

Introduction:

The Mattole Salmon Group will provide high quality winter and summer rearing habitat in the lower Mattole River and provide refuge from high flows and high temperatures to juvenile Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*Oncorhynchus kisutch*), and steelhead trout (*Oncorhynchus mykiss*). They will do this by excavating 800 feet of side channel and placing large woody debris, which will maintain large areas of low to near-zero velocities at all flows below bankfull, and facilitate access into an extensive network of wetlands at high flows. During summer conditions increasing water elevation will ensure connectivity with the channel even as river flows decline, and day time water temperatures in the channel will remain 1-2°C cooler than in the adjacent river. Maximum summer water temperatures in the lower Mattole mainstem can exceed 24°C as early as mid-June, so the availability of thermal refugia will benefit outward migrating Chinook salmon and steelhead trout smolts, as well as over-summering steelhead trout and Chinook salmon. Planting of woody riparian vegetation will contribute to future habitat complexity and slow floodplain turnover rates, increasing the probability of the development of off-channel habitats and anabranching through natural channel processes.

This project is necessary because summer habitat conditions in the lower Mattole River and estuary are generally poor for juvenile Pacific salmon. The area is broad, shallow, and lacks complex habitats for fish to hide from predators. Many of the riparian floodplains are void of long-lived riparian tree species that provide shade, floodplain stability, and future wood recruitment. Many mid-elevation islands that were relatively stable and vegetated with riparian trees species such as willow, California black cottonwood (*Populus trichocarpa*), and red alder (*Alnus rubra*) prior to flood events, are now partially vegetated with non-native grasses and forbs and some native shrubs and lack stability and abundant riparian vegetation. In addition, summer water temperatures in the lower river regularly exceed levels thought to be stressful, and even lethal, to Pacific salmon.

The Grantee shall not proceed with on the ground implementation until all necessary permits, consultations, and/or Notice to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* (Part VII <https://www.wildlife.ca.gov/Grants/FRGP/Guidance>).

Objective(s):

Objective 1. Restore 800 feet of off-channel salmonid habitat and provide connectivity to the Mattole Estuary and Lower Bear Creek through excavation of the Middle Slough Channel, installation of 12 wood structures and three (3) alcoves along the restored channel.

Objective 2. Enhance riparian habitat on floodplain adjacent to the Middle Slough through installation of 3000 feet of willow baffles, planting of 4000 trees and installation of salvaged wetland vegetation, and seeding and mulching.

Project Description:

Location:

The project is located approximately 3500 feet upstream from the mouth of the Mattole River and downstream of the town of Petrolia, CA in Humboldt County. The project sites are located on the south side of the lower Mattole River, in the King Range National Conservation Area (See attached Vicinity Map).

Objective 1 activities will take place at section C2, upstream from section C1. Access to this site is via Lighthouse Road.

Objective 2 activities will take place at BLM30. Access to this site is via Lighthouse Road.

Project coordinates are: 40.290738 N and -124.345652 W at the center point of the excavation at C2 and 40.290206 and -124.340985 W at the center point of where spoils will be relocated, willow baffles will be installed, and riparian planting will take place.

Project Set Up:

Project Team Roles and Responsibilities –

Mattole Salmon Group (MSG) - Prime Contractor/Grantee (C-27): Project oversight, contract management, administration, project management, monitoring, and on-site labor on section C2 restoration tasks. Personnel - Executive director, contract manager, project manager, laborer, monitoring technician

Edwards Excavation (EE) - Heavy equipment sub-contractor (Class A) - Establish access to site C2 and BLM30, clear vegetation in section C2, excavate, haul, and grade spoils in section C2, install 12 wood structures in C2, install 3 alcoves in C2, excavate and backfill willow baffles at BLM30, decommission access upon project completion. Personnel - Equipment operator

Mike Love and Associates (MLA) - Sub-contractor (Licensed Engineer): Pre-construction meetings, survey and stake section C2 boundaries and centerline, check grade on throughout channel in C2, and provide post-project as-built. Personnel - Project Engineer

Native Ecosystems (NE) - Sub-contractor (C-27): Section C2 project management, construction oversight and on-site labor. Personnel - Project manager, laborer

Mattole Restoration Council (MRC) - Sub-contractor (C-27): BLM30 project management and construction oversight; harvest and installation of large willow cuttings at BLM30; riparian and wetland plant installation, seeding and straw mulching, riparian revegetation monitoring at C2 and BLM30; Personnel - Executive director, contract manager, office manager, bookkeeper, project manager, laborer

Roscoe and Associates (JR) - Sub-contractor (Archaeology and Botany): Conduct archaeology and botany surveys pre-project at C2 and BLM30. Personnel - Archaeologist, field botanists, field technician

Project Tasks and Associated Personnel

Task 1. Contract Administration: Prepare annual and final reports and quarterly invoices; apply for LSAA; execute sub-contracts –MSG Executive Director, MSG Contract Manager, NE Project Manager, All sub-contractor personnel.

Task 2. Photo documentation: Establish photopoints and collect pre-project ground and drone photos at Section C2 and BLM30; Collect drone video footage of construction - NE Project Manager, MRC Project Manager.

Task 3. Middle Slough C2 Construction: Project management and construction oversight - NE and MSG Project Managers. Archaeological and botanical surveys - Jaimie Roscoe. On-site labor, dust control, and de-watering - NE and MSG laborers. Open access road to C2 and BLM30; Clear vegetation, tip and stage trees at C2; salvage top soil and wetland vegetation in C2 and stockpile; Excavate, transport and grade spoils from C2 to BLM30; Install wood structure and alcoves; close access- EE Equipment Operator. Survey and stake C2 boundaries, check grade, establish benchmark and hubs - MLA Project Engineer.

Task 4. Riparian Restoration: Excavate and backfill willow trenches - EE Equipment Operator. Willow baffle construction and revegetation project management; Harvest and install large willow cuttings and irrigate as needed; plant riparian trees and wetland plugs; install native seed and straw mulch- MRC Project Manager and MRC Laborers.

Task 5. Off-Channel Habitat Feature Monitoring: At Middle Slough Section C2 complete the following: Collect pre-and post photos and design flow surveys, perform biological surveys of functional use, collect temperature and dissolved oxygen data - MSG Monitoring Technician and MSG Project Manager.

Task 6. Riparian Restoration Monitoring and Maintenance: At BLM30 and C2 perform post project monitoring and maintenance including seedling survival surveys to assess survival of installed containerized plants; perform post project survival of willow baffles by measuring linear feet of willow baffle alive; remove weeds and irrigate containerized plantings as needed - MRC Laborer and MRC Project Manager.

Materials:

Project Materials include the following:

Water pumps – 3” and 4” gasoline powered water pumps will be used to de-water the channel once excavation reaches groundwater, provide temporary irrigation to willow baffles, and deliver water to for dust control. 3” and 4” intake line and discharge hose will be used to move water a minimum of 300 feet from the construction site, water baffles, and provide dust control water. All pumps will be placed in secondary containment with spill pad. Pumps are necessary in order to dewater the treatment area in order to excavate channel, check channel bed elevations, and provide water for irrigation. Water pumps will be rented by MSG and MRC.

Native Plant Materials - Containerized riparian trees, wetland plugs, native seed, and straw will be purchased by the MRC. All plant materials will be installed by hand using shovel, rake, and hoedad. These materials are required to reduce on-site erosion and and restore native riparian vegetation to the project sites that was required to be removed to access the channel for construction.

Chainsaw - Gas powered chainsaws will be used to clear vegetation, cut root wads and boles to length, and harvest large willow cuttings. Chainsaws are required for the project to accomplish project tasks. Chainsaws will be operated by certified sawyers with proper PPE. Chainsaws will be rented by MRC and MSG.

4X4 Truck - 4X4 Trucks will be used and are required to transport crews and materials to and from the project site. Trucks will be rented by MSG and MRC.

Hand Tools - Shovels, picks, hoedads, rockbars, tree-bags, rakes, and McClouds are required for revegetation tasks on the project. These tools will be purchased by MRC.

Fuel - Gasoline will be required to run pumps that will be used for de-watering, dust control, and irrigation. Fuel will be purchased by MRC and MSG.

Tasks:

Task 1 – Contract Administration

Prepare annual and final reports and quarterly invoices. Contract management. Execute Sub-contracts. Obtain final landowner access agreements. Apply for LSAA.

Task 2 – Photo documentation

Establish photo points and collect pre and post-project ground and drone photos at Section C2 and BLM30; Collect drone video footage of construction.

Task 3 – Middle Slough Section C2 Construction

A description of construction activities can be found in attached "Plans for Construction Mattole Estuary, Middle Slough Habitat Enhancement, Final Design". These plans are referred to as 'design plans' below. Construction of section C2 will occur in reference to design plans with field engineering occurring where needed. Please refer to design plans for all reference to station markers. NE project manager and MSG laborers will be on-site during entire length of this task.

Tasks include:

3.1 - Conduct archaeological and botany surveys at C2 and BLM30. Coordination will be done by NE Project Manager

3.2 - Hold pre-construction meeting with heavy equipment contractors, engineer, project manager, laborers and members of the Mattole Estuary TAC to discuss: Project timeline, project design, operations plan, and safety protocols. Meeting will be held by NE and MSG Project Manager.

3.3 - Open access road from Lighthouse Road to C2 and BLM30. Remove vegetation (willow and alder) with an excavator and labor crew. Vegetation will be staged for later use in willow trenches. Road will be graded with a bulldozer. Road will be watered for dust mitigation. Access will not require crossing of any streams or the Mattole River.

3.4 - Vegetation will be cleared along 800 feet of section C2 (Station 750-1550) and haul road with an excavator and labor crew. Red alder and Pacific willow trees within removal areas will be tipped so root wads remain intact and will be staged for future use as in-stream wood structures. Special care will be made to leave wildlife trees and trees that provide shade in-stream. All willow removed will be removed with roots attached and staged for future use in willow baffles and planting into haul road. If staging of willow is required for more than three days, willows will be soaked in temporary pond until installation occurs.

3.5 - Engineer will survey and stake section C2 boundaries and center line with elevation hub stakes placed every 50 feet.

3.6 - Excavator and laborers will salvage on-site native wetland vegetation through vegetative lifts and transfer to salvaged plant material staging area (See Project Map).

3.7 - A 20 feet wide haul road will be installed parallel to the entire length of section C2 with one entrance at station 750 and one entrance at station 1500. The haul road will not require any imported fill material and will be constructed by removing vegetation and grading. Once the haul road is no longer in use, it will be incorporated into the project as a combination of littoral shelf, floodplain, and off-channel pond/alcove that will be field engineered depending on site conditions. The road will be de-compacted and planted with native plant materials, including salvaged vegetation, as these features are built.

3.8 - Excavation of section C2 will take place according to design plans from station 750 to station 1550. Station 1500 to 1550 will consist of a gradual slope out of channel to existing grade at station 1550 to allow for fish passage and future tie in of the Lower Bear Creek project. A laser level, and boom and rod receivers, will be used to assure specified channel bed and littoral shelf elevation targets are being met. MLA Engineer will conduct weekly site visits to assure project is being built to specifications. A 50,000 lb. excavator will dig spoils from channel and load into a 20 cubic yard capacity articulated haul truck. Haul truck operator will transfer top soil to top soil staging area for future use on post-project revegetation and transfer gravel and cobble to spoils area at BLM30 (See Project Map). Spoils will be graded with 20,000 lb. bulldozer. Channel will be shaped to slopes specified in design plans. A 20' wide earth berm will be left at station 750 that will span the entire width of the channel to maintain disconnection between C1 and C2. A turbidity curtain will be installed below station 750 and the berm will be removed as the final step of excavation.

3.9 - De-watering will occur when necessary for excavator to shape channel and efficiently remove spoils. Construction will be scheduled to take place when groundwater levels will be at their lowest in June and July. When de-watering of channel occurs, no fish species will be present due to the channel having no connectivity to surface water. De-watering will require the use of a 4 in. trash pumps, 4 in. intake, and 3 in. discharge line to move water from channel to adjacent floodplains. Water will not be discharged into surface water and will be used to irrigate willow baffles when possible. All pumps and associated fuel will be in secondary containment.

3.10 - During excavation twelve wood structures will be placed in-stream and will be constructed using on-site red alder, Pacific willow (*Salix lucida*) and Douglas fir (*Pseudotsuga menziesii*) when available as shown in

design plans. A minimum of three alcoves and/or off-channel ponds will be constructed as shown in design plans at locations based on field conditions. A littoral shelf will be built as shown in design plans.

Task 4 – Riparian Restoration

4.1 - Hold pre-construction meeting with heavy equipment contractors, project manager, laborers and members of the Mattole Estuary TAC to discuss: Project timeline, project design, operations plan, and safety protocols. Meeting will be held by MRC Project Manager.

4.2 - Willow baffle installation. Some willow baffles will be installed during construction of C2 so that willow from clearing access can be installed immediately after it is removed. All other willow baffles will be installed in late September to decrease the need for irrigation. A 50,000 lb. excavator will dig 3000 ft. of trenches that will be 10 ft. to 15 ft. deep. Trenches will be dug into spoils removed from C2 as well as native soils at project site BLM30. Trenches will be spaced approximately 30 ft. apart and dug from north to south. Laborers will harvest willow cuttings with chainsaw from harvest areas that consist of Sitka willow (*Salix sitchensis*) and Hookers willow (*Salix hookeriana*). Cuttings will range in size from 15 ft. to 20 ft. in length and 3 in. to 6 in. in diameter. Cuttings will be bundled with a cable choker in groups of 15-20 and moved directly to trench with 4X4 truck, excavator, or wheel loader. Cuttings will be installed in trench every 1ft. to 2 ft. with cut ends in a minimum of 1 ft. of groundwater. Slash material from clearing access and C2 will be placed into excavated trench after willow is installed. Laborers will then cut cuttings to 4 ft. above grade and place slash material in trench. Trench will be backfilled with spoils using a 20,000 lb. bulldozer. Spoils will be watered in as they are backfilled to maintain soil moisture. As the bulldozer backfills and grades, a 1 ft. deep ditch line will be installed parallel to the willow baffle to aid in flood irrigation.

4.3 - Installation of salvaged top soil. After willow baffles are installed, the excavator will load dump truck with salvaged top soil and it will be transferred to areas in between trenches. Bulldozer will grade top soil.

4.4. - Irrigation. A temporary irrigation system will be installed to flood irrigate willow baffles until winter rains provide adequate soil moisture. An excavator will dig an open groundwater well into gravel bar adjacent to willow baffles. The well will have no connection to surface water. Safety fencing will be installed around well. A gas powered 3 in. semi-trash pump with 3 in. suction line will be used to move water from well into a 3 in. PVC mainline. The mainline will connect to 2 in. PVC lateral lines that will be placed perpendicular to willow baffles. A 2 in. PVC ball valve will be installed on the lateral line at the intersection of each baffle ditch line. Each willow baffle ditch will be flood irrigated a minimum of 2 hours per

week to maintain adequate soil moisture. This system has already been built and dismantled and has been used on previous phases of the project for the same purpose. Temporary drip irrigation will be installed at containerized planting sites in the summer of 2021 if needed to maintain target survival.

4.5 - Native Plant Installation.

Installation of salvaged vegetative lifts will be installed during decommissioning of haul road at C2. See task 3.7.

Native seed installation will occur at BLM 30 and C2 in September or October of 2020 after the first rains. The riparian seed mix will consist of Oregon ash (*Fraxinus latifolia*), Big leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), red-flowering currant (*Ribes sanguineum*), thimbleberry (*Rubus parviflorus*), black-capped raspberry (*Rubus lecodermis*), coffee berry (*Frangula californica*), oceanspray (*Holodiscus discolor*), Toyon (*Heteromeles arbutifolia*), Blue wildrye (*Elymus glaucus*), California brome (*Bromus carinatus*) and Douglas iris (*Iris douglasiana*). All seed will be sourced from local collection sites. Mix will be installed at a rate of 40 lbs. per acre on all bare soils into salvaged top soil in between willow baffles and on bare banks and floodplains at C2. Seed will be distributed by hand and raked in to increase soil contact. After installation, seed will be watered with 2 in. hose with fire nozzle and lightly mulched with weed free straw. Straw will be watered in with 2 in. hose with fire nozzle to prevent loss from wind and maintain moisture for seed germination.

Native plant installation will occur at BLM 30 and C2 after adequate soil moisture is reached from rainfall in November of 2020. All plants will be grown from locally collected seed at the MRC Native Plant Nursery. A total of 500 black cottonwood (*Populus trichocarpa*), 200 Douglas fir, 500 red alder, and 800 Pacific willow will be installed by laborers using a hoedad. Container size for trees will be size D25. Trees will be installed on 8 ft. centers with shallow basins at willow baffle sites at BLM30 and on the bare banks and floodplains at C2. In addition, 3000 small fruited bulrush (*Scripus microcarpus*), 500 common rush (*Juncus effusus*), and 500 gray rush (*Juncus patens*) will be installed by laborers using a hoedad. Container size will be AB34. Wetland plugs will be installed on 3 ft. centers on the bare banks and floodplains at C2.

Task 5 – Off-Channel Habitat Feature Monitoring

Collect pre-and post-photos and design flow surveys, perform biological surveys of functional use, collect water quality data.

Task 6 - Riparian Restoration Monitoring and Maintenance

At BLM30 and C2 perform post project monitoring and maintenance including seedling survival surveys to assess survival of installed containerized plants. Seedling survival surveys and willow baffle monitoring will be completed in spring of 2021, fall of 2020 and 2021. If any point during those surveys seedling survival fall below targets, replacement plants will be installed at no cost. Perform post project survival of willow baffles by measuring linear feet of willow baffle alive. Remove weeds and irrigate containerized plantings as needed.

Deliverables:

Task 1 – Contract Administration

Annual Reports and Final Report
Quarterly invoices
Copies of Sub-contracts
Landowner Access Agreements
Items required for LSAA

Task 2 – Photo documentation

Pre and post photos of C2 and BLM30
Drone footage of construction

Task 3 – Middle Slough Section C2 Construction

Project Photos
Project As-built plans

Task 4 – Riparian Restoration

As-built plans
Project Photos

Task 5 – Off-Channel Habitat Feature Monitoring

Monitoring Report

Task 6 - Riparian Restoration Monitoring and Maintenance

Monitoring Data in Final Report

Timelines:

Task 1 – Contract Administration – 6/1/2020 to 1/30/2022

Task 2 – Photo documentation – 6/1/2020 to 1/30/2022

Task 3 – Middle Slough Section C2 Construction – 6/1/2020 to 10/15/2020

Task 4 – Riparian Restoration – 6/1/2020 to 1/30/2021

Task 5 – Off-Channel Habitat Feature Monitoring – 11/2/2020 to 6/30/2022

Task 6 - Riparian Restoration Monitoring and Maintenance – 5/4/2020 to 12/30/2022

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured and a “notice to proceed” letter has been received from the California Department of Fish and Wildlife (CDFW) Grant Manager. Work in flowing streams is restricted per the Army Corp of Engineers Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of CDFW.

No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. Any and all equipment will be removed from the streambed and flood plain areas at the end of each workday.

All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the California Department of Fish & Wildlife Aquatic Invasive Species Decontamination Protocol.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

The Grantee shall notify the CDFW Grant Manager a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for CDFW personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of salmonids and other native aquatic species from the project area. If the project requires dewatering of the site and the relocation of listed aquatic species, the Grantee will implement the following measures to minimize harm and mortality to listed species as well as other native aquatic species:

- Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
- The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional

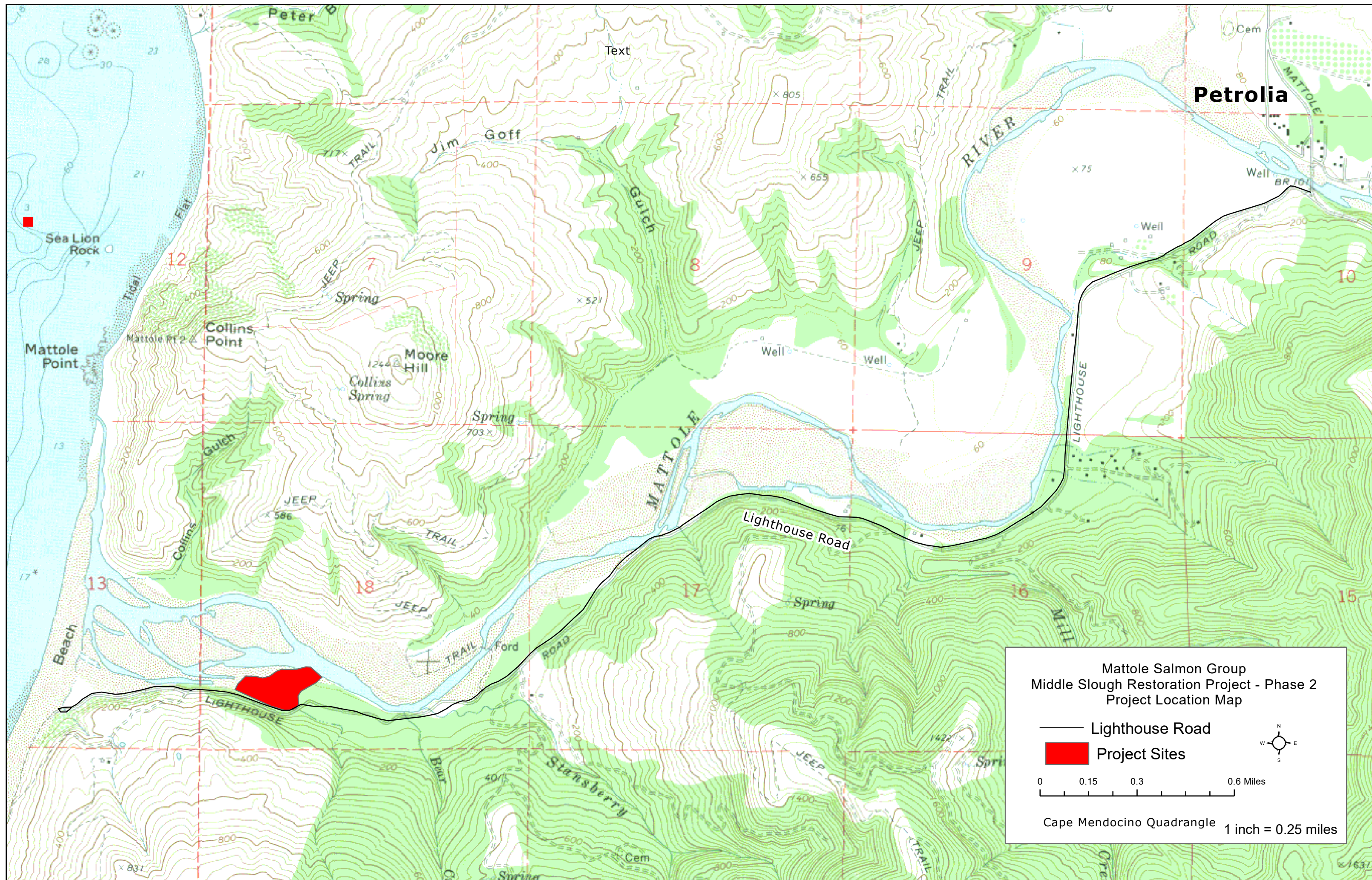
General Permit, NMFS Biological Opinion, and project's Lake and Streambed Alteration Agreement (1600 permit).

- Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
- Only qualified fisheries biologist that are approved by USFWS and permitted by CDFW under a California Endangered Species Act (CESA) Memorandum of Understanding (MOU) shall handle and relocate CESA listed species.
- All electrofishing shall be performed by a qualified fisheries biologist under the supervision of CDFW and conducted according to the National Marine Fisheries Service, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
- USFWS Approved fisheries biologists will provide fish relocation data via the Grantee to the CDFW Grant Manager on a form provided by CDFW.

The bridge (culvert) design and installation will meet flow carrying capacity required for a 100-year flood event as identified by specifications determined by National Oceanic and Atmospheric Administration (NOAA) Fisheries and the California Department of Fish and Wildlife (CDFW), for adult and juvenile salmonid fish passage. The project will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and criteria for fish passage as described in Volume II, Part IX, of the *California Salmonid Stream Habitat Restoration Manual*. The engineered plans for the bridge (culvert) installation shall be visually reviewed and authorized by NOAA Fisheries or California Department of Fish and Wildlife engineers prior to commencement of work.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual*, Volume I, and Volume II Part XI and Part XII. The Grantee/landowner will maintain the new crossing, inspect the crossing in a timely manner and remove debris as necessary during the storm season.

Seeding and mulching of all exposed soils shall be done for all slopes which may deliver sediment to a stream. Woody debris will be concentrated on finished slopes adjacent to stream crossings. The standard for success is 80% ground cover for broadcast planting of seed, after a period of three years. Mulching and seeding will take place as sites are completed to avoid unforeseen erosion. Planting of tree seedlings will take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings.



Mattole Salmon Group
Middle Slough Restoration Project - Phase 2
Project Location Map

— Lighthouse Road
■ Project Sites

0 0.15 0.3 0.6 Miles

Cape Mendocino Quadrangle 1 inch = 0.25 miles



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad< IS (Petrolia (4012433) OR Taylor Peak (4012442) OR Buckeye Mtn. (4012432) OR Shubrick Peak (4012422) OR Cooskie Creek (4012423) OR Cape Mendocino (4012444) OR Capetown (4012443))

Possible species within the Petrolia and surrounding quads for 3132 Middle Slough Restoration Project - Phase 2, Humboldt County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Accipiter cooperii</i> Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
<i>Aquila chrysaetos</i> golden eagle	ABNKC22010	None	None	G5	S3	FP
<i>Arborimus pomo</i> Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
<i>Ardea alba</i> great egret	ABNGA04040	None	None	G5	S4	
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Ascaphus truei</i> Pacific tailed frog	AAABA01010	None	None	G4	S3S4	SSC
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i> coastal marsh milk-vetch	PDFAB0F7B2	None	None	G2T2	S2	1B.2
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	None	G2G3	S1	
<i>Calamagrostis foliosa</i> leafy reed grass	PMPOA170C0	None	Rare	G3	S3	4.2
<i>Castilleja litoralis</i> Oregon coast paintbrush	PDSCR0D012	None	None	G3	S3	2B.2
<i>Coastal and Valley Freshwater Marsh</i> Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
<i>Coastal Douglas Fir Western Hemlock Forest</i> Coastal Douglas Fir Western Hemlock Forest	CTT82410CA	None	None	G4	S2.1	
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Entosphenus tridentatus</i> Pacific lamprey	AFBAA02100	None	None	G4	S4	SSC
<i>Erethizon dorsatum</i> North American porcupine	AMAFJ01010	None	None	G5	S3	
<i>Erysimum concinnum</i> bluff wallflower	PDBRA160E3	None	None	G3	S2	1B.2
<i>Erythronium oregonum</i> giant fawn lily	PMLIL0U0C0	None	None	G4G5	S2	2B.2
<i>Erythronium revolutum</i> coast fawn lily	PMLIL0U0F0	None	None	G4G5	S3	2B.2
<i>Fratercula cirrhata</i> tufted puffin	ABNNN12010	None	None	G5	S1S2	SSC



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Gilia capitata ssp. pacifica</i> Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
<i>Gilia millefoliata</i> dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
<i>Hesperevax sparsiflora var. brevifolia</i> short-leaved evax	PDASTE5011	None	None	G4T3	S2	1B.2
<i>Layia carnosa</i> beach layia	PDAST5N010	Endangered	Endangered	G2	S2	1B.1
<i>Montia howellii</i> Howell's montia	PDPOR05070	None	None	G3G4	S2	2B.2
<i>Oenothera wolfii</i> Wolf's evening-primrose	PDONA0C1K0	None	None	G2	S1	1B.1
<i>Oncorhynchus kisutch pop. 2</i> coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	G4T2Q	S2?	
<i>Oncorhynchus mykiss irideus pop. 16</i> steelhead - northern California DPS	AFCHA0209Q	Threatened	None	G5T2T3Q	S2S3	
<i>Oncorhynchus mykiss irideus pop. 36</i> summer-run steelhead trout	AFCHA0213B	None	None	G5T4Q	S2	SSC
<i>Packera bolanderi var. bolanderi</i> seacoast ragwort	PDAST8H0H1	None	None	G4T4	S2S3	2B.2
<i>Pekania pennanti</i> fisher - West Coast DPS	AMAJF01021	None	Threatened	G5T2T3Q	S2S3	SSC
<i>Phalacrocorax auritus</i> double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
<i>Piperia candida</i> white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
<i>Polemonium carneum</i> Oregon polemonium	PDPLM0E050	None	None	G3G4	S2	2B.2
<i>Rana aurora</i> northern red-legged frog	AAABH01021	None	None	G4	S3	SSC
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
<i>Rhyacotriton variegatus</i> southern torrent salamander	AAAAJ01020	None	None	G3G4	S2S3	SSC
<i>Romanzoffia tracyi</i> Tracy's romanzoffia	PDHYD0E030	None	None	G4	S2	2B.3
<i>Sidalcea malachroides</i> maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
<i>Sidalcea malviflora ssp. patula</i> Siskiyou checkerbloom	PDMAL110F9	None	None	G5T2	S2	1B.2
<i>Sisyrinchium hitchcockii</i> Hitchcock's blue-eyed grass	PMIRI0D0S0	None	None	G2	S1	1B.1



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Taricha rivularis</i> red-bellied newt	AAAAF02020	None	None	G4	S2	SSC
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Usnea longissima</i> Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2

Record Count: 43