

Central CA Coast Coho Salmon ~ Santa Cruz Mountains

Diversity Stratum

ACTIONS FOR RESTORING HABITATS

1. Restoration- Estuary

1.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of the species habitat or range

1.1.1. **Recovery Action:** Prevent impairment to the estuary (impaired quality and extent)

1.1.1.1. **Action Step:** Work with CalTrans to ensure the planned replacement of the existing Highway 1 bridge allows complete restoration of the Scott Creek estuary which is critical to smolt health and marine survival. Scott Creek is a very high priority for this Stratum.

1.1.1.2. **Action Step:** Improve estuarine habitat complexity and water quality and prevent future degradation of estuarine habitat.

1.1.1.3. **Action Step:** Work with California Coastal Commission and USACE to address standards, protocols, and beneficial structural improvements to minimize the frequency of “emergency” sandbar breaching requests.

2. Restoration- Floodplain Connectivity

2.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

2.1.1. **Recovery Action:** Improve floodplain connectivity with the main channel

2.1.1.1. **Action Step:** Floodplain connectivity has been significantly impaired by channel modification activities. Efforts to protect all existing floodplains and re-establish floodplain connectivity should be a high priority.

3. Restoration- Habitat Complexity

3.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of the species habitat or range

3.1.1. **Recovery Action:** Improve Habitat Complexity

3.1.1.1. **Action Step:** Conduct outreach and education to private landowners regarding the importance of instream large wood and its role in providing essential habitats for coho salmon survival.

- 3.1.1.2. **Action Step:** Continue working with Santa Cruz RCD and Coastal Conservancy to identify willing landowners to implement restoration projects in Core and Phase I areas.
- 3.1.1.3. **Action Step:** Conduct outreach and education to private landowner regarding the importance of instream large wood and its role in providing critical habitats for coho salmon survival.

3.2. **Objective:** Address the inadequacy of existing regulatory mechanisms

3.2.1. **Recovery Action:** Improve Habitat Complexity

- 3.2.1.1. **Action Step:** Backfill CDFG Fisheries positions and consider increases in NOAA/NMFS participation in San Mateo and San Cruz counties to facilitate development and outreach for FRGP funded restoration projects.
- 3.2.1.2. **Action Step:** Work with the County of San Mateo to develop a large woody debris management program similar to that developed by County of Santa Cruz.

4. Restoration- Hydrology

4.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

4.1.1. **Recovery Action:** Improve flow conditions

- 4.1.1.1. **Action Step:** Promote off-channel storage to reduce impacts of water diversion.

5. Restoration- Landscape Patterns

5.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of the species habitat or range

5.1.1. **Recovery Action:** Reduce adverse impacts to landscape patterns

- 5.1.1.1. **Action Step:** Conduct outreach and education to private landowners regarding the importance of instream large wood and its role in providing essential habitats for coho salmon survival.
- 5.1.1.2. **Action Step:** Continue working with Santa Cruz RCD and Coastal Conservancy to identify willing landowners to implement restoration projects in Core and Phase I areas.
- 5.1.1.3. **Action Step:** Strongly encourage Santa Cruz and San Mateo counties (including cities and local jurisdictions) to take a leadership role and work with their various departments on permitting, road maintenance, ordinances, etc., to

reduce the ongoing impacts of urbanization, agriculture, road building, grading activities, timber conversions, etc., to salmon and their habitats.

5.2. **Objective:** Address the inadequacy of existing regulatory mechanisms

5.2.1. **Recovery Action:** Work with Santa Cruz and San Mateo County district attorneys to address environmental crimes that adversely impact coho salmon and/or their habitat

6. Restoration- Passage

6.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

6.1.1. **Recovery Action:** Implement ESU and population level recovery actions for Passage

7. Restoration- Pool Habitat

7.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

7.1.1. **Recovery Action:** Implement ESU and population level recovery actions for Habitat Complexity

8. Restoration- Riparian

8.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

8.1.1. **Recovery Action:** Implement ESU and population level recovery actions for Riparian Vegetation

9. Restoration- Sediment

9.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

9.1.1. **Recovery Action:** Implement ESU and population level recovery actions for Sediment

10. Restoration- Viability

10.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of the species habitat or range

10.1.1. **Recovery Action:** Increase density, abundance, spatial structure and diversity

10.1.1.1. **Action Step:** Reintroduce coho salmon to watersheds where they are extirpated, using appropriate genetic stocks. Reintroduction should only occur in watersheds where habitat conditions are suitable for all freshwater lifestages. To minimize risk of extirpation in this stratum, this recommendation should be implemented immediately in San Gregorio Creek, Pescadero Creek, Waddell Creek, Soquel Creek and Aptos Creek.

- 10.1.1.2. **Action Step:** Evaluate feasibility and benefits of constructing and operating a conservation hatchery for the propagation of CCC coho salmon. Construct, fund, and operate the facility if determined to be feasible and beneficial using HGMP protocols. The Monterey Bay Salmon and Trout Project operate a coho broodstock program in Scott Creek. The facility at Scott Creek is constrained due to its location and cannot be easily expanded due to financial, physical, and water supply constraints. A larger facility could serve as a regional conservation hatchery for multiple populations in the Santa Cruz Mountain's Diversity Stratum.
- 10.1.1.3. **Action Step:** Secure long term funding for the operation of the MBSTP if an alternative regional conservation hatchery is determined infeasible or its development is under long term planning.
- 10.1.1.4. **Action Step:** Conduct a thorough historical analysis (including archeological analysis of Indian middens) and determine whether coho salmon historically occupied streams south of Elkhorn Slough in Monterey County. If positive data are discovered, evaluate the feasibility and likelihood of success of re-establishing coho salmon populations into the Big Sur and Little Sur Rivers.
- 10.1.1.5. **Action Step:** Salmonid monitoring in this Stratum is a high priority and long-term funding, for the continuation of current programs and their expansion, should be secured.

11. Restoration- Water Quality

- 11.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range
 - 11.1.1. **Recovery Action:** Implement ESU and population level recovery actions for Water Quality

THREAT ABATEMENT ACTIONS

12. Threat- Agricultural Practices

- 12.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range
 - 12.1.1. **Recovery Action:** Implement ESU and population level recovery actions for Agricultural Practices

13. Threat- Channel Modification

- 13.1. **Objective:** Address inadequacies of regulatory mechanisms

13.1.1. **Recovery Action:** Reduce adverse impacts to watershed processes

13.1.1.1. **Action Step:** Stream channel and estuarine habitats of four populations in the Stratum are impacted by channel modification. Projects should institute a net gain for these habitats and prevent further impairment.

14. Threat- Disease/Predation/Competition

14.1. **Objective:** Address disease or predation

14.1.1. **Recovery Action:** Prevent reduced density, abundance, and diversity

14.1.1.1. **Action Step:** Evaluate impacts of predation from introduced species in coastal estuaries to juvenile and smolting salmonids and implement abatement strategies where appropriate.

15. Threat- Fire/Fuel Management

15.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

15.1.1. **Recovery Action:** Prevent impairment to watershed processes

15.1.1.1. **Action Step:** Five populations in Stratum were identified with a high fire threat. A Fire Response Plan should be developed in coordination with relevant agencies to ensure protection of CCC coho salmon and their habitats.

16. Threat- Fishing/Collecting

16.1. **Objective:** Address the overutilization for commercial, recreational, scientific or educational purposes

16.1.1. **Recovery Action:** Prevent reduced density, abundance, and diversity

16.1.1.1. **Action Step:** Work with CDFG and Fish and Game Commission to improve freshwater sport fishing regulations to minimize unintentional and unauthorized take, and incidental mortality, of CCC coho salmon by anglers during the CCC coho salmon migration period in the Santa Cruz Mountains Diversity Stratum. This effort could include development specific emergency regulations during adult migration periods, development of appropriate low-flow closure thresholds and angler outreach programs.

17. Threat- Hatcheries

17.1. **Objective:** Address other natural or manmade factors affecting the species' continued existence

17.1.1. **Recovery Action:** Improve density, abundance, spatial structure, and diversity

17.1.1.1. **Action Step:** Ensure the threat of hatcheries remains low. See Viability actions for specific recommendations regarding hatchery practices.

18. Threat- Livestock

18.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

18.1.1. **Recovery Action:** Implement ESU and population level recovery actions for Livestock

19. Threat- Logging

19.1. **Objective:** Address the inadequacy of existing regulatory mechanisms

19.1.1. **Recovery Action:** Prevent impairment to watershed processes

19.1.1.1. **Action Step:** Explore feasibility and benefits of HCP, GCP or safe harbor with CalFire, BOF, industrial and non-industrial forestland owners (e.g., Soquel Demonstration State Forest, Big Creek, CalPoly, etc.). Facilitate as soon as possible mechanisms to promote sustainable forestry practices and reduce forest conversions which including development of county ordinances, BOF rule changes to conversion permits, incentives for sustainable practices, etc.

20. Threat- Mining

20.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

20.1.1. **Recovery Action:** Implement ESU and population level recovery actions for Mining

21. Threat- Recreation

21.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

21.1.1. **Recovery Action:** Implement ESU and population level recovery actions for Recreation

22. Threat- Residential/Commercial Development

22.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

22.1.1. **Recovery Action:** Prevent impairment to watershed processes

22.1.1.1. **Action Step:** Four populations have high or very high threats from residential and commercial development. Recommend continuing the County policy of promoting infill and high density developments over dispersal of low density rural residential in undeveloped areas.

23. Threat- Roads/Railroads

23.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

23.1.1. **Recovery Action:** Prevent increased landscape disturbance

23.1.1.1. **Action Step:** The threat of roads rated the highest for this Stratum. Road effects to salmon and their habitats must be controlled by county-wide road management planning for mainline transportation, rural residential and other road corridors.

23.1.2. **Recovery Action:** Increase density, abundance, spatial structure and diversity

23.1.2.1. **Action Step:** Work with CalTrans to ensure the planned replacement of the existing Highway 1 bridge allows complete restoration of Scott Creek and its estuary which are critical to smolt health and marine survival. Scott Creek is a critical watershed to preserve coho salmon across the Stratum.

24. Threat- Severe Weather Patterns

24.1. **Objective:** Address other natural or manmade factors affecting the species' continued existence

24.1.1. **Recovery Action:** The threat of severe weather was found high or very high across 6 populations. A regional severe weather plan should be developed that addresses proactive measures for climate change and a drought/flooding management and response plan.

25. Threat- Water Diversion/Impoundment

25.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of the species habitat or range

25.1.1. **Recovery Action:** Prevent impairment to stream hydrology (impaired water flow)

25.1.1.1. **Action Step:** Promote the use of reclaimed water for agricultural or other uses.

25.1.1.2. **Action Step:** Promote off-channel storage to reduce impacts of water diversion (e.g., storage tanks for rural residential users).

25.2. **Objective:** Address the inadequacy of existing regulatory mechanisms

25.2.1. **Recovery Action:** Improve flow conditions

25.2.1.1. **Action Step:** Petition SWRCB to declare CCC coho salmon watersheds with existing populations and ongoing diversions in the Santa Cruz Mountains Diversity Stratum declared as fully appropriated during the summer months. Encourage water right applications for existing rights holders who seek to shift the timing or manner of diversion from a less protective to more protective practice.

25.2.1.2. **Action Step:** Work with major water diverters and others to encourage development of a regional HCP in the streams of Santa Cruz County as opposed to individual stand-alone HCPs.

25.2.1.3. **Action Step:** Encourage the County of Santa Cruz to develop a conjunctive management plan for water resources in mid-County streams.

26. Threat- Watershed Process

26.1. **Objective:** Address the present or threatened destruction, modification, or curtailment of habitat or range

26.1.1. **Recovery Action:** Implement ESU and population level recovery actions for Watershed Processes