

11. Santa Monica Mountains Biogeographic Population Group

“Dispersal connectivity and genetic diversity may be aided by also including smaller ‘non-core’ populations that serve as stepping stones for dispersal. However, the core populations are fundamental.”

NOAA Fisheries Technical Recovery Team
Viability Criteria for South-Central and Southern California Steelhead, 2007

11.1 LOCATION AND PHYSICAL CHARACTERISTICS

The Santa Monica Mountains BPG region consists of five coastal watersheds located in southern Ventura and western Los Angeles counties. These watersheds drain the east-west oriented coastal Santa Monica Mountains. These mountains are composed of recently uplifted marine and volcanic formations that extend approximately 32 miles from the Oxnard Plain in the west to the Los Angeles Watershed in the east. With the exception of Malibu Creek, these watersheds are relatively small and do not extend inland beyond the Santa Monica Mountains. The watersheds, from west to east, are Big Sycamore Canyon Creek, Arroyo Sequit, Malibu Creek, Las Flores Canyon Creek, and Topanga Canyon Creek (Figure 11-1). The Santa Monica Mountains BPG region is similar to the Conception Coast BPG region in that it is comprised of a series of short, nearly parallel streams that drain steep south-facing slopes, with an average elevation of less than 2,500 feet

(Hunt & Associates 2008a, Kier Associates 2008b).



Santa Monica Mountains

The annual seasonal rainfall in the watersheds of this BPG region is approximately 18 inches, although rainfall is lower along the coast and increases with increasing elevation in the upper reaches of the watersheds. Malibu Creek is the largest of the five watersheds, encompassing approximately 110 square miles and, unlike other coastal streams in the Conception Coast BPG region, penetrates through a break in the Santa Monica Mountains to

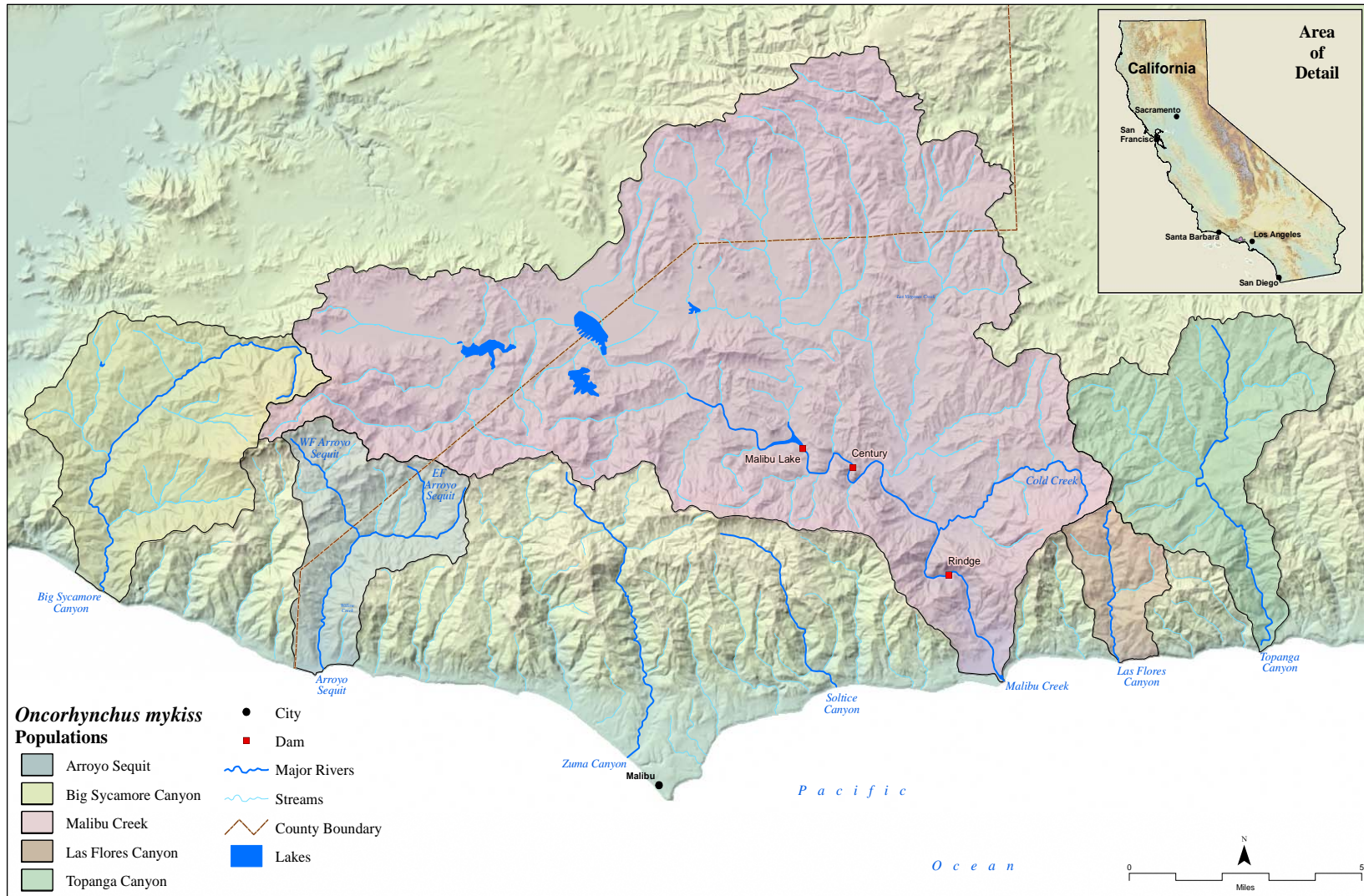


Figure 11-1. The Santa Monica Mountains BPG region. Five populations/watersheds were analyzed in this region: Arroyo Sequit, Big Sycamore Canyon, Malibu Creek, Las Flores Canyon, and Topanga Canyon.

drain a portion of its north-facing slopes and the south-facing slopes of the Simi Hills. Calleguas Creek and the Los Angeles River drain the remainder of the northern slopes of the Santa Monica Mountains. In addition to the major watersheds considered here, there are a number of smaller watersheds within this BPG (*e.g.*, Trancas, Zuma, Solstice, and Las Flores Canyon) which may also be used by steelhead when water conditions are favorable.

11.2 LAND USE

Table 11-1 summarizes land use and population density in Santa Monica Mountains BPG region. A significant portion of the Santa Monica Mountains BPG region is undeveloped, portions are publicly held as part of the Santa Monica Mountains National Recreation Area, seven state parks and beaches (Point Mugu State Park, Malibu Creek State Park, Leo Carrillo State Beach, Topanga State Park, R. H. Meyer Memorial State Beach, Dan Blocker State Beach, and Will Rogers State Park), and several local parks and beaches, including Zuma County Beach, Solstice Canyon Park, and Trancas Canyon Park. As a result of the relatively large amount of public land in proximity to a large urban area (Los Angeles Basin) recreational facilities receive intensive use.



Malibu Coastal Development

Development within these watersheds is principally residential, with some commercial and recreational development concentrated near the mouths of several of the streams. The Malibu Creek and Topanga Canyon Creek watersheds support the highest human population densities. Watersheds in the western portion of the Santa Monica Mountains generally have less development and significantly more area in public ownership than watersheds in the eastern half of the range. Human population density and private land ownership increases in the Santa Monica Mountains from west to east with increasing proximity to the Los Angeles Watershed. Agricultural conversion of watershed lands is generally light throughout the BPG region (Hunt & Associates 2008a, Kier Associates 2008b).

11.3 CURRENT WATERSHED CONDITIONS

Watershed conditions were assessed for the five major drainages in the Santa Monica Mountains BPG region. The mainstem and major tributaries of most of the drainages in this BPG region offer fair to good habitat conditions for anadromous *O. mykiss*. Existing habitat quality was rated as “Fair” in the Big Sycamore Canyon, Arroyo Sequit, Malibu Creek, and Las Flores Canyon watersheds, and “Good” in the Topanga Canyon Creek watershed. Existing conditions within the Topanga Canyon Creek watershed are relatively good, despite having the second highest human population density in this BPG region (Table 11-1). For example, Topanga Canyon Creek is characterized by perennial flows, high-quality instream and riparian conditions, an absence of non-native predators, and migration barriers, if present, are seasonally passable. However, the natural seasonal flow regime of Malibu Creek has been substantially altered by the waste discharge

Table 11-1. Physical and Land-Use Characteristics of Major Watersheds in the Santa Monica Mountains BPG region.

PHYSICAL CHARACTERISTICS						LAND USE			
WATERSHEDS (west to east)	Area (acres) ¹	Area (sq. miles) ¹	Stream Length ² (miles)	Ave. Ann. Rainfall ³ (inches)	Total Human Population ⁴	Public Ownership*	Urban Area ⁵	Agriculture/Barren ⁵	Open Space ⁵
Big Sycamore Canyon Creek	13,649	21	32	17.9	27	76%	< 1%	< 1%	99%
Arroyo Sequit	7,572	12	17	17.9	370	43%	3%	1%	96%
Malibu Creek	70,726	110	161	18.0	74,585	32%	23%	2%	75%
Las Flores Canyon Creek	2,908	5	6	18.5	1,144	5%	15%	< 1%	85%
Topanga Canyon Creek	12,616	20	30	17.9	5,561	72%	15%	< 1%	85%
TOTAL or AVERAGE	107,471	168	246	18.0	81,687	---	18%	1%	81%

¹ From: CDFFP CalWater 2.2 Watershed delineation, 1999 (www.ca.nrcs.usda.gov/features/calwater/)

² From: CDFG 1:1,000,000 Routed stream network, 2003 (www.calfish.org/)

³ From: USGS Hydrologic landscape regions of the U.S., 2003 (1 km grid cells)

⁴ From: CDFFP Census 2000 block data (migrated), 2003; preliminary analysis of Census 2010 indicates the population in the BPG has increased to 99,243

⁵ From: CDFFP Multi-source land cover data (v02_2), 2002 (100 m grid cells) (<http://frap.cdf.ca.gov/data/frapgisdata/select.asp>)

* Includes National Recreation Areas, State Parks, and County (from: <http://old.casil.ucdavis.edu/casil/gis.ca.gov/teale/govtowna/>)

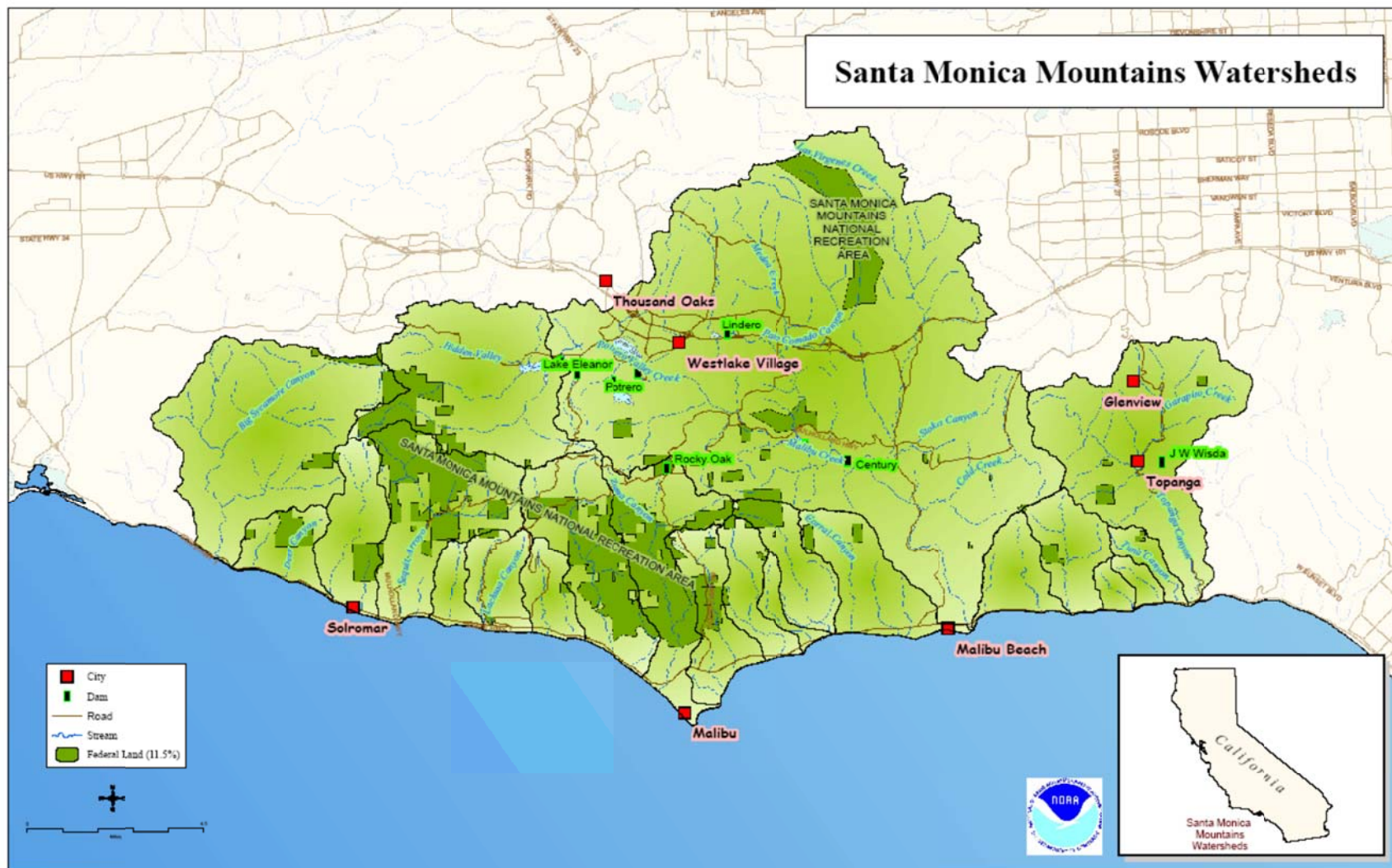


Figure 11-2. Santa Monica Mountains Watersheds.

of the Las Virgenes Municipal Water District Tapia wastewater treatment plan (Hunt & Associates 2008a, Kier Associates 2008b).



Arroyo Sequit Creek

Because of the proximity of the Santa Monica Mountains to large urban areas, there is significant pressure to develop and maintain recreational facilities. Each of the watersheds in the Santa Monica Mountains BPG region supports one or more coastal and inland campgrounds and other high-use recreational facilities. This is particularly the case in the Big Sycamore Creek, Arroyo Sequit, and Malibu Creek watersheds, where large portions of the watersheds are publicly owned. Recreational activities are recurring sources of direct and indirect threats to anadromous *O. mykiss* including roadway stream crossings in and around campgrounds that pose physical barriers to upstream and/or downstream movement migration, introduction of non-native plants and animals, disturbance to stream banks and instream habitats, and even redds potentially by foot traffic and off-road vehicles, loss of or disturbance to riparian corridors around campgrounds, and constriction of the floodplain. The type and number of threats posed by recreational facilities varies significantly between watersheds, from single locations such a road crossing on Arroyo Sequit, to multiple sites, such as numerous floodplain campgrounds or multiple stream crossings in the Malibu Creek watershed.



Rindge Dam - Malibu Creek

The Malibu Creek watershed is highly constrained by two major dams: the Rindge Dam and the Malibu Lake Dam. The former structure is located approximately two stream miles upstream of the lagoon and blocks access to over 90% of the anadromous *O. mykiss* spawning and rearing habitat within Malibu Creek. Rindge Dam also has isolated native *O. mykiss* that would otherwise exhibit an anadromous life-history, and prevents the repeated recolonization of upstream habitats that may experience temporary extirpations as a result of natural stochastic processes, such as wildfires, droughts, and landslides. These dams have numerous effects on physical, hydrological, and habitat characteristics of the middle and lower reaches of the Malibu Creek. Dams also create and maintain favorable habitat conditions for several species of non-native fishes and bullfrogs, which may affect one or more life history stages of *O. mykiss* either directly (*e.g.*, predation) or indirectly (*e.g.*, competition for food). Non-native crayfish, snails, fishes, and bullfrogs are particularly abundant in the Malibu Creek and Las Flores Canyon Creek watersheds.



Malibu Creek

The terrain of the Santa Monica Mountains results in development on steep slopes, often accompanied by road cuts to provide access, thus affecting watershed processes such as erosion and sedimentation. Development has also occurred along narrow riparian corridors, which encourages bank stabilization, levee construction, and other flood control activities, and physically constrains the ability of streams to maintain natural channel morphology and riparian vegetation.

Increased residential development, including high road densities, has significantly altered natural fire regimes in the Santa Monica Mountains BPG region because it has allowed human access to almost all portions of the component watersheds. Fires have consumed 71% to 100% of the Big Sycamore Canyon Creek, Arroyo Sequit, Malibu Creek, and Las Flores Canyon Creek watersheds within the past 25 years, including recent fires in 2007. Approximately 32% of the Topanga Canyon Creek watershed has burned in the last 25 years (Hunt & Associates, Kier Associates 2008b). While the natural fire-cycle is an important source of sediments essential to support productive spawning and rearing habitat, artificially increased fire frequency can increase slope erosion and sediment inputs to streams, resulting in long-term changes to substrate composition and

embeddedness, water quality (e.g., turbidity), and water temperature (e.g., loss of riparian canopy cover). Anadromous *O. mykiss* in each of the watersheds in the Santa Monica Mountains BPG region have been subjected to such secondary fire effects. The increase of impermeable surfaces as a result of urbanization (including roads) along the coastal terrace, and the development of homes on steep slopes (e.g., Malibu, Las Flores, and Topanga Canyons), has altered the natural flow regime of streams, particularly in the lower reaches, increasing the frequency and intensity of flood flows (Hunt & Associates 2008a, Kier Associates).



Topanga Creek

Estuarine habitat loss in the component watersheds of the Santa Monica Mountains BPG region ranges from 66% to 97%. Malibu Creek formerly had the largest estuary of any watershed in the BPG region and still has the highest amount of remaining estuarine habitat (34%), but its estuarine functions have been significantly impaired by upstream waste discharges from point and non-point sources, and the alteration of the natural hydrologic and sediment transport regimes by a series of upstream dams (Hunt & Associates 2008a, Kier Associates 2008b).



Big Sycamore Canyon Estuary

The estuaries of Big Sycamore Canyon, Arroyo Sequit, Los Flores Canyon, and Topanga Canyon Creek have suffered the largest loss of areal extent, and are highly impacted by Highway 1, commercial development, and recreational activities. Road construction, bridges, levees, floodplain encroachment by residential and commercial development (*e.g.*, the City of Malibu and Malibu Colony in Malibu Creek) have significantly reduced estuarine habitat in almost watersheds in this BPG region. Other estuarine habitats such as those of Big Sycamore and Las Flores Canyon have been almost completely lost due to transportation, recreation, and commercial development.

11.4 THREATS AND THREAT SOURCES

The relatively high population and development pressures along the coastal portions of the Santa Monica Mountains, coupled with the proximity to the densely populated Los Angeles Watershed, create a series of recurring, severe to very severe threats to the persistence of anadromous *O. mykiss* in each of the component watersheds in this BPG region. The number of threat sources used by the CAP Workbooks in determining threat status for the Santa Monica Mountains BPG watersheds varied from eight in the Big Sycamore Canyon Creek watershed to 16 in the Malibu Creek watershed.

Ten anthropogenic activities ranked as the top sources of stress to anadromous *O. mykiss* in the Santa Monica Mountains BPG (Table 11-2). Each watershed has a unique combination of threats; however, recurring threats among most or all of the watersheds include: high road density, including roads in close proximity to riparian corridors, impacts from recreational facilities, and barriers to migration at culverts and roadway stream crossings. Other threats are unique to particular watersheds, such as the Rindge and Malibu Lake dams on Malibu Creek (Hunt & Associates 2008a, Kier Associates 2008b).

Table 11-2. Threat source rankings in the component watersheds of the Santa Monica Mountains BPG region (see CAP Workbook for details).

Santa Monica Mountains BPG Component Watersheds (west to east)					
Threat Sources	Big Sycamore Canyon Creek	Arroyo Sequit	Malibu Creek	Las Flores Canyon Creek	Topanga Canyon Creek
Roads	Red	Red	Red	Yellow	Yellow
Recreational Facilities	Red	Red	Red	Dark Green	Light Green
Culverts and Road Crossings	Red	Red	Red	Light Green	Dark Green
Wildfires*	Yellow	Light Green	Light Green	Light Green	Light Green
Urban Development	Dark Green	Dark Green	Light Green	Light Green	Yellow
Levees and Channelization	Dark Green	Dark Green	Dark Green	Light Green	Dark Green
Dams and Surface Water Diversions	Dark Green	Light Green	Red	Dark Green	Dark Green
Non-Native Species	Dark Green	Dark Green	Red	Dark Green	Light Green
Upslope/Upstream Development	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green
Urban Effluents	Dark Green	Dark Green	Light Green	Light Green	Light Green

Key: Red = Very High threat; Yellow = High threat; Light green = Medium threat; Dark green = Low threat (Threat cell colors represent threat rating from CAP Workbook)

*Wildfires were not identified during the CAP Workbook analyses as one of the top five threats in several of these watersheds, but recent fires in coastal watersheds since 2007 could result in significant habitats impacts.

11.5 SUMMARY

Road density is high throughout the Santa Monica Mountains BPG region, both on private and public lands. Road density, particularly roads within or close to riparian corridors are affecting each of these watersheds by contributing to the source of non-point pollutants (*e.g.*, oil, grease, copper from breaking systems, *etc.*), altering surface runoff patterns and stream hydrographs, and encroaching on floodplains and decreasing floodplain connectivity. Such road density creates the need for bank stabilization and levee construction to protect development, which in turn provides conduits for sediment, pollutant, and bacterial inputs to the watercourse. In other cases, road crossings create barriers to upstream and downstream movement of adult and juvenile anadromous *O. mykiss*. Additionally, impacts associated with wildland fires, including fire-fighting measures to control or extinguish them, and the post-fire measures to repair damages incurred in fighting wildland fires, poses a potential threat to watersheds in this BPG. Table 11-3 summarizes the critical recovery actions needed within the Core 1 populations of this BPG.

Restoring conditions for anadromous *O. mykiss* passage, spawning, and/or rearing in these watersheds will require multiple, long-term, measures related to water management, recreation, and fish passage. Impediments to fish passage stemming from the construction and maintenance of roads and other transportation corridors, dams and other passage barriers, groundwater extraction, and modification of channel morphology and adjacent riparian habitats by flood control measures need to be further evaluated for this BPG. Additionally, the loss of estuarine functions caused by filling

and pollution from point and non-point agricultural and other anthropogenic waste discharges need to be addressed further in this region.



Malibu Creek Steelhead - 1946.

The threat sources discussed in this section should be the focus of a variety of recovery actions to address addresses specific risks to anadromous *O. mykiss* viability. Spatial and temporal data, for water temperature, pH, nutrients, *etc.*, are not uniformly available, and should be further developed, along with general habitat typing assessments, to better identify natural as well as anthropogenic limiting factors. This type of data acquisition should be the subject of site-specific investigation in order to refine the primary recovery actions or to target additional recovery actions as part of any recovery strategy for the Santa Monica Mountains BPG. Tables 11-4 through 11-8 below rank and describe proposed recovery actions for each sub-watershed in the Santa Monica Mountains BPG, including the estimated cost for implementing the actions in five year increments over the first 25 years, and where applicable extended out to 100 years, though many recovery actions can be achieved within a shorter period.

Table 11-3. Critical recovery actions for Core 1 populations within the Santa Monica Mountains BPG.

POPULATION	CRITICAL RECOVERY ACTION
Malibu Creek	Remove Rindge and Malibu dams, and physically modify road crossings, to allow natural migration of steelhead to upstream spawning and rearing habitats and passage of smolts and kelts downstream to the estuary and the ocean. Identify, protect, and restore estuarine and freshwater rearing habitats functions.
Topanga Creek	Develop and implement plan to replace the U.S. 101 culvert over Topanga Creek with a full span bridge to remove fill from the Topanga Creek Estuary, and allow natural migration to upstream spawning and rearing and passage of smolts and kelts downstream to the estuary and the ocean habitat, Develop and implement a restoration and management plan for the Topanga Creek Estuary.

Southern California Steelhead DPS Recovery Action Tables Identification Key, Santa Monica Mountains BPG (Tables 11-4 – 11-8).

Recovery Action Number Key: XXXX – SCS – 1.2		XXXX ID Table		Threat Source Legend	
XXXX	Watershed	BSC	Big Sycamore Canyon	1	Agricultural Development
SCS	Species Identifier – Southern California Steelhead	ASC	Arroyo Sequit Creek	2	Agricultural Effluents
1	Threat Source	MalC	Malibu Creek	3	Culverts and Road Crossings
2	Action Identity Number	LFC	Las Flores Canyon Creek	4	Dams and Surface Water Diversions
Action Rank		TopC	Topanga Canyon	5	Flood Control Maintenance
A	Action addresses the first listing factor regarding the destruction or curtailment of the species' habitat			6	Groundwater Extraction
B	Action addresses one of the other four listing factors			7	Levees and Channelization
				8	Mining and Quarrying
				9	Non-Native Species
				10	Recreational Facilities
				11	Roads
				12	Upslope/Upstream Activities
				13	Urban Development
				14	Urban Effluents
				15	Wildfires

See Chapter 8, Table 8.1 for Detailed Description of Recovery Actions

Table 11-4. Southern California Steelhead DPS Recovery Action Table for the Big Sycamore Canyon Creek Watershed (Santa Monica Mountains BPG).

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
Big Sycamore Canyon Creek												
BSC-SCS-3.1	Develop and implement plan to remove or modify fish passage barriers within the watershed	NMFS,CDOT, ACOE, SMMC, SMMRCD, CDFG, CSCC,CT, TCFT,TU,VC	Culverts and Road Crossings (Passage Barriers)	1, 4	1A	20 - refer to regional costs	0	0	0	0	0	0
BSC-SCS-4.2	Develop and implement water management plan for diversion operations	CDPR,CDFG, NMFS,CT,TU, TCFT,VC	Dams and Surface Water Diversions	1, 3, 4	3B	3	275550	0	0	0	0	275550
BSC-SCS-5.1	Develop and implement flood control maintenance program	CDPR,SMMC, SMMRCD, CDFG,NMFS, CT,TU,TCFT,VC	Flood Control Maintenance	1, 4	3B	100	0	0	0	0	0	0
BSC-SCS-7.1	Develop and implement a stream bank and riparian corridor restoration plan	CDPR,SMMC, SMMRCD, CDFG, CSCC, NMFS,CT,TU,TC FT,VC	Levees and Channelization	1, 4	3B	10	10521940	10521940	0	0	0	21043880
BSC-SCS-9.1	Develop and implement watershed-wide plan to assess the impacts of non-native species and develop control measures	CDFG,CDPR SMMC, SMMRCD, NMFS,CT,TU, TCFT,VC	Non-Native Species	1, 3, 5	3B	100 - refer to regional costs	0	0	0	0	0	0

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
BSC-SCS-9.2	Develop and implement non-native species monitoring program	CDFG,CDPR, CSCC,SMMC, SMMRCD, NMFS,CT,TU, TCFT,VC	Non-Native Species	1, 3, 5	3B	100 - refer to regional costs	0	0	0	0	0	0
BSC-SCS-9.3	Develop and implement public education program on non-native species impacts	CDFG,CDPR, CSCC,SMMC, SMMRCD, NMFS,CT,TU, TCFT,VC	Non-Native Species	1, 3, 5	3B	20	76140	76140	76140	76140	0	304560
BSC-SCS-10.1	Review and modify development and management plans for recreational areas and national forests (e.g., Point Mugu State Park, Santa Monica National Recreational Area General Management Plan)	CDPR,CDFG, SMMC, SMMRCD, NMFS,USFWS, CT,TU,TCFT,VC	Recreational Facilities	1, 2, 3, 4, 5	2B	ongoing -cost of doing business	0	0	0	0	0	0
BSC-SCS-10.2	Develop and implement public education program on watershed processes	CDPR,CDFG, CSCC,USFWS, NMFS,SMMC, SMMRCD, CT,TU,TCFT,VC	Recreational Facilities	1, 2, 3, 4, 5	3B	20	76140	76140	76140	76140	0	304560
BSC-SCS-10.3	Review and modify development and management plans for recreational areas and national forests	CDPR,CDFG, USFWS,NMFS, SMMC, SMMRCD, CT,TU,TCFT,VC	Recreational Facilities	1, 2, 3, 4, 5	3B	ongoing - cost of doing business	0	0	0	0	0	0

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
BSC-SCS-11.1	Manage roadways and adjacent riparian corridor and restore abandoned roadways	CDOT,CDFG, SMMC, SMMRCD,CT, TUC,TCFT,VC	Roads	1, 4	3B	20 - refer to regional costs	0	0	0	0	0	0
BSC-SCS-11.2	Retrofit storm drains to filter runoff from roadways	CDOT,CDPR, CDFG,SMMC, SMMRCD,CT, TU,TCFT,VC	Roads	1, 4	3B	20	32260	32260	32260	32260	0	129040
BSC-SCS-11.3	Develop and implement plan to remove or reduce approach-fill for railroad lines and roads	CDOT,CDPR, CDFG,SMMC, SMMRCD,CT, TU,TCFT,VC	Roads	1,4	3B	20 - refer to regional costs	0	0	0	0	0	0
BSC-SCS-12.1	Develop and implement an estuary restoration and management plan	CDPR,CDFG, CDOT, CSCC, SMMC, SMRCD,NMFS, USFWS,CT, TCFT,TU,VC	Upslope/ Upstream activities	1, 2, 3, 4, 5	2A	5	8881455	0	0	0	0	8881455
BSC-SCS-12.2	Review and modify applicable County and/or City Local Coastal Plans	CCC,CDFG, SMMC,CDPR, SMMRCD, NMFS,CT,TRCF, TU,VC	Upslope/ Upstream activities	1, 2, 3, 4, 5	2A	5	62400	0	0	0	0	62400
BSC-SCS-13.1	Develop, adopt, and implement urban land-use planning policies and standards	BLM,CT,TUC, SDT,VC	Urban Development	1, 4	3B	5	62400	0	0	0	0	62400
BSC-SCS-13.2	Retrofit storm drains in developed areas	NMFS,DOT, CT,TUC,SDT, VC	Urban Development	1, 4	3B	20	0	0	0	0	0	0

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
BSC-SCS-14.1	Review California Regional Water Quality Control Board Watershed Plans and modify Stormwater Permits	RWQCB, SWRCB,CDFG, CDPR,SMMC, SMMRCD,CT, TU,TCFT,VC	Urban Effluents	1, 4, 5	2B	ongoing - cost of doing business	0	0	0	0	0	0
BSC-SCS-14.2	Review, assess and modify NPDES wastewater discharge permits	RWQCB, CDFG,USFWS, NMFS,SMMC, SMMRCD,CT, TU,TCFT,VC	Urban Effluents	1, 4	3B	ongoing - cost of doing business	0	0	0	0	0	0
BSC-SCS-15.1	Develop and implement an integrated wildland fire and hazardous fuels management plan,	USFS,USFWS, USGS,NMFS, CDF,CDFG, SMMC, SMMRCD,CT, TCFT,TU,VC	Wildfires	1, 4, 5	1A	100 - refer to regional costs	0	0	0	0	0	0

Table 11-5. Southern California Steelhead DPS Recovery Action Table for the Arroyo Sequit Creek Watershed (Santa Monica Mountains BPG).

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
Arroyo Sequit Creek												
ASC-SCS-3.1	Develop and implement plan to remove or modify fish passage barriers within the watershed	CDPR,SMMC, SMMRCD, CDFG,CSCC, CDOT,USFWS, NMFS,CT,TU, TCFT,VC,LAC	Culverts and Road Crossings (Passage Barriers)	1, 4	1A	20 - refer to regional costs	0	0	0	0	0	0
ASC-SCS-4.1	Provide fish passage around dams and diversion (e.g., small, non-functional water impoundments on the east and west forks of Arroyo Sequit)	SMMC, SMMRCD, CDPR,CDFG, CSCC,NMFS, USFWS,CT,TU, TCFT,VC,LAC	Dams and Surface Water Diversions	1, 4	1A	20 - refer to regional costs	0	0	0	0	0	0
ASC-SCS-4.2	Develop and implement water management plan for diversion operations	CDPR,SMMC, SMMRCD, CDFG,NMFS, USFWS,CT, TCFT,VC,LAC	Dams and Surface Water Diversions	1, 3, 4	1B	5	275550	0	0	0	0	275550
ASC-SCS-5.1	Develop and implement flood control maintenance program	NRCS,USGS, NMFS,SMMC, SMMRCD, CDPR,CDFG, CT,TU,TCFT, VC,LAC	Flood Control Maintenance	1, 4	2B	100	0	0	0	0	0	0
ASC-SCS-7.1	Develop and implement a stream bank and riparian corridor restoration plan	CDPR,CDFG, CSCC,SMMC, SMMRCD, NMFS,CT,TU, TCFT,VC,LAC	Levees and Channelization	1, 4	2B	10	10521940	10521940	0	0	0	21043880

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
ASC-SCS-9.1	Develop and implement watershed-wide plan to assess the impacts of non-native species and develop control measures	CDFG,CDPR, CSCC,SMMC, SMMRCD, USFWS,NMFS, CT,TU,TCFT, VC,LAC	Non-Native Species	1, 3, 5	3B	100 - refer to regional costs	0	0	0	0	0	0
ASC-SCS-9.2	Develop and implement non-native species monitoring program	CDFG,CDPR CSCC,SMMC, SMMRCD, USFWS,NMFS, CT,TU,TCFT, VC,LAC	Non-Native Species	1, 3, 5	3B	100 - refer to regional costs	0	0	0	0	0	0
ASC-SCS-9.3	Develop and implement public education program on non-native species impacts	CDFG,CDPR, CSCC,SMMC, SMMRCD, USFWS,NMFS, CT,TU,TCFT, VC,LAC	Non-Native Species	1, 3, 5	3B	20	76140	76140	76140	76140	0	304560
ASC-SCS-10.1	Review and modify development and management plans for recreational areas and national forests (e.g., Leo Carrillo State Park)	CDPR,SMMC, SMRCD,CDFG, NMFS,CT,TU, TCFT,VC,LAC	Recreational Facilities	1, 2, 3, 4, 5	2B	1	68030	0	0	0	0	68030
ASC-SCS-10.2	Develop and implement a public education program on watershed processes	SMMC, SMMRCD, CDPR,CDFG, CSCC,NMFS, USGS,CT,TU, TCFT,VC,LAC	Recreational Facilities	1, 2, 3, 4, 5	3B	20	76140	76140	76140	76140	0	304560
ASC-SCS-11.1	Manage roadways and adjacent riparian corridor and restore abandoned roadways	CDOT,CDPR, CDFG,SMMC, SMMRCD, NMFS,USFWS, CT,TU,TCFT, VC,LAC	Roads	1, 4	1A	20 - refer to regional costs	0	0	0	0	0	0

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
ASC-SCS-11.2	Retrofit storm drains to filter runoff from roadways	CDOT,CDPR, RWQCB, CDFG,SMMC, SMMRCD, NMFS,CT,TU, TCFT,VC,LAC	Roads	1, 4	2B	20	32260	32260	32260	32260	0	129040
ASC-SCS-11.3	Develop and implement plan to remove or reduce approach-fill for railroad lines and roads	CDOT,CDPR, RWQCB, CDFG,SMMC, SMMRCD, NMFS,CT,TU, TCFT,VC,LAC	Roads	1, 4	2B	20 - refer to regional costs	0	0	0	0	0	0
ASC-SCS-12.1	Develop and implement an estuary restoration and management	CDPR,CDFG, CDOT,CSCC, SMMC, SMMRCD, NMFS,CT,TCFT, VC,LAC	Upslope/ Upstream activities	1, 2, 3, 4, 5	2A	5	670000	0	0	0	0	670000
ASC-SCS-12.2	Review and modify applicable County and/or City Local Coastal Plans	CCC,CDFG, SMMC, SMMRCD, NMFS,CT,TU, TCFT,VC,LAC	Upslope/ Upstream activities	1, 2, 3, 4, 5	2A	5	62400	0	0	0	0	62400
ASC-SCS-13.1	Develop, adopt, and implement urban land-use planning policies and standards	SMMC SMMRCD, CDFG,NMFS, CT,TU,TCFT, VC,LAC	Urban Development	1, 4	3B	5	62400	0	0	0	0	62400
ASC-SCS-13.2	Retrofit storm drains in developed areas	CDOT,SMMC, SMMRCD, CDFG,USFWS, NMFS,CT,TU, TCFT,VC,LAC	Urban Development	1, 4	3B	20	0	0	0	0	0	0
ASC-SCS-14.1	Review California Regional Water Quality Control Board Watershed Plans and modify Stormwater Permits	RWQCB, SWRCB,CDFG, CDPR,NMFS, USFWS,CT,TU, TCFT,VC,LAC	Urban Effluents	1, 4, 5	2B	ongoing - cost of doing business	0	0	0	0	0	0

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
ASC-SCS-14.2	Review, assess and modify NPDES wastewater discharge permits	RWQCB, CDFG,CDPR, USFWS,NMFS, CT,TU,TCFT, VC,LAC	Urban Effluents	1, 4	3B	ongoing - cost of doing business	0	0	0	0	0	0
ASC-SCS-15.1	Develop and implement an integrated wildland fire and hazardous fuels management plan	CDF,CDPR, SMMC, SMMRCD, USFWS,USGS, NMFS,CT,TU, TCFT,VC,LAC	Wildfires	1, 4, 5	1A	100 - refer to regional costs	0	0	0	0	0	0

Table 11-6. Southern California Steelhead DPS Recovery Action Table for the Malibu Creek Watershed (Santa Monica Mountains BPG).

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
Malibu Creek												
MalC-SCS-3.1	Develop and implement plan to remove or modify fish passage barriers within the watershed	CDPR,SMMC, SMMRCD, CDFG,CSCC CDOT,USFWS, NMFS,CT,TU, LAC	Culverts and Road Crossings (Passage Barriers)	1, 4	1A	20 - refer to regional costs	0	0	0	0	0	0
MalC-SCS-4.1	Provide fish passage around dams and diversions (e.g., remove or physically modify Rindge and Malibu dams)	CDPR,SMMC, SMMRCD, CDFG,CSCC USFWS,NMFS, ACOE,CT,TU, LAC	Dams and Surface Water Diversions	1, 3, 4	1A	10	TBD	TBD	TBD	TBD	TBD	TBD
MalC-SCS-4.2	Develop and implement water management plan for dam operations	SMMC, SMMRCD, CDFG,USFWS, NMFS,ACOE, CT,TU,LAC	Dams and Surface Water Diversions	1, 3, 4	1B	5	275550	0	0	0	0	275550
MalC-SCS-5.1	Develop and implement flood control maintenance program	NRCS,USGS, NMFS,SMMC, SMMRCD, CDPR,CDFG, CT,TU,TU,LAC	Flood Control Maintenance	1, 4	2B	100	0	0	0	0	0	0
MalC-SCS-7.2	Develop and implement stream bank and riparian corridor restoration plan	CDPR,CDFG, CSCC,SMMC, SMMRCD, NMFS,CT,TU, LAC	Levees and Channelization	1, 4	2B	10	10521940	10521940	0	0	0	21043880

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
MalC-SCS-9.1	Develop and implement watershed-wide plan to assess the impacts of non-native species and develop control measures	CDFG,CDPR, CSCC,SMMC, SMMRCD, USFWS,NMFS, CT,TU,LAC	Non-Native Species	1, 3, 5	3B	100 - refer to regional costs	0	0	0	0	0	0
MalC-SCS-9.2	Develop and implement non-native species monitoring program	CDFG,CDPR, CSCC,SMMC, SMMRCD, USFWS,NMFS, CT,TU,LAC	Non-Native Species	1, 3, 5	3B	100 - refer to regional costs	0	0	0	0	0	0
MalC-SCS-9.3	Develop and implement public education program on non-native species impacts	CDFG,CDPR, CSCCC, SMMC, SMMRCD, USFWS,NMFS, CT,TU,LAC	Non-Native Species	1, 3, 5	3B	20	76140	76140	76140	76140	0	304560
MalC-SCS-10.1	Review and modify development and management plans for recreational areas and national forests (e.g., Malibu State Park)	SMMC, SMMRCD, CDPR,CDFG, CSCC,NMFS, USGS,CT,TU, LAC	Recreational Facilities	1, 2, 3, 4, 5	2B	1	68030	0	0	0	0	68030
MalC-SCS-10.2	Develop and implement public education program on watershed processes	SMMC, SMMRCD, CDPR,CDFG, CSCC,NMFS, USGS,CT,TU, LAC	Recreational Facilities	1, 2, 3, 4, 5	3B	20	76140	76140	76140	76140	0	304560

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
MalC-SCS-11.1	Manage roadways and adjacent riparian corridor and restore abandoned roadways	CDOT,CDPR, RWQCB, CDFG,SMMC, SMMRCD, NMFS,CT,TU, LAC	Roads	1, 4	3B	20 - refer to regional costs	0	0	0	0	0	0
MalC-SCS-11.2	Retrofit storm drains to filter runoff from roadways	CDOT,CDPR, RWQCB, CDFG,SMMC, SMMRCD, NMFS,CT,TU, LAC	Roads	1, 4	3B	20	32260	32260	32260	32260	0	129040
MalC-SCS-12.1	Develop and implement an estuary restoration and management plan	CDPR,CDFG, CDOT, CSCCC, SMMC, SMMR,CD, NMFS,CT,TU, LAC	Upslope/ Upstream activities	1, 2, 3, 4, 5	2A	5	4958000	0	0	0	0	4958000
MalC-SCS-12.2	Review and modify applicable County and/or City Local Coastal Plans	CCC,CDFG, SMMC, SMMRCD, NMFS,CT,TU, LAC	Upslope/ Upstream activities	1, 2, 3, 4, 5	2A	5	62400	0	0	0	0	62400
MalC-SCS-13.1	Develop, adopt, and implement urban land-use planning policies and standards	SMMC SMMRCD, CDFG,NMFS, CT,TU,LAC	Urban Development	1, 4	3B	5	62400	0	0	0	0	62400
MalC-SCS-13.2	Retrofit storm drains in developed areas	SMMC SMMRCD, CDFG,NMFS, CT,TU,LAC	Urban Development	1, 4	3B	20	0	0	0	0	0	0

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
MalC-SCS-14.1	Review, assess and modify NPDES wastewater discharge permits (e.g., Las Virgenes Municipal Water District Wastewater Treatment Facility)	RWQCB, CDFG,CDPR, USFWS,NMFS, CT,TU,LAC	Urban Effluents	1, 4	2B	ongoing - cost of doing business	0	0	0	0	0	0
MalC-SCS-14.2	Review California Regional Water Quality Control Board Watershed Plans and modify Stormwater Permits	RWQCB, SWRCB, CDFG,CDPR, USFWS,NMFS, CT,TU,LAC	Urban Effluents	1, 4, 5	2B	ongoing - cost of doing business	0	0	0	0	0	0
MalC-SCS-15.1	Develop and implement an integrated wildland fire and hazardous fuels management plan	CDF,SMMC, SMMRCD, CDFG,USFWS, NMFS,USGS, CT,TU,LAC	Wildfires	1, 4, 5	1A	100 - refer to regional costs	0	0	0	0	0	0

Table 11-7. Southern California Steelhead DPS Recovery Action Table for the Las Flores Canyon Creek Watershed (Santa Monica Mountains BPG).

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
Las Flores Canyon Creek												
LFC-SCS-3.1	Develop and implement plan to remove or modify fish passage barriers within the watershed	CDPR,SMMC, SMMRCD, CDFG,CSCC, CDOT,USFWS, NMFS,CT,TU, LAC	Culverts and Road Crossings (Passage Barriers)	1, 4	3A	20 - refer to regional costs	0	0	0	0	0	0
LFC-SCS-4.1	Provide fish passage around dams and diversions	CDPR,SMMC, SMMRCD, CDFG,CSCC, CDOT,USFWS, NMFS,CT,TU, LAC	Dams and Surface Water Diversions	1, 3, 4	3A	20 - refer to regional costs	0	0	0	0	0	0
LFC-SCS-4.2	Develop and implement water management plan for diversion operations	CDPR,SMMC, SMMRCD, CDFG, CDOT,USFWS, NMFS,CT,TU, LAC	Dams and Surface Water Diversions	1, 3, 4	3B	5	275550	0	0	0	0	275550
LFC-SCS-5.1	Develop and implement flood control maintenance program	NRCS,USGS, NMFS,SMMC, SMMRCD, CDPR,CDFG, CT,TU,TU,LAC	Flood Control Maintenance	1, 4	3B	100	0	0	0	0	0	0
LFC-SCS-7.2	Develop and implement stream bank and riparian corridor restoration plan	CDPR,CDFG, CSCC,SMMC, SMMRCD, NMFS,CT,TU, LAC	Levees and Channelization	1, 4	3B	10	10521940	10521940	0	0	0	21043880

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
LFC-SCS-9.1	Develop and implement watershed-wide plan to assess the impacts of non-native species and develop control measures	CDFG,CDPR, CSCC,SMMC, SMMRCD, USFWS,NMFS, CT,TU,LAC	Non-Native Species	1, 3, 5	3B	100 - refer to regional costs	0	0	0	0	0	0
LFC-SCS-9.2	Develop and implement non-native species monitoring program	CDFG,CDPR, CSCC,SMMC, SMMRCD, USFWS,NMFS, CT,TU,LAC	Non-Native Species	1, 3, 5	3B	100 - refer to regional costs	0	0	0	0	0	0
LFC-SCS-9.3	Develop and implement public education program on non-native species impacts	CDFG,CDPR, CDOT,CSCC, SMMC, SMMRCD, USFWS,NMFS, CT,TU,LAC	Non-Native Species	1, 3, 5	3B	20	76140	76140	76140	76140	0	304560
LFC-SCS-10.1	Review and modify development and management plans for recreational areas and national forests (e.g., Santa Monica Mountains National Recreation Area General Management Plan)	SMMC, SMMRCD, CDPR,CDFG, CSCC,NMFS, USGS,CT,TU, LAC	Recreational Facilities	1, 2, 3, 4, 5	3B	ongoing -costs of doing business	0	0	0	0	0	0
LFC-SCS-10.2	Develop and implement public education program on watershed processes	SMMC, SMMRCD, CDPR,CDFG, CSCC,NMFS, USGS,CT,TU, LAC	Recreational Facilities	1, 2, 3, 4, 5	3B	20	76140	76140	76140	76140	0	304560

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
LFC-SCS-11.1	Manage roadways and adjacent riparian corridor and restore abandoned roadways	CDOT,CDPR, RWQCB, CDFG,SMMC, SMMRCD, NMFS,CT,TU, LAC	Roads	1, 4	3B	20 - refer to regional costs	0	0	0	0	0	0
LFC-SCS-11.2	Retrofit storm drains to filter runoff from roadways	CDOT,CDPR, RWQCB, CDFG,SMMC, SMMRCD, NMFS,CT, TU,LAC	Roads	1, 4	3B	20	32260	32260	32260	32260	0	129040
LFC-SCS-11.3	Develop and implement plan to remove or reduce approach-fill for railroad lines and road	CDOT,CDPR, RWQCB, CDFG,SMMC, SMMRCD, NMFS,CT,TU, LAC	Roads	1,4	3B	20 - refer to regional costs	0	0	0	0	0	0
LFC-SCS-12.1	Develop and implement an estuary restoration and management plan	CDFG,CSCC, SMMC, SMMRCD, NMFS,CT, TU ,LAC	Upslope/ Upstream activities	1, 2, 3, 4, 5	3B	5	67000	0	0	0	0	67000
LFC-SCS-12.2	Review and modify applicable County and/or City Local Coastal Plans	CCC,CDFG, SMMC, SMMRCD, NMFS,CT,TU, LAC	Upslope/ Upstream activities	1, 2, 3, 4, 5	3B	5	62400	0	0	0	0	62400
LFC-SCS-13.1	Develop, adopt, and implement urban land-use planning policies and standards	SMMC SMMRCD, CDFG NMFS,CT,TU, LAC	Urban Development	1, 4	3B	5	62400	0	0	0	0	62400
LFC-SCS-13.2	Retrofit storm drains in developed areas	SMMC SMMRCD, CDFG,NMFS, CT,TU,LAC	Urban Development	1, 4	3B	20	0	0	0	0	0	0

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
LFC-SCS-14.1	Review, assess and modify NPDES wastewater discharge permits (e.g., Las Virgenes Municipal Water District Wastewater Treatment Facility)	RWQCB, CDFG,CDPR, USFWS,NMFS, CT,TU,LAC	Urban Effluents	1, 4	3B	ongoing - cost of doing business	0	0	0	0	0	0
LFC-SCS-14.2	Review California Regional Water Quality Control Board Watershed Plans and modify Stormwater Permits	RWQCB, SWRCB, CDFG,CDPR, USFWS,NMFS, CT,TU,LAC	Urban Effluents	1, 4, 5	3B	ongoing - cost of doing business	0	0	0	0	0	0
LFC-SCS-15.1	Develop and implement an integrated wildland fire and hazardous fuels management plan	CDF,SMMC, SMMRCD, CDFG,USFWS, NMFS,USGS, CT,TU,LAC	Wildfires	1, 4, 5	3B	100 - refer to regional costs	0	0	0	0	0	0

Table 11-8. Southern California Steelhead DPS Recovery Action Table for the Topanga Canyon Creek Watershed (Santa Monica Mountains BPG).

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
Topanga Canyon Creek												
TopC-SCS-3.1	Develop and implement plan to remove or modify fish passage barriers within the watershed	CDPR,SMMC, SMMRCD, CDFG,CSCC, CDOT,USFWS, NMFS,CT,TU, LAC	Culverts and Road Crossings (Passage Barriers)	1, 4	1A	20 - refer to regional costs	0	0	0	0	0	0
TopC-SCS-4.1	Provide fish passage around dams and diversions	CDPR,SMMC, SMMRCD, CDFG,CSCC, USFWS,NMFS, CT,TU,LAC	Dams and Surface Water Diversions	1, 3, 4	2A	20 - refer to regional costs	0	0	0	0	0	0
TopC-SCS-4.2	Develop and implement water management plan for diversion operations	CDPR,SMMC, SMMRCD, CDFG,CSCC, USFWS,NMFS, CT,TU,LAC	Dams and Surface Water Diversions	1, 3, 4	2B	5	275550	0	0	0	0	275550
TopC-SCS-5.1	Develop and implement flood control maintenance program	USGS,ACOE, BLM,NMFS, CT,TU,LAC	Flood Control Maintenance	1, 4	2B	100	0	0	0	0	0	0
TopC-SCS-7.1	Develop and implement stream bank and riparian corridor restoration plan	CDFG,CDPR, CDOT,CSCC, SMMC, SMMRCD, NMFS,CT,TU, LAC	Levees and Channelization	1, 4	2B	10	10521940	10521940	0	0	0	21043880

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
TopC-SCS-9.1	Develop and implement watershed-wide plan to assess the impacts of non-native species and develop control measures	CDFG,CDPR, CSCC,SMMC, SMMRCD, USFWS,NMFS, CT,TU,LAC	Non-Native Species	1, 3, 5	2B	100 - refer to regional costs	0	0	0	0	0	0
TopC-SCS-9.2	Develop and implement non-native species monitoring program	CDFG,CDPR, CSCC, SMMC, SMMRCD, USFWS,NMFS, CT,TU	Non-Native Species	1, 3, 5	2B	100 - refer to regional costs	0	0	0	0	0	0
TopC-SCS-9.3	Develop and implement public education program on non-native species impacts	CDFG,CDPR, CSCC,SMMC, SMMRCD, USFWS,NMFS, CT,TU,LAC	Non-Native Species	1, 3, 5	2B	20	76140	76140	76140	76140	0	304560
TopC-SCS-10.1	Review and modify development and management plans for recreational areas and national forests (e.g., Topanga State Park, Santa Monica Mountains National Recreation Area General Management Plan)	SMMC, SMMRCD, CDPR,CDFG, CSCC,NMFS, USGS,CT,TU, LAC	Recreational Facilities	1, 2, 3, 4, 5	2B	ongoing -cost of doing business	0	0	0	0	0	0

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
TopC-SCS-10.2	Develop and implement public education program on watershed processes	SMMC, SMMRCD, CDPR, CDFG, CSCC, NMFS, USGS, CT, TU, LAC	Recreational Facilities	1, 2, 3, 4, 5	3B	20	76140	76140	76140	76140	0	304560
TopC-SCS-11.1	Manage roadways and adjacent riparian corridor and restore abandoned roadways	CDOT, CDPR, RWQCB, CDFG, SMMC, SMMRCD, NMFS, CT, TU, LAC	Roads	1, 4	2B	20 - refer to regional costs	0	0	0	0	0	0
TopC-SCS-11.2	Retrofit storm drains to filter runoff from roadways	CDOT, CDPR, RWQCB, CDFG, SMMC, SMMRCD, NMFS, CT, TU, LAC	Roads	1, 4	2B	20	32260	32260	32260	32260	0	129040
TopC-SCS-11.3	Develop and implement plan to remove or reduce approach-fill for railroad lines and road	CDOT, CDPR, RWQCB, CDFG, SMMC, SMMRCD, NMFS, CT, TU, LAC	Roads	1, 4	2B	20-refer to regional costs	0	0	0	0	0	0
TopC-SCS-12.1	Develop and implement an estuary restoration and management plan	CDFG, CDPR, CDOT, CSCC, SMMC, SMMRCD, NMFS, CT, TU, LAC	Upslope/ Upstream activities	1, 2, 3, 4, 5	2A	5	201000	0	0	0	0	201000
TopC-SCS-12.2	Review and modify applicable County and/or City Local Coastal Plans	CCC, CDFG, SMMC, SMMRCD, NMFS, CT, TU, LAC	Upslope/ Upstream activities	1, 2, 3, 4, 5	2A	5	62400	0	0	0	0	62400

Action #	Recovery Action	Potential Collaborators	Threat Source	Listing Factors (1 - 5)	Action Rank (1A, 1B, 2A, 2B, 3A, 3B)	Task Duration	Estimated Costs (\$)					
							FY 1-5	FY 6-10	FY 11-15	FY 16-20	FY 21-25	FY 1-100
TopC-SCS-13.1	Develop, adopt, and implement urban land-use planning policies and standards	SMMC SMMRCD, CDFG,NMFS, CT,TU,LAC	Urban Development	1, 4	2B	5	62400	0	0	0	0	62400
TopC-SCS-13.2	Retrofit storm drains in developed areas	SMMC SMMRCD, CDFG,CDOT, NMFS,CT,TU, LAC	Urban Development	1, 4	2B	20	0	0	0	0	0	0
TopC-SCS-14.1	Review, assess and modify NPDES wastewater discharge permits	RWQCB, CDFG,CDPR, USFWS,NMFS, CT,TU,LAC	Urban Effluents	1, 4	2B	ongoing - cost of doing business	0	0	0	0	0	0
TopC-SCS-14.2	Review California Regional Water Quality Control Board Watershed Plans and modify Stormwater Permits	RWQCB, SWRCB,CDFG, CDPR,USFWS, NMFS,CT,TU, LAC	Urban Effluents	1, 4, 5	3B	ongoing - cost of doing business	0	0	0	0	0	0
TopC-SCS-15.1	Develop and implement an integrated wildland fire and hazardous fuels management plan	CDF,SMMC, SMMRCD, CDFG,USFWS, NMFS,USGS, CT,TU,LAC	Wildfires	1, 4, 5	1A	100 - refer to regional costs	0	0	0	0	0	0