps.
AuC-CCCS-8.1.1.2	28.50	28.50				57	Cost based on erosion assessment for 4,482 acres (assume 10% of total watershed acres) at a rate of \$13/acre.
AuC-CCCS-10.1.1.1						0	Cost accounted for in other action steps.
AuC-CCCS-11.1.1.1	38.00	38.00				76	Cost based on treating 38 miles (assume 1 project/mile in 10% high IP) at a rate of \$2,000/mile.
AuC-CCCS-11.1.1.2						0	Cost accounted for in the Monitoring Chapter.
AuC-CCCS-11.1.1.3						0	Cost accounted for in the Monitoring Chapter.
AuC-CCCS-11.1.1.4						0	Cost accounted for in the Monitoring Chapter.
AuC-CCCS-11.1.1.5						0	Action is considered In-Kind
AuC-CCCS-11.1.1.6						0	Cost accounted for in the Monitoring Chapter.
AuC-CCCS-11.1.1.7						0	Action is considered In-Kind
AuC-CCCS-12.1.1.1						0	Cost accounted for in ROADS
AuC-CCCS-12.1.1.2						0	Action is considered In-Kind
AuC-CCCS-12.1.1.3						0	Action is considered In-Kind
AuC-CCCS-12.1.1.4	50.00	50.00				100	Cost of completing Farm Conservation Plan estimated at approximately \$50,000 per plan.
AuC-CCCS-12.1.1.5						0	Cost will likely be low if CDFW effectiveness monitoring protocols are used. Action is considered In-Kind
AuC-CCCS-12.1.1.6						0	Action is considered In-Kind
AuC-CCCS-12.1.1.7						0	Action is considered In-Kind
AuC-CCCS-12.1.1.8						0	Action is considered In-Kind
AuC-CCCS-12.1.1.9						0	Action is considered In-Kind
AuC-CCCS-12.1.1.10						0	Action is considered In-Kind
AuC-CCCS-12.1.2.1						0	Action is considered In-Kind
AuC-CCCS-12.1.2.2						TBD	Cost based on amount and type of easements needed to enhance natural riparian communities, fair market value, and landowner participation.
AuC-CCCS-12.1.2.3						0	Action is considered In-Kind
AuC-CCCS-12.1.3.1						0	Action is considered In-Kind
AuC-CCCS-12.1.4.1	25	25				50	Cost based on number of off-channel storage stations needed. Cost estimate for 10 storage site is \$5,000/site for at total of \$50,000.
AuC-CCCS-12.1.4.2						TBD	
AuC-CCCS-12.2.1.1						0	Action is considered In-Kind
AuC-CCCS-12.2.1.2						0	Action is considered In-Kind
AuC-CCCS-12.2.1.3						0	Action is considered In-Kind
AuC-CCCS-12.2.1.4						TBD	
AuC-CCCS-12.2.1.5						0	Streamlining permit processing is not expected to cost much, and may save money through future efficiencies. Action is considered In-Kind
AuC-CCCS-12.2.1.6						0	Soliciting cooperation not expected to cost much outside of already existing federal and state and local salaries. Action is considered In-Kind
AuC-CCCS-13.1.1.1	57.50	57.50				115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
AuC-CCCS-13.1.1.2						0	Action is considered In-Kind
AuC-CCCS-13.1.1.3						0	Action is considered In-Kind
AuC-CCCS-13.1.2.1	71	71	71	71		282	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
AuC-CCCS-13.1.2.2	143.50	143.50				287	Cost based on riparian and wetland restoration model at a rate of \$74,000 and \$213,000/project, respectively.
AuC-CCCS-13.1.2.3						0	Action is considered In-Kind
AuC-CCCS-13.2.1.1						0	Action is considered In-Kind
AuC-CCCS-13.2.1.2						0	Action is considered In-Kind
AuC-CCCS-13.2.1.3						0	Action is considered In-Kind
AuC-CCCS-13.2.1.4						0	Action is considered In-Kind
AuC-CCCS-18.1.1.1						TBD	Cost based on participation of landowners and amount of riparian exclusion fencing needed. Cost estimate for riparian exclusion fence is \$4/ft.
AuC-CCCS-18.1.1.2						TBD	Cost based on amount of area to be restored. Cost estimate for riparian restoration is \$75,000/ acre.
AuC-CCCS-18.1.1.3						0	Action is considered In-Kind because there would not be any new land acquired, only a new strategy
AuC-CCCS-18.1.1.4						0	Action is considered In-Kind

Austin Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
AuC-CCCS-18.1.2.1	8.3	8.3	8.3	8.3	8.3	50	Cost based on participation of landowners. Cost estimate for 10 offstream water sources estimate is \$5,000/site for a total of \$50,000
AuC-CCCS-18.1.2.2						TBD	This action step should be coordinated with riparian restoration and fencing activities identified in above action steps.
AuC-CCCS-18.1.2.3						0	Action is considered In-Kind
AuC-CCCS-18.1.2.4						0	Action is considered In-Kind
AuC-CCCS-19.1.1.1						0	Recruitment of LWD to the stream is critical. Action is considered In-Kind
AuC-CCCS-19.1.1.2						TBD	Cost based on fair market value and land turnover.
AuC-CCCS-19.1.1.3						0	Action is considered In-Kind
AuC-CCCS-19.1.2.1	100.00					100	Costs of a road sediment reduction plan are estimated at \$100,000/plan.
AuC-CCCS-19.1.2.2						0	This action step should be considered standard practice. Action is considered In-Kind
AuC-CCCS-19.2.1.1						0	Cost is minimal because NMFS/CDFW already participate in meetings the Board of Forestry. Action is considered In-Kind
AuC-CCCS-19.2.1.2						0	Action is considered In-Kind
AuC-CCCS-19.2.1.3						0	Action is considered In-Kind
AuC-CCCS-20.1.1.1	86.3	86.3	86.3	86.3		345	Cost based on appropriate measures needed to improve passage. Cost fish/habitat restoration model estimate of \$115,000/project and we estimated that 3 projects are needed for a total of \$345,000.
AuC-CCCS-20.1.1.2						0	Action is considered In-Kind
AuC-CCCS-20.1.1.3						0	Action is considered In-Kind
AuC-CCCS-20.1.1.4						0	Action is considered In-Kind
AuC-CCCS-20.1.2.1	260.00					260	Cost based on treating 10 mile at a rate of \$26,000/mile. If ELJ is used, estimate rate is \$104,000/ELJ.
AuC-CCCS-20.1.2.2						0	Action is considered In-Kind
AuC-CCCS-20.1.3.1	149	149				298	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
AuC-CCCS-20.1.3.2						0	Action is considered In-Kind
AuC-CCCS-22.1.1.1						0	Action is considered In-Kind
AuC-CCCS-22.1.1.2						0	Action is considered In-Kind
AuC-CCCS-22.1.1.3	75.00					75	Cost estimate from CDFG 2004.
AuC-CCCS-22.1.1.4						0	Action is considered In-Kind
AuC-CCCS-22.1.2.1						TBD	Investigating funding larger detention devices is not expected to cost much. Implementing the devices will be much more expensive.
AuC-CCCS-22.1.2.2						TBD	Cost of purchasing land/conservation easements is based on fair market value, land turnover, and landowner participation.
AuC-CCCS-22.1.2.3						0	Cost of identifying and developing incentives to landowners expected to be low. Action is considered In-Kind
AuC-CCCS-22.1.2.4						0	Action is considered In-Kind
AuC-CCCS-22.1.2.5						0	Action is considered In-Kind
AuC-CCCS-22.1.2.6						0	Encouraging the county on the above issue is not likely to incur any costs outside of the duties of already salaried state and federal workers. Action is considered In-Kind
AuC-CCCS-22.1.3.1						0	Implementing the BMP is not expected to be very costly.
AuC-CCCS-22.1.3.2						0	Action is considered In-Kind
AuC-CCCS-22.2.1.1						0	Cost of implementing performance standards is likely low. Action is considered in-kind
AuC-CCCS-22.2.2.1						0	Implementing the BMP is expected to be low cost.
AuC-CCCS-22.2.2.2						0	Implementing the BMP is expected to be low cost.
AuC-CCCS-22.2.3.1						TBD	Institutionalizing programs to purchase land is not expected to be much cost. Buying the land, on the other hand, is likely to be very expensive. Cost based on fair market value, land turnover, and participation from landowners.
AuC-CCCS-22.2.3.2						0	The cost of discouraging forestland conversion is expected to be low. Action is considered In-Kind
AuC-CCCS-22.2.3.3						0	Cost of ensuring enforcement of existing building permits is expected to be low (i.e., covered as part of already existing enforcement programs). Action is considered In-Kind
AuC-CCCS-22.2.3.4						0	Action is considered In-Kind
AuC-CCCS-22.2.3.5						0	Action is considered In-Kind
AuC-CCCS-22.2.3.6						0	Cost is expected to be low since work will largely be carried out by federal, state and local staff. Action is considered In-Kind
AuC-CCCS-22.2.3.7						0	Encouraging the county is not expected to result in a high cost basis. Action is considered In-Kind
AuC-CCCS-22.2.3.8						0	Action is considered In-Kind
AuC-CCCS-23.1.1.1	81.50	81.50				163	Cost based on road inventory of 163 miles of road network at a rate of \$1000/mile. Cost could be reduced if coordinated with similar action steps.
AuC-CCCS-23.1.1.2						TBD	Cost accounted for as part of similar action steps. Cost for upgrading and decommissioning roads estimate is \$21,000 and \$12,000/mile, respectively.
AuC-CCCS-23.1.1.3	103.5	103.5				207	Cost based on amount of adequate spoil sites needed and feasibility of implementing. Cost of assessment is estimated at \$207,000.
AuC-CCCS-23.1.1.4						0	Cost accounted for in other action steps.
AuC-CCCS-23.1.2.1						0	Cost likely accounted for in other action steps.
AuC-CCCS-23.1.2.2						TBD	Cost based on recommendations identified in road assessment.
AuC-CCCS-23.1.2.3						0	Action is considered In-Kind
AuC-CCCS-23.1.3.1						0	This action step should be considered standard practice. Action is considered In-Kind
AuC-CCCS-23.1.3.2						0	Action is considered In-Kind
AuC-CCCS-23.1.3.3						0	Action is considered In-Kind
AuC-CCCS-23.2.1.1						TBD	Cost cannot be determined at this time but should be adopted as part of future road actions.
AuC-CCCS-23.2.1.2						0	Action is considered In-Kind

Austin Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
AuC-CCCS-23.2.1.3						0	Incorporating 100-year flood flow design specifications into projects is not expected to result in more cost. Implementing the projects may prove more costly than less protective designs. Action is considered In-Kind
AuC-CCCS-24.1.1.1						0	Action is considered In-Kind
AuC-CCCS-24.2.1.1						0	Cost is expected to be low. Action is considered In-Kind
AuC-CCCS-24.2.2.1						TBD	Cost difficult to estimate due to uncertainty with the cost of water, number of participants, etc.
AuC-CCCS-24.2.2.2	32.50	32.50				65	Cost based on stream flow/precipitation model at a rate of \$65,000/project.
AuC-CCCS-24.2.2.3						0	Action is considered In-Kind
AuC-CCCS-24.2.2.4						0	Action is considered In-Kind
AuC-CCCS-24.2.2.5						0	Costs are expected to be minimal as some of these efforts will be part of existing programs, however some technical assistance may be necessary from a variety of agencies. Action is considered In-Kind
AuC-CCCS-24.2.3.1						0	See WATER QUALITY and RIPARIAN for costs
AuC-CCCS-25.1.1.1						0	Promoting water conservation best practices is not expected to result in additional costs. Action is considered In-Kind
AuC-CCCS-25.1.1.2						0	Costs associated with promoting use of reclaimed water is expected to be minimal. Action is considered In-Kind
AuC-CCCS-25.1.1.3	6	6	6	6		25	Cost of water storage tank is estimated at \$5000 for 5 tanks for a total of \$25,000
AuC-CCCS-25.1.1.4						0	Costs to promote this action are expected to be minimal. Action is considered In-Kind
AuC-CCCS-25.1.2.1						TBD	Cost based on amount of fish screens needed to prevent juvenile salmonid mortalities. Cost for fish screens estimate ranges from \$13,000 to \$53,000/screen.
AuC-CCCS-25.2.1.1						0	Cost for hydrologic model already accounted for SEVERE WEATHER PATTERNS
AuC-CCCS-25.2.1.2						0	Action is considered In-Kind
AuC-CCCS-25.2.1.3	207					207	Cost based on types and feasibility of recommendations to employ to reduce conflicts between frost protection and fisheries. Cost of assessment estimated at \$207,000.
AuC-CCCS-25.2.1.4						0	Coordination costs are expected to be minimal, depending on what specific actions are proposed. Action is considered In-Kind
AuC-CCCS-25.2.1.5						0	Evaluation costs are expected to be minimal. Action is considered In-Kind
AuC-CCCS-25.2.1.6						0	Technical assistance may be provided, and associated costs are expected to be minimal. Action is considered In-Kind

Green Valley Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GVC-CCCS-2.1.1.1	103.5	103.5				207	Cost of assessment estimated at \$207,000
GVC-CCCS-2.1.1.2	103.5	103.5				207	Cost of assessment estimated at \$207,000. Total final will be based on findings and implementation based on assessment.
GVC-CCCS-2.1.2.1	32.00	13.00				26	Cost based on treating 1 mile at a rate of \$26,000/mile.
GVC-CCCS-3.1.1.1						0	Action is considered In-Kind
GVC-CCCS-3.1.1.2						0	Action is considered In-Kind
GVC-CCCS-3.1.1.3	32.50	32.50				65	Cost based on stream flow/precipitation model at a rate of \$65,000/project.
GVC-CCCS-3.1.2.1	207					207	This action step requires develop of feasible alternatives for frost protection. Cost will vary depending upon the number and type of alternative is implemented. Cost of assessment estimated at \$207,000.
GVC-CCCS-3.1.3.1						0	Cost accounted for through implementation of similar action steps identified above in FLOODPLAIN and HABITAT COMPLEXITY.
GVC-CCCS-5.1.1.1	3,196					3,196	Cost based on providing passage at 6 barriers at a rate of \$533,000/project.
GVC-CCCS-6.1.1.1	13.00	13.00				26	Cost based on treating 1 mile at a rate of \$26,000/mile. This action step should be coordinated with similar action steps to reduce cost and redundancy.
GVC-CCCS-6.1.2.1						TBD	
GVC-CCCS-6.1.3.1						TBD	
GVC-CCCS-6.1.4.1						TBD	
GVC-CCCS-7.1.1.1						0	Action is considered In-Kind
GVC-CCCS-7.1.2.1						TBD	
GVC-CCCS-8.1.1.1	77.00					77	Cost based on erosion assessment of 6,108 acres (assume 25% of watershed) at a rate of \$13/acre.
GVC-CCCS-8.1.1.2	103.5	103.5				207	Cost of assessment estimated at \$207,000.
GVC-CCCS-8.1.2.1	115.00					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project. Additional cost will be encumbered for appropriate habitat enhancement projects.
GVC-CCCS-10.1.1.1	15.00					15	Cost based on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
GVC-CCCS-10.1.1.2	207					207	Recommendations for point and non-point source pollution are dependent upon results from water quality sampling efforts. Cost of assessment estimated at \$207,000.
GVC-CCCS-11.1.1.1						0	Cost accounted for in the Monitoring Chapter.
GVC-CCCS-11.1.1.2						0	Cost accounted for in the Monitoring Chapter.
GVC-CCCS-11.1.1.3						0	Action is considered In-Kind
GVC-CCCS-11.1.1.4						0	Monitoring for this action step will likely be carried out by current NMFS and/or CDFW.
GVC-CCCS-12.1.1.1						0	See ROADS for cost estimates
GVC-CCCS-12.1.1.2						0	Action is considered In-Kind
GVC-CCCS-12.1.1.3						0	Action is considered In-Kind
GVC-CCCS-12.1.1.4	50.00	50.00				100	Cost of completing Farm Conservation Plan estimated at approximately \$50,000 per plan.
GVC-CCCS-12.1.1.5	5	5	5	5		20	The cost is likely to be low if CDFW effectiveness monitoring protocols are used. Estimated cost is \$20,000
GVC-CCCS-12.1.1.6						0	Action is considered In-Kind
GVC-CCCS-12.1.1.7						0	Action is considered In-Kind
GVC-CCCS-12.1.1.8						0	Action is considered In-Kind
GVC-CCCS-12.1.2.1	10.50	10.50				21	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
GVC-CCCS-12.1.2.2						TBD	Cost based on amount of land/conservation easements needed, fair market value, and landowner participation.
GVC-CCCS-12.1.2.3						0	Action is considered In-Kind
GVC-CCCS-12.1.3.1	13.00	13.00				26	Cost based on treating 1 mile (assume 1 project/mile) at a rate of \$26,000/mile. If ELJ used, cost estimated at \$104,000/ELJ.
GVC-CCCS-12.1.3.2						0	Action is considered In-Kind
GVC-CCCS-12.1.4.1						0	Cost accounted for in other action steps, see RIPARIAN
GVC-CCCS-12.1.5.1	16.7	16.7	16.7			50	Cost based on the number of off-channel storage sites needed to reduce impacts from water diversions and landowner participation. Estimate for 10 off-channel storage at \$5,000/station is \$50,000.
GVC-CCCS-12.1.5.2						TBD	
GVC-CCCS-12.2.1.1						0	Action is considered In-Kind
GVC-CCCS-12.2.1.2						0	Action is considered In-Kind
GVC-CCCS-12.2.1.3						0	Action is considered In-Kind
GVC-CCCS-12.2.1.4						TBD	
GVC-CCCS-12.2.1.5						0	Streamlining permit processing is not expected to cost much, and may save money through future efficiencies. Action is considered In-Kind
GVC-CCCS-12.2.1.6						0	Soliciting cooperation not expected to cost much outside of already existing federal and state and local salaries. Action is considered In-Kind
GVC-CCCS-13.1.1.1	144.00	144.00				288	Cost based on riparian and wetland restoration model at a rate of \$73,793 and \$213,307/project, respectively.
GVC-CCCS-13.1.1.2	186	186	186	186		744	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
GVC-CCCS-13.1.1.3						TBD	Cost based on amount of levee system to setback. Estimate for setting back levees is \$34.94/linear ft.
GVC-CCCS-13.1.1.4						0	Action is considered In-Kind
GVC-CCCS-13.1.2.1						0	Action is considered In-Kind
GVC-CCCS-13.1.3.1						0	Action is considered In-Kind
GVC-CCCS-13.1.3.2						0	Action is considered In-Kind
GVC-CCCS-13.1.3.3						0	Action is considered In-Kind
GVC-CCCS-13.1.3.4						0	Action is considered In-Kind

Green Valley Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GVC-CCCS-13.2.1.1						0	Action is considered In-Kind
GVC-CCCS-13.2.1.2						0	Action is considered In-Kind
GVC-CCCS-18.1.1.1	15.50	15.50				31	Cost based on treat 1.6 miles at a rate of \$3.63/ft. Currently, there are cost-share programs in existence that can reduce the cost of this action step if done in conjunction.
GVC-CCCS-18.1.1.2	16.67	16.67	16.67	16.67	16.67	100	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
GVC-CCCS-18.1.1.3						0	Action is considered In-Kind because no new land is being purchased, only a change in grazing strategy
GVC-CCCS-18.1.1.4						0	Action is considered In-Kind
GVC-CCCS-18.1.2.1	8.3	8.3	8.3	8.3	8.3	50	Cost for offstream alternative water sources estimated for 10 sites at \$5,000/site for a total of \$50,000. This action step should be done in coordination with above action step to fence off riparian areas.
GVC-CCCS-18.1.2.2						0	Cost accounted for in other action step.
GVC-CCCS-18.1.2.3						0	Action is considered In-Kind
GVC-CCCS-18.1.2.4						0	Action is considered In-Kind
GVC-CCCS-18.1.2.5						0	Action is considered In-Kind
GVC-CCCS-19.1.1.1						TBD	Need to estimate where and how much land will come available and fair market value for purchase in the future
GVC-CCCS-19.1.1.2						0	Action is considered In-Kind
GVC-CCCS-19.1.1.3						0	Recruitment of LWD to the stream is critical. Action is considered In-Kind
GVC-CCCS-19.1.2.1						0	Action is considered In-Kind
GVC-CCCS-19.2.1.1						0	Action is considered In-Kind
GVC-CCCS-19.2.1.2						0	Cost is minimal because NMFS/CDFW already participate in meetings the Board of Forestry. Action is considered In-Kind
GVC-CCCS-19.2.1.3						0	Action is considered In-Kind
GVC-CCCS-20.1.1.1	173	173				345	Cost based on appropriate measures needed to improve passage. Cost fish/habitat restoration model estimate of \$114,861/project and is estimated being needed for 3 projects for a total of \$344,583.
GVC-CCCS-20.1.1.2						0	Action is considered In-Kind
GVC-CCCS-20.1.2.1	13.00	13.00				26	Cost based on treating 1 mile (assume 1 project/mile with a minimum of 1 mile) at a rate of \$26,000/mile. Cost may be higher if using other methods such as ELJ, estimated at \$104,000/ELJ.
GVC-CCCS-20.1.2.2						0	Action is considered In-Kind
GVC-CCCS-20.1.3.1	372.00	372.00				744	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
GVC-CCCS-20.1.3.2						0	Action is considered In-Kind
GVC-CCCS-22.1.1.1						0	Action is considered In-Kind
GVC-CCCS-22.1.1.2						0	Cost of training and encouraging partners to maintain riparian health is expected to be low. Action is considered In-Kind
GVC-CCCS-22.1.1.3	75.00					75	Cost estimate from CDFG 2004.
GVC-CCCS-22.1.1.4	50.00					50	Estimated cost of \$50,000 for an assessment. Cost of other resulting mitigation is unknown since the number, location and scope of future projects is not known.
GVC-CCCS-22.1.2.1	20					20	Investigating funding larger detention devices is not expected to cost much. Cost of investigation estimated at 20,000. Implementing the devices will be much more expensive.
GVC-CCCS-22.1.2.3						0	Encouraging landowners to restore floodplain areas is not expected to cost much. Action is considered In-Kind
GVC-CCCS-22.1.2.4						TBD	Cost of purchasing land/conservation easements is highly variable, depends on fair market value, and landowner participation.
GVC-CCCS-22.1.2.5						0	Cost of identifying and developing incentives to landowners expected to be low. Action is considered In-Kind
GVC-CCCS-22.1.2.6						0	Action is considered In-Kind
GVC-CCCS-22.1.2.7						0	Action is considered In-Kind
GVC-CCCS-22.1.2.8						0	Encouraging the county on the above issue is not likely to incur any costs outside of the duties of already salaried state and federal workers. Action is considered In-Kind
GVC-CCCS-22.1.2.9						0	Action is considered In-Kind
GVC-CCCS-22.1.2.10						0	Action is considered In-Kind
GVC-CCCS-22.1.2.11						0	Action is considered In-Kind
GVC-CCCS-22.1.3.1						0	Implementing this BMP is not expected to be very costly.
GVC-CCCS-22.1.3.2						0	Action is considered In-Kind
GVC-CCCS-22.2.1.1						0	Cost of implementing performance standards is likely low. Action is considered In-Kind
GVC-CCCS-22.2.2.1						0	Implementing this BMP is not expected to be very costly. Action is considered in-kind
GVC-CCCS-22.2.2.2						0	Implementing this BMP is not expected to be very costly. Action is considered in-kind
GVC-CCCS-22.2.2.3						0	Action is considered In-Kind
GVC-CCCS-22.2.3.1						TBD	Institutionalizing programs to purchase land is not expected to be much cost. Buying the land, on the other hand, is likely to be very expensive. Cost based on fair market value, land turnover, and participation from landowners.
GVC-CCCS-22.2.3.2						0	The cost of discouraging forestland conversion is expected to be low. Action is considered In-Kind
GVC-CCCS-22.2.3.3						0	Cost of ensuring enforcement of existing building permits is expected to be low (i.e., covered as part of already existing enforcement programs). Action is considered In-Kind
GVC-CCCS-22.2.3.4						0	Action is considered In-Kind
GVC-CCCS-22.2.3.5						0	Action is considered In-Kind
GVC-CCCS-22.2.3.6						0	Cost is expected to be low since work will largely be carried out by federal, state and local staff. Action is considered In-Kind
GVC-CCCS-22.2.3.7						0	Encouraging the county is not expected to result in a high cost basis. Action is considered In-Kind
GVC-CCCS-22.2.3.8						0	Action is considered In-Kind

Green Valley Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GVC-CCCS-23.1.1.1	77.00					77	Cost based on road inventory of 180 miles of road network at a rate of \$957/mile.
GVC-CCCS-23.1.1.2	203.00	203.00	203.00	203.00		812	Cost based on decommissioning 50 miles of riparian road at a rate of \$12,000/mile and upgrading 19 miles (assume 25% after decommissioning) at a rate of \$21,000/mile.
GVC-CCCS-23.1.1.3	103.5	103.5				207	Cost based on amount of adequate spoils sites needed. Road inventory could identify the number of spoils sites and locations to implement them. Cost of assessment estimated at \$206,600 and should be completed within the next 10 years.
GVC-CCCS-23.1.1.4						0	Action is considered In-Kind
GVC-CCCS-23.1.1.5						0	Action is considered In-Kind
GVC-CCCS-23.1.1.6						TBD	
GVC-CCCS-23.1.2.1	103.5	103.5				207	Cost of assessment estimated at \$206,600
GVC-CCCS-23.1.2.2						TBD	Cost based on recommendations identified in road assessment.
GVC-CCCS-23.2.1.1						0	Cost to expand an existing program are expected to be minimal. Action is considered In-Kind
GVC-CCCS-23.2.1.2						0	Action is considered In-Kind
GVC-CCCS-23.2.1.3						TBD	Incorporating free span bridges into replacement and new construction plans is unlikely to increase costs. Construction of the bridges will likely be much higher.
GVC-CCCS-23.2.1.4						0	Action is considered In-Kind
GVC-CCCS-24.1.1.1						0	Action is considered In-Kind
GVC-CCCS-24.2.1.1						0	Cost is expected to be low. Action is considered In-Kind
GVC-CCCS-24.2.2.1						0	Implementing conservation strategies not expected to be a high cost endeavor.
GVC-CCCS-24.2.2.2						TBD	Cost difficult to estimate due to uncertainty with the cost of water, number of participants, etc.
GVC-CCCS-24.2.2.3	16.25	16.25	16.25	16.25		65	Cost based on stream flow/precipitation model at a rate of \$65,084.
GVC-CCCS-24.2.2.4						0	Cost expected to zero or a small amount. Action is considered In-Kind
GVC-CCCS-24.2.2.5						0	Cost expected to be low. Action is considered In-Kind
GVC-CCCS-24.2.2.6						0	Costs are expected to be minimal as some of these efforts will be part of existing programs, however some technical assistance may be necessary from a variety of agencies. Action is considered In-Kind
GVC-CCCS-25.1.1.1	12.5	12.5	12.5	12.5		50	Cost based on number of off-channel storage stations needed. Cost estimate for 10 storage site is \$5,000/site for at total of \$50,000.
GVC-CCCS-25.1.1.2						0	Promoting water conservation best practices is not expected to result in additional costs. Action is considered In-Kind
GVC-CCCS-25.1.1.3						0	Costs associated with promoting use of reclaimed water is expected to be minimal. Action is considered In-Kind
GVC-CCCS-25.1.1.4						0	Costs to promote this action are expected to be minimal. Action is considered In-Kind
GVC-CCCS-25.1.2.1	134	134				267	Cost based on number and type of fish screens to implement. Estimate for 5 fish screens at \$53,465/screen is \$267,325.
GVC-CCCS-25.2.1.1	65.00					65	Cost based on stream flow/precipitation model at a rate of \$65,084/project.
GVC-CCCS-25.2.1.2						0	Action is considered In-Kind
GVC-CCCS-25.2.1.3	207					207	Cost based on types and feasibility of recommendations to employ to reduce conflicts between frost protection and fisheries. Cost of assessment is estimated at \$206,600.
GVC-CCCS-25.2.1.4						0	Coordination costs are expected to be minimal, depending on what specific actions are proposed. Action is considered In-Kind
GVC-CCCS-25.2.1.5						0	Evaluation costs are expected to be minimal. Action is considered In-Kind
GVC-CCCS-25.2.1.6						0	Technical assistance may be provided, and associated costs are expected to be minimal. Action is considered In-Kind

Lagunitas Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
LaC-CCCS-1.1.1.1						0	Action is considered In-Kind
LaC-CCCS-1.1.1.2	161.00	161.00				322	Cost based on estuary use, residence time model at a rate of \$322,000/project.
LaC-CCCS-1.1.1.3	32					TBD	Total cost will be based on the assessment in the previous action step.
LaC-CCCS-1.1.2.1	633	633				1,265	Cost based on treating 5% of total estuarine habitat at a rate of \$47,000/acre.
LaC-CCCS-1.2.1.1	7.50	7.50				15	Cost for continuous water quality monitoring gauges estimated at \$5,000/unit. Assume minimum of 3 for lagoon. Cost does not account for maintenance or data management.
LaC-CCCS-1.2.1.2						TBD	Increasing freshwater inflow will require reductions in water diversions and improved storage facilities. Cost based on the amount of water to be purchased/leased and off-channel storage facilities to implement.
LaC-CCCS-1.2.2.1	161.00	161.00				322	Cost based on estuary use monitoring estimated at \$322,000/project.
LaC-CCCS-1.2.2.2	103.50	103.50				207	Costs associated with removal of structures will depend on the number and type of structures identified and cannot be accurately determined at this time. Cost of assessment estimated at \$207,000.
LaC-CCCS-2.1.1.1	40.00					40	This is a GIS exercise with ground truthing, and costs are expected to be fairly low.
LaC-CCCS-2.1.1.2	57.50	57.50				115	Cost for fish/habitat monitoring estimated at \$115,000/project.
LaC-CCCS-2.1.1.3						0	Costs to promote and support restoration efforts (e.g. technical assistance) depend on level of technical assistance provided and the types of projects proposed. Action is considered In-Kind
LaC-CCCS-2.1.2.1	4,920	4,920				9,839	Cost based on treating 2.9 miles (assume 1 project/mile in 25% High IP with 80 acres/mile) at a rate of \$42,408/acre.
LaC-CCCS-2.1.2.2						0	Cost accounted for in above action steps.
LaC-CCCS-2.1.2.3	32.70	32.70	32.70	32.70	32.70	327	Cost based on riparian and wetland restoration model at a rate of \$84,000 and \$243,000/project, respectively.
LaC-CCCS-2.1.2.4						0	Action is considered In-Kind
LaC-CCCS-2.1.2.5						TBD	Cost based on amount of historical floodplains to place in conservation easements. Cost varies depending upon landowner participation, fair market value, and size of easement.
LaC-CCCS-2.1.2.6						0	Action is considered In-Kind
LaC-CCCS-2.1.2.7						TBD	
LaC-CCCS-2.2.1.1						0	Implementation of existing program activities are unlikely to increase costs associated with recovery. Action is considered In-Kind
LaC-CCCS-2.2.1.2						TBD	
LaC-CCCS-3.1.1.1	32.50	32.50				65	Cost for stream flow model estimated at \$65,000/project.
LaC-CCCS-3.1.1.2						0	Action is considered In-Kind
LaC-CCCS-3.1.1.3						0	Action is considered In-Kind
LaC-CCCS-3.1.1.4						0	Action is considered In-Kind
LaC-CCCS-3.1.2.1						0	Cost accounted for in other recovery actions. See habitat complexity and floodplain connectivity.
LaC-CCCS-3.1.2.2	103.50	103.50				207	Cost of assessment estimated at \$207,000 and should be completed within the first 10 years.
LaC-CCCS-3.2.1.1						0	Technical assistance is ongoing. Action is considered In-Kind
LaC-CCCS-3.2.1.2						TBD	Cost is based on amount and type of incentives to provide and participation from diversers.
LaC-CCCS-3.2.1.3						0	Cost of evaluations is likely In-Kind.
LaC-CCCS-5.1.1.1	800					800	This action would provide access to the San Geronimo Valley for all lifestages.
LaC-CCCS-5.1.1.2	750	750				1,500	Cost based on treating 25% of remaining structures assuming 1 barrier/5 miles High IP at a rate of \$368,000/unit. This action would provide access to the most productive subwatershed in this system. Many barriers have been addressed, however some continue to limit access to habitat.
LaC-CCCS-5.1.1.3						TBD	
LaC-CCCS-6.1.1.1	85.00	85.00				170	Cost based on placing LWD for 5.7 miles of stream (assume 1 project/mile in 50% High IP) at a rate of \$30,000/mile.
LaC-CCCS-6.1.1.2						0	Cost accounted for in increase shelters in 75% of streams.
LaC-CCCS-6.1.1.3						0	Costs are expected to be included in implementation of LWD placements actions. Action is considered In-Kind
LaC-CCCS-6.1.2.1	85.00	85.00				170	Cost based on treating 2.9 miles (assume 1 project/mile of 25% High IP) at a rate of \$30,000/mile. Cost may vary if ELJ or placement of boulders is preferred.
LaC-CCCS-6.1.2.2						0	Cost accounted for in increase pool frequency in 25 % of streams.
LaC-CCCS-6.1.2.3						0	Action is considered In-Kind
LaC-CCCS-6.1.2.4						0	Cost accounted for in fish/habitat monitoring.
LaC-CCCS-6.1.3.1						0	Cost accounted for as part of increase frequency of primary pools action step.
LaC-CCCS-6.1.3.2						0	Cost accounted for as part of increase pool frequency action step.
LaC-CCCS-6.1.3.3						0	Continue ongoing efforts. Action is considered In-Kind
LaC-CCCS-6.1.4.1						0	Cost accounted for in previous action steps.
LaC-CCCS-6.1.4.2						0	Cost likely accounted for in other action steps.
LaC-CCCS-6.1.4.3						0	Cost likely accounted for in other action steps.
LaC-CCCS-6.1.4.4						0	Cost to maintain LWD is expected to be minimal. Action is considered In-Kind
LaC-CCCS-6.1.4.5						0	Cost likely accounted for in other action steps.
LaC-CCCS-7.1.1.1						0	Action is considered In-Kind
LaC-CCCS-7.1.1.2	40	40	40	40		159	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
LaC-CCCS-7.1.1.3						0	Action is considered In-Kind
LaC-CCCS-7.1.1.4						0	Action is considered In-Kind
LaC-CCCS-7.1.2.1						0	Action is considered In-Kind
LaC-CCCS-7.1.2.2	114.00	114.00				228	Cost based on treating 1.7 miles (assume 80 acres/mile in 15% High IP) at a rate of \$1,600/acre.

Lagunitas Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
LaC-CCCS-8.1.1.1	65.50	65.50				131	Fish/habitat monitoring should identify areas with increased embeddness levels. Cost for based on fish/habitat model at a rate of \$131,000/project.
LaC-CCCS-8.1.1.2	125.50	125.50				251	Cost for erosion assessment (assume 25% of total watershed acres) estimated at \$15./acre.
LaC-CCCS-8.1.1.3						0	Cost accounted for in ROADS
LaC-CCCS-10.1.1.1						0	Existing programs could be copied for implementation, so costs are expected to be minimal and considered in-kind
LaC-CCCS-10.1.1.2						0	Existing programs could be copied for implementation, so costs are expected to be minimal and considered in-kind
LaC-CCCS-10.1.2.1						0	Implementation of the TMDL is mandated by the Clean Water Act, and additional costs associated with recovery are not expected. Action is considered In-Kind
LaC-CCCS-11.1.1.1						0	Action is considered In-Kind
LaC-CCCS-11.1.1.2						0	This recommendation should be considered standard practice of monitoring efforts. Action is considered In-Kind
LaC-CCCS-11.1.1.3						0	Cost accounted for in the Monitoring Chapter.
LaC-CCCS-11.1.1.4						0	Action is considered In-Kind
LaC-CCCS-11.1.1.5						0	Action is considered In-Kind
LaC-CCCS-12.1.1.1						0	Stringent review by permitting agencies is expected to reduce costs associated with poorly planned and poorly located developments. Action is considered In-Kind
LaC-CCCS-12.1.2.1						TBD	Cost difficult to determine because of fair market value and rate of turnover.
LaC-CCCS-12.1.2.2						0	Action is considered In-Kind
LaC-CCCS-12.1.3.1						0	Soliciting cooperation not expected to cost much outside of already existing federal and state and local salaries. Action is considered In-Kind
LaC-CCCS-12.1.4.1	50	50				100	Cost of completing plan estimated at approximately \$100,000 per plan
LaC-CCCS-12.1.5.1						0	Soliciting cooperation not expected to cost much outside of already existing federal and state and local salaries. Action is considered In-Kind
LaC-CCCS-12.2.1.1						0	Costs are expected to be minimal, however technical assistance from several agencies will be needed. Action is considered In-Kind
LaC-CCCS-12.2.2.1						0	Riparian buffers should be 100 feet. Action is considered In-Kind
LaC-CCCS-12.2.2.2						0	Action is considered In-Kind
LaC-CCCS-12.2.2.3						0	Streamlining permit processing is not expected to cost much, and may save money through future efficiencies. Action is considered In-Kind
LaC-CCCS-13.1.1.1						0	See Floodplain Connectivity actions for cost estimates.
LaC-CCCS-13.1.1.2						0	Action is considered In-Kind
LaC-CCCS-13.1.1.3						0	Action is considered In-Kind
LaC-CCCS-13.1.2.1						0	Action is considered In-Kind
LaC-CCCS-13.1.2.2						0	Action is considered In-Kind
LaC-CCCS-13.2.1.1						0	Action is considered In-Kind
LaC-CCCS-13.2.2.1						0	Action is considered In-Kind
LaC-CCCS-18.1.1.1						TBD	
LaC-CCCS-18.1.1.2	7.00	7.00				14	Cost based on fencing 0.6 miles (assume 5% of high IP) at a rate of \$4ft.
LaC-CCCS-18.1.1.3	15	15	15	15		60	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
LaC-CCCS-18.1.1.4						0	Action is considered In-Kind
LaC-CCCS-18.1.2.1						0	Action is considered In-Kind
LaC-CCCS-18.1.3.1						0	Action is considered In-Kind
LaC-CCCS-18.1.3.2						0	Action is considered In-Kind
LaC-CCCS-18.1.4.1						TBD	Costs for required infrastructure (e.g. mobile water trailers, tanks, etc.) will be the responsibility of individual landowners or supporting agencies, but cannot be determined at this time.
LaC-CCCS-18.2.1.1						0	Action is considered In-Kind
LaC-CCCS-22.1.1.1						TBD	Much of the cost of conducting this work is the responsibility of private landowners whose systems are failing.
LaC-CCCS-22.1.1.2						0	It is anticipated Marin County would know of current pollutant sources. Action is considered in-kind
LaC-CCCS-22.1.2.1						0	Action is considered in-kind
LaC-CCCS-22.1.2.2						TBD	
LaC-CCCS-22.1.3.1						0	Action is considered In-Kind
LaC-CCCS-22.1.3.2						0	Stringent review by permitting agencies is expected to reduce costs associated with poorly planned and poorly located developments. Action is considered In-Kind
LaC-CCCS-22.1.3.3						0	Action is considered In-Kind
LaC-CCCS-22.1.3.4						0	Action is considered In-Kind
LaC-CCCS-22.2.1.1						0	Action is considered in-kind.
LaC-CCCS-22.2.1.2						0	Action is considered In-Kind
LaC-CCCS-22.2.2.1						TBD	Investigating funding larger detention devices is not expected to cost much. Implementing the devices will be much more expensive.
LaC-CCCS-22.2.2.2						0	Action is considered In-Kind
LaC-CCCS-23.1.1.1	140.50	140.50				281	Cost based on road inventory of 281 miles of road at a rate of \$1,000/mile.
LaC-CCCS-23.1.1.2						0	The road assessment should identify priorities for utilizing BMPs within the watershed. Action is considered In-Kind
LaC-CCCS-23.1.1.3						0	Cost accounted for in previous action steps.
LaC-CCCS-23.1.1.4						TBD	Cost to decommission roads estimated at \$14,000/mile and to upgrade is \$24,000/mile.
LaC-CCCS-23.1.1.5	103.5	103.5				207	Cost depend on feasibility and need of adequate spoils storage sites. Cost of assessment is estimated at \$207,000 and should occur within the first 10 years.
LaC-CCCS-23.1.1.6	10.50	10.50	10.50	10.50		42	Cost based on decommissioning 3 miles of road network at a rate of \$14,000/mile.

Lagunitas Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
LaC-CCCS-23.1.2.1						0	Action is considered In-Kind
LaC-CCCS-23.1.3.1						0	Action is considered In-Kind
LaC-CCCS-23.1.3.2						0	Similar existing programs could be modified and implemented at minimal cost. Action is considered In-Kind
LaC-CCCS-23.1.4.1						0	Cost to expand an existing program are expected to be minimal. Action is considered In-Kind
LaC-CCCS-23.1.4.2						0	Action is considered In-Kind
LaC-CCCS-23.1.5.1						0	Action is considered In-Kind
LaC-CCCS-23.1.5.2						0	Action is considered In-Kind
LaC-CCCS-23.1.5.3						0	Action is considered In-Kind
LaC-CCCS-23.1.5.4	207					207	Final costs will be based on road assessment. Estimated cost of assessment is \$207,000.
LaC-CCCS-23.1.5.5						0	Cost accounted for in PASSAGE
LaC-CCCS-23.2.1.1						0	Existing authorities of permitting agencies facilitate implementation at minimal costs. Action is considered In-Kind
LaC-CCCS-23.2.1.2						0	Outreach and education are ongoing, and additional costs are expected to be minimal. Action is considered In-Kind
LaC-CCCS-23.2.1.3						0	Action is considered In-Kind
LaC-CCCS-24.1.1.1						0	
LaC-CCCS-24.1.1.2	103.5	103.5				207	Costs cannot be determined due to an unknown number of participants and types of modifications required for implementation. Cost of assessment is estimated at \$207,000.
LaC-CCCS-24.1.1.3						0	Action is considered in-kind
LaC-CCCS-24.2.1.1						0	Action is considered In-Kind
LaC-CCCS-25.1.1.1						0	Action is considered in-kind
LaC-CCCS-25.1.1.2	1.00					1	Cost for stream flow gauge estimated at \$1000/gauge. Cost does not account for maintenance or data management.
LaC-CCCS-25.1.1.3						0	Promoting water conservation best practices is not expected to result in additional costs. Action is considered In-Kind
LaC-CCCS-25.1.1.4						0	Costs associated with promoting use of reclaimed water is expected to be minimal. Action is considered In-Kind
LaC-CCCS-25.1.1.5						TBD	Costs are minimal to promote. Costs for implementation will depend on the number of participants. Estimate for off-channel storage is \$5,000/station.
LaC-CCCS-25.1.1.6						0	Action is considered In-Kind
LaC-CCCS-25.1.1.7						0	Costs associated with promoting conjunctive use of water is expected to be minimal. Action is considered In-Kind
LaC-CCCS-25.1.1.8	18.75	18.75	18.75	18.75		75	Cost based on stream flow/precipitation model at a rate of \$74,000/project.
LaC-CCCS-25.1.1.9						0	Action is considered In-Kind
LaC-CCCS-25.1.1.10						207	Estimated cost of assessment is \$207,000
LaC-CCCS-25.1.2.1						0	Action is considered In-Kind
LaC-CCCS-25.1.2.2						0	Action is considered In-Kind
LaC-CCCS-25.1.3.1	300.00					300	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
LaC-CCCS-25.1.4.1	100.00	100.00				200	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
LaC-CCCS-25.1.5.1	75.00					75	Cost based on fish/habitat restoration model at a rate of \$74,000/project
LaC-CCCS-25.1.6.1						TBD	Cost based on amount and type of fish screens to prevent juvenile salmonid mortalities. Estimate for fish screens is \$61,000/project.
LaC-CCCS-25.1.6.2						0	Action is considered In-Kind
LaC-CCCS-25.2.1.1						0	Action is considered In-Kind
LaC-CCCS-25.2.1.2	103.5	103.5				207	Costs associated with development of alternatives cannot be determined due to the unknown number and types of alternatives that might be proposed. Cost of assessment estimated at \$207,000 and should be completed within the first 10 years.
LaC-CCCS-25.2.1.3						0	Action is considered In-Kind
LaC-CCCS-25.2.1.4						0	Action is considered In-Kind
LaC-CCCS-25.2.1.5						0	Action is considered In-Kind
LaC-CCCS-25.2.1.6						0	Action is considered In-Kind
LaC-CCCS-25.2.1.7						0	Action is considered In-Kind
LaC-CCCS-25.2.1.8						0	Action is considered In-Kind

Salmon Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SIC-CCCS-1.1.1.1						TBD	Costs and duration are dependent on the specific mechanisms chosen to accomplish the task.
SIC-CCCS-1.1.1.2	291.00	291.00				582	Cost based on treating 15% of 83 acres of estuarine habitat at a rate of \$46,740/acre.
SIC-CCCS-1.1.1.3	32					0	Action is considered In-Kind
SIC-CCCS-1.1.2.1						TBD	Increasing flow within Salmon Creek will likely entail purchasing water rights upstream. The cost of purchasing water rights is unknown at this time.
SIC-CCCS-1.1.2.2	3.8	3.8	3.8	3.8		15	Cost based on installing a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance. Additional cost may be needed for parameters such as toxicity, nutrients, turbidity, etc.
SIC-CCCS-1.1.2.3						0	Cost accounted for in another action step.
SIC-CCCS-1.1.3.1						0	Cost accounted through implementation of other action steps (such as ROADS/RAILROADS)
SIC-CCCS-1.1.3.2						0	Cost related to increasing physical extent of estuary habitat and accounted for in another action step.
SIC-CCCS-1.1.3.3	161.00	161.00				322	Cost based on estuary use/residence time model at a rate of \$321,745/project
SIC-CCCS-1.1.4.1						0	Cost related to increasing physical extent of estuary habitat and accounted for in another action step.
SIC-CCCS-1.1.4.2						0	Cost related to increasing physical extent of estuary habitat and accounted for in another action step.
SIC-CCCS-1.1.4.3						0	Cost accounted for in above action steps.
SIC-CCCS-1.2.1.1	103.5	103.5				207	Costs associated with removal of structures will depend on the number and type of structures identified and cannot be accurately determined at this time. Cost of assessment is estimated at \$206,600
SIC-CCCS-1.2.1.2						0	Action is considered In-Kind
SIC-CCCS-2.1.1.1	122.00	122.00				244	Cost for wetland monitoring estimated at \$243,170/project.
SIC-CCCS-2.1.1.2	32.50	32.50				65	Cost for stream flow model estimated at \$65,084/project.
SIC-CCCS-2.1.1.3	1,697	1,697				3,393	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
SIC-CCCS-2.1.1.4						0	Action is considered In-Kind
SIC-CCCS-2.2.1.1						0	Action is considered In-Kind
SIC-CCCS-2.2.1.2						0	Action is considered In-Kind
SIC-CCCS-2.2.1.3						0	Action is considered In-Kind
SIC-CCCS-3.1.1.1	207					207	Cost of plan development could be partially in-kind and we have also estimated it could cost \$206,600.
SIC-CCCS-3.1.1.2						0	Action is considered In-Kind
SIC-CCCS-3.1.1.3						0	Action is considered In-Kind
SIC-CCCS-3.1.1.4	32.50	32.50				65	Cost based on stream flow/precipitation flow model at a rate of \$65,084/project.
SIC-CCCS-3.1.2.1						0	Stream flow model should identify flow levels necessary to maintain suitable habitat conditions for steelhead. Cost is accounted for in previous action step.
SIC-CCCS-3.1.3.1						0	Cost based on implementation of other action steps.
SIC-CCCS-3.1.3.2						0	Cost accounted for in other action steps.
SIC-CCCS-6.1.1.1	30.00	30.00				60	Cost based on treating 2 miles of stream at a rate of \$29,640/mile for placement of LWD. If ELJ used for increasing pool frequency, cost would be \$2,730,000 averaging 3 ELJ/mile.
SIC-CCCS-6.1.1.2						0	Cost accounted for to increase pool frequency across 60% in watershed (above action step)
SIC-CCCS-6.1.2.1						0	Cost related to increase frequency of primary or staging pool habitat (earlier action step)
SIC-CCCS-6.1.2.2	275.00					275	Cost based on treating 11 miles at a rate of \$25,000/mile.
SIC-CCCS-6.1.3.1						0	Cost related to increase pool frequency and LWD placement activities (earlier action step)
SIC-CCCS-6.1.3.2						0	Action is considered In-Kind
SIC-CCCS-6.1.3.3						0	Action is considered In-Kind
SIC-CCCS-6.1.4.1	150.00					150	Cost based on treating 6 miles of stream at a rate of \$25,000/mile
SIC-CCCS-6.1.5.1	5.00	5.00				10	Cost for beaver re-introduction estimated at \$10,000/beaver family translocation.
SIC-CCCS-7.1.1.1						0	Cost accounted for in other action steps.
SIC-CCCS-7.1.1.2	25.00	25.00	25.00	25.00		100	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
SIC-CCCS-7.1.1.3	22.06	22.06	22.06	22.06		88	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
SIC-CCCS-7.1.1.4						0	Action is considered In-Kind
SIC-CCCS-7.1.2.1						TBD	
SIC-CCCS-7.1.2.2						0	Cost is accounted for in other action steps.
SIC-CCCS-7.1.2.3						0	Action is considered In-Kind
SIC-CCCS-8.1.1.1						TBD	Cost based on remaining erosion control projects to treat and recommendations.
SIC-CCCS-8.1.1.2	5.92	5.92	5.92	5.92	5.92	71	Cost based on sediment assessment for 25% of total watershed acres at a rate of \$12.62/acre.
SIC-CCCS-8.1.1.3						0	Cost accounted for in above action step.
SIC-CCCS-10.1.1.1						0	Cost accounted for in other action steps.
SIC-CCCS-10.1.1.2	0.15	0.15	0.15	0.15		1	Cost based on installing a minimum of 3 water temperature gauges at a rate of \$200/gauge. Cost does not account for data management or maintenance.
SIC-CCCS-10.1.2.1	15.00					15	Cost for continuous water quality monitoring stations estimated at \$5,000/station. Assume minimum of 3. Cost does not account for maintenance or data management.
SIC-CCCS-10.1.2.2						0	Action is considered In-Kind

Salmon Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SIC-CCCS-10.1.3.1						TBD	Cost to upgrade stormwater discharge points cannot be determined at this time, but it may be significant. Turbidity data (NHI, 2010) indicated elevated levels during the winter and spring following seasonal rainfall events. Elevated turbidity levels could injure gills, reduce feeding efficiency and adversely affect growth. Increased rates of turbidity and temperature are likely the result of land and water management practices in the watershed. Winter rearing juveniles are the primary life-stage affected by high turbidity levels.
SIC-CCCS-10.1.3.2						0	Action is considered In-Kind
SIC-CCCS-10.1.3.3						0	Action is considered In-Kind
SIC-CCCS-11.1.1.1						0	Action is considered In-Kind
SIC-CCCS-11.1.1.2						0	Action is considered In-Kind
SIC-CCCS-11.1.1.3						0	Action is considered In-Kind
SIC-CCCS-11.1.1.4						0	Action is considered In-Kind
SIC-CCCS-11.1.1.5	60.00	60.00				120	Cost based on smolt outmigrant trapping at a rate of \$59,740/yr.
SIC-CCCS-11.1.1.6						0	Action is considered In-Kind
SIC-CCCS-11.1.1.7	20.00					20	Cost based on treating 1 mile at a rate of \$2,000/mile over 10 years.
SIC-CCCS-12.1.1.1						0	Action is considered In-Kind
SIC-CCCS-12.1.1.2						0	Action is considered In-Kind
SIC-CCCS-12.1.1.3						0	Soliciting cooperation not expected to cost much outside of already existing federal and state and local salaries. Action is considered In-Kind
SIC-CCCS-12.1.1.4						0	Action is considered In-Kind
SIC-CCCS-12.1.1.5						0	Action is considered In-Kind
SIC-CCCS-12.1.1.6						0	Currently, incentive programs exist and should be explored and expanded. Action is considered in-kind
SIC-CCCS-12.1.1.7						0	Action is considered In-Kind
SIC-CCCS-12.1.2.1						TBD	
SIC-CCCS-12.1.2.2	5.00					5	Cost for stream temperature gauges estimated at \$500/gauge. Assume a minimum of 10. Cost does not account for maintenance or data management.
SIC-CCCS-12.2.1.1						0	Action is considered In-Kind
SIC-CCCS-12.2.1.2							
SIC-CCCS-12.2.1.3						TBD	Cost based on amount and type of conservation easements to re-establish or enhance riparian corridors. Fair market value and landowner participation are main factors in the cost of this action step.
SIC-CCCS-12.2.2.1						0	Stringent review by permitting agencies is expected to reduce costs associated with poorly planned and poorly located developments. Action is considered In-Kind
SIC-CCCS-12.2.2.2						0	Action is considered In-Kind
SIC-CCCS-13.1.1.1						TBD	Costs may vary significantly depending on level of commitment from local government and private landowners. The majority of the costs would likely include local government and consultant staff time.
SIC-CCCS-13.1.1.2	164.00	164.00				328	Cost based on riparian and wetland restoration model at a rate of \$84,124 and \$243,169/project, respectively.
SIC-CCCS-13.1.1.3						0	Cost accounted for in other action steps.
SIC-CCCS-13.1.1.4						0	Action is considered In-Kind
SIC-CCCS-13.1.2.1						0	Action is considered In-Kind
SIC-CCCS-13.1.2.2						0	Action is considered In-Kind
SIC-CCCS-13.2.1.1						0	Action is considered In-Kind
SIC-CCCS-13.2.1.2						0	Action is considered In-Kind
SIC-CCCS-13.2.1.3						0	Action is considered In-Kind
SIC-CCCS-13.2.1.4						0	Action is considered In-Kind
SIC-CCCS-13.2.1.5						0	The majority of the costs would likely include local government. Action is considered In-Kind
SIC-CCCS-18.1.1.1						0	Action is considered In-Kind
SIC-CCCS-18.1.1.2						0	Action is considered In-Kind
SIC-CCCS-18.1.1.3						0	Action is considered In-Kind
SIC-CCCS-18.1.1.4						0	Cost accounted in ROADS/RAILROADS
SIC-CCCS-18.1.2.1	22.00					22	Cost based on treating 1 mile (assume 1 project/mile in 5% high IP) at a rate of \$4.14/linear ft.
SIC-CCCS-18.1.2.2						TBD	Cost based on number and size of catchment systems needed. Estimate for catchment system ranges from \$100 - \$20,000/system.
SIC-CCCS-18.1.3.1						0	Cost accounted for in above action step.
SIC-CCCS-18.1.3.2						TBD	
SIC-CCCS-18.1.3.3						0	Action is considered In-Kind
SIC-CCCS-18.1.3.4						0	Action is considered In-Kind
SIC-CCCS-18.2.1.1						0	Action is considered In-Kind
SIC-CCCS-19.1.1.1	97.00					97	Cost based on road inventory of 101 miles of road network at a rate of \$957/mile.
SIC-CCCS-19.1.1.2						0	Action is considered In-Kind
SIC-CCCS-19.1.1.3						0	Action is considered In-Kind
SIC-CCCS-19.2.1.1						TBD	Need to estimate where and how much land will come available for purchase in the future.
SIC-CCCS-19.2.1.2						0	Action is considered In-Kind
SIC-CCCS-19.2.1.3						0	Action is considered In-Kind
SIC-CCCS-19.2.2.1						0	Action is considered In-Kind
SIC-CCCS-19.2.2.2						0	Action is considered In-Kind

Salmon Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SIC-CCCS-19.2.2.3						0	Action is considered In-Kind
SIC-CCCS-22.1.1.1						0	Action is considered In-Kind
SIC-CCCS-22.1.1.2						TBD	Cost for conservation easement are dependent upon fair market value, landowner participation, and quantity and quality of easement.
SIC-CCCS-22.1.1.3						0	Action is considered In-Kind
SIC-CCCS-22.1.1.4						0	Costs associated with policy development are expected to be minimal. Action is considered In-Kind
SIC-CCCS-22.1.2.1						0	Currently, existing incentive program are available and should be explored and expanded. Action is considered in-kind
SIC-CCCS-22.1.2.2						TBD	Investigating funding larger detention devices is not expected to cost much. Implementing the devices will be much more expensive.
SIC-CCCS-22.1.3.1						0	Action is considered In-Kind
SIC-CCCS-22.2.1.1						0	Action is considered In-Kind
SIC-CCCS-22.2.1.2	7.50	7.50				15	Cost based on installing a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance. Methods to treat and reduce pollutants will depend upon the type and amount being used.
SIC-CCCS-22.2.2.1						0	Action is considered In-Kind
SIC-CCCS-22.2.2.2						0	Action is considered In-Kind
SIC-CCCS-22.2.2.3						0	Action is considered In-Kind
SIC-CCCS-22.2.2.4						0	Action is considered In-Kind
SIC-CCCS-22.2.3.1						0	Action is considered In-Kind
SIC-CCCS-22.2.3.2						0	Action is considered In-Kind
SIC-CCCS-22.2.3.3						0	Effective and consistent implementation of these policies are anticipated to have little cost. Action is considered In-Kind
SIC-CCCS-22.2.4.1						0	This action encourages implementation of many existing policies. Action is considered In-Kind
SIC-CCCS-22.2.4.2						0	Action is considered In-Kind
SIC-CCCS-22.2.4.3						0	Stringent review by permitting agencies is expected to reduce costs associated with poorly planned and poorly located developments. Action is considered In-Kind
SIC-CCCS-23.1.1.1	48.50	48.50				97	Cost based on road inventory of 101 miles of road network at a rate of \$957/mile.
SIC-CCCS-23.1.1.2						0	Cost accounted for in above action step.
SIC-CCCS-23.1.1.3						0	Cost accounted for in SEDIMENT.
SIC-CCCS-23.1.1.4						TBD	Cost based on number and size of adequate spoils sites needed. Road assessment should identify this.
SIC-CCCS-23.1.1.5	25.75	25.75	25.75	25.75		103	This is the only road parameter that received a high or very high threat (density of roads in riparian zone). Cost based for decommissioning 8.6 miles of road network at a rate \$12,000/mile.
SIC-CCCS-23.1.1.6						0	Action is considered In-Kind
SIC-CCCS-23.1.1.7	186.00	186.00				372	Cost based on decommissioning 31 miles of road network at a rate of \$12,000/mile.
SIC-CCCS-23.1.1.8						0	New roads should be designed to prevent sediment entering waterways. Action is considered In-Kind
SIC-CCCS-23.1.1.9						0	Cost accounted for in above action step.
SIC-CCCS-23.1.2.1						0	Action is considered In-Kind
SIC-CCCS-23.1.2.2						TBD	Cost at a rate of \$223,051/unit.
SIC-CCCS-23.1.2.3						0	Action is considered In-Kind
SIC-CCCS-23.1.2.4						0	Cost accounted for in other action steps.
SIC-CCCS-23.1.2.5						0	Action is considered In-Kind
SIC-CCCS-23.1.2.6						0	Incorporating free span bridges into replacement and new construction plans is unlikely to increase costs. Action is considered In-Kind
SIC-CCCS-23.1.3.1						0	Cost to expand an existing program are expected to be minimal. Action is considered In-Kind
SIC-CCCS-23.1.4.1						0	Similar existing programs could be modified and implemented at minimal cost. Action is considered In-Kind
SIC-CCCS-23.1.4.2						0	Action is considered In-Kind
SIC-CCCS-24.1.1.1						0	Action is considered In-Kind
SIC-CCCS-24.1.1.2						0	Outreach and education are ongoing, and additional costs are expected to be minimal. Action is considered In-Kind
SIC-CCCS-24.1.1.3						0	Action is considered In-Kind
SIC-CCCS-24.1.1.4						0	Action is considered In-Kind
SIC-CCCS-24.2.1.1						TBD	Cost based on amount of water to acquire to minimize effects. Estimate for water purchase is \$155/acre ft./yr.
SIC-CCCS-25.1.1.1						0	Action is considered In-Kind
SIC-CCCS-25.1.1.2						0	Action is considered In-Kind
SIC-CCCS-25.1.1.3						0	Action is considered In-Kind
SIC-CCCS-25.1.1.4						0	Promoting water conservation best practices is not expected to result in additional costs. Action is considered In-Kind
SIC-CCCS-25.1.1.5						0	Action is considered In-Kind
SIC-CCCS-25.1.1.6						0	Evaluation costs are expected to be minimal. Action is considered In-Kind
SIC-CCCS-25.1.2.1	535					535	Cost based on number and type of fish screens to install. Estimate for a fish screen is \$53,465/screen and an estimated 10 screens are needed for a total of \$534,650.
SIC-CCCS-25.1.2.2						0	Action is considered In-Kind
SIC-CCCS-25.1.2.3						0	Action is considered In-Kind
SIC-CCCS-25.2.1.1						0	Action is considered In-Kind
SIC-CCCS-25.2.1.2						0	Coordination costs are expected to be minimal, depending on what specific actions are proposed. Action is considered In-Kind
SIC-CCCS-25.2.1.3						0	Technical assistance may be provided, and associated costs are expected to be minimal. Action is considered In-Kind

## Walker Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
WkC-CCCS-1.1.1.1	322.00					322	Cost based on estuary use/residence time model at a rate \$322,000/project.
WkC-CCCS-1.1.1.2	482.00					482	Cost based on treating 10% of total estuarine habitat at a rate of \$46,500/acre.
WkC-CCCS-1.1.1.3	32.00					273	Cost for estuary use/residence timing estimated at \$273,000/project.
WkC-CCCS-1.1.1.4	104	104				207	Estimated cost of assessment is \$207,000. Cost of implementation is unknown.
WkC-CCCS-1.1.2.1	878	878				1,755	Cost based on treating 6.5 acres (assume 5% of total estuarine habitat) at a rate of \$272,000/acre.
WkC-CCCS-1.1.2.2	7.50	7.50				15	Cost for continuous water quality monitoring stations estimated at \$5,000/station. Assume minimum of 3 for lagoon. Cost does not account for maintenance or data management.
WkC-CCCS-1.1.2.3						TBD	
WkC-CCCS-1.2.1.1						0	Action is considered In-Kind
WkC-CCCS-1.2.1.2						TBD	Costs associated with removal of structures will depend on the number and type of structures identified and cannot be accurately determined at this time.
WkC-CCCS-2.1.1.1						0	Action is considered In-Kind
WkC-CCCS-2.1.1.2	1,527	1,527				3,054	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
WkC-CCCS-2.1.2.1	32.50	32.50				65	Cost for stream flow model estimated at \$65,000/project.
WkC-CCCS-2.1.2.2	122.00	122.00				244	Cost for wetland restoration monitoring estimated at \$244,000/project.
WkC-CCCS-2.1.2.3						0	Cost accounted for in above action steps.
WkC-CCCS-2.1.2.4						0	Action is considered In-Kind
WkC-CCCS-2.2.1.1	92.50	92.50				185	Cost based on treating 0.7 miles (assume 1% high IP) at a rate of \$340/ft. for levee setback and \$38,000/breach.
WkC-CCCS-3.1.1.1	103.5	103.5				207	Estimated cost of assessment
WkC-CCCS-3.1.1.2	103.5	103.5				207	Estimated cost of assessment
WkC-CCCS-3.1.1.3						0	Cost accounted for in stream flow model.
WkC-CCCS-3.1.1.4						0	Action is considered In-Kind
WkC-CCCS-3.1.1.5						0	Cost accounted for in ROADS/RAILROADS
WkC-CCCS-3.1.1.6						TBD	Cost difficult to determine because of landowner participation. Estimate for off-channel storage is \$5,000/site.
WkC-CCCS-3.1.1.7						TBD	Cost based on type and amount of incentives to provide and participation from landowners. Estimate for water purchase/lease is \$150/ac. ft./year. Currently, incentive programs exist and should be explored and expanded upon.
WkC-CCCS-3.1.2.1						0	Action is considered In-Kind
WkC-CCCS-3.1.2.2						0	Action is considered In-Kind
WkC-CCCS-5.1.1.1	51.8	51.8	51.8	51.8		207	Evaluate truck and trap operations. Estimated cost of assessment is \$207,000.
WkC-CCCS-6.1.1.1						TBD	
WkC-CCCS-6.1.1.2	207.00					207	Estimated cost of assessment is \$207,000
WkC-CCCS-6.1.1.3	207.00					207	Estimated cost of assessment is \$207,000
WkC-CCCS-6.1.2.1	53.50	53.50				107	Cost based on treating 3.6 (assume 1 project/mile in 50% High IP) at a rate of \$30,000/mile. This action step should be coordinated with similar action steps to reduce cost and redundancy.
WkC-CCCS-6.1.2.2						0	Cost accounted for in above action step.
WkC-CCCS-6.1.3.1	53.50	53.50				107	Cost based on treating 3.6 miles (assume 1 project/mile in 50% High IP) at a rate of \$30,000/mile. Cost may be reduced if done in concert with increase frequencies of riffles.
WkC-CCCS-6.1.3.2						0	Cost accounted for in above action steps.
WkC-CCCS-6.1.3.3						0	Action is considered In-Kind
WkC-CCCS-6.1.3.4						0	Cost accounted for in above action steps.
WkC-CCCS-6.1.4.1						0	Cost for this action step is accounted for in other action steps above. Increasing primary pools is part of LWD placement and increase riffles.
WkC-CCCS-6.1.4.2						0	Cost accounted for in other action steps.
WkC-CCCS-6.1.5.1						0	Cost accounted for in increase pools, riffles, and LWD frequency.
WkC-CCCS-6.1.5.2						0	Cost accounted for in other action steps.
WkC-CCCS-7.1.1.1	207					207	Cost based on riparian restoration model at a rate of \$84,000/project. Estimated cost of assessment is \$207,000.
WkC-CCCS-7.1.1.2						0	Action is considered In-Kind
WkC-CCCS-7.1.1.3						0	Action is considered In-Kind
WkC-CCCS-7.1.1.4						0	Action is considered In-Kind
WkC-CCCS-7.1.2.1						0	Cost accounted for in above action steps.
WkC-CCCS-7.1.2.2						0	Cost accounted for in above action steps.
WkC-CCCS-7.1.2.3						0	Cost accounted for in above action steps.
WkC-CCCS-7.1.2.4						0	Action is considered In-Kind
WkC-CCCS-8.1.1.1						TBD	Habitat typing analysis should identify areas with high embeddedness.
WkC-CCCS-8.1.1.2	86.50	86.50				173	Cost for erosion assessment estimated at \$14/acre (assume 25% of total watershed acres).
WkC-CCCS-8.1.1.3						0	See ROADS
WkC-CCCS-8.1.1.4						0	Cost accounted for in other action steps.
WkC-CCCS-8.1.1.5						0	Action is considered In-Kind
WkC-CCCS-8.1.2.1	103.5	103.5				207	Cost difficult to determine at this time. Information from habitat typing will identify areas deficient in suitable spawning substrate. Estimate for spawning gravel is \$40/cu. yd. Estimated cost of assessment is \$207,000 and should be completed within the first ten years.
WkC-CCCS-8.1.2.2						0	Cost accounted for in above action steps.
WkC-CCCS-8.1.2.3						0	Cost accounted for in above action steps.

## Walker Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
WkC-CCCS-8.1.2.4	53.50	53.50				107	Cost based on treating 3.6 miles (assume 1 project/mile in 50% high IP) at a rate of \$30,000/mile.
WkC-CCCS-10.1.1.1						0	Cost accounted for in action step below.
WkC-CCCS-10.1.1.2	2.50	2.50				5	Cost for stream temperature gauges estimated at \$500/gauge. Assume minimum of 10. Cost does not account for maintenance or data management. This action step relies on implementation of other action steps such as reducing surface water diversions during low-flow summer months and increasing riparian canopy.
WkC-CCCS-10.1.1.3						TBD	This action step relies on implementation of other action steps such as reducing surface water diversions during low-flow summer months and increasing riparian canopy.
WkC-CCCS-10.1.1.4						TBD	This action step relies on implementation of other action steps such as reducing surface water diversions during low-flow summer months and increasing riparian canopy.
WkC-CCCS-10.1.1.5						0	Cost accounted for in other action steps.
WkC-CCCS-10.1.1.6						TBD	Cost difficult to determine without temperature monitoring data (cost to obtain data in earlier action step). Data will help determine sites with the warmest temperatures.
WkC-CCCS-10.1.1.7						0	Action is considered In-Kind
WkC-CCCS-10.1.1.8						0	Cost accounted for in other action steps.
WkC-CCCS-10.1.2.1	207					207	Cost partially accounted for in water quality monitoring stations. Recommendations to treat point and non-point source of pollution vary widely depending upon the type and amount of pollutant. Estimated cost of assessment is \$207,000.
WkC-CCCS-10.1.2.2	25.00					25	Cost for continuous water quality monitoring stations estimated at \$5,000/station. Assume a minimum of 5 strategically placed in watershed. Cost does not account for maintenance or data management. This action step should be in concert with estuary continuous water quality monitoring.
WkC-CCCS-10.1.2.3						TBD	Costs are site-specific.
WkC-CCCS-10.1.2.4						0	Action is considered In-Kind
WkC-CCCS-10.1.3.1	39.00	39.00				78	Cost for sediment assessment estimated at \$14/acre.
WkC-CCCS-11.1.1.1						TBD	
WkC-CCCS-11.1.1.2						0	Action is considered In-Kind
WkC-CCCS-11.1.1.3						0	Action is considered In-Kind
WkC-CCCS-11.1.1.4						0	Action is considered In-Kind
WkC-CCCS-11.1.1.5						0	Action is considered In-Kind
WkC-CCCS-11.1.1.6	340.50	340.50				681	Cost based on outmigrant trapping at a rate of \$68,000/project.
WkC-CCCS-12.1.1.1						0	Action is considered In-Kind
WkC-CCCS-12.1.1.2						TBD	Cost based on number of off-channel storage sites needed to reduce impacts to spring and summer flows. Estimate for off-channel storage is \$5,000/site.
WkC-CCCS-12.1.2.1						0	Action is considered In-Kind
WkC-CCCS-12.1.3.1						0	Cost accounted for in ROADS/RAILROADS
WkC-CCCS-12.1.3.2						0	Action is considered In-Kind
WkC-CCCS-12.1.3.3						0	Action is considered In-Kind
WkC-CCCS-12.1.4.1						100	Cost of completing Farm Conservation Plan estimated at approximately \$100,000 per plan.
WkC-CCCS-12.1.4.2						TBD	Costs are site-specific.
WkC-CCCS-12.1.4.3	103.5	103.5				207	Costs will vary depending on methods implemented and extent of rehabilitation. Estimated cost of assessment is \$207,000 and should be completed within the first 10 years.
WkC-CCCS-12.2.1.1						0	Action is considered In-Kind
WkC-CCCS-12.2.1.2						0	Action is considered In-Kind
WkC-CCCS-12.2.2.1						0	Action is considered In-Kind
WkC-CCCS-12.2.2.2						0	Action is considered In-Kind
WkC-CCCS-12.2.3.1						0	Action is considered In-Kind
WkC-CCCS-12.2.3.2						0	Action is considered In-Kind
WkC-CCCS-13.1.1.1	122.00	122.00				244	Cost for wetland monitoring estimated at \$244,000/project.
WkC-CCCS-13.1.1.2						0	Cost accounted for in above actions steps.
WkC-CCCS-13.1.1.3						0	Action is considered In-Kind
WkC-CCCS-13.1.1.4	85.00					85	Cost partially accounted for in above action step. Cost based on riparian restoration model at a rate of \$84,000/project.
WkC-CCCS-13.1.1.5						0	Costs accounted for in other actions
WkC-CCCS-13.1.1.6						0	Action is considered In-Kind
WkC-CCCS-13.2.1.1						0	Action is considered In-Kind
WkC-CCCS-13.2.1.2						0	Action is considered In-Kind
WkC-CCCS-13.2.1.3						0	Action is considered In-Kind
WkC-CCCS-13.2.1.4						0	Action is considered In-Kind
WkC-CCCS-18.1.1.1						0	Action is considered In-Kind
WkC-CCCS-18.1.1.2						0	Action is considered In-Kind
WkC-CCCS-18.1.1.3						0	Action is considered In-Kind
WkC-CCCS-18.1.1.4						0	Cost accounted for in above action step.
WkC-CCCS-18.1.1.5						0	Action is considered In-Kind
WkC-CCCS-18.1.1.6						0	Costs accounted for in other actions

## Walker Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
WkC-CCCS-18.1.1.7	8.80					9	Cost based on treating 0.4 miles (assume 1 project/mile in 5% high IP) at a rate of \$4/ft.
WkC-CCCS-18.1.1.8						0	Cost accounted for in above action step. Cost may be higher if greater participation from landowners. Estimate for off-stream water sources is \$5,000/site.
WkC-CCCS-18.1.1.9						0	Cost accounted for in above action steps.
WkC-CCCS-18.1.1.10						0	Action is considered In-Kind
WkC-CCCS-18.1.2.1						TBD	This action step should be coordinated with riparian exclusion fencing.
WkC-CCCS-18.1.2.2						0	Action is considered In-Kind
WkC-CCCS-18.1.2.3						0	Action is considered In-Kind
WkC-CCCS-18.1.2.4						0	Action is considered In-Kind
WkC-CCCS-18.1.3.1						TBD	Cost difficult to determine because of landowner participation. Cost for water storage and catchment system can range from \$100-\$50,000 depending upon size and complexity of system.
WkC-CCCS-19.1.1.1						0	Recruitment of LWD to the stream is critical. Action is considered In-Kind
WkC-CCCS-19.1.2.1						0	Action is considered In-Kind
WkC-CCCS-22.1.1.1						0	Action is considered In-Kind
WkC-CCCS-22.1.1.2						0	Action is considered In-Kind
WkC-CCCS-22.1.1.3						0	Action is considered In-Kind
WkC-CCCS-22.1.1.4						0	Action is considered In-Kind
WkC-CCCS-22.1.2.1						0	Action is considered In-Kind
WkC-CCCS-22.1.2.2						0	Action is considered In-Kind
WkC-CCCS-22.1.2.3						TBD	Costs depend on extents and type of mitigation and/or detention proposed, and cannot be determined at this time.
WkC-CCCS-22.1.2.4						TBD	Cost based on amount and type of incentives to provide for rooftop water storage devices. Estimate for some types of rooftop storage range from \$500-25,000/station.
WkC-CCCS-22.1.3.1						0	Action is considered In-Kind
WkC-CCCS-22.1.3.2						0	Action is considered In-Kind
WkC-CCCS-22.2.1.1						0	Action is considered In-Kind
WkC-CCCS-22.2.1.2						0	Action is considered In-Kind
WkC-CCCS-22.2.2.1						0	Costs associated with policy development are expected to be minimal. Action is considered In-Kind
WkC-CCCS-22.2.2.2						0	Effective and consistent implementation of these policies are anticipated to have little cost. Action is considered In-Kind.
WkC-CCCS-22.2.2.3						0	Costs associated with development and implementation of ordinances is difficult to determine. Action is considered In-Kind
WkC-CCCS-22.2.2.4						0	Stringent review by permitting agencies is expected to reduce costs associated with poorly planned and poorly located developments. Action is considered In-Kind
WkC-CCCS-23.1.1.1	12.00	12.00				24	
WkC-CCCS-23.1.1.2	116.00					116	Cost based on road inventory of 116 miles of road network at a rate of \$1,000/mile
WkC-CCCS-23.1.1.3						TBD	Cost based on amount and type of prescriptions to disconnect roads and trails to watercourses. Estimate for some prescriptions range from \$3,500 - \$7,000/mile (Jahren et al 2005).
WkC-CCCS-23.1.1.4						0	Action is considered In-Kind
WkC-CCCS-23.1.1.5	18.00	18.00				36	Cost based on treating 3 miles of riparian road at a rate of \$12,000/mile.
WkC-CCCS-23.1.1.6	103.5	103.5				207	Cost based on road assessment identifying number and type of adequate spoils sites needed. Estimated cost of assessment is \$207,000 and should be done within the first 10 years.
WkC-CCCS-23.1.1.7						0	Action is considered In-Kind
WkC-CCCS-23.1.1.8						0	Action is considered In-Kind
WkC-CCCS-23.1.1.9						0	Costs accounted for in other actions
WkC-CCCS-23.1.2.1						0	Cost accounted for in road assessment.
WkC-CCCS-23.1.2.2	446.00	446.00				892	Cost based on treating 4 crossings (assume upgrade to bottomless arch) at a rate of \$223,000/unit.
WkC-CCCS-23.1.2.3						0	Action is considered In-Kind
WkC-CCCS-23.1.2.4						0	Action is considered In-Kind
WkC-CCCS-23.1.2.5						0	Incorporating free span bridges into replacement and new construction plans is unlikely to increase costs. Action is considered In-Kind
WkC-CCCS-23.1.3.1						0	Action is considered In-Kind
WkC-CCCS-23.1.3.2						0	Cost to expand an existing program are expected to be minimal. Action is considered In-Kind
WkC-CCCS-24.1.1.1						0	See WATER QUALITY.
WkC-CCCS-24.1.2.1						0	Action is considered In-Kind
WkC-CCCS-24.1.3.1						0	Action is considered In-Kind
WkC-CCCS-24.1.3.2						0	Action is considered In-Kind
WkC-CCCS-24.1.3.3						0	Action is considered In-Kind
WkC-CCCS-24.2.1.1						0	Action is considered In-Kind
WkC-CCCS-24.2.1.2						0	Costs are expected to be minimal as some of these efforts will be part of existing programs, however some technical assistance may be necessary from a variety of agencies. Action is considered In-Kind
WkC-CCCS-25.1.1.1	6	6	6	6		25	Costs are minimal to promote. Costs for implementation will depend on the number of participants. Estimate for off-channel storage is \$5,000/station and is estimated for 5 stations for a total of \$25,000
WkC-CCCS-25.1.1.2						0	Promoting water conservation best practices is not expected to result in additional costs. Action is considered In-Kind
WkC-CCCS-25.1.1.3						0	Costs associated with promoting use of reclaimed water is expected to be minimal. Action is considered In-Kind

Walker Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
Wkc-CCCS-25.1.1.4						0	Costs associated with promoting conjunctive use of water is expected to be minimal. Action is considered In-Kind
Wkc-CCCS-25.1.1.5						0	Evaluation costs are expected to be minimal. Action is considered In-Kind
Wkc-CCCS-25.1.2.1	270.0	270.0				540	Cost based on number and type of fish screens to install. Estimate for a fish screen is \$54,000/screen and an estimated 10 screens are needed for a total of \$540,000.
Wkc-CCCS-25.1.2.2						0	Action is considered In-Kind
Wkc-CCCS-25.1.2.3						0	Costs associated with promoting conjunctive use of water is expected to be minimal. Action is considered In-Kind
Wkc-CCCS-25.1.3.1						0	Action is considered In-Kind
Wkc-CCCS-25.1.3.2	15.00					15	Cost based on implement 3 continuous water quality monitoring stations at a rate of \$5,000/site. Cost does not account for data management or maintenance.
Wkc-CCCS-25.2.1.1						0	Coordination costs are expected to be minimal, depending on what specific actions are proposed. Action is considered In-Kind
Wkc-CCCS-25.2.1.2						0	Technical assistance may be provided, and associated costs are expected to be minimal. Action is considered In-Kind

Drakes Bay Tributaries, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DrB-CCCS-11.1.1.1						0	Cost for population status and trends are accounted for in the Monitoring Chapter.

Estero Americano, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
EAm-CCCS-1.1.1.1	161.00	161.00				322	Cost based on estuary use/residence monitoring at a rate of \$322,000/project.
EAm-CCCS-1.1.1.2	934	934				1,867	Cost based on treating 10% of total estuarine habitat at a rate of \$46,500/acre.
EAm-CCCS-1.1.2.1	32					TBD	Cost based on amount of instream flow to increase through varied methods (e.g. conservation, water lease, etc.).
EAm-CCCS-1.1.2.2	7.50	7.50				15	Cost based on installing 3 continuous monitoring stations at a rate of \$5,000/station.
EAm-CCCS-1.1.3.1						0	Cost accounted through implementation of other action steps.
EAm-CCCS-1.1.3.2	161.00	161.00				322	Cost based on use/residence monitoring at a rate of \$322,000/project.
EAm-CCCS-3.1.1.1						0	Existing programs and outreach are considered In-Kind.
EAm-CCCS-3.1.1.2						0	Existing programs and outreach are considered In-Kind.
EAm-CCCS-3.1.1.3	18.75	18.75	18.75	18.75		75	Cost based on hydrologic model at a rate of \$75,000/project.
EAm-CCCS-3.1.1.4						0	Action is considered In-Kind
EAm-CCCS-3.2.1.1	0.8	0.8	0.8	0.8		3	Cost based on amount and size of storage tanks needed. Cost estimated at \$500/tank for an estimated 5 tanks for a total of \$2500.
EAm-CCCS-3.2.1.2						0	Cost accounted for in stream flow model.
EAm-CCCS-3.2.1.3						0	Action is considered In-Kind
EAm-CCCS-5.1.1.1	24.50	24.50				49	Cost based on providing passage at a partial barrier at a rate of \$49,000/project.
EAm-CCCS-5.1.1.2	24.50	24.50				49	Cost based on providing passage at a partial barrier at a rate of \$49,000/project.
EAm-CCCS-7.1.1.1						TBD	See Estero Americano Watershed Management Plan for more information. Total cost dependent on the amount of stream needing to be fenced.
EAm-CCCS-7.1.1.2						TBD	See Estero Americano Watershed Management Plan for more information. The management plan estimates cost to be \$80,000-100,000 per stream mile.
EAm-CCCS-7.1.1.3	6.3	6.3	6.3	6.3		25	Cost based on amount of water sources to relocate. Cost estimated at \$5,000/site for an estimated 5 sites for a total of \$25,000.
EAm-CCCS-7.1.1.4						0	Existing programs and outreach are considered In-Kind.
EAm-CCCS-8.1.1.1	103.5	103.5				207	Cost of addressing such sites will depend on the amount of high and medium priority sites identified in an assessment. Cost of conducting an erosion assessment estimated at \$207,000 and should be completed within the first 10 years.
EAm-CCCS-8.1.1.2						0	Costs covered under other recovery actions - See Riparian.
EAm-CCCS-8.1.1.3						0	Costs covered under other recovery actions - See Riparian.
EAm-CCCS-10.1.1.1						0	Existing programs and outreach are considered In-Kind.
EAm-CCCS-10.2.1.1	10.00					10	Cost based on water quality monitoring at a rate of \$5,000/site.
EAm-CCCS-12.1.1.1						0	Currently, incentive programs exist and should be explored and expanded. Action is considered in-kind
EAm-CCCS-12.1.1.2						0	Existing programs and outreach are considered In-Kind.
EAm-CCCS-12.1.1.3	15.50	15.50	15.50	15.50		62	Cost based on conducting a road inventory for 62 miles of road at a rate of \$1000/mile. Costs may be redundant with other actions. See Sediment.
EAm-CCCS-18.1.1.1						0	Existing programs and outreach are considered In-Kind.
EAm-CCCS-18.1.1.2						0	Cost accounted for in other action step. Currently, incentive programs exist and should be explored and expanded.
EAm-CCCS-18.1.1.3						0	Existing programs and outreach are considered In-Kind.
EAm-CCCS-18.1.2.1						0	Existing programs and outreach are considered In-Kind.
EAm-CCCS-18.1.3.1						0	Existing programs and outreach are considered In-Kind.
EAm-CCCS-24.1.1.1						0	Existing programs and outreach are considered In-Kind.
EAm-CCCS-24.2.1.1						0	Existing programs and outreach are considered In-Kind.

Pine Gulch Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PGC-CCCS-25.1.1.1						0	Action is considered In-Kind and is an ongoing action
PGC-CCCS-25.1.1.2						0	Action is considered In-Kind
PGC-CCCS-25.2.1.1	32					TBD	Cost depends on landowner participation.
PGC-CCCS-25.2.2.1	13.5	13.5	13.5	13.5	13.5	270	Total cost based on number and type of fish screens to implement. Estimate for fish screens is \$54,000/screen and it is estimated that 5 screens are needed for a total of \$270,000

Redwood Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
RedC-CCCS-1.1.1.1	169.00	169.00				338	Cost based on treating 10% of 12 acres of estuarine habitat at a rate of \$280,000/acre.
RedC-CCCS-1.1.1.2	2,500	2,500				5,000	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
RedC-CCCS-1.1.1.3	32.0	103.5				207	Estimated cost of assessment is \$207,000,and should be completed within 10 years. Total cost is dependent on assessment.
RedC-CCCS-1.1.1.4						0	Action is considered In-Kind
RedC-CCCS-2.1.1.1	51.8	51.8	51.8	51.8		207	Estimated cost of assessment is \$207,000.
RedC-CCCS-2.1.1.2	103.5	103.5				207	Estimated cost of assessment is \$207,000,and should be completed within 10 years. Total cost is dependent on assessment.
RedC-CCCS-2.1.1.3						TBD	Total cost is dependent on assessment (below).
RedC-CCCS-2.1.1.4	103.5	103.5				207	Estimated cost of assessment is \$207,000,and should be completed within 10 years.
RedC-CCCS-2.1.1.5	5,000	5,000				10,000	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
RedC-CCCS-2.1.1.6	200.00	200.00				400	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
RedC-CCCS-2.1.1.7	125.00	125.00	125.00	125.00		500	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
RedC-CCCS-2.2.1.1						TBD	Cost difficult to determine because of willingness of landowner participation and fair market value for conservation easements.
RedC-CCCS-2.2.1.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
RedC-CCCS-2.2.1.3						TBD	Cost difficult to determine because of fair market value and rate of turnover.
RedC-CCCS-2.2.1.4	37.00	37.00				74	Cost based on riparian monitoring estimated at \$74,000/project.
RedC-CCCS-3.1.1.1						0	Cost accounted for in action step below.
RedC-CCCS-3.1.1.2	207.0					207	Estimated cost of assessment is \$207,000.
RedC-CCCS-3.1.1.3						TBD	Cost difficult to determine because of landowner participation. Currently, incentive programs exist and should be explored and expanded.
RedC-CCCS-3.2.1.1						0	Action is considered In-Kind
RedC-CCCS-3.2.1.2						TBD	Cost difficult to determine because of landowner participation and extent of off-channel storage needed to reduce impacts. Stream flow model should address this concern.
RedC-CCCS-3.2.1.3						0	Action is considered In-Kind
RedC-CCCS-3.2.1.4						0	Cost accounted for in stream flow model.
RedC-CCCS-3.2.1.5						0	Action is considered In-Kind
RedC-CCCS-3.2.2.1						0	Action is considered In-Kind
RedC-CCCS-3.2.2.2						0	Action is considered In-Kind
RedC-CCCS-3.2.2.3						0	Action is considered In-Kind
RedC-CCCS-6.1.1.1						0	Action is considered in-kind (BMP)
RedC-CCCS-6.1.1.2	130.00	130.00				260	Cost based on treating 10 miles (assume 1 project/mile in 50% of High IP) at a rate of \$26,000/mile.
RedC-CCCS-6.1.1.3						TBD	
RedC-CCCS-6.1.1.4	57.50	57.50				115	Cost based on fish/habitat restoration effectiveness monitoring estimated at \$115,000/project.
RedC-CCCS-6.1.2.1	5.00	5.00				10	Cost based on beaver reintroduction estimated at \$10,000/beaver family translocation.
RedC-CCCS-6.1.3.1						0	Cost accounted for in increase pools, riffles, and LWD frequency.
RedC-CCCS-6.2.1.1						0	Action is considered In-Kind
RedC-CCCS-6.2.1.2						0	Action is considered In-Kind
RedC-CCCS-6.2.1.3						0	Action is considered In-Kind
RedC-CCCS-7.1.1.1	51.8	51.8	51.8	51.8		207	Estimated cost of assessment is \$207,000.
RedC-CCCS-7.1.1.2	62.50	62.50	62.50	62.50		250	Cost based on previous regional projects
RedC-CCCS-7.1.1.3						0	Action is considered In-Kind
RedC-CCCS-7.1.1.4	25.00	25.00	25.00	25.00		100	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
RedC-CCCS-7.1.1.5						0	Action is considered In-Kind
RedC-CCCS-7.1.2.1						0	Cost accounted for in above action steps.
RedC-CCCS-7.1.2.2						0	Cost accounted for in above action steps.
RedC-CCCS-7.1.2.3						0	Encouragement is considered In-Kind
RedC-CCCS-7.2.1.1						0	Action is considered In-Kind
RedC-CCCS-7.2.1.2						0	Action is considered In-Kind
RedC-CCCS-8.1.1.1	50.00					50	Cost for road inventory estimated at \$1000/mile (assume 75% of road network) and sediment assessment (assume 25% of total watershed acres) estimated at \$12/acre.
RedC-CCCS-8.1.1.2						0	Cost accounted for in sediment assessment and decommissioning/upgrading actions
RedC-CCCS-8.1.1.3	42.00	42.00				84	Cost based on decommissioning 7 miles of riparian road at a rate of \$12,000/mile.
RedC-CCCS-8.1.1.4						0	Action is considered In-Kind
RedC-CCCS-8.1.1.5						TBD	Cost based on amount of riparian exclusion fencing needed. Estimate for exclusion fencing is \$4/ft.
RedC-CCCS-8.2.1.1						0	Action is considered In-Kind
RedC-CCCS-8.2.1.2						0	Action is considered In-Kind
RedC-CCCS-10.1.1.1	57.00	57.00				114	Cost based on treating 1 mile (assume 80 acres/mile in 15% High IP with 1 mile minimum) at a rate of \$1,400/acre.
RedC-CCCS-10.1.1.2						0	Action is considered In-Kind
RedC-CCCS-10.1.1.3						0	Action is considered In-Kind
RedC-CCCS-10.2.1.1	3.30					3	Cost to conduct water quality monitoring estimated at \$700/site. Assume minimum of 5 sites for High IP. Cost does not account for data management or reporting requirements.
RedC-CCCS-11.1.1.1						0	Cost accounted for in above action steps.
RedC-CCCS-11.1.1.2						0	Cost accounted for fish/habitat monitoring.

Redwood Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
RedC-CCCS-11.1.1.3	259	259				518	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
RedC-CCCS-11.1.1.4						0	Action is considered In-Kind
RedC-CCCS-13.1.1.1						0	Action is considered In-Kind
RedC-CCCS-13.1.1.2						TBD	Cost based on amount of obsolete bank stabilization structures. Cost estimated to be more costly than stream complexity and ELJ projects which cost \$26,000/mile and \$104,000ELJ, respectively.
RedC-CCCS-13.1.1.3						0	Action is considered In-Kind
RedC-CCCS-13.1.1.4						0	Action is considered In-Kind
RedC-CCCS-13.1.1.5						0	Action is considered In-Kind
RedC-CCCS-13.1.1.6	44.50	44.50				89	Cost based on treating 50% of IP at a rate of \$30,000/mile.
RedC-CCCS-15.1.1.1						0	Action is considered In-Kind
RedC-CCCS-15.1.1.2	43.00	43.00				86	Cost for effects of wildfire on ecosystem process estimated at \$86,000/project.
RedC-CCCS-15.1.2.1						0	Action is considered In-Kind
RedC-CCCS-15.1.2.2						0	Action is considered In-Kind
RedC-CCCS-21.1.1.1						0	Action is considered In-Kind
RedC-CCCS-21.1.1.2						20	Total costs are difficult to determine without knowledge of number of access points. Cost of assessment is likely small and is estimated at \$20,000 and should be completed within the first 10 years.
RedC-CCCS-21.1.1.3						0	Action is considered In-Kind
RedC-CCCS-21.1.1.4						0	Action is considered In-Kind
RedC-CCCS-23.1.1.1	235.00	235.00				470	Cost based on treating 14 miles of road network at \$21,000/mile. Cost to decommission road network to viability targets is \$168,000.
RedC-CCCS-23.1.1.2						0	Action is considered In-Kind
RedC-CCCS-23.1.2.1						0	Action is considered In-Kind
RedC-CCCS-23.1.2.2						0	Cost accounted for in other action steps.
RedC-CCCS-23.1.2.3	22.00	22.00				44	Cost based on decommissioning 4 miles of road network at \$12,000/mile.
RedC-CCCS-23.1.3.1						0	Cost accounted for in Floodplain Connectivity action step RedC-CCCS-2.1.1.5
RedC-CCCS-23.1.3.2						TBD	Cost based on treating 1,500 linear feet of levee at \$70/linear foot plus road treatment at a cost of \$21,000/mile.
RedC-CCCS-23.2.1.1						0	Action is considered In-Kind
RedC-CCCS-24.1.1.1						0	Action is considered In-Kind
RedC-CCCS-24.1.1.2						0	Action is considered In-Kind
RedC-CCCS-24.1.1.3						0	Action is considered In-Kind
RedC-CCCS-24.1.1.4						0	Action is considered In-Kind
RedC-CCCS-25.1.1.1						TBD	
RedC-CCCS-25.1.2.1	13.5	13.5	13.5	13.5	13.5	270	Total cost based on number and type of fish screens to implement. Estimate for fish screens is \$54,000/screen and it is estimated that 5 screens are needed for a total of \$270,000
RedC-CCCS-25.2.1.1						0	Action is considered In-Kind
RedC-CCCS-25.2.1.2						0	Action is considered In-Kind
RedC-CCCS-25.2.1.3						0	Action is considered In-Kind

Dutch Bill Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DBC-CCCS-2.1.1.1	21	21				42	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
DBC-CCCS-2.1.1.2	103.5	103.5				207	Cost of assessment may be link with the above action and is estimated at \$207,000 and should be completed within the first 10 years. Cost to implement results of assessment is TBD.
DBC-CCCS-2.1.2.1	32					0	Cost accounted for in above action step.
DBC-CCCS-3.1.1.1						0	Action is considered In-Kind
DBC-CCCS-3.1.1.2						0	Action is considered In-Kind
DBC-CCCS-3.1.1.3	32.50	32.50				65	Cost based on stream flow/precipitation model at a rate of \$65,000/project.
DBC-CCCS-3.1.2.1	20					20	Cost based on amount of water diversions needed to be altered. Several recommendations could be developed to reduce drawdown in the spring such as off-channel storage facilities or alternate frost protection measures. Most of cost could be in-kind or a small amount. It is estimated at \$20,000
DBC-CCCS-3.1.3.1	103.5	103.5				207	Cost of assessment and design is estimated at \$207,000.
DBC-CCCS-5.1.1.1	224.00					224	Cost based on escapement and juvenile migration monitoring at a rate of \$36,000 and \$188,000/project, respectively.
DBC-CCCS-6.1.1.1	18.20	18.20				36	Cost based on treating 1.4 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
DBC-CCCS-6.1.2.1	103.5	103.5				207	Cost of assessment is estimated at \$207,000 and may be able to be used for the next two action steps. Final total costs will be based on the assessment.
DBC-CCCS-6.1.3.1						TBD	Final total costs will be based on the assessment.
DBC-CCCS-6.1.4.1						TBD	Final total costs will be based on the assessment.
DBC-CCCS-10.1.1.1	15.00					15	Cost based on a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
DBC-CCCS-10.1.1.2	207					207	Cost is contingent upon above action step and recommendations to treat point and non-point source pollution. Cost of assessment for recommendations is estimated at \$207,000.
DBC-CCCS-12.1.1.1						0	Cost accounted for in ROADS
DBC-CCCS-12.1.1.2						0	Action is considered In-Kind
DBC-CCCS-12.1.1.3						0	Action is considered In-Kind
DBC-CCCS-12.1.1.4	25.00	25.00				50	Cost of completing Farm Conservation Plan estimated at approximately \$50,000 per plan.
DBC-CCCS-12.1.1.5	5	5	5	5		20	Cost is likely to be low if CDFW effectiveness monitoring protocols are used. Cost is estimated at \$20,000
DBC-CCCS-12.1.1.6						0	Action is considered In-Kind
DBC-CCCS-12.1.1.7						0	Action is considered In-Kind
DBC-CCCS-12.1.1.8						0	Action is considered In-Kind
DBC-CCCS-12.1.2.1						0	Action is considered In-Kind
DBC-CCCS-12.1.2.2						TBD	Cost based on amount of land/conservation easement needed, fair market value, and landowner participation.
DBC-CCCS-12.1.2.3						0	Action is considered In-Kind
DBC-CCCS-12.1.3.1	18.50	18.50				37	Cost based on treating 1.4 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
DBC-CCCS-12.1.3.2						0	Action is considered In-Kind
DBC-CCCS-12.1.4.1	41.50	41.50				82	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
DBC-CCCS-12.1.5.1	25	25				50	Cost based on amount of off-channel storage needed to reduce impacts. Cost for 10 off-channel estimates is \$5,000/site for a total of \$50,000
DBC-CCCS-12.1.5.2						TBD	
DBC-CCCS-12.2.1.1						0	Action is considered In-Kind
DBC-CCCS-12.2.1.2						0	Action is considered In-Kind
DBC-CCCS-12.2.1.3						0	Action is considered In-Kind
DBC-CCCS-12.2.1.4						TBD	
DBC-CCCS-12.2.1.5						0	Streamlining permit processing is not expected to cost much, and may save money through future efficiencies. Action is considered In-Kind
DBC-CCCS-12.2.1.6						0	Soliciting cooperation not expected to cost much outside of already existing federal and state and local salaries. Action is considered In-Kind
DBC-CCCS-13.1.1.1	287.00					287	Cost based on riparian and wetland restoration model at a rate of \$74,000 and \$213,000/project, respectively.
DBC-CCCS-13.1.1.2	521	521				1,042	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
DBC-CCCS-13.1.1.3						TBD	Cost based on amount of levees to set-back. Cost estimate for levee setback is \$35/linear ft.
DBC-CCCS-13.1.1.4						0	Action is considered In-Kind
DBC-CCCS-13.1.2.1						0	Action is considered In-Kind
DBC-CCCS-13.1.3.1						0	Action is considered In-Kind
DBC-CCCS-13.1.3.2						0	Action is considered In-Kind
DBC-CCCS-13.1.3.3						0	Action is considered In-Kind
DBC-CCCS-13.1.3.4						0	Action is considered In-Kind
DBC-CCCS-13.2.1.1						0	Action is considered In-Kind
DBC-CCCS-13.2.1.2						0	Action is considered In-Kind
DBC-CCCS-22.1.1.1						0	Action is considered In-Kind
DBC-CCCS-22.1.1.2						0	Cost of training and encouraging partners to maintain riparian health is expected to be low. Action is considered In-Kind
DBC-CCCS-22.1.1.3						0	Action is considered In-Kind
DBC-CCCS-22.1.2.1	20					20	Investigating funding larger detention devices is not expected to cost much. Cost of investigation estimated at 20,000. Implementing the devices will be much more expensive.
DBC-CCCS-22.1.2.2						0	Cost accounted for in other action steps.
DBC-CCCS-22.1.2.3						0	Encouraging landowners to restore floodplain areas is not expected to cost much. Action is considered In-Kind

Dutch Bill Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DBC-CCCS-22.1.2.4						TBD	Cost of purchasing land/conservation easements is highly variable and based on fair market value, amount of conservation easement needed, and landowner participation.
DBC-CCCS-22.1.2.5						0	Cost of identifying and developing incentives to landowners expected to be low. Action is considered In-Kind
DBC-CCCS-22.1.2.6						0	The cost of implementing this BMP should be standard practice. Action is considered In-Kind
DBC-CCCS-22.1.2.7						0	Action is considered In-Kind
DBC-CCCS-22.1.2.8						0	Encouraging the county on the above issue is not likely to incur any costs outside of the duties of already salaried state and federal workers. Action is considered In-Kind
DBC-CCCS-22.1.2.9						0	Action is considered In-Kind
DBC-CCCS-22.1.2.10						0	Action is considered In-Kind
DBC-CCCS-22.1.3.1						0	Implementing this BMP is not expected to be very costly.
DBC-CCCS-22.1.3.2						0	Action is considered In-Kind
DBC-CCCS-22.1.3.3						0	Action is considered In-Kind
DBC-CCCS-22.1.4.1						0	Action is considered in-kind.
DBC-CCCS-22.2.1.1						0	Cost of implementing performance standards is likely low. Action is considered in-kind.
DBC-CCCS-22.2.2.1						0	Implementing this BMP is expected to be low cost.
DBC-CCCS-22.2.2.2						0	Implementing this BMP is expected to be low cost. Action is considered in-kind
DBC-CCCS-22.2.3.1						TBD	Institutionalizing programs to purchase land is not expected to be much cost. Buying the land, on the other hand, is likely to be very expensive. Cost based on fair market value, land turnover, and participation from landowners.
DBC-CCCS-22.2.3.2						0	The cost of discouraging forestland conversion is expected to be low. Action is considered In-Kind
DBC-CCCS-22.2.3.3						0	Cost of ensuring enforcement of existing building permits is expected to be low (i.e., covered as part of already existing enforcement programs). Action is considered In-Kind
DBC-CCCS-22.2.3.4						0	Action is considered In-Kind
DBC-CCCS-22.2.3.5						0	Action is considered In-Kind
DBC-CCCS-22.2.3.6						0	Cost is expected to be low since work will largely be carried out by federal, state and local staff. Action is considered In-Kind
DBC-CCCS-22.2.3.7						0	Encouraging the county is not expected to result in a high cost basis. Action is considered In-Kind
DBC-CCCS-22.2.3.8						0	Action is considered In-Kind
DBC-CCCS-23.1.1.1	103.5	103.5				207	Cost of assessment estimated at \$207,000.
DBC-CCCS-23.1.1.2						0	This action step should be part of road inventory assessment identified in other action steps.
DBC-CCCS-23.1.2.1	103.5	103.5				207	Cost based on type and number of recommendation to employ. Road upgrades estimate is \$21,000/mile and road decommissioning estimate is \$12,000/mile. Cost of assessment is estimated at \$207,000 and should be completed within the first 10 years.
DBC-CCCS-23.1.2.2	25.50	25.50				51	Cost based on road inventory of 51 miles at a rate of \$1000/mile.
DBC-CCCS-23.1.2.3	103.5	103.5				207	Total cost based on amount of adequate spoils sites needed. Cost of assessment estimated at \$207,000.
DBC-CCCS-23.1.2.4						0	Action is considered In-Kind
DBC-CCCS-23.1.2.5						0	Action is considered In-Kind
DBC-CCCS-23.1.2.6						TBD	
DBC-CCCS-23.2.1.1						0	Action is considered In-Kind
DBC-CCCS-23.2.1.2						0	Action is considered In-Kind
DBC-CCCS-23.2.1.3						TBD	Incorporating free span bridges into replacement and new construction plans is unlikely to increase costs. Construction of the bridges will likely be much higher.
DBC-CCCS-23.2.1.4						0	Action is considered In-Kind
DBC-CCCS-25.1.1.1						TBD	Costs are minimal to promote. Costs for implementation will depend on the number of participants.
DBC-CCCS-25.1.1.2						0	Promoting water conservation best practices is not expected to result in additional costs.
DBC-CCCS-25.1.1.3						0	Costs associated with promoting use of reclaimed water is expected to be minimal. Action is considered In-Kind
DBC-CCCS-25.1.1.4						0	Costs to promote this action are expected to be minimal. Action is considered In-Kind
DBC-CCCS-25.1.2.1	67.5	67.5	67.5	67.5		270	Cost based on number and type of fish screens needed to prevent juvenile salmonid mortalities. Estimate for 5 fish screens is \$54,000/screen for a total of \$267,000
DBC-CCCS-25.2.1.1	65.00					65	Cost based on stream flow/precipitation model at a rate of \$65,000/project. Cost to distribute expected to be minimal.
DBC-CCCS-25.2.1.2						0	Action is considered In-Kind
DBC-CCCS-25.2.1.3	207					207	Cost based on types and feasibility of recommendations to employ to reduce conflicts between frost protection and fisheries. Cost of assessment estimated at \$207,000.
DBC-CCCS-25.2.1.4						0	Coordination costs are expected to be minimal, depending on what specific actions are proposed. Action is considered In-Kind
DBC-CCCS-25.2.1.5						0	Evaluation costs are expected to be minimal. Action is considered In-Kind
DBC-CCCS-25.2.1.6						0	Technical assistance may be provided, and associated costs are expected to be minimal. Action is considered In-Kind

Freezeout Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
FrezC-CCCS-2.1.1.1	143.50	143.50				287	Cost based on riparian and wetland restoration model at a rate of \$74,000 and \$213,000/project, respectively.
FrezC-CCCS-2.1.1.2	372.00	372.00				744	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
FrezC-CCCS-6.1.1.1	32.00	13.00				26	Cost based on treating 1 mile at a rate of \$26,000/mile.
FrezC-CCCS-6.1.2.1	13.00	13.00				26	Cost based on treating 1 mile at a rate of \$26,000/mile.
FrezC-CCCS-6.1.3.1	103.5	103.5				207	Cost of assessment estimated at \$207,000. Total final will be based on findings and implementation based on assessment.
FrezC-CCCS-6.1.4.1	103.5	103.5				207	Cost of assessment estimated at \$207,000. Total final will be based on findings and implementation based on assessment.
FrezC-CCCS-10.1.1.1	5.00					5	Cost based on installing a minimum of 1 continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
FrezC-CCCS-10.1.1.2	103.5	103.5				207	Cost based on results of continuous water quality monitoring. Cost of assessment estimated at \$207,000.
FrezC-CCCS-18.1.1.1						0	Currently, existing incentive programs exist and should be explored and expanded, action is considered in-kind
FrezC-CCCS-18.1.1.2	61.7	61.7	61.7	61.7	61.7	370	Cost based on amount of area needing to be restored. Estimate for riparian restoration is \$37,000/acre and is estimated to be needed for 10 acres for a total of \$370,000
FrezC-CCCS-18.1.1.3						0	Action is considered In-Kind because no land is being purchased, only a change in grazing strategy
FrezC-CCCS-18.1.1.4						0	Action is considered In-Kind
FrezC-CCCS-18.1.2.1						0	Action is considered In-Kind
FrezC-CCCS-18.1.2.2						TBD	This action step should be in concert with riparian exclusion fencing.
FrezC-CCCS-18.1.2.3						0	Action is considered In-Kind
FrezC-CCCS-18.1.2.4						0	Action is considered In-Kind
FrezC-CCCS-19.1.1.1						TBD	Need to estimate where and how much land will come available and the fair market value for the land to purchase in the future.
FrezC-CCCS-19.1.1.2						0	Action is considered In-Kind
FrezC-CCCS-19.1.1.3						0	Recruitment of LWD to the stream is critical. Action is considered In-Kind
FrezC-CCCS-19.1.2.1						0	Action is considered In-Kind
FrezC-CCCS-19.2.1.1						0	Action is considered In-Kind
FrezC-CCCS-19.2.1.2						0	Cost is minimal because NMFS/CDFW already participate in meetings the Board of Forestry. Action is considered In-Kind
FrezC-CCCS-19.2.1.3						0	Action is considered In-Kind
FrezC-CCCS-19.2.1.4						0	Action is considered In-Kind
FrezC-CCCS-23.1.1.1	4.00					4	Cost based on road inventory of 4 miles of road network at a rate of \$1000/mile.
FrezC-CCCS-23.1.1.2	103.5	103.5				207	Cost of assessment estimated at \$207,000. Total final will be based on findings from assessment.
FrezC-CCCS-23.1.1.3	103.5	103.5				207	Total cost based on amount of adequate spoils storage sites needed. Cost of assessment estimated at \$207,000.
FrezC-CCCS-23.1.1.4						0	Action is considered In-Kind
FrezC-CCCS-23.1.1.5						0	Action is considered In-Kind
FrezC-CCCS-23.1.1.6						0	Action is considered In-Kind
FrezC-CCCS-23.1.2.1	103.5	103.5				207	Cost of assessment estimated at \$207,000. Total final will be based on findings from assessment.
FrezC-CCCS-23.1.2.2						0	Cost accounted for in above action step.
FrezC-CCCS-23.2.1.1						0	Cost to expand an existing program are expected to be minimal. Action is considered In-Kind
FrezC-CCCS-23.2.1.2						0	Action is considered In-Kind
FrezC-CCCS-23.2.1.3						TBD	Incorporating free span bridges into replacement and new construction plans is unlikely to increase costs. Construction of the bridges will likely be much higher.
FrezC-CCCS-23.2.1.4						0	Action is considered In-Kind

Hulbert Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
HulC-CCCS-6.1.1.1	13.00	13.00				26	Cost based on treating 0.8 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
HulC-CCCS-6.1.2.1	13.00	13.00				26	Cost based on treating 0.8 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. This action step should be coordinated with above action step to reduce cost and redundancy.
HulC-CCCS-7.1.1.1	32.00	83.00				166	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
HulC-CCCS-7.1.1.2						0	Action is considered In-Kind
HulC-CCCS-19.1.1.1						TBD	Need to estimate how much land will come available and fair market value for purchase in the future.
HulC-CCCS-19.1.1.2						0	Action is considered In-Kind
HulC-CCCS-19.1.1.3						0	Recruitment of LWD to the stream is critical. Action is considered In-Kind
HulC-CCCS-19.1.2.1						0	Action is considered In-Kind
HulC-CCCS-19.2.1.1						0	Action is considered In-Kind
HulC-CCCS-19.2.1.2						0	Cost is minimal because NMFS/CDFW already participate in meetings the Board of Forestry. Action is considered In-Kind
HulC-CCCS-19.2.1.3						0	Action is considered In-Kind
HulC-CCCS-23.1.1.1	17.00					17	Cost based on road inventory of 17 miles of road network at a rate of \$1000/mile.
HulC-CCCS-23.1.1.2	112.00	112.00				224	Cost based on decommissioning 16 miles of road network at a rate of \$12,000/mile and upgrading remaining 1.6 miles at a rate of \$21,000/mile.
HulC-CCCS-23.1.1.3						TBD	Cost will be based on number of adequate spoil sites needed identified in road inventory.
HulC-CCCS-23.1.1.4						0	Action is considered In-Kind
HulC-CCCS-23.1.1.5						0	Action is considered In-Kind
HulC-CCCS-23.1.1.6						0	Action is considered In-Kind
HulC-CCCS-23.1.2.1						0	Cost included in the above road assesment.
HulC-CCCS-23.1.2.2						TBD	Cost will be based on recommendations identified in road assesment.
HulC-CCCS-23.2.1.1						0	Cost to expand an existing program are expected to be minimal.Action is considered In-Kind
HulC-CCCS-23.2.1.2						0	Action is considered In-Kind
HulC-CCCS-23.2.1.3						TBD	Incorporating free span bridges into replacement and new construction plans is unlikely to increase costs. Construction of the bridges will likely be much higher.
HulC-CCCS-23.2.1.4						0	Action is considered In-Kind

Porter Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PortC-CCCS-2.1.1.1	58	58				116	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
PortC-CCCS-2.1.1.2						0	Cost accounted for in above action step
PortC-CCCS-2.1.2.1	32.0	103.5				207	Costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment estimated at \$207,000
PortC-CCCS-6.1.1.1	17.00	17.00				34	Cost based on treating 1.3 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
PortC-CCCS-6.1.2.1	17.00	17.00				34	Cost based on treating 1.3 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. This action step should be coordinated with similar action steps to reduce cost and redundancy.
PortC-CCCS-6.1.3.1						0	Cost accounted for in above action steps.
PortC-CCCS-6.1.4.1						0	Cost accounted for in above action steps.
PortC-CCCS-7.1.1.1	83.00	83.00				166	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
PortC-CCCS-7.1.1.2						0	Action is considered In-Kind
PortC-CCCS-7.1.2.1						0	Cost accounted for through implementation of other action steps.
PortC-CCCS-12.1.1.1	7.00	7.00				14	Cost based on road inventory of 13.7 miles of road network. Cost to address sediment and runoff will depend upon recommendations from the assessment.
PortC-CCCS-12.1.1.2						0	Action is considered In-Kind
PortC-CCCS-12.1.1.3						0	Action is considered In-Kind
PortC-CCCS-12.1.1.4	25.00	25.00				50	Cost of completing Farm Conservation Plan estimated at approximately \$50,000 per plan.
PortC-CCCS-12.1.1.5						0	Action is considered In-Kind
PortC-CCCS-12.1.1.6						0	Action is considered In-Kind
PortC-CCCS-12.1.2.1						TBD	Cost will be based on number and scope of conservation easements, fair market value, and landowner participation.
PortC-CCCS-12.1.3.1	17.00	17.00				34	Cost based on treating 1.3 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. If ELJ is used, assume flat rate of \$104,000/ELJ.
PortC-CCCS-12.1.3.2						0	Action is considered In-Kind
PortC-CCCS-12.1.4.1	103.5	103.5				207	Costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment estimated at \$207,000 and should occur within the first ten years.
PortC-CCCS-12.1.5.1						0	Action is considered In-Kind
PortC-CCCS-12.1.5.2						TBD	
PortC-CCCS-12.2.1.1						0	Action is considered In-Kind
PortC-CCCS-12.2.1.2						0	Action is considered In-Kind
PortC-CCCS-12.2.1.3						TBD	Cost will be based on amount of setbacks needed. Estimate for levee setbacks is \$30/linear ft.
PortC-CCCS-12.2.1.4						TBD	
PortC-CCCS-12.2.1.5						0	Streamlining permit processing is not expected to cost much, and may save money through future efficiencies. Action is considered In-Kind
PortC-CCCS-12.2.1.6						0	Soliciting cooperation not expected to cost much outside of already existing federal and state and local salaries. Action is considered In-Kind
PortC-CCCS-13.1.1.1						0	Action is considered In-Kind
PortC-CCCS-13.1.2.1						0	Action is considered In-Kind
PortC-CCCS-13.1.3.1						0	Action is considered In-Kind
PortC-CCCS-13.1.3.2						0	Action is considered In-Kind
PortC-CCCS-13.1.3.3						0	Action is considered In-Kind
PortC-CCCS-13.1.3.4						0	Action is considered In-Kind
PortC-CCCS-13.2.1.1						0	Action is considered In-Kind
PortC-CCCS-13.2.1.2						0	Action is considered In-Kind
PortC-CCCS-18.1.1.1						TBD	Cost based on participation of landowners and amount of riparian exclusion fencing needed. Cost estimate for riparian exclusion fence is \$4/ft.
PortC-CCCS-18.1.1.2	103.5	103.5				207	Cost will be based on amount of area to be restored. Cost estimate for riparian restoration is \$37,000/ acre. Cost of assessment estimated at \$207,000 and should occur within the first ten years.
PortC-CCCS-18.1.1.3						0	Action is considered In-Kind. It is not requiring the purchase of any land but only a change in grazing strategy.
PortC-CCCS-18.1.1.4						0	Action is considered In-Kind
PortC-CCCS-18.1.2.1	0.67	0.67	0.67	0.67	0.67	4	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP) at a rate of \$4/ft. Offstream water sources estimate is \$5,000/site.
PortC-CCCS-18.1.2.2						TBD	This action should be conducted in coordination with riparian fencing.
PortC-CCCS-18.1.2.3						0	Action is considered In-Kind
PortC-CCCS-18.1.2.4						0	Action is considered In-Kind
PortC-CCCS-20.1.1.1	172.5	172.5				345	Cost based on appropriate measures needed to improve passage. Cost fish/habitat restoration model estimate of \$115,000/project and is estimated for 3 projects for a total of \$345,000
PortC-CCCS-20.1.1.2						0	Action is considered In-Kind
PortC-CCCS-20.1.2.1						0	Cost accounted for in HABITAT COMPLEXITY
PortC-CCCS-20.1.2.2						0	Action is considered In-Kind
PortC-CCCS-20.1.3.1						0	Cost accounted for in FLOODPLAIN CONNECTIVITY.
PortC-CCCS-20.1.3.2						0	Action is considered In-Kind
PortC-CCCS-23.1.1.1	103.5	103.5				207	Cost of assessment estimated at \$207,000. The road assessments may be able to be done together for a cost savings
PortC-CCCS-23.1.1.2						0	Cost accounted for in other action steps.
PortC-CCCS-23.1.1.3	103.5	103.5				207	Cost based on number and type of adequate spoils sites needed identified from road assessment. Cost of assessment estimated at \$207,000. The road assessments may be able to be done together for a cost savings

Porter Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PortC-CCCS-23.1.1.4						0	Action is considered In-Kind
PortC-CCCS-23.1.1.5						0	Action is considered In-Kind
PortC-CCCS-23.1.1.6						TBD	
PortC-CCCS-23.1.2.1	103.5	103.5				207	Cost of assessment estimated at \$207,000. The road assessments may be able to be done together for a cost savings
PortC-CCCS-23.1.2.2						TBD	Cost based on recommendations from road assessment.
PortC-CCCS-23.2.1.1						0	Cost to expand an existing program are expected to be minimal. Action is considered In-Kind
PortC-CCCS-23.2.1.2						0	Action is considered In-Kind
PortC-CCCS-23.2.1.3						0	Incorporating free span bridges into replacement and new construction plans is unlikely to increase costs. Action is considered In-Kind
PortC-CCCS-23.2.1.4						0	Action is considered In-Kind
PortC-CCCS-25.1.1.1	12.5	12.5	12.5	12.5		50	Cost based on number of off-channel storage stations needed. Cost estimate for 10 storage site is \$5,000/site for at total of \$50,000.
PortC-CCCS-25.1.1.2						0	Promoting water conservation best practices is not expected to result in additional costs. Action is considered In-Kind
PortC-CCCS-25.1.1.3						0	Costs associated with promoting use of reclaimed water is expected to be minimal. Action is considered In-Kind
PortC-CCCS-25.1.1.4						0	Costs to promote this action are expected to be minimal. Action is considered In-Kind
PortC-CCCS-25.1.2.1	135	135				270	Cost based on number and type of fish screens to implement. Estimate for 5 fish screens at \$54,000/screen is \$270,000
PortC-CCCS-25.2.1.1						65	Cost based on stream flow/precipitation model at a rate of \$65,000/project.
PortC-CCCS-25.2.1.2						0	Action is considered In-Kind
PortC-CCCS-25.2.1.3	207					207	Cost based on types and feasibility of recommendations to employ to reduce conflicts between frost protection and fisheries. Estimated cost of assessment is \$207,000
PortC-CCCS-25.2.1.4						0	Coordination costs are expected to be minimal, depending on what specific actions are proposed. Action is considered In-Kind
PortC-CCCS-25.2.1.5						0	Action is considered In-Kind
PortC-CCCS-25.2.1.6						0	Action is considered In-Kind

Sheephouse Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ShepC-CCCS-2.1.1.1	143.50	143.50				287	Cost based on riparian and wetland restoration model at a rate of \$74,000 and \$213,000/project, respectively.
ShepC-CCCS-2.1.1.2	372.00	372.00				744	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
ShepC-CCCS-2.1.2.1	32					0	Cost accounted for in above action step.
ShepC-CCCS-6.1.1.1	6.50	6.50				13	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP with a minimum of 0.5 miles) at a rate of \$26,000/mile
ShepC-CCCS-6.1.2.1	6.50	6.50				13	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP with a minimum of 0.5 miles) at a rate of \$26,000/mile
ShepC-CCCS-6.1.3.1	6.50	6.50				13	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP with a minimum of 0.5 miles) at a rate of \$26,000/mile
ShepC-CCCS-19.1.1.1	10	10				20	Need to estimate where and how much land will come available and fair market value for purchase in the future. Cost of prioritizing partially/wholly in-kind, any further costs would be minor and is estimated at \$20,000 and should be done within the first 10 years.
ShepC-CCCS-19.1.1.2						TBD	Costs cannot be determined at this time, due to an unknown number of variables and research priorities.
ShepC-CCCS-19.1.1.3						0	Recruitment of LWD to the stream is critical. Action is considered In-Kind
ShepC-CCCS-19.1.2.1						0	Action is considered In-Kind
ShepC-CCCS-19.2.1.1						0	Action is considered In-Kind
ShepC-CCCS-19.2.1.2						0	Cost is minimal because NMFS/CDFW already participate in meetings the Board of Forestry. Action is considered In-Kind
ShepC-CCCS-19.2.1.3						0	Action is considered In-Kind

Willow Creek, Central California Coast Steelhead (North Coastal) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
WlWc-CCCS-1.1.1.1	283.00					283	Cost based on estuary use/residence time model at a rate of \$283,000/project.
WlWc-CCCS-1.1.1.2						0	Action is considered In-Kind
WlWc-CCCS-2.1.1.1	32.00	32.00				287	Cost based on riparian and wetland restoration model at a rate of \$74,000 and \$213,000/project, respectively.
WlWc-CCCS-2.1.1.2	372.00	372.00				744	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
WlWc-CCCS-2.1.2.1						0	Cost accounted for in above action step.
WlWc-CCCS-5.1.1.1	172.00					172	Cost based on providing passage at 4 barriers (2 partial, 2 unknown status) at a rate of \$43,000/project.
WlWc-CCCS-5.1.1.2	112.00	112.00				224	Cost based on adult escapement and juvenile migration monitoring at a rate of \$36,000 and \$188,000/project, respectively.
WlWc-CCCS-6.1.1.1	13					13	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
WlWc-CCCS-6.1.2.1	103.5	103.5				207	Implementation costs will be based on treating 0.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. Cost of assessment and design estimated at \$207,000
WlWc-CCCS-6.1.3.1						0	Cost accounted for in other action steps.
WlWc-CCCS-6.1.4.1						0	Cost accounted for in other action steps.
WlWc-CCCS-13.1.1.1	143.50	143.50				287	Cost based on riparian and floodplain restoration model at a rate of \$74,000 and \$213,000/project, respectively.
WlWc-CCCS-13.1.1.2	372.00	372.00				744	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
WlWc-CCCS-13.1.1.3	103.5	103.5				207	Implementation costs will be based on amount of levee to setback. Estimate for levee setback is \$35/linear ft. Cost of assessment and design estimated at \$207,000
WlWc-CCCS-13.1.1.4						0	Action is considered In-Kind
WlWc-CCCS-13.1.2.1						0	Action is considered In-Kind
WlWc-CCCS-13.1.3.1						0	Action is considered In-Kind
WlWc-CCCS-13.1.3.2						0	Action is considered In-Kind
WlWc-CCCS-13.1.3.3						0	Action is considered In-Kind
WlWc-CCCS-13.1.3.4						0	Action is considered In-Kind
WlWc-CCCS-13.2.1.1						0	Action is considered In-Kind
WlWc-CCCS-13.2.1.2						0	Action is considered In-Kind
WlWc-CCCS-18.1.1.1						TBD	Cost based on participation of landowners and amount of riparian exclusion fencing needed. Cost estimate for riparian exclusion fence is \$4/ft.
WlWc-CCCS-18.1.1.2	24.83	24.83	24.83	24.83	24.83	149	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
WlWc-CCCS-18.1.1.3	10	10				20	Cost based on amount of cross fencing needed to be removed. This action step may be implemented in conjunction with above action step. Cost of assessment is likely low and estimated at \$20,000 and should be performed within the first 10 years.
WlWc-CCCS-18.1.1.4						0	Action is considered In-Kind because there is no new land being purchased, only a change in grazing strategy
WlWc-CCCS-18.1.2.1	8.3	8.3	8.3	8.3	8.3	50	Cost for offstream alternative water sources estimated for 10 sites at \$5,000/site for a total of \$50,000. This action step should be done in coordination with above action step to fence off riparian areas.
WlWc-CCCS-18.1.2.2						0	Cost accounted for as part of riparian exclusion fencing.
WlWc-CCCS-18.1.2.3						0	Action is considered In-Kind
WlWc-CCCS-19.1.1.1						TBD	Need to estimate how much land will come available and fair market value for purchase in the future.
WlWc-CCCS-19.1.1.2						0	Action is considered In-Kind
WlWc-CCCS-19.1.1.3						0	Recruitment of LWD to the stream is critical. Action is considered In-Kind
WlWc-CCCS-19.1.2.1						0	Action is considered In-Kind
WlWc-CCCS-19.2.1.1						0	Action is considered In-Kind
WlWc-CCCS-19.2.1.2						0	Cost is minimal because NMFS/CDFW already participate in meetings the Board of Forestry. Action is considered In-Kind
WlWc-CCCS-19.2.1.3						0	Action is considered In-Kind
WlWc-CCCS-23.1.1.1	64.50	64.50				129	Cost based on decommissioning 2 miles of road at a rate of \$12,000/mile and upgrading 5 miles of road network at a rate of \$21,000/mile.
WlWc-CCCS-23.1.1.2	52.5	52.5				105	Cost based on remaining upgrades needed. Road upgrades estimated at \$21,000/mile and have been estimated for 5 miles for a total of \$105,000
WlWc-CCCS-23.1.1.3						TBD	Cost for decommissioning is estimated at \$21,000/mile.
WlWc-CCCS-23.1.1.4	103.5	103.5				207	Cost based on number and type of adequate spoils storage sites needed. Estimated cost of assessment is \$207,000. A cost savings may incur if road assessments are done together.
WlWc-CCCS-23.1.1.5						0	Action is considered In-Kind
WlWc-CCCS-23.1.1.6						0	Action is considered In-Kind
WlWc-CCCS-23.1.1.7						TBD	
WlWc-CCCS-23.1.2.1						TBD	Cost based on recommendations from road assessment.
WlWc-CCCS-23.2.1.1						0	Cost to expand an existing program are expected to be minimal. Action is considered In-Kind
WlWc-CCCS-23.2.1.2						0	Action is considered In-Kind
WlWc-CCCS-23.2.1.3						TBD	Incorporating free span bridges into replacement and new construction plans is unlikely to increase costs. Construction of the bridges will likely be much higher.
WlWc-CCCS-23.2.1.4						0	Action is considered In-Kind

Dry Creek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DC-CCCS-2.1.1.1						0	This action is included in the Russian River Biological Opinion Reasonable and Prudent Alternatives; thus, there is no additional cost expected for implementing this action.
DC-CCCS-2.1.1.2						0	This action is included in the Russian River Biological Opinion Reasonable and Prudent Alternatives; thus, there is no additional cost expected for implementing this action.
DC-CCCS-2.1.1.3	32					0	This action is included in the Russian River Biological Opinion Reasonable and Prudent Alternatives; thus, there is no additional cost expected for implementing this action.
DC-CCCS-3.1.1.1						0	Action is considered In-Kind
DC-CCCS-3.1.1.2						TBD	Cost is TBD, since the number, location and scope of future actions is unknown at this time.
DC-CCCS-3.1.1.3						0	Action is considered In-Kind
DC-CCCS-3.1.1.4						0	No cost expected for requesting SWRCB review of water use. Action is considered In-Kind
DC-CCCS-3.1.1.5						0	Action is considered In-Kind
DC-CCCS-3.1.1.6						0	Cost expected to be largely absorbed through already employed agency enforcement personnel. Action is considered In-Kind
DC-CCCS-3.1.1.7						0	Evaluation will largely be done by already staffed federal, state and local agencies. Action is considered In-Kind
DC-CCCS-5.1.1.1	5,944	5,944				11,888	Cost based on providing passage at 14 impassable and 4 partial barriers at a rate of \$746,000 and \$361,000/project, respectively.
DC-CCCS-5.1.1.2						0	Most work will largely be done by CDFW and NMFS engineers. Action is considered In-Kind
DC-CCCS-5.1.1.3						0	Analysis likely done by agency staff at a low cost. Action is considered In-Kind
DC-CCCS-5.1.1.4	115.00					115	Cost of monitoring/investigating is based on fish/habitat restoration at a rate of \$115,000/project. if done by NMFS and CDFW, cost is small.
DC-CCCS-6.1.1.1	182.00	182.00	182.00	182.00	182.00	910	Cost based on treating 35 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile. Cost can be significantly higher for greater engineering and oversight such as implementing ELJ estimated at \$104,000/ELJ.
DC-CCCS-6.1.1.2						0	Work will largely be performed as part of CDFW's stream habitat assessment program. Action is considered In-Kind
DC-CCCS-6.1.1.3						0	Cost accounted for in above action step.
DC-CCCS-6.1.1.4						0	Action is considered In-Kind
DC-CCCS-6.1.1.5						0	Action is considered In-Kind
DC-CCCS-6.1.1.6						0	Action is considered In-Kind
DC-CCCS-6.1.1.7						0	Action is considered In-Kind
DC-CCCS-6.1.2.1						0	This action is included in the Russian River Biological Opinion Reasonable and Prudent Alternatives; thus, there is no additional cost expected for implementing this action.
DC-CCCS-6.1.3.1						0	This action is included in the Russian River Biological Opinion Reasonable and Prudent Alternatives; thus, there is no additional cost expected for implementing this action.
DC-CCCS-6.1.3.2						0	This action is included in the Russian River Biological Opinion Reasonable and Prudent Alternatives; thus, there is no additional cost expected for implementing this action.
DC-CCCS-6.1.3.3						0	Encouragement will largely come from already salaried CDFW and NMFS personnel. Action is considered In-Kind
DC-CCCS-6.1.3.4						0	Education will likely arise through continued guidance to landowners by CDFW, NMFS, RCD and NRCS staff. Action is considered In-Kind
DC-CCCS-7.1.1.1						TBD	Cost is unknown at this time since the number, location and scope of future projects is not known.
DC-CCCS-7.1.1.2	67.00					67	Cost based on treating 3.5 miles (assume 1 project/mile in 5% high IP) at a rate of \$4/ft.
DC-CCCS-7.1.1.3	363	363				725	Cost based on treating 3.5 miles (assume 1 project/mile in 5% high IP with 10 acres/mile) at a rate of \$21,000/acre. Cost can be reduced once specific plans are developed for each reach identified.
DC-CCCS-7.1.1.4						0	Education largely done through interaction with NMFS, CDFW, NRCS and RCD staff. Action is considered In-Kind
DC-CCCS-7.1.1.5	25.00	25.00	25.00	25.00		100	Approximate cost of performing assessment and developing reclamation and enhancement program.
DC-CCCS-7.1.2.1	103.5	103.5				207	Cost of future management unknown at this time. Cost of assessment is estimated at \$207,000 and should be completed within the first ten years.
DC-CCCS-7.1.2.2	77.00	77.00	77.00	77.00		308.50	Cost based on treating 10.5 miles (assume 1 project/mile in 15% high IP with 20 acres/mile treated) at a rate of \$1,500/acre.
DC-CCCS-8.1.1.1						0	Cost accounted for in ROADS/RAILROADS.
DC-CCCS-8.1.1.2						0	Cost accounted for in Roads section.
DC-CCCS-8.1.1.3						0	Cooperation largely accomplished by federal, state and local agencies. Action is considered In-Kind
DC-CCCS-8.1.1.4						0	Currently, existing incentive programs exist and should be explored and expanded.
DC-CCCS-8.1.1.5						0	Analysis largely done by CDFW or NMFS engineers, so cost will likely be low. Action is considered In-Kind
DC-CCCS-8.1.1.6						TBD	Cost is TBD, since scope, number and location of projects is uncertain at this time. Cost estimate for spawning gravel is \$30/cu.yd. (assume a minimum of 10 cu. yds/mile).
DC-CCCS-11.1.1.1						0	Costs for monitoring population status and trends are covered in the Monitoring Chapter.
DC-CCCS-11.1.1.2						0	Action is considered In-Kind
DC-CCCS-11.1.1.3						0	Action is considered In-Kind
DC-CCCS-11.1.1.4	115.00					115	Cost based on fish/habitat restoration model at a rate of \$115,000/project. Additional parameters will increase the cost.
DC-CCCS-11.1.1.5						0	Costs for monitoring population status and trends are covered in the Monitoring Chapter.
DC-CCCS-11.1.1.6	7.00	7.00				14	Cost based on treating 7 miles (assume 1 project/mile in 10% high IP with 1lb/150 sq. ft.) at a rate of \$2,000/mile.
DC-CCCS-12.1.1.1						0	Soliciting cooperation not expected to cost much outside of already existing federal and state and local salaries. Action is considered In-Kind
DC-CCCS-12.1.1.2						0	Action is considered In-Kind
DC-CCCS-12.1.1.3						0	Coordination efforts are expected to be low cost, mainly comprising already in place staff salaries at the state and federal level. Action is considered In-Kind
DC-CCCS-12.1.2.1	10	10				20	The cost will likely be low if CDFW effectiveness monitoring protocols are used. Cost estimated at \$20,000 and should be completed within the first ten years. Actual cost will depend on the number, location, and scope of erosion control measures

Dry Creek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
DC-CCCS-12.1.2.2	50.00	50.00				100	Cost of completing Farm Conservation Plan estimated at approximately \$100,000 per plan.
DC-CCCS-12.1.2.3						0	Action is considered In-Kind
DC-CCCS-12.2.1.1						TBD	Cost TBD since the scope and authorship of the papers is unknown at this time.
DC-CCCS-12.2.1.2						0	Streamlining permit processing is not expected to cost much, and may save money through future efficiencies. Action is considered In-Kind
DC-CCCS-13.1.1.1						TBD	Cost associated with design changes to levees is expected to be small.
DC-CCCS-13.1.1.2	1,786	1,786	1,786	1,786	1,786	8,928	Cost based on treating 3 miles (assume 1 project/mile, with 80/acres/mile) at a rate of \$37,000/acre.
DC-CCCS-13.1.1.3						0	Action is considered In-Kind
DC-CCCS-13.1.1.4						0	This recommendation should be considered standard practice. Action is considered In-Kind
DC-CCCS-13.1.1.5						0	BMP that is not expected to increase project costs. Action is considered In-Kind
DC-CCCS-13.1.2.1						0	Program development may be at a small cost. Implementing program not expected to result in additional cost. Action is considered In-Kind
DC-CCCS-13.1.2.2						0	BMP not expected to have any associated costs. Action is considered In-Kind
DC-CCCS-17.1.1.1						0	Action is considered In-Kind
DC-CCCS-17.1.1.2						0	Action is considered In-Kind
DC-CCCS-17.1.1.3						0	Action is considered In-Kind
DC-CCCS-17.1.1.4						0	Action is considered In-Kind
DC-CCCS-17.1.1.5						0	Action is considered In-Kind
DC-CCCS-23.1.1.1	106.25	106.25	106.25	106.25		425	Cost based on road inventory for 425 miles of road at a rate of \$1000/mile.
DC-CCCS-23.1.1.2						TBD	Cost is dependent on Road Assessment
DC-CCCS-25.1.1.1						0	Action is considered In-Kind
DC-CCCS-25.1.1.2						0	Coordination done largely by agency staff and affected landowners. Action is considered In-Kind
DC-CCCS-25.1.1.3						0	Promotion largely done through federal, state and local partnerships with interested NGO's. Action is considered In-Kind
DC-CCCS-25.1.1.4						0	Promotion likely done largely by agency and NGO partnerships. Action is considered In-Kind
DC-CCCS-25.1.1.5						TBD	Cost based on amount of incentives to provide to reduce instream impacts. Currently, incentive programs exist and should be explored and expanded.
DC-CCCS-25.1.2.1						0	Cost is likely already accounted for in another action step.
DC-CCCS-25.1.3.1						0	Action is considered In-Kind
DC-CCCS-25.1.3.2						0	Encouragement would largely arise through already employed CDFW and NMFS staff. Action is considered In-Kind
DC-CCCS-25.2.1.1						0	Cost accounted for in other action steps.
DC-CCCS-25.2.1.2						0	Cost accounted for in other action steps.
DC-CCCS-25.2.1.3						TBD	Cost is TBD, since the number, location and scope of future actions is unknown at this time.
DC-CCCS-25.2.1.4						0	Action is considered In-Kind
DC-CCCS-25.2.1.5						0	No cost expected for requesting SWRCB review of water use. Action is considered In-Kind
DC-CCCS-25.2.1.6						0	Action is considered In-Kind
DC-CCCS-25.2.1.7						0	Cost expected to be largely absorbed through already employed agency enforcement personnel. Action is considered In-Kind
DC-CCCS-25.2.1.8						0	Cost is for evaluation largely done by already staffed federal, state and local agencies. Action is considered In-Kind

Maacama Creek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
MaC-CCCS-3.1.1.1						0	Costs to adjudicate and enforce water allocations are borne by the State Water Board under California state law. Action is considered In-Kind
MaC-CCCS-3.1.1.2	103.5	103.5				207	Costs depends on extent of treatments. Cost of assessment is estimated at 207,000 and should be completed within the first 10 years.
MaC-CCCS-3.1.2.1	32					0	Action is considered In-Kind
MaC-CCCS-3.2.1.1						0	Costs to agencies engaged in the identification and elimination will vary depending on degree of cooperation from the diverter. Cost borne by the State Water Board as part of their responsibilities under state law. Action is considered In-Kind
MaC-CCCS-3.2.1.2	12.50	12.50	12.50	12.50	12.50	100	Cost per gauge estimated at 3000
MaC-CCCS-3.2.1.3						0	Action is considered In-Kind
MaC-CCCS-3.2.1.4						0	Action is considered In-Kind
MaC-CCCS-3.2.2.1						0	Action is considered In-Kind
MaC-CCCS-5.1.1.1	1,625	1,625				3,249	Cost based on providing passage at 9 unknown barriers at a rate of \$361,000/project.
MaC-CCCS-6.1.1.1	9.65	9.65	9.65	9.65	9.65	193	Cost based on treating 7.4 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
MaC-CCCS-7.1.1.1	150.00					150	Cost based on previous regional projects
MaC-CCCS-7.1.1.2	65.00					65	Cost based on treating 2.2 miles (assume 1 project/mile in 15% high IP with 20 acres/mile) treated at a rate of \$1,500/acre.
MaC-CCCS-7.1.2.1						0	Action is considered In-Kind
MaC-CCCS-7.1.2.2	103	103	103	103		410	Cost based on treating 1 mile (assume 1 project/mile in 5% high IP with 10 acres/mile treated) at a rate of \$41,000/acre.
MaC-CCCS-7.1.2.3	10.00	10.00				20	Cost based on treating 1 mile (assume 1 project/mile in 5% high IP) at a rate of \$4/ft.
MaC-CCCS-7.1.2.4						TBD	Cost is unknown at this time since the number, location and scope of future projects is not known.
MaC-CCCS-7.1.2.5						0	Action is considered In-Kind
MaC-CCCS-8.1.1.1	141.00					141	Cost based on erosion assessment of 25% of total watershed acres at a rate of \$13/acre.
MaC-CCCS-8.1.1.2						0	Currently, incentives exist and should be explored and expanded. Action is considered in-kind.
MaC-CCCS-8.1.1.3	57.50	57.50				115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
MaC-CCCS-8.1.1.4	57.50	57.50				115	Cost based on fish/habitat restoration model at a rate of \$115,000/project.
MaC-CCCS-8.1.1.5						0	V-Star is a rather inexpensive monitoring technique, and cost is not expected to be substantial.
MaC-CCCS-12.1.1.1						0	Action is considered In-Kind
MaC-CCCS-12.1.2.1						0	Action is considered In-Kind
MaC-CCCS-12.1.3.1						TBD	Cost is TBD, since the total number and scope of the future plans is unknown at this time.
MaC-CCCS-12.1.3.2						0	Cost accounted for in SEDIMENT.
MaC-CCCS-12.2.1.1						0	Developing legislation is not expected to be of significant cost, and will likely involve the work of already salaried public servants. Action is considered In-Kind
MaC-CCCS-12.2.1.2						TBD	Cost is difficult to estimate at this time, and will be dependent on the linear distance of setbacks and the cost to landowners of lost production from area inside the setback.
MaC-CCCS-12.2.1.3						0	Action is considered In-Kind
MaC-CCCS-15.1.1.1						0	Action is considered In-Kind
MaC-CCCS-15.1.1.2						0	Action is considered In-Kind
MaC-CCCS-15.1.1.3						0	Action is considered In-Kind
MaC-CCCS-15.1.1.4						0	Action is considered In-Kind
MaC-CCCS-15.1.2.1						0	Action is considered In-Kind
MaC-CCCS-15.1.2.2						0	Action is considered In-Kind
MaC-CCCS-15.1.2.3						0	Action is considered In-Kind
MaC-CCCS-15.1.3.1						0	Action is considered In-Kind
MaC-CCCS-15.1.3.2						0	Action is considered In-Kind
MaC-CCCS-15.1.3.3						0	Action is considered In-Kind
MaC-CCCS-15.2.1.1						0	Action is considered In-Kind
MaC-CCCS-15.2.1.2	5.00	5.00	5.00	5.00	5.00	100	Fuel load management costs are unknown at this time. Investigating historic fire frequency, intensity, and duration may require an approximately \$100,000 study.
MaC-CCCS-23.1.1.1						0	Action is considered In-Kind
MaC-CCCS-23.1.1.2						0	No cost associated with prioritizing restoration actions.
MaC-CCCS-23.1.1.3						0	No cost associated with encouraging landowners to conduct road assessments. Action is considered In-Kind
MaC-CCCS-23.1.1.4	100.00					100	Development of a Road Sediment Reduction Plan may cost up to \$100,000.
MaC-CCCS-23.1.1.5						TBD	Cost based on amount of funding needed to upgrade problematic roads.
MaC-CCCS-23.1.2.1						0	Fish passage forum and other collaborative evaluations are already in place. Action is considered In-Kind
MaC-CCCS-23.1.2.2						0	Action is considered in-kind (BMPs)
MaC-CCCS-23.1.2.3						0	Action is considered in-kind (BMPs)
MaC-CCCS-23.1.2.4						0	Action is considered in-kind (BMPs)
MaC-CCCS-23.1.3.1	105.00	105.00				210	Cost based on treating 10 miles of road network at a rate of \$21,000/mile.
MaC-CCCS-23.1.3.2						0	No cost associated with using best management practices. Action is considered In-Kind
MaC-CCCS-23.1.3.3						0	Action is considered in-kind (BMPs)
MaC-CCCS-23.1.3.4						0	Limiting winter use on trouble roads is not likely to incur high costs.
MaC-CCCS-23.2.1.1						0	Action is considered In-Kind
MaC-CCCS-24.1.1.1						TBD	Cost difficult to estimate due to uncertainty with the cost of water, number of participants, etc.
MaC-CCCS-24.1.1.2						0	Implementing conservation strategies not expected to be a high cost endeavor. Action is considered In-Kind

Maacama Creek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
MaC-CCCS-24.1.1.3						0	Action is considered In-Kind
MaC-CCCS-24.1.1.4						0	Action is considered In-Kind
MaC-CCCS-24.1.1.5						TBD	Cost difficult to estimate at this time.
MaC-CCCS-25.1.1.1	65.00					65	Cost based on stream flow/precipitation model at a rate of \$65,000/project.
MaC-CCCS-25.1.1.2						0	Frost protection is a regulation administered by the State Water Board. Cost of most work will largely be done by SWRCB and NMFS. Action is considered In-Kind
MaC-CCCS-25.1.1.3						0	Action is considered In-Kind

Mark West Creek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
MWC-CCCS-2.1.1.1	4,762	4,762	4,762	4,762		19,047	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
MWC-CCCS-2.1.1.2						0	Cost accounted for in another action step
MWC-CCCS-2.1.1.3	32					0	Cost accounted for in another action step
MWC-CCCS-6.1.1.1						0	Cost uncertain at this time. However, cost of incorporating LWD into ongoing operations is expected to be low. Action is considered In-Kind
MWC-CCCS-6.1.1.2	19.50	19.50	19.50	19.50		78	Cost based on previous regional projects
MWC-CCCS-6.1.1.3	81.00	81.00				162	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
MWC-CCCS-6.1.1.4						0	Cost covered by above actions.
MWC-CCCS-7.1.1.1	12.50	12.50				25	Cost based on treating 1.3 miles (assume 1 project/mile in 5% high IP) at a rate of \$4ft.
MWC-CCCS-7.1.1.2						0	Promoting conservation measures is a low cost undertaking. Action is considered In-Kind
MWC-CCCS-7.1.1.3	43.00	43.00	43.00	43.00	43.00	215	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
MWC-CCCS-7.1.1.4	11	11	11	11	11	54	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
MWC-CCCS-7.1.2.1	143.50	143.50				287	Cost based on riparian and wetland restoration model at a rate of \$74,000 and \$213,000/project, respectively.
MWC-CCCS-7.1.2.2	28.00	28.00	28.00	28.00		112	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
MWC-CCCS-8.1.1.1	140					140	Cost based best professional judgement of the amount of roads needing to be inventoried
MWC-CCCS-8.1.1.2						0	Currently, incentive programs exist and should be explored and expanded. Action is considered in-kind
MWC-CCCS-8.1.1.3						0	Action is considered In-Kind
MWC-CCCS-10.1.1.1	1.50					2	Cost based on installing a minimum of 3 stream flow temperature gauges at a rate of \$500/gauge. Cost does not account for data management or maintenance.
MWC-CCCS-10.1.1.2						0	Cost of promoting streamside conservation measures is likely to be low, since most promotion will come from already salaried CDFW and NMFS personnel. Action is considered In-Kind
MWC-CCCS-10.1.2.1	7.50	7.50				15	Cost based on installing a minimum of 3 continuous water quality monitoring gauges at a rate of \$5,000/station. Cost does not account for data management or maintenance.
MWC-CCCS-11.1.1.1						0	Action is considered In-Kind
MWC-CCCS-11.1.1.2						0	Cost accounted for in the Monitoring Chapter.
MWC-CCCS-11.1.1.3						0	Cost accounted for in the Monitoring Chapter.
MWC-CCCS-12.1.1.1	103.5	103.5				207	Cost is difficult to determine at this point, and will depend largely on the measures and technology chosen to accomplish task. Cost of assessment estimated at \$207,000 and should be completed within the first 10 years.
MWC-CCCS-12.1.2.1						TBD	Cost is difficult to estimate at this time, and will be dependent on the linear distance of setbacks and the cost to landowners of lost production from area inside the setback.
MWC-CCCS-12.1.2.2						0	Action is considered In-Kind
MWC-CCCS-12.1.3.1						0	Cost accounted for in SEDIMENT
MWC-CCCS-12.1.3.2						TBD	Cost is TBD, since the total number and scope of the future plans is unknown at this time.
MWC-CCCS-12.1.3.3						0	Cost of educating landowners will largely fall on already salaried public employees.
MWC-CCCS-12.2.1.1						0	Developing legislation is not expected to be of significant cost, and will likely involve the work of already salaried public servants. Action is considered In-Kind
MWC-CCCS-12.2.1.2						0	Action is considered In-Kind
MWC-CCCS-12.2.1.3						0	Action is considered In-Kind
MWC-CCCS-13.1.1.1						0	Action is considered In-Kind
MWC-CCCS-13.1.1.2	175.00	175.00				350	Cost based on treating 1 mile (assume 1 project/mile in 1% high IP) at a rate of \$350,000/mi.
MWC-CCCS-13.1.1.3						0	Cost accounted for in above action step.
MWC-CCCS-13.1.1.4						0	Action is considered In-Kind
MWC-CCCS-13.1.1.5	103.5	103.5				207	Total cost uncertain since number, scope and location of future projects is unknown at this time. Cost of assessment estimated at \$207,000 and should be completed within the first 10 years.
MWC-CCCS-13.1.1.6						0	BMP that is not expected to increase project costs. Action is considered In-Kind
MWC-CCCS-13.1.2.1						0	Program development may be at a small cost. Implementing program not expected to result in additional cost. Action is considered In-Kind
MWC-CCCS-13.1.2.2						0	BMP not expected to have any associated costs.
MWC-CCCS-22.1.1.1						0	Cost of training and encouraging partners to maintain riparian health is expected to be low. Action is considered In-Kind
MWC-CCCS-22.1.1.2	75.00					75	Cost estimate from CDFG 2004.
MWC-CCCS-22.1.1.3	50.00					50	Estimated cost of \$50,000 for an assessment. Cost of other resulting mitigation is unknown since the number, location and scope of future projects is not known.
MWC-CCCS-22.1.1.4						0	Cost of implementing performance standards is likely low. Action is considered In-Kind
MWC-CCCS-22.1.1.5						0	Action is considered In-Kind
MWC-CCCS-22.1.1.6						0	Cost of identifying and developing incentives to landowners expected to be low. Action is considered In-Kind
MWC-CCCS-22.1.1.7						0	Encouraging the county on the above issue is not likely to incur any costs outside of the duties of already salaried state and federal workers. Action is considered In-Kind
MWC-CCCS-22.1.1.8						TBD	The cost of implementing this BMP is uncertain at this time.
MWC-CCCS-22.1.2.1						0	Cost accounted for in RIPARIAN.
MWC-CCCS-22.1.2.2						0	Implementing this BMP is not expected to incur appreciable costs. Action is considered In-Kind
MWC-CCCS-22.1.2.3						TBD	Institutionalizing programs to purchase land is not expected to be much cost. Buying the land, on the other hand, is likely to be very expensive. Cost based on fair market value, land turnover, and participation from landowners.
MWC-CCCS-22.1.2.4						0	Action is considered In-Kind

Mark West Creek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
MWC-CCCS-22.1.3.1						0	Investigating funding larger detention devices is not expected to cost much. Implementing the devices will be much more expensive. Action is considered In-Kind
MWC-CCCS-22.1.3.2						0	Cost accounted for in other action steps (see FLOODPLAIN CONNECTIVITY).
MWC-CCCS-22.1.3.3						0	Encouraging landowners to restore floodplain areas is not expected to cost much. Action is considered In-Kind
MWC-CCCS-22.1.4.1						0	Implementing this BMP is not expected to be very costly. Action is considered In-Kind
MWC-CCCS-22.1.4.2	51					51	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
MWC-CCCS-22.1.4.3						0	Cost of implementing this BMP is expected to be low.
MWC-CCCS-22.2.1.1						0	Implementing this BMP is expected to be low cost. Action is considered In-Kind
MWC-CCCS-22.2.1.2						0	Implementing this BMP is expected to be low cost. Action is considered In-Kind
MWC-CCCS-22.2.2.1						0	Action is considered In-Kind
MWC-CCCS-22.2.2.2						0	Action is considered In-Kind
MWC-CCCS-22.2.2.3						0	Cost of ensuring enforcement of existing building permits is expected to be low (i.e., covered as part of already existing enforcement programs). Action is considered In-Kind
MWC-CCCS-22.2.2.4						0	Action is considered In-Kind
MWC-CCCS-22.2.2.5						0	Action is considered In-Kind
MWC-CCCS-22.2.2.6						0	Action is considered In-Kind
MWC-CCCS-23.1.1.1	100.00					100	
MWC-CCCS-23.1.1.2	368	368	368	368		1,470	Cost based on decommissioning 140 miles of road network at a rate of \$21,000/mile.
MWC-CCCS-23.1.1.3						0	No cost associated with encouraging landowners to conduct road assessments.
MWC-CCCS-23.1.1.4						0	No cost associated with using best management practices. Action is considered In-Kind
MWC-CCCS-23.1.1.5						0	Action is considered in-kind (BMPs)
MWC-CCCS-23.1.2.1						TBD	Cost is uncertain due to unknown number, location and scope of future projects.
MWC-CCCS-23.1.2.2	100.00					100	Development of a Road Sediment Reduction Plan may cost up to \$100,000.
MWC-CCCS-23.1.2.3						0	Action is considered In-Kind
MWC-CCCS-23.1.3.1						0	Fish passage forum and other collaborative evaluations are already in place. Action is considered In-Kind
MWC-CCCS-23.1.3.2						0	Action is considered in-kind (BMPs)
MWC-CCCS-23.1.3.3						0	Action is considered in-kind (BMPs)
MWC-CCCS-23.1.3.4						0	Action is considered in-kind (BMPs)
MWC-CCCS-23.2.1.1						TBD	Cost based on amount of funding needed to upgrade roads. Recommend conducting a road inventory to determine length and number of upgrades needed.
MWC-CCCS-25.1.1.1	65.00					65	Cost based on stream flow/precipitation model at a rate of \$65,000/project.
MWC-CCCS-25.1.1.2	207					207	Total cost based on number and type of alternatives to employ to reduce conflicts between fisheries and frost protection. Cost of assessment estimated at \$207,000.
MWC-CCCS-25.1.1.3						0	Action is considered In-Kind

Upper Russian, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
UR-CCCS-2.1.1.1	21,667	21,667	21,667			65,000	Cost based on treating 12 miles with similar treatment and costs in the Dry Creek Valley (over 6 miles).
UR-CCCS-2.1.1.2						0	Cost accounted for in above action step.
UR-CCCS-2.2.1.1	32					0	This recommendation should be considered standard policy. Action is considered In-Kind
UR-CCCS-5.1.1.1	3,932	3,932				7,863	
UR-CCCS-5.1.1.2						0	Cost accounted for in above action step.
UR-CCCS-5.1.1.3						0	Cost accounted for in above action step.
UR-CCCS-5.1.1.4						0	Fish passage evaluation would likely be done by NMFS or CDFW personnel at a low or no cost basis. Action is considered In-Kind
UR-CCCS-5.1.1.5						0	Action is considered In-Kind
UR-CCCS-5.1.2.1						0	Assessing passage needs would likely be done by CDFW or NMFS fish passage specialists at a low or no cost basis. Action is considered In-Kind
UR-CCCS-6.1.1.1						0	Action is considered In-Kind
UR-CCCS-6.1.1.2						0	Action is considered In-Kind
UR-CCCS-6.1.1.3						0	Action is considered In-Kind
UR-CCCS-6.1.1.4	50.00					50	Cost is estimated.
UR-CCCS-6.1.2.1	520					520	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
UR-CCCS-6.1.2.2	103.5	103.5				207	Cost and duration unclear at this time since number, location and scope of future projects is uncertain. Cost for stream complexity estimated at \$26,000/mile. Cost of assessment is estimated at \$207,000 and should occur within the first ten years.
UR-CCCS-6.1.2.3						0	Cost of maintaining existing structures are usually incorporated within the restoration construction cost. Action is considered In-Kind
UR-CCCS-7.1.1.1	163	163	163	163		650	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
UR-CCCS-7.1.1.2	160.00					160	Cost based on treating 8.3 miles (assume 1 project/mile in 5% high IP) at a rate of \$4/ft.
UR-CCCS-7.1.1.3						0	Cost accounted for in other actions steps.
UR-CCCS-7.1.1.4	50					50	Cost for exclusion fencing likely already accounted for and cost estimate for off-stream water development is \$5,000/station and we estimated that 10 stations would be needed for a total of \$50,000. Actual cost will depend on the size, scope and location.
UR-CCCS-7.1.2.1						0	Action is considered In-Kind
UR-CCCS-7.1.2.2	22	22	22	22		88	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
UR-CCCS-8.1.1.1						0	Low cost to provide incentives. Action is considered In-Kind
UR-CCCS-8.1.1.2						0	Low cost to solicit cooperation. Action is considered In-Kind
UR-CCCS-8.1.2.1	207					207	Cost of improving spawning habitat within the above-mentioned creeks is unknown currently, and needs further investigation. Cost estimate for spawning gravel augmentation estimated at \$30/cu. yd. Cost of investigation is estimated at \$207,000.
UR-CCCS-8.1.2.2						0	Analysis likely to be done by NMFS or CDFW personnel. Action is considered In-Kind
UR-CCCS-10.1.1.1	207					207	Total cost highly variable due to operation of Lake Mendocino. Cost of investigation is estimated at \$207,000.
UR-CCCS-10.1.1.2	207					207	Final cost based on identified recommendations from plan. Estimated cost of assessment is \$207,000
UR-CCCS-10.1.2.1						0	Cost accounted for in other action steps.
UR-CCCS-10.1.2.2						0	Work likely done by NMFS or CDFW engineering and biological staff. Action is considered In-Kind
UR-CCCS-10.1.2.3	0.75	0.75				2	Cost based on installing a minimum of 3 stream flow temperature gauges at a rate of \$500/gauge. Cost does not account for data management or maintenance.
UR-CCCS-11.1.1.1						0	Cost accounted for in the Monitoring Chapter.
UR-CCCS-11.1.1.2						0	Cost accounted for in the Monitoring Chapter.
UR-CCCS-12.1.1.1						0	Soliciting cooperation not expected to cost much outside of already existing federal and state and local salaries. Action is considered In-Kind
UR-CCCS-12.1.1.2						0	Streamlining permit processing is not expected to cost much, and may save money through future efficiencies. Action is considered In-Kind
UR-CCCS-12.1.2.1						0	Action is considered In-Kind
UR-CCCS-12.1.2.2						0	Coordination efforts are expected to be low, mainly comprising already in place staff salaries at the state and federal level. Action is considered In-Kind
UR-CCCS-12.1.3.1						0	Action is considered In-Kind
UR-CCCS-12.1.3.2	50.00	50.00				100	Cost of completing Farm Conservation Plan estimated at approximately \$50,000 per plan.
UR-CCCS-13.1.1.1						0	Action is considered In-Kind
UR-CCCS-13.1.1.2						0	BMP that is not expected to increase project costs.
UR-CCCS-13.1.1.3						0	BMP not expected to have any associated costs.
UR-CCCS-13.1.1.4	280.00	280.00				560	Cost based on treating 1.6 mile (assume 1 project/mile in 1% high IP) at a rate of \$350,000/m
UR-CCCS-13.2.1.1						0	Action is considered In-Kind
UR-CCCS-13.2.1.2						0	Action is considered In-Kind
UR-CCCS-13.2.1.3						0	Action is considered In-Kind
UR-CCCS-13.2.1.4						0	Action is considered In-Kind
UR-CCCS-13.2.2.1						0	Program development may be at a small cost. Implementing program not expected to result in additional cost. Action is considered In-Kind
UR-CCCS-13.2.2.2						TBD	Cost is TBD since the location, scope and size of future mitigation efforts is unknown at this time.
UR-CCCS-13.2.3.1						0	Cost associated with design changes to levees is expected to be small. Action is considered In-Kind
UR-CCCS-13.2.3.2						0	Action is considered In-Kind
UR-CCCS-16.1.1.1						0	Action is considered In-Kind
UR-CCCS-16.1.1.2						0	Action is considered In-Kind
UR-CCCS-16.1.1.3						0	Action is considered In-Kind
UR-CCCS-17.1.1.1						0	Action is considered In-Kind

Upper Russian, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
UR-CCCS-17.1.1.2						0	Action is considered In-Kind
UR-CCCS-17.1.1.3						0	Action is considered In-Kind
UR-CCCS-17.1.1.4						0	Action is considered In-Kind
UR-CCCS-17.1.1.5						0	Action is considered In-Kind
UR-CCCS-17.1.1.6						0	Action is considered In-Kind
UR-CCCS-17.1.1.7						0	Action is considered In-Kind
UR-CCCS-20.1.1.1						0	Action is considered In-Kind
UR-CCCS-20.1.1.2						0	Cost accounted for in other action steps (see HABITAT COMPLEXITY)
UR-CCCS-20.1.2.1						0	Action is considered In-Kind
UR-CCCS-20.1.2.2						0	Cost accounted for in other action steps (see FLOODPLAIN CONNECTIVITY)
UR-CCCS-22.1.1.1						0	Action is considered In-Kind
UR-CCCS-22.1.1.2						0	Cost of training and encouraging partners to maintain riparian health is expected to be low. Action is considered In-Kind
UR-CCCS-22.1.1.3	75.00					75	Cost estimate from CDFG 2004.
UR-CCCS-22.1.1.4						0	Action is considered In-Kind
UR-CCCS-22.1.2.1						TBD	Investigating funding larger detention devices is not expected to cost much. Implementing the devices will be much more expensive.
UR-CCCS-22.1.2.2						0	Cost accounted for in above action step (see FLOODPLAIN CONNECTIVITY).
UR-CCCS-22.1.2.3						0	Encouraging landowners to restore floodplain areas is not expected to cost much. Action is considered In-Kind
UR-CCCS-22.1.2.4						TBD	Cost of purchasing land/conservation easements is highly variable and depends on number, size, fair market value, and landowner participation.
UR-CCCS-22.1.2.5						0	Cost of identifying and developing incentives to landowners expected to be low. Action is considered In-Kind
UR-CCCS-22.1.2.6						TBD	The cost of implementing this BMP is uncertain at this time.
UR-CCCS-22.1.2.7						0	Action is considered In-Kind
UR-CCCS-22.1.2.8						0	Encouraging the county on the above issue is not likely to incur any costs outside of the duties of already salaried state and federal workers. Action is considered In-Kind
UR-CCCS-22.1.3.1						0	Action is considered In-Kind
UR-CCCS-22.2.1.1						0	Cost of implementing performance standards is likely low. Action is considered In-Kind
UR-CCCS-22.2.2.1						0	Implementing this BMP is expected to be low cost. Action is considered In-Kind
UR-CCCS-22.2.2.2						0	Implementing this BMP is expected to be low cost. Action is considered In-Kind
UR-CCCS-22.2.3.1						TBD	Institutionalizing programs to purchase land is not expected to be much cost. Buying the land, on the other hand, is likely to be very expensive. Cost based on fair market value, land turnover, and participation from landowners.
UR-CCCS-22.2.3.2						0	The cost of discouraging forestland conversion is expected to be low. Action is considered In-Kind
UR-CCCS-22.2.3.3						0	Cost of ensuring enforcement of existing building permits is expected to be low (i.e., covered as part of already existing enforcement programs). Action is considered In-Kind
UR-CCCS-22.2.3.4						0	Action is considered In-Kind
UR-CCCS-22.2.3.5						0	Action is considered In-Kind
UR-CCCS-22.2.3.6						0	Cost is expected to be low since work will largely be carried out by federal, state and local staff. Action is considered In-Kind
UR-CCCS-22.2.3.7						0	Encouraging the county is not expected to result in a high cost basis. Action is considered In-Kind
UR-CCCS-23.1.1.1	140	140				280	Cost based on road inventory of 280 miles of road network at a rate of \$1000/mile and an erosion assessment of 25% of total watershed acres at a rate of \$13/acre.
UR-CCCS-23.1.1.2	100.00					100	Cost estimate based on 50 miles of road and approximately \$1,000 per mile for road inventory and \$1,000/mile for sediment assessment (NMFS 2008).
UR-CCCS-23.1.1.3						0	Currently, incentive programs exist and should be explored and expanded, action is considered in-kind
UR-CCCS-23.1.1.4						0	Low cost to solicit cooperation. Action is considered In-Kind
UR-CCCS-23.1.1.5						TBD	Cost of upgrading lowgap road is unknown at this time. Cost for upgrading estimated at \$21,000/mile.
UR-CCCS-23.1.1.6						TBD	Cost based on feasibility of recommendation.
UR-CCCS-23.1.1.7						0	Analysis likely to be done by NMFS or CDFW personnel. Action is considered In-Kind
UR-CCCS-24.1.1.1						0	Action is considered In-Kind
UR-CCCS-24.1.1.2						TBD	Cost based on amount of emergency conservation measures to take.
UR-CCCS-24.1.1.3						0	Action is considered In-Kind
UR-CCCS-24.1.1.4	16.25	16.25	16.25	16.25		65	Cost based on stream flow/precipitation model at a rate of \$65,000/project.
UR-CCCS-24.1.1.5						TBD	Cost difficult to estimate due to uncertainty with the cost of water, number of participants, etc.
UR-CCCS-24.1.1.6						0	Action is considered In-Kind
UR-CCCS-24.1.1.7						0	Action is considered In-Kind
UR-CCCS-24.1.1.8						0	Action is considered In-Kind
UR-CCCS-25.1.1.1						0	Action is considered In-Kind
UR-CCCS-25.1.1.2						0	Coordination done largely by agency staff and affected landowners. Action is considered In-Kind
UR-CCCS-25.1.1.3						0	Promotion largely done through federal, state and local partnerships with interested NGO's. Action is considered In-Kind
UR-CCCS-25.1.1.4						0	Promotion likely done largely by agency and NGO partnerships. Action is considered In-Kind
UR-CCCS-25.1.1.5						TBD	Cost based on amount and type of incentives to provide.
UR-CCCS-25.1.2.1	15,000	15,000				30,000	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
UR-CCCS-25.1.2.2						0	Action is considered In-Kind

Upper Russian, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
UR-CCCS-25.1.3.1						0	Action is considered In-Kind
UR-CCCS-25.1.3.2						0	Action is considered In-Kind
UR-CCCS-25.2.1.1	65.00					65	Cost based on stream flow/precipitation model at a rate of \$65,000/project. This recommendation should be coordinated with other action steps to reduce cost and redundancy.
UR-CCCS-25.2.1.2						0	Action is considered In-Kind
UR-CCCS-25.2.1.3						TBD	Cost based on number and type of measures taken to reduce conflicts between fisheries and frost protection.
UR-CCCS-25.2.1.4						TBD	Cost is TBD, since the number, location and scope of future actions is unknown at this time.
UR-CCCS-25.2.1.5						0	Action is considered In-Kind
UR-CCCS-25.2.1.6						0	No cost expected for requesting SWRCB review of water use. Action is considered In-Kind
UR-CCCS-25.2.1.7						0	Action is considered In-Kind
UR-CCCS-25.2.1.8						0	Cost expected to be largely absorbed through already employed agency enforcement personnel. Action is considered In-Kind
UR-CCCS-25.2.1.9						0	Cost will be an evaluation largely done by already staffed federal, state and local agencies. Action is considered In-Kind

Crocker Creek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
CrC-CCCS-13.1.1.1						0	Action is considered In-Kind
CrC-CCCS-13.1.1.2						0	Action is considered In-Kind
CrC-CCCS-13.1.1.3	32.00					32	Cost based to treat 1.2 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
CrC-CCCS-13.1.2.1	15.00					15	Cost based on previous regional projects
CrC-CCCS-13.1.2.2						TBD	Cost based on amount of habitat needing restoration. Cost for stream restoration estimated at \$26,000/mile.
CrC-CCCS-18.1.1.1	18.50	18.50				37	Cost based on previous regional projects
CrC-CCCS-18.1.1.2	49.75	49.75				100	Cost based on previous regional projects
CrC-CCCS-18.1.1.3	6.3	6.3	6.3	6.3		25	Cost based on amount of water sources needing to be relocated. Cost estimated for off-channel water source at \$5,000/site for an estimated 5 sites for a total of \$25,000
CrC-CCCS-18.1.1.4						0	Cost based on amount of stream crossings needed. Cost likely accounted for in riparian exclusion fencing above.
CrC-CCCS-18.1.2.1						0	Action is considered In-Kind
CrC-CCCS-18.1.2.2	49.75	49.75				100	
CrC-CCCS-22.1.1.1	26.00					26	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
CrC-CCCS-22.1.1.2						0	Action is considered In-Kind
CrC-CCCS-22.1.1.3						0	Action is considered In-Kind
CrC-CCCS-22.1.1.4						0	Action is considered In-Kind
CrC-CCCS-22.1.2.1						0	Action is considered In-Kind
CrC-CCCS-22.1.2.2						0	Action is considered In-Kind
CrC-CCCS-22.1.3.1						0	Action is considered In-Kind
CrC-CCCS-22.1.3.2						0	Action is considered In-Kind
CrC-CCCS-22.1.3.3						TBD	
CrC-CCCS-22.1.3.4						0	Action is considered In-Kind
CrC-CCCS-22.1.4.1						0	Currently, incentive programs exist and should be explored and expanded. Action is considered in-kind
CrC-CCCS-22.1.4.2						0	Action is considered In-Kind
CrC-CCCS-22.1.4.3							
CrC-CCCS-22.2.1.1						0	Action is considered In-Kind
CrC-CCCS-22.2.1.2						0	Action is considered In-Kind
CrC-CCCS-22.2.1.3						0	Action is considered In-Kind
CrC-CCCS-22.2.2.1						0	Action is considered In-Kind
CrC-CCCS-23.1.1.1						0	Action is considered In-Kind
CrC-CCCS-23.1.1.2	3.35	3.35				7	Cost based on road inventory of 7 miles of road at a rate of \$1000/mile.
CrC-CCCS-23.1.1.3						0	Action is considered In-Kind
CrC-CCCS-23.1.1.4	115.50	115.50				231	Cost based on replacing culvert at a rate of \$231,000.
CrC-CCCS-23.2.1.1						0	Action is considered In-Kind
CrC-CCCS-23.2.1.2						0	Action is considered In-Kind
CrC-CCCS-25.1.1.1						0	Action is considered In-Kind
CrC-CCCS-25.1.1.2						0	Action is considered In-Kind
CrC-CCCS-25.1.1.3						0	Action is considered In-Kind
CrC-CCCS-25.1.1.4						0	Action is considered In-Kind

Gill Greek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GIC-CCCS-10.1.1.1	15.00					15	Cost based on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station.
GIC-CCCS-12.1.1.1	36.00					36	Cost based on treating 1.4 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
GIC-CCCS-12.1.1.2	32					0	Action is considered In-Kind
GIC-CCCS-12.1.1.3						0	Action is considered In-Kind
GIC-CCCS-12.1.1.4						0	Action is considered In-Kind
GIC-CCCS-12.1.2.1						0	Action is considered In-Kind
GIC-CCCS-12.1.2.2	50.00	50.00				100	
GIC-CCCS-12.1.2.3						0	Action is considered In-Kind
GIC-CCCS-12.1.2.4						0	Action is considered In-Kind
GIC-CCCS-12.1.2.5						0	Action is considered In-Kind
GIC-CCCS-12.1.3.1						0	Action is considered In-Kind
GIC-CCCS-12.1.3.2						0	Action is considered In-Kind
GIC-CCCS-12.1.3.3						0	Action is considered In-Kind
GIC-CCCS-12.1.3.4						0	Action is considered In-Kind
GIC-CCCS-12.1.4.1						0	Action is considered In-Kind
GIC-CCCS-12.2.1.1						0	Action is considered In-Kind
GIC-CCCS-12.2.1.2						0	Action is considered In-Kind
GIC-CCCS-12.2.1.3						0	Action is considered In-Kind
GIC-CCCS-13.1.1.1						0	Action is considered In-Kind
GIC-CCCS-13.1.1.2						TBD	
GIC-CCCS-13.1.1.3						0	Action is considered In-Kind
GIC-CCCS-13.1.2.1	103.00					103	Cost based on providing passage at a partial barrier at a rate of \$103,000/project.
GIC-CCCS-13.1.2.2						0	Action is considered In-Kind
GIC-CCCS-13.1.2.3						0	Action is considered In-Kind
GIC-CCCS-13.1.3.1						0	Action is considered In-Kind
GIC-CCCS-13.1.3.2						0	Action is considered In-Kind
GIC-CCCS-13.1.3.3	36.00					36	Cost based on treating 1.4 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
GIC-CCCS-13.1.4.1						0	Action is considered In-Kind
GIC-CCCS-13.1.5.1						0	Action is considered In-Kind
GIC-CCCS-13.1.5.2						0	Action is considered In-Kind
GIC-CCCS-13.1.5.3						0	Action is considered In-Kind
GIC-CCCS-18.1.1.1	74.00					74	Cost based on riparian restoration monitoring at a rate of \$74,000/project.
GIC-CCCS-18.1.1.2						TBD	Cost depends on number of instream livestock watering sources to be relocated, which is currently unknown. Cost estimated at \$5,000/site.
GIC-CCCS-18.1.1.3						0	Action is considered In-Kind
GIC-CCCS-18.1.2.1						0	Action is considered In-Kind
GIC-CCCS-18.1.2.2	83					83	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
GIC-CCCS-18.1.2.3	9.60					10	Cost based on treating 0.5 miles (assume 1 project/mile in 5% high IP) at a rate of \$3.63/ft.
GIC-CCCS-22.1.1.1	36.00					36	Cost based on treating 1.4 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
GIC-CCCS-22.1.1.2						0	Action is considered In-Kind
GIC-CCCS-22.1.1.3						0	Action is considered In-Kind
GIC-CCCS-22.1.1.4						0	Action is considered In-Kind
GIC-CCCS-22.1.2.1						0	Action is considered In-Kind
GIC-CCCS-22.1.2.2						0	Action is considered In-Kind
GIC-CCCS-22.1.2.3						0	Action is considered In-Kind
GIC-CCCS-22.1.3.1						0	Action is considered In-Kind
GIC-CCCS-22.1.3.2						0	Action is considered In-Kind
GIC-CCCS-22.1.3.3						0	Action is considered In-Kind
GIC-CCCS-22.1.4.1						TBD	Cost based on amount of incentives to supply for rain collection systems. Currently, incentive programs exist and should be explored and expanded.
GIC-CCCS-22.1.4.2						0	Action is considered In-Kind
GIC-CCCS-22.1.4.3							
GIC-CCCS-22.1.5.1						0	Action is considered In-Kind
GIC-CCCS-22.1.5.2						0	Action is considered In-Kind
GIC-CCCS-22.1.5.3						0	Action is considered In-Kind
GIC-CCCS-22.2.1.1						0	Action is considered In-Kind
GIC-CCCS-22.2.1.2						0	Action is considered In-Kind
GIC-CCCS-22.2.1.3						0	Action is considered In-Kind
GIC-CCCS-22.2.2.1						0	Action is considered In-Kind
GIC-CCCS-23.1.1.1						0	Action is considered In-Kind
GIC-CCCS-23.1.1.2	7.50	7.50				15	Cost based on road inventory for 15 miles of road at a rate of \$1000/mile.
GIC-CCCS-23.1.1.3						0	Action is considered In-Kind

Gill Greek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GIC-CCCS-23.1.1.4						TBD	Action may be considered In-Kind if other work is in progress
GIC-CCCS-23.1.1.5						0	Action is considered In-Kind
GIC-CCCS-23.1.1.6						0	Action is considered In-Kind
GIC-CCCS-23.1.1.7						0	Action is considered In-Kind
GIC-CCCS-23.1.1.8						0	Action is considered In-Kind
GIC-CCCS-23.2.1.1						0	Action is considered In-Kind
GIC-CCCS-23.2.1.2						0	Action is considered In-Kind
GIC-CCCS-25.1.1.1						TBD	
GIC-CCCS-25.1.1.2						0	Action is considered In-Kind
GIC-CCCS-25.1.1.3						0	Action is considered In-Kind
GIC-CCCS-25.1.1.4						0	Action is considered In-Kind
GIC-CCCS-25.1.1.5						0	Action is considered In-Kind
GIC-CCCS-25.1.1.6						0	Action is considered In-Kind
GIC-CCCS-25.1.1.7						0	Action is considered In-Kind
GIC-CCCS-25.1.1.8						TBD	
GIC-CCCS-25.1.1.9						0	Action is considered In-Kind
GIC-CCCS-25.1.1.10						0	Action is considered In-Kind
GIC-CCCS-25.1.1.11						0	Action is considered In-Kind
GIC-CCCS-25.2.1.1						0	Action is considered In-Kind
GIC-CCCS-25.2.1.2						0	Action is considered In-Kind
GIC-CCCS-25.2.1.3						0	Action is considered In-Kind
GIC-CCCS-25.2.1.4						0	Action is considered In-Kind

Miller Creek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
Mlrc-CCCS-10.1.1.1	15.00					15	Cost based on installing a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station.
Mlrc-CCCS-12.1.1.1	13.00					13	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
Mlrc-CCCS-12.1.1.2	32					0	Action is considered In-Kind
Mlrc-CCCS-12.1.1.3						0	Action is considered In-Kind
Mlrc-CCCS-12.1.1.4						0	Action is considered In-Kind
Mlrc-CCCS-12.1.2.1						TBD	Cost is TBD, since the total number and scope of the future plans is unknown at this time.
Mlrc-CCCS-12.1.2.2						0	Action is considered In-Kind
Mlrc-CCCS-12.1.2.3						0	Action is considered In-Kind
Mlrc-CCCS-12.1.2.4						0	Action is considered In-Kind
Mlrc-CCCS-12.1.3.1						0	Action is considered In-Kind
Mlrc-CCCS-12.1.3.2						0	Action is considered In-Kind
Mlrc-CCCS-12.1.3.3						0	Action is considered In-Kind
Mlrc-CCCS-12.1.3.4	41.50	41.50				82	Estimated costs based on similar costs in geographic area - actual costs TBD as costs are site, setting and geographic specific.
Mlrc-CCCS-12.1.4.1						0	Action is considered In-Kind
Mlrc-CCCS-12.2.1.1						0	Action is considered In-Kind
Mlrc-CCCS-12.2.1.2						0	Action is considered In-Kind
Mlrc-CCCS-12.2.1.3						0	Action is considered In-Kind
Mlrc-CCCS-13.1.1.1						0	Action is considered In-Kind
Mlrc-CCCS-13.1.1.2	25.00	25.00				50	
Mlrc-CCCS-13.1.1.3						0	Action is considered In-Kind
Mlrc-CCCS-13.1.2.1						0	Action is considered In-Kind
Mlrc-CCCS-13.1.2.2	6.50	6.50				13	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
Mlrc-CCCS-13.1.2.3	3.25	3.25	3.25	3.25		13	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$26,000/mile.
Mlrc-CCCS-13.1.3.1						0	Action is considered In-Kind
Mlrc-CCCS-13.1.3.2						0	Action is considered In-Kind
Mlrc-CCCS-13.1.3.3						0	Action is considered In-Kind
Mlrc-CCCS-13.1.3.4						0	Cost accounted for in other action steps.
Mlrc-CCCS-13.1.4.1						0	Action is considered In-Kind
Mlrc-CCCS-13.1.5.1						0	Action is considered In-Kind
Mlrc-CCCS-13.1.5.2						0	Action is considered In-Kind
Mlrc-CCCS-23.1.1.1						0	Action is considered In-Kind
Mlrc-CCCS-23.1.1.2	4.80	4.80				10	Cost based on road inventory for 10 miles at a rate of \$1000/mile.
Mlrc-CCCS-23.1.1.3						0	Action is considered In-Kind
Mlrc-CCCS-23.1.1.4						0	Action is considered In-Kind
Mlrc-CCCS-23.1.1.5						0	Action is considered In-Kind
Mlrc-CCCS-23.1.1.6						TBD	
Mlrc-CCCS-23.1.1.7						0	Action is considered In-Kind
Mlrc-CCCS-23.2.1.1						0	Action is considered In-Kind
Mlrc-CCCS-23.2.1.2						0	Action is considered In-Kind
Mlrc-CCCS-25.1.1.1						TBD	
Mlrc-CCCS-25.1.1.2						0	Action is considered In-Kind
Mlrc-CCCS-25.1.1.3						0	Action is considered In-Kind
Mlrc-CCCS-25.1.1.4						0	Action is considered In-Kind
Mlrc-CCCS-25.1.1.5						0	Action is considered In-Kind
Mlrc-CCCS-25.1.1.6						0	Action is considered In-Kind
Mlrc-CCCS-25.1.1.7						0	Action is considered In-Kind
Mlrc-CCCS-25.1.1.8						0	Action is considered In-Kind
Mlrc-CCCS-25.1.1.9						0	Action is considered In-Kind
Mlrc-CCCS-25.1.1.10	5					5	Cost based on amount and size of storage tanks needed. Cost estimated at \$500/tank for an estimated 10 tanks for a total of \$5000.
Mlrc-CCCS-25.1.1.11						0	Action is considered In-Kind
Mlrc-CCCS-25.2.1.1						0	Action is considered In-Kind
Mlrc-CCCS-25.2.1.2						TBD	Cost is variable upon landowner participation, but estimated at \$8,000/landowner/year.
Mlrc-CCCS-25.2.1.3						0	Action is considered In-Kind
Mlrc-CCCS-25.2.1.4						0	Action is considered In-Kind
Mlrc-CCCS-25.2.1.5						0	Action is considered In-Kind

Sausal Creek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SaC-CCCS-10.1.1.1	15.00					15	Cost based to establish a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
SaC-CCCS-12.1.1.1						0	Action is considered In-Kind
SaC-CCCS-12.1.1.2	32					0	Action is considered In-Kind
SaC-CCCS-12.1.1.3						0	Action is considered In-Kind
SaC-CCCS-12.1.1.4						0	Action is considered In-Kind
SaC-CCCS-12.1.2.1						0	Action is considered In-Kind
SaC-CCCS-12.1.2.2						0	Action is considered In-Kind
SaC-CCCS-12.1.2.3						0	Action is considered In-Kind
SaC-CCCS-12.1.3.1						0	Action is considered In-Kind
SaC-CCCS-12.1.3.2						0	Action is considered In-Kind
SaC-CCCS-12.1.3.3						0	Action is considered In-Kind
SaC-CCCS-12.1.3.4	42.00	42.00				83	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 20 acres/mile) at a rate of \$21,000/acre.
SaC-CCCS-12.1.4.1						0	Action is considered In-Kind
SaC-CCCS-12.2.1.1						0	Action is considered In-Kind
SaC-CCCS-12.2.1.2						0	Action is considered In-Kind
SaC-CCCS-12.2.1.3						0	Action is considered In-Kind
SaC-CCCS-13.1.1.1						0	Action is considered In-Kind
SaC-CCCS-13.1.1.2						0	Action is considered In-Kind
SaC-CCCS-13.1.2.1						0	Action is considered In-Kind
SaC-CCCS-13.1.2.2						0	Action is considered In-Kind
SaC-CCCS-13.1.2.3						0	Action is considered In-Kind
SaC-CCCS-13.1.3.1						0	Action is considered In-Kind
SaC-CCCS-13.1.3.2						0	Action is considered In-Kind
SaC-CCCS-13.1.3.3						0	Action is considered In-Kind
SaC-CCCS-13.1.3.4						TBD	
SaC-CCCS-13.1.4.1						0	Action is considered In-Kind
SaC-CCCS-13.1.4.2	54.00	54.00	54.00	54.00		214	Cost based to treat 0.20 mile (assume 1 project/mile) at a rate of \$1,070,400/mile.
SaC-CCCS-18.1.1.1	3.90					4	Cost based to treat 0.2 miles (assume 1 project/mile in 5% high IP) at a rate of \$4/ft.
SaC-CCCS-18.1.1.2						TBD	Cost based on number of stream crossings to establish. Cost should be minimal if included in above action step.
SaC-CCCS-18.1.2.1	104.00					104	Cost based on treating 0.2 mile (assume 1 project/mile in 5% high IP; assumes 20 acres per mile) at a rate of \$21,000/acre for riparian planting and \$26,000/mile for stream complexity. Costs only for bank stabilization component. Costs for riparian planting covered under other recovery actions - See Riparian.
SaC-CCCS-18.1.2.2						0	Cost accounted for in above action step.
SaC-CCCS-18.1.2.3						TBD	Cost based on number of instream livestock watering sources to relocate. Cost estimate for off-channel water source is \$5,000/site.
SaC-CCCS-23.1.1.1						0	Action is considered In-Kind
SaC-CCCS-23.1.1.2	10.00	10.00				20	Cost based on road inventory of 20 miles of road at a rate of \$1000/mile.
SaC-CCCS-23.1.1.3						0	Action is considered In-Kind
SaC-CCCS-23.1.1.4						0	Action is considered In-Kind
SaC-CCCS-23.1.1.5						0	Action is considered In-Kind
SaC-CCCS-23.1.1.6	115.50	115.50				231	Cost based to treat 1 stream crossing at a rate of \$231,000/project.
SaC-CCCS-23.1.1.7	52.50	52.50				105	Cost based to upgrade 5 miles of road at a rate of \$21,000/mile.
SaC-CCCS-23.1.1.8						0	Action is considered In-Kind
SaC-CCCS-23.2.1.1						0	Action is considered In-Kind
SaC-CCCS-23.2.1.2						0	Action is considered In-Kind
SaC-CCCS-25.1.1.1	106.0					106	Total cost based on number and type of fish screens to implement. Estimate for fish screens is \$53,000/screen and it is estimated that 2 screens are needed for a total of \$106,000
SaC-CCCS-25.1.1.2						0	Action is considered In-Kind
SaC-CCCS-25.1.1.3						0	Action is considered In-Kind
SaC-CCCS-25.1.1.4						0	Action is considered In-Kind
SaC-CCCS-25.1.1.5						0	Action is considered In-Kind
SaC-CCCS-25.1.1.6						0	Action is considered In-Kind
SaC-CCCS-25.1.1.7						0	Action is considered In-Kind
SaC-CCCS-25.1.1.8						TBD	Cost based on landowner participation and amount of water storage needed. Cost estimate for forbearance program estimated at \$7,700/landowner.
SaC-CCCS-25.1.1.9						0	Action is considered In-Kind
SaC-CCCS-25.1.1.10						0	Action is considered In-Kind
SaC-CCCS-25.1.1.11						0	Action is considered In-Kind
SaC-CCCS-25.1.1.12						0	Action is considered In-Kind
SaC-CCCS-25.2.1.1						0	Action is considered In-Kind
SaC-CCCS-25.2.1.2						0	Action is considered In-Kind

Sausal Creek, Central California Coast Steelhead (Interior) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SaC-CCCS-25.2.1.3						0	Action is considered In-Kind
SaC-CCCS-25.2.1.4						0	Action is considered In-Kind

Corte Madera Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
CMC-CCCS-1.1.1.1	104.5	104.5				209	Cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000.
CMC-CCCS-1.1.1.2	169.50	169.50				339	Cost based on estuary use/residence time model at a rate of \$339,000/project.
CMC-CCCS-1.1.1.3	32.00	443.00				886	Cost based on treating 18 acres of estuarine habitat (assume 10% of total estuarine habitat) at a rate of \$49,000/acre
CMC-CCCS-1.1.2.1						0	Cost accounted for in above action step.
CMC-CCCS-1.1.2.2						0	Cost accounted for in above action step.
CMC-CCCS-1.1.2.3						0	Cost accounted for in above action step.
CMC-CCCS-1.1.2.4						0	Cost likely accounted for through implementation of other action steps.
CMC-CCCS-1.1.2.5						0	There is no cost increase in using native plants vs nonnative plants in restoration projects.
CMC-CCCS-1.1.2.6						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-1.1.2.7						0	Cost for estuary rehabilitation sites accounted for in above action steps.
CMC-CCCS-1.1.3.1	7.50	7.50				15	Cost based on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station.
CMC-CCCS-1.1.3.2						0	Cost accounted for through implementation of other action steps.
CMC-CCCS-1.1.3.3						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-1.1.3.4						0	Action is considered In-Kind
CMC-CCCS-2.1.1.1	79.00					79	Cost based on stream flow/precipitation model at a rate of 79,000/project.
CMC-CCCS-2.1.2.1	345.00					345	Cost based on riparian and wetland restoration model at a rate of \$89,000 and \$256,000/project, respectively.
CMC-CCCS-2.1.2.2						0	Cost accounted for in above action step.
CMC-CCCS-2.1.2.3						0	Cost accounted for in above action step.
CMC-CCCS-2.1.2.4						0	Existing programs and outreach are considered In-Kind. Costs for conservation easements vary.
CMC-CCCS-2.1.2.5						0	Cost accounted for in above action step.
CMC-CCCS-3.1.1.1						TBD	Costs based on implementing other action steps (e.g. off-channel storage, irrigation efficiency, etc.)
CMC-CCCS-3.1.1.2	39.00	39.00				79	Cost based on stream flow/precipitation model at a rate of 79,000/project.
CMC-CCCS-3.1.2.1						0	Action is considered In-Kind
CMC-CCCS-3.1.2.2						0	
CMC-CCCS-3.1.2.3	104.5	104.5				209	Costs will vary depending on methods implemented. Cost of assessment estimated at \$209,000 and should be completed within the first 10 years.
CMC-CCCS-3.1.2.4						0	Action is considered In-Kind.
CMC-CCCS-3.1.2.5	3.00					3	Cost based on installing a minimum of 3 streamflow gauges at a rate of \$1,000/gauge. Cost does not account for data management or maintenance.
CMC-CCCS-3.1.2.6						0	Action is considered In-Kind
CMC-CCCS-5.1.1.1						0	Action is considered In-Kind
CMC-CCCS-5.1.1.2	209					209	Cost of assessment estimated at \$209,000.
CMC-CCCS-5.1.1.3						TBD	
CMC-CCCS-5.1.1.4						0	Action is considered In-Kind
CMC-CCCS-6.1.1.1	5.33	5.33	5.33			16	Cost based on treating 0.5 miles at a rate of \$32,000/mile. Cost likely higher if greater level of engineering and oversight is needed.
CMC-CCCS-6.1.1.2	8.00	8.00				16	Cost based on treating 0.5 miles at a rate of \$32,000/mile. Cost likely higher if greater level of engineering and oversight is needed.
CMC-CCCS-6.1.1.3	5.33	5.33	5.33			16	Cost based on treating 0.5 miles at a rate of \$32,000/mile. Cost likely higher if greater level of engineering and oversight is needed.
CMC-CCCS-6.1.2.1						0	Costs accounted for in previous actions related to habitat complexity.
CMC-CCCS-6.1.2.2						0	Costs accounted for in previous actions related to habitat complexity.
CMC-CCCS-6.1.2.3						0	Costs accounted for in previous actions related to habitat complexity.
CMC-CCCS-6.1.3.1						0	Costs accounted for in previous actions related to habitat complexity.
CMC-CCCS-6.1.4.1						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-7.1.1.1	99.00					99	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 20 acres/mile treated) at a rate of \$25,000/acre
CMC-CCCS-7.1.1.2						0	Cost accounted for in above action step.
CMC-CCCS-7.1.1.3	44.50	44.50				89	Cost based on riparian restoration model at a rate of \$89,000/project.
CMC-CCCS-7.1.1.4						0	Existing programs and outreach are considered In-Kind.☐
CMC-CCCS-7.1.1.5						0	Existing programs and outreach are considered In-Kind.☐
CMC-CCCS-7.1.1.6						0	Existing programs and outreach are considered In-Kind.☐
CMC-CCCS-7.1.1.7						0	Cost accounted for in above action step.
CMC-CCCS-8.1.1.1						0	Costs accounted for in previous actions related to habitat complexity.
CMC-CCCS-8.1.1.2	0.67	0.67	0.67			2	Cost based on treating 0.5 miles (assume 1 project/mile in 5% high IP with 100 cu. yds.mile) at a rate of \$40/cu. yd.
CMC-CCCS-8.1.1.3						0	Costs accounted for in previous actions related to habitat complexity.
CMC-CCCS-8.1.2.1						0	Costs accounted for in previous actions related to habitat complexity.
CMC-CCCS-8.1.2.2	104.5	104.5				209	Costs will vary depending on methods implemented. Cost of assessment estimated at \$209,000 and should be completed within the first 10 years.
CMC-CCCS-8.1.2.3						0	Costs accounted for in previous actions related to habitat complexity.
CMC-CCCS-10.1.1.1						0	Existing programs and outreach are considered In-Kind.☐
CMC-CCCS-10.1.1.2						0	Existing programs and outreach are considered In-Kind.☐
CMC-CCCS-10.1.1.3	104.5	104.5				209	Total costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment estimated at \$209,000.
CMC-CCCS-10.1.1.4						0	Existing programs and outreach are considered In-Kind.☐
CMC-CCCS-10.1.1.5						0	Existing programs and outreach are considered In-Kind.☐

Corte Madera Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
CMC-CCCS-10.1.1.6	104.5	104.5				209	Total costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment estimated at \$209,000.
CMC-CCCS-10.1.2.1						0	Costs accounted for in previous actions related to riparian.
CMC-CCCS-10.1.2.2						0	Costs accounted for in previous actions related to riparian.
CMC-CCCS-10.1.2.3						0	Costs accounted for in previous actions related to riparian.
CMC-CCCS-10.1.3.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
CMC-CCCS-10.1.3.2	104.5	104.5				209	Total costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment estimated at \$209,000.
CMC-CCCS-11.1.1.1	104.5	104.5				209	Cost of assessment estimated at \$209,000.
CMC-CCCS-11.1.1.2						0	Costs for adults spawner surveys are covered in the Monitoring Chapter.
CMC-CCCS-11.1.1.3						0	Cost for conducting standardized habitat assessments will be developed for the Coastal Monitoring Plan.
CMC-CCCS-11.1.1.4						0	Costs for smolt outmigration studies are covered in the Monitoring Chapter.
CMC-CCCS-11.1.1.5	42	42	42	42	42	209	Cost of assessment estimated at \$209,000.
CMC-CCCS-11.1.1.6						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-11.1.1.7						0	Action is considered In-Kind.
CMC-CCCS-13.1.1.1						0	Action is considered In-Kind.
CMC-CCCS-13.1.1.2						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-13.1.1.3						TBD	Costs cannot be determined until specific projects are identifies and designed. The USACE may contribute at least in their flood control section of Corte Madera and Ross Creeks.
CMC-CCCS-13.1.2.1	892	892	892			2,677	Cost based on treating 0.25 miles (assume 1 project/mile in 25% of flood control channel) at a rate of \$1,070,400/mile.
CMC-CCCS-13.1.2.2						0	Action is considered In-Kind
CMC-CCCS-13.1.2.3						0	Cost is dependent on extent and method of enhancement
CMC-CCCS-13.1.3.1						0	Action is considered In-Kind
CMC-CCCS-13.1.3.2	69.7	69.7	69.7			209	Total costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment estimated at \$209,000.
CMC-CCCS-13.1.3.3						0	Cost accounted for in above action step.
CMC-CCCS-13.1.3.4						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-13.1.4.1						0	Cost accounted for in FLOODPLAIN CONNECTIVITY
CMC-CCCS-18.1.1.1	197.50	197.50				395	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$25,000/acre.
CMC-CCCS-18.1.2.1						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-18.1.2.2						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-18.1.2.3						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-18.1.3.1						TBD	Costs will vary depending on methods implemented.
CMC-CCCS-18.1.4.1						0	Action is considered In-Kind
CMC-CCCS-22.1.1.1						0	Action is considered In-Kind to reduce and prevent the habitat modifications
CMC-CCCS-22.1.1.2						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-22.1.1.3						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-22.1.2.1						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-22.1.2.2						TBD	Costs will vary depending on methods implemented. □
CMC-CCCS-22.1.3.1						0	Costs for conservation easements vary.
CMC-CCCS-22.1.3.2						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-22.1.3.3						TBD	Existing programs and outreach are considered In-Kind.
CMC-CCCS-22.1.4.1						0	Action is considered In-Kind
CMC-CCCS-22.1.4.2	89.00	89.00				179	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$45,000/acre.
CMC-CCCS-22.1.4.3						0	Action is considered In-Kind
CMC-CCCS-22.1.5.1	104.5	104.5				209	Cost of assessment estimated at \$209,000.
CMC-CCCS-22.1.5.2						TBD	Costs will vary depending on methods implemented. Estimate for filter or buffer strip system range from \$12,000 to \$29,000/filter for a 25 ft. wide grass filter.
CMC-CCCS-22.2.1.1						0	Existing programs and outreach are considered In-Kind. □
CMC-CCCS-23.1.1.1	17.50	17.50				35	Cost based on decommissioning 2.4 miles of riparian road network at a rate of \$14,440/mile. Cost will be significantly higher if riparian roads are part of urban/suburban infrastructure.
CMC-CCCS-23.1.2.1						0	Existing programs and outreach are considered In-Kind. □
CMC-CCCS-23.1.2.2						0	Action is considered in-kind
CMC-CCCS-23.1.3.1						0	Costs accounted for in previous actions related to passage and migration.
CMC-CCCS-23.1.3.2						0	Existing programs and outreach are considered In-Kind. □
CMC-CCCS-23.1.3.3						TBD	Costs will vary depending on methods implemented.
CMC-CCCS-23.1.3.4						0	Action is considered In-Kind
CMC-CCCS-23.1.3.5						TBD	
CMC-CCCS-23.1.4.1						TBD	Cost based on number and type of methods used to hydrologically disconnect roads.
CMC-CCCS-23.1.5.1	74.67	74.67	74.67			224	Cost based on road inventory for 224 miles of road network at a rate of \$1,000/mile.
CMC-CCCS-23.1.5.2	41.8	41.8	41.8	41.8	41.8	209	Cost of plan is estimated at \$209,000.
CMC-CCCS-23.1.5.3						0	Cost accounted for in other ROADS action steps. □
CMC-CCCS-23.1.5.4	159.00	159.00				318	Cost based on decommissioning 22 miles of road network at a rate of \$15,000/mile.

Corte Madera Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
CMC-CCCS-25.1.1.1						TBD	Costs will vary depending on methods implemented.
CMC-CCCS-25.1.1.2						0	Operations conducted normally or with minor modifications are considered In-Kind.
CMC-CCCS-25.1.1.3						0	Operations conducted normally or with minor modifications are considered In-Kind.
CMC-CCCS-25.1.1.4						0	Operations conducted normally or with minor modifications are considered In-Kind.
CMC-CCCS-25.1.1.5						0	Existing programs and outreach are considered In-Kind.
CMC-CCCS-25.1.1.6	104.5	104.5				209	Cost will vary with assessment methods and level of detail. Cost of assessment is estimated at \$209,000 and should be completed within the first 10 years.
CMC-CCCS-25.1.1.7						0	Operations conducted normally or with minor modifications are considered In-Kind.
CMC-CCCS-25.1.1.8						0	Existing programs and outreach are considered In-Kind.□
CMC-CCCS-25.1.1.9						0	Existing programs and outreach are considered In-Kind.□
CMC-CCCS-25.1.2.1	104.5	104.5				209	Cost will vary with assessment methods and level of detail. Cost of assessment is estimated at \$209,000.
CMC-CCCS-25.1.2.2						TBD	Costs will vary depending on methods implemented.
CMC-CCCS-25.1.2.3						TBD	Costs will vary depending on methods implemented.
CMC-CCCS-25.1.3.1						0	Existing programs and outreach are considered In-Kind.□
CMC-CCCS-25.1.3.2						TBD	Costs will vary depending on methods implemented and number of diversions to be screened.
CMC-CCCS-25.2.1.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
CMC-CCCS-25.2.1.2						0	Operations conducted normally or with minor modifications are considered In-Kind.
CMC-CCCS-25.2.1.3						TBD	Costs will vary depending on methods implemented.
CMC-CCCS-25.2.1.4						0	Operations conducted normally or with minor modifications are considered In-Kind.

Guadalupe River, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GudR-CCCS-1.1.1.1	104.5	104.5				209	Cost would vary with extent of restoration efforts. Cost of assessment is estimated at \$209,000.
GudR-CCCS-1.1.1.2	250.00					250	Cost estimate for estuary/marsh habitat assessment.
GudR-CCCS-2.1.1.1	32.0	104.5				209	Cost of assessment is estimated at \$209,000.
GudR-CCCS-2.1.1.2	104.5	104.5				209	Cost will vary with amount of watershed area assessed and extent of floodplain connection restoration efforts. Moderate estimate is \$39,000 /acre of earthmoving (NMFS2008, pg. 26). Cost of assessment is estimated at \$209,000.
GudR-CCCS-2.1.1.3						0	Action is considered in-kind.
GudR-CCCS-3.1.1.1	104.5	104.5				209	Cost of assessment is estimated at \$209,000.
GudR-CCCS-5.1.1.1	1,392					1,392	Estimate of \$279,000/project within suburban setting used (CDFG 2004, pg. I-16), and an estimate of 5 barriers to be improved/removed. Passage improvement is of the absolute highest priority - expedite.
GudR-CCCS-5.1.1.2	112.52					113	Cost estimate from: □ Steelhead Abundance/Distribution project type (NMFS 2008, pg. 58). Cost is approximate. Support and expedite projects that contribute to above-reservoir passage investigation/implementation.
GudR-CCCS-5.1.1.3	44.00					44	Consider both volitional and non-volitional passage methods in the assessment. Cost based on escapement monitoring at a rate of \$44,000/project.
GudR-CCCS-5.1.1.4	1,250	1,250	1,250	1,250	1,250	25,000	Using cost estimates from a draft fish passage assessment performed by HDR engineering Inc. (2009) for Los Padres Dam: cost estimates range depending on methodology. For this estimate: □ 15 million for ladder installation (trap and haul less) □ 10 million for 100 years of operation (trap and haul similar). This estimates for one reservoir - multiply for multiple reservoirs. □
GudR-CCCS-5.1.1.5						0	Action is considered In-Kind because the grants would be written by county staff
GudR-CCCS-5.1.1.6	112.52					113	From NMFS 2008, pg. 58 - Steelhead Abundance/Distribution Monitoring
GudR-CCCS-5.1.1.7						TBD	
GudR-CCCS-5.1.1.8						TBD	
GudR-CCCS-6.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration at a rate of \$138,000/project.
GudR-CCCS-6.1.1.2						0	Action is considered In-Kind
GudR-CCCS-6.1.1.3						0	Likely to be coupled with other habitat restoration related monitoring -see cost estimates for Pool Frequency within Restoration - Habitat Complexity.
GudR-CCCS-6.1.2.1	69.00	69.00				138	Cost based on fish/habitat restoration at a rate of \$138,000/project. This action step should be coordinated with other action steps to reduce redundancy and cost.
GudR-CCCS-6.1.2.2	48.35	48.35				97	Cost will vary with area surveyed.
GudR-CCCS-7.1.1.1	104.5	104.5				209	Cost will depend upon extent and duration of exotic vegetation removal / native vegetation restoration efforts. Cost for non-native removal estimated at \$1000/acre. Cost of assessment is estimated at \$209,000.
GudR-CCCS-7.1.1.2	20.00	20.00				40	Cost based on treating 0.5 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$1,000/acre.
GudR-CCCS-7.1.1.3	120.00	120.00				240	Cost based on treating 1.7 miles (assume 1 project/mile in 15% high IP with 80 acres/mile) at a rate of \$2,000/acre.
GudR-CCCS-7.1.1.4						0	Cost accounted for in HYDROLOGY
GudR-CCCS-8.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration monitoring at a rate of \$138,000/project.
GudR-CCCS-8.1.1.2						0	Cost accounted for in HYDROLOGY
GudR-CCCS-8.1.1.3	209					209	Cost will vary depending on extent of restoration efforts, and methodologies employed. Cost of assessment is estimated at \$209,000.
GudR-CCCS-10.1.1.1						0	Action is considered In-Kind
GudR-CCCS-10.1.1.2						0	Action is considered In-Kind
GudR-CCCS-10.1.1.3						0	Costs accounted for in RIPARIAN and CHANNEL MODIFICATION
GudR-CCCS-10.1.2.1	15.00					15	Cost based on installing a minimum of 3 continuous water quality monitors at a rate of \$5,000/station.
GudR-CCCS-10.1.2.2						0	Action is considered In-Kind
GudR-CCCS-11.1.1.1	28.02	28.02				56	Cost estimate for Fish and Wildlife Warden from Bureau of Labor Statistics 2009.
GudR-CCCS-11.2.1.1						0	Future monitoring will be part of the Coastal Monitoring Plan. Costs for the CMP are accounted for in the Monitoring Chapter.
GudR-CCCS-11.2.1.2						0	Costs for salmonid monitoring are covered in the Monitoring Chapter
GudR-CCCS-11.2.1.3						0	Costs for salmonid monitoring are covered in the Monitoring Chapter
GudR-CCCS-11.2.1.4						0	Costs for salmonid monitoring are covered in the Monitoring Chapter
GudR-CCCS-11.2.1.5						0	Costs for salmonid monitoring are covered in the Monitoring Chapter
GudR-CCCS-11.2.1.6						0	Costs for salmonid monitoring are covered in the Monitoring Chapter
GudR-CCCS-13.1.1.1						0	Action is considered In-Kind
GudR-CCCS-13.1.1.2						0	Action is considered In-Kind
GudR-CCCS-13.1.1.3						0	Action is considered In-Kind
GudR-CCCS-13.1.1.4						0	Action is considered In-Kind
GudR-CCCS-13.1.1.5						0	Action is considered In-Kind
GudR-CCCS-13.1.1.6						0	Action is considered In-Kind
GudR-CCCS-13.1.1.7						0	Action is considered In-Kind
GudR-CCCS-13.1.1.8						0	Cost accounted for in PASSAGE
GudR-CCCS-13.1.1.9						0	Action is considered In-Kind
GudR-CCCS-14.1.1.1	104.5	104.5				209	Cost based on amount of exotic piscivorous fish species to be removed. Cost for invasive fish eradication estimated at \$9/fish. Cost of assessment is estimated at \$209,000.

Guadalupe River, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GudR-CCCS-14.1.1.2	80.57	80.57	80.57	80.57	80.57	1,611	Cost estimate for 4 fish screens installation, and 100 year maintenance. Fish screen installation 11,364 each (NMFS 2008, pg. 16); maintenance 1,566 /screen/year (NMFS 2008, pg. 68). Estimate for installation and four years maintenance = \$1,611,400.
GudR-CCCS-14.1.2.1						0	Cost accounted for in RIPARIAN
GudR-CCCS-20.1.1.1	104.5	104.5				209	Cost based on methods and amount of improvements needed. Cost of assessment is estimated at \$209,000.
GudR-CCCS-20.1.1.2	15.00					15	Cost based on a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station.
GudR-CCCS-21.1.1.1	44.50	44.50				89	Cost based on riparian restoration monitoring at a rate of \$89,000/project.
GudR-CCCS-21.1.1.2	209					209	Cost based on methods and amount of improvements needed. Cost of assessment is estimated at \$209,000.
GudR-CCCS-21.1.2.1						0	Action is considered In-Kind
GudR-CCCS-21.1.3.1	104.5	104.5				209	Cost based on amount of passage barriers. Cost estimated at \$639,247/project. Cost of assessment is estimated at \$209,079.
GudR-CCCS-22.1.1.1						TBD	Cost based on amount of habitat available to improve. This area is highly urbanized and opportunities to reclaim floodplain are few.
GudR-CCCS-22.1.1.2						TBD	Cost based on amount of existing system needing to be upgraded. Cost estimated at \$11,000/storm drain.
GudR-CCCS-22.1.1.3	52.3	52.3	52.3	52.3		209	Conduct an assessment to determine areas where infrastructure can reasonably be modified or relocated to accommodate habitat enhancement features. Implement where found necessary and suitable. Cost of assessment is estimated at \$209,000.
GudR-CCCS-22.1.1.4						0	Action is considered In-Kind
GudR-CCCS-22.1.1.5						0	Cost have been accounted in other action steps.
GudR-CCCS-22.1.1.6						TBD	Costs will vary depending on methods implemented.
GudR-CCCS-22.2.1.1						0	Action is considered In-Kind
GudR-CCCS-22.2.1.2						0	Action is considered In-Kind
GudR-CCCS-22.2.1.3						0	Action is considered In-Kind
GudR-CCCS-22.2.1.4						0	Action is considered In-Kind
GudR-CCCS-22.2.1.5						TBD	Cost of land or conservation easements is unknown for this area and is dependent on market value and the landowner
GudR-CCCS-22.2.1.6						0	Action is considered In-Kind
GudR-CCCS-22.2.1.7						0	Action is considered In-Kind
GudR-CCCS-23.1.1.1						0	Action is considered In-Kind
GudR-CCCS-23.1.1.2						0	Action is considered In-Kind
GudR-CCCS-23.1.1.3						TBD	
GudR-CCCS-23.1.2.1						0	Action is considered In-Kind
GudR-CCCS-25.1.1.1						0	Action is considered In-Kind
GudR-CCCS-25.1.1.2						0	Action is considered In-Kind
GudR-CCCS-25.1.1.3						0	Action is considered In-Kind
GudR-CCCS-25.1.1.4						0	Action is considered In-Kind
GudR-CCCS-25.1.1.5						0	Action is considered In-Kind
GudR-CCCS-25.1.1.6						0	Action is considered In-Kind
GudR-CCCS-25.1.1.7	94.00					94	Cost based to treat 3 miles (assume 1 project/mile in 25% high IP) at a rate of \$32,000/mile. Engineered structures will likely be used, which will increase cost.
GudR-CCCS-25.1.1.8						0	Action is considered In-Kind
GudR-CCCS-25.2.1.1						0	Action is considered In-Kind
GudR-CCCS-25.2.1.2						0	Action is considered In-Kind
GudR-CCCS-25.2.1.3	209					209	Cost of assessment is estimated at \$209,000.

Novato Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NvC-CCCS-1.1.1.1						0	Action is considered In-Kind
NvC-CCCS-1.1.1.2	15.00					15	Cost based on installing a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
NvC-CCCS-1.1.1.3	32.00					339	Cost based on estuary use/residence timing model at a rate of \$339,000/project.
NvC-CCCS-1.1.1.4						0	Action is considered In-Kind
NvC-CCCS-1.1.1.5	613	613	613			1,838	Cost based on treating 5% of total estuarine acres at a rate of \$49,000/acre.
NvC-CCCS-1.1.2.1						0	Cost accounted for in above action step.
NvC-CCCS-1.1.2.2						0	Cost accounted for in above action step.
NvC-CCCS-1.1.2.3						0	Cost accounted for in above action step.
NvC-CCCS-1.1.2.4						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-1.1.2.5	27.60	27.60	27.60	27.60	27.60	138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
NvC-CCCS-1.1.3.1						0	Cost will be accounted through implementation of other action steps.
NvC-CCCS-1.1.3.2						0	Costs accounted for in previous actions related to tidal restoration.
NvC-CCCS-1.1.3.3						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-1.1.3.4						0	Cost accounted for in above action step.
NvC-CCCS-2.1.1.1	79.00					79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.
NvC-CCCS-2.1.2.1	345.00					345	Cost based on riparian and wetland restoration model at a rate of \$89,000 and \$256,000/project, respectively.
NvC-CCCS-2.1.2.2						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-2.1.2.3	595	595	595			1,786	Cost based on treating 0.5 miles (assume 80 acres/mile) at a rate of \$45,000/acre.
NvC-CCCS-2.1.2.4						0	Cost accounted for in above action step.
NvC-CCCS-2.1.2.5	104.5	104.5				209	Estimated cost of assessment \$209,000 and complete assessment within the first ten years.
NvC-CCCS-3.1.1.1						0	Action is considered in-kind
NvC-CCCS-3.1.1.2	79.00					79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.
NvC-CCCS-3.1.2.1						0	Costs will be attributed to implementation of other action steps.
NvC-CCCS-3.1.2.2						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-3.1.2.3						0	Action is considered In-Kind
NvC-CCCS-3.1.2.4	45.50					46	Initial cost based on installing a minimum of 3 stream flow gauges at a rate of \$1,000/gauge. Cost does not account for data management or maintenance. Cost revised with information from NBWA, to \$10,500 per gauge.
NvC-CCCS-3.1.2.5						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-3.1.2.6						0	Encouragement is considered in-kind
NvC-CCCS-5.1.1.1	809					809	Cost based on adult escapement and juvenile migration model for 3 impassable barriers at a rate of \$270,000/project. Three impassable dams were identified in the 2008 Passage Assessment Database not counting Stafford Dam.
NvC-CCCS-5.1.1.2	250					250	Costs estimate for developing an feasibility analysis and report on providing passage at Stafford Dam.
NvC-CCCS-5.1.1.3						0	Cost accounted for in above action steps.
NvC-CCCS-5.1.1.4	104.5	104.5				209	Cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000.
NvC-CCCS-6.1.1.1	8.00	8.00				16	Cost based on treating 0.5 miles at a rate of \$32,000/mile. Cost likely higher with increased engineering and oversight. Use of ELJ estimate is \$125,000/ELJ.
NvC-CCCS-6.1.1.2	46.00	46.00	46.00			138	Cost based on fish/habitat restoration model at \$138,000/project
NvC-CCCS-6.1.1.3	104.5	104.5				209	Cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000.
NvC-CCCS-6.1.1.4	104.5	104.5				209	Cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000.
NvC-CCCS-6.1.2.1						0	Cost accounted for in above action step.
NvC-CCCS-6.1.2.2						0	Cost accounted for in above action step.
NvC-CCCS-6.1.3.1						0	Cost accounted for in above action step.
NvC-CCCS-6.1.3.2						0	Cost accounted for in above action step.
NvC-CCCS-6.1.4.1						0	Cost accounted for in above action step.
NvC-CCCS-7.1.1.1	112.00	112.00	112.00	112.00		447	Cost based on treating 1.0 miles (assume 1 project/mile with 10 acres/mile) at a rate of \$45,000/acre. This action step should be coordinated with similar action step to reduce cost and redundancy.
NvC-CCCS-7.1.1.2						0	Cost accounted for in above action steps.
NvC-CCCS-7.1.1.3						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-7.1.1.4						TBD	Costs for conservation easements vary.
NvC-CCCS-8.1.1.1						TBD	This action step is based on implementation of other action steps.
NvC-CCCS-8.1.1.2	104.5	104.5				209	Cost to be determined pending an assessment of features. Estimate for spawning gravel is \$40/cu. yd. Cost of assessment estimated at \$209,000 and should be completed within the first 10 years
NvC-CCCS-8.1.1.3	16.00	16.00				32	Cost based on treating 1 mile (assume 1 project/mile) at a rate of \$32,000/ mile. Cost likely higher with greater level of engineering and oversight. Use of ELJ is estimated at \$125,000/ELJ.
NvC-CCCS-8.1.2.1						0	Cost accounted for in other action steps.
NvC-CCCS-8.1.2.2	104.5	104.5				209	Cost based on number and type of stream bed and bank stability to be used. Estimate for bioengineering methods range from \$400/100' x 10' (WSDOT 2001). Cost of assessment estimated at \$209,000 and should be completed within the first 10 years
NvC-CCCS-8.1.2.3						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
NvC-CCCS-8.1.2.4						0	Cost accounted for in other action steps.

Novato Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NvC-CCCS-10.1.1.1	7.50	7.50				15	Cost based on installing continuous water quality stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
NvC-CCCS-10.1.1.2						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-10.1.1.3	104.5	104.5				209	Costs vary with monitoring effort and measures to be implemented. Cost of assessment estimated at \$209,000 and should be completed within the first 10 years
NvC-CCCS-10.1.1.4						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-10.1.1.5						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-10.1.2.1	209					209	Total costs vary with monitoring effort and measures to be implemented. Cost of assessment estimated at \$209,000
NvC-CCCS-10.1.2.2						0	Costs accounted for in previous actions related to riparian restoration.
NvC-CCCS-10.1.3.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-10.1.3.2	69.7	69.7	69.7			209	Costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment estimated at \$209,000.
NvC-CCCS-11.1.1.1	104.5	104.5				209	Costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment estimated at \$209,000.
NvC-CCCS-11.1.1.2	41.8	41.8	41.8	41.8	41.8	209	Costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment estimated at \$209,000.
NvC-CCCS-11.1.1.3						0	Costs for monitoring are covered in the Monitoring Chapter as part of the Coastal Monitoring Plan
NvC-CCCS-11.1.1.4						0	Costs for monitoring are covered in the Monitoring Chapter as part of the Coastal Monitoring Plan
NvC-CCCS-11.1.1.5						0	Costs for monitoring are covered in the Monitoring Chapter as part of the Coastal Monitoring Plan
NvC-CCCS-11.1.1.6	104.5	104.5				209	Costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment estimated at \$209,000.
NvC-CCCS-11.1.1.7						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-12.1.1.1						0	Costs captured in other recovery actions. See Riparian.
NvC-CCCS-12.1.1.2						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-12.1.2.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-12.1.2.2						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-12.1.2.3						0	Action is considered In-Kind
NvC-CCCS-12.1.3.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-12.1.3.2						TBD	Costs will vary depending on methods implemented.
NvC-CCCS-12.1.4.1						0	Action is considered in-kind and part of BMPs,
NvC-CCCS-12.1.4.2						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-12.1.5.1	104.5	104.5				209	Costs vary with monitoring effort and measures to be implemented. Cost of assessment estimated at \$209,000 and should be completed within the first 10 years
NvC-CCCS-12.1.5.2	104.5	104.5				209	Costs vary with monitoring effort and measures to be implemented. Cost of assessment estimated at \$209,000 and should be completed within the first 10 years
NvC-CCCS-12.1.6.1						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-13.1.1.1						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-13.1.1.2						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-13.1.2.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-13.1.2.2						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-13.1.2.3						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-13.1.3.1	536					536	Cost based on 0.5 miles of flood channel at a rate of \$1,070,400/mile.
NvC-CCCS-13.1.3.2						0	Cost accounted for in above action steps.
NvC-CCCS-18.1.1.1						TBD	
NvC-CCCS-21.1.1.1						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-21.1.1.2						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-21.1.1.3							Costs covered under other recovery actions. See Riparian.
NvC-CCCS-21.1.1.4						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-21.1.2.1	138.00					138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
NvC-CCCS-21.1.2.2	104.5	104.5				209	Costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment estimated at \$209,000.
NvC-CCCS-21.1.3.1							Costs covered under other recovery actions. See Passage.
NvC-CCCS-22.1.1.1						0	Action is considered In-Kind
NvC-CCCS-22.1.1.2						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-22.1.1.3	8.50	8.50				17	Cost based on treating 0.2 miles (assume 1 project/mile with 80 acres/mile) at a rate of \$1,000/acre.
NvC-CCCS-22.1.2.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-22.1.2.2						TBD	Costs for conservation easements vary.
NvC-CCCS-22.1.3.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-22.1.3.2	104.5	104.5				209	Costs vary with monitoring effort and measures to be implemented. Cost of assessment estimated at \$209,000 and should be completed within the first 10 years
NvC-CCCS-22.1.3.3						0	Existing programs and outreach are considered In-Kind. □
NvC-CCCS-22.1.4.1						0	Action is considered In-Kind
NvC-CCCS-22.1.4.2	585	585	585			1,756	Cost based on treating 0.5 miles (assume 1 project/mile with 80 acres/mile) at a rate of \$45,000/acre.
NvC-CCCS-22.1.4.3						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-22.1.5.1						0	Operations conducted normally or with minor modifications are considered In-Kind.

Novato Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NvC-CCCS-22.1.5.2	104.5	104.5				209	Cost based on amount and type of filter or buffer system needed to improve conditions. Estimate for filter strip ranges from \$32,000 - \$84,000/system. . Cost of assessment estimated at \$209,000 and should be completed within the first 10 years.
NvC-CCCS-22.1.6.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-23.1.1.1		144.00	144.00			288	Cost based on decommissioning 20 miles of road at a rate of \$15,000/mile. Cost likely higher due to infrastructure..
NvC-CCCS-23.1.2.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-23.1.2.2	209					209	Total costs will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000.
NvC-CCCS-23.1.2.3						0	Existing programs and outreach are considered In-Kind.□
NvC-CCCS-23.1.2.4						0	Action is considered in-kind
NvC-CCCS-23.1.3.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-23.1.3.2						TBD	Costs will vary depending on methods implemented.
NvC-CCCS-23.1.3.3						0	Action is considered In-Kind
NvC-CCCS-23.1.3.4	129.50	129.50				259	Cost based on road inventory for 259 miles at a rate \$1,000/mile
NvC-CCCS-23.1.4.1						TBD	Costs will vary depending on methods implemented and extent of rehabilitation identified in road assessment.
NvC-CCCS-23.1.5.1						0	Action is considered In-Kind
NvC-CCCS-23.1.5.2						0	Cost accounted for in above action step.
NvC-CCCS-25.1.1.1						TBD	Costs will vary depending on methods implemented.
NvC-CCCS-25.1.1.2						0	Existing programs and outreach are considered In-Kind.□
NvC-CCCS-25.1.1.3						0	Operations conducted normally or with minor modifications are considered In-Kind.
NvC-CCCS-25.1.1.4						0	Existing programs and outreach are considered In-Kind.□
NvC-CCCS-25.1.1.5						0	Existing programs and outreach are considered In-Kind.□
NvC-CCCS-25.1.2.1						TBD	Costs will vary depending on methods implemented.
NvC-CCCS-25.1.2.2						TBD	Costs will vary depending on methods implemented.
NvC-CCCS-25.1.3.1						TBD	Costs will vary depending on methods implemented. Estimate for fish screens is \$64,000/screen.
NvC-CCCS-25.2.1.1	1.50	1.50				3	Cost based on installing a minimum of 3 stream flow gauges at a rate of \$1,000/gauge. Cost does not account for data management or maintenance.
NvC-CCCS-25.2.1.2						TBD	Costs will vary depending on methods implemented.

San Francisco Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SFC-CCCS-1.1.1.1	339.00					339	Cost based on estuary restoration modeling at a rate of \$339,000/project.
SFC-CCCS-1.1.1.2						TBD	Gather data related to the historical structure and habitat characteristics of the fluvial-tidal interface; use this data to develop actions aimed at restoring habitat and sediment transport through fluvial-tidal stream reaches. Implement actions deemed feasible and of high priority. Costs will be determined once an assessment of the existing and historical estuary-tidal interface has been conducted - see below recovery action.
SFC-CCCS-1.1.1.3	32					0	Cost accounted for in above action step.
SFC-CCCS-1.1.1.4						0	Cost accounted for in above action steps.
SFC-CCCS-1.1.1.5	7.50	7.50				15	Cost based on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
SFC-CCCS-1.1.1.6						0	Cost accounted for in above action step.
SFC-CCCS-2.1.1.1	536	536	536	536		2,143	Cost based on treating 0.6 miles (assume 1 project/mile in 25% high IP) at a rate of \$45,000/acre.
SFC-CCCS-2.1.1.2	44.50	44.50				89	Identify the floodplain activation flow - the smallest flood pulse event that initiates substantial beneficial ecological processes when associated with floodplain inundation. Cost based on riparian restoration model at a rate of \$89,000/project.
SFC-CCCS-2.1.1.3						0	Action is considered In-Kind
SFC-CCCS-2.1.1.4						0	Cost accounted for in above action steps.
SFC-CCCS-2.1.1.5						0	Cost accounted for in above action step.
SFC-CCCS-2.1.1.6						0	Cost accounted for in above action step.
SFC-CCCS-2.1.1.7						0	Cost accounted for in above action step.
SFC-CCCS-2.1.1.8						0	Cost accounted for in above action step.
SFC-CCCS-3.1.1.1	13	13				25	Cost based on best professional judgement for this type of assessment.
SFC-CCCS-5.1.1.1						0	Action is considered In-Kind
SFC-CCCS-5.1.1.2						TBD	Stanford University is currently developing alternatives for the future of Searsville Dam. Passage for steelhead above the dam will ultimately depend on their final alternatives and whether or not the dam will remain. Costs for trap and truck over a 100 year span could exceed \$25 million.
SFC-CCCS-5.1.1.3	750					750	Cost based on previous regional projects
SFC-CCCS-5.1.1.4	640					640	Cost based on providing passage at a rate of \$639,000/project.
SFC-CCCS-5.1.1.5	640					640	Cost based on providing passage at a rate of \$639,000/project.
SFC-CCCS-5.1.1.6	640					640	Cost based on providing passage at a rate of \$639,000/project.
SFC-CCCS-5.1.1.7	640					640	Cost based on providing passage at a rate of \$639,000/project.
SFC-CCCS-5.1.1.8	31,962	31,962				63,925	Actual cost based on the type and number of passage barriers. Without any other data, we assumed five barriers at the maximum cost estimate of \$1,279,000/project.
SFC-CCCS-6.1.1.1	9.50	9.50	9.50	9.50		38	Cost based on treating 1.3 miles (assume 1 project/mile in 50% high IP) at a rate of \$32,000/mile.
SFC-CCCS-6.1.1.2	34.50	34.50	34.50	34.50		138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
SFC-CCCS-6.1.1.3						0	Cost accounted for in above action step.
SFC-CCCS-6.1.1.4						0	Cost accounted for in above action step.
SFC-CCCS-6.1.1.5	9.50	9.50	9.50	9.50		38	Cost based on treating 1.3 miles (assume 1 project/mile in 50% high IP) at a rate of \$32,000/mile. This action step should coincide with above action step.
SFC-CCCS-7.1.1.1	103.00	103.00	103.00	103.00		415	Cost based on treating 0.7 miles (assume 1 project/mile in 25% high IP with 24 acres/mile) at a rate of \$25,000/project.
SFC-CCCS-7.1.1.2						0	Cost accounted for in above action step.
SFC-CCCS-7.1.1.3						0	Action is considered In-Kind
SFC-CCCS-7.1.1.4						0	Cost for riparian restoration model accounted for in other action steps.
SFC-CCCS-7.1.1.5						0	Cost accounted for in other action step.
SFC-CCCS-7.1.1.6						0	Cost accounted for in other action steps.
SFC-CCCS-7.1.1.7						0	Action is considered In-Kind
SFC-CCCS-7.1.1.8	4.25	4.25	4.25	4.25		17	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$1,000/acre. Cost to replant areas accounted for in above action step.
SFC-CCCS-8.1.1.1	34.50	34.50	34.50	34.50		138	Cost based on fish/habitat restoration model at a rate of \$138,000/project. Cost for amount of coarse sediment to introduce is estimated at \$40/cu.yd.
SFC-CCCS-8.1.1.2						0	Action is considered In-Kind
SFC-CCCS-10.1.1.1						0	Cost are accounted for by existing water quality protection measures by city and county municipalities. Federal and state agencies must continue to support and encourage measures that will improve upon existing conditions where necessary.
SFC-CCCS-10.1.1.2	39.50	39.50				79	Cost based on hydrologic model at a rate of \$79,000/project.
SFC-CCCS-10.1.1.3						0	Action is considered In-Kind
SFC-CCCS-10.1.1.4	4	4	4	4		16	Cost depends if the facilities are a pasture or a more expensive structure like a barn. The cost to relocate a pasture, would not be much besides loss of land and new fencing and that is what is estimated. Fence material is \$3/feet and it is assumed that 1000 feet of pasture would need to be relocated. Cost of crossing is \$2500 per crossing. Assuming 5 crossings are needed per population.
SFC-CCCS-10.1.1.5						0	Action is considered In-Kind
SFC-CCCS-10.1.1.6						0	Action is considered In-Kind
SFC-CCCS-10.1.1.7						0	Action is considered In-Kind
SFC-CCCS-10.1.1.8						0	Action is considered In-Kind
SFC-CCCS-10.1.1.9						0	Hit hydrants will discharge very high volumes of chlorinated water that has the potential to kill an entire steelhead population in a stream. This action could prevent catastrophic loss of steelhead. Action is considered In-Kind

San Francisquito Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SFC-CCCS-11.1.1.1						0	Action is considered In-Kind
SFC-CCCS-11.1.1.2						0	Cost will be accounted for by monitoring conducted as part of the Coastal Monitoring Plan or by In-Kind monitoring by Stanford University or NPS.
SFC-CCCS-11.1.1.3						0	Action is considered In-Kind
SFC-CCCS-13.1.1.1						0	Action is considered In-Kind
SFC-CCCS-13.1.1.2						0	Action is considered In-Kind
SFC-CCCS-13.1.1.3						0	Action is considered In-Kind
SFC-CCCS-13.1.1.4						0	Action is considered In-Kind
SFC-CCCS-13.1.1.5						0	Action is considered In-Kind
SFC-CCCS-13.1.2.1						0	Action is considered In-Kind
SFC-CCCS-13.1.2.2						0	Action is considered In-Kind
SFC-CCCS-13.1.2.3	172.00	172.00	172.00	172.00		689	
SFC-CCCS-13.1.2.4						0	Action is considered In-Kind
SFC-CCCS-13.1.2.5						0	Cost accounted for in above action step.
SFC-CCCS-13.2.1.1						0	Action is considered In-Kind
SFC-CCCS-14.1.1.1						0	Cost accounted for in other actions. See Riparian.
SFC-CCCS-22.1.1.1						0	Action is considered In-Kind
SFC-CCCS-23.1.1.1	117.50	117.50				235	Cost based on road inventory of 235 miles of road at a rate of \$1,000/mile.
SFC-CCCS-23.1.1.2						TBD	Cost based on amount of roads needing to be hydrologically disconnected.
SFC-CCCS-23.1.1.3						0	Action is considered In-Kind
SFC-CCCS-25.1.1.1						0	Cost accounted for in other action steps (e.g. see CHANNEL MODIFICATION).
SFC-CCCS-25.1.1.2	9	9	9	9		35	Cost based on amount of urban runoff to treat. Cost estimated for infiltration ponds to range between \$12,000 to \$35,000 per pond. Cost estimate assumes the maximum amount of 35,000.
SFC-CCCS-25.1.1.3						0	Action is considered In-Kind
SFC-CCCS-25.1.1.4						0	Action is considered In-Kind
SFC-CCCS-25.1.1.5						0	Action is considered In-Kind
SFC-CCCS-25.1.1.6						0	Action is considered In-Kind
SFC-CCCS-25.1.1.7						0	Action is considered In-Kind

Stevens Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
StC-CCCS-1.1.1.1	118.79	118.79				238	NMFS 2008, pg. 58
StC-CCCS-1.1.1.2	123.00	123.00				246	Cost based on treating 5 acres (assume 10% of total estuarine acres) at a rate of \$49,000/acre.
StC-CCCS-2.1.1.1	32					0	Costs accounted for in subsequent actions related to habitat complexity, hydrology, and water diversion/impoundment.
StC-CCCS-2.1.1.2	172.50	172.50				345	Cost based on riparian and wetland restoration model at a rate of \$89,000 and \$256,000/project, respectively. Cost will vary with amount of watershed area assessed and extent of floodplain connection restoration efforts. Moderate estimate is \$29,000/acre of earthmoving (NMFS2008, pg. 26).
StC-CCCS-2.1.1.3						0	Action is considered In-Kind
StC-CCCS-3.1.1.1	209					209	Total cost will be dependent upon amount of water required, and extent of the program. Cost of assessment is estimated at \$209,000.
StC-CCCS-3.1.1.2	104.5	104.5				209	Total cost will be dependent upon amount of water required, and extent of the program. Cost of assessment is estimated at \$209,000.
StC-CCCS-5.1.1.1	104.5	104.5				209	Costs will vary depending on methods implemented. Cost of assessment is estimated at \$209,000 and should be completed within the first 10 years.
StC-CCCS-5.1.1.2	1,395					1,395	Estimate of \$279,000/project within suburban setting used (CDFG 2004, pg. I-16), and an estimate of 5 barriers to be improved/removed.
StC-CCCS-5.1.1.3	112.52					113	Cost estimate from: <input type="checkbox"/> Steelhead Abundance/Distribution project type (NMFS 2008, pg. 58). Cost is approximate. Support and expedite projects that contribute to above-reservoir passage investigation/implementation.
StC-CCCS-5.1.1.4	209					209	Consider both volitional and non-volitional passage methods in the assessment. Cost of assessment is estimated at \$209,000.
StC-CCCS-5.1.1.5						TBD	Costs will vary depending on methods implemented.
StC-CCCS-5.1.1.6	12,500	12,500				25,000	Using cost estimates from a draft fish passage assessment performed by HDR engineering Inc. (2009) for Los Padres Dam: cost estimates range depending on methodology. For this estimate: <input type="checkbox"/> 15 million for ladder installation (trap and haul less) <input type="checkbox"/> 10 million for 100 years of operation (trap and haul similar).
StC-CCCS-5.1.1.7						0	Action is considered In-Kind
StC-CCCS-6.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
StC-CCCS-6.1.1.2						0	Costs accounted for in previous actions related to habitat complexity.
StC-CCCS-6.1.1.3	22.33	22.33	22.33			67	Cost based on steelhead juvenile surveys for Coastal SF Bay at a rate \$5,000/year.
StC-CCCS-7.1.1.1	5.00	5.00	5.00	5.00	5.00	25	Cost based on treating 0.3 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$1,000/acre.
StC-CCCS-7.1.1.2	89.00					89	Cost based on riparian restoration model at a rate of \$89,000/project.
StC-CCCS-7.1.1.3						0	Costs accounted for in previous actions related to hydrology.
StC-CCCS-8.1.1.1	104.5	104.5				209	Costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment is estimated at \$209,000 and should be completed within the first 10 years.
StC-CCCS-8.1.1.2	77.00					77	Cost based on erosion assessment of 25% of total watershed acres at a rate of \$15/acre.
StC-CCCS-8.1.1.3						0	Costs accounted for in previous actions related to hydrology.
StC-CCCS-8.1.1.4	843	843	843	843	843	4,218	Estimate is for one mile of large scale reach restoration (NMFS 2008, pg. 27) - cost will vary depending on extent of restoration efforts, and methodologies employed.
StC-CCCS-10.1.1.1						0	Costs accounted for in previous actions related to water diversion.
StC-CCCS-10.1.1.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
StC-CCCS-10.1.2.1	7.50	7.50				15	Cost based on installing a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
StC-CCCS-10.1.2.2						0	Action is considered In-Kind
StC-CCCS-10.1.2.3						0	Action is considered In-Kind
StC-CCCS-11.1.1.1	11.21	11.21	11.21	11.21	11.21	56	Cost estimate for Fish and Game Warden from Bureau of Labor Statistics 2009.
StC-CCCS-11.2.1.1						0	Costs for monitoring population status and trends are covered under the Coastal Monitoring Plan - See Monitoring Chapter.
StC-CCCS-11.2.1.2	10.09	10.09	10.09	10.09	10.09	50	Monitoring estimate for: Production, Run timing, and Size monitoring (NMFS 2008, pg. 58)
StC-CCCS-11.2.1.3						0	Costs for monitoring population status and trends are covered under the Coastal Monitoring Plan - See Monitoring Chapter.
StC-CCCS-11.2.1.4						0	Costs for monitoring population status and trends are covered under the Coastal Monitoring Plan - See Monitoring Chapter.
StC-CCCS-11.2.1.5						0	Costs for monitoring population status and trends are covered under the Coastal Monitoring Plan - See Monitoring Chapter.
StC-CCCS-11.2.1.6						0	Cost accounted as part of other monitoring components in above action steps.
StC-CCCS-13.1.1.1						0	Cost based on number and type of stream bed and bank stability to be used. Estimate for bioengineering methods range from \$500/100' x 10' (WSDOT 2001).
StC-CCCS-13.1.1.2						TBD	Costs will vary depending on methods implemented.
StC-CCCS-13.1.1.3						0	Action is considered In-Kind
StC-CCCS-13.1.1.4						0	Action is considered In-Kind
StC-CCCS-13.1.1.5						0	Action is considered In-Kind
StC-CCCS-13.1.1.6						0	Cost accounted for in PASSAGE
StC-CCCS-13.2.1.1						0	Action is considered In-Kind
StC-CCCS-13.2.1.2						0	Action is considered In-Kind
StC-CCCS-13.2.1.3						0	Action is considered In-Kind
StC-CCCS-14.1.1.1	104.5	104.5				209	Cost based on amount of exotic piscivorous fish species to be removed. Cost for invasive fish eradication estimated at \$9/fish. Cost of assessment is estimated at \$209,079 and should be completed within the first 10 years.
StC-CCCS-21.1.1.1	209					209	Cost will vary with assessment methods and level of detail. Cost of assessment is estimated at \$209,000.
StC-CCCS-21.1.1.2						0	Costs accounted for in previous actions related to floodplain connectivity.

Stevens Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
StC-CCCS-21.1.2.1						0	Action is considered In-Kind
StC-CCCS-22.1.1.1						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
StC-CCCS-22.1.1.2						TBD	Cost based on amount of existing system needing to be upgraded. Cost estimated at \$11,000/storm drain.
StC-CCCS-22.1.1.3						0	Action is considered In-Kind
StC-CCCS-22.1.1.4	104.5	104.5				209	Costs will vary depending on methods implemented and extent of rehabilitation. Cost of assessment is estimated at \$209,000 and should be completed within the first 10 years.
StC-CCCS-22.1.1.5						TBD	Costs will vary depending on methods implemented.
StC-CCCS-22.1.1.6						0	Action is considered In-Kind
StC-CCCS-22.2.1.1						0	Action is considered In-Kind
StC-CCCS-22.2.1.2						0	Action is considered In-Kind
StC-CCCS-22.2.1.3						0	Action is considered In-Kind
StC-CCCS-22.2.1.4						0	Action is considered In-Kind
StC-CCCS-22.2.1.5						TBD	Costs for conservation easements vary.
StC-CCCS-22.2.1.6						0	Action is considered In-Kind
StC-CCCS-22.2.1.7						0	Action is considered In-Kind
StC-CCCS-23.1.1.1						0	Action is considered In-Kind
StC-CCCS-23.1.1.2						TBD	Costs will vary depending on methods implemented and should be identified from road assessment.
StC-CCCS-23.1.1.3						TBD	Costs will vary depending on methods implemented.
StC-CCCS-23.1.2.1						0	Action is considered In-Kind
StC-CCCS-25.1.1.1						0	Action is considered In-Kind
StC-CCCS-25.1.1.2						0	Action is considered In-Kind
StC-CCCS-25.1.1.3						0	Action is considered In-Kind
StC-CCCS-25.1.1.4						0	Action is considered In-Kind
StC-CCCS-25.1.1.5						0	Action is considered In-Kind
StC-CCCS-25.1.1.6						0	Action is considered In-Kind
StC-CCCS-25.1.1.7	88.00					88	Cost based on treating 2.8 miles (assume 1 project/mile in 50% high IP) at a rate of \$32,000/mile. Cost significantly higher for greater level of engineering and oversight. For example, the estimate for ELJ is \$125,000/ELJ.
StC-CCCS-25.1.1.8						0	Cost accounted for in above action step.
StC-CCCS-25.1.1.9						0	Action is considered In-Kind
StC-CCCS-25.1.1.10	79					79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.
StC-CCCS-25.1.1.11						0	Action is considered In-Kind
StC-CCCS-25.1.1.12						0	Action is considered In-Kind

Arroyo de Corte Madera del Presidio, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ACMP-CCCS-1.1.1.1	443.00	443.00				886	Cost based on treating 18 acres of estuarine habitat (assume 10% of total estuarine habitat) at a rate of \$49,000/acre
ACMP-CCCS-1.1.2.1						0	Cost accounted for in above action step.
ACMP-CCCS-1.1.2.2	32					0	Cost accounted for in above action step.
ACMP-CCCS-1.1.2.3						0	Cost accounted for in above action step.
ACMP-CCCS-1.1.2.4						0	There is no cost increase in using native plants vs nonnative plants in restoration projects.
ACMP-CCCS-1.1.2.5						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-1.1.3.1	7.50	7.50				15	Cost based on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station.
ACMP-CCCS-1.1.3.2						0	Cost accounted for through implementation of other action steps.
ACMP-CCCS-1.1.3.3						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-1.1.3.4	104.5	104.5				209	Cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000 and should be completed within the first ten years.
ACMP-CCCS-2.1.1.1	50.00					50	Cost based on best professional judgement.
ACMP-CCCS-2.1.1.2	50.00					50	Cost based on best professional judgement.
ACMP-CCCS-2.1.1.3						0	Cost accounted for in above action steps.
ACMP-CCCS-2.1.1.4						0	Existing programs and outreach are considered In-Kind. Costs for conservation easements vary.
ACMP-CCCS-2.1.1.5						0	Cost accounted for in above action step.
ACMP-CCCS-2.1.1.6						0	Cost accounted for in above action step.
ACMP-CCCS-3.1.1.1						0	Costs based on implementing other action steps (e.g. off-channel storage, irrigation efficiency, etc.)
ACMP-CCCS-3.1.1.2	39.50	39.50				79	Cost based on stream flow/precipitation model at a rate of \$79,000/project
ACMP-CCCS-3.1.1.3						0	Action is considered in-kind
ACMP-CCCS-3.1.2.1	104.5	104.5				209	Cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000 and should be completed within the first ten years.
ACMP-CCCS-3.1.2.2						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-3.1.2.3	104.5	104.5				209	Cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000.
ACMP-CCCS-3.1.2.4	3.00					3	Cost based on installing a minimum of 3 streamflow gauges at a rate of \$1,000/gauge. Cost does not account for data management or maintenance.
ACMP-CCCS-3.1.2.5						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-5.1.1.1						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-6.1.1.1	5.33	5.33	5.33			16	Cost based on treating 0.5 miles at a rate of \$32,000/mile. Cost likely higher if greater level of engineering and oversight is needed.
ACMP-CCCS-6.1.1.2	8.00	8.00				16	Cost based on treating 0.5 miles at a rate of \$32,000/mile. Cost likely higher if greater level of engineering and oversight is needed.
ACMP-CCCS-6.1.1.3	5.33	5.33	5.33			16	Cost based on treating 0.5 miles at a rate of \$32,000/mile. Cost likely higher if greater level of engineering and oversight is needed.
ACMP-CCCS-6.1.2.1						0	Costs accounted for in previous actions related to habitat complexity.
ACMP-CCCS-6.1.2.2						0	Costs accounted for in previous actions related to habitat complexity.
ACMP-CCCS-6.1.3.1						0	Costs accounted for in previous actions related to habitat complexity.
ACMP-CCCS-6.1.3.2						0	Costs accounted for in previous actions related to habitat complexity.
ACMP-CCCS-6.1.4.1						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-7.1.1.1	49.00	49.00				99	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 20 acres/mile treated) at a rate of \$25,000/acre
ACMP-CCCS-7.1.1.2						0	Cost accounted for in above action steps.
ACMP-CCCS-7.1.1.3						0	Existing programs and outreach are considered In-Kind. □
ACMP-CCCS-7.1.1.4						0	Existing programs and outreach are considered In-Kind. □
ACMP-CCCS-7.1.1.5						0	Existing programs and outreach are considered In-Kind. □
ACMP-CCCS-8.1.1.1						0	Costs accounted for in previous actions related to habitat complexity.
ACMP-CCCS-8.1.1.2	0.67	0.67	0.67			2	Cost based on treating 0.5 miles (assume 1 project/mile in 5% high IP with 100 cu. yds.mile) at a rate of \$40/cu. yd.
ACMP-CCCS-8.1.1.3						0	Costs accounted for in previous actions related to habitat complexity.
ACMP-CCCS-8.1.2.1						0	Costs accounted for in previous actions related to habitat complexity.
ACMP-CCCS-8.1.2.2						0	Costs accounted for in previous actions related to habitat complexity.
ACMP-CCCS-8.1.2.3						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
ACMP-CCCS-8.1.2.4						0	Costs accounted for in previous actions related to habitat complexity.
ACMP-CCCS-10.1.1.1						0	Existing programs and outreach are considered In-Kind. □
ACMP-CCCS-10.1.1.2	104.5	104.5				209	Costs will vary depending on methods implemented.
ACMP-CCCS-10.1.1.3						0	Existing programs and outreach are considered In-Kind. □
ACMP-CCCS-10.1.1.4						TBD	Costs will vary depending on methods implemented.
ACMP-CCCS-10.1.1.5						0	Existing programs and outreach are considered In-Kind. □
ACMP-CCCS-10.1.1.6	104.5	104.5				209	Total cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000.
ACMP-CCCS-10.1.2.1						0	Costs accounted for in previous actions related to riparian.
ACMP-CCCS-10.1.2.2						0	Costs accounted for in previous actions related to riparian.
ACMP-CCCS-10.1.2.3						0	Costs accounted for in previous actions related to riparian.
ACMP-CCCS-10.1.3.1	104.5	104.5				209	Cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000 and should be completed within the first ten years.
ACMP-CCCS-10.1.3.2						0	Operations conducted normally or with minor modifications are considered In-Kind.
ACMP-CCCS-10.1.3.3	104.5	104.5				209	Total cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000.

Arroyo de Corte Madera del Presidio, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ACMP-CCCS-11.1.1.1	104.5	104.5				209	Total cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000.
ACMP-CCCS-11.1.1.2	46.00	46.00	46.00			138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
ACMP-CCCS-11.1.1.3						0	Costs for adults spawner surveys are covered in the Monitoring Chapter.
ACMP-CCCS-11.1.1.4						0	Cost accounted for in monitoring chapter.
ACMP-CCCS-11.1.1.5							Costs for smolt outmigration studies are covered in the Monitoring Chapter.
ACMP-CCCS-11.1.1.6						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-13.1.1.1						0	Action is considered In-Kind
ACMP-CCCS-13.1.1.2						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-13.1.2.1	134	134				267	Cost based on treating 0.25 miles (assume 1 project/mile in 25% of flood control channeled) at a rate of \$1,070,400/mile.
ACMP-CCCS-13.1.2.2						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-13.1.2.3						TBD	
ACMP-CCCS-13.1.3.1						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-13.1.3.2	69.7	69.7	69.7			209	Total cost will vary with assessment methods and level of detail. Cost of assessment estimated at \$209,000.
ACMP-CCCS-13.1.3.3						0	Cost accounted for in above action step.
ACMP-CCCS-13.1.3.4						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-13.1.4.1						0	Cost accounted for in above action step.
ACMP-CCCS-18.1.1.1	197.50	197.50				395	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$25,000/acre.
ACMP-CCCS-18.1.2.1						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-18.1.2.2						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-18.1.3.1						TBD	
ACMP-CCCS-22.1.1.1						TBD	
ACMP-CCCS-22.1.1.2						0	Action is considered In-Kind
ACMP-CCCS-22.1.1.3						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-22.1.1.4	42.00					42	Cost based on treating 0.5 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$1,000/acre.
ACMP-CCCS-22.1.2.1						0	Action is considered In-Kind
ACMP-CCCS-22.1.2.2						TBD	Costs will vary depending on methods implemented. □
ACMP-CCCS-22.1.3.1						0	Costs for conservation easements vary.
ACMP-CCCS-22.1.3.2						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-22.1.4.1						TBD	
ACMP-CCCS-22.1.4.2	238.33	238.33	238.33			0	Action is considered In-Kind
ACMP-CCCS-22.1.4.3	39.50	39.50				715	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$45,000/acre.
ACMP-CCCS-22.1.4.3						0	Action is considered In-Kind
ACMP-CCCS-22.1.5.1	69.7	69.7	69.7			209	Costs will vary depending on methods implemented. Cost of assessment estimated at \$209,000.
ACMP-CCCS-22.1.5.2						TBD	Costs will vary depending on methods implemented. Estimate for filter or buffer strip system range from \$12,000 to \$29,000/filter for a 25 ft. wide grass filter.
ACMP-CCCS-23.1.1.1	17.50	17.50				35	Cost based on decommissioning 2.4 miles of riparian road network at a rate of \$15,000/mile. Cost will be significantly higher if riparian roads are part of urban/suburban infrastructure.
ACMP-CCCS-23.1.2.1						0	Action is considered In-Kind
ACMP-CCCS-23.1.2.2						0	Existing programs and outreach are considered In-Kind. □
ACMP-CCCS-23.1.2.3						0	Action is considered In-Kind
ACMP-CCCS-23.1.3.1						0	Existing programs and outreach are considered In-Kind. □
ACMP-CCCS-23.1.3.2						TBD	Costs will vary depending on methods implemented.
ACMP-CCCS-23.1.3.3						0	
ACMP-CCCS-23.1.3.4						TBD	
ACMP-CCCS-23.1.4.1						TBD	Cost based on number and type of methods used to hydrologically disconnect roads.
ACMP-CCCS-23.1.5.1						0	Action is considered In-Kind
ACMP-CCCS-23.1.5.2						0	Cost accounted for in other action steps. □
ACMP-CCCS-23.1.5.3	159.00	159.00				318	Cost based on decommissioning 22 miles of road network at a rate of \$15,000/mile.
ACMP-CCCS-25.1.1.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
ACMP-CCCS-25.1.1.2						0	Existing programs and outreach are considered In-Kind.
ACMP-CCCS-25.1.1.3						0	Operations conducted normally or with minor modifications are considered In-Kind.
ACMP-CCCS-25.1.1.4						0	Existing programs and outreach are considered In-Kind. □
ACMP-CCCS-25.1.1.5						0	Existing programs and outreach are considered In-Kind. □
ACMP-CCCS-25.1.2.1						TBD	Costs will vary depending on methods implemented.
ACMP-CCCS-25.1.2.2	69.7	69.7	69.7			209	Costs will vary depending on methods implemented. Cost of assessment estimated at \$209,000.
ACMP-CCCS-25.1.3.1						0	Existing programs and outreach are considered In-Kind. □
ACMP-CCCS-25.1.3.2						TBD	Costs will vary depending on methods implemented and number of diversions to be screened.
ACMP-CCCS-25.2.1.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
ACMP-CCCS-25.2.1.2	209					209	Costs will vary depending on methods implemented. Cost of assessment estimated at \$209,000.
ACMP-CCCS-25.2.1.3						0	Operations conducted normally or with minor modifications are considered In-Kind.

Miller Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
MiC-CCCS-1.1.1.1	125.00	125.00				250	Cost estimate for the development of an estuary rehabilitation and enhancement plan.
MiC-CCCS-1.1.1.2						0	Cost accounted for in above action step.
MiC-CCCS-1.1.1.3	32.00	7.50				15	Cost based on a minimum of 3 continuous monitoring stations at a rate of \$5,000/station. Cost does not include data management or maintenance.
MiC-CCCS-1.1.1.4	96.00	96.00				192	Cost based on treating 10% of total estuarine acres at a rate of \$49,000/acre.
MiC-CCCS-1.1.1.5	83.33	83.33	83.33			250	Cost estimate for the development of an estuary rehabilitation and enhancement plan.
MiC-CCCS-2.1.1.1	44.50	44.50				89	Cost based on riparian restoration monitoring at a rate of \$89,000/project.
MiC-CCCS-2.1.1.2	446.50	446.50				893	Cost based on treating 0.25 miles (assume 1 project/mile in 25% high IP with 80 acres/mile) at a rate of \$45,000/acre.
MiC-CCCS-5.1.1.1						0	Existing programs and outreach are considered In-Kind.
MiC-CCCS-5.1.1.2	640					640	Cost based on providing passage at one partial barrier at a rate of \$640,000/project.
MiC-CCCS-6.1.1.1	16.00	16.00				32	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP) at a rate of \$32,000/mile.
MiC-CCCS-6.1.2.1						0	Cost accounted for in above action step.
MiC-CCCS-6.1.3.1						0	Cost accounted for in above action step.
MiC-CCCS-7.1.1.1	40.00	40.00				80	Cost based on treating 0.04 miles (assume 1 project/mile in 55% high IP with 80 acres/mile) at a rate of \$25,000/acre.
MiC-CCCS-7.1.1.2						0	Existing programs and outreach are considered In-Kind.
MiC-CCCS-8.1.1.1	0.70	0.70				1	Cost based on treating 0.04 miles (assume 1 project/mile in 5% high IP) at a rate of \$140/cu. yd.
MiC-CCCS-8.1.1.2						0	Cost accounted for in other action steps.
MiC-CCCS-10.1.1.1						2	Cost based on installing a minimum of 3 stream temperature gauges at a rate of \$500/gauge. Cost does not account for data management or maintenance.
MiC-CCCS-10.1.2.1						0	These actions are considered normal duties of local (city and county) agencies. Federal and state agencies should continue to encourage improvements in water quality and the expansion of additional studies.
MiC-CCCS-11.1.1.1						0	Action is considered In-Kind.
MiC-CCCS-12.1.1.1						TBD	Cost of land is unknown and dependent on location and market value.
MiC-CCCS-12.1.2.1						0	Existing programs and outreach are considered In-Kind.
MiC-CCCS-13.1.1.1						0	Action is considered In-Kind
MiC-CCCS-13.1.1.2						0	Action is considered In-Kind
MiC-CCCS-13.1.1.3						0	Action is considered In-Kind
MiC-CCCS-13.1.1.4						0	Action is considered In-Kind
MiC-CCCS-13.1.3.5						0	Particular focus should be on the headwaters. Existing programs and outreach are considered In-Kind.□
MiC-CCCS-13.1.2.1						0	Cost accounted for in other recovery actions. See Floodplain Connectivity.
MiC-CCCS-13.1.2.2						TBD	Cost based on feasible methods to slow urban runoff. Practices could include flood retention basins, bypass channels, or vegetated swales.
MiC-CCCS-13.1.3.1						0	Action is considered In-Kind
MiC-CCCS-13.1.3.2						0	Action is considered In-Kind
MiC-CCCS-13.1.3.3	268.00	268.00				536	Cost based on treating 0.5 miles at a rate of \$1,07,400/mile.
MiC-CCCS-13.1.3.4						0	Action is considered In-Kind
MiC-CCCS-13.1.4.1	69.00	69.00				138	Cost based on fish/habitat restoration monitoring at a rate of \$138,000/project.
MiC-CCCS-13.1.4.2						0	Action is considered In-Kind
MiC-CCCS-13.1.4.3						0	Action is considered In-Kind
MiC-CCCS-22.1.1.1						0	Existing programs and outreach are considered In-Kind.
MiC-CCCS-22.1.1.2						0	Existing programs and outreach are considered In-Kind.
MiC-CCCS-22.1.2.1						TBD	Cost based on amount of filter or buffer system needed. Cost can range widely depending upon feasible solution. A infiltration pond is estimated to cost between \$12,000 to \$35,000/pond.
MiC-CCCS-22.1.2.2	5.00					5	Cost based on installing 5 signs at a rate of \$1,000/sign.
MiC-CCCS-23.1.1.1	68.00	68.00				136	Cost based on developing a road inventory for 136 miles of road at a rate of \$1,000/mile.
MiC-CCCS-23.1.1.2						TBD	Cost based on amount of sediment delivered from road network. Completion of a road inventory should identify sources of sediment and actions to reduce sediment delivery.
MiC-CCCS-23.1.2.1						TBD	Cost is dependent on the amount of roads needing to be disconnected.
MiC-CCCS-23.1.2.2						0	Existing programs and outreach are considered In-Kind.
MiC-CCCS-23.1.3.1						0	Existing programs and outreach are considered In-Kind.
MiC-CCCS-23.1.3.2	1,279	1,279				2,557	Cost based on providing passage at 4 stream crossings at a rate of \$639,000/project.

San Mateo Creek, Central California Coast Steelhead (Coastal San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SMatC-CCCS-1.1.1.1	150					150	Cost estimate for the development of an estuary assessment and enhancement plan for the mouth of San Mateo Creek.
SMatC-CCCS-1.1.1.2						0	Cost accounted for in above action step.
SMatC-CCCS-1.1.1.3	32.00	7.50				15	Cost based on installing 3 continuous monitoring stations at a rate of \$5,000/station.
SMatC-CCCS-2.1.1.1	223	223				447	Cost based on treating 1 mile (assume 1 project/mile in 25% high IP and 10 acres per mile) at a rate of \$45,000/acre. Cost could be reduced if combined with other action steps.
SMatC-CCCS-2.1.1.2						0	Cost accounted for in above action step.
SMatC-CCCS-3.1.1.1						0	Action is considered In-Kind
SMatC-CCCS-3.1.1.2	79.00					79	Cost based on hydrologic model at a rate of \$79,000/project.
SMatC-CCCS-3.1.1.3						0	Cost accounted for in above action step.
SMatC-CCCS-3.1.1.4						0	Action is considered In-Kind
SMatC-CCCS-3.1.1.5						0	Action is considered In-Kind
SMatC-CCCS-5.1.1.1						TBD	
SMatC-CCCS-5.1.1.2						0	Action is considered In-Kind
SMatC-CCCS-5.1.1.3	640					640	Cost based on treating 1 known partial impediment at a rate of \$640,000/project. Cost may actually be less due to need for only minor improvements at this site.
SMatC-CCCS-6.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project. Cost could be reduced if combined with other action steps.
SMatC-CCCS-6.1.2.1						0	Cost accounted for in above action step.
SMatC-CCCS-6.1.3.1						0	Cost accounted for in above action step.
SMatC-CCCS-7.1.1.1	62.00	62.00				124	Cost based on treating 0.5 miles (assume minimum of 10 acres/mile) at a rate of \$25,000/acre.
SMatC-CCCS-7.1.1.2						0	Action is considered In-Kind
SMatC-CCCS-8.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project. Cost for gravel augmentation estimated at \$40/cu. yd.
SMatC-CCCS-8.1.1.2						0	Cost accounted for in other action steps.
SMatC-CCCS-10.1.1.1	1.25	1.25				3	Cost based on installing 5 stream temperature gauges at a rate of \$500/gauge.
SMatC-CCCS-10.1.2.1	7.50	7.50				15	Cost based on a minimum of 3 continuous monitoring stations at a rate of \$5,000/station.
SMatC-CCCS-13.1.1.1						0	Action is considered In-Kind
SMatC-CCCS-13.1.1.2						0	Action is considered In-Kind
SMatC-CCCS-13.1.1.3						0	Action is considered In-Kind
SMatC-CCCS-13.1.1.4						0	Action is considered In-Kind
SMatC-CCCS-13.1.1.5						TBD	Cost is dependent on the area and market value for the land.
SMatC-CCCS-13.1.2.1						0	Cost accounted for in other recovery actions. See Floodplain Connectivity.
SMatC-CCCS-13.1.2.2						TBD	Cost based on amount of urban runoff contributing to poor habitat conditions. Cost for infiltration ponds estimated between \$12,000 to \$35,000/pond.
SMatC-CCCS-13.1.3.1						0	Action is considered In-Kind
SMatC-CCCS-13.1.3.2						0	Cost accounted for in action step below.
SMatC-CCCS-13.1.3.3	268	268				536	Cost based on treating 0.5 miles (assume 1 project) at a rate of \$1,070,400/mile.
SMatC-CCCS-13.1.3.4						0	Action is considered In-Kind
SMatC-CCCS-13.1.4.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
SMatC-CCCS-13.1.4.2						0	Action is considered In-Kind
SMatC-CCCS-13.1.4.3						0	Action is considered In-Kind
SMatC-CCCS-22.1.1.1						0	Action is considered In-Kind
SMatC-CCCS-22.1.1.2						0	Action is considered In-Kind
SMatC-CCCS-22.1.1.3						0	Action is considered In-Kind
SMatC-CCCS-22.1.2.1						TBD	Cost based on amount of filter or buffer system needed. Cost estimate for a 25-ft wide filter strip ranges between \$9,000 to \$23,000
SMatC-CCCS-22.1.2.2						0	Action is considered In-Kind
SMatC-CCCS-23.1.1.1	75.00	75.00				150	Cost based on road inventory for 150 miles of road at a rate of \$1,000/mile.
SMatC-CCCS-23.1.1.2						TBD	Cost based on amount of road network delivering sediment to streams.
SMatC-CCCS-23.1.2.1						TBD	Cost based on amount of road network needing to be hydrologically disconnected.
SMatC-CCCS-23.1.2.2						0	Action is considered In-Kind
SMatC-CCCS-23.1.3.1						0	Action is considered In-Kind
SMatC-CCCS-23.1.3.2						0	Cost accounted for in above recovery actions. See Passage.
SMatC-CCCS-25.1.1.1						0	Action is considered In-Kind
SMatC-CCCS-25.1.1.2						0	Cost accounted for in other action steps.
SMatC-CCCS-25.1.2.1						0	Action is considered In-Kind
SMatC-CCCS-25.1.2.2						0	Action is considered In-Kind
SMatC-CCCS-25.1.2.3						0	Action is considered In-Kind
SMatC-CCCS-25.1.2.4						0	Action is considered In-Kind
SMatC-CCCS-25.1.2.5						0	Action is considered In-Kind
SMatC-CCCS-25.1.2.6						0	Action is considered In-Kind

Alameda Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
AIC-CCCS-1.1.1.1	466	466				931	Cost based on treating 19 acres (assume 10% of total estuarine acres) at a rate of \$49,000/acre.
AIC-CCCS-1.1.1.2	20	20				40	Cost based on artificial breaching of sandspit at a rate of \$20,000/breaching.
AIC-CCCS-1.1.1.3	32	170				339	Cost based on estuary use/residence time model at a rate of \$339,000/project.
AIC-CCCS-1.1.1.4						0	Cost accounted for in above action step.
AIC-CCCS-1.1.1.5						0	Cost accounted for in above action step.
AIC-CCCS-1.1.1.6						0	Cost accounted for in above action step.
AIC-CCCS-1.1.2.1						0	Cost accounted for in above action step.
AIC-CCCS-1.1.2.2						0	Cost accounted for in above action step.
AIC-CCCS-1.1.2.3						0	Cost accounted for in above action step.
AIC-CCCS-1.1.3.1	7.50	7.50				15	Cost based on installing a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
AIC-CCCS-1.1.4.1						TBD	
AIC-CCCS-2.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
AIC-CCCS-2.1.1.2	39.00	39.00				78	Cost based on stream flow/precipitation model at a rate of \$78,000/project.
AIC-CCCS-2.1.1.3	28	28	28	28	28	138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
AIC-CCCS-2.1.1.4						0	Cost accounted for in above action step.
AIC-CCCS-2.1.1.5						0	Cost accounted for in above action step.
AIC-CCCS-3.1.1.1						0	Action is considered In-Kind
AIC-CCCS-3.1.1.2	39.00	39.00				78	Cost based on stream flow/precipitation model at a rate of \$78,000/project.
AIC-CCCS-3.1.1.3						0	Action is considered In-Kind
AIC-CCCS-3.1.1.4	39.00	39.00				78	Cost based on stream flow/precipitation model at a rate of \$78,000/project.
AIC-CCCS-3.1.1.5						0	Action is considered In-Kind
AIC-CCCS-3.1.1.6						0	Action is considered In-Kind
AIC-CCCS-3.1.2.1	39.00	39.00				78	Cost based on stream flow/precipitation model at a rate of \$78,000/project.
AIC-CCCS-3.1.2.2						0	Action is considered In-Kind
AIC-CCCS-3.1.3.1						0	Action is considered In-Kind
AIC-CCCS-5.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of 138,000/project.
AIC-CCCS-5.1.1.2	74.67	74.67	74.67			224	Cost based on adult escapement and juvenile migration model at a rate of \$36,000 and \$188,000/project.
AIC-CCCS-5.1.1.3						0	Cost accounted for in above action step.
AIC-CCCS-5.1.1.4						0	Cost accounted for in above action step.
AIC-CCCS-5.1.1.5						0	Cost accounted for in above action step.
AIC-CCCS-5.1.1.6						0	Cost accounted for in above action step.
AIC-CCCS-5.1.2.1	1191.00					1,191	Cost based on providing passage at a rate of \$1,191,000/project.
AIC-CCCS-5.1.2.2	74.67	74.67	74.67			224	Cost based on adult escapement and juvenile migration model at a rate of \$36,000 and \$188,000/project.
AIC-CCCS-5.1.2.3						0	Action is considered In-Kind
AIC-CCCS-5.1.2.4	5,360	5,360				10,719	Cost based on providing passage at a rate of \$1,191,000/project.
AIC-CCCS-5.1.2.5						0	Action is considered In-Kind
AIC-CCCS-5.1.2.6	392.00	392.00				784	Cost based on installing a fishway at a rate of \$784,000/project.
AIC-CCCS-5.1.2.7	78					78	Cost based on stream flow/precipitation model at a rate of \$78,000/project.
AIC-CCCS-5.1.3.1	39.00	39.00				78	Cost based on stream flow/precipitation model at a rate of \$78,000/project.
AIC-CCCS-5.1.3.2						0	Cost accounted for in other action steps.
AIC-CCCS-5.1.4.1	2888.00	2888.00				5,776	Cost based on providing fish passage at a rate of \$1,444,000/project for 4 project sites.
AIC-CCCS-5.1.4.2						TBD	
AIC-CCCS-5.1.5.1	112.00	112.00				224	Cost based on adult escapement and juvenile migration monitoring at a rate of \$36,000 and \$188,000/project.
AIC-CCCS-5.1.5.2						TBD	Cost based on appropriate method to move or modify gas line.
AIC-CCCS-5.1.6.1	320.00	320.00				640	Cost based on providing passage at a rate of \$639,000/project.
AIC-CCCS-6.1.1.1	101.25	101.25	101.25	101.25		405	Cost based on treating 33 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile.
AIC-CCCS-6.1.1.2						0	Cost accounted for in above action step.
AIC-CCCS-6.1.1.3	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
AIC-CCCS-6.1.1.4	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/mile.
AIC-CCCS-6.1.2.1	135.00	135.00	135.00			405	Cost based on treating 13 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile.
AIC-CCCS-6.1.2.2						0	Cost accounted for in other action steps.
AIC-CCCS-6.1.2.3						0	Cost accounted for in other action steps.
AIC-CCCS-6.1.2.4						0	Cost accounted for in other action steps.
AIC-CCCS-6.1.3.1	138.00					138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
AIC-CCCS-6.1.3.2	536	536				1,071	Cost based on treating 1 mile (assume 1 project/mile) at a rate of \$1,071,000/mile.
AIC-CCCS-7.1.1.1						0	Action is considered In-Kind
AIC-CCCS-7.1.1.2	29.67	29.67	29.67			89	Cost based on riparian restoration model at a rate of \$89,000/project.
AIC-CCCS-8.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
AIC-CCCS-8.1.2.1						0	Cost accounted for in above action step.
AIC-CCCS-8.1.2.2						0	Cost accounted for in above action step.

Alameda Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
AIC-CCCS-10.1.1.1						0	Action is considered In-Kind
AIC-CCCS-10.1.1.2	0.75	0.75				2	Cost based on installing a minimum of 3 water temperature loggers at a rate of \$500/logger. Cost does not account for data management or maintenance.
AIC-CCCS-10.1.1.3	39.00	39.00				78	Cost based on stream flow/precipitation model at a rate of \$78,000/project.
AIC-CCCS-10.1.1.4						0	Cost based on implementation of other action steps.
AIC-CCCS-10.1.1.5						0	Action is considered In-Kind
AIC-CCCS-10.1.1.6						TBD	Cost based on the type of recommendations to implement.
AIC-CCCS-10.1.1.7						TBD	Cost based on type of strategies to implement.
AIC-CCCS-10.1.2.1	7.50	7.50				15	Cost based on installing a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station.
AIC-CCCS-10.1.2.2						0	Cost accounted for in other actions steps.
AIC-CCCS-10.1.2.3						TBD	Cost based on cause of fish kill and appropriate recommendation to remedy conditions causing fish kills.
AIC-CCCS-10.1.2.4						0	Hit hydrants will discharge very high volumes of chlorinated water that has the potential to kill an entire steelhead population in a stream. This action could prevent catastrophic loss of steelhead. Action is considered In-Kind
AIC-CCCS-11.1.1.1						0	Action is considered In-Kind
AIC-CCCS-11.1.1.2						0	Action is considered In-Kind
AIC-CCCS-11.1.1.3						0	Action is considered In-Kind
AIC-CCCS-11.1.1.4						0	Action is considered In-Kind
AIC-CCCS-11.1.1.5						0	Action is considered In-Kind
AIC-CCCS-11.1.1.6						0	Action is considered In-Kind
AIC-CCCS-11.1.1.7						0	Costs accounted for under the Coastal Monitoring Plan - see Monitoring Chapter in Volume 1.
AIC-CCCS-11.1.1.8						0	Action is considered In-Kind
AIC-CCCS-11.1.1.9						0	Action is considered In-Kind
AIC-CCCS-11.1.1.10						0	Action is considered In-Kind
AIC-CCCS-11.1.1.11						0	Action is considered In-Kind
AIC-CCCS-11.1.1.12						0	Action is considered In-Kind
AIC-CCCS-11.1.1.13						0	Cost likely part of collaboration between NMFS, CDFW, and others to absorb the costs.
AIC-CCCS-13.1.1.1						0	Action is considered In-Kind
AIC-CCCS-13.1.1.2						0	Action is considered In-Kind
AIC-CCCS-13.1.1.3						0	Action is considered In-Kind
AIC-CCCS-13.1.1.4						0	Action is considered In-Kind
AIC-CCCS-13.1.1.5						0	Action is considered In-Kind
AIC-CCCS-13.1.2.1						TBD	Cost based on optimum flow level for multiple life stages. Cost for stream flow/precipitation monitoring estimated at \$78,000/project.
AIC-CCCS-13.1.2.2						0	Cost captured in other recovery actions.
AIC-CCCS-13.1.2.3						TBD	Cost based on amount of impervious soils contributing to increased runoff and methods to treat. Flood retention basins, engineered wetlands, and bypass channels are potential possibilities.
AIC-CCCS-13.1.3.1						0	Action is considered In-Kind
AIC-CCCS-13.1.3.2						0	Cost captured in other recovery actions.
AIC-CCCS-13.1.3.3						0	Cost accounted for in above action steps under Habitat Complexity.
AIC-CCCS-13.1.3.4						0	Action is considered In-Kind
AIC-CCCS-13.1.4.1						0	Action is considered In-Kind
AIC-CCCS-14.1.1.1						0	Action is considered In-Kind. Existing and future fisheries monitoring programs carried out by the SFPUC, CMP, and others will document the presence and distribution of black spot disease.
AIC-CCCS-14.1.1.2						0	Action is considered In-Kind
AIC-CCCS-14.1.1.3						0	Action is considered In-Kind
AIC-CCCS-16.1.1.1						0	Collaboration between agencies and staff is required. Action is considered In-Kind
AIC-CCCS-16.1.1.2						0	Action is considered In-Kind
AIC-CCCS-18.1.1.1						TBD	Cost based on amount of off-stream water sources needed and landowner participation. Estimate for off-stream water source is \$5,000/system.
AIC-CCCS-18.1.1.2	15.00	15.00				30	Cost based on treating 3.3 miles (assume 1 project/mile in 5% high IP) at a rate of \$4/ft.
AIC-CCCS-18.1.1.3						0	Action is considered In-Kind
AIC-CCCS-18.1.1.4						0	Cost accounted for in above action steps.
AIC-CCCS-18.1.1.5						0	Action is considered In-Kind
AIC-CCCS-20.1.1.1						TBD	Cost based on type of water quality parameters to monitor. Estimate for water quality testing range from \$20 - \$2,000/sample (Center for Watershed Science and Education, CCRWQCB).
AIC-CCCS-20.1.1.2						0	Action is considered In-Kind
AIC-CCCS-20.1.1.3						0	Action is considered In-Kind
AIC-CCCS-22.1.1.1						0	Action is considered In-Kind
AIC-CCCS-22.1.1.2						0	Action is considered In-Kind
AIC-CCCS-22.1.1.3						0	Action is considered In-Kind
AIC-CCCS-22.1.1.4						0	Action is considered In-Kind
AIC-CCCS-22.1.1.5						0	Action is considered In-Kind

Alameda Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
AIC-CCCS-22.1.2.1	5.00					5	Cost based on installing a minimum of 5 signs at a rate of \$1,000/sign.
AIC-CCCS-22.1.2.2						TBD	Cost based on amount and type of filter or buffer strip needed. Estimate for filter strip is \$10,000 to \$25,000 for a 25ft wide filter strip.
AIC-CCCS-23.1.1.1						TBD	Cost based on type and amount of actions to disconnect roads identified in road assessment. Estimate for road inventory is \$1,000/mile.
AIC-CCCS-23.1.1.2						0	Action is considered In-Kind
AIC-CCCS-23.1.2.1						0	Action is considered In-Kind
AIC-CCCS-23.1.2.2						0	Action is considered In-Kind
AIC-CCCS-23.1.3.1						TBD	High and medium priority roads should be identified from road assessment. Recommendations to treat will depend on extent and type of sediment being delivered.
AIC-CCCS-23.1.3.2						TBD	Cost based on road inventory of 3,934 mile of road network at a rate of \$1,000/mile and erosion assessment of 25% of total watershed acres at a rate of \$15/acre.
AIC-CCCS-23.1.3.3						0	Cost accounted for in above action step.
AIC-CCCS-24.1.1.1						0	Action is considered In-Kind
AIC-CCCS-24.1.1.2						0	Action is considered In-Kind
AIC-CCCS-25.1.1.1	39.00	39.00				78	Cost based on stream flow/precipitation model at a rate of \$78,000/project. Anticipate this cost is underestimated for the level of results needed for watershed wide hydrology model.
AIC-CCCS-25.1.1.2						0	Action is considered In-Kind
AIC-CCCS-25.1.1.3						0	Action is considered In-Kind
AIC-CCCS-25.1.2.1						0	Cost accounted for in above action steps under Hydrology.
AIC-CCCS-25.1.2.2						0	Costs accounted for in other recovery actions.

Coyote Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
CoC-CCCS-1.1.1.1	169.50	169.50				339	Cost based on estuary use/residence model at a rate of \$339,000/project.
CoC-CCCS-1.1.1.2						0	Action is considered In-Kind
CoC-CCCS-2.1.1.1	32.00	128.00				256	Cost based on wetland restoration model at a rate of \$256,000/project.
CoC-CCCS-2.1.1.2	104.5	104.5				209	Cost of assessment is estimated at \$209,000
CoC-CCCS-2.1.1.3						0	Action is considered in-kind
CoC-CCCS-3.1.1.1	78.00					78	Cost based on stream flow/precipitation model \$78,000/project.
CoC-CCCS-5.1.1.1	1,149					1,149	Cost of replacing culvert at Singleton Road at a rate of \$1,149,000 for a large waterway. Cost for Ogier Ponds will be determined on a site-specific basis.
CoC-CCCS-5.1.1.2	113.00					113	Cost for producing and assessment and evaluation of alternatives for fish passage.
CoC-CCCS-5.1.1.3						TBD	
CoC-CCCS-6.1.1.1	225.00	225.00				450	Cost based on treating 14 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile. Cost may increase with use of engineered structures such as log jams, boulder clusters, etc.
CoC-CCCS-6.1.2.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
CoC-CCCS-6.1.2.2						0	Cost accounted for in above action step.
CoC-CCCS-6.1.2.3	69.00	69.00				138	Cost for fish/habitat restoration monitoring at a rate of \$138,000/project. These costs could be higher if greater level of monitoring is required in the future.
CoC-CCCS-7.1.1.1	58.50	58.50				117	Cost based on treating 1.4 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$1000/acre.
CoC-CCCS-7.1.1.2						0	Cost accounted for in above action step.
CoC-CCCS-7.1.1.3	592					592	Cost based on treating 4.2 miles (assume 1 project/mile in 15% high IP with 80 acres/mile) at a rate of \$2,000/acre.
CoC-CCCS-7.1.1.4						0	Cost accounted for in other action steps.
CoC-CCCS-8.1.1.1	395.00					395	Cost based on erosion assessment of 10% of total watershed acres at a rate of \$15/acre
CoC-CCCS-8.1.1.2						0	Cost accounted for in above action step. See Floodplain Connectivity
CoC-CCCS-8.1.1.3	4,218					4,218	Estimate is for one mile of large scale reach restoration (NMFS 2008, pg. 27) - cost will vary depending on extent of restoration efforts, and methodologies employed.
CoC-CCCS-10.1.1.1	1.50					2	Cost based on installing a minimum of 3 stream temperature gauges at a rate of \$500/gauge.
CoC-CCCS-10.1.1.2						0	Action is considered in-kind
CoC-CCCS-10.1.1.3						TBD	
CoC-CCCS-10.1.2.1	15.00					15	Cost for a minimum of 3 continuous water quality gauges at a rate of \$5,000/gauge. This action should be coordinated with other water quality monitoring actions.
CoC-CCCS-10.1.2.2						0	Action is considered In-Kind
CoC-CCCS-11.1.1.1						0	Action is considered In-Kind
CoC-CCCS-11.1.1.2						0	Costs accounted for under the Coastal Monitoring Plan - see Monitoring Chapter
CoC-CCCS-11.1.1.3						0	Costs accounted for under the Coastal Monitoring Plan - see Monitoring Chapter
CoC-CCCS-11.1.1.4						0	Costs accounted for under the Coastal Monitoring Plan - see Monitoring Chapter
CoC-CCCS-11.1.1.5						0	Costs accounted for under the Coastal Monitoring Plan - see Monitoring Chapter
CoC-CCCS-11.2.1.1	9.34	9.34	9.34	9.34	9.34	56	Cost estimate for Fish and Wildlife Warden from Bureau of Labor Statistics 2009.
CoC-CCCS-13.1.1.1	2,033	2,033				4,066	Cost based on treating 3.8 miles (assume 25% of total flood channel) at a rate of \$1,071,000/mile.
CoC-CCCS-13.1.1.2						0	Action is considered In-Kind
CoC-CCCS-13.1.1.3						0	Action is considered In-Kind
CoC-CCCS-13.1.1.4						0	Action is considered In-Kind
CoC-CCCS-13.1.1.5						0	Action is considered In-Kind
CoC-CCCS-13.1.1.6						TBD	Cost based on amount of conservation measures needed and landowner participation.
CoC-CCCS-13.1.1.7	3,731	3,731				7,461	Cost based on treating 11 road crossing (1 impassable, 10 partially impassable) at a rate of \$1,071,000/total barrier and \$639,000/partial barrier.
CoC-CCCS-13.1.1.8						0	Action is considered In-Kind
CoC-CCCS-14.1.1.1	104.5	104.5				209	Total cost based on amount of exotic piscivorous fish species to be removed. Cost for invasive fish eradication estimated at \$9/fish. Cost of assessment is estimated at \$209,000
CoC-CCCS-14.2.1.1						TBD	Cost based on amount of fish screens needed. Cost for fish screens estimated to range between \$16,000 to \$64,000/screen
CoC-CCCS-20.1.1.1	138.00					138	Cost based on fish/habitat restoration monitoring at a rate of \$138,000/project. Cost is likely conservative and could be higher depending on additional parameters to be evaluated.
CoC-CCCS-21.1.1.1	104.5	104.5				209	Cost based on miles of recreational facilities. Cost expected to be less than road inventory methods estimated at \$1,000/mile. Cost of assessment is estimated at \$209,000
CoC-CCCS-21.1.1.2						0	Cost accounted for an another action step
CoC-CCCS-21.1.2.1						0	Action is considered In-Kind. Costs associated with encouraging are considered In-kind.
CoC-CCCS-22.1.1.1						TBD	Cost based on opportunities to reduce residential and commercial development.
CoC-CCCS-22.1.1.2						TBD	Cost based on amount of stormwater system needing upgrading.
CoC-CCCS-22.1.1.3						0	Cost accounted for in FLOODPLAIN CONNECTIVITY and HABITAT COMPLEXITY.
CoC-CCCS-22.1.1.4						0	Action is considered In-Kind
CoC-CCCS-22.1.1.5	7.50	7.50				15	Cost based to install a minimum of 3 continuous water quality monitoring gauges at a rate of \$5,000/station. Cost does not account for data management or maintenance.
CoC-CCCS-22.1.1.6						0	Action is considered In-Kind

Coyote Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
CoC-CCCS-22.2.1.1						0	Action is considered In-Kind
CoC-CCCS-22.2.1.2						0	Action is considered In-Kind
CoC-CCCS-22.2.1.3						0	Action is considered In-Kind
CoC-CCCS-22.2.1.4						0	Action is considered In-Kind
CoC-CCCS-22.2.1.5						TBD	Cost to purchase land is TBD and dependent on the market.
CoC-CCCS-22.2.1.6						0	Action is considered In-Kind
CoC-CCCS-22.2.1.7						0	Action is considered In-Kind
CoC-CCCS-23.1.1.1	548					548	Cost based on amount of road network in riparian corridor. Cost estimated for 548 miles of road at a rate of \$1,000/mile.
CoC-CCCS-23.1.1.2						0	Action is considered In-Kind
CoC-CCCS-23.1.1.3						TBD	Cost based on amount of road network contributing sediment to stream channels.
CoC-CCCS-23.1.2.1						0	Action is considered In-Kind
CoC-CCCS-23.1.2.2	104.5	104.5				209	Total cost based on feasible passage alternatives for Ogier Ponds complex. Cost for adult escapement estimated at \$44,000 and juvenile migration estimated at \$226,000/project. Cost of assessment is estimated at \$209,000
CoC-CCCS-23.1.2.3						0	Cost accounted for in other action step. See Passage.
CoC-CCCS-25.1.1.1						0	Action is considered In-Kind
CoC-CCCS-25.1.1.2						0	Action is considered In-Kind
CoC-CCCS-25.1.1.3						0	Action is considered In-Kind
CoC-CCCS-25.1.1.4						0	Action is considered In-Kind
CoC-CCCS-25.1.1.5						0	Action is considered In-Kind
CoC-CCCS-25.1.1.6						0	Action is considered In-Kind
CoC-CCCS-25.1.1.7						0	Action is considered In-Kind
CoC-CCCS-25.1.1.8						0	Action is considered In-Kind
CoC-CCCS-25.1.1.9	450.00					450	Cost based to treat 14 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile. Cost likely to be higher for greater level of engineering and oversight.
CoC-CCCS-25.2.1.1						0	Action is considered In-Kind
CoC-CCCS-25.2.1.2						0	Cost accounted for in other action steps.
CoC-CCCS-25.2.1.3	102.00					102	Cost based on adult escapement monitoring at a rate of \$44,000/project and production, run timing, and size monitoring at a rate of \$57,000/project.
CoC-CCCS-25.2.1.4						0	Cost likely accounted as part of other action steps. Data monitoring component should be coordinated.

Green Valley/Suisun Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GVSC-CCCS-1.1.1.1						TBD	Cost is TBD.
GVSC-CCCS-2.1.1.1	179.00	179.00				357	Cost based on treating 0.2 miles (assume 1 project/mile in 25% high IP with 40 acres per mile treated) at a rate of \$45,000/acre.
GVSC-CCCS-2.1.1.2	32					0	Action is considered In-Kind
GVSC-CCCS-2.1.1.3						0	Cost expected to be small. Action is considered In-Kind
GVSC-CCCS-2.1.1.4	100.00					100	Estimated cost of investigation.
GVSC-CCCS-2.1.1.5						0	Costs accounted for in above recovery action step.
GVSC-CCCS-2.1.1.6						0	Costs accounted for in above recovery action step.
GVSC-CCCS-2.1.1.7						0	Costs accounted for in above recovery action step.
GVSC-CCCS-2.1.1.8						0	Cost accounted for in above recovery action step.
GVSC-CCCS-3.1.1.1						TBD	Costs depend on extent of treatments.
GVSC-CCCS-3.1.1.2						0	Action is considered In-Kind
GVSC-CCCS-3.2.1.1						0	Action is considered In-Kind
GVSC-CCCS-3.2.1.2						0	Action is considered In-Kind
GVSC-CCCS-3.2.1.3						0	Action is considered In-Kind
GVSC-CCCS-3.2.1.4						0	Action is considered In-Kind
GVSC-CCCS-3.2.1.5						TBD	Changes in flow management may incur costs to diverters and water delivery systems, but costs are unknown.
GVSC-CCCS-3.2.1.6						0	Action is considered In-Kind
GVSC-CCCS-3.2.1.7						0	Action is considered In-Kind
GVSC-CCCS-5.1.1.1						TBD	LSA did an assessment as part of a Salmonid Habitat Assessment Report for Solano County in 2008. Passage treatment would depend on the site characteristics and feasibility studies.
GVSC-CCCS-6.1.1.1						0	Maintenance responsibilities and costs are usually incorporated into the restoration project agreement, and are not likely to have a separate cost.
GVSC-CCCS-6.1.1.2						TBD	Cost will be driven by extent and type of sampling conducted.
GVSC-CCCS-6.1.1.3	8.00	8.00	8.00	8.00		32	Cost based on treating 0.2 miles at a rate of \$32,000/mile.
GVSC-CCCS-6.1.1.4						0	Cost accounted for in above action step.
GVSC-CCCS-6.1.1.5						0	Cost of incorporating LWD into ongoing operations is expected to be low.
GVSC-CCCS-7.1.1.1						TBD	Cost of future management unknown at this time.
GVSC-CCCS-7.1.1.2	166.00	166.00	166.00			498	Cost based on treating 1 mile (assume 20 acres/mile treated) at a rate of \$25,000/acre.
GVSC-CCCS-7.1.1.3						0	Action is considered In-Kind
GVSC-CCCS-7.1.1.4						0	Action is considered In-Kind
GVSC-CCCS-7.1.1.5	138.00					138	cost based on fish/habitat restoration model at a rate of \$138,000/project.
GVSC-CCCS-7.1.1.6	3.00					3	Cost to treat 0.3 miles (assume 1 project/mile in 5% high IP with 10 acres/mile treated) at a rate of \$1,000/acre.
GVSC-CCCS-8.1.1.1	50.00					50	Estimated cost of preparing the plan. □
GVSC-CCCS-8.1.1.2						TBD	The cost of incentives is difficult to determine at this time.
GVSC-CCCS-8.1.1.3	69.00	69.00				138	Cost for fish/habitat restoration monitoring at a rate of \$138,000/project. This action step should be coordinated with similar action steps to reduce cost and redundancy.
GVSC-CCCS-8.1.1.4						TBD	V-Star is a rather inexpensive monitoring technique, and cost is not expected to be substantial.
GVSC-CCCS-10.1.1.1	100.00					100	Cost estimate for investigation.
GVSC-CCCS-10.1.1.2						TBD	
GVSC-CCCS-10.1.1.3						0	Cost accounted for in other recovery action steps - see Riparian.
GVSC-CCCS-10.1.1.4						TBD	Cost based on analysis of summer rearing water temperature. Cost to reduce water temperature likely accounted for in other action steps.
GVSC-CCCS-10.1.1.5	1.5					1.5	Cost based on installing a minimum of 3 continuous water/air temperature gauges at a rate of \$500/station. Cost does not account for data management or maintenance.
GVSC-CCCS-11.1.1.1						0	Action is considered In-Kind
GVSC-CCCS-11.1.1.2						0	Costs for monitoring population status and trends are accounted for in the Monitoring Chapter.
GVSC-CCCS-11.1.1.3						0	Costs for monitoring population status and trends are accounted for in the Monitoring Chapter.
GVSC-CCCS-11.1.1.4						TBD	This will depend on the scope and frequency of restoration projects implemented. Monitoring costs may be considered In-Kind and a requirement of the restoration/permitting process.
GVSC-CCCS-11.1.1.5						0	Action is considered In-Kind
GVSC-CCCS-11.2.1.1						0	Action is considered In-Kind
GVSC-CCCS-12.1.1.1						TBD	Cost based on amount of landowner participation and appropriate incentives for management operations. Incentive programs currently exist and should be explored and expanded.
GVSC-CCCS-12.1.2.1						0	Action is considered In-Kind
GVSC-CCCS-12.1.2.2						0	Action is considered In-Kind
GVSC-CCCS-12.1.3.1						0	Action is considered In-Kind
GVSC-CCCS-12.1.3.2						0	Action is considered In-Kind
GVSC-CCCS-12.1.3.3						TBD	Cost is difficult to estimate at this time, and will be dependent on the linear distance of setbacks and the cost to landowners of lost production from area inside the setback.
GVSC-CCCS-12.1.4.1						0	Action is considered In-Kind
GVSC-CCCS-12.2.1.1						0	Action is considered In-Kind
GVSC-CCCS-12.2.1.2						0	Action is considered In-Kind

Green Valley/Suisun Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GVSC-CCCS-12.2.1.3						0	Action is considered In-Kind
GVSC-CCCS-12.2.1.4						TBD	Cost is TBD, since the total number and scope of the future plans is unknown at this time.
GVSC-CCCS-18.1.1.1						TBD	Cost based on the number of stream crossing to establish.
GVSC-CCCS-18.1.1.2						TBD	Cost based on amount of off-stream water sources needed. Cost estimated at \$5,000/site.
GVSC-CCCS-18.1.1.3						0	Action is considered In-Kind
GVSC-CCCS-18.1.1.4						0	Action is considered In-Kind
GVSC-CCCS-18.1.1.5						0	Action is considered In-Kind
GVSC-CCCS-18.1.2.1						0	Action is considered In-Kind
GVSC-CCCS-18.1.2.2	2.30	2.30	2.30	2.30	2.30	46	Cost based on riparian exclusion fencing at a rate of \$4/ft.
GVSC-CCCS-18.1.2.3						0	Action is considered In-Kind
GVSC-CCCS-18.1.2.4						0	Action is considered In-Kind
GVSC-CCCS-25.1.1.1						0	Action is considered In-Kind
GVSC-CCCS-25.1.1.2						0	Action is considered In-Kind
GVSC-CCCS-25.1.1.3						TBD	Potential incentives unknown at this time. Currently, incentive programs exist and should be explored and expanded upon.
GVSC-CCCS-25.1.1.4						0	Promotion largely done through federal, state and local partnerships with interested NGO's.
GVSC-CCCS-25.1.1.5						0	Promotion likely done largely by agency and NGO partnerships.
GVSC-CCCS-25.2.1.1						0	Action is considered In-Kind
GVSC-CCCS-25.2.1.2						0	No cost expected to encourage the SWRCB. Encouragement would largely arise through already employed CDFW and NMFS staff.
GVSC-CCCS-25.2.1.3						0	Action is considered In-Kind
GVSC-CCCS-25.2.1.4						0	This action is largely part of Water Control Board operations and information database.
GVSC-CCCS-25.2.1.5						0	Action is considered In-Kind
GVSC-CCCS-25.2.1.6						0	Cost expected to be largely absorbed through already employed agency enforcement personnel.

Napa River, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NpR-CCCS-1.1.1.1	169.50	169.50				339	Cost based on estuary use/residence time model at a rate of \$339,000/project.
NpR-CCCS-1.1.1.2	7.50	7.50				15	Cost base on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
NpR-CCCS-1.1.1.3	32					0	Cost accounted for in above action step.
NpR-CCCS-1.1.1.4	2,337	2,337				4,674	Cost based on treating 95 acres (assume 2.5% of total estuarine acres) at a rate of \$49,000/acre.
NpR-CCCS-2.1.1.1	296.50	296.50				593	Cost based on treating 19 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile. Cost can be significantly higher if greater oversight and engineering is needed such as installing ELJ estimated at \$125,000/ELJ.
NpR-CCCS-2.1.1.2	172.50	172.50				345	Cost based on riparian and wetland restoration model at a rate of \$89,000 and \$256,000/project, respectively.
NpR-CCCS-2.1.1.3						0	Action is considered In-Kind
NpR-CCCS-2.1.1.4	1,125	1,125				2,250	Cost based 5 projects with 10 acres/project at a rate of \$45,000/acre.
NpR-CCCS-2.1.1.5						0	Cost accounted for in above action step.
NpR-CCCS-2.1.1.6						0	Cost accounted for in above action steps.
NpR-CCCS-3.1.1.1						0	This action step relies on participation of water users reducing groundwater pumping or locating groundwater wells away from alluvial fan reaches.
NpR-CCCS-3.1.1.2						0	This action step relies on participation of water users reducing groundwater pumping or locating groundwater wells away from alluvial fan reaches.
NpR-CCCS-3.1.1.3						0	This action step relies on participation of water users reducing groundwater pumping or locating groundwater wells away from alluvial fan reaches.
NpR-CCCS-3.1.1.4	15.80	15.80	15.80	15.80	15.80	79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.
NpR-CCCS-3.1.1.5						0	Action is considered In-Kind
NpR-CCCS-3.1.1.6	26.33	26.33	26.33			79	Cost based on stream flow/precipitation model at a rate of \$79,000/project. This action step should be done in conjunction with similar action steps to reduce cost and redundancy.
NpR-CCCS-3.1.1.7						TBD	Cost based on modifying or removing water diversions in high value habitat. Estimate for off-channel storage is \$5,000/station.
NpR-CCCS-3.1.1.8						TBD	Cost based on modifying or removing water diversions in high value habitat. Estimate for off-channel storage is \$5,000/station.
NpR-CCCS-3.1.1.9	39.50	39.50				79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.
NpR-CCCS-3.1.1.10	39.50	39.50				79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.
NpR-CCCS-3.1.1.11	39.50	39.50				79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.
NpR-CCCS-3.1.1.12	39.50	39.50				79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.
NpR-CCCS-3.1.1.13	104.5	104.5				209	Cost of assessment estimated at \$209,000
NpR-CCCS-5.1.1.1						0	Action is considered In-Kind
NpR-CCCS-5.1.1.2						0	Action is considered In-Kind
NpR-CCCS-5.1.1.3	270					270	Cost based on adult escapement and juvenile migration model at a rate of \$270,000.
NpR-CCCS-5.1.1.4	209.00					209	Cost of feasibility assessment estimated at \$209,000 and should be completed within the first 5 years. Total cost based on assessment and design.
NpR-CCCS-5.1.1.5	1,000					1,000	Dam removal projects typically are cost effective approaches to providing passage. Cost for dam removal estimate is \$1,000,000.
NpR-CCCS-5.1.1.6	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.7	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.8	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.9	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.10	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.11	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.12	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.13	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.14	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.15	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.16	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.17	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.18	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.19	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.20	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.21	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.22	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.23	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.24	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.25	67.50	67.50	67.50	67.50		270	Cost based on adult escapement and juvenile migration model at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-5.1.1.26	67.50	67.50	67.50	67.50		270	
NpR-CCCS-5.1.1.27	67.50	67.50	67.50	67.50		270	
NpR-CCCS-6.1.1.1	46.00	46.00	46.00			138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
NpR-CCCS-6.1.1.2	62.67	62.67	62.67			188	Cost based on treating 6 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile.
NpR-CCCS-6.1.1.3	5.33	5.33	5.33			16	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile.
NpR-CCCS-6.1.1.4	8.00	8.00				16	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile.

Napa River, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NpR-CCCS-6.1.1.5						0	Action is considered In-Kind
NpR-CCCS-6.1.1.6						0	Action is considered In-Kind
NpR-CCCS-6.1.1.7						0	Cost accounted for in above action steps.
NpR-CCCS-6.1.2.1	46.00	46.00	46.00			138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
NpR-CCCS-6.1.2.2						TBD	Cost dependent on restoration projects implemented.
NpR-CCCS-6.1.3.1	209.00					209	Cost of assessment to identify locations estimated at \$209,000 and should be completed within the first 5 years. Final costs TBD based on assessment.
NpR-CCCS-6.1.3.2	209.00					209	Cost of assessment to identify locations estimated at \$209,000 and should be completed within the first 5 years. Final costs TBD based on assessment.
NpR-CCCS-6.1.3.3						TBD	
NpR-CCCS-6.1.4.1	209.00					209	Cost of assessment to identify locations estimated at \$209,000 and should be completed within the first 5 years. Final costs TBD based on assessment.
NpR-CCCS-7.1.1.1	115.00	115.00	115.00			345	Cost based on riparian and wetland restoration model at a rate of \$89,000 and \$256,000/project, respectively. Estimate for riparian restoration is \$25,000/acre in 25% high IP and 80 acres/mile.
NpR-CCCS-7.1.1.2	52.67	52.67	52.67			158	Cost based on treating 1.9 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$1,000/acre.
NpR-CCCS-7.1.1.3						0	Action is considered In-Kind
NpR-CCCS-8.1.1.1	34.50	34.50	34.50	34.50		138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
NpR-CCCS-8.1.1.2	34.50	34.50	34.50	34.50		138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
NpR-CCCS-8.1.1.3	34.50	34.50	34.50	34.50		138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
NpR-CCCS-8.1.2.1	254.25	254.25	254.25	254.25		1,017	Cost based on sediment assessment for 67,158 acres (assume 25% total watershed acres) at a rate of \$15/acre.
NpR-CCCS-8.1.2.2						0	Cost accounted for in other action steps: Habitat Complexity.
NpR-CCCS-8.1.2.3						0	Cost accounted for in other action steps.
NpR-CCCS-8.1.2.4						0	Cost accounted for in other action steps: Habitat Complexity.
NpR-CCCS-10.1.1.1						TBD	Cost will be based on results from water temperature monitoring.
NpR-CCCS-10.1.1.2	1.50					2	Cost based on installing a minimum of 3 stream temperature gauges at a rate of \$500/gauge.
NpR-CCCS-10.1.1.3						0	Action is considered In-Kind
NpR-CCCS-10.1.1.4						0	Action is considered In-Kind
NpR-CCCS-10.1.2.1						TBD	Cost based on number and type of bank stabilization projects. Estimate for bank stabilization ranges from \$280 to \$400/ft. (NMFS 2008).
NpR-CCCS-12.1.1.1						0	Action is considered In-Kind
NpR-CCCS-12.1.1.2						0	Action is considered In-Kind
NpR-CCCS-12.1.1.3						0	Action is considered In-Kind
NpR-CCCS-12.1.1.4						0	Action is considered In-Kind
NpR-CCCS-12.1.1.5						0	Action is considered In-Kind
NpR-CCCS-12.1.2.1						0	Costs accounted for in above recovery actions.
NpR-CCCS-12.1.2.2						0	Cost based on implementation of other action steps.
NpR-CCCS-12.1.3.1						TBD	Cost based on amount and type of off-channel storage needed to reduce impacts during spring and summer flows. Estimate for off-channel storage is \$5,000/station.
NpR-CCCS-12.1.3.2						0	Action is considered In-Kind
NpR-CCCS-12.1.4.1						TBD	Cost based on fair market value, number and type of conservation easement or land acquisition, and participation from landowner.
NpR-CCCS-12.1.4.2						0	Action is considered In-Kind
NpR-CCCS-12.1.5.1						0	Cost accounted for in above action step.
NpR-CCCS-12.1.6.1						0	Action is considered In-Kind
NpR-CCCS-12.1.6.2						0	Action is considered In-Kind
NpR-CCCS-12.2.1.1						0	Action is considered In-Kind
NpR-CCCS-13.1.1.1						0	Channel incision is one of the main contributors to habitat degradation and loss of salmonid spawning and rearing habitat.
NpR-CCCS-13.1.1.2						0	Action is considered In-Kind
NpR-CCCS-13.1.2.1						TBD	Cost based on implementing several strategies such as catchment basins, filter strips, and reducing impervious surfaces.
NpR-CCCS-13.1.3.1						0	Action is considered In-Kind
NpR-CCCS-13.1.4.1						0	Action is considered In-Kind
NpR-CCCS-13.1.4.2						0	Action is considered In-Kind
NpR-CCCS-13.1.5.1						0	Action is considered In-Kind
NpR-CCCS-13.1.5.2						0	Action is considered In-Kind
NpR-CCCS-13.1.6.1						0	Action is considered In-Kind
NpR-CCCS-13.1.6.2						0	Action is considered In-Kind
NpR-CCCS-22.1.1.1						0	Action is considered In-Kind
NpR-CCCS-22.1.1.2						TBD	Cost based on number and type of filter or buffer system needed to reduce pollutant discharge to streams and waterways. Estimate for filter strip ranges from \$9,000 to \$24,000/system.
NpR-CCCS-22.2.1.1						0	Action is considered In-Kind
NpR-CCCS-22.2.1.2						0	Action is considered In-Kind
NpR-CCCS-23.1.1.1	445	445	445			1,334	Cost based on road inventory of 1334 miles of road network at a rate of \$1,000/mile.
NpR-CCCS-23.1.1.2						0	Action is considered In-Kind

Napa River, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
NpR-CCCS-23.1.1.3						0	Action is considered In-Kind
NpR-CCCS-23.1.2.1						0	Cost accounted for in above action step: Passage.
NpR-CCCS-23.1.2.2	180.00	180.00	180.00			540	Cost based on adult escapement and juvenile migration model for 2 impassable crossing at a rate of \$44,000 and \$226,000/project, respectively.
NpR-CCCS-23.1.2.3						0	Action is considered In-Kind
NpR-CCCS-24.1.1.1						0	Action is considered In-Kind
NpR-CCCS-24.2.1.1	15.80	15.80	15.80	15.80	15.80	79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.
NpR-CCCS-24.2.1.2						0	Action is considered In-Kind
NpR-CCCS-25.1.1.1						0	Cost for stream flow model accounted for in other action steps.
NpR-CCCS-25.1.1.2						TBD	Cost based on number and type of fish screens needed. Estimate for fish screens is \$64,000/screen.
NpR-CCCS-25.1.2.1						0	Action is considered In-Kind
NpR-CCCS-25.1.2.2						0	Cost accounted for in other action steps: Hydrology
NpR-CCCS-25.1.3.1						0	Action is considered In-Kind
NpR-CCCS-25.1.4.1						0	Action is considered In-Kind
NpR-CCCS-25.1.4.2						TBD	Cost based on the amount and type of off-channel storage facilities needed. Estimate for off-channel storage is \$5,000/station.
NpR-CCCS-25.1.4.3						0	Action is considered In-Kind
NpR-CCCS-25.1.4.4	1.7	1.7	1.7			5	Cost based on the number of water diversions. Estimate for stream flow gauges is \$1,000/station and it is estimated that 5 stations would be needed for a total of \$5000.

Petaluma River, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PR-CCCS-1.1.1.1	785					785	Cost based on treating 20 acres at a rate of \$39,000/acre.
PR-CCCS-1.1.1.2						0	Action is considered In-Kind
PR-CCCS-1.1.1.3	32					0	Cost accounted for in other action steps.
PR-CCCS-1.1.1.4	450	450				900	Cost based on treating 20 acres at a rate of \$45,000/acre.
PR-CCCS-1.1.1.5	10	10				20	Cost based on treating 20 acres at a rate of \$1000/acre.
PR-CCCS-1.1.1.6	3.75	3.75	3.75	3.75		15	Cost based on installing a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
PR-CCCS-1.1.1.7						0	Action is considered In-Kind
PR-CCCS-1.1.1.8	104.5	104.5				209	Costs associated with removal of structures will depend on the number and type of structures identified and cannot be accurately determined at this time. Estimated cost of assessment is 209,000.
PR-CCCS-1.1.1.9	169.50	169.50				339	Cost based on estuary use/residence time model at a rate of \$339,000/project.
PR-CCCS-1.1.1.10						0	Cost accounted for in above action step.
PR-CCCS-1.1.1.11						0	Existing programs and outreach are considered In-Kind. □
PR-CCCS-1.1.1.12						0	Cost accounted for in above action step.
PR-CCCS-2.1.1.1						0	Existing programs and outreach are considered In-Kind. □
PR-CCCS-2.1.1.2	104.5	104.5				209	Cost based on amount of existing levees to set-back. Cost for set-back estimated at \$40/linear ft. Cost of assessment to identify strategic areas is estimated at \$209,000 and should be completed within the first ten years.
PR-CCCS-2.1.1.3	104.5	104.5				209	Total cost cannot be determined due to unknown number of projects at various scales. Support is considered in-kind. Cost of assessment is estimated at \$209,000 and should be completed within the first 10 years.
PR-CCCS-2.1.1.4						0	Cost accounted for in other action steps.
PR-CCCS-3.1.1.1						0	Cost accounted for in above action step.
PR-CCCS-3.1.1.2	104.5	104.5				209	Total costs will vary depending on methods implemented. Cost of assessment is estimated at \$209,000.
PR-CCCS-3.1.1.3	104.5	104.5				209	Total costs will vary depending on methods implemented. Cost of assessment is estimated at \$209,000.
PR-CCCS-5.1.1.1	500					500	Cost based on replacing 5 stream crossings at a rate of approximately \$100,000/site assessment.
PR-CCCS-5.1.1.2						0	Cost accounted for in above action step.
PR-CCCS-5.1.1.3						0	Cost accounted for in above action step.
PR-CCCS-5.1.1.4	2,165					2,165	Cost based on providing passage at 5 dams at a rate of \$433,000/project.
PR-CCCS-5.1.1.5						0	Cost accounted for in above action steps.
PR-CCCS-5.1.1.6						TBD	Costs will vary depending on methods implemented.
PR-CCCS-5.1.1.7	138.00					138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
PR-CCCS-5.1.1.8	209					209	Total costs will vary depending on methods implemented. Cost estimate of design is \$209,000.
PR-CCCS-5.1.1.9						0	Cost accounted for in above action step.
PR-CCCS-5.1.1.10						0	Costs accounted for in above action step.
PR-CCCS-6.1.1.1	22.00	22.00				44	Cost based on treating 1.4 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile. This action step should be coordinated with other action steps to reduce cost and redundancy.
PR-CCCS-6.1.1.2						0	Cost accounted for in above action step.
PR-CCCS-6.1.1.3						0	Cost accounted for in above action step.
PR-CCCS-6.1.2.1						0	Cost accounted for in above action step.
PR-CCCS-6.1.2.2						0	Cost accounted for in other action steps.
PR-CCCS-6.1.3.1						0	Cost accounted for in other action steps.
PR-CCCS-6.1.3.2						0	Cost accounted for in other action steps.
PR-CCCS-6.1.4.1						0	Cost accounted for in other action steps.
PR-CCCS-7.1.1.1						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
PR-CCCS-7.1.1.2	199.00	199.00				398	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$25,000/acre.
PR-CCCS-7.2.1.1						0	Cost accounted for in other action steps.
PR-CCCS-7.2.1.2						TBD	Costs for conservation easements vary.
PR-CCCS-8.1.1.1						0	Cost associated with implementation of other actions steps.
PR-CCCS-8.1.1.2	176.50	176.50				353	Cost based on erosion assessment for 25% of total watershed acres at a rate of \$15/acre.
PR-CCCS-8.1.1.3						0	Costs accounted for in actions related to roads.
PR-CCCS-8.1.1.4						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
PR-CCCS-8.1.1.5						0	Cost accounted for in other action steps.
PR-CCCS-10.1.1.1	1.50					2	Cost based on installing a minimum of 3 temperature loggers at a rate of \$500/logger. Cost does not account for data management or maintenance.
PR-CCCS-10.1.1.2						0	Cost accounted for through implementation of other action steps.
PR-CCCS-10.1.2.1						0	Action is considered In-Kind
PR-CCCS-10.1.2.2						15	Cost based on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station.
PR-CCCS-10.1.2.3						0	Action is considered In-Kind
PR-CCCS-10.1.2.4						0	Hit hydrants will discharge very high volumes of chlorinated water that has the potential to kill an entire steelhead population in a stream. This action could prevent catastrophic loss of steelhead. Action is considered In-Kind
PR-CCCS-11.1.1.1	115.50	115.50				231	Cost based on life history/population size monitoring at a rate of \$231,000/project.

Petaluma River, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PR-CCCS-11.1.1.2	20					20	Restock steelhead according to the lifestage that is most applicable to each tributary. Determine need and locations for smolt imprinting/release stations throughout the watershed together with partners and the community. Cost of evaluation is likely low and could be partially in-kind, estimated at \$20,000.
PR-CCCS-11.1.1.3						0	To better understand changes in sedimentation, monitoring in the basin should include: longitudinal profiles, cross-sections, V*, LWD volume and distribution, and embeddedness. Costs accounted for in other action steps
PR-CCCS-11.1.1.4						0	Cost accounted for in the Monitoring Chapter. Systematic habitat assessments will be part of the Coast Monitoring Plan.
PR-CCCS-11.1.1.5						TBD	Habitat surveys are estimated at \$1500/mile. Costs may be reduced if UACG conduct some of the assessments.
PR-CCCS-12.1.1.1						0	This recommendation should be considered standard practice. Existing programs and outreach are considered in-kind.☐
PR-CCCS-12.1.1.2						0	Cost accounted for in other actions. See Riparian.
PR-CCCS-12.1.1.3						0	Existing programs and outreach are considered In-Kind.☐
PR-CCCS-12.1.1.4						0	Costs accounted for in RIPARIAN
PR-CCCS-12.1.1.5						0	Existing programs and outreach are considered In-Kind.☐
PR-CCCS-12.1.2.1						0	Existing programs and outreach are considered In-Kind.☐
PR-CCCS-12.1.2.2						TBD	Cost based on the number of participants. Cost of completing Farm Conservation Plan estimated at approximately \$100,000 per plan.
PR-CCCS-12.1.2.3	12.5	12.5	12.5	12.5		50	The cost is TBD since the number, location and scope of future erosion control measures is unknown at this time. however, the cost will likely be low if CDFW effectiveness monitoring protocols are used. Cost estimated at \$50,000.
PR-CCCS-12.1.2.4	501					501	Cost based on road inventory of 501 miles of road at a rate of \$1,000/mile.
PR-CCCS-12.2.1.1						TBD	Cost based on amount of off-channel storage needed and willingness of landowners. Cost estimate for off-channel storage \$5,000/site.
PR-CCCS-12.2.1.2						0	Existing programs and outreach are considered In-Kind.☐
PR-CCCS-12.2.1.3						0	Costs are expected to be minimal as some of these efforts will be part of existing programs, however some technical assistance may be necessary from a variety of agencies.
PR-CCCS-12.2.2.1						0	Action is considered in-kind
PR-CCCS-12.2.2.2						0	Soliciting cooperation not expected to cost much outside of already existing federal and state and local salaries. Existing programs and outreach are considered In-Kind.☐
PR-CCCS-12.2.2.3						0	Streamlining permit processing is not expected to cost much, and may save money through future efficiencies.
PR-CCCS-12.2.2.4						TBD	Cost is difficult to estimate at this time, and will be dependent on the linear distance of setbacks and the cost to landowners of lost production from area inside the setback.
PR-CCCS-12.2.3.1						0	Existing programs and outreach are considered In-Kind.☐
PR-CCCS-13.1.1.1						0	Action is considered in-kind
PR-CCCS-13.1.2.1						0	Cost accounted for in above action step.
PR-CCCS-13.1.3.1						0	Action is considered in-kind
PR-CCCS-13.1.3.2						0	Action is considered in-kind
PR-CCCS-13.1.3.3	312	312				625	Cost based on treating 0.7 miles (assume 1 project/mile, 20 acres/mile in 25% high IP) at a rate of \$45,000/acre.
PR-CCCS-13.1.4.1						0	Cost accounted for in other actions.
PR-CCCS-13.1.4.2						0	Cost accounted for in other action steps.
PR-CCCS-13.1.4.3						0	Cost accounted for in other action steps.
PR-CCCS-13.2.1.1						0	Action is considered In-Kind.
PR-CCCS-13.2.1.2						0	Action is considered In-Kind.
PR-CCCS-13.2.1.3						0	Action is considered In-Kind.
PR-CCCS-13.2.1.4						0	Action is considered In-Kind.
PR-CCCS-13.2.1.5						0	Operations conducted normally or with minor modifications are considered In-Kind.
PR-CCCS-13.2.1.6						0	Action is considered In-Kind.
PR-CCCS-13.2.1.7						0	Operations conducted normally or with minor modifications are considered In-Kind.
PR-CCCS-17.1.1.1						0	Action is considered In-Kind.
PR-CCCS-17.1.1.2						0	Action is considered In-Kind.
PR-CCCS-17.1.1.3						TBD	Cost based on amount of stocking to occur. Estimates for steelhead smolt production have not been established. However, estimates for coho smolts is \$0.05/released smolt (NMFS, 2008 pg 66).
PR-CCCS-18.1.1.1						0	Action is considered In-Kind
PR-CCCS-18.1.1.2						0	Action is considered In-Kind
PR-CCCS-18.1.1.3						TBD	Cost based on amount of riparian areas needing exclusion fencing and offstream water source. Estimate for riparian exclusion fencing is \$4/linear ft.
PR-CCCS-18.1.2.1						0	Existing programs and outreach are considered In-Kind.
PR-CCCS-18.1.2.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
PR-CCCS-18.1.2.3	66.33	66.33	66.33	66.33	66.33	398	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of 25,000/acre.
PR-CCCS-18.1.2.4						0	Action is considered In-Kind
PR-CCCS-18.1.2.5						0	Cost should be accounted for as part of riparian exclusion fencing.
PR-CCCS-22.1.1.1						0	Existing programs and outreach are considered In-Kind.
PR-CCCS-22.1.1.2						0	Cost accounted for in RIPARIAN
PR-CCCS-22.1.2.1						0	Action is considered In-Kind
PR-CCCS-22.2.1.1						0	Action is considered In-Kind
PR-CCCS-22.2.1.2						0	Action is considered In-Kind

Petaluma River, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PR-CCCS-22.2.1.3						0	Buffers should be 100 feet. Existing programs and outreach are considered In-Kind. □
PR-CCCS-22.2.1.4						0	Action is considered In-Kind
PR-CCCS-22.2.1.5						TBD	Costs will vary depending on methods implemented.
PR-CCCS-22.2.1.6						0	Action is considered In-Kind
PR-CCCS-22.2.1.7						0	Action is considered In-Kind
PR-CCCS-22.2.2.1						0	Action is considered In-Kind
PR-CCCS-22.2.2.2						0	Action is considered In-Kind
PR-CCCS-22.2.2.3						0	Action is considered In-Kind
PR-CCCS-22.2.3.1						0	Action is considered In-Kind
PR-CCCS-22.2.3.2						0	Effective and consistent implementation of these policies are anticipated to have little cost. Modification of policies may be controversial and costs may be high.
PR-CCCS-22.2.3.3						0	Action is considered In-Kind
PR-CCCS-22.2.3.4						0	Action is considered In-Kind
PR-CCCS-22.2.3.5						0	Stringent review by permitting agencies is expected to reduce costs associated with poorly planned and poorly located developments.
PR-CCCS-23.1.1.1	257.00	257.00				514	Cost based on conducting road inventory for 514 miles of road at a rate of \$1,000/mile.
PR-CCCS-23.1.1.2						TBD	Costs will vary depending on methods implemented.
PR-CCCS-23.1.1.3						TBD	Cost based on road assessment identifying adequate spoils storage sites.
PR-CCCS-23.1.1.4	2,326	2,326	2,326	2,326	2,326	11,628	Cost based on decommissioning 51 miles of road at a rate of \$15,000/mile and upgrading 17 miles of road at a rate of \$25,000/mile.
PR-CCCS-23.1.1.5						0	Action is considered In-Kind
PR-CCCS-23.1.1.6						0	Action is considered In-Kind
PR-CCCS-23.1.2.1						0	Action is considered In-Kind
PR-CCCS-23.1.2.2						0	Incorporating free span bridges into replacement and new construction plans is unlikely to increase costs. Construction of the bridges will likely be much higher but should be considered a BMP and is thus considered in-kind
PR-CCCS-23.1.2.3						0	Cost accounted for as part of road assessment.
PR-CCCS-23.2.1.1						0	Cost to expand an existing program are expected to be minimal.
PR-CCCS-23.2.1.2						0	Existing programs and outreach are considered In-Kind.
PR-CCCS-25.1.1.1						0	Operations conducted normally or with minor modifications are considered In-Kind.
PR-CCCS-25.1.1.2						TBD	Costs will vary depending on methods implemented, and number of diversion screened. Estimate for fish screen is \$64,000/screen.
PR-CCCS-25.1.1.3						0	Promoting water conservation best practices is not expected to result in additional costs.
PR-CCCS-25.1.1.4						0	Costs associated with promoting use of reclaimed water is expected to be minimal.
PR-CCCS-25.1.1.5						0	Costs are minimal to promote. Costs for implementation will depend on the number of participants.
PR-CCCS-25.1.1.6						0	Costs associated with promoting conjunctive use of water is expected to be minimal.
PR-CCCS-25.2.1.1						0	Action is considered In-Kind
PR-CCCS-25.2.1.2						0	Costs to promote this action are expected to be minimal.
PR-CCCS-25.2.1.3						0	Action is considered In-Kind
PR-CCCS-25.2.1.4						0	Additional regulatory authorities may be needed to fully implement this action, and associated costs cannot be determined. However technical assistance may be provided, and associated costs are expected to be minimal.
PR-CCCS-25.2.1.5						0	Cost accounted for in other action steps.

Sonoma Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SoC-CCCS-1.1.1.1	250.00					250	Cost estimate for the development of an estuary rehabilitation and enhancement plan.
SoC-CCCS-1.1.1.2						0	Cost accounted for in above action step.
SoC-CCCS-1.1.1.3	32.00					15	Cost based on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
SoC-CCCS-1.1.1.4						0	Cost accounted for in above action steps.
SoC-CCCS-1.1.1.5						0	Cost accounted for in above action steps.
SoC-CCCS-1.1.1.6	777	777	777	777	777	3,887	Cost based on treating 79 acres (assume 10% total estuarine acres) at a rate of \$49,000/acre.
SoC-CCCS-2.1.1.1	39.50	39.50				79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.
SoC-CCCS-2.1.1.2	115.00	115.00	115.00			345	Cost based on riparian and wetland restoration model at a rate of \$89,000 and \$256,000/project, respectively.
SoC-CCCS-2.1.1.3						0	Cost accounted for in above action step.
SoC-CCCS-2.1.1.4						0	Cost accounted for in above action step.
SoC-CCCS-3.1.1.1						0	Action is considered In-Kind
SoC-CCCS-3.1.1.2	26.33	26.33	26.33			79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.
SoC-CCCS-3.1.1.3						0	Action is considered In-Kind
SoC-CCCS-3.1.1.4						TBD	Cost based on type and amount of passive diversion devices. Additional cost to screen passive diversion devices would also need to be calculated.
SoC-CCCS-3.1.2.1						0	Action is considered In-Kind
SoC-CCCS-3.1.2.2						0	Action is considered In-Kind
SoC-CCCS-3.1.2.3						0	Action is considered In-Kind
SoC-CCCS-3.1.2.4						TBD	
SoC-CCCS-3.1.2.5	26.33	26.33	26.33			79	Cost based on stream flow/precipitation model at a rate of \$79,000/project. This action step may be coordinated with similar action steps to reduce cost or redundancy.
SoC-CCCS-3.1.2.6						0	Action is considered In-Kind
SoC-CCCS-5.1.1.1	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.2	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.3	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.4	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.5	270.00					270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.6	270.00					270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.7	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.8	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.9	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.10	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.11	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.12	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.13	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.14	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.15	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.16	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.17	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.18	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.19	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.20	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.21	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.22	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.23	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.24	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.1.25	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.2.1	46.00	46.00	46.00			138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
SoC-CCCS-5.1.2.2	90.00	90.00	90.00			270	Cost based on adult escapement and juvenile migration at a rate of \$44,000 and \$226,000/project, respectively.
SoC-CCCS-5.1.2.3	962.7	962.4	962.4			2,888	Cost based on number and type of recommendations to employ to improve passage in concrete culverts. Estimate for a new fish ladder in a large waterway is \$1,444,000/ladder. Cost is estimated for 2 ladders for a total of \$2,888,000
SoC-CCCS-6.1.1.1						TBD	
SoC-CCCS-6.1.1.2	138.00					138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
SoC-CCCS-6.1.1.3	140.50	140.50				281	Cost based on treating 9 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile. Cost may be significantly greater if a higher level of oversight and engineering is required such as implementing ELJ which are estimated at \$125,000/ELJ.
SoC-CCCS-6.1.2.1	56.20	56.20	56.20	56.20	56.20	281	Cost based on treating 9 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile. Cost may be significantly greater if a higher level of oversight and engineering is required such as implementing ELJ which are estimated at \$125,000/ELJ. This action step should be coordinated with similar action steps to reduce cost and redundancy.
SoC-CCCS-6.1.2.2						0	Cost accounted for in above action step.
SoC-CCCS-6.1.3.1						0	Cost accounted for in above action steps.

Sonoma Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SoC-CCCS-6.1.4.1	104.5	104.5				209	Cost of assessment estimated at \$209,000 and should be completed within the first 10 years. Final costs TBD based on assessment.
SoC-CCCS-7.1.1.1	382	382	382			1,144	Cost based on treating 4.6 miles (assume 1 project/mile in 25% high IP with 10 acres/mile) at a rate of \$25,000/acre.
SoC-CCCS-7.1.1.2	44.50	44.50				89	Cost based on riparian restoration model at a rate of \$89,000/project.
SoC-CCCS-7.1.1.3						0	Action is considered In-Kind
SoC-CCCS-7.1.1.4						0	Cost accounted for in above action steps.
SoC-CCCS-7.1.1.5						0	Action is considered In-Kind
SoC-CCCS-8.1.1.1						TBD	
SoC-CCCS-8.1.1.2						0	Action is considered In-Kind
SoC-CCCS-8.1.1.3						TBD	Cost based on remediating eroding soils such as gullies in upslope sources. Estimate for gully/landslide stabilization is \$4,000/acre.
SoC-CCCS-10.1.1.1						0	Cost accounted for in other action steps: Riparian
SoC-CCCS-10.1.1.2						TBD	Cost based on appropriate strategies such as storage facilities to reduce groundwater impacts. Estimate for storage facilities ranges from \$100 to \$25,000/facility.
SoC-CCCS-10.1.1.3	0.75	0.75				2	Cost based on installing a minimum of 3 water temperature gauges at a rate of \$500/gauge. Cost does not account for data management or maintenance.
SoC-CCCS-12.1.1.1						0	Action is considered In-Kind
SoC-CCCS-12.1.2.1						0	Action is considered In-Kind
SoC-CCCS-12.1.2.2						0	Action is considered In-Kind
SoC-CCCS-12.1.3.1						0	Action is considered In-Kind
SoC-CCCS-12.1.3.2						0	Action is considered In-Kind
SoC-CCCS-12.1.4.1	3	3	3	3	3	15	Cost based on the number of water diversions used for frost protection. Estimate for water metering devices is \$1,000/logger for an estimated 15 locations for a total of \$15,000.
SoC-CCCS-12.1.5.1						0	Costs accounted for in other recovery actions - see Riparian.
SoC-CCCS-12.1.5.2						0	Action is considered In-Kind
SoC-CCCS-12.1.6.1						TBD	
SoC-CCCS-12.1.6.2						0	Action is considered In-Kind
SoC-CCCS-13.1.1.1						0	Action is considered In-Kind
SoC-CCCS-13.1.1.2						0	Action is considered In-Kind
SoC-CCCS-13.1.2.1						0	Action is considered In-Kind
SoC-CCCS-13.1.2.2						0	Action is considered In-Kind
SoC-CCCS-13.1.2.3						0	Action is considered In-Kind
SoC-CCCS-13.1.2.4	140.50	140.50				281	Cost based on treating 9 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile.
SoC-CCCS-13.1.2.5						0	Action is considered In-Kind
SoC-CCCS-13.1.3.1	411	411	411	411	411	2,054	Cost based on treating 4.6 miles (assume 1 project/mile in 25% high IP with 10 acres/mile) at a rate of \$45,000/acre.
SoC-CCCS-16.1.1.1						0	Action is considered In-Kind
SoC-CCCS-22.1.1.1						0	Action is considered In-Kind
SoC-CCCS-22.1.1.2						TBD	
SoC-CCCS-22.1.2.1						0	Action is considered In-Kind
SoC-CCCS-22.1.2.2	107.20	107.20	107.20	107.20	107.20	536	
SoC-CCCS-22.1.3.1						0	Action is considered In-Kind
SoC-CCCS-22.1.4.1						0	Action is considered In-Kind
SoC-CCCS-23.1.1.1						0	Action is considered In-Kind
SoC-CCCS-23.1.1.2						0	Action is considered In-Kind
SoC-CCCS-23.1.1.3						0	Action is considered In-Kind
SoC-CCCS-23.1.2.1						0	Action is considered In-Kind
SoC-CCCS-23.1.2.2	246.50	246.50				493	Cost based on road inventory of 493 miles of road network at a rate of \$1,000/mile.
SoC-CCCS-23.1.3.1						TBD	Cost based on type and scope of recommendations identified in road assessment.
SoC-CCCS-24.1.1.1						TBD	This action step will rely on development of a hydrologic model, followed by coordination and cooperation with other stakeholders. Cost of model development is TBD.
SoC-CCCS-25.1.1.1						TBD	Cost based on number and type of off-channel storage needed to reduce impacts. Estimate for off-channel storage ranges from \$100 to \$25,000/station.
SoC-CCCS-25.1.1.2	3.3	3.3	3.3			10	Cost based on the number of water diversions without stream gages. Estimate for stream gages is \$1000/gage and may be accounted for in previous action step. An additional 10 gages are estimated to be needed for a total of \$10,000.
SoC-CCCS-25.1.1.3						TBD	
SoC-CCCS-25.2.1.1						0	Action is considered In-Kind

Codornices Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
CodC-CCCS-1.1.1.1	169.50	169.50				339	Cost based on estuary use/residence model at a rate of \$339,000/project.
CodC-CCCS-1.1.1.2	7.50	7.50				15	Cost based on installing a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station.
CodC-CCCS-2.1.1.1	32.0	104.5				209	Total costs will vary depending on methods implemented and extent of rehabilitation. Cost estimated at \$45,000/acre. Cost of assessment is estimated at \$209,000
CodC-CCCS-2.1.1.2	104.5	104.5				209	Total costs will vary depending on methods implemented and extent of rehabilitation. Cost estimated at \$45,000/acre. Cost of assessment is estimated at \$209,000
CodC-CCCS-5.1.1.1						0	Action is considered In-Kind
CodC-CCCS-5.1.1.2	5,666					5,666	Cost based on treating a total of 8 crossings (1 total barrier, 3 partial, 4 unknown) at a rate of \$1,191,000 for total barrier and \$639,000 for partial barriers.
CodC-CCCS-6.1.1.1	104.5	104.5				209	Cost based on treating 1 mile (assume 1 project/mile) at a rate of \$31,000/mile. If ELJ used, estimate \$125,000/ELJ. Cost of assessment is estimated at \$209,000
CodC-CCCS-6.1.2.1						0	Cost accounted for in above action step.
CodC-CCCS-6.1.3.1						0	Cost accounted for in above action step.
CodC-CCCS-7.1.1.1	50.00	50.00				100	Cost based on treating 0.5 miles (assume 1 project/mile in 5% high IP) at a rate of \$200,000/mile
CodC-CCCS-7.1.1.2						0	Existing programs and outreach are considered In-Kind.
CodC-CCCS-8.1.1.1	104.5	104.5				209	Costs will vary depending on methods implemented and extent of rehabilitation. Cost for gravel augmentation estimated at \$40/cu. yd. Cost of assessment is estimated at \$209,000
CodC-CCCS-8.1.1.2						0	Costs will vary depending on methods implemented and extent of rehabilitation. Cost accounted for in above action step (see HABITAT COMPLEXITY and FLOODPLAIN COMPLEXITY).
CodC-CCCS-10.1.1.1	0.75	0.75				2	Cost based on installing a minimum of 3 stream temperature gauges at a rate of \$500/gauge.
CodC-CCCS-10.1.2.1	15.00					15	Cost based on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
CodC-CCCS-13.1.1.1						0	Action is considered In-Kind
CodC-CCCS-13.1.1.2						0	Action is considered In-Kind
CodC-CCCS-13.1.1.3						0	Existing programs and outreach are considered In-Kind.
CodC-CCCS-13.1.1.4	104.5	104.5				209	Total costs will vary depending on methods implemented. Cost of assessment is estimated at \$209,000
CodC-CCCS-13.1.1.5						TBD	Costs for conservation easements vary.
CodC-CCCS-13.1.2.1	321.50	321.50				643	Cost based on treating 0.6 miles (assume 1 project/mile in 25% of flood channel) at a rate of \$1,070,000/mile.
CodC-CCCS-13.1.2.2	104.5	104.5				209	Cost based on amount of impervious soils contributing to increased runoff and methods to treat. Flood retention basins, engineered wetlands, and bypass channels are potential possibilities. Cost of assessment is estimated at \$209,000
CodC-CCCS-13.1.3.1						0	Action is considered In-Kind
CodC-CCCS-13.1.3.2						TBD	Costs will vary depending on methods implemented and extent of rehabilitation.
CodC-CCCS-13.1.3.3	316.50	316.50				633	Cost based on treating 0.6 miles (assume 1 project/mile in 25% of flood channel) at a rate of \$1,070,000. This action step should be coordinated with other action steps to reduce cost and redundancy.
CodC-CCCS-13.1.3.4						0	Action is considered In-Kind
CodC-CCCS-13.1.4.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
CodC-CCCS-13.1.4.2						0	Existing programs and outreach are considered In-Kind.
CodC-CCCS-13.1.4.3						0	Existing programs and outreach are considered In-Kind.
CodC-CCCS-13.1.5.1	25.00	25.00				50	Cost based on treating 0.7 acres (assume 10% of total estuarine acres) at a rate of \$49,000/acre. Cost likely higher with greater level of engineering and maintenance involved.
CodC-CCCS-14.1.1.1	104.5	104.5				209	Total cost based on amount of exotic piscivorous fish species to be removed. Cost for invasive fish eradication estimated at \$9/fish. Cost of assessment is estimated at \$209,000
CodC-CCCS-22.1.1.1						0	Existing programs and outreach are considered In-Kind.
CodC-CCCS-22.1.1.2						0	Existing programs and outreach are considered In-Kind.
CodC-CCCS-22.1.1.3						0	Existing programs and outreach are considered In-Kind.
CodC-CCCS-22.1.2.1						TBD	Cost based on amount and size of filter or buffer system needed to reduce pollutants. Cost range from \$8,000/Mgal to \$2,201,000/Mgal.
CodC-CCCS-22.1.2.2	2.50	2.50				5	Cost based on installing a minimum of 5 signs at a cost of \$1,000/sign.
CodC-CCCS-23.1.1.1	33.00	33.00				66	Cost based on amount of road network in riparian corridor. Cost estimated for 66 miles of road at a rate of \$1,000/mile
CodC-CCCS-23.1.2.1						TBD	Costs will vary depending on methods implemented.
CodC-CCCS-23.1.3.1						0	Cost accounted for in above action step.
CodC-CCCS-23.1.3.2						0	Cost accounted for in other action step: PASSAGE

Pinole Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PinC-CCCS-1.1.1.1	169.50	169.50				339	Cost based on estuary use/residence time monitoring at a rate of \$339,000/project.
PinC-CCCS-1.1.1.2						5,000	
PinC-CCCS-2.1.1.1	32	1,786				3,572	Cost based on treating 1 mile (assume 80 acres/mile) at a rate of \$45,000/acre.
PinC-CCCS-3.1.1.1	39.50	39.50				79	Cost based on hydrologic model at a rate of 79,000/project.
PinC-CCCS-5.1.1.1						0	Cost accounted for in CHANNEL MODIFICATION.
PinC-CCCS-5.1.1.2						0	Action is considered In-Kind
PinC-CCCS-5.1.1.3	448.00					448	Cost based on treating 1 partial barrier at a rate of \$448,000/project.
PinC-CCCS-6.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration monitoring at a rate of \$138,000/project. Cost to implement projects is TBD and dependent on the methods used and amount.
PinC-CCCS-6.1.2.1						0	Cost accounted for in above action step.
PinC-CCCS-6.1.3.1	16.00	16.00				32	Cost based on treating 1 mile (assume 1 project/mile) at a rate of \$32,000/mile.
PinC-CCCS-7.1.1.1						0	Action is considered In-Kind
PinC-CCCS-7.1.2.1						0	Cost accounted for in ESTUARY actions.
PinC-CCCS-7.1.3.1						TBD	
PinC-CCCS-8.1.1.1	104.5	104.5				209	Cost of assessment is estimated at \$209,000. Cost of implementation will be determined based on the assessment.
PinC-CCCS-8.1.1.2	16.00	16.00				32	Cost based on treating 1 mile (assume 1 project/mile) at a rate of \$32,000/mile
PinC-CCCS-8.1.1.3	8.00	8.00				16	Cost based on erosion assessment for 10% of total watershed acres at a rate of \$15/acre. Cost of implementation will be determined based on the assessment.
PinC-CCCS-10.1.1.1	0.75	0.75				2	Cost based on installing a minimum of 3 temperature gauges at a rate of \$500/gauge.
PinC-CCCS-10.1.2.1	7.50	7.50				15	Cost based on installing 3 continuous monitoring gauges at a rate of \$5,000/gauge.
PinC-CCCS-10.1.2.2						0	Action is considered In-Kind
PinC-CCCS-10.1.2.3						0	Action is considered In-Kind
PinC-CCCS-10.1.2.4						0	Action is considered In-Kind
PinC-CCCS-11.1.1.1						0	Cost accounted for in monitoring chapter
PinC-CCCS-12.1.1.1						0	Action is considered In-Kind
PinC-CCCS-13.1.1.1						0	Action is considered In-Kind
PinC-CCCS-13.1.1.2						0	Action is considered In-Kind
PinC-CCCS-13.1.1.3						0	Action is considered In-Kind
PinC-CCCS-13.1.1.4						0	Action is considered In-Kind
PinC-CCCS-13.1.1.5						TBD	
PinC-CCCS-13.1.2.1						0	Costs accounted for in above actions.
PinC-CCCS-13.1.2.2	104.5	104.5				209	Total cost will be based on amount of urban runoff entering streams during spawning and migration season. Methods to remedy may include flood basins, bypass channels, and storm drain retrofits. Cost of strategy development is estimated at \$209,000
PinC-CCCS-13.1.3.1						0	Cost accounted for in above action step.
PinC-CCCS-13.1.3.2						0	Cost accounted for in above action step.
PinC-CCCS-13.1.3.3						0	Cost accounted for in above action step.
PinC-CCCS-13.1.3.4						0	Action is considered In-Kind
PinC-CCCS-13.1.4.1						0	Costs accounted for in above actions.
PinC-CCCS-13.1.4.2						0	Action is considered In-Kind
PinC-CCCS-13.1.4.3						0	Action is considered In-Kind
PinC-CCCS-13.1.5.1	25.00	25.00				50	Cost based on treating 1 acre (assume 10% of total estuarine acres) at a rate of \$49,000/acre.
PinC-CCCS-13.1.5.2	104.5	104.5				209	Total cost will be based on amount of structures to be removed. Cost may be significantly more than implementing stream complexity projects estimated at \$31,000/mile. Cost of assessment is estimated at \$209,000
PinC-CCCS-14.1.1.1	104.5	104.5				209	Total cost based on amount of exotic piscivorous fish species to be removed. Cost for invasive eradication estimated at \$9/fish. Cost of assessment is estimated at \$209,000
PinC-CCCS-18.1.1.1	75	75				150	Cost based on amount of off-stream waters sources needed. Cost estimated for 30 sites at \$5,000 each for a total of \$150,000.
PinC-CCCS-18.1.1.2						0	Action is considered In-Kind
PinC-CCCS-18.1.1.3						0	Action is considered In-Kind
PinC-CCCS-18.1.1.4	2.90	2.90				6	Cost based on treating 0.25 miles at a rate of \$4/ft.
PinC-CCCS-21.1.1.1						TBD	
PinC-CCCS-22.1.1.1						0	Action is considered In-Kind
PinC-CCCS-22.1.1.2						0	Action is considered In-Kind
PinC-CCCS-22.1.1.3						0	Action is considered In-Kind
PinC-CCCS-22.1.2.1						TBD	Cost based on amount and size of filter or buffer system needed to reduce pollutants. Cost range from \$8,000/Mgal to \$2,201,000/Mgal.
PinC-CCCS-22.1.2.2	2.50	2.50				5	Cost based on installing a minimum of 5 signs at a cost of \$1,000/sign.
PinC-CCCS-23.1.1.1	43.50	43.50				87	Cost based on road inventory of 87 miles of road at a rate of \$1,000/mile. Medium and high priority sediment sites should be identified from road inventory. Cost of assessment is included in action step below.
PinC-CCCS-23.1.1.2	104.5	104.5				209	Cost of assessment is estimated at \$209,000
PinC-CCCS-23.1.2.1						0	Action is considered In-Kind
PinC-CCCS-23.1.2.2						0	Action is considered In-Kind
PinC-CCCS-23.1.3.1						0	Action is considered In-Kind

Pinole Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PinC-CCCS-23.1.3.2	640					640	Cost based on improving passage at 1 partial barrier (not counting Highway 80) at a rate of \$639,000/project.
PinC-CCCS-23.1.3.3						TBD	
PinC-CCCS-25.1.1.1	39.50	39.50				79	Cost based on hydrologic model at a rate of \$79,000/project. Cost could be coordinated with above action step.

San Leandro Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SanLC-CCCS-1.1.1.1	169.50	169.50				339	Cost based on estuary use/residence time model at a rate of \$339,000/project.
SanLC-CCCS-1.1.1.2	122.50	122.50				245	Cost based on treating 5 acres of estuarine habitat at a rate of \$49,000/acre.
SanLC-CCCS-1.1.1.3	32.00	7.50				15	Cost based on installing a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
SanLC-CCCS-1.1.1.4						0	Cost accounted for in above action step.
SanLC-CCCS-1.1.1.5						0	Cost accounted for in above action step.
SanLC-CCCS-2.1.1.1	357.50	357.50				715	Cost based on treating 0.2 miles (assume 1 project/mile in 25% high IP) at a rate of \$45,000/acre.
SanLC-CCCS-3.1.1.1						TBD	
SanLC-CCCS-3.1.1.2	104.5	104.5				209	Cost of assessment is estimated at \$209,000
SanLC-CCCS-3.1.1.3						0	Action is considered In-Kind
SanLC-CCCS-3.1.1.4	71.00					71	Cost based on production, run timing, and size monitoring at a rate of \$71,000/project.
SanLC-CCCS-5.1.1.1	125.00					125	Cost estimate for conducting feasibility study for fish passage at Lake Chabot.
SanLC-CCCS-5.1.1.2						0	Cost accounted for in HYDROLOGY
SanLC-CCCS-5.1.1.3	1,191					1,191	Cost based on improving passage at 1 barrier (Marlow Ave Weir) at a rate of \$1,191,000/barrier. (Chabot Dam not considered in this action)
SanLC-CCCS-5.1.1.4	104.5	104.5				209	Cost of assessment is estimated at \$209,000
SanLC-CCCS-6.1.1.1	6.50	6.50				13	Cost based on treating 0.4 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile. Cost could be higher with greater engineering and oversight.
SanLC-CCCS-6.1.2.1	6.50	6.50				13	Cost based on treating 0.4 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile. Cost could be higher with greater engineering and oversight. this action step should be coordinated with other action step to reduce cost and redundancy.
SanLC-CCCS-6.1.3.1	6.50	6.50				13	Cost based on treating 0.4 miles (assume 1 project/mile in 50% high IP) at a rate of \$31,000/mile. Cost could be higher with greater engineering and oversight. this action step should be coordinated with other action step to reduce cost and redundancy.
SanLC-CCCS-7.1.1.1	124.00					124	Cost based on treating 0.5 miles (assume 1 project/mile with 10 acres/mile) at a rate \$25,000/acre.
SanLC-CCCS-7.1.1.2						0	Action is considered In-Kind
SanLC-CCCS-8.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project. Cost for amount and quality of gravel needed is estimated at \$40/cu.yd.
SanLC-CCCS-8.1.1.2						0	Cost accounted for in HABITAT COMPLEXITY.
SanLC-CCCS-10.1.1.1	1.50					2	Cost based on installing a minimum of 3 stream flow temperature gauges at a rate of \$500/gauge. Cost does not account for data management or maintenance.
SanLC-CCCS-10.1.2.1						0	Action is considered In-Kind
SanLC-CCCS-10.1.2.2	104.5	104.5				209	Cost of assessment and mapping estimated at \$209,000. Final cost of replace septic system will be determined by assessment.
SanLC-CCCS-10.1.2.3						TBD	
SanLC-CCCS-13.1.1.1						0	Action is considered In-Kind
SanLC-CCCS-13.1.1.2						0	Action is considered In-Kind
SanLC-CCCS-13.1.1.3						0	Action is considered In-Kind
SanLC-CCCS-13.1.1.4						0	Action is considered In-Kind
SanLC-CCCS-13.1.1.5						TBD	
SanLC-CCCS-13.1.2.1						0	Costs accounted for in above recovery actions.
SanLC-CCCS-13.1.2.2	175	175				350	Cost based on amount and type of strategies needed to reduce urban runoff. Cost estimate for infiltration ponds ranges between \$12,000 to \$35,000/pond. We estimated that 10 ponds would be needed at \$35,000 per pond for a total of \$350,000.
SanLC-CCCS-13.1.3.1						0	Action is considered In-Kind
SanLC-CCCS-13.1.3.2						0	Cost accounted for in other action steps.
SanLC-CCCS-13.1.3.3						0	Cost accounted for in other action steps: Habitat Complexity and Floodplain Connectivity.
SanLC-CCCS-13.1.3.4						0	Action is considered In-Kind
SanLC-CCCS-13.1.4.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
SanLC-CCCS-13.1.4.2						0	Action is considered In-Kind
SanLC-CCCS-13.1.4.3						0	Action is considered In-Kind
SanLC-CCCS-13.1.5.1	104.5	104.5				209	Cost to be determined based on the number and type of structures found and the feasibility of their removal. Cost of assessment is estimated at \$209,000.
SanLC-CCCS-14.1.1.1	104.5	104.5				209	Total cost based on amount of exotic piscivorous fish species to be removed. Cost for invasive fish eradication estimated at \$9/fish. Cost of assessment is estimated at \$209,000.
SanLC-CCCS-22.1.1.1						0	Action is considered In-Kind
SanLC-CCCS-22.1.1.2						0	Action is considered In-Kind
SanLC-CCCS-22.1.1.3						0	Action is considered In-Kind
SanLC-CCCS-22.1.2.1						TBD	Cost based on amount of system needed to reduce pollutants to level protective of sensitive species. Cost estimate for filter or buffer of pollutants ranges between \$8,000 to \$2,200,000/Mgal.
SanLC-CCCS-22.1.2.2	2.50	2.50				5	Cost based on placing a minimum of 5 signs at a rate of \$1,000/sign.
SanLC-CCCS-23.1.1.1						TBD	Cost to be determined following an analysis of the road network. Methods for treating sediment sources varies.
SanLC-CCCS-23.1.2.1						TBD	Cost based on recommendations identified in road assessment.
SanLC-CCCS-23.1.2.2						0	Action is considered In-Kind
SanLC-CCCS-23.1.3.1						0	Action is considered In-Kind
SanLC-CCCS-25.1.1.1						0	Action is considered In-Kind

San Leandro Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SanLC-CCCS-25.1.1.2						0	Cost accounted for in HABITAT COMPLEXITY and FLOODPLAIN COMPLEXITY.
SanLC-CCCS-25.1.2.1						0	Action is considered in-kind
SanLC-CCCS-25.1.2.2						0	Action is considered in-kind
SanLC-CCCS-25.1.2.3						0	Action is considered in-kind
SanLC-CCCS-25.1.2.4						0	Action is considered in-kind
SanLC-CCCS-25.1.2.5						0	Action is considered in-kind
SanLC-CCCS-25.1.2.6	79.00					79	Cost based on stream flow/precipitation model at a rate of \$78,000/project.
SanLC-CCCS-25.1.2.7						0	Cost accounted for in above action step.

San Lorenzo Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SLoA-CCCS-1.1.1.1	2.50	2.50	2.50	2.50	2.50	50	Cost based on treating 1 acre (assume 10% of total estuarine habitat) at a rate of \$49,000/acre. Cost could be higher depending on engineering and oversight.
SLoA-CCCS-1.1.1.2	100					100	Developing guidelines may only take several years and less than \$100k. However, implementing recommendations may take several decades and cost millions of dollars. Thus, the total cost is difficult to estimate at this time since the future recommendations are unknown at this time. Cost of assessment estimated at \$100,000 and is estimated to be done in 5 years.
SLoA-CCCS-1.1.1.3	32					TBD	
SLoA-CCCS-2.1.1.1	536	536				1,072	Cost based on treating 0.3 miles (assume 1 project/mile with 80 acres/mile) at a rate of \$45,000/acre.
SLoA-CCCS-2.1.1.2						TBD	The number, scope and duration of actions is unknown at this time.
SLoA-CCCS-3.1.1.1						0	Action is considered In-Kind
SLoA-CCCS-3.1.1.2	104.5	104.5				209	Total cost will be determined by assessment. Cost of assessment is estimated at \$209,000 and should be completed within the first ten years.
SLoA-CCCS-3.1.1.3	39.00	39.00				78	Cost based on stream flow/precipitation model at a rate of \$78,000/project.
SLoA-CCCS-3.1.1.4						0	Action is considered In-Kind
SLoA-CCCS-3.1.1.5						0	Using NMFS guidelines not expected to result in higher costs. Action is considered In-Kind
SLoA-CCCS-3.1.1.6						0	Cost is expected to be low and already captured through existing state and federal resources. Action is considered In-Kind
SLoA-CCCS-3.1.1.7						0	Requesting SWRCB review water uses in San Lorenzo Creek is not expected to cost more than already allocated staff time. Action is considered In-Kind
SLoA-CCCS-3.1.1.8	1.5	1.5				3	Cost based on a minimum of 3 stream flow gauges at a rate of \$1,000/gauge. Cost does not account for data management or maintenance.
SLoA-CCCS-3.1.1.9	104.5	104.5				209	Total cost is TBD since the potential solutions are not yet known and will result from the future study. Cost of assessment is estimated at \$209,000 and should be completed within the first ten years.
SLoA-CCCS-5.1.1.1	150					150	Cost is an estimate for passage assessment, prioritization, and feasibility study. Costs for addressing passage will be determined following an assessment, prioritization, and feasibility plan.
SLoA-CCCS-5.1.1.2	150					150	Cost is an estimate for passage assessment, prioritization, and feasibility study. Costs for addressing passage will be determined following an assessment, prioritization, and feasibility plan.
SLoA-CCCS-5.1.1.3	150					150	Cost is an estimate for passage assessment, prioritization, and feasibility study. Costs for addressing passage will be determined following an assessment, prioritization, and feasibility plan.
SLoA-CCCS-5.1.1.4						TBD	
SLoA-CCCS-5.1.1.5	104.5	104.5				209	Cost of assessment is estimated at \$209,000.
SLoA-CCCS-5.1.1.6	104.5	104.5				209	Cost of assessment is estimated at \$209,000.
SLoA-CCCS-5.1.1.7	104.5	104.5				209	Cost of assessment is estimated at \$209,000.
SLoA-CCCS-5.1.1.8						TBD	Cost will be determined by assessment (earlier action step).
SLoA-CCCS-5.1.1.9	104.5	104.5				209	Cost of assessment is estimated at \$209,000.
SLoA-CCCS-6.1.1.1						0	Action is considered In-Kind
SLoA-CCCS-6.1.1.2						0	Action is considered in-kind
SLoA-CCCS-6.1.1.3	16.00	16.00				32	Cost based on treating 0.5 mile (assume 1 project/mile in 50% high IP) at a rate of \$32,000/mile. Cost likely higher with greater engineering and oversight.
SLoA-CCCS-6.1.1.4	34.50	34.50	34.50	34.50		138	Cost based on fish/habitat restoration model at a rate of \$138,000/project. Cost for individual projects accounted for in above action steps.
SLoA-CCCS-6.1.1.5						0	Maintenance responsibilities and costs are usually incorporated into the restoration project agreement, and are not likely to have a separate cost. Action is considered In-Kind
SLoA-CCCS-6.1.1.6	209.0					209	Cost of assessment is estimated at \$209,000.
SLoA-CCCS-7.1.1.1	25.00	25.00	25.00	25.00		100	
SLoA-CCCS-7.1.1.2						0	Cost accounted for in HABITAT COMPLEXITY.
SLoA-CCCS-7.1.1.3						0	Cost accounted for in RIPARIAN.
SLoA-CCCS-7.1.1.4						0	Cost accounted for in another action step
SLoA-CCCS-7.1.1.5						0	Promoting conservation measures is a low cost undertaking. Action is considered In-Kind
SLoA-CCCS-8.1.1.1	25.00	25.00				50	
SLoA-CCCS-8.1.1.2	104.5	104.5				209	Total cost is TBD since the number, scope, and location of future projects is unknown. Cost of assessment is estimated at \$209,000 and should be completed within the first 10 years.
SLoA-CCCS-10.1.1.1						0	Cost unknown since number and scope of future projects are unknown. However, riparian planting is generally a low-cost restoration action (approximately \$37k/acre (NMFS 2008)). Cost likely accounted for in other action steps.
SLoA-CCCS-10.1.2.1						TBD	Cost based on installing a minimum of 3 continuous monitoring stations at a rate of \$5,000/station. Cost estimate for filter or buffer systems for pollutant ranges between \$8,000 to \$2,200,000/Mgal.
SLoA-CCCS-10.1.2.2						0	This recommendation should be part of ongoing urban improvements. Action is considered In-Kind
SLoA-CCCS-10.1.2.3						0	Cost accounted for in above action step.
SLoA-CCCS-11.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project. Additional parameters likely will increase overall cost of model.
SLoA-CCCS-11.1.1.2						0	Action is considered In-Kind
SLoA-CCCS-11.1.1.3	50	50	50	50	50	1,000	Cost is uncertain since the number, location and scope of future restoration actions is unknown. However, the cost per individual project is approximately \$100,000 and is estimated for 10 projects for a total of \$1,000,000.
SLoA-CCCS-13.1.1.1						TBD	Cost based on amount of levees to be set-back to improve habitat/channel conditions. Cost estimate for set-back levee is \$40/linear foot.
SLoA-CCCS-13.1.1.2						0	Action is considered In-Kind
SLoA-CCCS-13.1.1.3						0	BMP not expected to have any associated costs.

San Lorenzo Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SLoA-CCCS-13.1.1.4						0	BMP that is not expected to increase project costs.
SLoA-CCCS-13.1.1.5	104.5	104.5				209	Cost uncertain since number, scope and location of future projects is unknown at this time. Cost of assessment is estimated at \$209,000 and should be investigated within the first 10 years.
SLoA-CCCS-13.1.2.1						0	Cost associated with design changes to levees is expected to be small.
SLoA-CCCS-13.1.2.2						TBD	Cost is TBD since the number and size of future levee development is unknown at this time.
SLoA-CCCS-13.1.2.3						0	Avoiding development in sensitive habitat is not expected to appreciably increase project costs.
SLoA-CCCS-22.1.1.1						TBD	Investigating funding larger detention devices is not expected to cost much. Implementing the devices will be much more expensive.
SLoA-CCCS-22.1.1.2						TBD	Number, location and scope of future projects is uncertain at this time.
SLoA-CCCS-22.1.1.3						0	Encouraging landowners to restore floodplain areas is not expected to cost much.
SLoA-CCCS-22.1.2.1						0	Action is considered In-Kind
SLoA-CCCS-22.1.2.2	99.50	99.50				199	Cost based on treating 0.1 mile (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$25,000/acre.
SLoA-CCCS-22.1.2.3						TBD	Institutionalizing programs to purchase land is not expected to be much cost. Buying the land, on the other hand, is likely to be very expensive. Cost based on fair market value, land turnover, and participation from landowners.
SLoA-CCCS-22.1.2.4						0	Cost of identifying and developing incentives to landowners expected to be low.
SLoA-CCCS-22.1.3.1						0	Action is considered In-Kind
SLoA-CCCS-22.1.3.2						0	Cost of training and encouraging partners to maintain riparian health is expected to be low.
SLoA-CCCS-22.1.4.1						0	Implementing the BMP is not expected to be very costly.
SLoA-CCCS-22.1.4.2						0	Cost of implementing the BMP is expected to be low.
SLoA-CCCS-22.1.4.3	45.00					45	Cost base on erosion assessment of 10% of total watershed acres at a rate of \$15/acre.
SLoA-CCCS-22.1.4.4						0	Cost of implementing the BMP is expected to be low.
SLoA-CCCS-22.1.4.5						0	Cost of implementing the BMP is expected to be low.
SLoA-CCCS-22.1.4.6	50.00					50	Estimated cost of \$50,000 for an assessment. Cost of other resulting mitigation is unknown since the number, location and scope of future projects is not known.
SLoA-CCCS-22.1.4.7						0	Cost of implementing performance standards is likely low.
SLoA-CCCS-22.2.1.1						0	This recommendation should be considered standard practice.
SLoA-CCCS-22.2.1.2						TBD	The cost of implementing the this BMP is uncertain at this time.
SLoA-CCCS-22.2.1.3						0	Cost of adopting a new policy is considered in-kind.
SLoA-CCCS-22.2.1.4						0	Action is considered In-Kind
SLoA-CCCS-22.2.1.5						0	Action is considered In-Kind
SLoA-CCCS-22.2.1.6						0	Action is considered In-Kind
SLoA-CCCS-22.2.1.7						0	Implementing this BMP is not expected to incur appreciable costs.
SLoA-CCCS-22.2.1.8						0	Cost of ensuring enforcement of existing building permits is expected to be low (i.e., covered as part of already existing enforcement programs).
SLoA-CCCS-22.2.1.9						0	Encouraging the county on the above issue is not likely to incur any costs outside of the duties of already salaried state and federal workers. Action is considered In-Kind
SLoA-CCCS-23.1.1.1						0	Action is considered In-Kind
SLoA-CCCS-23.1.1.2						0	Fish passage forum and other collaborative evaluations are already in place. Action is considered In-Kind
SLoA-CCCS-23.1.1.3	100.00					100	Estimated cost for development of plan.
SLoA-CCCS-23.1.1.4						0	Action is considered In-Kind
SLoA-CCCS-23.1.1.5	100.00					100	Development of a Road Sediment Reduction Plan may cost up to \$100,000.
SLoA-CCCS-23.1.1.6						0	No cost associated with using best management practices. Action is considered In-Kind
SLoA-CCCS-23.1.1.7						TBD	
SLoA-CCCS-23.2.1.1						TBD	Utilizing more stringent road standards will likely increase costs to a small degree.
SLoA-CCCS-23.2.1.2						TBD	Utilizing more stringent crossing standards will likely increase costs to a small degree.
SLoA-CCCS-23.2.1.3						0	Action is considered In-Kind. Restricting or limiting winter use of trouble roads is not likely to incur high costs.
SLoA-CCCS-23.2.1.4						0	Action is considered in-kind.
SLoA-CCCS-23.2.1.5						0	Action is considered in-kind.
SLoA-CCCS-23.2.1.6	100.00					100	Estimated cost of plan development
SLoA-CCCS-23.2.1.7						TBD	

San Pablo Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SPab-CCCS-1.1.1.1						0	Cost accounted for in CHANNEL MODIFICATION.
SPab-CCCS-1.1.1.2	344.50	344.50				689	Cost based on treating 14 acres (assume 25% total estuarine acres) at a rate of \$49,000/acres.
SPab-CCCS-1.1.1.3	32.00					15	Cost based on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
SPab-CCCS-2.1.1.1	446.50	446.50				893	Cost based on treating 0.25 miles (assume 1 project/mile in 25% high IP with 80 acres/mile) at a rate of \$45,000/acre.
SPab-CCCS-3.1.1.1	39.50	39.50				79	Cost based on stream flow/precipitation model at a rate of \$78,000/project.
SPab-CCCS-5.1.1.1	250					250	Cost is an estimate for the assessment and feasibility studies for fish passage at San Pablo and Briones reservoirs.
SPab-CCCS-5.1.1.2	209					209	Cost to develop schedule estimated at \$209,000.
SPab-CCCS-5.1.1.3	9,000					9,000	Cost based on providing passage at two known total barriers. Giant Road barrier and Hwy 80. Cost estimate informed by EBMUD \$4.5 million/project.
SPab-CCCS-6.1.1.1	8.00	8.00				16	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$32,000/mile. Cost likely to be higher if greater level of oversight and engineering are used, such as implementation of ELJ.
SPab-CCCS-6.1.2.1	8.00	8.00				16	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$32,000/mile. Cost likely to be higher if greater level of oversight and engineering are used, such as implementation of ELJ.
SPab-CCCS-6.1.3.1	8.00	8.00				16	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$32,000/mile. Cost likely to be higher if greater level of oversight and engineering are used, such as implementation of ELJ.
SPab-CCCS-7.1.1.1	44.50	44.50				89	Cost based on riparian restoration assessment at a rate of \$89,000/project.
SPab-CCCS-7.1.1.2						0	Action is considered In-Kind
SPab-CCCS-8.1.1.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
SPab-CCCS-8.1.1.2	8.00	8.00				16	Cost based on treating 0.5 miles (assume 1 project/mile in 50% high IP) at a rate of \$32,000/mile.
SPab-CCCS-10.1.1.1	0.75	0.75				2	Cost based on installing a minimum of 3 water temperature gauges at a rate of \$500/gauge.
SPab-CCCS-10.1.2.1	7.50	7.50				15	Cost based on installing a minimum of 3 continuous water quality monitoring stations at a rate of \$5,000/station.
SPab-CCCS-13.1.1.1						0	Action is considered In-Kind
SPab-CCCS-13.1.1.2						0	Action is considered In-Kind
SPab-CCCS-13.1.1.3						0	Action is considered In-Kind
SPab-CCCS-13.1.1.4						0	Action is considered In-Kind
SPab-CCCS-13.1.2.1						0	Costs accounted for in other recovery action steps: Floodplain Connectivity
SPab-CCCS-13.1.2.2	104.5	104.5				209	Total cost based on number and type of strategies implemented such as off-channel storage, filter strips, and reducing impervious surfaces. Cost of assessment estimated at \$209,000.
SPab-CCCS-13.1.3.1						0	Action is considered In-Kind
SPab-CCCS-13.1.3.2						0	Costs accounted for in other recovery actions.
SPab-CCCS-13.1.3.3						0	Costs accounted for in other recovery actions.
SPab-CCCS-13.1.3.4						0	Action is considered In-Kind
SPab-CCCS-13.1.4.1	69.00	69.00				138	Cost based on fish/habitat restoration model at a rate of \$138,000/project.
SPab-CCCS-13.1.4.2						0	Action is considered In-Kind
SPab-CCCS-13.1.4.3						0	Action is considered In-Kind
SPab-CCCS-13.1.5.1	169.50	169.50				339	Cost based on estuary use/residence time model at a rate of \$339,000/project.
SPab-CCCS-13.1.5.2	104.5	104.5				209	Total cost based on type and amount of structures impairing or reducing historical tidal prism. Assume the cost comparable to implementing stream complexity action steps. Cost of assessment estimated at \$209,000.
SPab-CCCS-22.1.1.1						0	Action is considered In-Kind
SPab-CCCS-22.1.1.2						0	Action is considered In-Kind
SPab-CCCS-22.1.1.3						0	Action is considered In-Kind
SPab-CCCS-22.1.2.1						TBD	Cost based on the amount and type of filter or buffer system needed to reduce pollutants being discharged into waterways. Estimate for filter strip is from \$9,000 to \$24,000/system.
SPab-CCCS-22.1.2.2	5.00	5.00				10	Cost based on installing a minimum of 10 signs at a rate of \$1,000/sign.
SPab-CCCS-23.1.1.1	119.00	119.00				238	Cost based conducting a road inventory of 238 miles of road network at a rate of \$1,000/mile.
SPab-CCCS-23.1.1.2						TBD	Cost based on types of recommendations identified in road assessment.
SPab-CCCS-23.1.2.1						TBD	Cost based on recommendations identified in road assessment.
SPab-CCCS-23.1.2.2						0	Action is considered In-Kind
SPab-CCCS-23.1.3.1						0	Action is considered In-Kind
SPab-CCCS-23.1.3.2						0	Cost accounted for in above actions - see Passage.
SPab-CCCS-25.1.1.1						0	Action is considered In-Kind
SPab-CCCS-25.1.1.2						0	Cost accounted for in other action steps CHANNEL MODIFICATION.
SPab-CCCS-25.1.2.1						0	Action is considered In-Kind
SPab-CCCS-25.1.2.2						0	Action is considered In-Kind
SPab-CCCS-25.1.2.3						0	Action is considered In-Kind
SPab-CCCS-25.1.2.4						0	Action is considered In-Kind
SPab-CCCS-25.1.2.5						0	Action is considered In-Kind
SPab-CCCS-25.1.2.6	209					209	Cost of assessment estimated at \$209,000.
SPab-CCCS-25.1.2.7	79.00					79	Cost based on stream flow/precipitation model at a rate of \$79,000/project.

Wildcat Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
WCC-CCCS-1.1.1.1						TBD	Cost based on amount of waste and area impacted by dumping.
WCC-CCCS-1.1.2.1						0	Action is considered In-Kind
WCC-CCCS-1.1.3.1	32.0	104.5				209	Cost of assessment is estimated at \$209,079
WCC-CCCS-1.1.4.1	443.00					443	Cost based to treat 1 mile of levees at a rate of \$41.93/mile.
WCC-CCCS-2.1.1.1						TBD	
WCC-CCCS-2.1.1.2						TBD	Cost based on amount of incised channel to treat.
WCC-CCCS-2.1.1.3	1,071					1,071	Cost based on treating 1 mile at a rate of \$1,070,400/mile.
WCC-CCCS-3.1.1.1						0	Action is considered In-Kind
WCC-CCCS-3.1.1.2	39.50	39.50				79	Cost based on stream flow/precipitation model at a rate of \$78,100/project.
WCC-CCCS-3.1.1.3						0	Action is considered In-Kind
WCC-CCCS-3.1.1.4	3.00					3	Cost based on a minimum of 3 stream flow gauges at a rate of \$1,000/gauge. Cost does not account for data management or maintenance.
WCC-CCCS-3.1.1.5	39.50	39.50				79	Cost based on stream flow/precipitation model at a rate of \$78,100/project.
WCC-CCCS-5.1.1.1	4,169	4,169				8,337	Cost based on providing passage at 7 culverts at a rate of \$1,190,974/barrier. Cost for the culvert under I-80 likely to be higher than estimated rate.
WCC-CCCS-5.1.1.2	135.00	135.00				270	Cost based on adult escapement at a rate of \$43,654 and juvenile migration modeling at a rate of \$225,916.
WCC-CCCS-5.1.1.3						TBD	
WCC-CCCS-6.1.1.1	536	536				1,071	Cost based on treating 1 mile (assume 1 project/mile) at a rate of \$1,070,400. Cost could be coupled with FLOODPLAIN CONNECTIVITY.
WCC-CCCS-6.1.1.2						0	Cost accounted for in above action step.
WCC-CCCS-6.1.2.1						0	Cost accounted for in other action steps.
WCC-CCCS-6.1.3.1						0	Action is considered In-Kind
WCC-CCCS-6.1.4.1						0	Action is considered In-Kind
WCC-CCCS-6.1.4.2						0	Action is considered In-Kind
WCC-CCCS-6.1.4.3	8.00	8.00	8.00	8.00		32	Cost based to treat 1 mile (assume 1 project/mile) at a rate of \$31,200/mile. Cost likely higher for greater engineering and oversight.
WCC-CCCS-6.1.4.4	138.00	138.00				276	Conduct habitat assessments according to CDFW/NMFS protocols once every five years. Cost based on fish/habitat restoration model at a rate of \$137,833/project.
WCC-CCCS-7.1.1.1	249.00	249.00				498	Cost based on treating 2 mile with an estimate of 10 acres/mile at a rate of \$24,862/acre.
WCC-CCCS-7.1.1.2	328	328	328			984	Cost based on treating 1 mile (assume 1 project/mile with 20 acres/mile) at a rate of \$49,200/acre.
WCC-CCCS-7.1.1.3	89.50	89.50				179	Cost based on fish/habitat restoration model at a rate of \$178,833/project.
WCC-CCCS-7.1.1.4						0	Action is considered In-Kind
WCC-CCCS-8.1.1.1						0	Cost accounted for in HABITAT COMPLEXITY and FLOOD CONNECTIVITY.
WCC-CCCS-8.1.1.2						0	Cost accounted for in ROADS/RAILROADS.
WCC-CCCS-8.1.1.3						0	Cost accounted for in other action steps.
WCC-CCCS-8.1.1.4	104.5	104.5				209	Total cost based on amount of erosion control projects. Cost estimate at a range of \$3,681/acre plus riparian revegetation at an estimate of \$24,862/acre. Cost of assessment is estimated at \$209,079
WCC-CCCS-10.1.1.1						0	Cost accounted for in other action steps.
WCC-CCCS-10.1.1.2						0	Costs covered under other recovery actions - See Riparian.
WCC-CCCS-10.1.1.3						0	Cost accounted for in other action steps.
WCC-CCCS-10.1.2.1						TBD	Cost for filter or buffer system estimate range between \$8,000 to \$2,200,000/Mgal.
WCC-CCCS-11.1.1.1	89.50	89.50				179	Cost based on fish/habitat restoration model at a rate of \$178,833/project. Cost likely higher for each additional parameter.
WCC-CCCS-11.1.1.2						0	Action is considered In-Kind
WCC-CCCS-11.1.1.3						TBD	Cost is uncertain since the number, location and scope of future restoration actions is unknown. However, the cost per individual project is approximately \$100k.
WCC-CCCS-11.1.1.4						0	Costs associated with assessing population status and trends are covered in the Monitoring Chapter.
WCC-CCCS-11.1.1.5						0	Costs associated with assessing population status and trends are covered in the Monitoring Chapter.
WCC-CCCS-11.1.1.6						0	Action is considered In-Kind
WCC-CCCS-11.1.1.7						0	Cost likely accounted for in other action steps.
WCC-CCCS-13.1.1.1						0	Action is considered In-Kind
WCC-CCCS-13.1.1.2						0	Action is considered In-Kind
WCC-CCCS-13.1.2.1						TBD	
WCC-CCCS-13.1.2.2						0	Action is considered In-Kind
WCC-CCCS-13.1.3.1						0	Action is considered In-Kind
WCC-CCCS-13.1.3.2	104.5	104.5				209	Cost based on amount of set-back levees needed to restore habitat and channel function and value. Cost for levee set-back estimate at \$41.93/linear foot. Estimated cost of assessment is \$209,079.
WCC-CCCS-13.1.3.3						0	Action is considered In-Kind
WCC-CCCS-22.1.1.1						0	Implementing the BMP is not expected to be very costly.
WCC-CCCS-22.1.1.2						0	Implementing the BMP is not expected to be very costly.
WCC-CCCS-22.1.1.3	12.00					12	Cost based on erosion assessment of 10% of total watershed acres at a rate of \$15.14/acre.
WCC-CCCS-22.1.1.4						0	Implementing the BMP is not expected to be very costly.
WCC-CCCS-22.1.1.5						0	Implementing the BMP is not expected to be very costly.
WCC-CCCS-22.1.1.6						0	Assessing efficacy and necessity of ongoing stream maintenance practices are part of existing and subsequent ESA consultations and other permitting requirements.

Wildcat Creek, Central California Coast Steelhead (Interior San Francisco Bay) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
WCC-CCCS-22.1.2.1						0	Action is considered In-Kind
WCC-CCCS-22.1.2.2						0	Cost of training and encouraging partners to maintain riparian health is expected to be low.
WCC-CCCS-22.1.2.3	3.75	3.75	3.75	3.75	3.75	75	Cost estimate from CDFG 2004.
WCC-CCCS-22.1.3.1						0	This recommendation should be considered standard practice.
WCC-CCCS-22.1.3.2						TBD	Cost is TBD since the number, location and scope of future actions is uncertain at this time.
WCC-CCCS-22.1.4.1	20					20	Investigating funding larger detention devices is not expected to cost much. Implementing the devices will be much more expensive. Estimated cost of investigation is \$20,000.
WCC-CCCS-22.1.5.1	5.00					5	Estimated cost for the design and installation of signs and other materials related to education of illegal dumping. Enforcement of these laws are considered In-Kind under existing laws and regulations.
WCC-CCCS-22.1.5.2	2.50					3	Cost for cleanup supplies is estimated to fairly low at a rate of \$500/project.
WCC-CCCS-22.2.1.1						0	Action is considered In-Kind
WCC-CCCS-22.2.1.2						TBD	The cost of implementing the above BMP is uncertain at this time.
WCC-CCCS-22.2.1.3						0	Action is considered In-Kind
WCC-CCCS-22.2.1.4						0	Action is considered In-Kind
WCC-CCCS-22.2.1.5						0	Action is considered In-Kind
WCC-CCCS-22.2.1.6						0	Action is considered In-Kind
WCC-CCCS-22.2.1.7						0	Implementing this BMP is not expected to incur appreciable costs.
WCC-CCCS-22.2.1.8						0	Cost of ensuring enforcement of existing building permits is expected to be low (i.e., covered as part of already existing enforcement programs).
WCC-CCCS-22.2.1.9						0	Encouraging the county is not likely to incur any costs outside of the duties of already salaried state and federal workers.
WCC-CCCS-22.2.1.10						0	Action is considered In-Kind
WCC-CCCS-22.2.2.1						0	Action is considered In-Kind
WCC-CCCS-23.1.1.1	54.50	54.50				109	Cost based on road inventory of 95 miles at a rate of \$1,148/mile.
WCC-CCCS-23.1.1.2						0	Action is considered In-Kind
WCC-CCCS-23.1.1.3						0	Fish passage forum and other collaborative evaluations are already in place.
WCC-CCCS-23.1.1.4	100.00					100	Estimated cost for development of plan.
WCC-CCCS-23.1.1.5	239.50	239.50				479	Cost based for decommissioning 19 miles at a rate of \$25,200/mile. Cost likely higher due to amount of urbanization with riparian corridors and public infrastructure.
WCC-CCCS-23.1.1.6						0	Action is considered In-Kind
WCC-CCCS-23.1.1.7	100.00					100	Development of a Road Sediment Reduction Plan may cost up to \$100,000.
WCC-CCCS-23.1.1.8						0	No cost associated with using best management practices.
WCC-CCCS-23.1.1.9						TBD	Cost based on amount of roads needed to be hydrologically disconnected. Road inventory should identify number and type of roads.
WCC-CCCS-23.1.1.10						0	Action is considered In-Kind
WCC-CCCS-23.2.1.1						TBD	Cost based on amount of sediment delivered from road network.
WCC-CCCS-23.2.1.2						TBD	Utilizing more stringent road standards will likely increase costs to a small degree.
WCC-CCCS-23.2.1.3						0	Limiting winter use on trouble roads is not likely to incur high costs.
WCC-CCCS-23.2.1.4						TBD	Utilizing more stringent crossing standards will likely increase costs to a small degree.
WCC-CCCS-23.2.1.5						0	Action is considered In-Kind
WCC-CCCS-23.2.1.6						0	Implementation of this action should result in no additional costs.
WCC-CCCS-23.2.1.7						TBD	

**Aptos Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs**

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ApC-CCCS-1.1.1.1	209					209	Estimated cost of feasibility and benefits analysis is \$209,000. Cost for planning would not take more than 1-5 years.
ApC-CCCS-1.1.1.2	209					209	Estimated cost of feasibility and benefits analysis is \$209,000. Cost for planning would not take more than 1-5 years.
ApC-CCCS-1.1.1.3	32					8	Cost determined for developing an estuary rehabilitation plan for 9 acres of estuarine habitat at a rate of \$900/acre. Cost for planning would not take more than 1-5 years.
ApC-CCCS-1.1.2.1						0	Action is considered In-Kind
ApC-CCCS-1.1.2.2						0	Cost based on the feasibility of removing infrastructure and adopting management policies to allow stream mouth to breach naturally. Cost to evaluate feasibility accounted for in another estuary action step.
ApC-CCCS-1.1.3.1						0	Action is considered In-Kind
ApC-CCCS-1.1.4.1	385					385	Cost based on treating 50% of 9 acres of estuarine habitat at a rate of \$86,000/acre.
ApC-CCCS-1.1.5.1	119	119				237	Cost based on treating 1 mile of estuary at a rate of \$119,000/ELJ.
ApC-CCCS-1.1.5.2	32	32				64	Cost based on treating 0.5 miles of high IP at a rate of \$86,000/mile for planting and \$41,000/acre of thinning.
ApC-CCCS-1.1.6.1						100	The average cost of replacing the private sewer lateral is on average \$5000 (Source: East Bay Mud) and the assessment is usually less than \$200 per site. Cost estimate is for the replacement of 20 private sewer laterals for a total of \$100,000. The cost will vary with the actual amount that need to be repaired or replaced.
ApC-CCCS-1.1.6.2						0	Action is considered in-kind
ApC-CCCS-1.1.7.1						TBD	Cost of estuary assessment account for in a previous estuary action step.
ApC-CCCS-1.1.7.2	209					209	
ApC-CCCS-1.1.7.3						0	Action is considered In-Kind
ApC-CCCS-1.2.1.1	8	8				15	Cost based on installing a minimum of 3 continuous water quality stations at a rate of \$5,000/station. Cost does not account for data management or maintenance.
ApC-CCCS-1.2.1.2						0	Action is considered In-Kind
ApC-CCCS-1.2.1.3						0	It is likely that some diverters will require more time and interaction on the part of the SWRCB to bring into compliance which is reflected in the tentative cost estimate. Action is considered In-Kind
ApC-CCCS-1.2.1.4						0	Action is considered In-Kind
ApC-CCCS-1.2.1.5	1	1	1	1	1	2	Cost based on increasing and replacing refuse containers.
ApC-CCCS-1.2.1.6	75	75				150	Water quality assessment based on a cost of \$5000/site for continuous monitoring, with a minimum of 3 sites within the lagoon. Cost could be significantly higher if additional sites are needed to identify source of pollution to estuarine water quality.
ApC-CCCS-1.2.2.1						0	Costs will vary and will depend on variation in river mouth configuration. Action is considered In-Kind
ApC-CCCS-1.2.2.2	3					3	Cost of signs varies widely depending on materials used and content. Assume average cost of sign being \$1,000/sign with a minimum of 3 posted near estuary.
ApC-CCCS-1.2.2.3						0	Close coordination by all parties would likely comprise the majority of the costs. Other methods should also be evaluated such as installation of cameras that provide real time oversight. Action is considered In-Kind
ApC-CCCS-2.1.1.1	2300	2300	2300	2300	2300	45994	Costs associated with development and implementation of this program are difficult and will vary significantly depending on market conditions, landowner participation, and programs actually used. We estimated that a conservation easement in Santa Cruz is \$65,000/acre and that assumed 5% of the watershed would be in an easement for a total of \$45,994,000
ApC-CCCS-2.1.1.2	85	85				170	Costs will vary significantly depending on site specific constraints and type of structure constructed. Assuming base application of restoring floodplain, cost based on treating 2 miles (assume 1 project/mile in 25% High IP) at a rate of \$43,000/mile.
ApC-CCCS-6.1.1.1						0	Action is considered In-Kind
ApC-CCCS-6.1.1.2	476					476	Cost based on treating 2 miles (assume 1 project/mile in 25% High IP) at a rate of \$119,000/ELJ. Costs are higher when engineered large wood placement approaches are used. Significant cost savings (and ecological benefits) would likely be realized if unsecured woody material (sized at 1.5 to 2 times bankfull) is used. Additional and very significant cost savings would be realized if natural recruitment into the watershed was allowed to stay in place. Unsecured LWD input should be evaluated for the portion of Aptos managed by State Parks and if feasible, significant cost saving could result over engineered structures.
ApC-CCCS-6.1.1.3						0	Costs would likely be minimal, consisting of staff time for public outreach and outreach materials. Action is considered In-Kind
ApC-CCCS-6.1.1.4						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. Action is considered In-Kind
ApC-CCCS-6.1.1.5						0	Action is considered In-Kind
ApC-CCCS-6.1.1.6						0	Action is considered In-Kind
ApC-CCCS-6.1.1.7						0	Action is considered In-Kind
ApC-CCCS-6.1.2.1	161	161				321	Cost could be minimal if incorporated into ongoing timber harvest plans. Cost for treating 1.2 miles (assume 80 acre/mile in 15% High IP) at a rate of \$2,000/acre.
ApC-CCCS-6.1.3.1						0	Cost accounted for in above action steps (i.e. increase frequency of primary pools).
ApC-CCCS-8.1.1.1						TBD	
ApC-CCCS-8.1.1.2	112					112	A sediment assessment is estimated to cost \$112,000 (assume 5% of total watershed acres at a rate of \$1,500/acre).
ApC-CCCS-8.1.1.3						0	Action is considered In-Kind
ApC-CCCS-8.1.1.4						0	Action is considered In-Kind
ApC-CCCS-8.1.1.5						0	Action is considered In-Kind
ApC-CCCS-8.1.1.6	20					20	Cost based on erosion assessment of 10% of total watershed acres at a rate \$14/acre.
ApC-CCCS-8.2.1.1						0	Action is considered In-Kind
ApC-CCCS-8.2.1.2						0	This should be considered a standard practice by all regulatory agencies. Action is considered In-Kind

**Aptos Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs**

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ApC-CCCS-10.1.1.1	5					5	Temperature monitoring is relatively inexpensive. Cost for stream temperature monitoring estimated at \$500/gauge with a minimum of 10. Cost do not account for maintenance or data management.
ApC-CCCS-10.1.2.1	900	900	900	900		3600	Costs will vary depending on degree of infestation and landowner participation. Cost based on treating 0.25 mile (assume 80 acres/mile-) at a rate of \$45,000/acre.
ApC-CCCS-10.1.2.2	20	20				40	Cost based on installation of continuous monitoring gauges (2) at a rate of \$20,000 each; cost does not account for maintenance and operation.
ApC-CCCS-10.1.3.1						TBD	Cost to upgrade stormwater discharge points cannot be determined at this time, but it may be significant.
ApC-CCCS-10.1.3.2						0	Action is considered In-Kind
ApC-CCCS-10.1.3.3						0	Action is considered In-Kind
ApC-CCCS-10.2.1.1						0	Action is considered In-Kind
ApC-CCCS-10.2.1.2	114	114				227	Cost based on treating 1.2 miles (assume 1 project/mile in 15% high IP with 80 acres/mile) at a rate of \$24,000/acre.
ApC-CCCS-11.1.1.1	131					131	Cost based on fish/habitat restoration model at a rate of \$131,000/project.
ApC-CCCS-11.1.1.2						0	Cost accounted for in Monitoring Chapter.
ApC-CCCS-11.1.1.3						TBD	TBD cost based on the parameters (sediment, erosion, fisheries) needed in watershed plan are highly variable.
ApC-CCCS-13.1.1.1						0	Costs will vary depending on extent and location of streambank work. Gabions and undersized rock are often used because they are cheaper than larger and more stable rock features. USDA estimated stream bank protection projects in general coast about \$125/square foot in California. This recommendation should be considered standard practice. Action is considered In-Kind
ApC-CCCS-13.1.1.2						0	This recommendation should be adopted as standard practice for all agencies and consulting firms involved in actions that address stream stability. Action is considered In-Kind
ApC-CCCS-13.1.1.3						0	This should become standard practice for all agencies and consulting firms engaged in constructing and designing solutions to address channel stability. Action is considered In-Kind
ApC-CCCS-13.1.2.1						0	Cost accounted for in other action steps, i.e. Habitat Complexity, Estuary
ApC-CCCS-13.1.2.2						0	Action is considered In-Kind
ApC-CCCS-14.1.1.1						0	Cost accounted for in WATER QUALITY.
ApC-CCCS-15.1.1.1						0	This recommendation should be considered a standard practice. Action is considered In-Kind
ApC-CCCS-15.1.1.2						0	This recommendation will result in a net cost savings. This recommendation should be considered a standard practice and no additional financial costs are anticipated.
ApC-CCCS-15.1.1.3						0	Implementing erosion control measures when constructing firebreaks (if possible) or shortly thereafter will likely result in a net cost savings. It is much more financially efficient to implement these measures while the fire crews are present rather than months later after the fire is out.
ApC-CCCS-15.1.1.4						0	Action is considered In-Kind
ApC-CCCS-15.1.1.5						0	Action is considered In-Kind
ApC-CCCS-15.1.2.1						0	Action is considered In-Kind
ApC-CCCS-15.1.3.1						0	Action is considered In-Kind
ApC-CCCS-15.1.3.2						0	Action is considered In-Kind
ApC-CCCS-15.1.3.3						0	Action is considered In-Kind
ApC-CCCS-15.2.1.1						0	Action is considered In-Kind
ApC-CCCS-15.2.1.2						0	Action is considered In-Kind
ApC-CCCS-15.2.1.3						0	Action is considered In-Kind
ApC-CCCS-15.2.1.4						0	Action is considered In-Kind
ApC-CCCS-15.2.1.5						0	Action is considered In-Kind
ApC-CCCS-15.2.1.6						0	Action is considered In-Kind
ApC-CCCS-15.2.1.7						0	Action is considered In-Kind
ApC-CCCS-16.1.1.1						0	Action is considered In-Kind
ApC-CCCS-16.1.1.2						0	Action is considered In-Kind
ApC-CCCS-16.1.1.3						0	Action is considered In-Kind
ApC-CCCS-21.1.1.1						0	Development of a management plan should be relatively inexpensive if it draws from existing guidelines and sediment reduction protocols. Action is considered In-Kind
ApC-CCCS-21.1.1.2	29	29				57	Cost will vary depending on trail location and accessibility. Cost based on decommissioning 2 miles of trail at a rate of \$14,000/mile. Cost may be lower for trails due to overall size and footprint and may range from \$3,000 per mile to \$23,000 per mile according to estimates in the State Multispecies Recovery Plan.
ApC-CCCS-21.1.1.3	10					10	Cost for signs vary widely depending on materials used and content of signs. Assume signs average \$500/sign for 20 signs.
ApC-CCCS-21.1.1.4						0	Action is considered In-Kind
ApC-CCCS-22.1.1.1						0	Action is considered In-Kind
ApC-CCCS-22.1.2.1						0	Action is considered In-Kind
ApC-CCCS-22.1.2.2						0	General recommendation that is a best management practice and should be applied to all pre-existing and future landuse activities in the watershed.
ApC-CCCS-22.1.3.1						0	Action is considered In-Kind
ApC-CCCS-22.1.3.2						0	Action is considered In-Kind
ApC-CCCS-22.1.4.1						0	Outreach to landowners already occurs from many of the municipalities and water districts in the watershed. Action is considered In-Kind
ApC-CCCS-22.1.5.1						0	This action encourages implementation of many existing policies. Action is considered In-Kind
ApC-CCCS-22.1.5.2						0	Action is considered In-Kind

**Aptos Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs**

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ApC-CCCS-22.1.5.3						0	Cost accounted for in the conservation easement estimate in FLOODPLAIN CONNECTIVITY
ApC-CCCS-22.1.5.4						0	This recommendation should be considered standard practice. Action is considered In-Kind
ApC-CCCS-22.2.1.1						0	Action is considered In-Kind
ApC-CCCS-22.2.1.2						0	Action is considered In-Kind
ApC-CCCS-22.2.2.1						0	Action is considered In-Kind
ApC-CCCS-22.2.2.2						0	Action is considered In-Kind
ApC-CCCS-22.2.2.3						0	Action is considered In-Kind
ApC-CCCS-22.2.3.1						0	Action is considered In-Kind
ApC-CCCS-22.2.3.2						TBD	
ApC-CCCS-22.2.3.3						0	Action is considered In-Kind
ApC-CCCS-22.2.3.4						0	Existing programs are in place
ApC-CCCS-22.2.3.5						0	Action is considered In-Kind
ApC-CCCS-22.2.4.1						0	Action is considered In-Kind
ApC-CCCS-22.2.4.2						0	Action is considered In-Kind
ApC-CCCS-22.2.4.3						0	Action is considered In-Kind
ApC-CCCS-22.2.5.1						0	Action is considered In-Kind
ApC-CCCS-22.2.5.2						0	Action is considered In-Kind
ApC-CCCS-22.2.5.3						0	Action is considered In-Kind
ApC-CCCS-22.2.5.4						0	Action is considered In-Kind
ApC-CCCS-23.1.1.1						TBD	Cost of implementation will likely be high due to the large amount of existing infrastructure.
ApC-CCCS-23.1.1.2	1315					1315	Cost based on treating five stream crossings at a rate of \$263,000/unit.
ApC-CCCS-23.1.1.3	15	15				30	This action encourages implementation of many existing policies.
ApC-CCCS-23.1.2.1						0	Action is considered In-Kind
ApC-CCCS-23.1.2.2	62	62				124	Cost partially accounted for in SEDIMENT. Cost for road inventory estimated at \$1,056/mile (assume 75% of road network).
ApC-CCCS-23.1.2.3						TBD	Many road associations are inadequately funded. A road improvement fund for the Aptos watershed could address sources of chronic and episodic sediment input by improving drainage features and reducing hydrologic connectivity.
ApC-CCCS-23.1.2.4						0	Cost are likely accounted for with culvert replacement.
ApC-CCCS-23.1.2.5						TBD	
ApC-CCCS-23.1.2.6						TBD	Road inventory accounted for in another action step.
ApC-CCCS-23.1.2.7						TBD	The road inventory should identify the number and type of energy dissipaters needed. Road inventory accounted for in another action step
ApC-CCCS-23.1.2.8						TBD	Cost difficult to determine but may result in a long term cost savings. Current economic conditions will likely delay implementation of this recommendation, if adopted.
ApC-CCCS-23.1.2.9						0	This should be an ongoing program. Existing material can likely be used and tailored to private landowners and agencies with road maintenance staff. Action is considered In-Kind
ApC-CCCS-23.1.2.10	35	35	35	35		140	Cost based on decommissioning 2 miles of riparian and 8 miles of road network at a rate of \$13,680/mile.
ApC-CCCS-23.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
ApC-CCCS-23.1.4.1	1687	1687				3374	According to CDFG (2004) cost estimates can range from 150K to 800K depending on location and type of barrier. Some modified barriers in Santa Cruz have cost more than these estimates. Costs associate with barrier modification must be carefully balanced against other restoration activities that are less popular socially, but may yield greater beneficial affects to various lifestages. Cost based on providing passage (assume urban land use) at 2 total barriers at a rate of \$1,125,000/unit and 2 partial barriers at a rate of \$562,000/unit.
ApC-CCCS-23.1.4.2						0	Action is considered In-Kind
ApC-CCCS-23.1.4.3						TBD	Cost may vary significantly. In more urbanized areas costs will likely be absorbed into SWMP requirements per the RWQCB. Costs in rural areas where these storm water plans are not required may be significant on a project by project basis.
ApC-CCCS-23.1.4.4						0	Action is considered In-Kind
ApC-CCCS-23.1.5.1						TBD	The road inventory should identify species and extent of removal of unwanted vegetation. Road inventory accounted for in another action step
ApC-CCCS-23.1.5.2						0	Action is considered In-Kind
ApC-CCCS-23.2.1.1						0	Action is considered In-Kind
ApC-CCCS-23.2.2.1						0	Road inventory cost accounted for in other recovery actions.
ApC-CCCS-23.2.2.2						0	Action is considered In-Kind
ApC-CCCS-23.2.2.3						0	Action is considered In-Kind
ApC-CCCS-23.2.2.4						0	This should be considered a standard practice by regulatory agencies, however, due to staffing levels regulatory oversight is often inadequate. Action is considered In-Kind
ApC-CCCS-23.2.2.5						0	Action is considered In-Kind
ApC-CCCS-23.2.2.6						0	Action is considered In-Kind
ApC-CCCS-23.2.3.1						0	Action is considered In-Kind
ApC-CCCS-23.2.3.2						0	Action is considered In-Kind
ApC-CCCS-23.2.3.3						0	Action is considered In-Kind
ApC-CCCS-23.2.3.4						0	Action is considered In-Kind
ApC-CCCS-23.2.3.5						0	Action is considered In-Kind
ApC-CCCS-23.2.4.1						0	Action is considered In-Kind
ApC-CCCS-24.1.1.1						0	Cost accounted for in estuary.

Aptos Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ApC-CCCS-24.1.1.2						0	Cost accounted for in ESTUARY.
ApC-CCCS-24.1.1.3						0	Cost accounted for in ESTUARY.
ApC-CCCS-24.1.2.1	74					74	Cost for stream flow modeling estimated at \$74,000/project.
ApC-CCCS-24.1.2.2						0	Action is considered In-Kind
ApC-CCCS-24.1.2.3						0	Action is considered In-Kind
ApC-CCCS-24.1.2.4						TBD	Cost vary depending on landowner participation and feasibility of protective measures.
ApC-CCCS-24.1.3.1						0	Action is considered in-kind.
ApC-CCCS-24.1.3.2						0	Action is considered In-Kind
ApC-CCCS-24.1.4.1						0	Action is considered In-Kind
ApC-CCCS-24.1.4.2						0	Action is considered in-kind.
ApC-CCCS-24.2.1.1						0	Action is considered In-Kind
ApC-CCCS-24.2.1.2						0	Action is considered In-Kind
ApC-CCCS-24.2.1.3						0	Action is considered In-Kind
ApC-CCCS-24.2.1.4						0	Action is considered In-Kind
ApC-CCCS-24.2.1.5						TBD	Cost based on amount and type of conservation strategies needed.
ApC-CCCS-25.1.1.1						0	Cost accounted for stream flow modeling in SEVERE WEATHER PATTERNS.
ApC-CCCS-25.1.2.1						0	Cost for stream flow modeling already accounted for.
ApC-CCCS-25.1.2.2						TBD	
ApC-CCCS-25.1.2.3						0	Promoting action is considered In-Kind. Costs may be significant depending on site conditions and number of devices installed
ApC-CCCS-25.1.2.4						0	Action is considered In-Kind
ApC-CCCS-25.1.2.5	74					74	Cost based on establishing a stream flow/precipitation model first. Additional cost likely be encumbered for reduction in water diversions and restoring natural hydrograph. Cost for stream flow/precipitation model is estimated at \$74,000/project.
ApC-CCCS-25.1.2.6						0	Action is considered In-Kind
ApC-CCCS-25.1.2.7						0	Action is considered In-Kind
ApC-CCCS-25.1.3.1						0	Costs cannot be estimated because the location of illegal diversions are not known, and the quantities of water diverted are unknown. Action is considered In-Kind
ApC-CCCS-25.1.3.2						TBD	Costs will vary depending on methods implemented and number of diversions to be screened.
ApC-CCCS-25.1.4.1						0	Action is considered In-Kind
ApC-CCCS-25.2.1.1						0	Action is considered In-Kind
ApC-CCCS-25.2.1.2						0	Action is considered In-Kind
ApC-CCCS-25.2.1.3						0	Action is considered In-Kind
ApC-CCCS-25.2.1.4						0	Action is considered In-Kind
ApC-CCCS-25.2.1.5						0	Cost accounted for in above action step.
ApC-CCCS-25.2.1.6						0	Action is considered In-Kind
ApC-CCCS-25.2.1.7						0	Action is considered In-Kind
ApC-CCCS-25.2.1.8						0	Action is considered In-Kind
ApC-CCCS-25.2.1.9						0	Action is considered In-Kind

Pescadero Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PeC-CCCS-1.1.1.1	2,109	2,109				4,217	NMFS (2008) estimated floodplain and tributary reconnection could range in cost from \$9,000 to \$81,000 per acre. Costs in Pescadero Marsh would likely be at the higher edge of that estimate range. If side channel restoration is proposed NMFS (2008) estimated cost could range between \$35,000 and \$291,000 per acre. Cost based on treating 15 acres assume 5% of current estuarine extent) at a rate of \$282,000/acre.
PeC-CCCS-1.1.1.2						0	It is likely that some diverters will require more time and interaction on the part of the SWRCB to come into compliance which is reflected in the tentative cost estimate. Action is considered In-Kind
PeC-CCCS-1.1.2.1	32					0	Action is considered In-Kind
PeC-CCCS-1.1.2.2						0	Cost accounted for in increase the extent of estuarine habitat.
PeC-CCCS-1.1.3.1	90.00					90	Cost based on treating 15 acres (assume 5% of total estuarine habitat) at a rate of \$6,000/acre. Cost can be vary widely depending on various experimental approaches to sandbar closure.
PeC-CCCS-1.1.4.1						0	Cost accounted for in other recovery actions.
PeC-CCCS-1.1.5.1						0	This cost should be minimal and should be considered a standard practice by the entity that has granted conservation easements for private properties in the estuary.
PeC-CCCS-1.1.5.2						0	Action is considered In-Kind
PeC-CCCS-1.1.6.1						0	Close coordination by all parties would likely comprise the majority of the costs and are in-kind.
PeC-CCCS-1.1.6.2	0.05	0.05	0.05	0.05	0.05	1	Cost estimate based on best professional judgement
PeC-CCCS-1.1.6.3	1.50	1.50				3	Cost of signage varies widely depending on materials and information. Assume standard rate of \$1,000/sign.
PeC-CCCS-2.1.1.1	73	73	73	73		290	Cost based on treating 6.75 miles (assume 1 project per mile in 25% High IP) at a rate of. The actual number of projects will vary depending on landowner participation and acceptance. Assume standard rate of \$43,000/mile.
PeC-CCCS-2.1.1.2						0	This recommendation should be considered standard practice.
PeC-CCCS-3.1.1.1	14	14	14	14	14	280	Costs will vary depending on landowner participation. Assuming 10,000 gallon water tanks that cost \$7000 each and the purchase of 40 tanks for a total of \$280,000.
PeC-CCCS-3.1.1.2						0	Coordination is considered in-kind. Other cost are accounted for in previous action step.
PeC-CCCS-3.1.1.3						0	Initial focus should be directed towards agricultural practices in the Butano sub-watershed.
PeC-CCCS-3.1.2.1	3,850	3,850				7,700	Significant oversight by regulatory agencies may be required to ensure successful program implementation. Implementation and outreach is anticipated to occur over the entire 100 year recovery horizon due to the large number of diversions in the watershed. Cost are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
PeC-CCCS-3.1.2.2	37.10	37.10				74	Cost for stream flow monitoring estimated at \$74,000/project.
PeC-CCCS-6.1.1.1						0	LWD target could likely be achieved in a relatively short time period of existing if naturally recruited large wood was left intact by landowners. Action is considered In-Kind
PeC-CCCS-6.1.1.2	99.50	99.50	99.50	99.50		398	Assuming universal landowner approval and permission, the cost to install LWD is \$398,000. Cost based on treating 13.5 miles (assume 1 project per mile in 50% High IP) at a rate of \$30,000. 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. If ELJ used, cost would be \$1,556,200. Coordinating instream large wood placement with future timber harvest activities in the watershed could result in substantial cost savings and serve as an opportunity for effective timber harvest plan mitigation.
PeC-CCCS-6.1.1.3						0	Costs may occur if large wood removal continues to occur at current levels following completion of the program. Action is considered in-kind
PeC-CCCS-6.1.1.4						0	Action is considered In-Kind
PeC-CCCS-6.1.1.5	131.00					131	Cost based on fish/habitat restoration at a rate of \$131,000/project
PeC-CCCS-6.1.1.6						0	Retention of wood could result in cost savings for future restoration projects. Action is considered In-Kind
PeC-CCCS-6.1.1.7						0	Costs should be minimal because the bank protection action would likely occur anyway.
PeC-CCCS-6.1.1.8	134.00	134.00	134.00	134.00		536	Cost based on treating 4 miles (assume 80 acres/mile in 15% High IP) at a rate of \$2,000/acre.
PeC-CCCS-6.2.1.1	325.00	325.00				650	
PeC-CCCS-8.1.1.1						TBD	
PeC-CCCS-8.1.1.2						0	Cost are likely minimal if incorporated into general management plan for commercial and residential areas.
PeC-CCCS-8.1.1.3						0	Cost accounted for in ROADS
PeC-CCCS-8.1.1.4						0	Action is considered In-Kind
PeC-CCCS-8.1.2.1						0	Action is considered In-Kind
PeC-CCCS-8.1.2.2						0	Action is considered In-Kind
PeC-CCCS-8.1.2.3						0	Costs accounted for in WATER QUALITY
PeC-CCCS-8.1.2.4	8,742	8,742	8,742	8,742	8,742	174846	Costs associated with development and implementation of this program are difficult and will vary significantly depending on market conditions, landowner participation, and programs actually used. We estimated that a conservation easement in Santa Cruz is \$65,000/acre and that assumed 5% of the watershed would be in an easement for a total of \$174,846,000
PeC-CCCS-8.2.1.1						0	Action is considered In-Kind
PeC-CCCS-8.2.1.2						0	Inspections should be considered a standard business practice by all regulatory agencies and this action should not be considered as an additional cost.
PeC-CCCS-10.1.1.1						TBD	Cost to upgrade stormwater discharge points cannot be determined at this time, but it may be significant.
PeC-CCCS-10.1.1.2						0	Action is considered In-Kind
PeC-CCCS-10.1.1.3						0	Action is considered In-Kind
PeC-CCCS-10.1.1.4						0	Action is considered In-Kind
PeC-CCCS-10.1.2.1						0	Cost accounted for in implementation of other action steps.

Pescadero Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PeC-CCCS-10.1.2.2	315.00	315.00	315.00	315.00	315.00	1,890	The fiscal costs of riparian revegetation or planting depend on the complexity of the project undertaken, the remoteness of the parcel of land to be treated, and the degree of site preparation needed. According to CDFG 2004, Evergreen Funding Consultants suggest a budget of between 5,000 dollars and 135,000 dollars per acre. Cost based on treating 1 mile (assume 5% of high IP with 80 acres/mile)) at a rate of \$24,000/acre.
PeC-CCCS-10.1.3.1						0	Cost associated with CCRWQCB objectives.
PeC-CCCS-10.1.3.2	12.00	12.00				24	Cost based on water quality monitoring at a rate of \$800/site with a minimum of 3.
PeC-CCCS-10.1.3.3						0	Action is considered In-Kind
PeC-CCCS-10.1.3.4						0	Action is considered In-Kind
PeC-CCCS-11.1.1.1	109.17	109.17	43.67			262	Cost based on fish/habitat restoration monitoring at a rate of \$131,000/project
PeC-CCCS-11.1.1.2						TBD	
PeC-CCCS-11.1.1.3						0	Cost for populations status and trends monitoring are accounted for in the Monitoring Chapter.
PeC-CCCS-12.1.1.1						TBD	TBD, based on the number of farmed acres that need improvements to sediment and chemical effluent discharges from agriculture.
PeC-CCCS-12.1.1.2	2.50	2.50	2.50	2.50	2.50	50	Cost estimate would only apply to outreach efforts to the agricultural community.
PeC-CCCS-12.1.2.1	50.00	50.00				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.
PeC-CCCS-12.1.3.1	12.00	12.00				24	Cost based on treating 1 acre (assume 5% of high IP) at a rate of \$24,000/acre. Costs may vary depending on landowner participation and existing landuse.
PeC-CCCS-12.1.3.2						0	Action is considered In-Kind
PeC-CCCS-12.1.3.3						0	Costs will vary depending on the amount of willing landowners participating in the program, market value, and rate of availability. Conservation easements are a cost effective strategy. Cost accounted for in another action step.
PeC-CCCS-13.1.1.1	1	1	1	1	1	10	TBD, cost will vary depending upon the amount and extent of obsolete bank structures. Cost based on treating 1 acre (assume 5% of high IP) at a rate of \$10,000/acre. Additional cost incurred for habitat features such as riparian planting, LWD placement, and non-native species control (which are accounted for in other action steps)
PeC-CCCS-13.1.1.2	37.00					37	NMFS (2008) estimated floodplain and tributary reconnection could range in cost from \$9,000 to \$81,000 per acre. Costs in Pescadero Marsh would likely be at the higher edge of that estimate range. If side channel restoration is proposed NMFS (2008) estimated cost could range between \$35,000 and \$291,000 per acre. Cost based on treating 1 mile (assume 1% of high IP) at a rate of \$37,000/mile for floodplain connectivity.
PeC-CCCS-13.1.1.3	52	52	52	52		209	An evaluation of the number of structures is needed and costs will vary depending on site specific conditions. Cost to perform evaluation estimated at \$209,000.
PeC-CCCS-13.1.1.4	94.00	94.00				188	Cost based on erosion assessment assuming 25% of total watershed acres at a rate of \$14/acre.
PeC-CCCS-13.1.1.5						0	This should be considered a standard practice for all practitioners of instream bank stabilization.
PeC-CCCS-13.1.1.6						0	This should be adopted as standard practice.
PeC-CCCS-13.1.1.7	40.00					40	Policy could be applied to all targeted San Mateo County streams. Estimated cost of developing a new policy and staff time.
PeC-CCCS-14.1.1.1	1,553	1,553	1,553	1,553		6,210	Cost based on treating 2 miles (assume 80 acres/mile in 5% High IP) at a rate of \$39,000/acre.
PeC-CCCS-15.1.1.1						0	This recommendation should be considered a standard practice.
PeC-CCCS-15.1.1.2						0	This recommendation will result in a net cost savings. This recommendation should be considered a standard practice and no additional financial costs are anticipated.
PeC-CCCS-15.1.1.3						0	Implementing erosion control measures when constructing firebreaks (if possible) or shortly thereafter will likely result in a net cost savings. It is much more financially efficient to implement these measures while the fire crews are present rather than months later after the fire is out. Action is considered In-Kind
PeC-CCCS-15.1.1.4						0	Standard practice.
PeC-CCCS-15.1.1.5						0	Action is considered In-Kind
PeC-CCCS-15.1.2.1						0	Action is considered In-Kind
PeC-CCCS-15.1.2.2						0	Action is considered In-Kind
PeC-CCCS-15.1.3.1						0	
PeC-CCCS-15.1.4.1						0	This recommendation should be adopted in areas where human life and infrastructure and not endangered by fire. Action is considered In-Kind
PeC-CCCS-15.1.4.2						0	Action is considered In-Kind
PeC-CCCS-15.1.4.3						0	Action is considered In-Kind
PeC-CCCS-15.2.1.1						0	Action is considered In-Kind
PeC-CCCS-15.2.1.2						0	Action is considered In-Kind
PeC-CCCS-15.2.2.1	100.00					100	Cost may be significantly reduced if existing plans and protocols are adopted (e.g. USFS protocols). Costs may be higher if site specific constraints and agency and community reluctance to adopt existing NMFS and USFWS approved protocols exists.
PeC-CCCS-15.2.2.2						0	Action is considered In-Kind
PeC-CCCS-16.1.1.1						0	Action is considered In-Kind
PeC-CCCS-16.1.1.2						0	Action is considered In-Kind
PeC-CCCS-16.1.1.3						0	Action is considered In-Kind
PeC-CCCS-16.1.1.4	7.50	7.50				15	Cost for signs varies widely depending on materials and content of signs. Cost based on \$500/sign. Assume a minimum of 30.
PeC-CCCS-16.1.1.5						0	Action is considered In-Kind
PeC-CCCS-18.1.1.1						0	This recommendation should be considered standard practice.

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	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PeC-CCCS-18.1.1.2						0	Establishing conservative targets would reduce the total number of AUM but would also reduce restoration costs to address gullies. Action is considered In-Kind
PeC-CCCS-18.1.2.1	23	23	23	23	23	450	CDFW estimated water control structures at \$15,000 each. The cost of moving a water source for grazing cattle is likely much lower. Estimating 30 water control structures for a total of \$450,000
PeC-CCCS-18.1.2.2						TBD	CDFG 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-CCCS-19.1.1.1						0	This recommendation should be considered standard practice.
PeC-CCCS-19.1.2.1						0	Action is considered In-Kind
PeC-CCCS-19.1.2.2						0	Cost accounted for in other recovery actions. See Habitat Complexity.
PeC-CCCS-19.1.3.1						0	This recommendation should be considered standard practice.
PeC-CCCS-19.1.3.2						0	Action is considered In-Kind
PeC-CCCS-19.1.3.3						0	Action is considered In-Kind
PeC-CCCS-19.1.4.1						0	Action is considered In-Kind
PeC-CCCS-19.1.5.1						0	Action is considered In-Kind
PeC-CCCS-19.1.6.1						0	Action is considered In-Kind
PeC-CCCS-19.1.6.2						0	Action is considered In-Kind
PeC-CCCS-19.1.6.3						0	Action is considered in-kind.
PeC-CCCS-19.1.6.4						0	Cost is contingent on future rate of harvest and extent and existing conditions of road network. Cost is considered in-kind.
PeC-CCCS-19.2.1.1						0	Action is considered In-Kind
PeC-CCCS-19.2.1.2						0	Action is considered In-Kind
PeC-CCCS-19.2.1.3						0	Action is considered In-Kind
PeC-CCCS-19.2.1.4						0	Action is considered In-Kind
PeC-CCCS-19.2.1.5						0	Action is considered In-Kind
PeC-CCCS-19.2.2.1						0	Action is considered In-Kind
PeC-CCCS-22.1.1.1						0	Action is considered In-Kind
PeC-CCCS-22.1.1.2						0	This is an obligation of the resource agencies. Action is considered In-Kind
PeC-CCCS-22.1.1.3	6	6	6	6	6	125	Cost will depend on the frequency of problematic areas and the material to be removed. Additionally, costs may be highly variable depending on water year and flooding. Cost was estimated for the hiring of a qualified consulting fisheries biologist and/or a qualified hydrologist may range from \$50 to >\$200 per hour, we used \$125 per hour and assumed 1000 hours.
PeC-CCCS-22.1.2.1						0	Action is considered In-Kind
PeC-CCCS-22.1.2.2						0	Action is considered In-Kind
PeC-CCCS-22.2.1.1						0	See recommended strategies for Floodplains and Riparian areas. Action is considered In-Kind
PeC-CCCS-22.2.1.2						0	Action is considered In-Kind
PeC-CCCS-22.2.1.3						0	Costs should be minimal if this concept is adopted early in the planning process for all new development.
PeC-CCCS-22.2.2.1						0	Costs of changing existing regulations should be minimal.
PeC-CCCS-22.2.3.1						0	Action is considered In-Kind
PeC-CCCS-22.2.3.2	15.00	15.00				30	Cost would include rerouting traffic.
PeC-CCCS-22.2.3.3						0	Particular attention should be directed at actions adjacent of high risk areas such as the Pescadero Marsh. Action is considered In-Kind
PeC-CCCS-22.2.3.4						0	Action is considered In-Kind
PeC-CCCS-22.2.3.5						0	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-CCCS-22.2.4.1						0	Stringent review by permitting agencies is expected to reduce ancillary costs associated with poorly planned and poorly located developments. Action is considered In-Kind
PeC-CCCS-22.2.4.2						TBD	Cost to upgrade stormwater discharge points cannot be determined at this time, but it may be significant. Cost can likely be incorporated into ongoing road public works upgrades.
PeC-CCCS-22.2.4.3						0	Cost of minimizing the effects of development within the floodplain should result in a long term cost savings. Action is considered In-Kind
PeC-CCCS-23.1.1.1	40.00	40.00	40.00	40.00		160	Cost based on road inventory assessment at a rate of \$1,000/mile for 160 miles (assume 75% of road network)..
PeC-CCCS-23.1.1.2	131.50	131.50	131.50	131.50	131.50	2,630	Cost based on upgrading 10 road crossing (assume minor 2 lane road and 25% of total crossings upgraded) at a rate of \$263,000/unit.
PeC-CCCS-23.1.1.3	1	1				2	Cost accounted in part in other recovery actions. Setting up database is likely minimal cost once road inventory is completed and is estimated at \$2000.
PeC-CCCS-23.1.1.4	17.50	17.50	17.50	17.50		70	Cost based on decommissioning 5 miles of road network at a rate of \$14,000/mile.
PeC-CCCS-23.1.2.1						0	Action is considered In-Kind
PeC-CCCS-23.1.2.2	94.50	94.50				189	Cost for road inventory accounted for in above action steps. Cost for erosion assessment estimated at \$14/acre (assume 25% of total watershed acres).
PeC-CCCS-23.1.2.3						0	Cost accounted for in other recovery actions and will incorporate measures to reduce road densities. Action is considered In-Kind
PeC-CCCS-23.1.2.4						TBD	Partial barriers are present in the Pescadero watershed. According to CDFG 2004 cost estimates can range from 150K to 800K depending on location and type of barrier. Some modified barriers in Santa Cruz County have cost more than these estimates. Costs associate with barrier modification must be carefully balanced against other restoration activities that are less popular socially, but may yield greater beneficial affects to various lifestages. If bridges are not feasible, replacement culverts on fish bearing streams must have a natural bottom. Cost accounted for road inventory assessment.
PeC-CCCS-23.1.2.5						TBD	Cost estimates cannot be determine until the feasibility and quantity of adequate spoils storage site is completed.

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	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PeC-CCCS-23.1.2.6						TBD	Cost for a road inventory assessment accounted for in previous action step.
PeC-CCCS-23.1.2.7						TBD	Cost for type and quantity of energy dissipaters will be determined from road inventory assessment. However, this should be considered a standard business practice and minimal costs are anticipated.
PeC-CCCS-23.1.2.8						0	Action is considered In-Kind
PeC-CCCS-23.1.2.9						0	Action is considered In-Kind
PeC-CCCS-23.1.2.10						0	Action is considered in-kind
PeC-CCCS-23.1.2.11						TBD	Costs are difficult to accurately determine but it may result in a long term cost savings.
PeC-CCCS-23.1.2.12						0	Action is considered In-Kind
PeC-CCCS-23.1.2.13						TBD	Estimates of cost will require estimates on long term maintenance commitments. Maintenance costs may be highly variable depending on location and rainfall year. Years of high rainfall will require more frequent maintenance.
PeC-CCCS-23.1.3.1	905	905	905	905		3,620	Few partial barriers are present in the Pescadero Watershed. According to CDFG 2004 cost estimates can range from 150K to 800K depending on location and type of barrier. Some modified barriers in Santa Cruz Mountains Diversity Stratum have cost more than these estimates. Costs associate with barrier modification must be carefully balanced against other restoration activities that are less popular socially, but may yield greater beneficial affects to various lifestages. Cost based on treating 7 impassable barriers at a rate of \$517,000/barrier.
PeC-CCCS-23.1.3.2						0	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. Action is considered in-kind
PeC-CCCS-23.1.3.3						TBD	Cost may vary significantly, but should be considered standard practice.
PeC-CCCS-23.1.3.4						TBD	Partial barriers are present in the Pescadero watershed. According to CDFG 2004 cost estimates can range from 150K to 800K depending on location and type of barrier. Some modified barriers in Santa Cruz County have cost more than these estimates. Costs associate with barrier modification must be carefully balanced against other restoration activities that are less popular socially, but may yield greater beneficial affects to various lifestages. If bridges are not feasible, replacement culverts on fish bearing streams must have a natural bottom. TBD costs are based on the number of crossings needing to be replaced and the alternative selected.
PeC-CCCS-23.1.4.1						0	Action is considered In-Kind
PeC-CCCS-23.2.1.1						0	Action is considered In-Kind
PeC-CCCS-23.2.2.1						0	Action is considered In-Kind
PeC-CCCS-23.2.2.2						0	Action is considered In-Kind
PeC-CCCS-23.2.2.3						0	Action is considered In-Kind
PeC-CCCS-23.2.3.1						0	Standard practice
PeC-CCCS-23.2.3.2						0	Action is considered In-Kind
PeC-CCCS-23.2.3.3						0	Cost should be considered part of land owner road management plans.
PeC-CCCS-23.2.3.4						0	Action is considered In-Kind
PeC-CCCS-24.1.1.1						0	Cost accounted for in ESTUARY.
PeC-CCCS-24.1.1.2						0	Cost accounted for in ESTUARY.
PeC-CCCS-24.1.1.3						0	Cost accounted for in ESUARY.
PeC-CCCS-24.1.2.1	34.00	34.00				68	Cost based on stream flow/precipitation gauging for water balance model at a rate of \$68,000/project.
PeC-CCCS-24.1.2.2						0	Action is considered In-Kind
PeC-CCCS-24.1.2.3						0	Cost will likely be staff time expense. Action is considered In-Kind
PeC-CCCS-24.1.2.4						TBD	This cost may be significant and will require development of a water budget (possibly an IFIM) for Pescadero Creek. Costs are based on stream flow/precipitation monitoring accounted for above. Costs for improving or preserving bypass flows will be determined once those values are assessed.
PeC-CCCS-24.1.2.5						0	Action is considered In-Kind
PeC-CCCS-24.1.3.1	5.00					5	Cost based on stream temperature monitoring (assume minimum of 10 sites) at a cost of \$500/unit. Cost estimate does not account for maintenance or data management.
PeC-CCCS-24.1.3.2						0	This recommendation should be considered standard practice.
PeC-CCCS-24.1.4.1						0	Action is considered In-Kind
PeC-CCCS-24.1.4.2						0	Costs are anticipated to be absorbed into ongoing activities.
PeC-CCCS-24.1.4.3						0	Action is considered In-Kind
PeC-CCCS-24.1.4.4	42.00					42	Evaluation should include an evaluation of existing maintenance requirements and development of landowner agreements where appropriate. Escapement monitoring cost are \$42,000/project.
PeC-CCCS-24.1.5.1						0	This recommendation should be considered standard practice.
PeC-CCCS-24.1.6.1						0	Cost will likely consist of existing staff time. It is presumed that existing protocols could be tailor to general San Mateo County constraints. Costs may be higher if new guidelines are developed that do not rely on protocols from past studies.
PeC-CCCS-24.1.6.2						TBD	
PeC-CCCS-24.1.6.3						0	Action is considered In-Kind
PeC-CCCS-25.1.1.1						0	Action is considered In-Kind
PeC-CCCS-25.1.2.1						0	Cost accounted for in other action steps.
PeC-CCCS-25.1.2.2						TBD	
PeC-CCCS-25.1.2.3						TBD	Cost will vary widely depending on willingness of water diverters to modify water diversions. Costs may be significant depending on site conditions and number of devices installed.

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	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PeC-CCCS-25.1.2.4	74.00					74	This data base should already exist for the Pescadero Creek and costs to maintain it are likely minimal. These data should be used to guide future water availability studies. Cost based on stream flow/precipitation gauging at a rate of \$74,000/project.
PeC-CCCS-25.1.2.5						TBD	Costs can be determined pending completion of evaluation of summer flows and impacts to historical hydrology from existing diversions.
PeC-CCCS-25.1.3.1						0	Action is considered In-Kind
PeC-CCCS-25.1.3.2						TBD	Cost is dependent on the amount of screens needed.
PeC-CCCS-25.1.4.1						0	Action is considered In-Kind
PeC-CCCS-25.2.1.1	8.00					8	Cost is based on a one year pilot study.
PeC-CCCS-25.2.1.2						0	Action is considered In-Kind
PeC-CCCS-25.2.1.3						0	Action is considered In-Kind
PeC-CCCS-25.2.1.4						TBD	Costs will vary significantly depending on landowner cooperation, infrastructure constraints, and types of infrastructure necessary to meet landowner needs. Due to the predicted levels of flow impairment in the watershed it is likely that significant infrastructure and coordination will be required to meet minimum flow requirements for steelhead viability and therefore, costs will be significant.
PeC-CCCS-25.2.1.5						0	Cost of enforcement is considered in-kind
PeC-CCCS-25.2.1.6						0	Action is considered In-Kind
PeC-CCCS-25.2.1.7						0	Action is considered In-Kind

Pilarcitos Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PiIC-CCCS-1.1.1.1						0	Action is considered In-Kind
PiIC-CCCS-1.1.1.2						0	See Recreational Areas and Activities for a cost estimate.
PiIC-CCCS-2.1.1.1	32					0	Action is considered In-Kind
PiIC-CCCS-2.1.1.2						0	Action is considered In-Kind
PiIC-CCCS-2.1.1.3	105	105				209	Conservation easements are generally preferable to fee title purchase. Conservation easements allow protection of key portions of landscapes at significantly less cost than purchasing. Cost cannot be estimated due to the wide range of value for individual landscapes and wide variation between costs between the two methods. NMFS (2008) estimated costs for conservation easements could range from \$223 per acres to \$65000 per acre depending on location. Cost of land with medium to high development potential can range 23,000 per acre to unpredictable upper limits depending on location for purchase. Cost will vary highly depending market value, rate of turnover, and landowner willingness. Cost of evaluation estimated at \$209,000 and would be completed within the first ten years.
PiIC-CCCS-2.1.1.4	42.00	42.00				84	Cost based on riparian restoration at a rate of \$84,000/project. Costs assume the hiring of a consultant to evaluate historical information sources and conduct a review of existing aerial photographs (or other imagery). Some ground truthing will likely be required.
PiIC-CCCS-2.1.1.5						0	Action is considered In-Kind
PiIC-CCCS-3.1.1.1						0	Cost estimate is not for actual permitting and construction cost. Cost estimate (In-Kind) applies to working with landowners, water rights holders, and regulatory agencies in order to develop the appropriate template for the Pilarcitos Creek watershed.
PiIC-CCCS-3.1.1.2						0	Action is considered In-Kind
PiIC-CCCS-3.1.1.3	37.00	37.00				74	Cost based on stream/flow precipitation gauging at a rate of \$74,000/project
PiIC-CCCS-3.2.1.1						0	Action is considered In-Kind
PiIC-CCCS-3.2.1.2	3,850	3,850				7,700	Cost are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
PiIC-CCCS-3.2.2.1						0	Action is considered In-Kind
PiIC-CCCS-3.2.2.2						0	Action is considered In-Kind
PiIC-CCCS-3.2.2.3						0	Action is considered In-Kind
PiIC-CCCS-3.2.2.4						0	Action is considered In-Kind
PiIC-CCCS-3.2.2.5						0	Action is considered In-Kind
PiIC-CCCS-5.1.1.1	209					209	Estimated cost is likely much higher than would be necessary if landowner willingly agreed to initiate removal of Old Stone Dam. Little infrastructure is present in the three mile stream reach below the dam. Estimate cost of evaluation is \$209,000
PiIC-CCCS-5.1.1.2	1,562					1,562	Cost estimated at \$1,561,600/project for unknown height, complete barrier. It is likely that the dam could be removed for significantly less than predicted if the landowner agrees and is proactive regarding this recommendation.
PiIC-CCCS-5.1.2.1	119.00					119	Cost based on treating one site at a rate of \$119,000. It is assumed the cost of replacing would be equivalent to implementing an ELJ.
PiIC-CCCS-5.1.2.2	412.00					412	Cost based on providing passage for a stream in an urban area at a rate of \$412,000/project.
PiIC-CCCS-5.1.2.3	486.00					486	Cost based on providing passage on a tributary stream in a suburban area at a rate of \$486,000/project.
PiIC-CCCS-6.1.1.1	131.00					131	Cost based on fish/habitat restoration monitoring at a rate of \$131,000/project.
PiIC-CCCS-6.1.1.2	148.75	148.75	148.75	148.75		595	Costs will vary depending on types of structures installed. NMFS (2008) estimated costs of LWD placement can range from \$37,500 (at 20 structures per mile) to \$222,000 (400 structures per mile). It is likely the number of structures placed in Pilarcitos would be modest but it is also reasonable to assume the costs would be high because the structures would be engineered. Cost based on treating 1 mile (assume 50% high IP) at a rate of \$119,000/ELJ. Assume a minimum of 5 ELC/mile.
PiIC-CCCS-6.1.1.3						0	
PiIC-CCCS-6.1.1.4						0	Action is considered In-Kind
PiIC-CCCS-6.1.1.5	131.00					131	Cost based on conducting fish/habitat restoration monitoring at a rate of \$131,000
PiIC-CCCS-7.1.1.1						0	Action is considered In-Kind
PiIC-CCCS-7.1.1.2	40.00	40.00				80	Cost based on treating 1 mile (assume 5% high IP with a minimum of 1 mile and 80acres/mile) at a rate of \$1000/acre.
PiIC-CCCS-7.1.1.3						0	Action is considered In-Kind
PiIC-CCCS-7.1.1.4	12.50	12.50	12.50	12.50		50	Cost based on treating 0.36 miles (assume 15% of high IP with 80 acres/mile) at a rate of \$2000/acre.
PiIC-CCCS-11.1.1.1						0	Cost accounted for in Monitoring Chapter.
PiIC-CCCS-12.1.1.1						0	Action is considered In-Kind
PiIC-CCCS-12.1.1.2						0	Action is considered In-Kind
PiIC-CCCS-12.1.1.3						0	Action is considered In-Kind
PiIC-CCCS-12.1.2.1						0	Action is considered In-Kind
PiIC-CCCS-12.1.2.2	33	33	33	33	33	200	Cost will depend on the number of participants. A Farm Conservation Plan is estimated to cost 5k-20k. We assumed a each plan would cost \$20,000 and that 10 plans would be completed.
PiIC-CCCS-12.1.2.3	10	10	10	10	10	209	Most costs will be incurred early on and will likely decrease once landowners adopt appropriate erosion control measures. It is anticipated that the majority of the implementation costs will be borne by the landowners. Estimate cost of evaluation of erosion control is \$209,000
PiIC-CCCS-12.1.2.4						0	Action is considered In-Kind
PiIC-CCCS-12.1.2.5						TBD	
PiIC-CCCS-12.2.1.1						0	No costs are anticipated. Most conservation easement have an establish endowment to address costs associated with monitoring of easements.
PiIC-CCCS-12.2.1.2						TBD	Cost cannot be determined because of the variability in market value, frequency of turnover, and landowner willingness.
PiIC-CCCS-12.2.1.3						0	Action is considered In-Kind
PiIC-CCCS-12.2.1.4						0	Action is considered In-Kind
PiIC-CCCS-13.1.1.1	850	850	850	850		3,400	Cost based on treating 1 mile (assume 1 project per mile in 25% high IP with a minimum of 1 mile with 80acres/mile) at a rate of \$42,500/acre

Pilarcitos Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
PiIC-CCCS-13.1.1.2						0	Action is considered In-Kind
PiIC-CCCS-13.1.1.3						0	Action is considered In-Kind
PiIC-CCCS-13.1.1.4	10	10	10	10	10	209	An assessment of the number of obsolete bank stabilization structures needs to be completed first and will likely vary highly between individual projects. Cost of assessment is \$209,000
PiIC-CCCS-13.1.1.5						TBD	Costs cannot be determined at this time. Relocation may result in a cost savings over time due to reduced needs for bank stabilization. However, initial costs may be prohibitive in many areas where extensive urban infrastructure is present.
PiIC-CCCS-13.1.1.6						0	Action is considered In-Kind
PiIC-CCCS-13.1.1.7						0	Action is considered In-Kind
PiIC-CCCS-13.1.1.8						0	Action is considered In-Kind
PiIC-CCCS-13.1.1.9						0	Action is considered In-Kind
PiIC-CCCS-14.1.1.1						0	Cost accounted for in action step below.
PiIC-CCCS-14.1.1.2	67.00	67.00				134	Many of the stands in the watershed are well established. Removal will likely require significant community outreach. Eucalyptus control and planning was recommended in the Pilarcitos Integrated Watershed Management Plan. NMFS estimated costs for site preparation can range from \$17,000 per acre to \$1,366,300 per acre. Cost estimated for treating 1.2 miles (assume 50% high IP) at a rate of \$1,700/acre.
PiIC-CCCS-21.1.1.1	33.50	33.50				67	Cost based on erosion assessment for acres (assume 25% of total watershed acres) at a rate of \$14/acre.
PiIC-CCCS-21.1.1.2	300.00					300	Other solutions that would result in major cost savings could included rerouting equestrian trails or prohibiting access to wet water crossings. Cost based on construction of 1000 sq. ft. bridge at a rate of \$300/sq. ft.
PiIC-CCCS-22.1.1.1						0	Action is considered In-Kind
PiIC-CCCS-22.1.2.1							Avoiding development in areas prone to damage from flooding should result in a net savings.
PiIC-CCCS-22.1.3.1						0	
PiIC-CCCS-22.1.3.2						TBD	Cost cannot be determined without identifying the number of detention basins needed.
PiIC-CCCS-22.1.4.1						0	Action is considered In-Kind
PiIC-CCCS-22.1.4.2						0	Action is considered In-Kind
PiIC-CCCS-22.2.1.1						0	Action is considered In-Kind
PiIC-CCCS-22.2.1.2						0	Action is considered In-Kind
PiIC-CCCS-22.2.1.3	10	10	10	10	10	209	Total cost cannot be determined because recommendation is based on willingness of landowners to participate. Cost to identify areas is \$209,000
PiIC-CCCS-22.2.1.4						0	Action is considered In-Kind
PiIC-CCCS-23.1.1.1						0	Action is considered In-Kind
PiIC-CCCS-23.1.1.2	45.00					45	Cost estimate as reported in Pilarcitos Integrated Watershed Management Plan (PWA 2008). Actual costs may be higher depending on the detail and condition of the road network. Road inventories in the watershed totaled \$1000/mile.
PiIC-CCCS-23.1.2.1						0	Action is considered In-Kind
PiIC-CCCS-23.1.2.2						0	Action is considered In-Kind
PiIC-CCCS-23.1.2.3						0	Action is considered In-Kind
PiIC-CCCS-23.1.3.1						0	Action is considered In-Kind
PiIC-CCCS-23.1.3.2						TBD	Costs of figuring out where to place road spoils in this watershed should be minimal.
PiIC-CCCS-23.1.3.3	14.00	14.00				28	A road assessment plan will need to be developed first to determine the extent of road decommissioning that is necessary, and costs of road decommissioning will depend on the plan. Road decommission costs for California were estimated by NMFS to cost \$14,000/mile. Cost based on decommissioning 2 miles of road at a rate of \$14,000/mile.
PiIC-CCCS-23.2.1.1						0	Avoiding placing roads within floodprone zones will likely result in a long term cost savings. Action is considered In-Kind
PiIC-CCCS-24.1.1.1						0	Action is considered In-Kind
PiIC-CCCS-24.1.1.2						0	Action is considered In-Kind
PiIC-CCCS-24.1.1.3						0	Review Hydrology and Water Diversion Strategies for cost estimate.
PiIC-CCCS-24.1.1.4						0	Action is considered In-Kind
PiIC-CCCS-24.1.2.1	3.75	3.75	3.75	3.75		15	
PiIC-CCCS-24.2.1.1						0	Action is considered In-Kind
PiIC-CCCS-24.2.1.2	74.00	74.00				148	Cost based on stream flow/precipitation monitoring at a rate of \$74,000/project.
PiIC-CCCS-24.2.1.3						TBD	TBD cost from above action to identify critical level and opportunities for reducing water consumption.
PiIC-CCCS-24.2.1.4						TBD	
PiIC-CCCS-25.1.1.1						0	Promoting water conservation practices is not expected to result in additional costs. Actual implementation costs will result in costs that cannot be determined due to the wide variety of potential solutions for water conservation.
PiIC-CCCS-25.1.1.2						0	Action is considered In-Kind
PiIC-CCCS-25.1.1.3						TBD	See HYDROLOGY section for cost estimate.
PiIC-CCCS-25.2.1.1						0	Action is considered In-Kind
PiIC-CCCS-25.2.1.2						0	Action is considered In-Kind
PiIC-CCCS-25.2.1.3						0	Action is considered In-Kind
PiIC-CCCS-25.2.1.4						0	Additional regulatory authorities may be needed to fully implement this action, and associated costs cannot be determined. However technical assistance may be provided, and the action is considered In-Kind.
PiIC-CCCS-25.2.1.5						0	Action is considered In-Kind
PiIC-CCCS-25.2.1.6						0	Action is considered In-Kind

San Gregorio Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SGC-CCCS-1.1.1.1	123.00					123	Cost to treat 3 acres (assume 1 project/acre in 10% of total estuarine habitat) at a rate of \$41,000/acre.
SGC-CCCS-1.1.2.1						0	Action is considered In-Kind
SGC-CCCS-1.1.2.2	32					0	Action is considered In-Kind
SGC-CCCS-1.1.2.3	0.05	0.05	0.05	0.05	0.05	1	
SGC-CCCS-1.1.2.4	1.50	1.50				3	Cost for signs vary widely depending on content and materials. Assume \$1,000/sign for a minimum of 3 signs.
SGC-CCCS-1.1.2.5	0.50	0.50				1	Cost estimate does not include yearly operational expenses.
SGC-CCCS-1.1.3.1						0	Action is considered In-Kind
SGC-CCCS-1.1.3.2						0	Action is considered In-Kind
SGC-CCCS-1.1.3.3	25.00	25.00				50	
SGC-CCCS-2.1.1.1	121.50	121.50				243	Significant work has occurred in recent years in San Gregorio Creek and total costs could be reduced by leveraging existing information. Cost for wetland monitoring estimated at \$243,000/project.
SGC-CCCS-2.1.1.2	105	105				209	Total costs cannot be determined at this time. Implementation will depend on landowner participation. Cost of evaluation estimated at \$209,000 and would be completed with the first 10 years
SGC-CCCS-2.1.1.3	42	42	42	42	42	840	Total costs will vary depending on restoration action and total number of projects implemented. Cost based on riparian restoration at a rate of \$84,000/project and assuming 10 projects for a total of \$840,000.
SGC-CCCS-2.1.1.4						TBD	Cost are dependent upon market value and landowner participation.
SGC-CCCS-2.1.1.5	140.00					140	Cost based on decommissioning 10 miles of riparian road network (assume 25% of riparian roads) at a rate of \$14,000/mile.
SGC-CCCS-3.1.1.1	18	18	18	18		70	Costs will vary depending on landowner participation. Assuming 10,000 gallon water tanks that cost \$7,000 each and the purchase of 10 tanks for a total of \$70,000.
SGC-CCCS-3.1.1.2						TBD	Cost will be dependent upon participation of stakeholders.
SGC-CCCS-3.1.1.3						0	Action is considered In-Kind
SGC-CCCS-3.1.1.4						0	Action is considered In-Kind
SGC-CCCS-3.1.1.5	55.00	55.00				110	Cost based on annual maintenance of stream flow gauge at an annual rate of \$11,000 for 10 years.
SGC-CCCS-3.1.2.1	3,850	3,850				7,700	Cost are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
SGC-CCCS-3.1.2.2						0	Cost accounted for in previous action step.
SGC-CCCS-3.1.2.3	37.50	37.50				75	Cost based on stream flow model at a cost of \$75,000/project.
SGC-CCCS-3.1.2.4						0	Action is considered In-Kind
SGC-CCCS-3.1.2.5						0	Action is considered In-Kind
SGC-CCCS-3.1.3.1	774					774	Cost based on \$119,000/mile of Engineered Log Jam for 6.5 miles of high IP. If placement of LWD used in replacement of Engineered Log Jam, cost would equal \$182,000 for treating 6.5 miles of high IP. Co-related to habitat complexity.
SGC-CCCS-6.1.1.1						0	Action is considered In-Kind
SGC-CCCS-6.1.1.2						0	Overall costs may be reduced by assessing and leveraging past surveys and ongoing assessment in the watershed to prioritize key areas. However, due to the urbanized nature of the watershed (particularly adjacent to riparian areas) and flooding concerns, it is anticipated that most LWD structures will require engineering. Cost based on treating 10 miles of stream (assume 1 project/mile in 50% High IP) at a rate of \$30,000/mile. If ELJ used instead, cost estimated to be \$1,153,000. Cost accounted for in another action step (see hydrology).
SGC-CCCS-6.1.1.3						0	Cost savings would be significant. Currently a significant amount of large woody material was removed without proper authorization in the watershed. Action is considered In-Kind
SGC-CCCS-6.1.1.4						0	Action is considered In-Kind
SGC-CCCS-6.1.1.5						0	Action is considered In-Kind
SGC-CCCS-6.1.1.6	20.00	20.00				40	Additional funding for staff will likely be necessary to implement this recommendation.
SGC-CCCS-6.1.1.7	335.00	335.00				670	Cost based on treating 5 miles (assume 80 acres/mile in 25% High IP) at a rate of \$2,000.
SGC-CCCS-6.1.2.1						0	Action is considered In-Kind
SGC-CCCS-6.1.2.2						0	Action is considered In-Kind
SGC-CCCS-6.1.2.3	105	105				209	Total costs cannot be determined at this time. A limiting factors analysis may help to refine costs. Cost of evaluation estimated at \$209,000 and would be completed with the first 10 years
SGC-CCCS-6.1.2.4						TBD	Project costs cannot be estimated at this time because the number of future stream bank protection projects is unknown and cannot be reasonably predicted.
SGC-CCCS-8.1.1.1						TBD	Costs can vary significantly depending on access and type of project and based on assessment in previous step.
SGC-CCCS-8.1.1.2						TBD	Cost are dependent on market value and property turnover.
SGC-CCCS-8.1.2.1	202					209	Cost of evaluation estimated at \$209,000 and should be completed within the first 5 years.
SGC-CCCS-8.1.2.2						TBD	
SGC-CCCS-8.1.2.3						0	Action is considered In-Kind
SGC-CCCS-8.1.2.4						0	While costs are involved in this recommendation, inspections should be considered a standard business practice by all regulatory agencies and this action should not be considered as an additional cost.
SGC-CCCS-8.1.2.5						0	Action is considered In-Kind
SGC-CCCS-10.1.1.1						0	Action is considered In-Kind
SGC-CCCS-10.1.1.2	15.00	15.00				30	Cost based on water quality monitoring at an annual rate of \$1000/site for a minimum of 3 sites.
SGC-CCCS-10.1.2.1						TBD	Cost to upgrade stormwater discharge points cannot be determined at this time, but it may be significant.
SGC-CCCS-10.1.2.2						0	Action is considered In-Kind
SGC-CCCS-10.1.2.3						0	Action is considered In-Kind

San Gregorio Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SGC-CCCS-10.1.2.4						0	Action is considered In-Kind
SGC-CCCS-10.1.3.1	12.50	12.50				25	Cost for continuous water quality monitoring stations estimated at \$5,000/station. Assume minimum 5 for San Gregorio Creek. Cost does not account for maintenance or data management.
SGC-CCCS-10.1.3.2						0	Action is considered In-Kind
SGC-CCCS-10.1.4.1	170	170	170	170		680	The fiscal costs of riparian revegetation or planting depend on the complexity of the project undertaken, the remoteness of the parcel of land to be treated, and the degree of site preparation needed. According to CDFG 2004, Evergreen Funding Consultants suggest a budget of between 5,000 dollars and 135,000 dollars per acre. Areas where this practice should be targeted would include lower mainstem reaches where the canopy is most impaired. Cost based on treating 0.4 mile (assume 5% high IP with 20 acres/mile) at a rate of \$85,000/acre.
SGC-CCCS-11.1.1.1						0	Cost accounted for in the Monitoring Chapter
SGC-CCCS-11.1.1.2						0	Cost accounted for in the Monitoring Chapter
SGC-CCCS-11.1.1.3						0	Cost accounted for in the Monitoring Chapter
SGC-CCCS-11.1.1.4						0	Cost accounted for in the Monitoring Chapter
SGC-CCCS-12.1.1.1						0	Action is considered In-Kind
SGC-CCCS-13.1.1.1						0	Action is considered in-kind.
SGC-CCCS-13.1.1.2						0	Action is considered In-Kind
SGC-CCCS-13.1.1.3						0	
SGC-CCCS-13.1.2.1						0	Action is considered In-Kind
SGC-CCCS-13.1.3.1						TBD	
SGC-CCCS-13.2.1.1						0	Action is considered In-Kind
SGC-CCCS-14.1.1.1	157.50	157.50				315	Cost based on removing invasive exotic vegetation in 0.4 miles (assume 80 acres/mile in 5% High IP) at a rate of \$1000/acre.
SGC-CCCS-15.1.1.1						0	Action is considered In-Kind
SGC-CCCS-15.2.1.1						0	Action is considered In-Kind
SGC-CCCS-15.2.1.2						0	This recommendation will result in a net cost savings. This recommendation should be considered a standard practice and no additional financial costs are anticipated.
SGC-CCCS-15.2.1.3						0	Implementing erosion control measures when constructing firebreaks (if possible) or shortly thereafter will likely result in a net cost savings. It is much more financially efficient to implement these measures while the fire crews are present rather than months later after the fire is out. Action is considered In-Kind
SGC-CCCS-15.2.1.4						0	Action is considered In-Kind
SGC-CCCS-15.2.1.5						0	Action is considered In-Kind
SGC-CCCS-15.2.2.1						0	Action is considered In-Kind
SGC-CCCS-15.2.2.2						0	Action is considered In-Kind
SGC-CCCS-15.2.2.3						0	Action is considered In-Kind
SGC-CCCS-15.2.2.4						0	Action is considered In-Kind
SGC-CCCS-15.2.2.5						97	Cost based on effects of wildfire on aquatic ecosystems monitoring at a rate of \$97,000/project.
SGC-CCCS-15.2.3.1						0	
SGC-CCCS-15.2.4.1						0	Action is considered In-Kind
SGC-CCCS-15.2.4.2						0	Action is considered In-Kind
SGC-CCCS-15.2.5.1						0	Action is considered In-Kind
SGC-CCCS-22.1.1.1						0	Action is considered In-Kind
SGC-CCCS-22.1.2.1						0	Action is considered In-Kind
SGC-CCCS-22.1.2.2						TBD	
SGC-CCCS-22.1.2.3						0	Action is considered In-Kind
SGC-CCCS-22.1.3.1						0	Action is considered In-Kind
SGC-CCCS-22.1.3.2						0	Action is considered In-Kind
SGC-CCCS-22.1.3.3						0	Action is considered In-Kind
SGC-CCCS-22.1.4.1						0	Action is considered In-Kind
SGC-CCCS-22.1.4.2						TBD	Cost depend on market value, landowner participation, and turnover.
SGC-CCCS-22.1.5.1						0	Action is considered In-Kind
SGC-CCCS-22.2.1.1						0	Action is considered In-Kind
SGC-CCCS-22.2.2.1						0	Costs are considered part of RWQCB existing authority and obligation.
SGC-CCCS-22.2.2.2						0	Action is considered In-Kind
SGC-CCCS-22.2.2.3						0	Action is considered In-Kind
SGC-CCCS-22.2.3.1						0	Action is considered In-Kind
SGC-CCCS-22.2.3.2						0	Costs are considered part of SWRCB existing authority and obligation.
SGC-CCCS-22.2.3.3						0	Costs should be minimal if incorporated into updated county general plans.
SGC-CCCS-22.2.3.4						TBD	Cost may vary significantly. In more urbanized areas costs will likely be absorbed into SWMP requirements per the RWQCB. Costs in rural areas where these storm water plans are not required may be significant on a project by project basis.
SGC-CCCS-22.2.4.1						0	Action is considered In-Kind
SGC-CCCS-22.2.4.2						0	Cost is accounted for in SEDIMENT
SGC-CCCS-22.2.4.3						0	Action is considered In-Kind
SGC-CCCS-22.2.4.4						0	

San Gregorio Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SGC-CCCS-22.2.5.1						0	Action is considered In-Kind
SGC-CCCS-23.1.1.1						0	Action is considered In-Kind
SGC-CCCS-23.1.1.2	45.50	45.50	45.50	45.50		182	Cost based on decommissioning 13 miles of road network at a rate of \$14,000/mile.
SGC-CCCS-23.1.2.1						0	Action is considered In-Kind
SGC-CCCS-23.1.2.2						0	Cost accounted for in RESIDENTIAL/COMMERCIAL DEVELOPMENT.
SGC-CCCS-23.1.2.3	817	817	817	817		3,268	Cost based on improving passage at 9 stream crossings (2 impassable, 7 temporary or partially impassable) at a rate of \$745,000 for impassable and \$254,000 for partially impassable.
SGC-CCCS-23.1.2.4						TBD	Cost dependent on identifying spoil storage sites and feasibility of meeting targets.
SGC-CCCS-23.1.2.5						TBD	
SGC-CCCS-23.1.2.6	105	105				209	Cost of evaluation estimated at \$209,000 and should be completed within the first 10 years.
SGC-CCCS-23.1.2.7						0	Action is considered In-Kind
SGC-CCCS-23.1.2.8	105	105				209	Costs will vary depending on number of culvert upgrades that occur on a road network and the inefficiency of the current drainage system. Cost of evaluation estimated at \$209,000 and should be completed within the first 10 years.
SGC-CCCS-23.1.2.9						TBD	Costs are difficult to accurately determine but it may result in a long term cost savings.
SGC-CCCS-23.1.2.10						0	Action is considered In-Kind
SGC-CCCS-23.1.3.1						TBD	Cost may vary significantly. In more urbanized areas costs will likely be absorbed into SWMP requirements per the RWQCB. Costs in rural areas where these storm water plans are not required may be significant on a project by project basis.
SGC-CCCS-23.1.3.2						0	Action is considered in-kind.
SGC-CCCS-23.1.3.3						0	Action is considered In-Kind
SGC-CCCS-23.1.3.4						TBD	According to CDFG 2004 cost estimates can range from 150K to 800K depending on location and type of barrier. Some modified barriers in Santa Cruz County have cost more than these estimates. Costs associate with barrier modification must be carefully balanced against other restoration activities that are less popular socially, but may yield greater beneficial affects to various lifestages.
SGC-CCCS-23.1.4.1						0	Action is considered In-Kind
SGC-CCCS-23.1.5.1						0	Action is considered In-Kind
SGC-CCCS-23.1.5.2						0	Action is considered In-Kind
SGC-CCCS-23.1.6.1						TBD	
SGC-CCCS-23.1.6.2	145.00	145.00				290	Cost based on conducting a road inventory of 156 miles of road network at a rate of \$1,000/mile and a erosion assessment of 25% of total watershed acres at a rate of \$14/acre.
SGC-CCCS-23.1.6.3						0	This is a cost that is frequently absorbed into road projects.
SGC-CCCS-23.2.1.1						0	Action is considered in-kind
SGC-CCCS-23.2.1.2						TBD	
SGC-CCCS-23.2.1.3						0	Action is considered In-Kind
SGC-CCCS-23.2.2.1						0	Action is considered In-Kind
SGC-CCCS-23.2.3.1						0	Standard practice, action is considered in-kind
SGC-CCCS-23.2.3.2						0	Action is considered In-Kind
SGC-CCCS-23.2.3.3						0	Cost should be considered part of land owner road management plans. Action is considered In-Kind
SGC-CCCS-24.1.1.1						0	This should be considered an ongoing business practice but due to the constraints of the SWRCB from lack of staffing an indeterminate cost is associated with this recommendation. Action is considered In-Kind
SGC-CCCS-24.1.2.1						0	Action is considered In-Kind
SGC-CCCS-24.2.1.1						0	Action is considered In-Kind
SGC-CCCS-24.2.1.2	105	105				209	Cost of evaluation estimated at \$209,000 and should be completed with the first 10 years.
SGC-CCCS-24.2.2.1	37.50	37.50				75	Cost based on stream flow modeling at a cost of \$75,000.
SGC-CCCS-24.2.2.2						0	Action is considered In-Kind
SGC-CCCS-24.2.2.3						0	Action is considered In-Kind
SGC-CCCS-24.2.3.1						0	Action is considered In-Kind
SGC-CCCS-24.2.3.2	10.00					10	Cost based on temperature monitoring at a cost of \$10,000.
SGC-CCCS-24.2.3.3						0	Action is considered In-Kind
SGC-CCCS-24.2.3.4						0	Action is considered In-Kind
SGC-CCCS-24.2.3.5						0	Outreach and education are ongoing, and additional costs are expected to be minimal.
SGC-CCCS-24.2.4.1						0	Action is considered In-Kind
SGC-CCCS-24.2.5.1						0	Action is considered In-Kind
SGC-CCCS-24.2.5.2						0	Action is considered In-Kind
SGC-CCCS-24.2.5.3						TBD	Protecting these areas from impacts of development may be costly due to concerns of reverse condemnation, etc.
SGC-CCCS-24.2.5.4						0	Action is considered In-Kind
SGC-CCCS-25.1.1.1						0	Action is considered In-Kind
SGC-CCCS-25.1.2.1						0	Action is considered In-Kind
SGC-CCCS-25.1.2.2	37.50	37.50				75	Cost based on stream flow/precipitation model at a rate of \$75,000/project.
SGC-CCCS-25.1.2.3						0	Action is considered In-Kind
SGC-CCCS-25.1.2.4						0	Action is considered In-Kind
SGC-CCCS-25.1.2.5	75.00	75.00				150	Cost based on stream flow/precipitation gauge modeling at a rate of \$75,000/project.
SGC-CCCS-25.1.3.1						0	Cost accounted in other action steps.

San Gregorio Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SGC-CCCS-25.1.3.2	66	66	66	66	66	1,325	Estimate for fish screen is \$53,000/screen and we are assuming that 25 diversions would need to be screened for a total of 1,325,000
SGC-CCCS-25.1.4.1						0	Action is considered In-Kind
SGC-CCCS-25.2.1.1						0	Action is considered In-Kind
SGC-CCCS-25.2.1.2						0	Action is considered In-Kind
SGC-CCCS-25.2.1.3						0	Action is considered In-Kind
SGC-CCCS-25.2.1.4						0	Action is considered In-Kind
SGC-CCCS-25.2.1.5						0	Action is considered In-Kind
SGC-CCCS-25.2.1.6						0	Action is considered In-Kind
SGC-CCCS-25.2.2.1						0	Costs cannot be determined at this time but may be significant and will require close coordination with NGOs, private landowners, regulatory and non regulatory agencies.

San Lorenzo River, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SLR-CCCS-1.1.1.1	517	517	517	517	517	3,100	Cost based on increasing 10 acres of estuary habitat at a rate of \$310,000/acre.
SLR-CCCS-1.1.1.2	105	105				209	Cost of implementation would be significant. Partial cost accounted for in restore estuarine habitat. Cost to acquire park cannot be determined and will be based on current market value. Cost of assessment is \$209,000 and would be completed in the first 10 years.
SLR-CCCS-1.1.2.1	32					0	Action is considered In-Kind
SLR-CCCS-1.1.2.2	0.05	0.05	0.05	0.05	0.05	1	Cost estimated at \$1000.
SLR-CCCS-1.1.2.3	3.00					3	Cost for signs varies depending on materials and content. Cost for signs estimated at \$1,000/sign. Assume a minimum of 3 for lagoon.
SLR-CCCS-1.1.2.4	5.00					5	Cost based on installing a minimum of 5 signs at a rate of \$1,000/sign.
SLR-CCCS-1.1.3.1	31.33	31.33	31.33			94	Cost based on treating 2 acres of estuarine habitat (assume 5% of current estuary extent) at a rate of \$47,000/acre.
SLR-CCCS-1.1.3.2						0	Cost accounted for in another action step
SLR-CCCS-1.1.3.3	24	24	24	24		94	Costs may vary depending on the total number of structures and necessary engineering. Permitting costs are anticipated to be negligible because of likely use of programmatic permits. Cost based on treating 2 acres at a rate of \$47,000/acre. This action step should be coordinated with above action steps to reduce cost and redundancy.
SLR-CCCS-1.1.4.1	625					625	A 2016 cost estimate for a water elevation control device (head driven culvert) is approximately \$625K
SLR-CCCS-1.1.4.2						0	Action is considered In-Kind
SLR-CCCS-1.1.4.3						0	Action is considered In-Kind
SLR-CCCS-1.1.5.1						0	Action is considered In-Kind
SLR-CCCS-1.1.5.2	15.00					15	Cost for continuous water quality monitoring stations estimated at \$5,000/station. Assume a minimum of 3 for estuary habitat. Additional water quality monitoring parameters could increase the cost of this recommendation. Cost does not account for maintenance or data management.
SLR-CCCS-1.1.5.3						0	Action is considered In-Kind
SLR-CCCS-1.1.5.4						0	Action is considered In-Kind
SLR-CCCS-1.1.5.5						0	Cost expected to be absorbed in City/County maintenance initiatives.
SLR-CCCS-1.1.5.6	5	5	5	5	5	100	Average cost to replace \$5000, average cost to have evaluated \$200. We assume the replacement of 20 private sewer laterals for a total cost of \$100,000.
SLR-CCCS-1.1.5.7						0	Action is considered In-Kind
SLR-CCCS-1.1.5.8						0	
SLR-CCCS-1.1.5.9						0	Action is considered In-Kind
SLR-CCCS-1.1.6.1						0	Cost estimate is for evaluation only, implementation costs cannot be estimated at this time but may exceed \$200,000 or more depending on availability of information and concerns from the public and adjacent landowners. Yearly cost of operation by the City of Capitola for Soquel ranges between 70-80K/year. The 1989 San Lorenzo River Enhancement Plan indicated a flume was designed and this existing design may suffice. Cost estimate is based on review of potential new information and regulatory review for the flume. Cost accounted for in above action steps (SLR-CCCS-1.1.4.1).
SLR-CCCS-1.2.1.1						0	Costs cannot be estimated because the location of illegal diversions are not known, quantities of water diverted are unknown, and willingness of those diverting water to come into compliance with State Law is unknown. Action is considered in-kind.
SLR-CCCS-1.2.2.1	0.50	0.50	0.50	0.50	0.50	10	Rough cost estimate for the 100 year period. Close coordination by all parties would likely comprise the majority of the costs. Other methods should also be evaluated such as installation of cameras that provide real time oversight and may result in a reduction in the anticipated cost.
SLR-CCCS-3.1.1.1	140	140				280	Promoting these types of projects will require a sustained effort to target willing landowners in critical stream reaches. Incentive programs devised by the numerous water agencies in the San Lorenzo River for individual rate payers could result in rapid acceptance of these types of water conservation programs. Assuming 10,000 gallon water tanks that cost \$7,000 each and the purchase of 40 tanks for a total of \$280,000.
SLR-CCCS-3.1.1.2						0	Action is considered In-Kind
SLR-CCCS-3.1.1.3	37.50	37.50				75	Cost based on stream flow/precipitation model at a rate of \$75,000/project.
SLR-CCCS-3.1.1.4						0	Action is considered In-Kind
SLR-CCCS-3.1.1.5						0	Action is considered In-Kind
SLR-CCCS-3.1.1.6						0	Action is considered In-Kind
SLR-CCCS-3.1.1.7						0	Cost to promote SWRCB review of existing diversions will likely vary depending on the cooperation of the diverter. Action is considered In-Kind
SLR-CCCS-3.1.1.8						0	Action is considered In-Kind
SLR-CCCS-3.1.1.9	3,850	3,850				7,700	Cost are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
SLR-CCCS-3.1.1.10						0	Action is considered In-Kind
SLR-CCCS-3.1.1.11						0	Action is considered In-Kind.
SLR-CCCS-3.1.2.1	774					774	Cost based on \$119,000/mile of Engineered Log Jam for 6.5 miles of high IP. If placement of LWD used in replacement of Engineered Log Jam, cost would equal \$193,000 for treating 6.5 miles of high IP. Co-related to habitat complexity.
SLR-CCCS-5.1.1.1	2,500	2,500	2,500	2,500		10,000	Cost estimates will vary significantly and all impediments should be closely evaluated.
SLR-CCCS-5.1.1.2	2,500	2,500	2,500	2,500		10,000	Cost estimates will vary significantly and all impediments should be closely evaluated.
SLR-CCCS-6.1.1.1						0	Costs could be somewhat minimized through the use of existing materials already created by the RCD and County. Action is considered In-Kind
SLR-CCCS-6.1.1.2						0	Action is considered in-kind

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Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SLR-CCCS-6.1.1.3	326.00	326.00				652	Cost based on treating 22 miles (assume 1 project/mile in 50% High IP) at a rate of \$30,000/mile. SLR has 136 miles of IP habitat but it is assumed that many reaches will not be treated due to concerns over impacts to existing infrastructure and flood capacity issues. Costs will be higher if engineered large wood placement approaches are used. Cost to implement ELJ for 22 miles of stream is \$2,608,000. Significant cost savings (and ecological benefits) would likely be realized if unsecured woody material (sized at 1.5 to 2 times bankfull) is used. Additional and very significant cost savings would be realized if natural recruitment into the SLR was allowed to stay in place.
SLR-CCCS-6.1.1.4						0	Cost savings would be significant. Action is considered In-Kind
SLR-CCCS-6.1.1.5						0	Retention of wood could result in cost savings for future restoration projects. Action is considered In-Kind
SLR-CCCS-6.1.1.6						0	
SLR-CCCS-6.1.1.7	221.00	221.00	221.00	221.00		884	Cost for treating 6.6 miles (assume 80 acres/mile in 15% High IP) at a rate of \$2,000/acre.
SLR-CCCS-6.1.2.1	50.00	50.00				100	
SLR-CCCS-6.2.1.1	350.00	350.00				700	
SLR-CCCS-7.1.1.1						0	Action is considered in-kind
SLR-CCCS-8.1.1.1						0	Cost accounted for in other action steps ROADS/RAILROADS.
SLR-CCCS-8.1.1.2						0	Cost accounted for in other action steps.
SLR-CCCS-8.1.1.3						TBD	Cost based on amount and type of conservation measures to promote. Fair market value and landowner participation are major factors to feasibility of alternatives.
SLR-CCCS-8.1.1.4						0	Action is considered In-Kind
SLR-CCCS-8.1.2.1						0	Cost accounted for in other action steps.
SLR-CCCS-8.1.2.2	105	105				209	Cost based on amount of landslide and bank failures to treat. Cost can vary depending on approach taken but estimated at \$3,500/acre. Cost of assessment is 209,000 and should be accomplished in the first ten years.
SLR-CCCS-8.1.2.3						0	Coordination is considered in-kind
SLR-CCCS-8.1.2.4						TBD	
SLR-CCCS-8.1.2.5	105	105				209	Extent of bank failures are unknown and therefore a total costs could not be estimated. NMFS (2008) estimated bank stabilization can cost from \$300 to \$400 per foot of stream bank stabilized depending on distance from access roads. Cost of assessment is 209,000 and should be accomplished in the first ten years.
SLR-CCCS-8.1.2.6	105	105				209	Cost for sediment catchment basin assessment is 209,000 and should be accomplished in the first ten years.
SLR-CCCS-8.1.2.7						0	Cost accounted for in ROADS
SLR-CCCS-10.1.1.1	5.00					5	Cost for stream temperature gauge estimated \$500/gauge. Assume a minimum of 10. Cost does not account for maintenance or data management.
SLR-CCCS-10.1.2.1						0	Action is considered In-Kind
SLR-CCCS-10.1.2.2						0	Action is considered In-Kind
SLR-CCCS-10.1.2.3						0	This recommendation should be considered standard practice. Action is considered In-Kind
SLR-CCCS-10.1.2.4						0	This is an ongoing program. Action is considered In-Kind
SLR-CCCS-10.1.2.5						0	This is an ongoing program that is part of the counties operations. Action is considered In-Kind
SLR-CCCS-10.1.2.6						0	Action is considered In-Kind
SLR-CCCS-10.1.2.7						0	Action is considered In-Kind
SLR-CCCS-10.1.3.1						0	Cost should be absorbed in new or upgraded network. Action is considered In-Kind
SLR-CCCS-10.1.3.2						0	Action is considered In-Kind
SLR-CCCS-10.2.1.1						0	Action is considered In-Kind
SLR-CCCS-11.1.1.1	60.00	60.00				120	Cost estimates include necessary upgrades and staff time.
SLR-CCCS-11.1.1.2	375.00	375.00				750	Cost estimate based on current monitoring.
SLR-CCCS-13.1.1.1						0	Action is considered In-Kind
SLR-CCCS-13.1.1.2						0	Action is considered In-Kind
SLR-CCCS-13.1.2.1						0	Action is considered In-Kind
SLR-CCCS-13.1.2.2	500	500	500	500		2,000	Cost estimate based on best professional judgement.
SLR-CCCS-13.1.3.1	100					100	
SLR-CCCS-13.2.1.1						0	Action is considered In-Kind
SLR-CCCS-13.2.2.1						0	Action is considered In-Kind
SLR-CCCS-14.1.1.1	7.50	7.50	7.50	7.50	7.50	150	This will primarily occur through educational and outreach programs. Cost based on treating 1.9 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$1000/acre.
SLR-CCCS-14.1.1.2						0	This will primarily occur through educational programs. Action is considered in-kind.
SLR-CCCS-14.2.1.1						0	Cost accounted for in another action step.
SLR-CCCS-15.1.1.1						0	This recommendation should be considered a standard practice. Action is considered In-Kind
SLR-CCCS-15.1.1.2						0	This recommendation will result in a net cost savings. This recommendation should be considered a standard practice and no additional financial costs are anticipated. Action is considered In-Kind
SLR-CCCS-15.1.1.3						0	Implementing erosion control measures when constructing firebreaks (if possible) or shortly thereafter will likely result in a net cost savings. It is much more financially efficient to implement these measures while the fire crews are present rather than months later after the fire is out. Action is considered In-Kind
SLR-CCCS-15.1.1.4						0	Standard practice. Action is considered In-Kind
SLR-CCCS-15.1.1.5						0	Cost of providing the plan is minimal. Action is considered In-Kind
SLR-CCCS-15.1.2.1						0	Action is considered In-Kind

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Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SLR-CCCS-15.1.2.2						0	Action is considered In-Kind
SLR-CCCS-15.1.2.3						0	Action is considered In-Kind
SLR-CCCS-15.1.2.4						0	Action is considered In-Kind
SLR-CCCS-15.1.2.5						0	Action is considered In-Kind
SLR-CCCS-15.1.2.6						0	This is an ongoing program of CalFire and should continue. Additional costs are not anticipated. Action is considered In-Kind
SLR-CCCS-15.1.2.7	2.50	2.50	2.50	2.50	2.50	50	Cost estimate for the SLR watershed only.
SLR-CCCS-15.2.1.1						0	Action is considered In-Kind
SLR-CCCS-16.1.1.1						0	Action is considered In-Kind
SLR-CCCS-16.1.1.2						0	Action is considered In-Kind
SLR-CCCS-16.1.1.3						0	Action is considered In-Kind
SLR-CCCS-16.1.1.4						0	Action is considered In-Kind
SLR-CCCS-16.1.1.5						0	Cost accounted for in ESTUARY.
SLR-CCCS-16.1.1.6						0	Action is considered In-Kind
SLR-CCCS-19.1.1.1						0	Action is considered In-Kind
SLR-CCCS-19.1.2.1						0	Action is considered In-Kind
SLR-CCCS-19.1.2.2						0	Action is considered In-Kind
SLR-CCCS-19.1.3.1						0	Action is considered In-Kind
SLR-CCCS-19.1.3.2						0	Cost is expected to be minimal. Action is considered In-Kind
SLR-CCCS-19.1.3.3						0	Action is considered In-Kind
SLR-CCCS-19.1.4.1						0	Action is considered In-Kind
SLR-CCCS-19.1.4.2						0	Action is considered In-Kind
SLR-CCCS-19.1.5.1						0	Action is considered In-Kind
SLR-CCCS-19.1.5.2						TBD	Cost to acquire land is unknown
SLR-CCCS-19.1.6.1						0	This recommendation should be considered standard practice and likely to be less expensive than repairing chronic roads. Action is considered In-Kind
SLR-CCCS-19.1.6.2						0	Action is considered In-Kind
SLR-CCCS-19.1.6.3						0	Action is considered In-Kind
SLR-CCCS-19.2.1.1						0	Action is considered In-Kind
SLR-CCCS-19.2.2.1						0	Action is considered In-Kind
SLR-CCCS-19.2.2.2						0	Action is considered In-Kind
SLR-CCCS-19.2.2.3						0	Action is considered In-Kind
SLR-CCCS-19.2.2.4						0	Action is considered In-Kind
SLR-CCCS-19.2.2.5						0	Action is considered In-Kind
SLR-CCCS-21.1.1.1						0	Cost combined with other road assessment priorities in the watershed.
SLR-CCCS-21.1.1.2						0	Action is considered In-Kind
SLR-CCCS-21.1.1.3	101	101				209	Costs cannot be determined until appropriate assessments have been conducted. Costs may vary significantly depending on type of road related problems and whether roads are closed or decommissioned. Cost of assessment is \$209,000 and would be completed in the first 10 years.
SLR-CCCS-21.1.2.1						0	Action is considered In-Kind
SLR-CCCS-21.2.1.1						0	Action is considered In-Kind
SLR-CCCS-21.2.2.1						0	Action is considered In-Kind
SLR-CCCS-21.2.2.2	370.00	370.00	370.00	370.00	370.00	2,220	Costs may be high due to sediment deposition behind some dams and subsequent analysis of downstream impacts resulting from dam removal/sediment removal. The total cost is unknown due to the uncertainties regarding the extent of the problems and landowner willingness. Cost based on treating 15 barriers at a rate of \$148,000/unit.
SLR-CCCS-21.2.2.3						0	The cost of monitoring adult/juvenile passage should be incorporated into each summer dam passage facility. Action is considered In-Kind
SLR-CCCS-21.2.2.4						0	Cost should be minimal to use existing guidelines when evaluating summer dams. Action is considered In-Kind
SLR-CCCS-22.1.1.1						TBD	In more urbanized areas costs will likely be absorbed into SWMP requirements per the RWQCB. Costs in rural areas where these storm water plans are not required may be significant on a project by project basis.
SLR-CCCS-22.1.1.2						0	Action is considered In-Kind
SLR-CCCS-22.1.1.3						0	Currently, incentive programs already exist and should be explored and expanded upon. Action is considered in-kind
SLR-CCCS-22.1.2.1						0	Action is considered In-Kind
SLR-CCCS-22.1.2.2						0	Action is considered In-Kind
SLR-CCCS-22.1.2.3						0	Action is considered In-Kind
SLR-CCCS-22.1.2.4						TBD	
SLR-CCCS-22.1.3.1						0	Action is considered in-kind.
SLR-CCCS-22.1.3.2						TBD	Cost are dependent on market value and property turnover.
SLR-CCCS-22.1.3.3						0	Action is considered In-Kind
SLR-CCCS-22.1.3.4						0	Action is considered In-Kind
SLR-CCCS-22.1.3.5						0	Action is considered In-Kind
SLR-CCCS-22.1.4.1						0	Outreach to landowners already occurs from many of the municipalities and water districts in the watershed. Action is considered In-Kind
SLR-CCCS-22.1.5.1						0	Action is considered In-Kind

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Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SLR-CCCS-22.1.5.2						0	Action is considered In-Kind
SLR-CCCS-22.1.6.1	2.50	2.50				5	Cost based on installing a minimum of 5 water quality stations at a rate of \$1000/site.
SLR-CCCS-22.2.1.1						0	Action is considered In-Kind
SLR-CCCS-22.2.1.2						0	Action is considered In-Kind
SLR-CCCS-22.2.2.1						0	Action is considered In-Kind
SLR-CCCS-22.2.2.2	105	105				209	Cost likely accounted as part of identifying failing septic systems through water quality monitoring. Cost of assessment is \$209,000 and would be completed in the first 10 years.
SLR-CCCS-22.2.2.3							
SLR-CCCS-22.2.2.4						0	Action is considered In-Kind
SLR-CCCS-22.2.2.5						0	Action is considered In-Kind
SLR-CCCS-22.2.3.1						TBD	Size, number, and type of detention basins is not determined.
SLR-CCCS-22.2.3.2						0	Action is considered In-Kind
SLR-CCCS-22.2.4.1						0	Action is considered In-Kind
SLR-CCCS-22.2.4.2						0	Action is considered In-Kind
SLR-CCCS-22.2.5.1						0	Action is considered in-kind
SLR-CCCS-22.2.5.2						0	Action is considered In-Kind
SLR-CCCS-22.2.5.3						0	Costs should be minimal and are considered part of SWRCB existing authority and obligation. Action is considered In-Kind
SLR-CCCS-22.2.5.4						0	Action is considered In-Kind
SLR-CCCS-23.1.1.1						TBD	Cost of implementation will likely be high due to the large amount of existing infrastructure. Cost cannot be determined without an assessment of road network and site feasibility.
SLR-CCCS-23.1.2.1						0	Standard practice, action is considered in-kind
SLR-CCCS-23.1.2.2	1	1				2	Cost to develop database estimated at \$2,000
SLR-CCCS-23.1.2.3						0	Action is considered In-Kind
SLR-CCCS-23.1.2.4						0	Action is considered In-Kind
SLR-CCCS-23.1.2.5						0	Similar existing programs could be modified and implemented at minimal cost. Action is considered In-Kind
SLR-CCCS-23.1.2.6	50.00					50	
SLR-CCCS-23.1.3.1						0	Action is considered In-Kind
SLR-CCCS-23.1.3.2	377.00	377.00				754	Some road assessment have already been conducted in the watershed. Existing assessments should be used when possible. Cost for road inventory estimated at \$1000/mile (assume 75% of road network) and for erosion assessment estimated at \$12/acre (assume 25% of total watershed acres).
SLR-CCCS-23.1.3.3						0	Action is considered in-kind and part of THPs.
SLR-CCCS-23.1.3.4	116.67	116.67	116.67	116.67	116.67	700	Cost based on treating a portion of the riparian road network in rural areas, assuming 40% of riparian road network is in rural land. Cost based on decommission 50 miles of riparian road at a rate of \$14,000/mile. If roads are upgraded, cost would be \$1,197,000.
SLR-CCCS-23.1.3.5						TBD	Many road associations are inadequately funded. A road improvement fund for the San Lorenzo River could address sources of chronic and episodic sediment input by improving drainage features and reducing hydrologic connectivity.
SLR-CCCS-23.1.3.6	1,642	1,642	1,642	1,642		6,567	Cost based on treating 25 stream crossings (10% of 258 total) at a rate of \$263,000/unit.
SLR-CCCS-23.1.3.7						TBD	
SLR-CCCS-23.1.3.8	192.50	192.50	192.50	192.50		770	Cost based on upgrading 32 miles (5% of 641 miles of local, neighborhood, and rural road, city street, unseparated) at a rate of \$24,000/mile.
SLR-CCCS-23.1.3.9						0	Action is considered In-Kind
SLR-CCCS-23.1.3.10						TBD	Costs will vary depending on number of culvert upgrades on a road network and the inefficiency of the current drainage system.
SLR-CCCS-23.1.3.11						TBD	Cost difficult to determine but may result in a long term cost savings. Current economic conditions will likely delay implementation of this recommendation, if adopted.
SLR-CCCS-23.1.3.12						0	
SLR-CCCS-23.1.3.13						0	Action is considered In-Kind
SLR-CCCS-23.1.3.14	220.00	220.00	220.00	220.00		880	
SLR-CCCS-23.1.4.1						0	Action is considered In-Kind
SLR-CCCS-23.1.5.1	211.50	211.50				423	Railcar bridges may result in large cost savings as compared to a seismically engineered bridge structure. Cost based on treating 3 barriers at a rate of \$141,000/crossing.
SLR-CCCS-23.1.5.2						0	Action is considered In-Kind
SLR-CCCS-23.1.5.3						TBD	Cost may vary significantly. In more urbanized areas costs will likely be absorbed into SWMP requirements per the RWQCB. Costs in rural areas where these storm water plans are not required may be significant on a project by project basis.
SLR-CCCS-23.1.5.4						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.
SLR-CCCS-23.1.5.5						0	Cost is accounted for in other actions.
SLR-CCCS-23.1.5.6						TBD	According to CDFG 2004 cost estimates can range from 150K to 800K depending on location and type of barrier. Some modified barriers in Santa Cruz have cost more than these estimates. Costs associate with barrier modification must be carefully balanced against other restoration activities that are less popular socially, but may yield greater beneficial affects to various lifestages.
SLR-CCCS-23.1.6.1	75.00	75.00				150	Cost based on treating 1.9 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$1000/acre.
SLR-CCCS-23.1.6.2						0	Action is considered In-Kind
SLR-CCCS-23.1.7.1						TBD	

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Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SLR-CCCS-23.1.7.2						TBD	Costs may vary depending on sediment remediation techniques. Road upgrades for the Russian River were estimated to cost 92K per mile (NMFS 2008). Costs for the SLR are likely similar.
SLR-CCCS-23.1.7.3						TBD	Costs may vary depending on sediment remediation techniques. Road upgrades for the Russian River were estimated to cost 92K per mile (NMFS 2008).
SLR-CCCS-23.1.7.4						TBD	
SLR-CCCS-23.2.1.1						0	Action is considered In-Kind
SLR-CCCS-23.2.1.2						0	Action is considered In-Kind
SLR-CCCS-23.2.1.3						0	Action is considered In-Kind
SLR-CCCS-23.2.1.4						0	Action is considered In-Kind
SLR-CCCS-23.2.1.5						TBD	Cost may vary significantly. However, a well designed road management plan should result in overall cost savings.
SLR-CCCS-23.2.1.6	1,500	1,500				3,000	Cost is anticipated to be primarily from staffing.
SLR-CCCS-23.2.1.7						0	Costs should be minimal because this should be adopted as a standard practice of all agencies. Action is considered In-Kind
SLR-CCCS-23.2.2.1						0	Action is considered In-Kind
SLR-CCCS-23.2.3.1						0	Action is considered In-Kind
SLR-CCCS-23.2.3.2						0	Action is considered In-Kind
SLR-CCCS-23.2.3.3						0	Action is considered In-Kind
SLR-CCCS-23.2.3.4						0	Action is considered In-Kind
SLR-CCCS-24.1.1.1	37.50	37.50				75	Cost based on stream flow/precipitation model at a rate of \$75,000/project.
SLR-CCCS-24.1.1.2						0	Action is considered In-Kind
SLR-CCCS-24.1.1.3						0	Action is considered In-Kind
SLR-CCCS-24.1.1.4						0	Action is considered In-Kind
SLR-CCCS-24.1.1.5						0	Providing information to the SWRCB should be of little expense. Action is considered In-Kind
SLR-CCCS-24.1.1.6						0	Cost of informing the Water District of streambed alteration agreements requirements should be minimal. Action is considered In-Kind
SLR-CCCS-24.1.1.7						0	Cost of protecting these cool water sources is expected to be minimal. Action is considered In-Kind
SLR-CCCS-24.2.1.1						0	Action is considered In-Kind
SLR-CCCS-24.2.1.2	6.55	6.55	6.55	6.55	6.55	131	Cost based on fish/habitat restoration model at a rate of \$131,000/project.
SLR-CCCS-24.2.1.3						0	Action is considered In-Kind
SLR-CCCS-24.2.2.1						TBD	Costs may be significant and cannot be predicted at this time.
SLR-CCCS-24.2.2.2						0	Costs accounted for in other actions (see Recreation).
SLR-CCCS-24.2.2.3						0	Action is considered In-Kind.
SLR-CCCS-24.2.3.1						0	Action is considered In-Kind
SLR-CCCS-24.2.3.2						0	Cost accounted for in implementation of other action steps.
SLR-CCCS-24.2.4.1						0	Action is considered In-Kind
SLR-CCCS-24.2.4.2						0	Action is considered In-Kind
SLR-CCCS-24.2.4.3						0	Costs may include consulting expertise to construct a water budget for the San Lorenzo River. Action is considered In-Kind
SLR-CCCS-24.2.4.4						0	Costs are anticipated to be absorbed into ongoing activities. Action is considered In-Kind
SLR-CCCS-24.2.4.5						0	Action is considered In-Kind
SLR-CCCS-24.2.4.6						0	Action is considered In-Kind
SLR-CCCS-24.2.5.1						TBD	Protecting these areas from impacts of development may be costly due to concerns of reverse condemnation, etc. Cost cannot be determined at this time due to a lack of information regarding where these existing habitats remain in juxtaposition to future development.
SLR-CCCS-24.2.5.2						0	Action is considered In-Kind
SLR-CCCS-24.2.6.1						0	Cost will likely consist of existing staff time. It is presumed that existing protocols could be tailored to general Santa Cruz County constraints. Costs may be higher if new guidelines are developed that do not rely on protocols from past studies.
SLR-CCCS-24.2.6.2						0	Outreach and education are ongoing, and additional costs are expected to be minimal. Action is considered In-Kind
SLR-CCCS-24.2.6.3						TBD	Cost accounted for in other action steps.
SLR-CCCS-24.2.6.4						0	Action is considered In-Kind
SLR-CCCS-24.2.7.1						0	This action step should be adopted as part of future road actions. Action is considered In-Kind
SLR-CCCS-24.2.8.1	100.00					100	
SLR-CCCS-25.1.1.1						0	Action is considered in-kind
SLR-CCCS-25.1.2.1	18.75	18.75	18.75	18.75		75	Cost based on stream flow/precipitation model at a rate of \$75,000/project.
SLR-CCCS-25.1.2.2						TBD	
SLR-CCCS-25.1.2.3						TBD	Costs may be significant depending on site conditions and number of devices installed
SLR-CCCS-25.1.2.4						TBD	Costs may be significant. Pooling of resources with other water agencies in Santa Cruz County could result in significant cost savings.
SLR-CCCS-25.1.2.5						0	Action is considered In-Kind
SLR-CCCS-25.1.2.6						TBD	Town of Scotts Valley is located above the anadromous portions of the San Lorenzo River watershed (specifically Carbonera Creek). Water savings in Scotts Valley should result in increased flow into San Lorenzo River tributaries.
SLR-CCCS-25.1.2.7						0	Action is considered In-Kind
SLR-CCCS-25.1.2.8						TBD	Costs may be significant depending on site conditions and number of devices installed.
SLR-CCCS-25.1.2.9						TBD	Costs unknown at this time and would depend on the specific size and number of parking lots.
SLR-CCCS-25.1.2.10	105	105				209	Cost is estimate for an assessment only.
SLR-CCCS-25.1.3.1						0	Action is considered In-Kind

San Lorenzo River, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SLR-CCCS-25.1.3.2	61.00					61	Cost based on fish screen at a rate of \$61,000/screen.
SLR-CCCS-25.1.4.1						0	Action is considered In-Kind
SLR-CCCS-25.2.1.1						0	Action is considered In-Kind
SLR-CCCS-25.2.1.2						TBD	Cost may vary considerably depending on existing baseflow and existing uses of water being diverted.
SLR-CCCS-25.2.1.3	100					100	Cost is based on a one year pilot study.
SLR-CCCS-25.2.1.4						0	Action is considered In-Kind
SLR-CCCS-25.2.1.5						0	Action is considered In-Kind
SLR-CCCS-25.2.1.6						0	
SLR-CCCS-25.2.1.7						0	Action is considered In-Kind
SLR-CCCS-25.2.1.8						0	Action is considered In-Kind
SLR-CCCS-25.2.1.9						0	Action is considered In-Kind
SLR-CCCS-25.2.1.10						0	Action is considered In-Kind
SLR-CCCS-25.2.1.11						0	Action is considered In-Kind
SLR-CCCS-25.2.1.12						0	Action is considered In-Kind
SLR-CCCS-25.2.1.13						0	Action is considered In-Kind
SLR-CCCS-25.2.1.14						0	Action is considered In-Kind
SLR-CCCS-25.2.1.15						0	Action is considered In-Kind

Scott Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ScC-CCCS-1.1.1.1						TBD	
ScC-CCCS-1.1.1.2						TBD	
ScC-CCCS-1.1.1.3	32					0	Action is considered In-Kind
ScC-CCCS-1.1.2.1	1.50	1.50				3	Cost of signs vary widely depending on materials used and content of signs. Assume \$1,000/sign with a minimum of 3 signs for lagoon.
ScC-CCCS-1.1.2.2						0	Action is considered In-Kind
ScC-CCCS-1.1.3.1						0	Cost accounted for in other ESTUARY action step.
ScC-CCCS-2.1.1.1	64.50	64.50				129	Cost estimate based on treating 3 miles (assume 1 project/mile in 25% High IP) at a rate of \$43,000/mile.
ScC-CCCS-2.1.1.2						0	Cost accounted for in above action steps.
ScC-CCCS-2.1.1.3						0	Cost accounted for in SEDIMENT.
ScC-CCCS-3.1.1.1	774					774	Cost based on \$119,000/mile of Engineered Log Jam for 6.5 miles of high IP. If placement of LWD used in replacement of Engineered Log Jam, cost would equal \$182,000 for treating 6.5 miles of high IP. Co-related to habitat complexity.
ScC-CCCS-3.1.2.1						TBD	Cost will be determined when optimum acre feet per year is assessed to reduce impacts. Recommend initiating a hydrological study at a rate of \$75,000/project.
ScC-CCCS-3.1.2.2	3,850	3,850				7,700	Costs are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
ScC-CCCS-3.1.2.3						0	Action is considered In-Kind
ScC-CCCS-6.1.1.1	67.50	67.50				135	Cost based on treating 4.5 miles (1 project per mile in 50% high IP) at a rate of \$30,000/mile.
ScC-CCCS-6.1.1.2	131.00					131	Cost based on fish/habitat restoration at a rate of \$131,000/project.
ScC-CCCS-6.1.1.3						TBD	Cost accounted for in above action step.
ScC-CCCS-6.1.1.4						TBD	Cost will depend on number of stream bank protection projects identified in fish/habitat restoration assessment in Scott Creek. This number is unknown and will vary depending on water year. Cost of LWD may be less expensive in this watershed due to ongoing timber management actions.
ScC-CCCS-6.1.1.5						0	Costs are anticipated to be lower in Scott Creek than in many of the more urbanized watersheds in the Santa Cruz Mtns Diversity Stratum due to the familiarity of many landowners with salmon and their habitat requirements. Action is considered In-Kind
ScC-CCCS-6.1.2.1						0	Cost should be minimal because retention of LWD is typically a resource management policy versus physical process. Action is considered In-Kind
ScC-CCCS-6.1.2.2						0	Coordinating instream large wood placement with future timber harvest activities in the watershed could result in substantial cost savings and serve as an opportunity for effective timber harvest plan mitigation. Costs accounted for in other recovery actions - See Hydrology.
ScC-CCCS-6.1.2.3	67.00	67.00				134	Cost based on treating 1 mile (assume 80 acres/mile in 5% High IP with a 1 mile minimum) at a rate of \$2,000/acre.
ScC-CCCS-8.1.1.1	6.25	6.25	6.25	6.25		25	Costs will vary on landowner participation and year to year variation in rainfall patterns. This cost estimate does not include maintenance obligations.
ScC-CCCS-8.1.1.2						0	This should be considered a standard practice for all regulatory and oversight agencies. Action is considered In-Kind
ScC-CCCS-8.1.1.3	21.00	21.00				42	Cost based on assumption of \$14,000/mile to decommission 10% (~3 miles) of road network in the watershed. Road upgrades for the same 10% of the road network would equate to \$71,820.
ScC-CCCS-8.1.1.4	35.91	35.91				72	The cost of this action assumes 10% of roads (~3 miles) will be treated at a cost of \$24,000/mile.
ScC-CCCS-8.1.1.5	10.50	10.50				21	Costs to decommission 1.5 miles of riparian roads based on \$14,000/mile. The costs are related to Roads and Railroads.
ScC-CCCS-11.1.1.1						0	Costs accounted for in Monitoring Chapter.
ScC-CCCS-13.1.1.1						0	This recommendation should be adopted as a standard practice for all agencies and consulting firms involved in actions to address channel and bank stability. Action is considered In-Kind
ScC-CCCS-13.1.1.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
ScC-CCCS-13.1.1.3						0	This recommendation should be considered standard practice. Action is considered In-Kind
ScC-CCCS-13.1.1.4						0	This recommendation should be considered standard practice. Action is considered In-Kind
ScC-CCCS-13.1.1.5						0	
ScC-CCCS-13.1.2.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
ScC-CCCS-13.1.3.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
ScC-CCCS-13.1.4.1						TBD	
ScC-CCCS-13.1.4.2	48.00	48.00				96	Cost are based on treating 2.25 miles (assume 1 project/mile in 25% high IP) at a rate of \$43,000.
ScC-CCCS-13.2.1.1						0	Action is considered In-Kind
ScC-CCCS-15.1.1.1						0	Action is considered In-Kind
ScC-CCCS-15.1.1.2						0	Standard practice. Action is considered In-Kind
ScC-CCCS-15.1.1.3						0	Action is considered In-Kind
ScC-CCCS-15.1.2.1						0	Action is considered In-Kind
ScC-CCCS-15.1.2.2						0	Action is considered In-Kind
ScC-CCCS-15.2.1.1						0	This recommendation should be adopted as standard practice. Action is considered In-Kind
ScC-CCCS-15.2.1.2						0	Cost of providing the plan is minimal. Action is considered In-Kind
ScC-CCCS-15.2.1.3						0	Action is considered In-Kind
ScC-CCCS-15.2.1.4						0	Action is considered In-Kind
ScC-CCCS-15.2.2.1						0	Action is considered In-Kind
ScC-CCCS-15.2.3.1						0	Additionally, costs are developed for the Aptos watershed and the fire plan could be used in the Scott watershed. Action is considered In-Kind
ScC-CCCS-16.1.1.1	38.00					38	Cost of signs varies widely. Assume \$500/sign with a minimum of 15 signs.
ScC-CCCS-16.1.1.2						0	Action is considered In-Kind

Scott Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ScC-CCCS-16.1.1.3						0	This recommendation is associated with environmental regulatory policy. Action is considered In-Kind
ScC-CCCS-16.1.1.4						0	Action is considered In-Kind
ScC-CCCS-16.1.1.5						0	Action is considered In-Kind
ScC-CCCS-16.1.1.6						0	Action is considered In-Kind
ScC-CCCS-19.1.1.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
ScC-CCCS-19.1.2.1						0	Action is considered In-Kind
ScC-CCCS-19.1.3.1						0	Action is considered In-Kind
ScC-CCCS-19.1.3.2						0	Cost should be minimal as it is anticipated this recommendation will only be implemented as part of an approved timber harvest plan. Cost accounted for in above action step.
ScC-CCCS-19.1.3.3						0	Some costs may be incurred by landowner depending on management philosophy. Action is considered In-Kind
ScC-CCCS-19.1.4.1						0	This recommendation should be considered standard practice. Action is considered In-Kind
ScC-CCCS-19.1.4.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
ScC-CCCS-19.1.4.3						0	Financial impact will depend on rate of harvest in the watershed. Overall costs should be minimal. Action is considered In-Kind
ScC-CCCS-19.1.4.4						0	Most of these costs will likely be associated with planned ongoing harvest.
ScC-CCCS-19.1.4.5						0	
ScC-CCCS-19.1.5.1						0	Action is considered In-Kind
ScC-CCCS-19.1.5.2	100.00	100.00	100.00	100.00	100.00	600	If existing information is adequate regarding watershed conditions for covered species, it will reduce overall costs considerably. However, if HCP negotiations are contentious and protracted, costs could increase considerably.
ScC-CCCS-19.2.1.1						0	Applications are currently approved without review. Action is considered In-Kind
ScC-CCCS-19.2.1.2						TBD	
ScC-CCCS-19.2.1.3						0	Action is considered In-Kind
ScC-CCCS-19.2.1.4						0	Costs should be minimal if Santa Cruz County readily adopts this recommendation.
ScC-CCCS-19.2.1.5						0	Action is considered In-Kind
ScC-CCCS-23.1.1.1	14.00	14.00				28	Cost for a road inventory of 26 miles of road estimated at \$1,000/mile. Number of culverts and feasibility of energy dissipaters should be identified from road assessment.
ScC-CCCS-23.1.1.2						0	Action is considered In-Kind
ScC-CCCS-23.1.1.3	10.50	10.50				21	Cost based on \$14,000/mile to decommission 1.5 miles of riparian roads.
ScC-CCCS-23.1.2.1						0	Increased costs may be associated with the proposed recommendation but this information is currently unavailable. Cost accounted for in ESTUARY.
ScC-CCCS-23.1.3.1	222.00	222.00				444	Cost based on \$74,000/unit for 6 identified stream crossings.
ScC-CCCS-23.1.4.1	0.50	0.50	0.50	0.50	0.50	10	Ongoing programs could facilitate this recommendation. Costs are difficult to estimate on a watershed basis. Such a program would likely be focused on County and State maintenance staff who cover a large region and many of the key watersheds.
ScC-CCCS-23.1.4.2						0	Cost accounted for in county planning for future road construction and/or above action steps.
ScC-CCCS-23.1.5.1	3.33	3.33	3.33	3.33	3.33	40	
ScC-CCCS-23.1.5.2	5.00	5.00	5.00	5.00		20	
ScC-CCCS-23.1.5.3						TBD	Cost will vary depending on the number of culvert upgrades on the road network and the maintenance requirements and accessibility. An inventory of the culvert system is necessary before costs can be estimated. Culvert inventory cost estimated in action step above.
ScC-CCCS-23.1.5.4						0	Action is considered In-Kind
ScC-CCCS-23.1.6.1						0	Action is considered In-Kind
ScC-CCCS-23.1.6.2						0	Cost accounted for in above action steps.
ScC-CCCS-23.2.1.1						0	Action is considered In-Kind
ScC-CCCS-23.2.1.2	21.00	21.00				42	Cost based on decommissioning 3 miles of road at a rate of \$14,000/mile.
ScC-CCCS-23.2.1.3						0	Action is considered In-Kind
ScC-CCCS-23.2.1.4						0	This should be considered a standard road management practice for all landowners. Action is considered In-Kind
ScC-CCCS-23.2.1.5						0	This is a cost that is frequently absorbed into new road projects and should be considered a standard business practice.
ScC-CCCS-23.2.1.6						0	These practices should be adopted as part of future road actions and maintenance practices. Action is considered in-kind
ScC-CCCS-23.2.1.7						0	Cost likely accounted for in road inventory.
ScC-CCCS-23.2.1.8						0	
ScC-CCCS-23.2.1.9						0	A well designed road management plan should result in overall cost savings due to reduced flood fighting actions, and stream bank and road stabilization projects. Action is considered In-Kind
ScC-CCCS-23.2.1.10	25.00	25.00				50	Costs are estimated for Scott Creek watershed only. Costs are an estimate of County staff time.
ScC-CCCS-23.2.2.1						0	Action is considered In-Kind
ScC-CCCS-24.1.1.1						0	Costs are expected to be absorbed into ongoing activities. Action is considered In-Kind
ScC-CCCS-24.2.1.1						0	Action is considered In-Kind
ScC-CCCS-24.2.2.1	34.00	34.00				68	Cost for erosion assessment estimated at \$14/acre. (assume 25% of total watershed acres).
ScC-CCCS-24.2.3.1						0	Avoiding building in channel migration zones can result in long term cost saving due to reduced flood fighting and consequent stabilization measures. Action is considered In-Kind
ScC-CCCS-24.2.3.2						0	Action is considered In-Kind
ScC-CCCS-24.2.4.1	45.00					45	
ScC-CCCS-24.2.4.2	20.00	20.00				40	
ScC-CCCS-24.2.4.3						0	Action is considered In-Kind

Scott Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
ScC-CCCS-24.2.4.4						0	Action is considered In-Kind
ScC-CCCS-24.2.4.5						0	Action is considered In-Kind
ScC-CCCS-24.2.4.6						0	Action is considered In-Kind
ScC-CCCS-24.2.4.7						0	Action is considered In-Kind
ScC-CCCS-24.3.1.1						0	Cost for maintaining minimum summer base will be determined once a streamflow assessment has been conducted. This cost has been accounted for in above action step.
ScC-CCCS-24.3.1.2						0	Cost accounted for in ESTUARY.
ScC-CCCS-24.3.2.1						TBD	The cost for water conservation strategies will depend upon the type of each strategy, the feasibility to implement, and the willingness of water users to implement.
ScC-CCCS-24.3.2.2	37.00	37.00				74	Cost for stream flow model estimated at \$74,000/project. This action step could coordinate with additional action steps to avoid redundancy in cost.

Soquel Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SqC-CCCS-1.1.1.1						0	Cost based on number of storm drains to re-direct. Cost likely absorbed into City/County Public Works Department operations.
SqC-CCCS-1.1.1.2	1	1				2	Cost to screen the railroad trestle not likely to be significant and is estimated at \$2000.
SqC-CCCS-1.1.1.3	32					0	Action is considered In-Kind
SqC-CCCS-1.1.1.4						0	Action is considered In-Kind
SqC-CCCS-1.1.2.1						0	Action is considered In-Kind
SqC-CCCS-1.1.2.2						0	Action is considered In-Kind
SqC-CCCS-1.1.2.3	50.00	50.00				100	
SqC-CCCS-1.1.2.4						0	Action is considered In-Kind
SqC-CCCS-1.1.3.1						0	Action is considered In-Kind
SqC-CCCS-1.1.3.2	0.63	0.63	0.63	0.63	0.63	13	Cost based on amount of roofs needing to be treated. Cost for bird deterrents estimated at \$25/ft. for 500 ft. for a total of \$12,500
SqC-CCCS-1.1.4.1	41.00	41.00				82	Cost based on treating 1 acre (assume 5% high IP) at a rate of \$41,000. Cost to replace accounted for in below action steps.
SqC-CCCS-1.1.4.2						0	Action is considered In-Kind
SqC-CCCS-1.1.4.3	5.00					5	
SqC-CCCS-1.1.5.1	141.00	141.00				282	Costs may vary depending on the total number of structures and necessary engineering. Permitting costs are anticipated to be negligible due to likely use of programmatic permits. Cost for treating 1 acre (assume 10% of total estuarine habitat) at a rate of \$282,000/acre.
SqC-CCCS-1.1.5.2						0	Action is considered In-Kind
SqC-CCCS-1.1.5.3	101	101				209	Cost of evaluation estimated at \$209,000 and would be completed with the first 10 years.
SqC-CCCS-2.1.1.1	300	300	300	300		1,500	Cost based on treating 5 miles ( assume 1 project/mile) at a rate of \$300,000/project.
SqC-CCCS-2.1.1.2						0	Costs will vary depending on site specific conditions and degree of landowner participation. Some of these areas have urban infrastructure which increases the importance of those remaining floodplain areas in Soquel. Cost accounted for in other action steps.
SqC-CCCS-2.1.2.1						TBD	Cost is variable and driven by fair market value, land turnover rates, and amount of habitat needed to be restored.
SqC-CCCS-2.1.2.2						0	Cost accounted for in ROADS/RAILROADS.
SqC-CCCS-2.1.2.3	50.00					50	
SqC-CCCS-3.1.1.1	15.00	15.00	15.00	15.00	15.00	75	Cost based on hydrologic model estimated at \$75,000/project.
SqC-CCCS-3.1.1.2						0	Action is considered In-Kind
SqC-CCCS-3.1.1.3						0	Action is considered In-Kind
SqC-CCCS-3.1.1.4	47	47	47	47	47	280	Total costs are difficult to predict due to uncertainties regarding landowner participation. The estimated cost of a 10,000 gallon water storage tank is \$7000 per tank and we estimated 40 tanks would need to be purchased for a total of \$280,000
SqC-CCCS-3.1.1.5	3,850	3,850				7,700	Cost are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year.
SqC-CCCS-3.1.1.6						TBD	Costs will vary depending on the size of the diversion and participation of diverters.
SqC-CCCS-3.2.1.1						0	Action is considered In-Kind
SqC-CCCS-5.1.1.1	150.00					150	Cost estimate is for evaluation only.
SqC-CCCS-5.1.1.2	639.00	639.00				1,279	Cost based on providing passage at a rate of \$639,000/project. Implementation of these actions would depend on the outcome of the feasibility study.
SqC-CCCS-5.1.1.3	42.00					42	Cost based on escapement monitoring estimated at \$42,000/project.
SqC-CCCS-5.1.1.4	2.00					2	Cost should be minimal.
SqC-CCCS-6.1.1.1	65.50	65.50				131	Cost for fish/habitat monitoring estimated at \$131,000/project.
SqC-CCCS-6.1.1.2	319.00	319.00				638	Cost based on treating 22 miles of stream at a rate of \$29,000/mile. Costs for implementing these projects may be more than estimated depending on the methods used.
SqC-CCCS-6.1.1.3						0	Cost accounted for in above action steps.
SqC-CCCS-6.1.1.4						0	Action is considered In-Kind
SqC-CCCS-6.1.1.5						0	Action is considered In-Kind
SqC-CCCS-6.1.1.6						0	Action is considered In-Kind
SqC-CCCS-6.1.1.7						0	Manipulation of LWD should not occur until evaluated by the County of Santa Cruz Planning staff and hydrologist and/or qualified biologist familiar with Central Coast streams. Action is considered In-Kind
SqC-CCCS-6.1.1.8						0	Action is considered In-Kind
SqC-CCCS-6.1.1.9	1					1	Cost for planting trees is very minimal. Cost provided is for the next 20 years.
SqC-CCCS-6.1.2.1						TBD	
SqC-CCCS-6.1.3.1	29.00	29.00				58	Cost based on treating 2 miles of stream at a rate of \$29,000/mile for LWD placement. If constructing ELJ, assume 10/mile at a rate of 115,000/ELJ for a total of 1,150,000.
SqC-CCCS-6.1.4.1	37.50	37.50				75	
SqC-CCCS-8.1.1.1	48.50	48.50				97	Cost for erosion assessment estimated at \$14/acre (assume 25% of total watershed acres).
SqC-CCCS-8.1.1.2						TBD	
SqC-CCCS-8.1.1.3	10.00	10.00				20	
SqC-CCCS-8.1.1.4	250.00	250.00				500	Cost likely amounts to a 1/2 time position in the Soquel Creek/Aptos Creek watersheds. Costs were estimated over a ten year interval and will likely need further refinement if this recommendation is carried out over a longer duration.
SqC-CCCS-8.1.1.5						0	This should be considered a standard practice for all permitting agencies. Action is considered In-Kind
SqC-CCCS-8.1.1.6						0	Action is considered In-Kind
SqC-CCCS-8.1.1.7	10.00	10.00	10.00	10.00		40	This cost estimate does not include long-term maintenance obligations.
SqC-CCCS-8.1.1.8	101	101				209	Assessment cost estimated at \$209,000.

Soquel Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SqC-CCCS-8.1.1.9						0	Action is considered In-Kind
SqC-CCCS-8.1.1.10						0	Action is considered In-Kind
SqC-CCCS-8.1.1.11						0	Cost accounted for in erosion assessment.
SqC-CCCS-11.1.1.1						0	Cost accounted for in Monitoring Chapter.
SqC-CCCS-11.1.1.2						TBD	Existing CDFW habitat survey protocols may be utilized at little or no cost for development.
SqC-CCCS-11.1.1.3	100.00	100.00	100.00			300	
SqC-CCCS-12.1.1.1						TBD	Cost depends on land and market value
SqC-CCCS-13.1.1.1						0	Action is considered In-Kind
SqC-CCCS-13.1.2.1						0	Action is considered In-Kind
SqC-CCCS-13.2.1.1						0	Adoption of this standard practice will result in increased costs for some projects but will ultimately result in long term savings due to better designed and constructed projects with long term persistence. Action is considered In-Kind
SqC-CCCS-13.2.1.2						0	Action is considered In-Kind
SqC-CCCS-13.2.1.3						0	Action is considered In-Kind
SqC-CCCS-15.1.1.1						0	Action is considered In-Kind
SqC-CCCS-15.1.1.2						0	Action is considered In-Kind
SqC-CCCS-15.1.1.3						0	
SqC-CCCS-15.1.1.4						0	Action is considered In-Kind
SqC-CCCS-15.1.1.5						0	Action is considered In-Kind
SqC-CCCS-15.1.1.6						0	This should be a standard practice. Action is considered In-Kind
SqC-CCCS-15.1.1.7						0	Action is considered In-Kind
SqC-CCCS-15.1.2.1						0	Sediment control is a requirement for all post firefighting actions. Immediately implementing these measures (when feasible) when equipment and crews are available will minimize mobilization costs and result in a long term cost savings. Action is considered In-Kind
SqC-CCCS-15.1.2.2						0	Action is considered In-Kind
SqC-CCCS-15.1.3.1						0	Action is considered In-Kind
SqC-CCCS-15.1.4.1						0	Action is considered In-Kind
SqC-CCCS-15.2.1.1						0	Action is considered In-Kind
SqC-CCCS-15.2.1.2						0	Action is considered In-Kind
SqC-CCCS-16.1.1.1						0	Action is considered In-Kind
SqC-CCCS-16.1.1.2						0	Action is considered In-Kind
SqC-CCCS-16.1.1.3						0	Action is considered In-Kind
SqC-CCCS-16.1.1.4	7.50					8	Cost for signs vary widely depending on materials and content. Assume \$500/sign with a minimum of 15 signs.
SqC-CCCS-19.1.1.1						0	Action is considered In-Kind
SqC-CCCS-19.1.2.1						0	Action is considered In-Kind
SqC-CCCS-19.1.3.1						0	Action is considered In-Kind
SqC-CCCS-19.1.3.2	134.00	134.00				268	Costs will vary depending on landowner participation and site specific needs. This strategy can be implemented at relatively little costs in areas zoned for timber production as a component of future harvest plans. Cost based on treating 2 miles (assume 80 acres/mile in 15% High IP) at a rate of \$2,000/acre.
SqC-CCCS-19.1.4.1						0	Action is considered In-Kind
SqC-CCCS-19.1.4.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
SqC-CCCS-19.1.4.3						0	Action is considered In-Kind
SqC-CCCS-19.1.4.4						0	Action is considered In-Kind
SqC-CCCS-19.1.4.5						0	Action is considered In-Kind
SqC-CCCS-19.1.5.1						0	Cost of managing riparian areas is anticipated to be minimal. Action is considered In-Kind
SqC-CCCS-19.1.6.1						0	Action is considered In-Kind
SqC-CCCS-19.1.6.2						0	Action is considered In-Kind
SqC-CCCS-19.1.6.3						0	Action is considered In-Kind
SqC-CCCS-19.1.7.1						0	Action is considered In-Kind
SqC-CCCS-19.1.7.2						0	Action is considered In-Kind
SqC-CCCS-19.1.7.3						0	Action is considered In-Kind
SqC-CCCS-19.1.7.4						0	
SqC-CCCS-19.1.8.1						0	Action is considered In-Kind
SqC-CCCS-19.2.1.1	200.00	200.00	200.00	200.00	200.00	1,200	Cost estimate is for development of the HCP. Development costs are highly variable and are contingent on proposed covered activities, regulatory agency staffing, and interpersonal dynamics during negotiations.
SqC-CCCS-19.2.1.2						0	Action is considered In-Kind
SqC-CCCS-19.2.1.3						0	Action is considered In-Kind
SqC-CCCS-19.2.1.4						0	Action is considered In-Kind
SqC-CCCS-19.2.1.5						0	Action is considered In-Kind
SqC-CCCS-19.2.1.6						0	Action is considered In-Kind
SqC-CCCS-19.2.2.1						0	Action is considered In-Kind
SqC-CCCS-20.1.1.1						0	Action is considered In-Kind

Soquel Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SqC-CCCS-20.1.1.2						0	This recommendation is typically a standard business practice for mining operation due to a variety of regulatory requirements. Action is considered In-Kind
SqC-CCCS-20.1.1.3						0	Costs of avoiding environmental impacts should be minimal with proper and conservative planning. Action is considered In-Kind
SqC-CCCS-20.1.1.4						0	This should be considered a standard business practice. A site specific evaluation is likely needed. Costs of implementing this recommendation should be borne by the quarry operator. Action is considered In-Kind
SqC-CCCS-20.1.2.1						0	Costs should be minimal and should be part of Reclamation Plan. Action is considered In-Kind
SqC-CCCS-22.1.1.1						0	Action is considered In-Kind
SqC-CCCS-22.1.1.2						TBD	Cost to incorporate these measures in future developments would be considered In-Kind. Costs for modifying existing developments would depend on the site location, size, and type of treatment.
SqC-CCCS-22.1.1.3	101	101				202	Cost to upgrade stormwater discharge points cannot be determined at this time, but it may be significant. Cost of assessment estimated at \$202,355 and should be done within the first ten years..
SqC-CCCS-22.1.2.1						0	Action is considered In-Kind
SqC-CCCS-22.1.2.2						TBD	Cost may vary significantly. In more urbanized areas costs will likely be absorbed into SWMP requirements per the RWQCB. Costs in rural areas where these storm water plans are not required may be significant on a project by project basis.
SqC-CCCS-22.1.2.3						0	Action is considered In-Kind
SqC-CCCS-22.1.3.1						TBD	This recommendation may be difficult to implement unless Santa Cruz realizes a cost savings (due to reduced flood fighting, etc.). A financial analysis will likely be needed.
SqC-CCCS-22.1.3.2						0	Action is considered In-Kind
SqC-CCCS-22.1.3.3						TBD	Cost will vary depending on location and desirability of parcel for future development.
SqC-CCCS-22.1.4.1						0	Action is considered In-Kind
SqC-CCCS-22.1.4.2						0	Action is considered In-Kind
SqC-CCCS-22.1.4.3	204	204	204	204		818	Cost based on treating 0.25 mile (assume 80 acres/mile) at a rate of \$41,000/acre.
SqC-CCCS-22.1.4.4						0	Action is considered In-Kind
SqC-CCCS-22.1.4.5						0	
SqC-CCCS-22.1.5.1						0	Action is considered In-Kind
SqC-CCCS-22.1.5.2						0	Action is considered In-Kind
SqC-CCCS-22.1.5.3						0	Action is considered In-Kind
SqC-CCCS-22.1.5.4	5.00	5.00	5.00	5.00		20	Use of existing education materials should reduce overall costs.
SqC-CCCS-22.1.6.1						0	Action is considered In-Kind
SqC-CCCS-22.2.1.1						0	Action is considered In-Kind
SqC-CCCS-22.2.1.2						0	Action is considered In-Kind
SqC-CCCS-22.2.2.1						0	Action is considered In-Kind
SqC-CCCS-22.2.2.2						TBD	Cost may vary significantly. In more urbanized areas costs will likely be absorbed into SWMP requirements per the RWQCB. Costs in rural areas where these storm water plans are not required may be significant on a project by project basis.
SqC-CCCS-22.2.2.3						0	Action is considered In-Kind
SqC-CCCS-22.2.2.4						0	Costs should be minimal and are considered part of SWRCB existing authority and obligation. The recommendation should be implemented every year over the 100 year planning horizon. Action is considered In-Kind
SqC-CCCS-22.2.3.1						0	Action is considered In-Kind
SqC-CCCS-22.2.3.2						0	Action is considered In-Kind
SqC-CCCS-22.2.3.3						0	Action is considered In-Kind
SqC-CCCS-22.2.3.4						0	Action is considered In-Kind
SqC-CCCS-22.2.4.1						0	Remaining undeveloped floodplains provide critical high water refugia for listed salmonids. These habitats are typically converted to landuses incompatible with salmonid life history requisites.
SqC-CCCS-22.2.4.2						0	Costs should be minimal if incorporated into updated general plan. Action is considered In-Kind
SqC-CCCS-22.2.4.3						0	Costs should be minimal if incorporated into updated general plan. Action is considered In-Kind
SqC-CCCS-23.1.1.1						0	Action is considered In-Kind
SqC-CCCS-23.1.1.2						TBD	
SqC-CCCS-23.1.1.3	16.67	16.67	16.67	16.67	16.67	100	Costs would depend on outreach success of the program.
SqC-CCCS-23.1.1.4	41.50	41.50	41.50	41.50		166	Cost based on road inventory of 166 miles at a rate of \$1,000/mile.
SqC-CCCS-23.1.1.5	14.00	14.00	14.00	14.00		56	Cost will depend on landowner willingness to participate and site specific conditions. Cost based on decommissioning 4 miles of riparian road network at a rate of \$14,000/mile. If upgrading riparian roads, cost are estimated to total \$96,000.
SqC-CCCS-23.1.1.6	250	250	250	250		1,000	Cost based on treating 20 culverts at a rate of \$50,000/culvert.
SqC-CCCS-23.1.1.7	3,255					3,255	Soquel Demonstration State Forest to install a bridge or decommission a wet ford crossing on East Branch Soquel. Cost for this location (assume bottomless arch) at a rate of \$255,000. Estimated cost for a new bridge at the Redwood Lodge Road culvert location is approximately \$3 million.
SqC-CCCS-23.1.1.8						0	Action is considered In-Kind
SqC-CCCS-23.1.1.9	56.00	56.00	56.00	56.00		224	Cost based on treating 16 miles of road network at a rate of 14,000/mile.
SqC-CCCS-23.1.2.1						0	Cost accounted for in Prevent or minimize impairment to instream substrate.
SqC-CCCS-23.1.3.1	3,643	3,643				7,285	Cost based on treating 14 barriers at a rate of \$520,296/barrier. Cost may vary depending on size of stream and land use. Locations that impede wood movement in addition to salmonid movement should be considered a high priority for remediation.
SqC-CCCS-23.1.3.2						0	Use NMFS (2001) Guideline for Stream Crossings. Action is considered In-Kind

Soquel Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SqC-CCCS-23.1.3.3	10.00					10	Implementation of this recommendation could result in a significant cost savings for County of Santa Cruz. The education of county staff could lead to more private landowners using them because the county staff would promote them more often.
SqC-CCCS-23.1.4.1						0	Action is considered In-Kind
SqC-CCCS-23.1.5.1						0	Cost accounted for in other action step.
SqC-CCCS-23.1.5.2						TBD	An assessment of permanent and year-round access roads is required before a cost estimate can be estimated. Existing information and assessments conducted by the County and private consultants could (if compiled) result in a significant cost reduction.
SqC-CCCS-23.1.5.3						0	This cost could be minimal if incorporated into future timber harvest plans. Action is considered In-Kind
SqC-CCCS-23.1.5.4						TBD	Costs cannot be determined at this time. An assessment of permanent and year-round access roads is required before a cost estimate can be estimated. Cost of assessment is accounted for in another action step.
SqC-CCCS-23.1.5.5	25.00	25.00				50	Cost will vary depending on landowner participation and the severity of the problem. Cost estimate is based on RCD staff time and expertise to assess and educate landowners over a ten year period.
SqC-CCCS-23.1.5.6						0	Action is considered In-Kind
SqC-CCCS-23.1.6.1						0	Action is considered In-Kind
SqC-CCCS-23.1.6.2						0	Action is considered In-Kind
SqC-CCCS-23.2.1.1						TBD	
SqC-CCCS-23.2.1.2						0	This is a cost that is frequently absorbed into road projects.
SqC-CCCS-23.2.1.3	250.00	250.00				500	Cost likely amounts to a 1/2 time position in the Soquel Creek/Aptos Creek watersheds. Costs were estimated over a ten year interval and will likely need further refinement if this recommendation is carried out over a longer duration.
SqC-CCCS-23.2.1.4						TBD	Constant diligence will be necessary to minimize the impacts of unsanctioned trails and roads. Action is considered In-Kind
SqC-CCCS-23.2.1.5						TBD	
SqC-CCCS-23.2.1.6						0	Action is considered In-Kind
SqC-CCCS-23.2.2.1						TBD	Cost may vary significantly. However, a well designed road management plan should result in overall cost savings.
SqC-CCCS-23.2.3.1						0	Action is considered In-Kind
SqC-CCCS-23.2.4.1						0	Action is considered In-Kind
SqC-CCCS-23.2.4.2	101	101				202	Cost may vary significantly. However, a well designed road management plan should result in overall cost savings. Cost of assessment estimated at \$209,000 and should be done within the first ten years.
SqC-CCCS-24.1.1.1						0	Action is considered In-Kind
SqC-CCCS-24.1.2.1	105	105				209	Cost of assessment estimated at \$209,000 and should be done within the first ten years..
SqC-CCCS-24.1.3.1						TBD	Current demand for water exceeds the safe yield of local aquifers and is in danger of seawater contamination. Severe drought, particularly if occurring over a period of two or more years, would likely reduce flows significantly throughout the watershed, which would reduce overall salmonid abundance and compromise steelhead recovery goals.
SqC-CCCS-24.1.3.2						0	Action is considered In-Kind
SqC-CCCS-24.1.4.1						0	Action is considered In-Kind
SqC-CCCS-24.2.1.1						0	Cost accounted for in ESTUARY.
SqC-CCCS-24.2.2.1						0	Action is considered In-Kind
SqC-CCCS-24.2.2.2	37.50	37.50				75	Cost for stream flow model estimated at \$75,000/project. Cost could be redundant with above action step if not coordinated.
SqC-CCCS-24.2.2.3						0	Action is considered In-Kind
SqC-CCCS-24.2.3.1						0	Action is considered In-Kind
SqC-CCCS-24.2.3.2						0	Action is considered In-Kind
SqC-CCCS-24.2.4.1	1.50	1.50	1.50	1.50	1.50	30	Costs are difficult to estimate and might require minimal modification with hand crews or modifications with mechanized equipment.
SqC-CCCS-25.1.1.1						0	Action is considered In-Kind
SqC-CCCS-25.1.2.1	20.00					20	
SqC-CCCS-25.1.2.2	101	101				202	Cost of evaluation estimated at \$209,000 and would be completed with the first 10 years.
SqC-CCCS-25.1.2.3						0	Action is considered In-Kind
SqC-CCCS-25.1.2.4						0	Action is considered In-Kind
SqC-CCCS-25.1.2.5						0	Action is considered In-Kind
SqC-CCCS-25.1.2.6						0	Cost of purchasing or lease their rights is included in HYDROLOGY.
SqC-CCCS-25.1.2.7						TBD	
SqC-CCCS-25.1.2.8						TBD	Cost for off-channel storage dependent upon amount of optimum flow required for all life stages of fish.
SqC-CCCS-25.1.2.9						0	Action is considered In-Kind
SqC-CCCS-25.1.2.10	202					202	Costs would likely be significant and major infrastructure upgrades would be necessary. Cost of assessment estimated at \$209,000 and should be done within the first 5 years.
SqC-CCCS-25.1.2.11						0	This recommendation should be considered standard practice. Action is considered In-Kind
SqC-CCCS-25.1.2.12						TBD	Cost of working with the City will be absorbed into ongoing HCP negotiations. Cost of expanding plant will result in a significant increase in cost to City Water Dept.
SqC-CCCS-25.1.3.1						TBD	Estimate for fish screen is \$61,000/screen.
SqC-CCCS-25.1.4.1						0	Action is considered In-Kind
SqC-CCCS-25.1.5.1						0	Action is considered In-Kind
SqC-CCCS-25.1.5.2	80.00					80	Cost estimate derived from CDFG 2004.
SqC-CCCS-25.2.1.1						0	Action is considered In-Kind
SqC-CCCS-25.2.1.2	200.00					200	

Soquel Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SqC-CCCS-25.2.1.3						0	Cost accounted for above.
SqC-CCCS-25.2.1.4	12.00	12.00				24	Cost for stream flow gauges estimated at \$1000/gauge. Cost does not account for maintenance or data management.
SqC-CCCS-25.2.1.5						0	Action is considered In-Kind
SqC-CCCS-25.2.1.6						0	Action is considered In-Kind
SqC-CCCS-25.2.1.7						0	Action is considered In-Kind
SqC-CCCS-25.2.1.8						0	Action is considered In-Kind
SqC-CCCS-25.2.1.9						0	Action is considered In-Kind
SqC-CCCS-25.2.1.10						0	Action is considered In-Kind
SqC-CCCS-25.2.1.11						TBD	
SqC-CCCS-25.2.1.12						TBD	
SqC-CCCS-25.2.1.13	50.00	50.00				100	Cost may vary considerably depending on existing baseflow and existing uses of water being diverted.
SqC-CCCS-25.2.1.14	125.00	125.00				250	Cost estimate is for a comprehensive IFIM type watershed study. NMFS (2008) estimated \$50,000 for stream flow gaging and water balance model. Costs in Soquel - which is gaged - would likely be significantly more due to degree of overdraft and number of diversions. Cost estimate is very rough.
SqC-CCCS-25.2.1.15						0	Action is considered In-Kind

Waddell Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
WdC-CCCS-1.1.1.1	161.00	161.00				322	An estimated cost \$322,000/project.
WdC-CCCS-1.1.1.2	105	105				209	Cost of evaluation estimated at \$209,000.
WdC-CCCS-1.1.2.1	32.00	320.50				641	Costs may vary depending on the total number of structures and necessary engineering. Due to the lack of instream infrastructure (after the Highway 1 bridge is replaced) it is likely that relatively little engineering will be necessary. Permitting costs are anticipated to be negligible to likely use of programmatic permits. Cost for treating 2 acres (assume 5% of total estuarine acres) at a rate of \$320,000/acre.
WdC-CCCS-2.1.1.1	287.50	287.50				575	Costs are based on \$29,000/mile for stream complexity actions and \$42,000/mile for floodplain projects because the projects will work in concert with each other over the 8 mile section.
WdC-CCCS-6.1.1.1	51.00					51	Cost based on treating 1.7 miles (assume 1 project/mile in 50% high IP) at a rate of \$30,000/mile.
WdC-CCCS-6.1.1.2	160.00					160	Accurate costs depend on selected approaches. CDFW estimated LWD installation costs at approximately \$20K/mile (CDFG 2004).
WdC-CCCS-6.1.2.1						85	Cost based on riparian restoration monitoring at a rate of \$85,000/project.
WdC-CCCS-6.1.2.2	73.50	73.50				147	Cost estimate based on CDFG 2004, at approximately \$29,000/mile, and assuming approximately 5 miles would be treated. Costs will be higher if engineered large wood placement approaches are used. Significant cost savings (and ecological benefits) would likely be realized if unsecured woody material (sized at 1.5 to 2 times bankfull) is used. Large woody debris should be targeted to reach density and volume outlined in the Viability table in this document. Cost for treating 5 miles with large wood placement is \$147,000 and \$595,000 for Engineered Log Jams, respectively.
WdC-CCCS-6.1.2.3						0	Action is considered in-kind
WdC-CCCS-6.1.2.4	6	6	6	6	6	125	Estimated cost of 1000 hours of a hydrologist's time at \$125 per hour, for a total of \$125,000.
WdC-CCCS-6.1.2.5						0	Action is considered In-Kind
WdC-CCCS-6.1.2.6						TBD	Estimate for riparian thinning is \$2,000/acre.
WdC-CCCS-6.1.3.1	101.50	101.50				203	Cost based on \$29,000/mile for 7 miles of mainstem Waddell Creek. Cost of improving shelter could be part of increasing large wood frequency.
WdC-CCCS-6.1.3.2						0	Cost accounted for in above action steps.
WdC-CCCS-8.1.1.1	28.00	28.00				56	Cost for erosion assessment estimated at \$14/acre (assume 25% of total watershed acres).
WdC-CCCS-8.1.1.2	16.00	16.00				32	Cost based on \$14,000/mile for 2.3 miles of riparian road.
WdC-CCCS-8.1.1.3						TBD	Cost based on amount of gullies and slides to be treated. Cost estimated at \$500/ft.
WdC-CCCS-8.1.1.4						TBD	Cost based on amount of near stream sediment sources needing treatment.
WdC-CCCS-8.1.1.5						0	Action is considered In-Kind
WdC-CCCS-8.1.1.6	670	670				1,340	CDFW estimated LWD structures cost approximately \$20K each (CDFG 2004). Assumed 50 structures would be needed. Significant cost reduction could be realized in Waddell if less engineered structures (felling of riparian trees into watercourses) are used in the watershed. This approach may be more applicable in this watershed due to the paucity of near stream infrastructure.
WdC-CCCS-8.1.1.7						TBD	This work would be in addition to the road evaluation study. Cost savings could be realized through the use of air photography and interviews with landowners to identify major sources of sediment input.
WdC-CCCS-10.1.1.1	50.00					50	Cost for continuous water quality stations estimated at \$5,000/station. Assume a minimum of 10. Cost does not account for maintenance or data management.
WdC-CCCS-10.1.1.2	1					1	Estimated cost of reward is \$1000
WdC-CCCS-10.1.1.3	45.00					45	
WdC-CCCS-11.1.1.1						0	See Monitoring Chapter for costs associated with Lifecycle Monitoring Stations.
WdC-CCCS-14.1.1.1	67.00	67.00				134	Final reports should include a series of recommendations and the feasibility of implementing these recommendations. Accurate implementation cost cannot be determined until all potential control methods are evaluated and total magnitude of the impact of anadromous salmonids ascertained. Some researchers believe striped bass are not a major constraint. Cost for abundance/distribution surveys estimated at \$133,660/project.
WdC-CCCS-15.1.1.1						0	Action is considered In-Kind
WdC-CCCS-15.1.2.1						0	Action is considered In-Kind
WdC-CCCS-15.1.2.2	48.50	48.50				97	Cost based on effects of wildfire on ecosystem at a rate of \$97,000/project.
WdC-CCCS-15.1.2.3						0	Cost accounted for in above action step.
WdC-CCCS-15.1.3.1						0	This should be considered a standard practice by firefighting organizations. Action is considered In-Kind
WdC-CCCS-15.1.4.1						0	Action is considered In-Kind
WdC-CCCS-15.2.1.1						0	Action is considered In-Kind
WdC-CCCS-15.2.1.2						0	Action is considered In-Kind
WdC-CCCS-15.2.1.3						0	Action is considered In-Kind
WdC-CCCS-15.2.1.4						0	Costs are developed for the Aptos watershed and the guidance could be applied elsewhere. Action is considered In-Kind

Waddell Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
WdC-CCCS-15.2.2.1						0	Action is considered In-Kind
WdC-CCCS-15.2.2.2						0	Cost of providing the plan is minimal. Action is considered In-Kind
WdC-CCCS-15.2.2.3						0	Action is considered In-Kind
WdC-CCCS-15.2.2.4	10.00	10.00				20	
WdC-CCCS-15.2.3.1						0	Costs are developed for the Aptos watershed. The fire plan could be used from the Scott watershed. Action is considered In-Kind
WdC-CCCS-23.1.1.1	29.00	29.00				58	Cost based on \$14,000/mile for decommissioning 4.1 miles of road (10% of 41 miles of road network).
WdC-CCCS-23.1.1.2	92.50	92.50	92.50	92.50		370	Cost based on \$74,000/unit with 5 of the 11 crossings being treated. The complexity of the crossings could result in each unit costing \$1,191,000, resulting in an estimate of \$5,955,000
WdC-CCCS-23.1.1.3						0	Action is considered In-Kind
WdC-CCCS-23.1.1.4						0	Action is considered In-Kind
WdC-CCCS-23.1.2.1	1.40	1.40	1.40	1.40	1.40	28	Cost based on treating 2 miles at a rate of \$14,000/mile.
WdC-CCCS-23.1.2.2	43.50	43.50				87	Cost accounted for erosion assessment. Cost for road inventory estimated at \$1,000/mile.
WdC-CCCS-23.1.2.3	8.33	8.33	8.33	8.33	8.33	50	
WdC-CCCS-23.1.3.1						0	Action is considered In-Kind
WdC-CCCS-23.1.4.1						0	Action is considered In-Kind
WdC-CCCS-23.1.5.1	11.50	11.50				23	Cost based on erosion assessment for 1,542 acres (assume 10% of total acres) at a rate of \$14/acre.
WdC-CCCS-23.1.5.2						0	These standards should be applied to all roads in the watershed. Action is considered In-Kind
WdC-CCCS-23.1.5.3	15.00	15.00				30	
WdC-CCCS-23.1.6.1						0	It is likely that other projects will occur opportunistically over the next 100 years recovery horizon and should implemented when landowners are willing and funding is available. Caltrans is currently evaluating bridge replacement - differentiating between anticipated replacement costs and additional actions for steelhead and coho salmon recovery benefits can not be estimated at this time due to uncertainty regarding Caltrans preferred alternative. Replacement of the bridge offers a rare opportunity to improve rearing conditions in an important habitat.
WdC-CCCS-23.2.1.1						0	Action is considered In-Kind
WdC-CCCS-23.2.1.2						0	Action is considered In-Kind
WdC-CCCS-23.2.1.3						0	Action is considered In-Kind
WdC-CCCS-23.2.1.4						0	Action is considered In-Kind
WdC-CCCS-23.2.2.1						0	Action is considered In-Kind
WdC-CCCS-24.1.1.1						0	Action is considered In-Kind
WdC-CCCS-24.1.1.2						0	Action is considered In-Kind
WdC-CCCS-24.1.1.3	3,850	3,850				7,700	The price at which water is sold on environmental markets is determined by negotiations between landowners and purchasing entity. Cost will vary depending on water availability and landowner participation. Cost are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
WdC-CCCS-24.2.1.1						0	Cost accounted for in ESTUARY.
WdC-CCCS-24.2.2.1	0.08	0.08	0.08	0.08	0.08	2	Cost based on installing a minimum of 3 stream temperature gauges at a rate of \$500/gauge.
WdC-CCCS-24.2.3.1						0	Action is considered In-Kind
WdC-CCCS-24.2.4.1	32.50	32.50				65	Cost for stream flow model estimated at \$65,000/project.
WdC-CCCS-24.2.4.2						0	Action is considered In-Kind
WdC-CCCS-24.2.4.3						0	Cost accounted for in above action step.
WdC-CCCS-24.2.4.4						0	Action is considered In-Kind
WdC-CCCS-24.2.4.5						0	Action is considered In-Kind
WdC-CCCS-24.2.5.1						0	Cost accounted for in other action steps.
WdC-CCCS-24.2.5.2						TBD	Protecting these areas from impacts of development may be costly due to concerns of reverse condemnation, etc. Cost cannot be determined at this time due to a lack of information regarding where these existing habitats remain in juxtaposition to future development.

Gazos Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GC-CCCS-1.1.1.1						0	Action is considered in-kind to investigate the conflict and to develop potential solutions. Implementing the solutions is TBD.
GC-CCCS-1.1.1.2						0	Action is considered In-Kind
GC-CCCS-1.1.1.3	32.0	0.5				1	Cost estimate based on best professional judgement
GC-CCCS-1.1.2.1	141.00	141.00				282	
GC-CCCS-1.1.2.2	0.20					0.2	Cost are estimates for a set of new garbage/recycling cans (up to 5 cans for this beach/parking lot) with gull proof lids.
GC-CCCS-3.1.1.1	3,850	3,850				7,700	Cost are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
GC-CCCS-3.1.1.2	37.50	37.50				75	Cost for stream flow monitoring estimated at \$75,000
GC-CCCS-6.1.1.1						15	
GC-CCCS-6.1.2.1	500.00					500	
GC-CCCS-6.1.2.2						0	No cost are associated with this recommendation if habitat features are passively maintained.
GC-CCCS-6.1.2.3						0	Action is considered In-Kind
GC-CCCS-6.2.1.1						0	Action is considered In-Kind
GC-CCCS-6.2.1.2						0	This recommendation should be considered standard practice.
GC-CCCS-7.1.1.1	82.50	82.50	82.50	82.50		330	Cost based on treating 1 mile (assume 5% of high IP) at a rate of \$41,000/acre.
GC-CCCS-7.2.1.1						0	Action is considered In-Kind
GC-CCCS-14.1.1.1						0	Action is considered In-Kind
GC-CCCS-14.1.1.2						0	Action is considered In-Kind
GC-CCCS-15.1.1.1						0	Action is considered In-Kind
GC-CCCS-15.1.2.1						0	Action is considered In-Kind
GC-CCCS-15.2.1.1						0	Action is considered In-Kind
GC-CCCS-15.2.1.2						0	Action is considered In-Kind
GC-CCCS-15.2.1.3						0	Action is considered In-Kind
GC-CCCS-15.2.1.4						0	Action is considered In-Kind
GC-CCCS-15.2.1.5						0	Action is considered In-Kind
GC-CCCS-21.1.1.1						0	Action is considered In-Kind
GC-CCCS-23.1.1.1	9.33	9.33	9.33	9.33	9.33	56	Cost based on decommissioning 4 miles of riparian road network at a rate of \$14,000/mile.
GC-CCCS-23.1.2.1						0	Replacement of culverts/bridges 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 existing structures. Long term durability and stability will result in long-term cost savings in many circumstances. This recommendation should be considered standard practice.
GC-CCCS-23.1.3.1						0	Action is considered In-Kind
GC-CCCS-23.1.3.2	15.25	15.25				31	Cost for a road inventory assessment \$31,000 at a rate of \$1,000/mile.
GC-CCCS-23.1.3.3						TBD	Cost cannot be determined without identifying need and location for spoils storage sites first.
GC-CCCS-23.1.3.4	28.00	28.00				56	Cost based on decommissioning 4 miles of road network at a rate of \$14,000/mile.
GC-CCCS-23.1.3.5						0	Action is considered In-Kind
GC-CCCS-23.2.1.1						0	Action is considered In-Kind
GC-CCCS-23.2.1.2						0	This recommendation should be considered standard practice.
GC-CCCS-23.2.1.3						0	Cost to hydraulically disconnect roads is TBD based on the assessment.
GC-CCCS-23.2.2.1						0	Action is considered In-Kind
GC-CCCS-24.1.1.1						0	Action is considered In-Kind

Gazos Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
GC-CCCS-25.1.1.1						0	Action is considered In-Kind
GC-CCCS-25.1.1.2						0	Action is considered In-Kind
GC-CCCS-25.1.2.1						TBD	Costs cannot be estimated until an overall strategy to address diversions and their relative impact to salmonids is developed.
GC-CCCS-25.1.2.2						0	Action is considered In-Kind
GC-CCCS-25.1.3.1						TBD	Cost of screens is TBD and is dependent on the amount of diversions needing to be screened.
GC-CCCS-25.2.1.1						0	Action is considered In-Kind
GC-CCCS-25.2.1.2						0	Action is considered In-Kind
GC-CCCS-25.2.1.3						0	Action is considered In-Kind

Laguna Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
LgnaC-CCCS-1.1.1.1	0.5	0.5				1	Cost based on best professional judgement
LgnaC-CCCS-1.1.2.1						283	The habitat assessment should determine existing limiting factors and develop potential rehabilitation projects to address these factors. Cost based on estuary use, residence time monitoring at a rate of \$283,000.
LgnaC-CCCS-3.1.1.1	32					0	Work with regulatory agencies and the public to adopt effective conservation measures to improve hydrologic function. Action is considered In-Kind
LgnaC-CCCS-3.1.1.2						0	Action is considered In-Kind
LgnaC-CCCS-3.1.1.3						0	Action is considered In-Kind
LgnaC-CCCS-3.2.1.1						0	Action is considered In-Kind
LgnaC-CCCS-3.2.1.2	3,850	3,850				7,700	Cost are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
LgnaC-CCCS-3.2.2.1						0	Action is considered In-Kind
LgnaC-CCCS-3.2.2.2						0	Action is considered In-Kind
LgnaC-CCCS-3.2.2.3	18.75	18.75	18.75	18.75		75	Cost based on stream flow/precipitation water balance model at a rate of \$75,000/project. Costs included evaluation of critical passage areas and modeling of potential flow solutions during April and May to ensure smolts are able to access the ocean.
LgnaC-CCCS-3.2.2.4						0	Action is considered In-Kind
LgnaC-CCCS-3.2.2.5						0	Action is considered in-kind
LgnaC-CCCS-7.1.1.1						TBD	Actual costs will depend on the size of the area infested with invasive exotic species (rate is \$41,000 per acre).
LgnaC-CCCS-7.1.1.2						0	Action is considered In-Kind
LgnaC-CCCS-7.1.1.3	189.00	189.00				378	Cost based on treating 0.2 miles (assume 1 project/mile in 5% high IP with 80 acres/mile) at a rate of \$24,000/acre.
LgnaC-CCCS-8.1.1.1	125.50	125.50				251	Cost based on conducting an erosion assessment for 25% of total watershed acres at a rate of \$14/acre.
LgnaC-CCCS-8.1.1.2						0	Action is considered In-Kind
LgnaC-CCCS-21.1.1.1						0	A majority of the cost will be from agency coordination, thus, In-Kind services.
LgnaC-CCCS-23.1.1.1						0	Action is considered In-Kind
LgnaC-CCCS-23.1.1.2						0	Cost accounted for in other actions: Sediment.
LgnaC-CCCS-23.1.1.3						TBD	A road inventory needs to be completed to determine the extent of roadside berms increasing runoff within the road network. Cost rate for a road inventory assessment are approximately \$1,000/mile.
LgnaC-CCCS-23.2.1.1						0	Action is considered In-Kind
LgnaC-CCCS-23.2.1.2						0	Cost accounted for in above action step. Cost to treat chronic sediment sources likely be part of ongoing maintenance and upgrades.
LgnaC-CCCS-23.2.2.1						0	Action is considered In-Kind
LgnaC-CCCS-23.2.3.1						0	Action is considered In-Kind
LgnaC-CCCS-24.1.1.1						0	Action is considered In-Kind
LgnaC-CCCS-25.1.1.1						0	Action is considered In-Kind
LgnaC-CCCS-25.1.1.2						0	Action is considered In-Kind
LgnaC-CCCS-25.1.2.1						TBD	Costs cannot be estimated until an overall strategy to address diversions and their relative impact to salmonids is developed.
LgnaC-CCCS-25.1.2.2						0	Action is considered In-Kind
LgnaC-CCCS-25.1.3.1						TBD	This recommendation should be considered standard practice. Cost of each screen and the amount of screens needed is unknown.
LgnaC-CCCS-25.2.1.1						0	Action is considered In-Kind
LgnaC-CCCS-25.2.1.2						0	Action is considered In-Kind
LgnaC-CCCS-25.2.1.3						0	Action is considered In-Kind

San Pedro Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SPC-CCCS-1.1.1.1	322					322	Cost based on estuary use/residence time monitoring at a rate of \$322,000/project.
SPC-CCCS-1.1.1.2	1	1	1	1	1	5	Cost to evaluate and implement this expected to be low and is estimated at no more than \$1,000 per year. This assumes some of the structural elements could be destroyed and washed away by flows each year.
SPC-CCCS-1.1.1.3	32					0	Cost expected to be minimal and part of ongoing improvements. Action is considered In-Kind
SPC-CCCS-2.1.1.1						0	Action is considered In-Kind
SPC-CCCS-3.1.1.1						TBD	Cost based on amount of catchment basins needed and landowner participation.
SPC-CCCS-5.1.1.1	1,063	1,063				2,126	Cost at each site will vary depending on alternative selected. See also Hagar (2002) and SPCWC (2002). Cost based on providing passage at 5 crossing (4 Temporary, 1 Partial) at a rate of \$425,000/project.
SPC-CCCS-5.1.1.2	608					608	See: Hagar (2002) and SPCWC (2002). Cost based on providing fish passage at a rate of \$608,000/project.
SPC-CCCS-6.1.1.1	32.00					32	Cost based on treating 1 mile (assume 1 project/mile in 50% high IP) at a rate of \$32,000/mile.
SPC-CCCS-6.1.1.2	65.50	65.50				131	See Pearce et al. (2004). Cost based on fish/habitat restoration at a rate of \$131,000/project.
SPC-CCCS-6.1.2.1						0	Action is considered In-Kind
SPC-CCCS-6.1.2.2						0	Action is considered In-Kind
SPC-CCCS-6.2.1.1						0	Action is considered In-Kind
SPC-CCCS-6.2.1.2						0	Action is considered In-Kind
SPC-CCCS-7.1.1.1	20.00					20	Cost based on treating 0.25 miles (assume 1 project/mile in 5% high IP) at a rate of \$1000/acre.
SPC-CCCS-7.2.1.1						0	Action is considered In-Kind
SPC-CCCS-7.2.1.2						0	Action is considered In-Kind
SPC-CCCS-8.1.1.1						TBD	See Pearce et al. (2004)
SPC-CCCS-8.1.1.2						0	Cost accounted for in other action steps.
SPC-CCCS-10.1.1.1	15	15	15	15		59	Cost based on amount of feasible methods to employ. Cost estimate for bio-swale ranges between \$6,000 to \$12,000/project. We assumed the cost of 5 bio-swales at \$12,000 for a total of \$59,000.
SPC-CCCS-10.1.1.2						0	Action is considered In-Kind
SPC-CCCS-10.1.1.3						0	Action is considered In-Kind
SPC-CCCS-10.1.1.4	105	105				209	Cost based on amount of riparian thinning needing to occur. Estimate for riparian thinning is \$2,000/acre. Cost of evaluating the area needed to be daylighted estimated at \$209,000.
SPC-CCCS-22.1.1.1						0	Action is considered In-Kind
SPC-CCCS-22.1.1.2						0	Cost based on amount of water storage needed and participation of community members. Cost accounted for in another action step.
SPC-CCCS-23.1.1.1						0	Cost accounted for in above action step.
SPC-CCCS-23.1.2.1						0	Action is considered In-Kind
SPC-CCCS-24.1.1.1						TBD	Cost based on amount of storage needed to reduce stormwater impacts.
SPC-CCCS-25.1.1.1						0	Action is considered In-Kind
SPC-CCCS-25.1.1.2	18	18	18	18	18	175	Cost based on amount of infiltration ponds. Cost estimate for infiltration pond ranges between \$12,000 to \$35,000/pond. We estimated 5 ponds at a cost of \$35,000 for a total of \$175,000.
SPC-CCCS-25.1.1.3						0	Action is considered In-Kind

San Vicente Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
SVC-CCCS-1.1.1.1	175					175	Costs for these evaluations are based on best professional judgement.
SVC-CCCS-1.1.1.2	750					750	Costs for these evaluations are based on best professional judgement and would vary substantially depending on what was to be implemented.
SVC-CCCS-2.1.1.1	32.00	4.00				8	Costs are reduced due to generally cooperative landowners in the San Vicente Watershed. Most costs are likely associated with staff time. The inlet to San Vicente pond should be monitored, and problems corrected, on a weekly basis. Cost for monitoring estimated at \$4,000/project with a total of two projects.
SVC-CCCS-2.1.1.2	100.00					100	Cost provided is considered a best professional estimate.
SVC-CCCS-3.1.1.1						0	Action is considered In-Kind
SVC-CCCS-3.1.1.2						0	Action is considered In-Kind.
SVC-CCCS-5.1.1.1	163.50	163.50				327	Cost based on adult escapement and juvenile migration monitoring at a rate of \$84,000 and \$243,000/project. respectively.
SVC-CCCS-5.1.1.2	36.00	36.00				72	Cost based on \$72,000/unit.
SVC-CCCS-5.1.1.3	1.00	1.00				2	Preliminary information indicates the habitat upstream of the dam, although relatively high gradient, is suitable for steelhead.
SVC-CCCS-6.1.1.1	230.00	230.00				460	Cost based on treating 4 miles of stream at a cost of \$115,000/mile.
SVC-CCCS-6.1.2.1						0	Costs already incorporated as part of shelter.
SVC-CCCS-6.1.2.2						TBD	
SVC-CCCS-6.1.3.1	25.00	25.00				50	Cost based on treating 2 miles of stream at a rate of \$25,000/mile for LWD placement. If constructing ELJ, assume 10/mile at a rate of 115,000/ELJ for a total of 2,300,000.
SVC-CCCS-7.1.1.1	903	903	903	903		3,610	Cost based on treating 1 mile (assume 80 acres/mile in 5% High IP with a 1 mile minimum) at a rate of \$45,000/acre.
SVC-CCCS-7.1.1.2						0	Action is considered In-Kind
SVC-CCCS-14.1.1.1						0	Action is considered In-Kind
SVC-CCCS-15.1.1.1						0	Action is considered In-Kind
SVC-CCCS-15.1.1.2						0	Action is considered In-Kind
SVC-CCCS-15.1.2.1						0	Action is considered In-Kind
SVC-CCCS-15.2.1.1						0	Action is considered In-Kind
SVC-CCCS-20.1.1.1						TBD	An assessment of potential site specific threats is needed in order to evaluate total costs. However, this recommendation is typically a standard business practice for mining operation due to a variety of regulatory requirements.
SVC-CCCS-20.1.1.2						0	This should be considered a standard business practice. A site specific evaluation is likely needed. Costs of implementing this recommendation should be borne by the quarry operator.
SVC-CCCS-22.1.1.1	63.50	63.50	63.50	63.50		254	Cost based on assumption of 1 project per mile in high IP habitat, total of 2 projects at a cost of \$127,000/acre.
SVC-CCCS-22.2.1.1						0	Action is considered In-Kind
SVC-CCCS-23.1.1.1						0	Action is considered In-Kind
SVC-CCCS-23.1.1.2	56.00	56.00				112	Cost for road inventory estimated at \$1,000/mile (assume 75% of road network). Cost for sediment assessment estimated at \$14/acre (assume 25% of total watershed acres).
SVC-CCCS-23.1.1.3	8.00	8.00	8.00	8.00		32	Decommissioning approximately ten percent of the riparian roads in San Vicente Creek targets 2.3 miles of riparian road. \$14,000/mile at 2.3 miles. Costs may vary depending on site conditions and other constraints.
SVC-CCCS-23.1.1.4						0	The cost estimate is low because NMFS believes relatively little grading will occur due to the small size of the watershed. Action is considered In-Kind
SVC-CCCS-23.1.1.5						0	These BMPs should be incorporated into all road management practices and may result in long term cost savings due to lower maintenance and repair costs.
SVC-CCCS-23.1.1.6						0	Action is considered In-Kind
SVC-CCCS-23.1.1.7						0	The number of visits per year to this important watershed will likely be minimal due to the small size of the watershed. Additional costs will be necessary to meet the obligations in the ordinance in other watersheds and this expense could be spread out across the County. Action is considered In-Kind
SVC-CCCS-23.1.1.8						0	Hydrologically disconnect roads in the watershed. This should be considered a standard practice for all landowners and managers in the watershed. Action is considered In-Kind
SVC-CCCS-23.1.1.9						0	Action is considered In-Kind
SVC-CCCS-23.1.2.1						0	
SVC-CCCS-23.1.3.1						0	Action is considered In-Kind
SVC-CCCS-25.1.1.1						0	Action is considered In-Kind
SVC-CCCS-25.2.1.1	72.00					72	This cost will require transects and measurements of streamflow in the lower reaches over a multiple year period. Costs may vary depending on gauging requirements under California Fish and Game Code section 1600 et seq. stream diversion requirements. Bypass flow requirements should assess impacts to both coho and steelhead during all life stages. Cost for stream flow model estimated at \$71,825/project.
SVC-CCCS-25.2.1.2						0	
SVC-CCCS-25.2.1.3						0	Action is considered In-Kind

Tunitas Creek, Central California Coast Steelhead (Santa Cruz Mountains) Recovery Action Costs

Action ID	Costs (\$K)					Entire Duration	Cost Comment
	FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25		
TuC-CCCS-1.1.1.1	1.50	1.50				3	Cost for signage vary widely based on materials and content. Assume a minimum of 3 signs at a rate of \$1,000/sign.
TuC-CCCS-1.1.1.2						0	Action is considered In-Kind
TuC-CCCS-1.1.1.3	32.00					3	Cost based on posting 3 signs at an estimated cost of \$1,000/sign.
TuC-CCCS-1.1.2.1	322.00					322	Cost based on estuary use/residence time monitoring at a rate of \$322,000/project.
TuC-CCCS-3.1.1.1	37.50	37.50				75	Cost for stream flow monitoring estimated at \$75,000
TuC-CCCS-3.1.1.2	9	9	9	9		35	Total costs are difficult to predict due to uncertainties regarding landowner participation. The estimated cost of a 10,000 gallon water storage tank is \$7000 per tank and we estimated 5 tanks would need to be purchased for a total of \$35,000.
TuC-CCCS-3.1.1.3	3,850	3,850				7,700	Costs are estimated for the first ten years assuming successful implementation of two projects per year. Costs are estimated at \$70,000 per landowner per year. Costs will vary depending on the size of the diversion and participation of diverters.
TuC-CCCS-5.1.1.1	42.00					42	Cost based on escapement monitoring at a rate of \$42,000/project.
TuC-CCCS-5.1.1.2						TBD	
TuC-CCCS-6.1.1.1	250.00					250	Cost estimate based other projects completed in the area.
TuC-CCCS-6.1.1.2						0	No cost are associated with this recommendation if habitat features are passively maintained. Action is considered In-Kind
TuC-CCCS-6.1.1.3						0	Action is considered In-Kind
TuC-CCCS-6.2.1.1						0	Action is considered In-Kind
TuC-CCCS-6.2.1.2						0	This recommendation should be considered standard practice. Action is considered In-Kind
TuC-CCCS-7.1.1.1	232.50	232.50	232.50	232.50		930	Cost based on treating 0.25 miles (assume 1 project /mile in 5% high IP with 80 acres/mile) at a rate of \$47,000/acre.
TuC-CCCS-7.2.1.1						0	Action is considered In-Kind
TuC-CCCS-15.1.1.1						0	Action is considered In-Kind
TuC-CCCS-15.1.2.1						0	Action is considered In-Kind
TuC-CCCS-15.2.1.1						0	Action is considered In-Kind
TuC-CCCS-15.2.1.2						0	Action is considered In-Kind
TuC-CCCS-15.2.1.3						0	Action is considered In-Kind
TuC-CCCS-15.2.1.4						0	Action is considered In-Kind
TuC-CCCS-15.2.1.5						0	Action is considered In-Kind
TuC-CCCS-21.1.1.1						0	Action is considered In-Kind
TuC-CCCS-21.1.1.2						0	Action is considered In-Kind
TuC-CCCS-23.1.1.1	10.00	10.00	10.00	10.00	10.00	60	Cost based on decommissioning 2.5 miles of road at a rate of \$24,000/mile.
TuC-CCCS-23.1.2.1						0	Replacement of culverts/bridges 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 existing structures. Long term durability and stability will result in long-term cost savings in many circumstances. This recommendation should be considered standard practice. Action is considered In-Kind
TuC-CCCS-23.1.3.1						0	Action is considered In-Kind
TuC-CCCS-23.1.3.2	15.00	15.00				30	Cost for a road inventory assessment \$30,000 at a rate of \$1,000/mile.
TuC-CCCS-23.1.3.3						TBD	Cost cannot be determined without identifying need and location for spoils storage sites first.
TuC-CCCS-23.1.3.4	101	101				209	Cost of evaluation estimated at \$209,000 and would be completed with the first 10 years.
TuC-CCCS-23.1.3.5						0	Action is considered In-Kind
TuC-CCCS-23.2.1.1						0	Action is considered In-Kind
TuC-CCCS-23.2.1.2						0	Action is considered In-Kind
TuC-CCCS-23.2.1.3						0	Cost accounted for in remove roadside berms assuming road inventory will address winter road use.
TuC-CCCS-23.2.2.1						0	Action is considered In-Kind
TuC-CCCS-24.1.1.1						0	Cost covered under above action (Habitat Complexity).
TuC-CCCS-25.1.1.1						0	Action is considered In-Kind
TuC-CCCS-25.1.1.2						0	Action is considered In-Kind
TuC-CCCS-25.1.2.1						TBD	Costs cannot be estimated until an overall strategy to address diversions and their relative impact to salmonids is developed.
TuC-CCCS-25.1.2.2						0	Action is considered In-Kind
TuC-CCCS-25.1.3.1						TBD	Estimate for fish screen is \$61,000/screen. The amount of screens needed is unknown.
TuC-CCCS-25.2.1.1						0	Action is considered In-Kind
TuC-CCCS-25.2.1.2						0	Action is considered In-Kind
TuC-CCCS-25.2.1.3						0	Action is considered In-Kind