DRAFT OFF-SITE HABITAT MITIGATION AND MONITORING PLAN

for the Gualala Shoulders Project

EA / EFIS
01-0F710 / 0116000047
State Route 1, Post Miles 6.4 – 9.5
In Mendocino County, California

October 2023
(Revised January 2024)

STATE OF CALIFORNIA
Department of Transportation—North Region Environmental
1656 Union Street
Eureka, CA 95501
707-492-0158

DRAFT OFF-SITE HABITAT MITIGATION AND MONITORING PLAN

for the Gualala Shoulders Project

EA / EFIS
01-0F710 / 0116000047

State Route 1 (1-MEN-SR1)
from Post Miles 6.4 to 9.5
In Mendocino County, California

Regional Water Quality Control Board Clean Water Act Section 401 Water Quality Certification #: Pending

Mendocino County Coastal Development Permit (CDP) #: Pending

California Department of Fish and Wildlife 1600 Lake and Streambed Alteration Agreement (LSAA) Permit #: Pending

STATE OF CALIFORNIA
Department of Transportation
North Region Environmental
1656 Union Street
Eureka, CA 95501
707-492-0158

Timothy.Nelson@dot.ca.gov

LIST OF PREPARERS

Prepared By: Timothy Nelson Date: 10/9/2023

Timothy Nelson
Environmental Scientist – Mitigation Specialist
North Region Environmental – Mitigation Analysis and Planning
Caltrans District 01
1656 Union Street
Eureka, CA 95501
(707) 492-0158
Timothy.Nelson@dot.ca.gov

Recommended for Approval By: Date: 10/9/2023

Jessica Barger
Environmental Scientist – Coordinator
North Region Environmental – Mitigation Analysis and Planning
Caltrans District 01
1656 Union Street
Eureka, CA 95501
(707) 382-7174
Jessica.Barger@dot.ca.gov

Approved By: Denise Walker-Brown Date: 10/9/2023

Denise Walker-Brown
Acting Branch Chief
North Region Environmental – Mitigation Analysis and Planning
Caltrans District 1
1656 Union Street
Eureka, CA 95501
(707) 492-0004
Denise.Walker-Brown@dot.ca.gov

TABLE OF CONTENTS

List of Tables

List of Appendices

ACRONYMS AND ABBREVIATED TERMS

ACRONYM / ABBREVIATION	DESCRIPTION
APN	Assessor's Parcel Number
ASBS	Area of Special Biological Significance
Bank	Mendocino Coast Mitigation Bank
BEI	Bank Enabling Instrument
BMPs	Best Management Practices
BP	bishop pine
BSA	Biological Study Area
CalFire	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CCA	California Coastal Act
CCC	California Coastal Commission
CCT	California Coastal Trail
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
ESA	Environmentally Sensitive Area
ESHA	Environmentally Sensitive Habitat Area
ESL	Environmental Study Limits
HMMP	Habitat Mitigation and Monitoring Plan
HUC	Hydrologic Unit Code
IP	Initial Planting
IRT	Interagency Review Team
LCP	Local Coastal Program (Mendocino County)
LEDPA	Least Environmentally Damaging Practicable Alternative
LSAA	Lake and Streambed Alteration Agreement
LWD	Large woody debris
MAP	Mitigation Analysis and Planning
MLD	Most Likely Descendent
MLT	Mendocino Land Trust
MPA	Marine Protected Area
NAHC	Native American Heritage Commission
NB	Northbound
NCRWQCB	North Coast Regional Water Quality Control Board
NES	Natual Environment Study

ACRONYM / ABBREVIATION	DESCRIPTION
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resource Conservation Service
NWPL	National Wetland Plant List
OHWM	Ordinary High Water Mark
PAR	Property Analysis Record
PDT	Project Development Team
PEM	Palustrine Emergent, Persistent Wetland
PM(s)	Postmile(s)
PRC	California Public Resources Code
PRG	Pacific reed grass
project	Gualala Shoulders Project
PRM	Permittee-responsible mitigation
RCLC	Redwood Coast Land Conservancy
Rd	Road
RES	Resource Environmental Solutions
RFP	Request for Proposals
RIP	Riparian
RP	Replanting
RPW	Relatively Permanent Water
R/W	Right of Way
RTL	Ready To List
SCC	California State Coastal Conservancy
SMCA	State Marine Conservation Area
SNC	Sensitive Natural Community
SNRC	Spade Natural Resources Consulting
SR	State Route
State Parks	California Department of Parks and Recreation
SWRCB	State Water Resources Control Board
TNC	The Nature Conservancy
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
§	Section

Chapter 1. Introduction

The following Off-Site Habitat Mitigation and Monitoring Plan (HMMP) is for the California Department of Transportation (Caltrans) for the purpose of offsetting project impacts associated with the Gualala Shoulders Project (EA 01-0F710) (project). A brief description of the project is provided below:

- The project is located on State Route (SR) 1 in Mendocino County between postmiles (PMs) 6.4 – 9.5 (Appendix A, Figure 1). The purpose of this project is to reduce the frequency and severity of motor vehicle collisions and improve highway safety conditions for non-motorized users. The proposed project would realign the roadway, widen the traffic lanes to a uniform 11 feet and shoulders to 4 feet in both directions, install guardrail and supporting retaining walls, replace culverts, and relocate utility poles on at two locations north of Gualala in Mendocino County, from PMs 6.40 to 6.80 between the intersection of Havens Neck Drive and Gypsy Flat Road (Rd) and from PM 9.20 to 9.50 between Signal Port Creek Rd and Iversen Point Rd.

Through the environmental process, preferred alternatives were assessed, and the Least Environmentally Damaging Practicable Alternative (LEDPA) was chosen. Impacts for the project include both temporary and permanent impacts to riparian habitat regulated by Mendocino County via the Local Coastal Program (LCP) (appealable by California Coastal Commission [CCC]), the California Department of Fish and Wildlife (CDFW) and the North Coast Regional Water Quality Control Board (NCRWQCB); waters of the United States (U.S.) and State (wetlands and non-wetland waters) regulated by the U.S. Army Corps of Engineers (USACE), NCRWQCB, CDFW, and Mendocino County's LCP; and Environmentally Sensitive Habitat Areas (ESHA) and Sensitive Natural Communities (SNC) regulated by Mendocino County's LCP and CDFW.

1.1 Project Impacts and Proposed Mitigation

The purpose of this HMMP is to describe Caltrans' mitigation approach for impacts associated with the project. Under the jurisdiction of Section (§) 401/404 of the Clean Water Act (CWA), the California Coastal Act (CCA) of 1976 and CDFW through the California Fish and Game Code §1600 et seq., project impacts include waters of the U.S./State including non-wetland waters and 3-parameter wetlands, state regulated riparian areas, and upland/non-riparian SNC/ESHAs including Pacific Reed Grass Meadow (*Calamagrostis nutkaensis*) and Bishop Pine Forest Alliance (*Pinus muricata*). This HMMP will address off-

site mitigation to compensate for impacts to waters of the U.S./State (wetlands and non-wetland waters) and Bishop Pine Forest Alliance SNC/ESHA. Impacts to non-wetland waters (ephemeral drainage ditch and in-kind culvert replacement), riparian habitats, and Pacific Reed Grass Meadow SNC/ESHA will be mitigated completely on-site and will not require off-site mitigation.

Caltrans evaluated numerous alternatives to satisfy mitigation obligations for the project (Section 1.3, Table 3). Several issues including, but not limited to, the extent of available right of way (R/W) at project locations and severely limited off-site mitigation options in the coastal zone of the Big-Navarro-Garcia Hydrologic Unit Code (HUC) 8 (18010108) watershed, have resulted in Caltrans selecting the use of mitigation bank credits from the Mendocino Coast Mitigation Bank (Bank) and Saunders Landing (Assessor's Parcel Number [APN] 142-010-54) (Appendix A, Figure 2) as the best options to satisfy all off-site compensatory mitigation requirements for project impacts. Caltrans has developed separate mitigation proposals to address impacted resources under the jurisdiction of specific agencies that can be found in Appendices B & C. Mitigation pertaining to upland SNC/ESHA resources under the jurisdiction of Mendocino County and CDFW will be found in Appendix B but will not be covered in Appendix C for the NCRWQCB and USACE.

1.1.1 Project Impacts

According to the project's Natural Environment Study (NES) (Caltrans 2021) and Environmentally Sensitive Habitat Analysis (Caltrans 2023a), areas within the project's Environmental Study Limit (ESL)[1] and Biological Study Area (BSA)[2], possess hydrogeological and climate conditions that result in various aquatic features and associated vegetation. Anticipated impacts are only expected to occur to habitat features within the project's ESL (Appendix A, Figure 3).

Many of the aquatic features within the ESL are recognized as potentially jurisdictional by the U.S. and the State (Appendix A, Figures 4-5). Wetland delineations conducted for this project indicated that within the ESL there are several potentially jurisdictional water features, including palustrine (freshwater) wetlands and roadside drainage ditches.

[1] The Environmental Study Limits (ESL) refers to the project limits where direct ground disturbance may occur from all proposed activities.

[2] The Biological Study Area (BSA) varies for different resources addressed for a given project but always includes the project limits or ESL where ground disturbance may occur and an appropriate buffer, as required, to analyze indirect effects to adjacent biological resources.

Additional impacted sensitive habitats in the ESL are upland riparian vegetation consisting of Douglas-fir (*Pseudotsuga menziesii*) and tanoak (*Notholithocarpus densiflora*) and upland SNC/ESHAs including Pacific Reed Grass Meadow and Bishop Pine Forest (Table 1).

Table 1. Summary of Estimated Impacts Associated with the Gualala Shoulders Project.

Jurisdictional Feature	Habitat Type[3]	Impacts (Acres)[4]		
		Temporary		Permanent
		Temporary	Long-Term Temporary	
CWA Wetland	CWA 3-Parameter Wetland (PEM-1 & Ditch-2)	-	0.0097	0.1246
Non-Wetland Waters (Fed/State)	Relatively Permanent Waters (RPW-1, RPW-2 & RPW-4)	0.0034	-	0.0079
	Ephemeral Drainage Ditch (Ditch-3)	0.0021	-	-
Wetlands/Non-Wetland Waters Total		***0.0055***	***0.0097***	***0.1325***
Riparian Areas	Coniferous Riparian (RIP-1 & RIP-2)	**-**	**-**	0.0109
Riparian Total		**-**	**-**	***0.0109***
Upland SNC/ESHA	Pacific Reed Grass Meadows (PRG-2)	-	0.0031	0.0050
	Bishop Pine Forest Alliance (BP-2, BP-3, & BP-4)	-	-	0.7959
Upland SNC/ESHA Total		**-**	***0.0031***	***0.8009***
Gualala Shoulders Project Totals		**0.0055**	**0.0128**	**0.9443**

Jurisdictional Waters of the U.S. and State

Wetlands present within the ESL include one 3-parameter palustrine (freshwater) emergent wetland (PEM-1) with persistent emergent vegetation and one ditch wetland (Ditch 2) (Appendix A, Figures 4-5). PEM-1 is a 3-parameter freshwater seep wetland (PEM1D-Hillside Seep Wetland) within the ESL of Location 1 between PMs 6.49 and 6.58 on the

[3] Feature types for three-parameter wetlands are identified by their corresponding system, subsystem and class in accordance with Classification of Wetlands and Deepwater Habitats of the United States (FGDC 2013).

[4] Caltrans defines temporary impacts are those in which restoration begins within one year of the first date of impact. Long-term temporary impacts occur when restoration begins more than one year after the first date of impact and there is a temporal loss of function (per CCC definitions). Permanent impacts are impacts that are not restorable. However, 0.0648 acre of long-term temporary (temporary) impacts to CWA wetlands have been recategorized to "permanent" as maintenance and monitoring cannot be performed following construction due to safety concerns.

northbound (NB)/east side of SR 1 and encompasses 0.5512 acre within the BSA and is characterized by permanently saturated soils with subsurface seepage that collects near the surface. Ditch-2 is a jurisdictional 3-parameter wetland roadside ditch (PEM1F-Ditch) on the south end of project Location 1 on the NB/east side of SR 1 between PMs 6.50 and 6.58. Ditch-2 encompasses 0.0181 acre within the BSA. While this roadside ditch was created by Caltrans to convey stormwater runoff, it may also drain the natural seep (PEM-1) that lies in the slope described above. Total combined impacts to wetland habitats within the ESL include 0.0097 acre of long-term temporary (temporary) and 0.1246 acre of permanent impacts.

Three non-wetland Relatively Permanent Waters (RPW) of the U.S. and State occur within the ESL, features RPW-1, RPW-2, and RPW-4 as well as a potentially jurisdictional Other Waters of the State ephemeral drainage ditch (Ditch-3) (Appendix A, Figures 4-5). RPW-1 and RPW-2 within the ESL are intermittent drainages, meaning the area below the Ordinary High-Water Mark (OHWM) is either seasonally flooded or seasonally flooded/saturated. RPW-1 is an intermittent RPW within the ESL at project Location 1, PM 6.60, flowing from east to west underneath SR 1. This drainage is classified according to the Cowardin System (1979) as Riverine Intermittent/Streambed Sand (R4SB4) – Relatively Permanent Drainages. RPW-2 is an intermittent RPW within the ESL at project Location 1, PM 6.74, flowing from east to west underneath SR 1. This drainage is classified according to the Cowardin System as Riverine Intermittent/Streambed Sand (R4SB4) – Relatively Permanent Drainages. RPW-4 is a perennial stream named Walker Gulch that is classified by the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (2023) as a Riverine system-Riverine Upper Perennial Rock Bottom Bedrock (R3RB1). RPW-4, which encompasses 0.0172 acre within the BSA, is found at Location 2, PM 9.36, flowing from east to west underneath SR 1. Total impacts to non-wetland waters habitats include 0.0055 acre of temporary impacts and 0.0079 acre of permanent impacts.

Riparian Areas

Two riparian areas (RIP-1 & RIP-2) identified within the ESL are considered "upland" as they are not dominated by hydrophytic vegetation. RIP-1 is primarily a Douglas-fir forest. According to the USACE National Wetland Plant List (NWPL) (2020), Douglas-fir is classified as a facultative-upland plant (Lichvar et al., 2012). RIP-2 is primarily composed of tanoak scrub, which is classified according to the USACE NWPL as an upland plant. Total impacts to upland riparian areas consist of 0.0109 acre of permanent impacts.

Upland SNCs/ESHAs

SNCs are habitats considered sensitive because of their high species diversity, high productivity, unusual nature, limited distribution, or declining status (CDFW 2018). The CDFW ranks natural communities (alliances and associations) according to their degree of imperilment (as measured by rarity, trends, and threats) and considers natural communities with a global rarity ranking of G1-G3 or state rarity ranking of S1-S3 as sensitive (CDFW 2022). Two SNCs were identified within the BSA: Pacific Reed Grass Herbaceous Meadow (G4S2) and Bishop Pine Forest Alliance (G3S3). Pacific reed grass is a facultative wetland herbaceous plant and bishop pine is an upland coniferous tree. Total combined impacts to Pacific Reed Grass Meadow SNC/ESHA within the ESL include 0.0031 acre of long-term temporary and 0.0050 acre of permanent impacts.

Bishop Pine Forest Alliance

While bishop pine is itself not considered a rare species, the total assemblage of plant species in an area where bishop pine occurs (i.e., the vegetation community) is treated as rare. Bishop Pine Forest Alliance (CDFW 2022) is a type of coniferous forest that grows in a variety of soil types on maritime terraces, coastal slopes, and coastal bluffs (CNPS 2022). This SNC occurs throughout the BSA in both project locations. Within the BSA, bishop pine habitats comprise 8.5227 acres, however only 0.7959 acre falls within the ESL. As common as it is on the southern Mendocino coast, much of the bishop pine stands within the project region (including the project site) are in poor condition (Giusti 2014). Dead and dying bishop pine trees were found in concentrations at the south end of Location 1, north and south ends of Location 2, and scattered within both project areas. There are four bishop pine habitats (BP-1, BP-2, BP-3, BP-4) found within the BSA, and three of them fall within the ESL (BP-2, BP-3, BP-4). Project impacts to the Bishop Pine Forest Alliance total 0.7959 acre of permanent impacts.

1.1.2 Proposed On-site Offsets (Restoration/Revegetation)

On-site offset of project impacts to be completed at the project is extremely limited by the remaining R/W available following project completion. Currently, within the project limits, Caltrans R/W is constricted by private residences and steep oceanside cliffs. Given that this is a safety project with the intent to widen shoulders and realign the roadway to reduce collisions, the availability to conduct on-site offsets will be further constrained when the project is complete. As a result, limited on-site offsets are proposed including restoration of aquatic features and revegetation of upland riparian and SNC/ESHA resources (Caltrans 2023b). Caltrans has provided separate proposals to offset and compensate for impacts to

resources under the jurisdiction of the regulatory agencies. Resources under the jurisdiction of the Mendocino County and CDFW (Appendix B) include waters of the U.S./State (wetlands/non-wetland waters), riparian habitat, and Bishop Pine Forest Alliance SNC/ESHA. Resources under the jurisdiction of the NCRWQCB and USACE (Appendix C) include waters of the U.S./State (wetlands/non-wetland waters) and riparian habitats. Appendices B and C contain information pertaining to the proposed on-site offsets.

Details of on-site offsets including revegetation are under development, including type and precise locations. On-site revegetation activities may include replanting within temporarily disturbed wetlands and riparian areas and salvage/collection of seed of sensitive plant species. Planting palettes, location details, and mapping for proposed on-site revegetation will be specified in the project's Revegetation Plan.

Revegetation is typically performed under the guidance of Caltrans' Revegetation Specialists, and work is performed by the California Conservation Corps, a similar labor force, or an appropriate contractor. Depending on the timing of construction, planting commonly occurs immediately following, or within one year after construction, and is completed during the winter when the soil is wet from rain, and the plants are dormant. This timing also allows any erosion-control seed to establish and allows microsite conditions to develop. Planting during dormancy decreases stress on the plants and gives them the best chance of survival. Installed plantings are typically purchased through an outgrow contract of regionally appropriate stock to protect genetic integrity, or off-the-shelf if appropriate sourcing is available. Plants are typically caged to protect from herbivory, watered twice monthly during the first two dry seasons, mulched to suppress weeds and retain water, and weeded to decrease competition from non-native plants. Plant species are selected to replace habitat impacted by construction. Mulch used to suppress weeds will not contain wood shavings from diseased trees.

Within the proposed project footprint, all disturbed soil areas would be treated with erosion control consisting of a regionally appropriate seed mixture and seed would be locally sourced where possible. Additionally, Caltrans would implement on-site revegetation with appropriate native California plants in all disturbed soil areas of the project where feasible. Non-native plant species would be controlled in the revegetation areas to allow the plantings to establish. Caltrans endeavors to eradicate any newly introduced invasive species ranked as having High ecological impact by the California Invasive Plant Council (Cal-IPC) (2023).

1.1.3 Proposed Off-site Mitigation

After discussions with the Project Development Team (PDT), it was determined that not all long-term temporary and permanent project impacts to waters of the U.S./State and SNC/ESHA resources could be offset on-site, thus requiring off-site mitigation. Given the extremely limited options for Caltrans to complete off-site permittee-responsible mitigation (PRM) in the coastal zone of the Big-Navarro-Garcia HUC 8 watershed, Caltrans proposes to satisfy mitigation needs for the project through 1) Bishop Pine Forest Alliance SNC/ESHA restoration at Saunders Landing and 2) use of contracted waters of the U.S./State (wetlands and non-wetland waters) mitigation bank credits from the Bank. Caltrans has provided separate proposals to offset and compensate for impacts to resources under the jurisdiction of the regulatory agencies. Appendices B (Mendocino County/CDFW) and C (NCRWQCB/USACE) contain information pertaining to the proposed on-site offsets in addition to the off-site mitigation strategy, mitigation ratios, and summary mitigation tables listing on-site offsets and associated off-site compensatory mitigation.

Bishop Pine Forest Alliance SNC/ESHA Restoration – Saunders Landing Bishop Pine Restoration Project

As a part of a separate mitigation project for three transportation projects, Caltrans purchased Saunders Landing to restore and preserve sensitive coastal habitats and resources present on-site for the Mendocino Land Trust (MLT) to manage and protect in perpetuity. A Biological Report outlining the resources present at Saunders Landing and recommended restoration actions (Appendix D) identifies locations for bishop pine planting adjacent to existing stands, within non-native grasslands. Caltrans Revegetation/Mitigation Specialists will work with the California Conservation Corps to complete the Bishop Pine Restoration Project on Saunders Landing that will include implementation and continual maintenance and monitoring for up to five years. Caltrans will enter into a Mitigation Agreement with MLT that will outline the mitigation project, roles and responsibilities, and provisions for the transfer of additional endowment funds required for the long-term management of the project site. Estimated endowment funding amounts for the bishop pine mitigation project on Saunders Landing can be found in the attached Draft Property Analysis Record (PAR) (Appendix E), which is subject to change as tasks are finalized. Details pertaining to resources present at Saunders Landing within and adjacent to the proposed Bishop Pine Restoration Project can be found in Chapter 2.

Caltrans initiated early discussions with state regulatory agencies about the future of bishop pine on the Mendocino coast and the efficacy of a postage-stamp restoration project when

compared to the regional decline of the entire species. The group discussed the potential of initiating a "Mendocino Coast Bishop Pine Task Force" that would be made up of on-the-ground, state agency practitioners and restorationists (CalFire, State Parks, Caltrans), educators/researchers (University of California Davis), and regulatory agencies (CDFW, CCC, Mendocino County). Through these discussions, possible long-term, scientific-based solutions and/or viable mitigation opportunities may be identified. As such, Caltrans suggested alternative bishop pine mitigation options such as research or studies since little is known as to the reasons for the decline of the species on the Mendocino coast. However, following this meeting, regulatory staff agreed that for upcoming bishop pine mitigation efforts, Caltrans should continue to focus on traditional restoration activities (e.g., planting bishop pine). Though this Task Force is not a part of this mitigation proposal, Caltrans would still like to explore the potential for future mitigation options that include funding scientific research to better understand the issues affecting bishop pine along the Mendocino coast.

Caltrans has coordinated with MLT and County/State representatives regarding the potential for the Saunders Landing Bishop Pine Restoration Project to be applicable as potential mitigation to satisfy PRM for impacts from the project. The following meetings and site visits (with outcomes) have occurred:

- Early 2020, Caltrans North Region Environmental staff met with staff from CCC and CDFW to discuss bishop pine mitigation along the Mendocino coast given the ongoing decline of the species (CCC and CDFW staff are in favor of developing a Task Force and conducting research however suggested that Caltrans continue to explore traditional mitigation activities such as bishop pine restoration to permit upcoming transportation projects).
- December 14, 2022, Caltrans Mitigation Analysis and Planning (MAP) unit staff met with Nicolet Houtz (MLT) to discuss the potential for Caltrans to plant additional bishop pine on the eastern parcel. MLT will be the ultimate landowner following the acquisition of Saunders Landing (MLT staff is in favor of Caltrans leading and funding a bishop pine restoration project on the eastern parcel).
- April 26, 2023, Caltrans staff from the PDT met with Julia Krog and Steven Switzer (Mendocino County's Planning Department) to discuss ESHA impacts and proposed mitigation at Saunders Landing (Mendocino County staff conceptually agreed to the mitigation approach pending the completion and review of the HMMP).

- May 31, 2023, Caltrans staff from the PDT met with Greg O'Connell (CDFW) to discuss the proposed mitigation project (CDFW staff conceptually agreed to the mitigation approach pending the completion and review of the HMMP).
- May 31, 2023, Caltrans MAP staff met with MLT staff to revisit the potential bishop pine mitigation opportunity at Saunders Landing to verify that MLT staff were still in support of the mitigation project (MLT staff renewed their continued support of the Bishop Pine Restoration Project on Saunders Landing).
- June 27, 2023, Caltrans MAP staff met with MLT staff to discuss details pertaining to the endowment for the bishop pine restoration mitigation (Parties discussed tasks associated with the long-term maintenance of the restored areas).
- July 20, 2023, Caltrans North Region Environmental staff met Greg O'Connell (CDFW) at Saunders Landing to conduct a site visit and discuss the efficacy of planned bishop pine restoration in the non-native grasslands on the eastern parcel (After the site visit, CDFW staff concurred via email that the in-kind bishop pine restoration proposal is preferred. CDFW staff are open to other proposals such as research in the future if planned mitigation fails or bishop pine mortality continues to spread).
- September 15, 2023, Caltrans staff from the PDT met with Julie Krog and Steven Switzer (Mendocino County's Planning Department) and Melissa Kraemer, Peter Allen, Abigail Strickland, and Bente Jansen (CCC) to discuss Bishop Pine Forest Alliance SNC/ESHA impacts and proposed mitigation at Saunders Landing (Mendocino County and CCC staff conceptually agreed to the mitigation approach pending the completion and review of the HMMP).

Wetland and Non-wetland Waters Re-establishment – Mendocino Coast Mitigation Bank

To mitigate for impacts to resources under the jurisdiction of applicable regulatory agencies, Caltrans District 1 is routinely required to comply with regulatory permits including, but not limited to, USACE CWA §404, California State Water Resources Control Boards (SWRCB) CWA §401, CCC/County Coastal Development Permit (CDP), and CDFW's Lake and Streambed Alteration Agreements (LSAA). Due to the lack of mitigation banks and credits available for purchase, District 1 typically is required to mitigate at a higher ratio under a PRM approach. Additionally, the timely issuance of permits and delivery of capital projects is challenging. At the time of programming projects in 2013, and as remains the case for present day, no mitigation banks exist in the coastal zone of the Big-Navarro-Garcia HUC 8 watershed. Therefore, to lessen project costs through reduced off-site mitigation ratios, limit

the need for staff resources, and to provide ecologically beneficial, landscape level mitigation as opposed to postage stamp PRM projects, Caltrans District 1 began the process to create a mitigation bank in the coastal zone of the Big-Navarro-Garcia HUC 8 watershed.

In 2013, Caltrans' Environmental and Project Management teams initiated the process to program an advance mitigation project to capture anticipated impacts associated with upcoming transportation projects along SR 1, in the coastal zone of the Big-Navarro-Garcia HUC 8 watershed. This process projected a need for 11.1 credits to compensate for impacts to 3-parameter wetlands and 4.1 credits for non-wetland waters compensation. In 2017, Caltrans North Region Environmental programmed a second project to capture additional future impacts to aquatic resources along SR 1 in the coastal zone of the Big-Navarro-Garcia HUC 8 watershed. This process projected an additional need for 15.1 credits to compensate for impacts to 3-parameter wetlands and 8.1 credit for non-wetland waters compensation. In 2019, Caltrans District 1 created and circulated two (2) Request for Proposals (RFP) seeking a contractor(s) to procure the anticipated mitigation credits in the coastal zone of the Big-Navarro-Garcia HUC 8 watershed for impacts to jurisdictional wetlands and non-wetland waters protected under the CCA and CWA. To establish a mitigation bank, Caltrans required the contractor to conduct all the necessary technical studies, obtain environmental approvals, and prepare all relevant documents necessary under the approval of state and federal regulatory agencies as part of the contracts. After review of technical and cost proposals submitted by various mitigation banking organizations, Caltrans awarded Resource Environmental Solutions, LLC (RES) both contracts in early 2020 to provide 26.2 credits of 3-parameter wetlands and 12.2 credits of non-wetland waters in the coastal zone of the Big-Navarro-Garcia HUC 8 watershed.

Following contract execution, RES identified viable banking sites, entered into legal agreements with landowners, and started necessary studies (e.g., hazardous waste, biological, cultural studies) for submittal of the Draft Prospectus. In late December 2020, RES submitted the Draft Prospectus to USACE and an Interagency Review Team (IRT) was formed which included all the regulatory agencies. After comments from the public and the IRT, RES revised the Draft Prospectus and submitted the Final Prospectus which was deemed complete by USACE in late December 2021. Following submittal of the Final Prospectus, RES presented the information to the IRT and conducted site visits to all the Bank parcels in March 2022. As a result of agency comments during the Prospectus phase, and after 15 months of review, RES ultimately decided to split the Bank into two banks as the IRT had concerns regarding the large geographic range of the HUC 8 (Ten Mile River to the north to Garcia River to the south), coverage of separate ecoregions, and the difference in

credit types to be restored, created, enhanced, and/or preserved. Therefore, Bank #1 consists of two parcels, a 117-acre easement area within the northern floodplain of the Garcia River and a 27-acre fee-title parcel north of Brush Creek, east of Highway 1. Bank #2 consists of a 61-acre potential easement area along the Ten Mile River, east of SR 1 and three fee-title parcels in the northern floodplain of the Navarro River (19-acres, 40-acres, and 4-acres).

For Bank #1, RES has provided an updated Final Prospectus which was circulated for public review in July 2023 for scheduled completion in late-August 2023, though a minor error has resulted in an extension of the public comment period into October 2023. Credits to be applied as mitigation for project impacts will come from Bank #1, therefore all schedules and associated information within this HMMP will refer to Bank #1. RES has developed a Draft Bank Enabling Instrument (BEI) for submittal to the IRT upon completion of the public review period and approval by the IRT to submit the document. RES is anticipating completion of the Final BEI in April-May 2024 for Bank #1 and Bank permitting in ~July-August 2024 which, shortly thereafter, 15% of Bank credits will become available for use ~October 2024.

As compensatory mitigation to offset project impacts to aquatic resources, Caltrans proposes to use contracted credits from the Bank. Establishment of the BEI is anticipated to be in spring/summer 2024, with permitting anticipated in summer 2024, and first credit release anticipated in fall 2024, 6-8 months prior to impacts from the project's construction (spring/summer 2025). Table 2 below shows the anticipated Bank establishment/permitting timelines, availability of credits, and project Ready to List (RTL) and construction start dates.

Table 2. Project Schedule and Mendocino Coast Mitigation Bank Timelines.

Project/Bank Milestone	Timeline
Gualala Shoulders Project RTL	3/24/2024
Bank BEI Executed	~5/2024
Bank Permitted	~7/2024
Credit Release #1 (15%) – Upon Bank Establishment	~10/2024
Gualala Shoulders Project Construction Start	~4/2025 – 6/2025
Bank Construction	6/2025 – 10/31/2025
Credit Release #2 (40%) – After Approval of As Built and 30% of the Endowment has been funded	1/31/2026

In May/June 2023, Caltrans proposed a separate PRM project within the floodplain of Greenwood Creek located on the California Department of Parks and Recreation's (State Parks) Greenwood State Beach unit. The mitigation project proposed the removal of approximately 1.6 acres of cape ivy (Delairea odorata), an invasive plant rated as "High" according to Cal-IPC, and other non-native, invasive plant species throughout the lower reaches of Greenwood Creek (herein referred to as the "Greenwood Creek Restoration Project"). Caltrans presented the information to both CDFW and NCRWQCB staff and though the mitigation project received positive feedback, it would not result in the creation/restoration of 3-parameter wetlands to compensate for wetland impacts at the project. As a result, Caltrans coordinated with the NCRWQCB in July/August 2023 to discuss the project construction timeline and the Bank progress to determine if the use of contracted Bank credits would be applicable mitigation. NCRWQCB staff concurred that use of contracted Bank credits to meet the "no net loss" policy for waters of the U.S./State would be applicable as long as the credits to be released in October 2024 included "wetland re-establishment/establishment" credits. Caltrans met with RES regarding the types of credits anticipated to be available during the first credit release and RES confirmed that approximately 0.90 acre of "seasonal wetland re-establishment" and 0.97 acre of "riparian wetland/waters re-establishment" credits are proposed in the Draft BEI for availability in the first credit release. Caltrans relayed this information to the NCRWQCB staff, and they concurred that impacts to seasonal emergent freshwater wetlands would be able to be mitigated with wetland re-establishment credits for similar types of wetlands (seasonal emergent freshwater wetlands) proposed to be re-established (Appendix F).

Based on the current Bank schedule and the additional time between anticipated first credit release and the planned project construction start date (~6-8 months), Caltrans is optimistic that the Final BEI will be approved by the IRT and Bank #1 will be permitted by all regulatory agencies prior to project construction. However, Caltrans acknowledges that the development of a mitigation bank within the coastal zone offers a variety of challenges. If the IRT fails to establish Bank #1 and/or RES does not obtain the necessary regulatory permits prior to the construction for this project, Caltrans will consult with the regulatory agencies to determine an appropriate mitigation ratio that compensates for temporal loss of project impacts to waters of the U.S./State (wetlands/non-wetland waters).

Caltrans has coordinated with the Mendocino County and State representatives regarding appropriate mitigation for project impacts to wetlands, non-wetland waters, and riparian habitats. The following meetings and site visits (with outcomes) have occurred:

- May 31, 2023, Caltrans North Region Environmental staff met with Greg O'Connell (CDFW) to discuss Caltrans' proposal to mitigate for impacts to wetlands, non-wetland waters, and riparian habitats at the Greenwood Creek Restoration Project (Greg [CDFW] voiced support for the Greenwood Creek Restoration Project as mitigation for project impacts).
- June 15, 2023, Caltrans North Region Environmental staff met with Susan Stewart (NCRWQCB) to discuss Caltrans' proposal to mitigate for impacts to wetlands, non-wetland waters, and riparian habitats at the Greenwood Creek Restoration Project (Susan [NCRWQCB] voiced support for the Greenwood Creek Restoration Project though needed to discuss the mitigation project details with her supervisor, Gil Falcone).
- July 6, 2023, Caltrans North Region Environmental staff met with Gil Falcone and Susan Stewart (NCRWQCB) to follow up on Caltrans' proposal to mitigate for impacts to wetlands, non-wetland waters, and riparian habitats at the Greenwood Creek Restoration Project (NCRWQCB staff voiced support for the project, expressed how the enhancement mitigation project can be beneficial to the lower Greenwood Creek estuary, but noted that the mitigation project as proposed would not meet the agency's "no net loss" policy).
- July 12, 2023, Caltrans' MAP staff met with Peter van de Burgt (The Nature Conservancy [TNC]) to discuss TNC's restoration projects along the Mendocino coast. Based on feedback from the NCRWQCB staff regarding the Greenwood Creek Restoration Project, Caltrans' MAP staff sought alternative mitigation options for wetland creation and/or re-establishment to meet NCRWQCB's no net loss policy. Peter presented two restoration projects, one in the South Fork Ten Mile and the other in Mill Creek (tributary to mainstem Ten Mile River) that included, but was not limited to, seasonal wetland creation, off-channel rearing habitat, riparian planting, and large woody debris (LWD) placement (Peter [TNC] shared information including the Basis of Design for one of the proposed restoration projects and though both projects will result in wetland creation/re-establishment, Caltrans determined that the projects would be infeasible to complete based on overall costs and schedule).
- July 20, 2023, Caltrans' North Region Environmental staff met with Greg O'Connell (CDFW) at the project site to discuss the current mitigation proposal entailing on-site offsets of minor riparian impacts and use of contracted mitigation bank credits for wetlands and non-wetland waters impacts (CDFW staff tentatively agreed to the proposed mitigation approach including on-site riparian offsets and use of contracted mitigation bank credits according to the current Bank schedule).

- August 7, 2023, Caltrans' staff from the PDT met with Gil Falcone and Susan Stewart (NCRWQCB) to discuss the current mitigation proposal entailing on-site offsets of minor riparian impacts and use of contracted mitigation bank credits for wetlands and non-wetland waters impacts. Based on feedback from the previous two meetings with NCRWQCB staff regarding the Greenwood Creek Restoration Project and lack of alternative wetland creation mitigation options, Caltrans MAP staff met with the PDT and contracted mitigation bank entity (RES) to discuss schedules. Caltrans presented the project and Bank schedule (Table 2) to NCRWQCB seeking concurrence that based on the timing of project construction and first credit release, the use of contracted Bank credits would be an appropriate proposal to mitigate for impacts to wetlands and non-wetland waters. Anticipated first mitigation bank credit release is estimated ~October 2024, 6-8 months prior to project construction start date ~April-June 2025 (NCRWQCB staff conceptually agreed to the proposed mitigation approach including on-site riparian offsets and use of contracted mitigation bank credits ["wetland creation" or "wetland re-establishment" credits only] according to the current Bank schedule. Caltrans agreed that any delay to the Bank schedule where credits will not be available prior to construction will result in higher mitigation ratios applied to Bank credits or for any severe delay in the availability of Bank credits [up to 9 months beyond start of construction], Caltrans will seek alternative PRM).
- August 8, 2023, Caltrans MAP team met with contracted mitigation bank entity (RES) to confirm that "wetland establishment" or "wetland re-establishment" credits will be available in the first credit release (RES confirmed that the current Draft BEI includes a first credit release of 0.90 acres of "seasonal wetland re-establishment" credits and 0.97 acres of "riparian wetland/waters re-establishment" credits for a total of 1.87 acres of wetland re-establishment credits).
- September 15, 2023, Caltrans' North Region Environmental staff met with Julia Krog and Steven Switzer (Mendocino County's Planning Department) and Melissa Kraemer, Peter Allen, Abigail Strickland, and Bente Jansen (CCC) to discuss the current mitigation proposal entailing on-site offsets of minor riparian impacts and use of contracted mitigation bank credits for wetlands and non-wetland waters impacts (Mendocino County and CCC staff conceptually agreed to the proposed mitigation approach including on-site riparian offsets and use of contracted mitigation bank credits according to the current Bank schedule. Caltrans agreed that any delay to the Bank schedule where credits will not be available prior to construction will result in higher mitigation ratios applied to bank credits or for any severe delay in the availability of Bank credits, Caltrans will seek alternative PRM).

1.2 Anticipated Agency Permits & Environmental Documents

NES Biological Memorandum

An assessment of the off-site mitigation site (Saunders Landing) and mitigation project activities will be analyzed in a NES memo and amended in the project's environmental documents. The NES memo will evaluate the on-site biological resources and will assess any potential effects associated with the mitigation project activities. The off-site mitigation project activities at Saunders Landing would be self-mitigating; however, Caltrans' Standard Measures and Best Management Practices (BMPs) would be implemented to ensure protection of sensitive resources.

The following agency permits are anticipated to be required to satisfy impacts associated with the project, planned off-site mitigation activities at Saunders Landing, and use of contracted credits from the Bank:

Mendocino County CDP

The project's CDP (pending) with Mendocino County would cover Caltrans' mitigation activities on-site and off-site at Saunders Landing and through the use of contracted waters of the U.S./State (wetlands/non-wetland waters) credits from the Bank.

NCRWQCB Water Quality Certification

The project's Water Quality Certification (pending) would cover Caltrans' mitigation activities on-site and off-site through the use of contracted waters of the U.S./State (wetlands/non-wetland waters) credits from the Bank credits.

CDFW LSAA

The project's LSAA (pending) would cover Caltrans' mitigation activities on-site and off-site through the use of contracted waters of the U.S./State (non-wetland waters) credits from the Bank.

1.3 Off-Site Mitigation Project Selection

Within the Big-Navarro-Garcia HUC 8 watershed, Caltrans identified numerous off-site mitigation projects to adequately compensate for project impacts:

1. Purchase resource credits from the Mendocino Coast Mitigation Bank (RES),
2. Bishop Pine Forest Alliance SNC/ESHA restoration mitigation at Saunders Landing (MLT),
3. Bishop Pine Forest Alliance SNC/ESHA restoration mitigation at Mill Bend Conservation Project (Redwood Coast Land Conservancy [RCLC], California State Coastal Conservancy [SCC]),
4. Bishop Pine Forest Alliance SNC/ESHA restoration mitigation at Pelican Bluffs Coastal Trail and Preserve (MLT),
5. Bishop Pine Forest Alliance SNC/ESHA preservation mitigation at Sholars Bog (CDFW),
6. Greenwood Creek Restoration Project at Greenwood State Beach (State Parks),
7. European beach grass (*Ammophila arenaria)* removal and other invasive species surrounding seasonal wetlands, Fen Creek, and Ten Mile River (State Parks),
8. Invasive gorse (*Ulex europaeus*) removal at Jughandle or Manchester in coastal grasslands/seasonal wetlands etc. (State Parks),
9. Replacement of Mill Creek crossing on State Parks access road at MacKerricher State Park with bridge (State Parks),
10. Big River Rd. removal and replacement of 300+ stream culverts (State Parks),
11. Stream enhancement and restoration projects on mainstem and South Fork of Ten Mile (TNC),
12. Replace Railroad Gulch crossing culvert on Forest Rd 720 and abandoned segments of road (California Department of Forestry and Fire Protection [CalFire]),
13. Provide funding to assist with the removal of Pudding Creek Dam (CDFW), and
14. Alder and Maple creeks daylighting project (Fort Bragg Headlands Consortium).

Caltrans has developed a feasibility matrix that includes compensation for project impacts both through on-site offsets and off-site mitigation (Table 3). Through the feasibility selection process, Caltrans determined the use of contracted Bank credits and Bishop Pine Forest Alliance SNC/ESHA restoration at Saunders Landing would provide the appropriate off-site mitigation for project impacts.

Table 3. Mitigation Feasibility Matrix.

Mitigation Projects	Proposed Treatment	Constraints / Uncertainties	Satisfies "No Net Loss"?	Fully Satisfies Waters of the U.S. / State Mitigation?	Mitigation Available (acres)	Cost / Complexity
1. On-site wetland/non-wetland waters restoration	Restore 0.0152 acre of waters of the state (wetlands/non-wetland waters) at project site	Severely limited R/W on SR 1 from safety project road widening; Limited space on-site to incorporate wetland/non-wetland waters mitigation	No	No	0.0152	Funded w/ project, low complexity
2. On-site riparian restoration	At a 1.21:1 mitigation ratio, restore 0.0132 acre of riparian habitats at project site	Severely limited R/W on SR 1 from safety project road widening; Limited space on-site to restore riparian habitats	Yes	N/A	0.0132	Funded w/ project, low complexity
3. On-site upland Pacific Reed Grass Meadow SNC/ESHA restoration	At a 3.19:1 mitigation ratio, restore 0.0258 acre of upland Pacific Reed Grass Meadow SNC/ESHA at project site	Severely limited R/W on SR 1 from safety project road widening	N/A	N/A	0.0258	Funded w/ project, low complexity
4. On-site upland Bishop Pine Forest Alliance SNC/ESHA restoration	Restore 0.0393 acre of native species closely associated with Bishop Pine Forest Alliance SNC/ESHA at project site	Severely limited R/W on SR 1 from safety project road widening; Caltrans policy that prohibits planting of bishop pine in state owned R/W	N/A	N/A	0.0393	Funded w/ project, low complexity

Mitigation Projects	Proposed Treatment	Constraints / Uncertainties	Satisfies "No Net Loss"?	Fully Satisfies Waters of the U.S. / State Mitigation?	Mitigation Available (acres)	Cost / Complexity
5. Use contracted credits from the Mendocino Coast Mitigation Bank (RES)	Use approved, contracted mitigation bank credits from the Mendocino Coast Mitigation Bank	BEI anticipated to be approved in spring 2024, bank permitted in summer 2024, with first credit releases in fall 2024; Possibility of delays while developing BEI and permitting bank; Project construction planned for spring 2025 (6-8 month delay buffer)	Yes	Yes	~2.0 acres (first credit release) Caltrans contracted for 38.4 wetland and non-wetland waters credits) Bank #1: 20-30 credits Bank #2: 15-35 credits	Low; Most cost effective for Caltrans as cost/credit is ~50-60% the cost of typical PRM; Caltrans and RES under contract to create the Mendocino Coast Mitigation Bank for projects in the coastal zone of the Big-Navarro-Garcia watershed
6. Bishop Pine Forest Alliance SNC/ESHA restoration at Saunders Landing (MLT)	Restoration of 1.100 acre of Bishop Pine Forest Alliance SNC/ESHA on the eastern parcel at Saunders Landing	Site access issues as restoration area is located on top of bluff without adequate vehicle / pedestrian access	N/A	N/A	1.100	Moderate costs including implementation, maintenance / monitoring, and long-term management (endowment)

Mitigation Projects	Proposed Treatment	Constraints / Uncertainties	Satisfies "No Net Loss"?	Fully Satisfies Waters of the U.S. / State Mitigation?	Mitigation Available (acres)	Cost / Complexity
7. Bishop Pine Forest Alliance SNC/ESHA restoration at Mill Bend Conservation Project (RCLC, SCC)	Restoration of Bishop Pine Forest Alliance SNC/ESHA in heavily disturbed habitats at the Mill Bend Conservation Project in Gualala	Potential issues involving hazardous waste and cultural/historical resources throughout restoration areas; Identified pitch canker pathogen on bishop pine individuals at project site; Site will be used by public (California Coastal Trail [CCT], other trails) w/ higher risk for pathogen spread to restored habitats	N/A	N/A	many	High to Very High costs including multiple pre-restoration treatments involving the removal of invasive species and remnant asphalt/concrete; Implementation, maintenance/monitoring, and long-term management (endowment) costs higher for additional restoration acreage and elevated risks to restored mitigation areas
8. Bishop Pine Forest Alliance SNC/ESHA restoration at Pelican Bluffs Coastal Trail and Preserve (MLT)	Removal of Monterey cypress trees and restoration of Bishop Pine Forest Alliance SNC/ESHA at Pelican Bluffs Coastal Trail and Preserve	Site requires further analysis for archaeological and biological resources; Site will be used by public (CCT, other trails) w/ higher risk for pathogen spread to restored habitats	N/A	N/A	~3	High costs including removal of invasive Monterey cypress trees and restoration of bishop pine communities (implementation, maintenance / monitoring, and long-term management [endowment])

Mitigation Projects	Proposed Treatment	Constraints / Uncertainties	Satisfies "No Net Loss"?	Fully Satisfies Waters of the U.S. / State Mitigation?	Mitigation Available (acres)	Cost / Complexity
9. Bishop Pine Forest Alliance SNC/ESHA preservation mitigation at Sholars Bog/Mendocino County Parks and Recreation parcel (CDFW)	Purchase of a sensitive bog (Sholars Bog) and adjacent parcel for the long-term protection of sensitive habitats on-site	Time constraint to develop a mitigation strategy, complete legal agreement, and acquire parcels prior to construction impacts; Depending on agency willingness, time delay in completing process can be applied through higher mitigation ratios to account for additional temporal loss; project out of the coastal zone	N/A	N/A	TBD	Moderate costs include purchase of parcels and funds for the long-term management (endowment); Costs to be split amongst multiple Caltrans projects seeking mitigation value for the preservation of the site
10. Greenwood Creek Restoration Project (State Parks)	Substantial restoration of 1.6 acres of wetlands, non-wetland waters, and riparian habitats via the removal of invasive species (specifically cape ivy) in lower Greenwood Creek/estuary	No formal site control mechanism for mitigation on State Parks and Caltrans controlled lands	No	No	1.6	Moderate costs including implementation, maintenance / monitoring, and long-term management (endowment)
11. European beach grass removal and other invasive species surrounding seasonal wetlands, Fen Creek, and Ten Mile River (State Parks)	Remove invasive plants throughout State Parks lands	Potential issue with working with State Parks regarding site control; Out-of-kind mitigation (dune wetlands) for impacted resources	No	No	<5	Moderate costs including implementation, maintenance / monitoring, and long-term management (endowment)

Mitigation Projects	Proposed Treatment	Constraints / Uncertainties	Satisfies "No Net Loss"?	Fully Satisfies Waters of the U.S. / State Mitigation?	Mitigation Available (acres)	Cost / Complexity
12. Invasive gorse removal at Jughandle or Manchester in coastal grasslands / seasonal wetlands etc. (State Parks)	Remove invasive plants throughout State Parks lands	Minor. Provide State Parks additional funding to continue removal of gorse on State Parks lands; Gorse seed can persist for ~50 years so long-term efficacy of restoration proposal is unknown; Mitigation proposed would be a funding contribution to assist with long-term management of invasive plant species on State Parks lands	No	No	>5	Moderate cost for long-term endowment to allow State Parks to continue eradicating gorse from State Parks lands.
13. Replacement of Mill Creek crossing on State Parks access road at MacKerricher State Park with bridge (State Parks)	Remove culvert and replace with bridge to assist with flooding issues at State Parks access road to MacKerricher State Park	Major. Potential issue with working with State Parks regarding site control; Potential to impact riparian and wetlands during construction; Additional design, environmental clearance, and permits/consultation needed; Requires more time to develop than schedule allows	Unknown	Unknown	<1	High; Need design/engineering, clearance, and permits; Mitigation activities unlikely to take place on schedule with project impacts.

Mitigation Projects	Proposed Treatment	Constraints / Uncertainties	Satisfies "No Net Loss"?	Fully Satisfies Waters of the U.S. / State Mitigation?	Mitigation Available (acres)	Cost / Complexity
14. Big River Rd. removal and replacement of 300+ stream culverts (State Parks)	Remove legacy logging roads and replace failing culverts with bridges	Major. Potential issue with working with State Parks regarding site control; State Parks staff will not work on projects until at least 2024; Additional design, environmental clearance, and permits/consultation needed; Requires more time to develop than schedule allows	Yes	Yes	numerous	High; Need design/engineering, clearance, and permits; Mitigation activities will not take place on schedule with project impacts
15. Stream enhancement and restoration projects on mainstem and South Fork of Ten Mile (TNC)	Stream restoration projects on Ten Mile River; TNC has applied for Prop 1 funding for additional SF Ten Mile for construction in 2023	Major; Potential to impact riparian and wetlands during construction; Conversion of jurisdictional wetlands to non-wetland waters (side channel); Concern regarding funding overlap with Prop 1 grants that may pay for the design and mitigation $ will pay for the implementation; Need clear separation of grant and mitigation $; Need baseline studies to determine if expected mitigation will be achieved	Unknown	Unknown	Several projects	High; Caltrans would need baseline studies and pay for design, permits, and construction; TNC willing to accept partial funding but Prop 1 funding is involved and causes potential issues for granting agencies

Mitigation Projects	Proposed Treatment	Constraints / Uncertainties	Satisfies "No Net Loss"?	Fully Satisfies Waters of the U.S. / State Mitigation?	Mitigation Available (acres)	Cost / Complexity
16. Replace Railroad Gulch crossing culvert on Forest Rd 720 and abandon segment of road (CalFire)	Upgrade culvert at CalFire's main entrance road into Mendocino Woodlandor SP	Potential to impact riparian and wetlands during construction; Need baseline studies to determine if expected mitigation will be achieved; project out of the coastal zone	Unknown	Unknown	<1	Moderate; Engineering and plans are being developed by CalFire for project completion; Permits and consultation would be required prior to construction
17. Pudding Dam removal (CDFW)	Provide funding to assist with the removal of the Pudding Creek Dam	Funding contribution only; Potential issues with numerous agencies, local governments, and landowner on pathway forward; Requires more time to develop than schedule allows; Out-of-kind mitigation	No	No	Unknown	Unknown; Funding contribution to the lead agency once an overall plan is known; Dam removal is complex, involves numerous parties, and is not a certainty
18. Alder and Maple creeks daylighting project (Fort Bragg Headlands Consortium)	Daylight two creeks that are currently culverted beneath old mill site	Highly likely that site contains numerous hazardous chemicals in the soil from decades of mill operations; Additional concerns regarding cultural resources present	Yes	Yes	~5-10	Very High; In addition to permitting and construction costs to complete the project, Caltrans would be required to properly remove and dispose of soil contaminated with hazardous materials

Chapter 2. Environmental Setting

The following section will detail the environmental setting of the proposed compensatory mitigation project that will occur at Saunders Landing (Bishop Pine Restoration Project).

2.1 Saunders Landing Bishop Pine Restoration Project

2.1.1 Project Location

Saunders Landing is located approximately 10.2 miles north of the Mendocino-Sonoma County border and six miles south of Point Arena, along SR 1 in Mendocino County (APNs 142-010-53 & 142-010-54). The two parcels are bisected by SR 1, containing a 7.50-acre parcel to the west (western parcel) and a 4.5-acre parcel to the east (eastern parcel). Hearn Gulch, a perennial stream containing sensitive waters of the U.S./State, riparian, and SNC/ESHA biological communities, runs through the eastern parcel. Parcels to the north and south of the eastern parcel are privately owned. One large lot to the north is composed primarily of non-native grassland with intermixed riparian and SNC resources upstream along Hearn Gulch. There are four adjacent parcels within the Iversen Subdivision to the south of the eastern parcel. The mitigation project will occur entirely on the eastern parcel and incorporate portions of Caltrans' R/W east of SR 1 (Appendix A, Figure 6).

Climate in the vicinity of the parcel is typically mild and wet during fall and winter and cool and dry during spring and summer. Average annual rainfall in the Fort Bragg area is 50.6 inches, most of which falls between October and May (Western Regional Climate Center 2021).

2.1.2 Existing Land Use

Saunders Landing is under private ownership and was purchased with the intent to develop a residential dwelling at these locations (pers. comm. Nicolet Houtz, MLT). As mentioned earlier, Caltrans and MLT are partnering to purchase Saunders Landing to compensate for impacts associated with three other transportation projects but to also meet MLT's goals of protecting coastal resources while providing public access to the coast. Directly south of the eastern parcel is a large subdivision (Iversen Subdivision) which contains ~80 residential lots. Directly north of the eastern parcel is a similar sized lot that appears to be dominated by non-native grasslands that may offer suitable development potential for a similar subdivision. Additionally, portions of the eastern parcel contain similar habitats that occur in potential bishop pine restoration areas, upslope from riparian habitats along Hearn Gulch.

Currently, there is no identified land use activity at the eastern and western parcels as the site is uninhabited and unmanaged. As a result, the public uses the western parcel to access the Hearn Gulch Beach via the Caltrans lookout/rest area located directly north of the western parcel. The continuous unauthorized access endangers sensitive wetland resources and plant/animal species present on the western parcel (as discussed in Section 2.1.8 below). Lands surrounding Hearn Gulch are predominantly privately owned with exception at the mouth where RCLC owns a parcel directly south of the Hearn Gulch mouth. Acquisition of Saunders Landing will facilitate the future extension of the CCT on the western parcel by connecting the RCLC parcel to the south of Hearn Gulch to Saunders Landing via a designated trail. No public access is currently planned for the eastern parcel and the main goals for acquisition include restoration of impacted resources and preservation of sensitive habitats. MLT will maintain existing and install new fencing on the northern and western boundaries of the eastern parcel to prevent unauthorized access and protect the preserved and proposed to be restored habitats on-site.

2.1.3 Topography

On the eastern parcel, the project area is a sloping hillside that is a mix of non-native grassland, tanoak forest, bishop pine forest, and the riparian area of Hearn Gulch. Steep slopes indicative of gulch habitats are found on the eastern parcel with a perennial stream terminating at the Hearn Gulch Beach directly downstream and adjacent to the parcels. Just offshore lies the Saunders Reef State Marine Conservation Area (SMCA) Marine Protected Area (MPA) and Area of Special Biological Significance (ASBS) State Water Quality Protection Area.

2.1.4 Soils

According to the United States Department of Agriculture (USDA)-Natural Resources Conservation Service (NRCS) (2023), soil map units present within the restoration areas include:

- Abalobadiah-Bruhel-Vizcaino complex, 30 to 50 percent slopes
- Cabrillo-Heeser complex, 0 to 5 percent slopes
- Irmulco-Tramway complex, 50 to 75 percent slopes

The following descriptions of the Abalobadiah, Bruhel, and Cabrillo series are derived from USDA-NRCS (2023):

The Abalobadiah series consists of moderately deep, well drained soils formed in material weathered from sandstone. Abalobadiah soils are on coastal hills and mountains and have slopes of 9 to 75 percent. Similarly, the Bruhel series consists of deep or very deep, well drained soils formed in material weathered from sandstone. Bruhel soils are on coastal hills and mountains and associated marine terraces and have slopes of 2 to 75 percent. Most to all bishop pine restoration will occur within the Abalobadiah-Bruhel-Vizcaino complex soils. Cabrillo series consists of very deep, somewhat poorly drained soils formed in marine sediments. Cabrillo soils are on marine terraces and have slopes of 0 to 5 percent.

The following descriptions for the Irmulco-Tramway complex are derived from USDA-NRCS' Soil Survey of Mendocino County, California, Western Part (1999):

The Irmulco soil is very deep and is well drained. It formed in material derived from sandstone. Typically, the surface is covered with a mat of leaves and twigs about 1 inch thick. The surface layer is pale brown loam about 6 inches thick. The upper 35 inches of the subsoil is light brown loam. The lower 20 inches is light brown, pink, and reddish yellow clay loam. Soft sandstone bedrock is at a depth of about 61 inches. Permeability is moderate in the Irmulco soil. Available water capacity is high. The effective rooting depth is 60 inches or more. Surface runoff is medium or rapid, and the hazard of water erosion is moderate if the surface is left bare.

The Tramway soil is moderately deep to weathered bedrock and is well drained. It formed in material derived from sandstone. Typically, the surface is covered with a mat of leaves and twigs about 2 inches thick. The surface layer is light brownish gray loam about 7 inches thick. The upper 5 inches of the subsoil is pale brown loam. The lower 16 inches is light yellowish-brown clay loam. Soft, fractured sandstone is at a depth of about 28 inches. Permeability is moderate in the Tramway soil.

2.1.5 Hydrology

Saunders Landing is within the Alder Creek-Frontal Pacific Ocean watershed HUC 10 (HUC 1801010809); a watershed extending 293.5 square miles (187,840 acres) (WATERS 2023). Impacts and on-site revegetation, as well as the off-site mitigation for bishop pine (Saunders Landing) for the Gualala Shoulders Project are all within the Alder Creek-Frontal Pacific Ocean watershed HUC 10.

The nearest watercourse shown on the United States Geological Survey (USGS) quadrangles is Hearn Gulch, flowing through the eastern parcel and emerging directly south of the western parcel, bisecting the adjacent parcel owned by RCLC, where it flows into the Pacific Ocean. Hearn Gulch is a perennial stream, approximately 0.75-miles in length originating in upper stretches to the east of the mitigation parcels and terminating at the Pacific Ocean, adjacent to the western parcel at Hearn Gulch Beach. Elevations range from 0 feet at the mouth to ~430 feet in the headwater areas.

2.1.6 Vegetation Communities

Floristically, the project is situated within the North Coast sub-region of the Northwest Region of the California Floristic Province in coastal Mendocino County (Baldwin et al., 2012). The mitigation project BSA consists of high-quality aquatic resources and vegetative habitat containing special status plant species and rare vegetation alliances. Biological surveys were conducted at the parcels on May 15 and 25, 2020 by Teresa Spade (Spade Natural Resources Consulting [SNRC]) and a report titled, "*Hearn Extension Resource Information Report*" (2020) (Appendix D) was prepared that highlights sensitive plant communities/species present, delineates waters of the U.S./State, and notes areas where restoration on Saunders Landing would be most appropriate. These surveys showed a variety of native and rare plants and ESHAs. The property contains two (2) California Native Plant Society's (CNPS) California Rare Plant Rank (CRPR) List 1B plant species (Mendocino coast paintbrush [*Castilleja mendocinensis*] and purple-stemmed checkerbloom [*Sidalcea malviflora ssp. purpurea*]), a 1.129-acre riparian area along Hearn Gulch, and habitats that could be potential restoration areas to plant habitat (blue violet [*Viola adunca*]) for the Behren's Silverspot butterfly (*Speyeria zerene behrensii*), a federally listed endangered species. Seventeen different vegetation alliances have been documented on Saunders Landing and described in more detail in Appendix D.

Focusing on the eastern parcel, the area supports both wetland and upland native communities including red alder forest (*Alnus rubra*), bishop pine forest, tanoak forest, wax myrtle (*Morella cerifera*), and coyote brush scrub (*Baccaharis pilularis).* Non-native habitats include non-native grasslands that are composed of many species including, but not limited to, purple velvet grass (*Holcus lanatus*), spring vetch (*Vicia sativa*), sow thistle (*Sonchus arvensis*), and blue eyed grass (*Sisyrinchium montanum*). The proposed bishop pine restoration mitigation will occur within the non-native grasslands (described below in "Upland Riparian Buffer Habitats" section) though details regarding the vegetation communities present on the entirety of the eastern parcel are outlined in the sections below.

Upland Riparian Buffer Habitats

Within the upland riparian buffer habitats on the eastern parcel, rattlesnake grass (*Briza maxima*) and sweet vernal grass (*Anthoxanthum odoratum*) are the most dominant vegetation alliance covering approximately 1.292-acres of the non-native grasslands. Also significantly present are purple velvet grass, spring vetch, sow thistle, Douglas iris (*Iris douglasiana),* blue eyed grass, California poppy (*Eschscholzia californica*), sheep sorrel (*Rumex acetosella*), tufted hairgrass (*Deschampsia cespitosa*), and coyote brush. Within the tanoak forests, the species present include tanoak, honeysuckle (*Lonicera hispidula*), bracken (*Pteridium aquilinium*), redwood sorrel (*Oxalis oregana*), black huckleberry (*Gaylussacia baccata*), manzanita (*Arctostaphylos* sp.), and madrone (*Arbutus menziesii*) (SNRC 2020). The approximate 0.234-acre tanoak forest is located along the northeastern boundary of the eastern parcel directly above the identified riparian zone.

Other Sensitive Biological Communities

Saunders Landing contains upland SNC/ESHA habitats that make up approximately 6.206-acres, or ~52% of the acreage for both parcels. SNCs/ESHAs found on Saunders Landing include bishop pine forest, northern coastal scrub, coastal terrace prairie, and coastal bluff scrub. On the eastern parcel, sensitive riparian SNC/ESHA borders existing bishop pine forest SNC/ESHA as well as non-native grasslands ("upland riparian buffer habitats"). These habitats found on the eastern parcel are described further in the following sections.

Bishop Pine Forest

Bishop pine forest (G3 S3)[5] is found along the Mendocino County coast and as far south as Monterey County. The species is often found on sterile, rocky soils with an understory of shrubs and perennial herbs that is almost continuous in open stands on moist sites or nearly absent from dense stands or dry, rocky sites (Holland 1986). Bishop pine forest is rare and highly imperiled along the Mendocino coast, in part due to several pathogens and compounding factors such as drought and fire suppression. Bishop pine forest found at Saunders Landing occurs within the eastern parcel, adjacent to the non-native grasslands along the ridge and partially within Hearn Gulch. For the Bishop Pine Forest Alliance SNC/ESHA, the main species present include bishop pine, California blackberry (*Rubus ursinus*), bedstraw (*Galium* sp.), poison oak (*Toxicodendron pubescens*), bracken,

[5] Alliance Rarity Ranking and Classification System: G3 S3: 21-100 viable occurrences worldwide/statewide, and/or more than 2,590-12,950 hectares.

honeysuckle, soft rush (*Juncus effusus*), and common rush (*Juncus patens*). Overall, the bishop pine forest on the eastern parcel is healthy and providing quality habitat to resident wildlife including noted presence of Sonoma tree vole (*Arborimus pomo*). Additionally, Caltrans and CDFW biologists noted bishop pine volunteers within the non-native grasslands during recent site visits on May 24, 2023 and July 20, 2023 indicating that the proposed restoration has the potential to be successful and self-sustaining.

Northern Coastal Scrub

The Northern coastal scrub habitat is a mixed community of coyote brush scrubland (G5 S5) and wax myrtle scrub (G3 S3). This Northern Coastal Scrub community on Saunders Landing is dominated by coyote brush and other native shrubs containing scattered grassy openings located on windy, exposed sites with shallow rocky soils ranging from sandy to heavy clay in composition (CNPS 2022). On the eastern parcel of Saunders Landing, this mixed community is located primarily on the western border near wax myrtle scrub habitat (associated with three CWA wetlands) also found along the western border.

Riparian Vegetation

Within Hearn Gulch and the floodplain, Red Alder Forest Alliance SNC/ESHA is the most dominant vegetation alliance consisting of red alder, willow (*Salix* sp.), coffeeberry (*Frangula californica*), sword fern (*Polystichum munitum*), lady fern (*Athyrium filix-femina var. cyclosorum*), red elderberry (*Sambucus racemose)*, wild ginger (*Asarum caudatum*), thimbleberry (*Rubus parviflorus)*, wild cucumber (*Echinocystis lobata*), California blackberry, cow parsnip (*Heracleum maximum*), giant horsetail (*Equisetum telmateia* ssp. *braunii*), bee plant (*Scrophularia californica*), and honeysuckle. The defined riparian zone is approximately 1.129-acres and encompasses vegetation that spans from Hearn Gulch to the top of the ridge on the northern slope and the northern, western, and eastern parcel boundaries.

2.1.7 Wetlands and Non-Wetland Waters

As part of the separate mitigation effort associated with Saunders Landing, SNRC identified 13 wetlands encompassing 1.182-acres of potential CWA and CCA jurisdictional wetlands within Saunders Landing. On the eastern parcel, there are four (4) identified CWA wetlands consisting of two (2) common rush bog wetlands, one (1) red alder forest wetland, and one (1) wax myrtle wetland. These features could be classified under the Cowardin system (FGDC 2013) as combinations of freshwater forested/shrub wetland (palustrine forested, broad-leaved deciduous, seasonally flooded [PF01C]) or freshwater emergent wetlands

(palustrine emergent, persistent, seasonally saturated [PEM1B]). More details and mapping for wetlands at Saunders Landing are included in the *Hearn Extension Resource Informational Report* included in this HMMP (Appendix D).

Non-wetland waters surveys conducted by qualified Caltrans staff followed a standard USACE OHWM Delineation Datasheet. On the eastern parcel, the lower stretch of Hearn Gulch present within the BSA has high quality habitat that contains a variety of water features including deep pools, riffles, flatwater, LWD, and islands, mature riparian vegetation, and aquatic species including amphibian and invertebrates (surveyors noted three [3] rough-skinned newt [*Taricha granulosa*] adults and numerous invertebrate species including caddisfly larval/pupal in cases). Approximately 0.130 acre of a perennial stream (Hearn Gulch) is present within the eastern parcel.

2.1.8 Special Status Species

Sensitive plant and animal species surveys occurred during site visits to Saunders Landing on May 15 and 25, 2020 by SNRC. Special status plant species including Mendocino coast paintbrush and purple-stemmed checkerbloom were observed on the western parcel. Special status wildlife species including shoulderband snails were noted on the western parcel as well as cormorant nests identified along the edge of the rocky bluffs surrounding the western parcel and on nearby offshore rocks. On the eastern parcel within the project BSA, evidence of Sonoma tree vole occurrence was seen within the existing bishop pine forest. A discussion regarding the potential for Sonoma tree vole impacts within proposed Bishop Pine Restoration Project on Saunders Landing is provided below.

Discussion of Sonoma tree vole

The Sonoma tree vole is designated a CDFW species of special concern due to concerns regarding loss of habitat from tree harvest, fire, and/or land conversion. The species occurs from Sonoma County north to the Oregon border along the coast in fog-influenced areas (Zeiner et al. 1990). This species is found mainly in older Douglas-fir, coast redwood (*Sequoia sempervirens*), and montane forests (Zeiner et al. 1990); however, younger trees may be also be used (Williams 1986) and Sonoma tree vole have been observed (although less frequently) using grand fir and bishop pine for forage and nest sites (Forsman et al. 2016) (pers. comm. Jennifer Garrison, CDFW). Females are primarily arboreal and males only partially terrestrial. Sonoma tree voles feed on the needles, buds, and tender twig bark of Douglas-fir, grand fir, and western hemlock (*Tsuga heterophylla*) trees (Williams 1986).

Nests are constructed from the needle resin ducts and generally found high in trees near the trunk, on branches, or on a whorl of limbs (Zeiner et al. 1990).

Because of the size and location of nests, occupancy by Sonoma tree voles can be difficult to determine as nests are difficult to observe from the ground. Biologists typically detect evidence of vole activity by searching the ground for discarded piles of resin ducts – produced in large quantities by actively foraging voles. As noted above, recent surveys have found Sonoma tree voles use of the existing Bishop Pine Forest Alliance SNC/ESHA on Saunders Landing. Enhancements and expansion to the existing Bishop Pine Forest Alliance SNC/ESHA and/or other codominant tree species such as Douglas-fir and grand fir would improve the quality of habitats present for the Sonoma tree vole. Additionally, the species would benefit into the future as Saunders Landing will be protected in perpetuity, eliminating the threat of development and/or habitat conversion.

A Biological Resources Memorandum for the Bishop Pine Restoration Project at Saunders Landing would address special status species that may potentially occur within or adjacent to the mitigation project area and outline Caltrans' Standard Measures and BMPs that would be implemented to ensure protection of sensitive resources.

2.1.9 Cultural and Archaeology Resources

As part of the process for the acquisition of Saunders Landing, a records search, Native American consultation, background literature search and pedestrian survey did not reveal any evidence of cultural resources in the project footprint. No historic properties are present.

If any cultural resources are identified from the inventory or consultation effort, these would be protected (through the establishment of Environmentally Sensitive Areas [ESAs]) from all ground-disturbing activities which would occur as part of the mitigation effort. In addition, the following standard protocols would be implemented during this mitigation effort:

CR-1: **Unexpected Discovery of Cultural Materials.** If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be stopped until a qualified archaeologist can assess the nature and significance of the find in consultation with the State Historic Preservation Officer. If significant, the provisions outlined in 36 CFR800.13 would then be followed.

CR-2: Procedures for Human Remains. If human remains are discovered, State Health and Safety Code 7050.5 states that further disturbances and activities would cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to

California Public Resource Code (PRC) 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission (NAHC) which would then notify the Most Likely Descendent (MLD). Further provisions of PRC 5097.98 are to be followed as applicable.

PA-1: In the unlikely event that fossils are encountered during project excavations, Caltrans Standard Specification 14-7 would be followed. This standard specification states that if unanticipated paleontological resources are discovered at the job site, all work within 60 feet would stop, the area around the fossil would be protected, and the resident engineer would be notified.

Chapter 3. Implementation Plan

3.1 Saunders Landing Bishop Pine Restoration Project

Caltrans is in the process of purchasing the 12-acre Saunders Landing parcels to transfer to MLT with an endowment via a Mitigation Agreement (anticipated close of escrow, February 2024). Mitigation values for impacts to wetlands, non-wetland waters, riparian, and other upland SNC/ESHA from three additional transportation projects requiring compensatory mitigation have been applied, via regulatory permits, to the property. A Biological Resource Inventory prepared by a consultant, SNRC (Appendix D), outlined an area for potential 1.1 acre of bishop pine restoration in the non-native grasslands on the eastern parcel. This location adjoins an area of existing bishop pine forest approximately 1.1 acres in size.

Bishop pine forests along the coast of Mendocino County are undergoing severe decline, due to their age and a suite of pathogens known as bishop pine decline. The primary problematic pathogens associated with bishop pine decline are bark beetles (*Ips* species), a group of tiny engraver beetles; pine pitch canker (*Fusarium circinatum*), a canker causing fungus; and cinnamon fungus (*Phytophthora cinnamomi*), a water mold which causes root rot dieback. The effects of these pathogens are compounded by drought and fire suppression. Giusti (2014) noted that several large fires occurred along the coast of Sonoma and Mendocino counties following World War II. As a result, stands of even-aged bishop pine cohorts are common. It is apparent that many (if not most) of the bishop pine stands along the coast of Mendocino and Sonoma counties are nearing the end of their lifespan. Bishop pine decline effects are hastening their demise and inhibiting recruitment to replace lost individuals and stands. Cohort mortality is apparent at the project as Caltrans arborist Darin Sullivan confirmed that many of the bishop pine that would be removed for the project are at the end of their lifespan and are considered road hazards (Caltrans Arborist, Darin Sullivan pers. com).

Caltrans proposes to mitigate the estimated 0.7959 acre of bishop pine project impacts by implementing restoration both on-site and off-site at Saunders Landing. The off-site mitigation at Saunders Landing will occur by substantially restoring the area on the eastern parcel through planting of bishop pine and closely associated SNC/ESHA alliance species including other native tree species (e.g., Douglas fir, grand fir, tanoak) and understory species (e.g., coffeeberry, California blackberry). To ensure long-term success of the off-site restoration efforts, Caltrans proposes to perform continual maintenance and monitoring for

up to five years and provide funds to an established endowment for MLT to perform long-term management of the restored habitats.

3.1.1 Planting Methods

Restoration on the Saunders Landing eastern parcel would consist of installation of native plant species typically associated with the Bishop Pine Forest Alliance SNC/ESHA. Restoration planting areas have been identified in SNRC's *Hearn Extension Resource Informational Report* (2020), Section 2.2., Figure 18 (Appendix D). To avoid planting bishop pine in the state R/W, as per Caltrans' policy, planting is proposed entirely on the eastern parcel in the non-native grasslands that border the existing bishop pine forest (Appendix A, Figure 6).

Due to the consideration of bishop pine decline, strict field hygiene protocols would be in place for all work performed during implementation, maintenance, and monitoring. This would include disinfecting tools, boots, and any other equipment with 70% isopropyl alcohol (or another appropriate disinfectant) and ensuring any materials brought on-site would be free from any pathogenic agents. Additionally, any work involving pruning, cutting, or chipping of wood from pine trees (*Pinus* species) would follow the *Draft Best Management Practices for Treework on Bishop and Monterey Pine in Mendocino County*, modified for this project (Appendix G).

3.1.1.1 Planting Palette

Due to the risk presented by variables affecting bishop pine along the Mendocino coast, Caltrans proposes to plant bishop pine along with other native tree/understory species that are common co-dominant and co-occurring species. These include grand fir, tanoak, Douglas-fir, coffeeberry, California blackberry, and more (Table 4). Caltrans Revegetation Specialist, Mitigation Specialist, and/or Project Biologist along with crew from the California Conservation Corps, may also collect and plant seeds from on-site mature bishop pine trees that appear to be resistant to locally common pathogens and where seedlings are recruiting naturally into the population. If at the end of the monitoring period, the bishop pines are showing signs of decline, then the co-dominant and co-occurring species would be in place to help meet the goal of restoring functional habitat.

Table 4. Planting Palette with Proposed Planting Densities. Approximate number of plants to be installed, and target number of plants at end of Year 5 based on percent survival proposed in the success criteria.

Scientific Name	Common Name	Planting Densities	Approximate Number to be Planted (based on planting density per 1.1 acres)	Percent Survival Required by Success Criteria	Target Number of Each Category
Dominant Species					
Pinus muricata	bishop pine	12 feet on center	250	50	125
Co-dominant Trees					
Arbutus menziesii	madrone	12 feet on center	67	70	47
Notholithocarpus densiflorus	tan oak				
Pseudotsuga menziesii var. *menziesii*	Douglas fir				
Co-occurring Shrubs					
Baccharis pilularis ssp. *consanguinea*	coyote brush	6 feet on center	67	70	47
Gaultheria shallon	salal				
Frangula californica ssp. *californica*	California coffeeberry				
Lonicera hispidula	pink honeysuckle				
Morella californica	California wax myrtle				
Rubus ursinus	California blackberry				
Vaccinium ovatum	evergreen huckleberry				
Totals			**384**		**219**

3.1.2 Planting and Watering Schedule

Mitigation activities would be conducted and overseen by a Caltrans Revegetation Specialist, Mitigation Specialist, and/or Project Biologist. Crews from the California Conservation Corps would assist Caltrans with the initial plantings followed by watering and maintenance until the agency approved success criteria have been achieved.

3.1.2.1 Planting

To minimize plant stress, container plants would be installed at a time when plants are dormant, to the extent practicable (fall-winter). Replacement planting, if needed, would occur during the dormant season, generally a year after the initial planting.

3.1.2.2 Watering

Watering would be conducted during the first two dry seasons following each planting (typically mid-May through October or November, approximately every other week), and/or any extensive dry period during the first two years following initial planting and replanting.

3.1.3 Invasive Plant Management Plan

Weeding will be conducted by hand and/or mechanical methods during the monitoring period to help installed and native volunteer and resprouting plants successfully establish. Weeding is typically performed once in the spring and once in the late summer or fall, or on a schedule appropriate to species' phenological timing to prevent spreading of weed seeds. Ongoing treatment of invasive plant species during the maintenance and monitoring period would be conducted by the California Conservation Corps, or other similar restoration entity, and overseen by a Caltrans Revegetation Specialist, Mitigation Specialist, and/or Project Biologist. Table 5 below outlines the anticipated timeline for the Bishop Pine Restoration Project including implementation, watering, and maintenance and monitoring.

Table 5. Anticipated Implementation, Watering, and Maintenance and Monitoring Timeline for Saunders Landing Bishop Pine Restoration Project.

Mitigation Task	Years				
	1	2	3	4	5
Initial Planting (IP)	X				
IP Watering	X	X			
Replanting (RP) (if necessary)		X	X	X	
Maintenance and Monitoring*	X	X	X	X	X

* First year monitoring may take place in the same calendar year as the initial planting as long as plant installation occurs before March 1st.

- If the first monitoring occurs in the same calendar year, it will occur at the end of summer to allow establishment of plants during the growing season.
- If monitoring occurs at least one year after planting, it will occur between May and end of summer.

Chapter 4. Success Criteria, Monitoring and Reporting

Caltrans would be responsible for five years of stewardship including the implementation (planting), maintenance, and monitoring periods (Table 6). The mitigation activities would be evaluated annually using the performance and success criteria described below. For this HMMP, a "performance criterion" is a measure that indicates whether the restoration and mitigation goals are on a trajectory to being attained at a given point in time which will be used to guide site maintenance activities. A "success criterion" is a measure that indicates whether the restoration and mitigation goals have been achieved at the end of the monitoring period. The performance and success criteria for the off-site mitigation project at the Saunders Landing Bishop Pine Restoration Project are outlined below.

4.1 Saunders Landing Bishop Pine Restoration Project

4.1.1 Performance and Success Criteria

4.1.1.1 Performance Criteria

Year 1: The Saunders Landing Bishop Pine Restoration Project will be implemented. Performance criteria for Year 1 will include successful installation of plants, supplemental watering, and Year 1 monitoring. Monitoring will occur after implementation and one full growing season, most likely in the late summer or fall (August to November) of Year 1. Implementation and maintenance activities and monitoring results will be included in the Year 1 Interim Report.

Years 2-5: For Years 2 through 5 of the maintenance and monitoring period, yearly monitoring of the mitigation site will occur to evaluate the success of all woody plants installed to ensure that the bishop pine restoration is on trajectory to meet the success criteria as described below.

4.1.1.2 Success Criteria

Year 5: By the fifth and final year of the maintenance and monitoring period, the criteria for restoration will be based on the survival of the planted and woody volunteer woody trees and shrubs.

- 50% survival of bishop pine species based upon original number of individual plants installed.
- 70% survival of co-dominant trees, shrubs, and/or woody vines.

4.1.1.3 Success Criteria Discussion

Due to the prevalence of bishop pine decline along the Mendocino Coast, there is a risk that the Saunders Landing Bishop Pine Restoration plantings could be impacted and could suffer higher rates of symptoms and mortality than found on non-bishop pine restoration projects. Caltrans will plant 1.1 acres with bishop pine and associated co-dominant and co-occurring species. Planting bishop pine at a higher than typical density (e.g., 6 feet on center rather than 12 feet on center) was considered to offset the potential for high mortality. However, concerns about poor forest health due to overcrowding, increased pathogen loads, and weak growth habits due to competition for light eliminated this consideration. Instead, adjusted percent survival criteria were developed with final numbers of living trees and shrubs in mind. Planting 1.1 acres at 12 feet on center for bishop pine results in 250 trees to be installed. With a 50% survival threshold, 125 trees would be the minimum numbers of bishop pine restored. For co-dominant and co-occurring trees and shrubs planted at 12 feet and 6 feet on center (respectively), 67 non-bishop pine trees and 67 shrubs would be planted. With a 70% survival threshold, 47 trees and 47 shrubs would be the minimum to survive. This would result in a minimum of 219 Bishop Pine Forest Alliance SNC/ESHA associated common woody native plant species to be restored.

4.1.2 Monitoring

Caltrans would conduct annual monitoring[6] of the mitigation area to ensure the success criteria is being met and to implement adaptive management if necessary. Monitoring would characterize extant conditions in the field, and data collection will be reproducible and collected in a consistent manner. Monitoring would be conducted annually during the maintenance and monitoring period by a Caltrans Revegetation Specialist, Mitigation Specialist, Project Biologist, and/or other staff with appropriate field survey experience.

[6] First year monitoring may take place in the same calendar year as the initial planting as long as plant installation occurs before March 1st.

- If the first monitoring occurs in the same calendar year, it will occur at the end of summer to allow establishment of plants during the growing season.
- If monitoring occurs at least one year after planting, it will occur between May and end of summer.

4.1.2.1 Monitoring Methods

4.1.2.1.1 Sampling

Census monitoring will be conducted after initial revegetation planting to assess establishment of native plants in the revegetation areas (frequency discussed below). Installed, volunteer, and resprouting native woody plants that are alive during monitoring will be counted, by species. Establishment of volunteer and resprouting native species will be included in the total plant count since these plants indicate revegetation is successfully occurring and a site is self-sustaining. Additionally, presence of volunteer and resprouting native plants will affect whether and how much replanting is needed, since overplanting is a concern.

4.1.2.1.2 Photo Monitoring

Restoration implementation and progress will be documented through photo monitoring once annually throughout the entire maintenance and monitoring period. Additional or alternate photo points may need to be installed if the original photo points fail to capture enough visual data.

4.1.3 Reporting

Caltrans will prepare and submit monitoring reports following Years 1, 3, and 5. Reports will be prepared by a qualified Revegetation Specialist, Mitigation Specialist, and/or Biologist and each report will document the condition of the mitigation project area and native plant revegetation progress, with photographs taken from the same fixed points in the same directions. A "performance evaluation" section will be included where monitoring results are used to evaluate the status of the bishop pine restoration efforts in relation to the final success criteria in this HMMP. Additionally, the report will include recommendations for work for the subsequent year needed to improve mitigation success. The final report will summarize prior reports, provide a timeline of the overall progress and success and include sufficient detail to evaluate compliance with the specified goals, objectives, and success criteria set forth in this HMMP.

Each monitoring report will include the following information:

- A list of the names, titles, and companies of the people who prepared the content of the annual report and participated in monitoring activities that year

- A reference of the resource agency permits and any subsequent letters of modification, as an appendix
- A summary of the mitigation project location and description
- Maps of the general mitigation project location and mitigation areas
- A performance evaluation section in which monitoring results are discussed to evaluate bishop pine restoration efforts in relation to performance and success criteria
- Photo documentation and maps of photo points of the mitigation site and reference site(s) at established, fixed points
- Sufficient detail to evaluate comprehensive compliance with the HMMP's goals, objectives, and success criteria
- Adaptive management recommendations, including discussion of areas with inadequate performance and recommendations for remedial action

4.1.4 Implementation, Monitoring, and Reporting Schedule

Table 6 below illustrates the proposed timeline to complete the initial treatment, maintenance and monitoring, and reporting tasks to meet compensatory mitigation requirements for the mitigation project. Adaptive management tasks have been included in case efforts are required following the conclusion of the maintenance and monitoring period. If required, Caltrans will submit a revised HMMP (amendment) within 90 days of the submittal of the final monitoring report that will include details on how to remediate any failed mitigation efforts.

Table 6. Saunders Landing Bishop Pine Restoration Project Schedule including Implementation, Maintenance, Monitoring, Reporting, and Adaptive Management (if necessary).

Mitigation Task	Years									
	1	2	3	4	5	6	7	8	9	10
Implementation										
Initial bishop pine planting	X									
Identification of fixed restoration photo points	X									
Maintenance and Monitoring										
Annual maintenance and monitoring of bishop pine restoration area	X	X	X	X	X					
Report submittal (Interim Reports after Years 1 & 3; Final Report after Year 5)		X		X		X				
*Adaptive Management (**if necessary**) **										
Submittal of revised HMMP (within 90 days of final report)						X				
Implementation of adaptive management measures						X	X	X	X	X
Adaptive management reporting							X		X	

*If required, timeline for adaptive management activities to be negotiated following submittal of revised HMMP.

4.2 Remedial Actions and Adaptive Management

Adaptive management requires observing long-term trends and responses to management activities. For the purposes of this HMMP, adaptive management is a learning and decision process employed in response to observed significant changes that have detrimental effects on the mitigation goals and objectives. Adaptive management does not represent an end, but rather a means to more effective management decisions and enhanced benefits to the resources. Its true measure is in how well it helps meet environmental goals, increases scientific knowledge, and reduces tensions among stakeholders.

The adaptive management strategy for the mitigation sites will be used to evaluate and work within the constraints of the normal, dynamic environmental conditions (e.g., high coastal winds, pests, pathogens) and natural processes of the mitigation site. Mitigation will be allowed to conform to this dynamic environment as it responds to the normal conditions and natural processes. Adaptive management actions will avoid creating situations that require recurring intervention to redirect or compete with the site's normal conditions and natural processes.

4.2.1 Changing Habitat Conditions

Bishop pine forests along the coast in Mendocino County are undergoing severe decline, due to pathogens, pests, invasive species, and compounding factors such as drought and fire suppression. Changed habitat conditions that may warrant adaptive management include, but are not limited to, the following:

Invasive Species, Pests, and/or Pathogens: New invasive pathogens, plants or animals that invade the mitigation lands may need to be managed adaptively. Caltrans acknowledges possible difficulties in achieving restoration success due to the presence or introduction of disease such as pine pitch canker and/or *Phytophthora sp.*, pests (e.g., *Ips* beetles), and climatic patterns (e.g., droughts). Additionally, target invasive plant management activities could increase the opportunity for new invasive species to become established which may also trigger adaptive management.

***Reference sites*:** Reference site(s) may be chosen by Caltrans to use as a tool for determining whether adaptive management is needed at the mitigation sites. Before reference sites are finalized, Caltrans will seek approval from regulatory agencies for use of the location(s) and the site(s) will be monitored using an appropriate sampling as described in Section 4.1.2.1.1. Additional reference site monitoring may be conducted as needed if the site is showing signs of not reaching success criteria or if the site requires an adaptive management strategy.

Reference site monitoring would help Caltrans to determine if changes are taking place around the Mendocino coast region that may explain why the site may not be performing as expected (i.e., drought, pathogens, pests, etc.).

4.2.2 Failure to Meet Success Criteria

If the final monitoring report indicates that the restoration activities have been unsuccessful, in part or in whole, based on the approved success criteria, Caltrans will submit within 90 days a revised or supplemental HMMP for the review and approval by the agencies to compensate for those portions of the original mitigation efforts which did not meet the approved success criteria. The revised or supplemental HMMP will be prepared by a qualified restoration specialist and will specify measures to remediate those portions of the original approved HMMP that have failed or have not been implemented in conformance with the original approved HMMP. The revised plan shall be processed as an amendment to the corresponding project permit, unless determined it is not legally required by the permitting agencies. Caltrans will coordinate with MLT and the regulatory agencies to review and gain approval for the remedial or adaptive management activities. Caltrans will be responsible for implementing the adaptive management strategy. All remedial or adaptive management measures will be documented in follow up monitoring reports. If necessary, Table 6 above outlines the tasks and timelines to implement required adaptive management measures.

Chapter 5. Long-Term Management Plan

5.1 Purpose

The purpose of the long-term management of Saunders Landing is to ensure continued success of the bishop pine restoration area and protection of the parcels in perpetuity from future development or degradation. Caltrans is in the process of acquiring Saunders Landing for MLT who will be assuming ownership of the parcels. Saunders Landing will offer the opportunity to preserve sensitive coastal resources, provide public access to nearby coastal areas (e.g., Hearn Gulch Beach, Saunders Reef SMCA MPA and ASBS State Water Quality Protection Area) and connect the CCT from RCLC lands immediately south of Saunders Landing through other publicly owned lands approximately one mile north. MLT will implement long term management per the endowment requirements.

5.2 Responsible Parties

Caltrans is responsible for the HMMP mitigation and monitoring activities until the success criteria are achieved and approved by the agencies. Once Caltrans and the resource agencies have agreed the mitigation criteria has met the performance standards per the off-site HMMP, MLT will be responsible for the long-term management of the restored bishop pine area. Caltrans will include endowment funds to an established endowment account for Saunders Landing for MLT to use to monitor and maintain the restored bishop pine areas per tasks outlined in this HMMP.

5.2.1 Property Owner and Land Manager

The property is currently under private ownership. The owner, Mr. Kenneth LaBoube, passed away in March of 2022; however, before his passing, RCLC obtained a Letter of Mutual Interest from Mr. LaBoube to sell the subject properties. MLT and RCLC have since obtained a second Letter of Mutual Interest from the landowner's heirs to document their continued intent to sell the property. Furthermore, Caltrans R/W has entered into a Lease to Purchase Option with the estate administrator for the acquisition of the parcels for an anticipated February 2024 acquisition. MLT will manage the land and execute activities required within the endowment. The endowment's purpose is to fund MLT's long-term maintenance and management of the parcels. Part of the maintenance activities funded by the endowment include, but are not limited to:

- Evaluating bishop pine stand health and conducting management actions as necessary.
- Coordinating general inspections of the mitigation properties annually as required by this HMMP.
- Coordinating trash removal.
- Arranging for any corrective action necessary to drive the performance of the habitat, as required by this HMMP.
- Submitting yearly general inspection reports regarding the compliance and maintenance status of the mitigation to Mendocino County and CDFW.
- Working with the resource agencies when necessary to carry out the long-term management.

5.2.2 Qualified Personnel/Monitoring Biologist

MLT will utilize qualified staff or contractors to implement maintenance and monitoring activities. MLT staff and/or contractors will be familiar with California flora and fauna and will have knowledge regarding the various special status species and their ecology. MLT staff and other Qualified Personnel/Monitoring Biologist responsibilities may include, but are not limited to:

- Evaluating bishop pine health and recommending management actions, if needed.
- Evaluating site conditions and recommending remedial action.
- Assisting in reviewing or planning restoration activities, use of the mitigation properties for education, and other tasks such as grant proposals.

5.2.3 Site Protection and Endowment Holder

To provide long-term site protection of the mitigation parcels, mitigation lands will be encumbered via an Offer to Dedicate Fee Title and Declaration of Restrictive Covenants (OTD) that will be placed over the mitigation site. Saunders Landing will be protected by MLT to include the limited activities such as protection and restoration of wetland habitat and, to the extent not inconsistent with these purposes, for open space, passive recreational public access, and environmental education and research. Any public or scientific use of Saunders Landing would be at the discretion of MLT. The OTD will restrict the mitigation parcels in perpetuity, include allowed uses and prohibition of development as defined in section 30106 of the CCA, be free of liens or other encumbrances, and include formal legal

descriptions. The OTD will run with the land in favor of the People of the State of California, binding successors and assigns of the landowner in perpetuity.

Caltrans will provide the long-term endowment and adaptive management funds to be held by MLT. MLT will utilize the detailed long-term management cost estimate included in Appendix E. The provided endowment is an estimate of potential long-term management costs and is subject to change per the details of the tasks outlined in the PAR.

5.3 Management Approach

The general management approach to the long-term maintenance of the mitigation properties will be to maintain quality habitat for the newly restored Bishop Pine Forest Alliance SNC/ESHA through ongoing monitoring and maintenance of key environmental characteristics. More specifically, an adaptive management approach will be used (if needed) to incorporate changes to management practices. The overall adaptive management strategy will be to evaluate and work within the constraints of the normal conditions and natural processes of the mitigation site. These normal conditions and natural processes create a dynamic environment to which the landscape will be allowed to conform. Adaptive management actions will avoid creating situations that require recurring intervention to redirect or compete with normal conditions and natural processes. Natural recruitment and succession and type changes in natural resource habitats will be accepted as part of this approach.

Caltrans, with the assistance of the MLT, has developed a PAR with appropriate endowment activities/actions that are required to ensure resources present on Saunders Landing are protected in perpetuity. The PAR identified four categories wherein main tasks associated with the long-term management of the mitigation parcels will be completed. These categories include Habitat Maintenance, Reporting, and Administration. Habitat maintenance funds will be used for a variety of purposes including bishop pine stand health evaluation and management. Reporting funds will be provided by Caltrans to be used to develop and submit the annual general inspection report to the agencies. Administration funds will be used to generate annual management and fiscal reports. Tasks pertaining to each category are detailed in the following sections.

5.3.1 Habitat Maintenance

Following the restoration of the Bishop Pine Forest Alliance SNC/ESHA on Saunders Landing, MLT will be responsible for continuing to monitor and maintain the restored

habitats. The best approach for the management of the bishop pine community at Saunders Landing will be completed through yearly assessments of the existing and restored bishop pine communities with planned maintenance (if needed). Along with yearly evaluations, Caltrans will provide funding to conduct regular maintenance of the restored bishop pine areas though adaptive management may be required due to impacts from environmental factors (e.g., droughts), associated disease pathogens (e.g., pitch canker), and pests (e.g., *Ips* beetles).

5.3.2 Reporting

Reporting funds will be provided to MLT to create general inspection reports. General inspections of the Saunders Landing parcels will be completed every year by MLT personnel with a general inspection report to be completed and submitted to the agencies. Information pertaining to the general inspections can be found in Section 5.4.2 below with reporting requirements outlined in Section 5.4.4.

5.3.3 Administration

Caltrans will provide endowment funds to complete administrative tasks including ongoing mitigation project oversight. Mitigation project management tasks will include, but may not be limited to, reconciliation of the endowment budget, tracking monthly expenses for required fiscal reporting, coordination with contractors for specialized tasks and/or annual maintenance work, and development of management plans.

5.3.4 Education and Public Access

The mitigation property may represent an opportunity for scientific research or for public education. Individuals or groups wishing to use the mitigation properties for educational purposes will obtain the consent of and coordinate with MLT. If the education activities are passive in nature, such as a discussion of plants and animals, the consent of MLT may be sufficient. If active use other than restoration activities of the mitigation parcel is envisioned, MLT will review for approval. MLT has the right to refuse a request to use the mitigation properties if it is determined the use may have a negative impact on any habitats or wildlife on the mitigation properties.

5.3.5 Permitted/Prohibited Uses and Activities

It is understood that the following activities are prohibited, except as needed to accomplish the management and maintenance activities in this HMMP. In addition, if any of these

activities must be undertaken because of special circumstances, they may be reviewed and approved by the resource agencies on a case-by-case basis.

Access to the Mitigation Area: The intent of the long-term management plan is to restore Bishop Pine Forest Alliance SNC/ESHA on the eastern parcel. The eastern parcel on Saunders Landing will be fenced off to prohibit access to the parcel to protect the sensitive habitats. Off-trail pedestrian access to the mitigation area will be discouraged through fencing. Limited access to habitats/locations on the Saunders Landing parcels may be allowed on a case-by-case basis, subject to the approval of MLT.

Removal of Native Vegetation: No killing, removal, or alteration of any existing native vegetation will be allowed in the mitigation area except as described in this HMMP and/or as reasonably necessary for MLT to conduct the land management activities.

Burning and Dumping: No burning will be allowed in the mitigation area. This prohibition does not include controlled burning to achieve mitigation goals, as a method to manage nonnative and invasive species (including invasive debris removal) and/or diseased vegetation (e.g., bishop pine). No dumping of rubbish, garbage, or any other wastes or fill materials will be allowed in the mitigation area. This prohibition excludes fill material such as clean dirt that may be necessary to carry out the land management of the property according to this HMMP. No dumping of any material in jurisdictional waters shall be allowed without appropriate resource agency authorization.

Irrigation: Irrigation may be used as a maintenance measure during the long-term management period as a tool for habitat intervention (e.g. invasive spp. management) but will not be used for forage production or to sustain wetlands in perpetuity.

Disking: The plowing, disking, cultivation, ripping, planting, sowing, irrigation, or any other conversion or disturbance of the mitigation area is prohibited, except for activities to rehabilitate or preserve the mitigation.

New Trails: Trails that are not designed and permitted by the resource agencies, and that may have a negative impact on the mitigation area, are prohibited.

Equipment or Fuel Storage: The storage or disassembly of inoperable automobiles, machinery, equipment, trucks, and similar items for purposes of storage, sale, or rental of space for any such purpose is prohibited. The use, dumping, storage, or other disposal of

non-compostable refuse, trash, sewer sludge, or unsightly or toxic or hazardous materials or agrichemicals is prohibited.

Use of Pesticides and Chemical Agents: Use of any pesticides, herbicides, fungicides, insecticides, or any other chemical agents used to kill or suppress plants, animals, or fungi in the mitigation area is highly discouraged though uses shall only be approved in specific circumstances and in close coordination with the resource agencies.

Use of Motor Vehicles: No motorized vehicles will be ridden, used, or permitted on any portion of the mitigation area with the following exception: motorized vehicle use will be restricted to that required for mitigation area maintenance purposes such as habitat management and monitoring and emergency or law enforcement situations requiring access by medical, fire, or law enforcement vehicles.

Construction Activities: No construction will be allowed in the mitigation area except for any activities mentioned in this HMMP.

Introduction of Nonnative Species: No seeding, planting, or introduction of nonnative grasses, clovers, or any other plant species is permitted. Intentional or reckless introduction of exotic plant or animal species that may threaten to impair the mitigation is prohibited.

Grazing: If Caltrans, MLT, or other subsequent landowner(s) intend to use Saunders Landing for grazing activities, Caltrans, MLT, or subsequent landowners shall submit a Grazing Management Plan prior to the undertaking of any grazing for the review and approval of the agencies. The Grazing Management Plan shall be prepared by a qualified expert(s) in grazing management and restoration ecology, and shall consider the habitat enhancement, restoration, and management goals of this HMMP in recommending a grazing regime that is compatible with those goals.

5.4 Inspection, Monitoring, and Reporting

5.4.1 Schedule

Long-term management of Saunders Landing by MLT will occur when the agencies have agreed that Caltrans has met the HMMP performance standards at the end of the maintenance and monitoring period (after Year 5). The following schedule outlines the long-term management tasks to be completed by MLT:

- MLT will conduct annual assessments of the restored bishop pine areas.

- MLT will treat or remove dead or diseased bishop pine vegetation every five years or as needed.
- In coordination with the Saunders Landing Off-site Habitat Mitigation and Monitoring Plan (Caltrans 2023c), MLT will conduct one general inspection each year of the Saunders Landing property.
- Follow-up inspections of the mitigation properties will occur as often as needed to protect the mitigation.
- Complete annual general inspection reports and submit to agencies. MLT will coordinate site photographs of the bishop pine restoration mitigation area. The intent of the photographs will be to capture the ongoing success/challenges of the bishop pine restoration areas.

Table 7 below outlines the proposed Saunders Landing mitigation inspection, monitoring, and reporting schedule.

5.4.2 General Inspections

In coordination with the Saunders Landing Off-site Habitat Mitigation and Monitoring Plan (Caltrans 2023c), general inspections will be conducted every year by qualified MLT personnel. MLT mitigation parcel inspections will concentrate on an evaluation of the following: erosion, trash accumulation, invasive species, evidence of unauthorized use of the site, and/or vandalism that jeopardizes the property. The entire perimeter of the restored areas will be covered, as well as meandering transects through its interior.

Photo documentation will also occur at identified locations throughout the mitigation site. Permanent photo points for taking photographs will be established, and a site map showing the photo point(s) will be prepared for the mitigation project file. Representative photographs will be taken once per year during the same season. If any problems are identified, follow-up inspections will be done to closely track the problem as well as to track that any employed remedial actions are effective. MLT will notify all permitting agencies if anything problematic is identified on the property during the annual general inspections or otherwise.

Table 7. Proposed Mitigation Inspection, Monitoring, and Reporting Schedule for Caltrans and MLT for the Saunders Landing Bishop Pine Restoration Project.

Mitigation Task	Years										
	1	2	3	4	5	6	7	8	9	10	11+
Caltrans (Initial Treatment)											
Initial bishop pine plantings	X										
Bishop pine maintenance and monitoring	X	X	X	X	X						
Submittal of Interim (after Years 1 & 3) and Final Reports (after Year 5)		X		X		X					
MLT (Long-term Management Period)											
General Inspections							X	X	X	X	X
Bishop pine restoration area monitoring							X	X	X	X	X
Bishop pine management (if necessary)											X
Submittal of General Inspection Report							X	X	X	X	X

5.4.3 Biological Monitoring

Biological monitoring for Saunders Landing under this HMMP will include annual monitoring for the bishop pine restoration areas. MLT staff or contractors will conduct ocular surveys to ensure that the success criteria for the bishop pine restoration area continue to be met. Results from the annual survey will be summarized in the annual monitoring report (see Section 5.4.4). MLT will coordinate surveys, with photographs, in Year 1 of the long-term maintenance period to establish baseline conditions for future surveys. Bishop pine restoration survey and management activities (if necessary) will be provided to the regulatory agencies within the annual general inspection report.

If MLT determines there is a decline in the health of recently installed plants for the mitigation project, MLT shall work with the regulatory agencies on selection of applicable reference sites as consistent with Section 4.2.1 above. If results show a decline in the health of the planted bishop pine and/or codominant species, MLT shall coordinate with the regulatory agencies on a plan to employ remedial actions and adaptive management strategies. Given potential issues with bishop pine on the Mendocino coast, if MLT notes a decline in the species, a potential solution to ensure success of the restored area would be removal of diseased/dying/dead bishop pine trees and restoration of codominant species of the Bishop Pine Forest Alliance SNC/ESHA. Continued success of the mitigation areas should be based on ongoing research of the Bishop Pine Forest Alliance SNC/ESHA such as those noted by CNPS (2023).

5.4.4 Reporting and Administration

MLT will submit an annual written report to the interested agencies, including Caltrans, by December 30th. The annual report will summarize all annual and long-term maintenance efforts, along with any potential land management changes.

The general inspection report will include:

- A map of Saunders Landing with identified bishop pine restoration areas.
- Representative photos documenting the status of the Saunders Landing parcels.
- Observations from the annual general inspections (e.g., vandalism, erosion, etc.).
- Documentation of maintenance activities accomplished.
- Bishop pine restoration annual surveys and management activities (if necessary).
- Endowment accounting.
- Recommendations for altered management practices as needed.

5.5 Transfer of Responsibilities and Plan Modifications

5.5.1 Transfer of Management Responsibilities

Any subsequent transfer of management responsibilities under the long-term management plan to a different land manager will be requested in writing by MLT. The request will be made to the regulatory agencies and Caltrans, which will issue written approval that will be incorporated as an amendment into this long-term management plan. Any subsequent land manager assumes responsibilities described in this long-term management plan unless otherwise amended in writing by the resource agencies.

5.5.2 Amendments to the Management Plan

MLT may request to coordinate with Caltrans to amend or revise the long-term management plan to better meet management objectives and preserve the habitat on the mitigation parcel. Any proposed changes to the long-term management plan described in this HMMP will be discussed with the regulatory agencies and designed with input from all parties. Amendments will be approved by the regulatory agencies in writing, will require Caltrans' management consensus, and will be implemented by MLT.

References

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, D. H. Wilken (eds). 2012. *The Jepson Manual: Vascular Plants of California, Second Edition*. Berkeley, CA: University of California Press, Berkeley.

California Department of Fish and Wildlife (CDFW). 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959. Accessed December 2022.

_____. 2022. California Natural Community List. Available: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities.Updated: July 2022. Accessed October 2022.

California Department of Transportation (Caltrans). 2021. *Natural Environment Study for the Gualala Shoulders Project.*

_____. 2023a. *Environmentally Sensitive Habitat Area Assessment for the Gualala Shoulders Project.*

_____. 2023b. *On-site Revegetation Plan for the Gualala Shoulders Project.*

_____. 2023c. *Saunders Landing Off-site Habitat Mitigation and Monitoring Plan*.

California Invasive Plant Council (Cal-IPC). 2023. *Cal-IPC Inventory.* Available: https://www.cal-ipc.org/plants/inventory/ . Accessed April 2023.

California Native Plant Society (CNPS). 2022. A Manual of California Vegetation. Sacramento. California. Available: https://vegetation.cnps.org/. Accessed November 2022.

_____. 2023. Inventory of Rare and Endangered Plants of California. Available: https://rareplants.cnps.org/. Accessed: May 1, 2023.

Cowardin, L. M., 1979. *Classification of Wetlands and Deepwater Habitats in the United States.* U. S. Department of the Interior, Fish and Wildlife Service.

Federal Geographic Data Committee (FGDC). 2013. *Classification of wetland and deepwater habitats of the United States*. FGDC-STD-004-2013. Second Edition. Wetlands

Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington DC.

Forsman, E.D., J. K. Swingle, R.J. Davis, B.L., B.L. Biswell, L.S. Andrews. 2016. Tree voles: an evaluation of their distribution and habitat relationships based on recent and historical studies, habitat models, and vegetation change Gen. Tech. Rep. PNW-GTR-948. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 119 p.

Giusti, G.A. 2014. Watching the demise of a coastal forest type – Bishop pine. A White Paper. California Forest Pest Council Winter. Available: http://cemendocino.ucanr.edu/files/199447.pdf. Accessed May 2023.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resource Agency. California Department of Fish and Game. Sacramento, CA. 156 pp.

Lichvar, R.W., N.C. Melvin, M.L. Butterwick, and W.N. Kirchner. 2012. National Wetland Plant List indicator rating definitions. ERDC/CRREL TR-12-1. U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, New Hampshire.

Spade Natural Resources Consulting. 2020. *Hearn Extension Resource Information Report*. Prepared for RCLC.

U.S. Army Corps of Engineers (USACE). 2020. *National Wetland Plant List, version 3.5*. Available: https://wetland-plants.sec.usace.army.mil/nwpl_static/v34/home/home.html. Accessed May 2023.

U.S. Department of Agriculture – Natural Resource Conservation Service (USDA-NRCS). 1999. *Soil Survey of Mendocino County, California, Western Part*. C.A. Rittiman, Jr. and T.Thorson.

_____. 2023. *Web Soil Survey.* Available: http://www.soils.usda.gov/survey. Accessed: May 1, 2023.

U.S. Fish and Wildlife Service (USFWS). 2023. National Wetlands Inventory. Available: https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper. Accessed: May 1, 2023.

Watershed Assessment, Tracking & Environmental Results System (WATERS). 2023. Environmental Protection Agency. Available: https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system. Accessed: May 1, 2023.

Western Regional Climate Center (WRCC). 2023. Period of Record Monthly Climate Summary – Fort Bragg, CA. Available: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3161. Accessed: May 1, 2023.

Williams, D. F. 1986. Mammalian species of special concern in California. Wildlife Management Division Administrative Report 86-1 (June 1986). California Dept. of Fish and Game, Sacramento, CA.

Zeiner, D. C., W. F. Laudenslayer, Jr., and K. E. Mayer (eds.). 1990. *California's Wildlife. Volume III: Mammals*. California Statewide Wildlife Habitat Relationships System. Sacramento, CA: California Department of Fish and Game.

Appendix A. Project Figures & Maps

Figure 1. Gualala Shoulders Project (01-0F710) Location Map.

Figure 2. Gualala Shoulders Project and Off-site Mitigation Locations.

Figure 3. Gualala Shoulders Project (01-0F710) BSA & ESL.

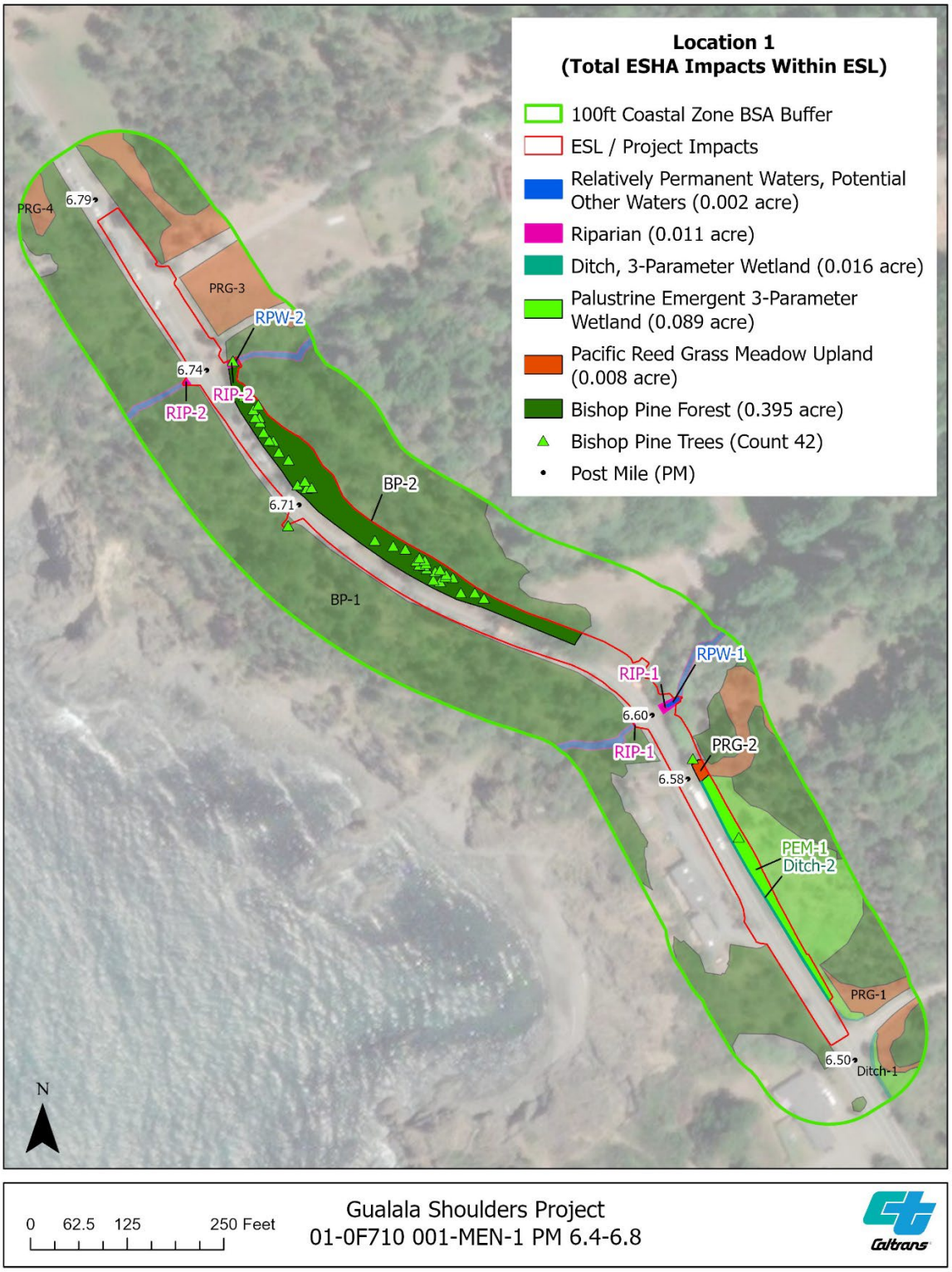


Figure 4. Gualala Shoulders Project (01-0F710) Location 1 Habitat/Resources Impact Map.

Figure 5. Gualala Shoulders Project (01-0F710) Location 2 Habitat/Resources Impact Map.

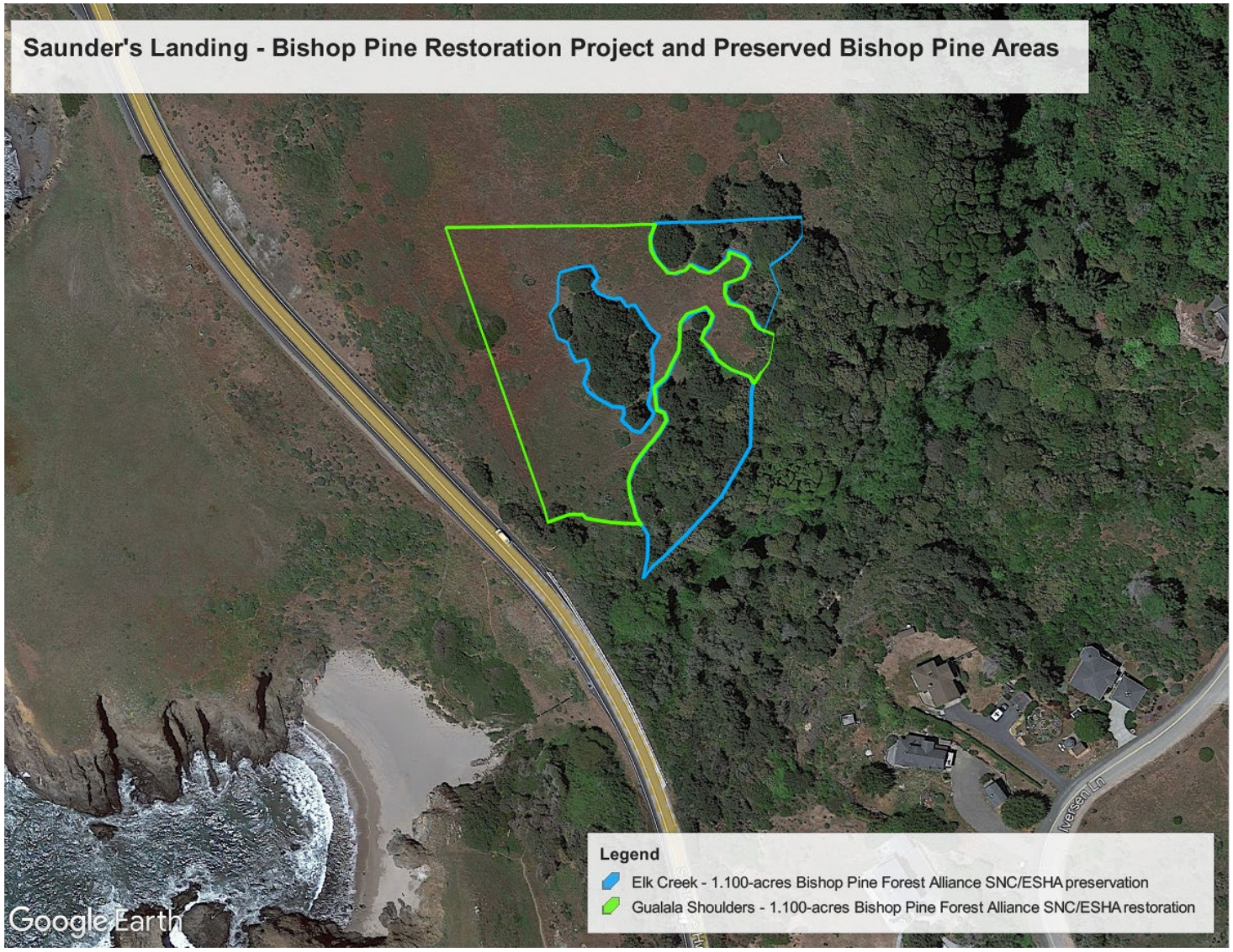


Figure 6. Saunders Landing Bishop Pine Restoration Project (green outline) and preserved bishop pine for Elk Creek Bridge Replacement Project (01-0E110) (blue outline).

Appendix B. CDFW LSAA and Mendocino County CDP Mitigation Discussion

Regulatory Background

Caltrans often develops mitigation for impacted resources that are under the jurisdiction of multiple agencies including, but not limited to, the California Coastal Commission (CCC) and/or Local Coastal Programs (LCP) for counties or cities with delegated authority, California Department of Fish and Wildlife (CDFW), United States Army Corps of Engineers (USACE), State Water Resources Control Board (SWRCB) and regional water boards (e.g., North Coast Regional Water Quality Control Board [NCRWQCB]), United States Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) Fisheries (or National Marine Fisheries Service [NMFS]), etc. To consolidate efforts and provide mitigation specific to each agency exercising jurisdiction for authorizing mitigation for project impacts, Caltrans has provided separate appendices for agencies with overlapping jurisdiction (e.g., CCC and CDFW; NCRWQCB and USACE). The purpose of this appendix is to describe Caltrans' mitigation approach for impacts associated with the Gualala Shoulders Project (01-0F710) (project) to resources under the jurisdiction of Mendocino County (appealable by the CCC) through the California Coastal Act (CCA) of 1976 and CDFW through the California Fish and Game Code Sections (§) 1600 et seq.

When a project will require fill in waters within the coastal zone, Caltrans must obtain a permit from the CCC or the city or county with coastal permit jurisdiction. The CCC oversees implementation of the CCA and the nationwide Coastal Zone Management Act (CZMA). The coastal zone extends three miles seaward and generally about 1,000 yards inland. In important and generally undeveloped areas where there can be considerable effects on the coastline from inland development, the coastal zone extends to a maximum of 5 miles inland from mean high tide line. In developed urban areas, the coastal zone extends substantially less than 1,000 yards inland. The CCA established a permanent State Coastal Commission which requires each local government within the coastal zone to prepare an LCP. Any development within the coastal zone requires a Coastal Development Permit (CDP) to be submitted either to a local government with delegated authority by the CCC to oversee coastal resources according to an approved LCP or to the State CCC (depending on location of project). Under the current scope, the project is within the jurisdiction of Mendocino County's LCP therefore, a County CDP would be required for the project.

Waters may also be subject to jurisdiction of CDFW in accordance with Fish and Game Code §1600-1607. CDFW regulates activities that would alter the flow, bed, channel or bank of streams and lakes by issuing Lake and Streambed Alteration Agreements (LSAA). In riparian areas, CDFW jurisdictional limits are usually delineated by the top of the stream or

lake banks, or the outer edge of riparian vegetation; whichever is wider. Waters under jurisdiction of the USACE may or may not be included in the area covered by a LSAA obtained from the CDFW. The California Fish and Game Code §1602 requires any person, state, or local governmental agency, or public utility to notify CDFW before beginning any activity that would substantially modify a river, stream, or lake. This includes intermittent streams and watercourses with a subsurface flow. To notify CDFW, a notification package must be completed and submitted with the appropriate fee to the CDFW Regional Office that serves the county where the project would take place. Under the current scope of work, a CDFW LSAA would be required for the project.

Mitigation Requirements

As detailed in Section 1.1 of the project's Habitat Mitigation and Monitoring Plan (HMMP), the project will impact a variety of resources under the jurisdiction of multiple agencies including Mendocino County and CDFW. This appendix will address impacts under the jurisdiction of Mendocino County and CDFW specifically to meet requirements of compensatory mitigation for the project's CDP and LSAA. These impacts include waters of the U.S./State which include non-wetland waters and 3-parameter wetlands, State riparian areas, and upland/non-riparian Sensitive Natural Communities (SNC)/Environmentally Sensitive Habitat Areas (ESHAs) including Pacific Reed Grass Meadow (*Calamagrostis nutkaensis*) and Bishop Pine Forest Alliance (*Pinus muricata*) (Table 1).

The impacts to waters of the U.S./State, riparian habitats, and SNC/ESHAs will be mitigated on-site within the limits of the project via in-kind replacement, use of contracted credits from the Mendocino Coast Mitigation Bank (Bank), and through permittee-responsible mitigation (PRM) off-site at Saunders Landing through substantial restoration as described in Chapters 3 and 4 of the HMMP. Mitigation activities will be carried out either through a Landscape Contract or by the California Conservation Corps. Mitigation work will be overseen and quality control will be conducted by Caltrans Revegetation/Mitigation Specialists, Landscape Architects, and/or Project Biologists.

The following sections provide details associated with the project mitigation which include restoration and revegetation for both on-site offsets and proposed off-site mitigation.

Table 1. CCC and CDFW jurisdictional resources impacted by Gualala Shoulders Project.

Jurisdictional Feature	Habitat Type[1]	Impacts (Acres)[2]		
		Temporary	Long-Term Temporary	Permanent
Clean Water Act (CWA) Wetland	CWA 3-Parameter Wetland (PEM-1 & Ditch-2)	-	0.0097	0.1246
Non-Wetland Waters	Relatively Permanent Waters (RPW-1, RPW-2 & RPW-4)	0.0034	-	0.0079
	Ephemeral Drainage Ditch (Ditch-3)	0.0021	-	-
Wetlands/Non-Wetland Waters Total		***0.0055***	***0.0097***	***0.1325***
Riparian Areas	Coniferous Riparian (RIP-1 & RIP-2)	-	-	0.0109
Riparian Total		**-**	**-**	***0.0109***
Upland SNC/ESHA	Pacific Reed Grass Meadows (PRG-2)	-	0.0031	0.0050
	Bishop Pine Forest Alliance (BP-2, BP-3, & BP-4)	-	-	0.7959
Upland SNC/ESHA Total		**-**	***0.0031***	***0.8009***
Gualala Shoulders Project Totals		**0.0055**	**0.0128**	**0.9443**

Proposed On-site Offsets

Mitigation to compensate for temporary, long-term temporary, and permanent loss of waters of the U.S./State, including ditch wetlands and non-wetland Relatively Permanent Waters (RPW) and an ephemeral drainage would be partially offset on-site (Table 2). As applicable, and as based on final design and impacts, wetlands would be planted with appropriate wetland vegetation as feasible based on wetland location and composition. Based on the extent of the proposed impacts and current conditions at the project location, a <1:1 wetland mitigation ratio is proposed to be completed on-site (0.0097 acre) to partially compensate for

[1] Feature types for three-parameter wetlands are identified by their corresponding system, subsystem and class in accordance with Classification of Wetlands and Deepwater Habitats of the United States (FGDC 2013).

[2] Caltrans defines temporary impacts are those in which restoration begins within one year of the first date of impact. Long-term temporary impacts occur when restoration begins more than one year after the first date of impact and there is a temporal loss of function. Permanent impacts are impacts that are not restorable. However, 0.0648 acre of long-term temporary (temporary) impacts to CWA wetlands have been recategorized to “permanent” as maintenance and monitoring cannot be performed following construction due to safety concerns.

total project impacts to wetlands (0.1343 acre). Due to safety issues to restoration crews from the California Conservation Corps and the Caltrans Revegetation North unit, Caltrans can only safely restore 0.0097 acre of impacts to waters of the U.S./State (wetlands). Since Caltrans cannot monitor all of the temporarily impacted wetland areas, 0.0648 acre of true long-term temporary impacts will be considered "permanent" though Caltrans does not anticipate full functional resource loss as is typical with true permanent impacts. As a result, the permanent impacts to waters of the U.S./State (wetlands) (0.1246 acre) will require off-site compensatory mitigation. Temporary impacts to waters of the U.S./State (non-wetland waters), including a non-RPW ephemeral drainage (Ditch-3) (0.0021 acre) and an in-kind culvert replacement within a RPW (RPW-1) (0.0034 acre), would be offset onsite at a 1:1 ratio (0.0055 acre) though there will be permanent loss of non-wetland RPW (0.0079 acre). In summary, in addition to on-site offsets, off-site compensatory mitigation will be required to fully mitigate for permanent impacts and temporal loss to wetlands and non-wetland waters.

Mitigation to compensate for permanent loss of riparian vegetation as a result of project construction would be offset entirely on-site through riparian restoration. As applicable, and as based on final design and impacts, any riparian areas would be planted with riparian vegetation with the goal to shade any waters and to replace habitat. Seed collection, cuttings, and/or plant salvage would occur prior to construction within the project footprint and adjacent riparian habitats in the Caltrans Right of Way (R/W). Based on the extent of the proposed impacts and current conditions at the project location, a 1.21:1 mitigation on-site re-establishment ratio is proposed to be completed on-site (0.0132 acre) to fully compensate for project impacts (0.0109 acre).

Mitigation to compensate for long-term temporary and permanent impacts to upland Pacific Reed Grass Meadow SNC/ESHA will be completed entirely on-site via revegetation. Based on the extent of the proposed impacts and current conditions at the project location, a 3.19:1 mitigation re-establishment ratio is proposed to be completed on-site (0.0258 acre) to fully compensate for project impacts (0.0081 acre). As a result, project impacts to Pacific Reed Grass Meadow SNC/ESHA will be fully mitigated and will not require additional off-site compensatory mitigation.

Bishop pine is facing declining populations in Mendocino County due to various reasons including, but not limited to, pathogens, insects, climate change, and removal of fire from the landscape, thus reducing natural recruitment of bishop pine. As bishop pine stands are reaching end of life, tree recruitment is important for the recovery of the SNC/ESHA. However, due to the susceptibility of bishop pine to diseases (e.g., pitch canker), there are

limitations on planting this species within the Caltrans R/W as diseased and/or dead trees pose a safety risk to humans and existing facilities. Revegetation efforts implemented as part of the project would include on-site protection where feasible, replanting using co-dominant tree species (e.g., grand fir [*Abies grandis*], tankoak [*Notholithocarpus densiflorus*], Douglas fir [*Pseudotsuga menziesii*]) and shrub species (e.g., coffeeberry [*Frangula californica*] and California blackberry [*Rubus ursinus*]) in the SNC/ESHA, and natural recruitment. On-site at the project site, Caltrans plans to complete restoration with 0.0393 acre of native conifer tree and shrub understory species associated with the Bishop Pine Forest Alliance SNC/ESHA. Due to the limited amount of available R/W following project activities, trees will be planted only if adequate space is available. In summary, in addition to on-site offsets, off-site compensatory mitigation will be required to fully mitigate for permanent impacts to Bishop Pine Forest Alliance SNC/ESHA.

The following on-site activities would be accomplished to satisfy the mitigation requirements for impacts occurring at the project:

On-site Mitigation for Waters of the U.S./State (wetlands/non-wetland waters): On-site mitigation activities will include recontouring roadside ditch wetlands, completing an in-kind culvert replacement within a RPW (RPW-1), and relocating a non-RPW intermittent drainage (Ditch-3). As mentioned above, Caltrans intends to restore all temporarily disturbed wetlands (0.0745 acre) on-site however due to safety concerns, Caltrans can only maintain and monitor 0.0097 acre of these temporarily impacted wetlands. The remaining temporarily impacted wetland acreage will be treated as "permanent" impacts and will be mitigated off-site at the Mendocino Coast Mitigation Bank. Temporary impacts to waters of the U.S./State (non-wetland waters), including a non-RPW ephemeral drainage (Ditch-3) (0.0021 acre) and an in-kind culvert replacement within a RPW (RPW-1) (0.0034 acre), would be offset onsite at a 1:1 ratio (0.0055 acre). Caltrans proposes to mitigate for the permanent impacts (0.0079 acre) to waters of the U.S./State (non-wetland waters) via the use of contracted non-wetland waters credits at the Mendocino Coast Mitigation Bank.

On-site Mitigation for Riparian Habitats: Mitigation activities will include restoring estimated permanent impacts to riparian resources of 0.0109 acre at a 1.21:1 ratio, or 0.0132 acre.

On-site Mitigation for Pacific Reed Grass Meadow SNC/ESHA: Mitigation activities will include restoring estimated long-term temporary and permanent impacts to Pacific Reed Grass Meadow SNC/ESHA of 0.0081 acre at a 3.19:1 ratio, or 0.0258 acre.

On-site Mitigation for Bishop Pine Forest Alliance SNC/ESHA: Mitigation activities will include restored native plant communities associated with the Bishop Pine Forest Alliance SNC/ESHA. Due to issues facing bishop pine along the Mendocino coast and restrictions of planting in the State R/W, Caltrans will replant within the R/W at Location 1 (0.0393 acre) with suitable native plants closely associated with bishop pine in lieu of direct planting of bishop pine. On-site revegetation at Location 2 cannot be completed due to safety constraints with the restoration crews therefore, the site will be revegetated via a Landscape contract though no maintenance and monitoring will be conducted. In summary, estimated impacts to the Bishop Pine Forest Alliance SNC/ESHA of 0.7959-acre will be restored via the planting of 0.0393 acres of other suitable native plant species closely associated with the alliance.

Additional compensatory mitigation required to reach an agency approved mitigation ratio/acreage would be achieved through off-site mitigation at the Bank and Saunders Landing (Attachment A, Figure 1) as described below and subject to approval through the permitting process.

Table 2. Impacts and On-site Offsets to Wetlands of the U.S./State, Riparian Habitats, and SNC/ESHAs Associated with the Project

Habitat Type	Impacts (Acres)			Total Impacts (acres)	On-site Offsets (acres)	Remaining Impacts in Need of Mitigation (acres)
	Temporary	Long-Term Temporary	Permanent			
CWA 3-Parameter Wetland (PEM-1 & Ditch-2)	-	0.0097	0.1246	0.1343	0.0097	0.1246
Relatively Permanent Waters (RPW-1, RPW-2 & RPW-4)	0.0034	-	0.0079	0.0113	0.0034	0.0079
Ephemeral Drainage Ditch (Ditch-3)	0.0021	-	-	0.0021	0.0021	-
Waters of the U.S./State Totals	***0.0055***	***0.0097***	***0.1325***	***0.1477***	***0.0152***	***0.1325***
Coniferous Riparian (RIP-1 & RIP-2)	-	-	0.0109	0.0109	0.0132	-
Riparian Totals	***-***	***-***	***0.0109***	***0.0109***	***0.0132***	***-***
Pacific Reed Grass Meadows (PRG-2)	-	0.0031	0.0050	0.0081	0.0258	-
Bishop Pine Forest Alliance (BP-2, BP-3, & BP-4)	-	-	0.7959	0.7959	0.0393	0.7566
Upland SNC/ESHA Totals	***-***	***0.0031***	***0.8009***	***0.8040***	***0.0651***	***0.7566***
Gualala Shoulders Project Totals	**0.0055**	**0.0128**	**0.9443**	**0.9626**	**0.0935**	**0.8891**

Proposed Off-site Mitigation

Temporary, long-term temporary, and permanent project impacts will be offset on-site to the fullest extent possible as described above though given the lack of suitable space on-site, additional off-site mitigation is needed to compensate for impacted waters of the U.S./State and upland SNC/ESHAs. Caltrans proposes to satisfy mitigation for the project through the use of contracted credits for sensitive wetlands and non-wetland waters habitats at the Bank and through completion of the Bishop Pine Forest Alliance SNC/ESHA on Saunders Landing. The following activities would be accomplished to satisfy off-site compensatory mitigation requirements for impacts occurring at the project:

Off-site Mitigation for Waters of the U.S./State (Wetlands & Non-Wetland Waters) – Use of Contracted Credits at the Mendocino Coast Mitigation Bank: Contracted Bank credits will be applied for project impacts to waters of the U.S./State including wetlands and non-wetland waters. In 2020, Caltrans awarded Resource Environmental Solutions, LLC (RES) two contracts to provide 26.2 credits of 3-parameter wetlands and 12.2 credits of non-wetland waters in the coastal zone of the Big-Navarro-Garcia Hydrologic Unit Code (HUC) 8 watershed. Since then, RES has identified several parcels to develop mitigation bank credits though due to issues involving Bank site locations in relation to project impact sites, credits within differing ecoregions, and differing credit types, RES is pursuing two banks (Bank #1 & #2) as directed by the Bank's Interagency Review Team (IRT). An updated Final Prospectus for Bank #1 was circulated for public review in July 2023 and public comments were addressed in October. RES has developed a Draft Bank Enabling Instrument (BEI) for submittal to the IRT upon completion of the public review period and approval by the IRT to submit the Draft BEI. RES is anticipating completion of the Final BEI in April-May 2024 for Bank #1 and Bank permitting in ~July-August 2024 which, shortly thereafter, 15% of Bank credits will become available for use ~October 2024.

Impacts to wetlands include both long-term temporary (0.0097 acre) and permanent (0.1246 acre) impacts. Caltrans plans to restore the long-term temporary impacts following construction activities though due to the small amount of R/W at the project site and issues involving access and safety for personnel, Caltrans Revegetation North and California Conservation Corps staff can only safely revegetate, maintain, and monitor 0.0097 acre of long-term temporary wetland impacts. Remaining long-term temporary wetland impacts (0.0648 acre) will be revegetated on-site via a Landscape contract though no maintenance and monitoring will be conducted. As a result, the remaining 0.0648 acre of temporary impacts will be considered "permanent" and will be mitigated off-site along with the other 0.0598 acre of permanent impacts (0.1246 acre total permanent impacts) via the use of

contracted wetland credits at the Mendocino Coast Mitigation Bank at a 2:1 ratio. After Caltrans Revegetation North offsets 0.0097 acre on-site, 0.2492 acre of contracted credits from the Bank will be required to compensate for waters of the U.S./State (wetland) impacts.

Impacts to non-wetland waters will include both temporary (0.0055 acre) and permanent (0.0079 acre) impacts. Caltrans proposes to restore temporary impacts on-site by completing an in-kind culvert replacement and realigning an existing ephemeral ditch following road widening construction activities. Permanent impact to non-wetland waters will not be offset on-site and will require additional off-site compensatory mitigation. As a result, Caltrans proposes to mitigate for the 0.0079 acre of permanent impacts via the use of contracted non-wetland waters credits at the Mendocino Coast Mitigation Bank at a 2:1 ratio. After offsets of 0.0055 acre on-site, 0.0158 acre of contracted credits from the Bank will be required to compensate for waters of the U.S./State (non-wetland waters) impacts.

In addition to impacts to waters of the U.S./State (wetlands and non-wetland waters), Caltrans proposes to mitigate for impacts to the Bishop Pine Forest Alliance SNC/ESHA through the following activities:

Off-site Mitigation for Bishop Pine Forest Alliance SNC/ESHA – Substantial Restoration at Saunders Landing: Caltrans is proposing to restore 1.100 acre of Bishop Pine Forest Alliance SNC/ESHA (per membership rules) at the eastern parcel on Saunders Landing. As a part of a separate mitigation project for three transportation projects, Caltrans purchased Saunders Landing to restore and preserve sensitive coastal habitats and resources present on-site for the Mendocino Land Trust (MLT) to manage and protect in perpetuity. At Saunders Landing, off-site restoration will occur within the non-native grasslands on the eastern parcel of Saunders Landing where previous assessments identified the area as an ideal bishop pine restoration location (Attachment A, Figure 2). Foreseeing the need for bishop pine mitigation for this project, at the time, Caltrans and MLT reserved the 1.100 acres of non-native grasslands and did not account for this acreage in the mitigation project mentioned above. Table 3 below shows an account of all mitigation values present at Saunders Landing that have been allocated to the four projects needing mitigation. A map showing the acreages of habitats proposed to be preserved and restored on Saunders Landing can be found in Attachment A, Figure 3.

Table 3. Summary Table of Caltrans Projects' Mitigation and Resources Present on Saunders Landing.

Resource	Acreage Present on Saunders Landing	Caltrans Projects				Project Mitigation Acreage Totals	Notes
		Cleone (01-0G600)	Jack Peters (01-43484)	Elk Creek (01-0E110)	Gualala Shoulders (01-0F710)		
CCA Wetland and Waters of the U.S/State (Wetlands/Non-Wetland Waters) Preservation							
Waters of the U.S./State (wetlands)	**1.112**	0.441	0.564	0.018	-	**1.023**	On-site CWA wetlands restoration will be completed at 01-43484 and 01-0E110 at 1:1 ratio. 01-0G600: Preservation of 0.441-acre which include: o 0.144-acre proposed to be preserved for project impacts to wetlands o 0.297-acre proposed to be preserved as mitigation for project impacts to non-wetland waters (see Waters of the U.S./State [non-wetland waters] section below) 01-43484: Preservation of 0.564-acre of wetlands for project impact to wetlands 01-0E110: Preservation of 0.018-acre of wetlands for project impacts to wetlands Caltrans will preserve 1.112-acres of CWA wetland habitats at Saunders Landing though project needs total only 1.023-acres.

Resource	Acreage Present on Saunders Landing	Caltrans Projects				Project Mitigation Acreage Totals	Notes
		Cleone (01-0G600)	Jack Peters (01-43484)	Elk Creek (01-0E110)	Gualala Shoulders (01-0F710)		
Waters of the U.S./State (non-wetland waters)	**0.130**	0.094	0.036	-	-	**0.130**	On-site CWA non-wetland waters restoration will be completed at 01-43484 and 01-0E110 at 1:1 ratio. 01-0G600: Preservation of 0.094-acre of non-wetland waters for project impacts to non-wetland waters; Additional mitigation needs for project impacts proposed to be mitigated via preservation of 0.297-acre of wetland habitats at Saunders Landing that are closely associated with non-wetland waters habitats on-site (e.g., red alder forest wetlands) (see Waters of the U.S./State [wetlands] section above). 01-43484: Preservation of 0.036 acre of non-wetland waters for project impact to non-wetland waters
CCA Wetland (1-, 2-parameter wetlands)	**0.070**	-	-	-	-	**-**	No identified project needs for CCA wetlands at Saunders Landing; Habitats will be preserved in perpetuity as a result of acquisition of the parcels for MLT.
CCA Wetland and Waters of the U.S/State Totals	***1.312***	***0.535***	***0.600***	***0.018***	**-**	***1.153***	In combination with 1:1 on-site Waters of the U.S./State restoration mitigation at 01-43484 and 01-0E110, Caltrans will preserve 1.312-acres of wetland/non-wetland waters habitats at Saunders Landing though project needs total only 1.153-acres.

Resource	Acreage Present on Saunders Landing	Caltrans Projects				Project Mitigation Acreage Totals	Notes
		Cleone (01-0G600)	Jack Peters (01-43484)	Elk Creek (01-0E110)	Gualala Shoulders (01-0F710)		
Riparian Habitat Preservation							
Riparian Zone at Saunders Landing	**1.129**	-	-	1.129	-	**1.129**	On-site riparian restoration (at 1:1) will be completed at 01-0E110. 01-0E110: 9:1 riparian preservation mitigation ratio applied to 0.605 project impacts = 5.442-acres; 1.129-acres of riparian mitigation available at Saunders Landing; Additional riparian mitigation required to compensate for project impacts (see SNC/ESHA Preservation section below)
Riparian Totals	***1.129***	**-**	**-**	***1.129***	**-**	***1.129***	In combination with 1:1 on-site riparian restoration at 01-0E110, Caltrans will preserve 1.129-acres of riparian habitats at Saunders Landing
SNC/ESHA Preservation							
Bishop Pine Forest	**1.100**	-	-	1.100	-	**1.100**	SNC/ESHAs proposed to be preserved at Saunders Landing include: • 1.100-acres of bishop pine forest • 1.330-acres of northern coastal scrub • 0.455-acre of coastal bluff scrub • 3.261-acres of coastal terrace prairie Total SNC/ESHA to be preserved = 6.146-acres
Northern Coastal Scrub	**1.330**	-	-	1.330	-	**1.330**	
Coastal Bluff Scrub	**0.455**	-	-	0.455	-	**0.455**	
Coastal Terrace Prairie	**3.321**	-	-	3.261	-	**3.261**	

Resource	Acreage Present on Saunders Landing	Caltrans Projects				Project Mitigation Acreage Totals	Notes
		Cleone (01-0G600)	Jack Peters (01-43484)	Elk Creek (01-0E110)	Gualala Shoulders (01-0F710)		
SNC/ESHA Totals	***6.206***	-	-	*6.146*	-	***6.146***	On-site riparian restoration will be completed at 01-0E110 at 1:1 ratio. To account for temporal loss, Caltrans proposes to mitigate for these losses via riparian preservation mitigation at a 9:1 ratio (see Riparian Preservation section above). Due to a shortfall of meeting the required mitigation acreage, Caltrans proposes out-of-kind mitigation via SNC/ESHA preservation mitigation at a 12:1 ratio for 0.479-acre of unmitigated impacts 01-0E110: 10:1 SNC/ESHA preservation mitigation ratio applied to 0.479-acre project impacts = 4.790-acres On-site non-riparian coastal brambles SNC/ESHA restoration will be completed at 01-0E110 at a 0.67:1 ratio. To account for temporal loss, Caltrans proposes additional mitigation for 0.151-acre project impacts via SNC/ESHA preservation mitigation at a 9:1 ratio. 01-0E110: 9:1 SNC/ESHA preservation mitigation ratio applied to 0.151-acre project impacts = 1.356-acres As a result of acquisition and transference to the MLT, a total of 6.206-acres of SNC/ESHA will be preserved in perpetuity though only 6.146-acres of SNC/ESHA are required to mitigate for impacts to riparian and non-riparian SNC/ESHA resources

Resource	Acreage Present on Saunders Landing	Caltrans Projects				Project Mitigation Acreage Totals	Notes
		Cleone (01-0G600)	Jack Peters (01-43484)	Elk Creek (01-0E110)	Gualala Shoulders (01-0F710)		
Proposed Restoration Mitigation							
CCA Wetland Restoration (iceplant removal)	**0.317**	0.317	-	-	-	**0.317**	CCA wetland mitigation proposed for 0.008-acre project includes substantial wetland restoration of a 0.350-acre CCA wetland invaded by iceplant. Caltrans proposes to mitigate for 0.317-acre given safety concerns with the wetland's proximity to the bluff edge. 01-0G600: 0.317-acre CCA wetland restoration mitigation for 0.008-acre project impacts results in a ~39.6:1 mitigation ratio
Bishop Pine Restoration (non-native grasslands on eastern parcel)	**1.100**	-	-	-	1.100	**1.100**	01-0F710: Restoration of 1.100 acre of Bishop Pine Forest Alliance SNC/ESHA will occur in the non-native grasslands on the eastern parcel of Saunders Landing. Restoration will occur adjacent to 1.100 acre of existing, preserved bishop pine stands

Project Mitigation Summary

In summary, the following mitigation ratios and acreages are proposed on-site and off-site to satisfy compensatory mitigation requirements for the project. Tables 4-8 below provide an overview of proposed mitigation for each impacted habitat at the project. Table 9 provides a summary of the estimated impacts, on-site offsets, and proposed off-site mitigation acreage for waters of the U.S./State and bishop pine to provide compensatory mitigation for impacts.

Waters of the U.S./State (wetlands) Impacts: On-site waters of the U.S./State (wetlands) restoration activities would occur at a <1:1 ratio, or 0.0097 acre. As mentioned earlier, the remaining 0.0648 acre of true long-term temporary wetland impacts will be restored on-site following construction, but on-site maintenance and monitoring will not occur due to impact location and constrained R/W, thus presenting a safety concern for the California Conservation Corps and Caltrans restoration crews. As a result, these 0.0648 acre of temporary impacts have been categorized as "permanent" impacts and assessed at a higher mitigation ratio. When combined with the true permanent impacts (0.0598 acre), the total permanent impacts are 0.1246 acre. As described in Table 4 below, Caltrans proposes to cover this mitigation through use of contracted Bank credits for waters of the U.S./State (wetlands) at a 2:1 ratio, or 0.2492 acre.

Table 4. Long-term Temporary and Permanent Wetland Impacts, On-site Offsets, and Off-site Mitigation.

Proposed Mitigation	On-site Offsets at Gualala Shoulders Project		Off-site Mendocino Coast Mitigation Bank Wetland Re-establishment Credits
	Long-term Temporary Impacts	Permanent Impacts	Permanent Impact
Project Impacts (acres)	***0.0097***	***0.1246***	
Remaining Impacts (acres)			***0.1246***
Mitigation Ratio Proposed	1:1	2:1	2:1
Mitigation Required (acres)	0.0097	0.2492	0.2492
Mitigation Proposed (acres)	0.0097	-	0.2492
Remaining Impacts Requiring Mitigation (acres)	***0.0000***	***0.1246***	***0.0000***
Total Off-site Waters of the U.S./State (Wetlands) Re-establishment Mitigation Bank Credits			**0.2492**

Waters of the U.S./State (non-wetland waters) Impacts: Due to limited R/W at the project site, there is no planned on-site offsets for permanent impacts to waters of the U.S./State (non-wetland waters). Caltrans proposes to restore temporary impacts (0.0055 acre) on-site following construction activities however, 0.0079 acre of permanent project impacts will require off-site compensatory mitigation. Caltrans proposes to cover this mitigation through use of contracted Bank credits for waters of the U.S./State (non-wetland waters) at a 2:1 ratio, or 0.0158 acre (Table 5).

Table 5. Temporary and Permanent Non-Wetland Waters Impacts, On-site Offsets, and Off-site Mitigation.

Proposed Mitigation	On-site Offsets at Gualala Shoulders Project Non-wetland Waters Re-establishment		Off-site Mendocino Coast Mitigation Bank Non-wetland Waters Re-establishment Credits
	Temporary Impacts	Permanent Impacts	Permanent Impacts
Project Impacts (acres)	*0.0055*	*0.0079*	
Remaining Impacts (acres)			*0.0079*
Mitigation Ratio Proposed	1:1	2:1	2:1
Mitigation Required (acres)	0.0055	0.0158	0.0158
Mitigation Proposed (acres)	0.0055	-	0.0158
Remaining Impacts Requiring Mitigation (acres)	*0.0000*	*0.0079*	*0.0000*
Total Off-site Waters of the U.S./State (Non-wetland Waters) Re-establishment Mitigation Bank Credits			**0.0158**

Riparian Impacts: Caltrans proposes to complete riparian restoration activities at a 1.21:1 ratio, or 0.0132 acre, at the project site (Table 6). Though impacts are minimal and in order to ensure no net loss of riparian habitats as a result of construction activities, the project's On-site Revegetation Plan proposes 85% of installed plants will be alive at the end of the maintenance and monitoring period (Year 5) in all planted areas. Caltrans endeavors to ensure the survival of as many planted individuals as reasonable possible however, 85% of the proposed restoration acreage (0.0132 acre) will be greater than the original impact acreage (0.0109 acre).

Table 6. Riparian Impacts, On-site Offsets, and Off-site Mitigation.

Proposed Mitigation	On-site Offsets at Gualala Shoulders Project Riparian Re-establishment
Project Impacts (acres)	***0.0109***
Mitigation Ratio Proposed	1.21:1
Mitigation Required (acres)	0.0132
Mitigation Proposed (acres)	0.0132
Remaining Impacts Requiring Mitigation (acres)	***0.0000***
Total On-site Riparian Re-establishment Mitigation	**0.0132**

Pacific Reed Grass Meadow SNC/ESHA Impacts: Caltrans proposes to complete SNC/ESHA restoration activities at a 3.19:1 ratio, or 0.0258 acre, at the project site (Table 7).

Table 7. Upland Pacific Reed Grass Meadow SNC/ESHA Impacts and On-site Offsets.

Proposed Mitigation	On-site Offsets at Gualala Shoulders Project Pacific Reed Grass Meadow Re-establishment
Project Impacts (acres)	***0.0081***
Mitigation Ratio Proposed	3.19:1
Mitigation Required (acres)	0.0258
Mitigation Proposed (acres)	0.0258
Remaining Impacts Requiring Mitigation (acres)	***0.0000***
Total On-site Upland Pacific Reed Grass Meadow SNC/ESHA Re-establishment Mitigation	**0.0258**

Bishop Pine Forest Alliance SNC/ESHA Impacts: Bishop Pine Forest Alliance SNC/ESHA mitigation will be accomplished through restoration activities on-site and at the off-site mitigation site on Saunders Landing. Due to internal constraints prohibiting the planting of bishop pine within Caltrans R/W, Caltrans plans to restore 0.0393 acre on-site

with other suitable native plant species closely associated with the Bishop Pine Forest Alliance SNC/ESHA in lieu of direct bishop pine planting. This action would provide approximately 5% (or ~0.0393 acre of 0.7959 acre project impacts) of the required mitigation for Bishop Pine Forest Alliance SNC/ESHA mitigation, leaving 95% (or 0.7566 acre) of project impacts requiring additional mitigation. Caltrans proposes to cover additional mitigation through 1.1 acre of off-site restoration on Saunders Landing of the Bishop Pine Forest Alliance SNC/ESHA that was impacted at the project site (Table 8).

Table 8. Bishop Pine Forest Alliance SNC/ESHA Impacts, On-site Offsets, and Off-site Mitigation.

Proposed Mitigation	On-site Offsets at Gualala Shoulders Project Bishop Pine Forest Alliance SNC/ESHA Restoration	Off-site Mitigation at Saunders Landing Bishop Pine Forest Alliance SNC/ESHA Restoration
Project Impacts (acres)	***0.7959***	
Remaining Impacts (acres)		***0.7566***
Mitigation Ratio Proposed	1:1	1.45:1
Mitigation Required (acres)	0.7959	1.100
Mitigation Proposed (acres)	0.0393	1.100
Remaining Impacts Requiring Mitigation (acres)	***0.7566***	***0.0000***
Total Off-site Bishop Pine Forest Alliance SNC/ESHA Re-establishment Mitigation		**1.100**

Table 9 below provides a summary of the project impacts, on-site mitigation and revegetation efforts, and proposed off-site mitigation acreage for waters of the U.S./State (wetlands/non-wetland waters) and Bishop Pine Forest Alliance SNC/ESHA to provide compensatory mitigation for project impacts.

Table 9. Summary of Impacts for Gualala Shoulders Project with Proposed On-site Offsets and Off-Site Mitigation.

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Overview of Project Impacts, On-site Offsets, and Off-site Mitigation				
Total Long-Term Temporary Impacts to Waters of the U.S. and State (CWA Wetlands)	0.0097	0.0097	0.2492	On-site restoration of temporarily impacted wetlands (0.0097 acre); Remaining temporary impacts (0.0648 acre) recategorized as "permanent" and assessed at a higher mitigation ratio (2:1) as maintenance and monitoring will not be performed; Additional off-site compensatory mitigation of 0.2492 acre via the use of contracted credits from the Mendocino Coast Mitigation Bank
Total Permanent Impacts to Waters of the U.S. and State (CWA Wetlands)	0.1246	-	-	
Wetlands Totals	***0.1343***	***0.0097***	***0.2492***	
Total Temporary Impacts to Waters of the U.S. and State (Non-Wetlands Waters)	0.0055	0.0055	-	On-site restoration of temporarily impacted non-wetland waters
Total Permanent Impacts to Waters of the U.S. and State (Non-Wetland Waters)	0.0079	-	0.0158	Off-site mitigation of 0.0158 acre via the use of contracted mitigation bank credits from the Mendocino Coast Mitigation Bank
Non-Wetland Waters Totals	***0.0134***	***0.0055***	***0.0158***	
Total Permanent Impacts to Riparian	0.0109	0.0132	-	On-site restoration of 0.0132 acre of impacted riparian habitats
Riparian Totals	***0.0109***	***0.0132***	***-***	
Total Long-Term Temporary Impacts to upland Pacific Reed Grass Meadow SNC/ESHA	0.0031	0.0258	-	On-site restoration of impacted upland Pacific Reed Grass Meadow SNC/ESHA
Total Permanent Impacts to upland Pacific Reed Grass Meadow SNC/ESHA	0.0050			
Pacific Reed Grass Meadow SNC/ESHA Totals	***0.0081***	***0.0258***	***-***	

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Overview of Project Impacts, On-site Offsets, and Off-site Mitigation (continued)				
Total Permanent Impacts to Bishop Pine Forest Alliance SNC/ESHA	0.7959	0.0393	1.100	On-site restoration of closely associated species of Bishop Pine Forest Alliance SNC/ESHA and off-site restoration of 1.100 acre at Saunders Landing
Total Bishop Pine Forest Alliance SNC/ESHA Impacts	***0.7959***	***0.0393***	***1.100***	
Details for Proposed On-Site Offsets				
Ditch Wetland Creation (long-term temporary impacts) Re-establishment of temporarily impacted wetlands at a 1:1 mitigation ratio		**0.0097**		On-site re-establishment for long-term temporary impacts to wetlands
Ephemeral Drainage Ditch (Temporary Impacts) Temporary impacts from relocating ephemeral drainage ditch (Ditch-3) after construction activities (e.g., widening) In-kind Culvert Replacement (Temporary Impacts) Temporary impacts to RPW (RPW-1) as a result of in-kind culvert replacement		**0.0055**		On-site non-wetland waters re-establishment of an ephemeral drainage ditch and in-kind replacement of a culvert at 1:1 mitigation ratio for temporary impacts following road widening construction and culvert replacement
Riparian Restoration		**0.0132**		On-site riparian restoration at 1.21:1 mitigation ratio for permanent impacts
Upland Pacific Reed Grass Meadow SNC/ESHA		**0.0258**		On-site restoration of upland Pacific Reed Grass Meadow SNC/ESHA for long-term temporary and permanent impacts at a 3.19:1 in-kind replacement mitigation ratio

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Upland Bishop Pine Forest Alliance SNC/ESHA On-site offsets to include the planting of other suitable native plant species closely associated with the Bishop Pine Forest Alliance SNC/ESHA in lieu of direct bishop pine planting		**0.0393**		On-site restoration of upland Bishop Pine Forest Alliance SNC/ESHA for permanent impacts.
Details for Proposed Mitigation Off-site				
Off-site Waters of the U.S./State (wetlands) Mitigation – Use of Contracted Wetland Re-establishment Credits at Mendocino Coast Mitigation Bank Caltrans proposes to use contracted waters of the U.S./State (wetlands) credits at the Mendocino Coast Mitigation Bank			**0.2492**	Use 0.2492 acre of contracted waters of the U.S./State (wetlands) credits at the Mendocino Coast Mitigation Bank following 0.0097 acre of on-site offsets. Credits to be used will be "wetland re-establishment" credits to ensure no net loss of wetlands as a result of the project
Off-site Waters of the U.S./State (non-wetland waters) Mitigation – Use of Contracted Wetland Re-establishment Credits at Mendocino Coast Mitigation Bank Caltrans proposes to use contracted waters of the U.S./State (non-wetland waters) credits at the Mendocino Coast Mitigation Bank			**0.0158**	Use 0.0158 acre of contracted waters of the U.S./State (non-wetland waters) credits at the Mendocino Coast Mitigation Bank following 0.0055 acre of on-site offsets.
Off-site Upland Bishop Pine Forest Alliance SNC/ESHA on Saunders Landing Caltrans proposes to restore 1.100 acre of non-native grasslands adjacent to 1.100 acres of existing, preserved bishop pine forests at Saunders Landing. Mitigation proposed will attempt to mitigate for the Bishop Pine Forest Alliance SNC/EHSA association present at the project site			**1.100**	Restoration of Bishop Pine Forest Alliance SNC/ESHA on Saunders Landing to address permanent loss to upland SNC/ESHA resources following 0.0393 acre of on-site offsets

Restoration Goals and Objectives

Saunders Landing Bishop Pine Restoration Project

The primary goal of the Saunders Landing Bishop Pine Restoration Project is to restore 1.100 acre of Bishop Pine Forest Alliance SNC/ESHA via the installation of regionally/genetically viable bishop pine, other closely associated Bishop Pine Forest Alliance SNC/ESHA species, and other native tree species that are common codominant species within the canopy, such as grand fir, tanoak, and Douglas fir, in the project area. Restoration activities include site preparation, installation of native plant tree species that would include, but may not be limited to, bishop pine, grand fir, tanoak, and Douglas fir and other native understory plants, conduct short-term monitoring and maintenance to achieve mitigation project success criteria, and provide endowment funds for long-term management of the site. The following mitigation goals will be achieved through the restoration of the mitigation project area on Saunders Landing:

1) **Expand the Bishop Pine Forest Alliance SNC/ESHA present on Saunders Landing through the restoration of non-native grasslands via the installation of bishop pine, codominant native tree species, and associated understory species**

As noted above, bishop pine is in a severe decline on the Mendocino coast and the major issues leading to the demise of the species are mainly associated with diseases, pests, and fire suppression on the landscape, all issues that are difficult to deal with on a biological and land-use/planning front. As such, the most common mitigation on the Mendocino coast is direct enhancement and/or restoration of areas that once were bishop pine forests and are not prone to, exhibiting signs of, or directly affected by pests/pathogens. These limitations make bishop pine mitigation both very difficult to identify on the Mendocino coast and very expensive as preparation of a site may involve robust techniques to ensure survival of planted species as well as site protection requirements and long-term management. According to Giusti's *Watching the demise of a coastal forest type – Bishop pine. A White Paper* (2014), Mendocino County Planning Department and local CDFW personnel have accepted that the most viable solution for mitigating the loss of older, decant trees is to inform landowners to help them recognize what they can do to help promote natural bishop pine recruitment. In most cases it simply means having them identify established seedlings and marking/avoiding them while mowing.

To restore 1.100 acre of Bishop Pine Forest Alliance SNC/ESHA, bishop pine, codominant native tree species, and associated understory species will be planted on the eastern parcel of Saunders Landing. Mapping conducted by SNRC (2020) as well as soil maps from USDA-NRCS (2023) indicate suitable bishop pine restoration habitats within the non-native grasslands on the eastern parcel. Additional restoration areas identified by SNRC occur within Caltrans'

R/W but as mentioned earlier, a Caltrans policy prohibits planting of the species at these locations due to safety concerns to the traveling public and existing facilities from falling, hazardous trees. Additional Bishop Pine Forest Alliance SNC/ESHA plantings at this location will enlarge the existing bishop pine forest that borders Hearn Gulch and offer additional wildlife habitat for sensitive species, such as Sonoma tree voles (*Arborimus pomo*), that have been documented, currently using these habitats (SNRC 2020).

2) **Expand habitat for special status wildlife species including Sonoma tree vole**

During sensitive species surveys conducted on the eastern parcel, SNRC found evidence of Sonoma tree vole presence in the bishop pine habitats adjacent to the proposed restoration area. Historical field notes from the California coastal region documented voles that feed on grand fir, Monterey pine (*Pinus radiata*), or bishop pine (Forsman et al 2016). Restoration activities will include installation of bishop pine and other codominant tree species including, but not limited to, grand fir and Douglas fir to expand foraging and nesting habitats at Saunders Landing. Giving that the species does not migrate long distances, enhancements and installation of additional native tree species within the non-native grasslands will expand the current Sonoma tree vole habitat.

Caltrans has developed the following objectives to achieve the restoration goals identified above:

1. Complete substantial restoration of 1.100 acres of Bishop Pine Forest Alliance SNC/ESHA and codominant native tree species in the identified restoration areas on the eastern parcel of Saunders Landing.
2. Complete five (5) years of maintenance and monitoring of the bishop pine restoration areas to achieve agency-approved success criteria.
3. Provide additional funds to the Saunders Landing endowment established for MLT during the acquisition and transference of the parcels in order to maintain agency-approved success criteria in perpetuity.

Relationship to Other Applicable General Plans

Mendocino County General Plan

The following Goals and Policies listed in the Mendocino County General Plan (2009) align with stated mitigation project goals and objectives for the project's proposed mitigation:

Water Resources Goals and Policies

Goal RM-1 (Watersheds) Land uses, development patterns and practices that facilitate functional and healthy watershed ecosystems.

- Policy RM-1: Protect stream corridors and associated riparian habitat.
- Policy RM-2: Promote and participate in watershed restoration and enhancement projects.
- Policy RM-4: Promote and support public outreach and education programs pertaining to watershed and water resources stewardship.

Biology and Ecology Resources Goals and Policies

Goal RM-4 (Ecosystems) Protection and enhancement of the county's natural ecosystems and valuable resources.

Goal RM-5 (Ecosystems) Prevent fragmentation and loss of the county's oak woodlands, forests, and wildlands and preserve their economic and ecological values and benefits.

- Policy RM-24: Protect the county's natural landscapes by restricting conversion and fragmentation of timberlands, oak woodlands, stream corridors, farmlands, and other natural environments.
- Policy RM-26: Protect, use and manage the county's farmlands, forests, water, air, soils, energy, and other natural resources in an environmentally sound and sustainable manner.
- Policy RM-27: Conserve, restore and enhance natural resources, sensitive environments, and ecological integrity.

Goal RM-7 (Biological Resources) Protection, enhancement and management of the biological resources of Mendocino County and the resources upon which they depend in a sustainable manner.

Goal RM-8 (Marine Resources) Protection and restoration, and enhancement of Mendocino County's freshwater and marine environments.

- Policy RM-71: Promote land uses and management practices that protect biological diversity and productivity.
- Policy RM-78: Conserve native vegetation, critical habitats and soil resources through education, technical and financial assistance, cooperative endeavors, best management practices, and soils and vegetation management plans for development and resource uses.
- Policy RM-79: Encourage farmers, landowners and property managers to protect sensitive environments, and minimize the effects of recreation, tourism, agriculture and development on these resources. Promote techniques and features such as: Habitat contiguity, wildlife corridors, maintaining compatibility with adjacent uses, and maintaining habitat for sensitive plant and animal species.

    - Action Item RM-79.1: Work with agencies and organizations to educate the public about effective ways to protect listed plant and animal species and preserve sensitive habitats.
    - Action Item RM-79.3: Promote conservation easements to protect wildlife habitat, wetlands and other sensitive environments.
    - Action Item RM-79.4: Provide information to landowners, developers, and the public on the importance and value of maintaining wildlife corridors.
- Policy RM-82: Promote the conservation and use of native species or drought-tolerant, fire resistive and noninvasive vegetation.
- Policy RM-89: Conserve and enhance watercourses to protect habitat, fisheries, soils, and water quality.
- Policy RM-127: Support land trusts and similar organizations in identifying and protecting lands and corridors with significant resource, recreational or scenic values.
    - Action Item RM-127.1: Continue to protect the scenic qualities of uplands and rural landscapes through measures such as Timberland Production and large lot zoning controls, clustering, the Williamson Act, the Forest Practices Act, and good management of public lands.
- Policy RM-128: Protect the scenic values of the county's natural and rural landscapes, scenic resources, and areas of significant natural beauty.

References

California Native Plant Society (CNPS). 2023. *Pinus muricata-Pinus radiata* Forest & Woodland Alliance Membership Rules. Available at: https://vegetation.cnps.org/alliance/509. Accessed June 1, 2023.

Federal Geographic Data Committee (FGDC). 2013. *Classification of wetland and deepwater habitats of the United States*. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington DC.

Forsman, E.D., J. K. Swingle, R.J. Davis, B.L., B.L. Biswell, L.S. Andrews. 2016. Tree voles: an evaluation of their distribution and habitat relationships based on recent and historical studies, habitat models, and vegetation change Gen. Tech. Rep. PNW-GTR-948. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 119 p.

Giusti, G.A. 2014. Watching the demise of a coastal forest type – Bishop pine. A White Paper. California Forest Pest Council Winter. Available: http://cemendocino.ucanr.edu/files/199447.pdf. Accessed May 2023.

Mendocino County. 2009. Mendocino County General Plan. Available: https://www.mendocinocounty.org/government/planning-building-services/plans/mendocino-county-general-plan. Accessed June 8, 2023.

Spade Natural Resources Consulting. 2020. *Hearn Extension Resource Information Report*. Prepared for RCLC

U.S. Department of Agriculture – Natural Resource Conservation Service (USDA-NRCS). 2023. *Web Soil Survey.* Available: http://www.soils.usda.gov/survey. Accessed: May 1, 2023.

Attachment A. Figures

Figure 1. Gualala Shoulders Project and off-site mitigation locations.

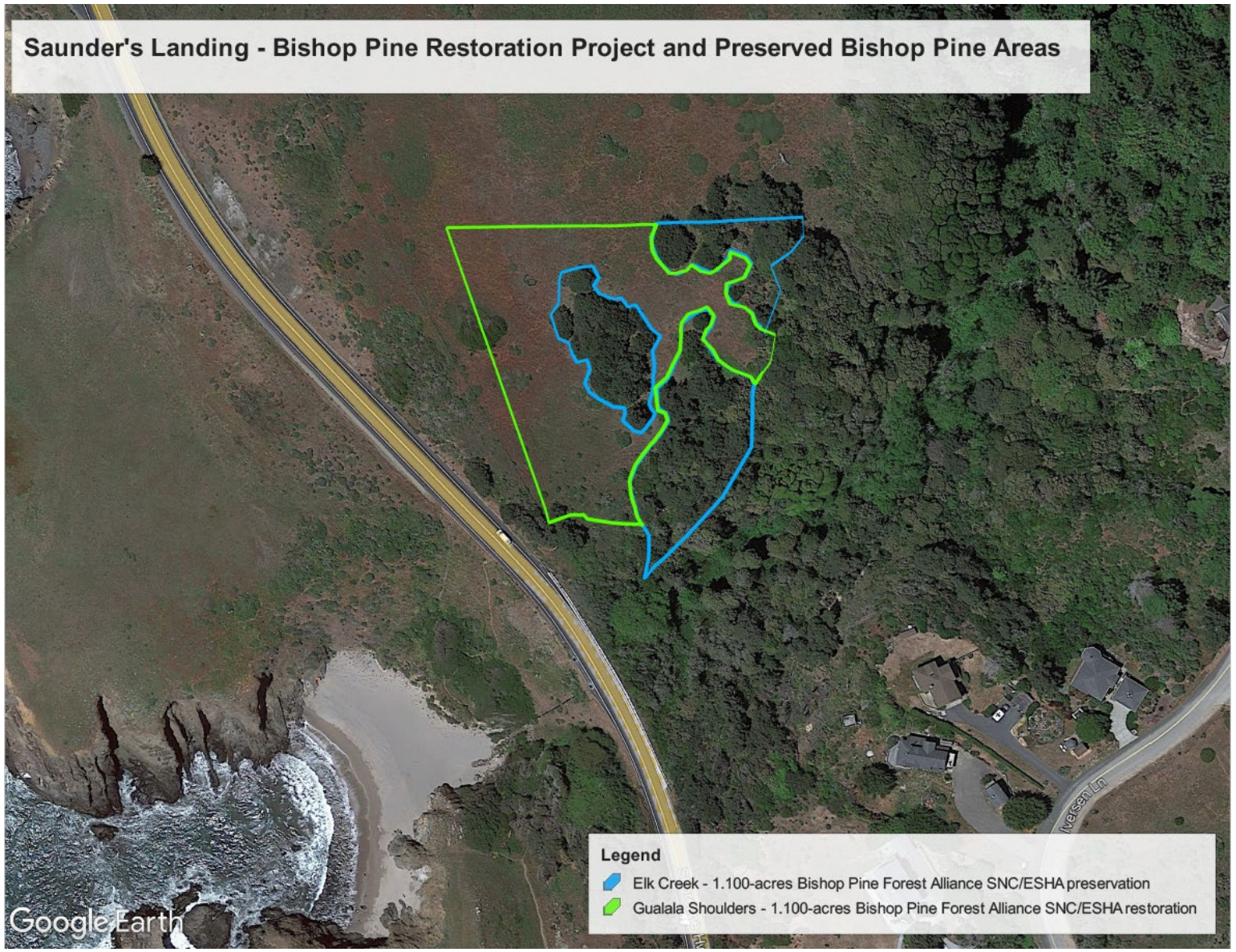


Figure 2. Saunders Landing Bishop Pine Restoration Project (green outline) and preserved bishop pine for Elk Creek Bridge Replacement Project (01-0E110) (blue outline).

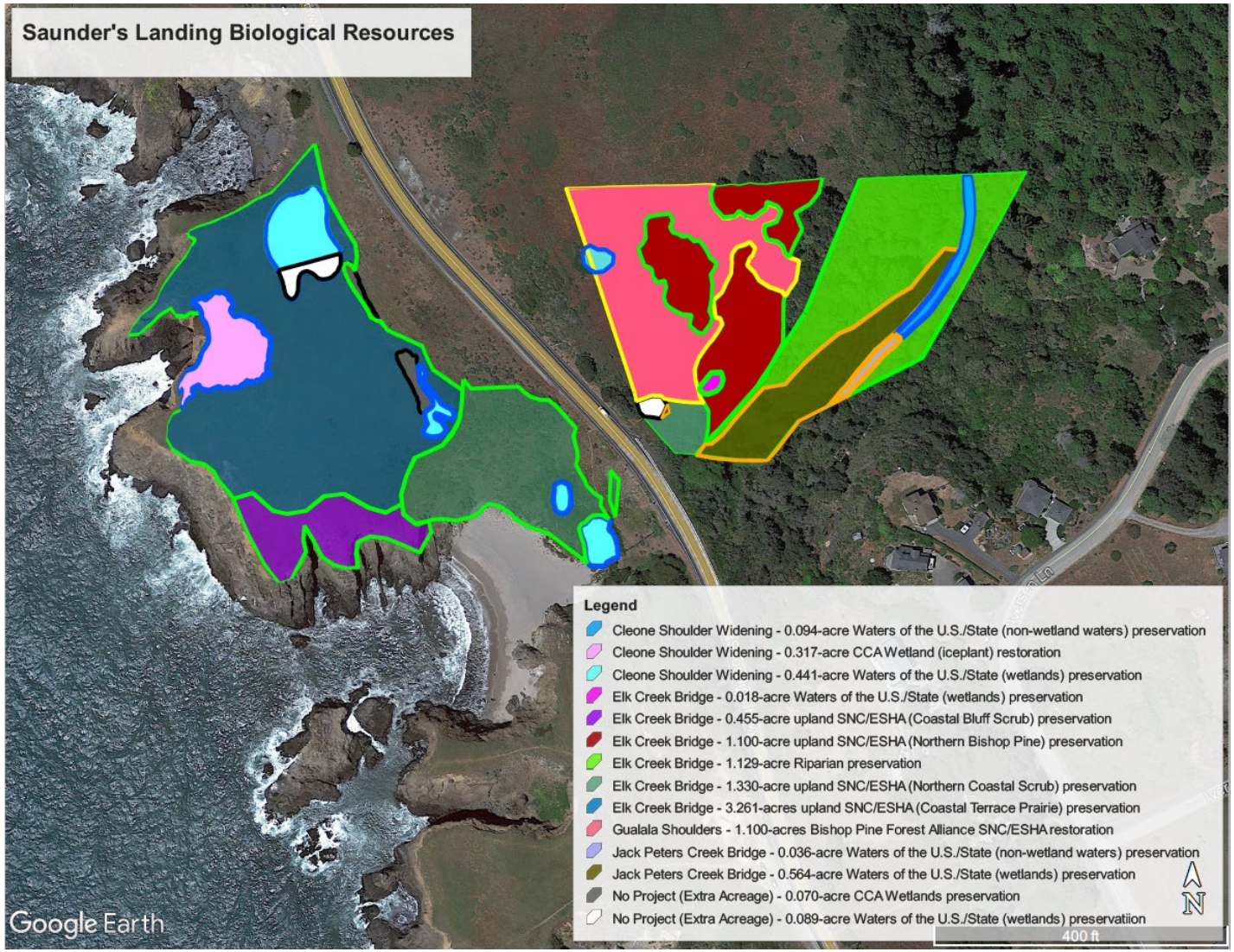


Figure 3. Biological resources present on Saunders Landing proposed to be used for mitigation for four Caltrans Projects. Blue outline = Cleone Shoulder Widening; Orange = Jack Peters Creek Bridge Project; Green = Elk Creek Bridge Project; Yellow = Gualala Shoulders; Black = No Project (Excess Mitigation).

Appendix C. NCRWQCB CWA §401 Water Quality Certification and USACE CWA §404 Permit Mitigation Discussion

Regulatory Background

Caltrans often develops mitigation for impacted resources that are under the jurisdiction of multiple agencies including, but not limited to, the United States Army Corps of Engineers (USACE), State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB) (e.g., North Coast Regional Water Quality Control Board [NCRWQCB]), the California Coastal Commission (CCC) and/or Local Coastal Programs (LCP) for counties/cities with delegated authority, California Department of Fish and Wildlife (CDFW), United States Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), etc. To consolidate efforts and provide mitigation specific to each agency exercising jurisdiction for authorizing mitigation for impacts, Caltrans has provided separate appendices for agencies with overlapping jurisdiction (e.g., CCC and CDFW; NCRWQCB and USACE). The purpose of this appendix is to describe Caltrans' mitigation approach for impacts associated with the Gualala Shoulders Project (01-0F710) (project) to resources under the jurisdiction of the NCRWQCB through Clean Water Act (CWA) Section (§) 401 and USACE via CWA §404.

The SWRCB and the nine (9) RWQCB, including NCRWQCB, work together to protect California's water resources. The SWRCB is generally responsible for setting statewide water quality policy and considering petitions contesting RWQCB actions. The SWRCB is also solely responsible for allocation of surface water rights. CWA §401 (33 U.S.C. 1341) requires any applicant of a federal license or permit conducting any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain certification from the state in which the discharge originates. As a result, proposed fill in waters requires coordination with the appropriate RWQCB that administers CWA §401 and provides certification. The RWQCB also plays a role in review of water quality and wetland/waters issues, including avoidance and minimization of effects. CWA §401 certification is required prior to issuance of a §404 permit. Under the current scope of work, a Water Quality Certification issued by the NCRWQCB would be required for the project.

The purpose of the USACE and CWA §404 program is to ensure that the physical, biological, and chemical quality of our nation's water is protected from irresponsible and unregulated discharges of dredged or fill material that could permanently alter or destroy these valuable resources. Many water bodies in the nation are waters of the U.S and are subject to the USACE regulatory authority. CWA §404 establishes a permit program administered by USACE which regulates the discharge of dredged or fill material into waters of the U.S. CWA §404(b)(1) guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative which would have less adverse effects.

The USACE Regulatory Program administers and enforces Section 10 of the Rivers and Harbors Act of 1899 and CWA §404. Under the Rivers and Harbors Act, Section 10, a permit is required for work or structures in, over or under navigable waters of the U.S. Under CWA §404, a permit is required for the discharge of dredged or fill material into waters of the U.S. The USACE regulatory authority under the Rivers and Harbors Act of 1899 is limited to traditional "navigable waters". Traditional navigable waters regulated by Section 10 are waters that are, could be, or were once used to transport interstate or foreign commerce. In contrast, "waters of the U.S." regulated under §404 also include "other waters" such as wetlands that have a sufficient nexus to interstate commerce. A CWA §404 permit is required from the USACE when a project requires fill or other modification of waters. There are two types of permits issued by the USACE: Standard and General permits. Under the current scope of work, a USACE General Permit would be required for the project.

Mitigation Requirements

As detailed in Section 1.1 of the HMMP, the project will impact a variety of resources under the jurisdiction of multiple agencies including NCRWQCB and USACE. This appendix will address impacts under the jurisdiction of NCRWQCB and USACE specifically to meet requirements of compensatory mitigation for the project's 401 and 404 permits. These impacts include waters of the U.S./State including non-wetland waters and 3-parameter wetlands and State riparian areas (Table 1).

The impacts to waters of the U.S./State (wetlands/non-wetland waters) and riparian habitats will be mitigated on-site within the limits of the project via in-kind replacement and use of contracted waters of the U.S./State (wetlands/non-wetland waters) credits from the Mendocino Coast Mitigation Bank (Bank). Mitigation activities will be carried out either through a Landscape Contract or by the California Conservation Corps. Mitigation work will be overseen and quality control will be conducted by Caltrans Revegetation/Mitigation Specialists, Landscape Architects, and/or Project Biologists.

The following sections provide details associated with the project including on-site offsets (restoration and revegetation efforts) and proposed off-site mitigation.

Table 1. NCRWQCB and USACE jurisdictional resources impacted by Gualala Shoulders Project.

Jurisdictional Feature	Habitat Type[1]	Impacts (Acres)[2]	
		Temporary	Permanent
Clean Water Act (CWA) Wetland	CWA 3-Parameter Wetland (PEM-1 & Ditch-2)	0.0097	0.1246
Non-Wetland Waters	Relatively Permanent Waters (RPW-1, RPW-2 & RPW-4)	0.0034	0.0079
	Ephemeral Drainage Ditch (Ditch-3)	0.0021	-
Wetlands/Non-Wetland Waters Total		***0.0152***	***0.1325***
Riparian Areas	Coniferous Riparian (RIP-1 & RIP-2)	-	0.0109
Riparian Total		**-**	***0.0109***
Gualala Shoulders Project Totals		**0.0152**	**0.1434**

Proposed On-site Offsets

Mitigation to compensate for temporary and permanent loss of waters of the U.S./State, including ditch wetlands and non-wetland Relatively Permanent Waters (RPW) and an ephemeral drainage would be partially offset on-site (Table 2). As applicable, and as based on final design and impacts, wetlands would be planted with appropriate wetland vegetation as feasible based on wetland location and composition. Based on the extent of the proposed impacts and current conditions at the project location, a <1:1 wetland mitigation ratio is proposed to be completed on-site (0.0097 acre) to partially compensate for total project impacts (0.1343 acre). Due to safety issues to restoration crews from the California Conservation Corps and the Caltrans Revegetation North unit, Caltrans can only safely restore 0.0097 acre of impacts to waters of the U.S./State (wetlands). Since Caltrans cannot monitor all of the temporarily impacted wetland area, 0.0648 acre of true temporary impacts will be considered "permanent" though Caltrans does not anticipate full functional resource loss as is typical with true permanent impacts. As a result, the permanent impacts to waters of the U.S./State (wetlands) (0.1246 acre) will require off-site compensatory mitigation. Temporary impacts to waters of the U.S./State

[1] Feature types for three-parameter wetlands are identified by their corresponding system, subsystem and class in accordance with Classification of Wetlands and Deepwater Habitats of the United States (FGDC 2013).

[2] Caltrans defines temporary impacts are those in which restoration begins within one year of the first date of impact. Permanent impacts are impacts that are not restorable. However, 0.0648 acre of temporary impacts to CWA wetlands have been recategorized to "permanent" as maintenance and monitoring cannot be performed following construction due to safety concerns.

(non-wetland waters), including a non-RPW ephemeral drainage (Ditch-3) (0.0021 acre) and an in-kind culvert replacement within a RPW (RPW-1) (0.0034 acre), would be offset onsite at a 1:1 ratio (0.0055 acre) though there will be permanent loss of non-wetland RPW (0.0079 acre). In summary, in addition to on-site offsets, off-site compensatory mitigation will be required to fully mitigate for permanent impacts and temporal loss to wetlands and non-wetland waters.

Mitigation to compensate for permanent loss of riparian habitat as a result of project construction would be offset entirely on-site through riparian restoration. As applicable, and as based on final design and impacts, any riparian areas would be planted with riparian vegetation with the goal to shade any waters and to replace habitat. Seed collection, cuttings, and/or plant salvage would occur prior to construction within the project footprint and adjacent riparian habitats in the Caltrans Right of Way (R/W). Based on the extent of the proposed impacts and current conditions at the project location, a 1.21:1 mitigation on-site re-establishment ratio is proposed to be completed on-site (0.0132 acre) to fully compensate for project impacts (0.0109 acre).

The following on-site activities would be accomplished to satisfy the mitigation requirements for impacts occurring at the project:

On-site Mitigation for Waters of the U.S./State (wetlands/non-wetland waters): On-site mitigation activities will include recontouring roadside ditch wetlands, completing an in-kind culvert replacement within a RPW (RPW-1), and relocating a non-RPW intermittent drainage (Ditch-3). As mentioned above, Caltrans intends to restore all temporarily disturbed wetlands (0.0745 acre) on-site however due to safety concerns, Caltrans can only maintain and monitor 0.0097 acre of these temporarily impacted wetlands. The remaining temporarily impacted wetland acreage will be treated as "permanent" impacts and will be mitigated off-site at the Mendocino Coast Mitigation Bank. Temporary impacts to waters of the U.S./State (non-wetland waters), including a non-RPW ephemeral drainage (Ditch-3) (0.0021 acre) and an in-kind culvert replacement within a RPW (RPW-1) (0.0034 acre), would be offset onsite at a 1:1 ratio (0.0055 acre). Caltrans proposes to mitigate for the permanent impacts (0.0079 acre) to waters of the U.S./State (non-wetland waters) via the use of contracted non-wetland waters credits at the Mendocino Coast Mitigation Bank.

On-site Mitigation for Riparian Habitats: Mitigation activities will include restoring estimated permanent impacts to riparian resources of 0.0109 acre at a 1.21:1 ratio, or 0.0132 acre.

Additional compensatory mitigation required to reach an agency approved mitigation ratio/acreage would be achieved through off-site mitigation at the Bank (Attachment A, Figure 1) as described below and subject to approval through the permitting process.

Table 2. Impacts and On-site Offsets to Wetlands of the U.S./State and Riparian Habitats Associated with the Project.

Habitat Type	Impacts (Acres)		Total Impacts (acres)	On-site Offsets (acres)	Remaining Impacts in Need of Mitigation (acres)
	Temporary	Permanent			
CWA 3-Parameter Wetland (PEM-1 & Ditch-2)	0.0097	0.1246	0.1343	0.0097	0.1246
Relatively Permanent Waters (RPW-1, RPW-2 & RPW-4)	0.0034	0.0079	0.0113	0.0034	0.0079
Ephemeral Drainage Ditch (Ditch-3)	0.0021	-	0.0021	0.0021	-
Waters of the U.S./State Totals	***0.0152***	***0.1325***	***0.1377***	***0.0152***	***0.1325***
Coniferous Riparian (RIP-1 & RIP-2)	-	0.0109	0.0109	0.0132	-
Riparian Totals	***-***	***0.0109***	***0.0109***	***0.0132***	***-***
Gualala Shoulders Project Totals	**0.0152**	**0.1434**	**0.1486**	**0.0284**	**0.1325**

Proposed Off-site Mitigation

Temporary and permanent project impacts will be offset on-site to the fullest extent possible as described above though given the lack of suitable space on-site, additional off-site mitigation is needed to compensate for impacted waters of the U.S./State. Caltrans proposes to satisfy mitigation for the project through the restoration of sensitive wetlands and non-wetland waters habitats at the Bank. The following activities would be accomplished to satisfy off-site compensatory mitigation requirements for impacts occurring at the project:

Off-site Mitigation for Waters of the U.S./State (Wetlands & Non-Wetland Waters) – Use of Contracted Credits at the Mendocino Coast Mitigation Bank: Contracted Bank credits will be applied for project impacts to waters of the U.S./State including wetlands and non-wetland waters. In 2020, Caltrans awarded Resource Environmental Solutions, LLC (RES) two contracts to provide 26.2 credits of 3-parameter wetlands and 12.2 credits of non-wetland waters in the coastal zone of the Big-Navarro-Garcia Hydrologic Unit Code (HUC) 8 watershed. Since then, RES has identified several parcels to develop mitigation bank credits though due to issues involving Bank site locations in relation to project impact sites, credits within differing ecoregions, and differing credit types, RES is pursuing two banks (Bank #1 & #2) as directed by the Bank's Interagency Review Team (IRT). An updated Final Prospectus for Bank #1 was circulated for public review in July 2023 and public comments were addressed in October. RES has developed a Draft Bank Enabling Instrument (BEI) for submittal to the IRT upon completion of the public review period and approval by the IRT to submit the Draft BEI. RES is anticipating completion of the Final BEI in April-May 2024 for Bank #1 and Bank permitting in ~July-August 2024 which, shortly thereafter, 15% of Bank credits will become available for use ~October 2024.

Impacts to wetlands include both temporary (0.0097 acre) and permanent (0.1246 acre) impacts. Caltrans plans to restore all true temporary impacts following construction activities though due to the small amount of R/W at the project site and issues involving access and safety for personnel, Caltrans Revegetation North and California Conservation Corps staff can only safely revegetate, maintain, and monitor 0.0097 acre of temporary wetland impacts. Remaining true temporary wetland impacts (0.0648 acre) will be revegetated on-site via a Landscape contract though no maintenance and monitoring will be conducted. As a result, the remaining 0.0648 acre of temporary impacts will be considered "permanent" and will be mitigated off-site with the other 0.0598 acre of permanent impacts (0.1246 acre total permanent impacts) via the use of contracted wetland credits at the Mendocino Coast Mitigation Bank at a 2:1 ratio. After Caltrans Revegetation North offsets 0.0097 acre on-site, 0.2492 acre of contracted credits from the Bank will be required to compensate for waters of the U.S./State (wetland) impacts.

Impacts to non-wetland waters will include both temporary (0.0055 acre) and permanent (0.0079 acre) impacts. Caltrans proposes to restore temporary impacts on-site by completing an in-kind culvert replacement and realigning an existing ephemeral ditch following road widening construction activities. Permanent impact to non-wetland waters will not be offset on-site and will require additional off-site compensatory mitigation. As a result, Caltrans proposes to mitigate for the 0.0079 acre of permanent impacts via the use of contracted non-wetland waters credits at the Mendocino Coast Mitigation Bank at a 2:1 ratio. After offsets of 0.0055 acre on-site, 0.0158 acre of contracted credits from the Bank will be required to compensate for waters of the U.S./State (non-wetland waters) impacts.

Project Mitigation Summary

In summary, the following mitigation ratios and acreages are proposed on-site and off-site to satisfy compensatory mitigation requirements for the project. Tables 3-5 below provide an overview of proposed mitigation for each impacted habitat at the project.

Waters of the U.S./State (wetlands) Impacts: On-site waters of the U.S./State (wetlands) restoration activities would occur at a <1:1 ratio, or 0.0097 acre. As mentioned earlier, the remaining 0.0648 acre of true temporary wetland impacts will be restored on-site following construction, but on-site maintenance and monitoring will not occur due to impact location and constrained R/W, thus presenting a safety concern for the California Conservation Corps and Caltrans restoration crews. As a result, the 0.0648 acre of temporary impacts have been categorized as "permanent" impacts and assessed at a higher mitigation ratio. When combined with the true permanent impacts (0.0598 acre), the total permanent impacts are 0.1246 acre. As described in Table 4 below, Caltrans proposes to cover this mitigation through use of contracted Bank credits for waters of the U.S./State (wetlands) at a 2:1 ratio, or 0.2492 acre.

Waters of the U.S./State (non-wetland waters) Impacts: Due to limited R/W at the project site, there is no planned on-site offsets for permanent impacts to waters of the U.S./State (non-wetland waters). Caltrans proposes to restore temporary impacts (0.0055 acre) on-site however, 0.0079 acre of permanent project impacts will require off-site compensatory mitigation. Caltrans proposes to cover this mitigation through use of contracted Bank credits for waters of the U.S./State (non-wetland waters) at a 2:1 ratio, or 0.0158 acre (Table 4).

Table 3. Temporary and Permanent Wetland Impacts, On-site Offsets, and Off-site Mitigation.

Proposed Mitigation	On-site Offsets at Gualala Shoulders Project		Off-site Mendocino Coast Mitigation Bank Wetland Re-establishment Credits
	Temporary Impacts	Permanent Impacts	Permanent Impacts
Project Impacts (acres)	*0.0097*	*0.1246*	
Remaining Impacts (acres)			*0.1246*
Mitigation Ratio Proposed	1:1	2:1	2:1
Mitigation Required (acres)	0.0097	0.2492	0.2492
Mitigation Proposed (acres)	0.0097	-	0.2492
Remaining Impacts Requiring Mitigation (acres)	*0.0000*	*0.1246*	*0.0000*
Total Off-site Waters of the U.S./State (Wetlands) Re-establishment Mitigation Bank Credits			**0.2492**

Table 4. Temporary and Permanent Non-Wetland Waters Impacts, On-site Offsets, and Off-site Mitigation.

Proposed Mitigation	On-site Offsets at Gualala Shoulders Project Non-wetland Waters Re-establishment		Off-site Mendocino Coast Mitigation Bank Non-wetland Waters Re-establishment Credits
	Temporary Impacts	Permanent Impacts	Permanent Impacts
Project Impacts (acres)	*0.0055*	*0.0079*	
Remaining Impacts (acres)			*0.0079*
Mitigation Ratio Proposed	1:1	2:1	2:1
Mitigation Required (acres)	0.0055	0.0158	0.0158
Mitigation Proposed (acres)	0.0055	-	0.0158
Remaining Impacts Requiring Mitigation (acres)	*0.0000*	*0.0079*	*0.0000*
Total Off-site Waters of the U.S./State (Non-wetland Waters) Re-establishment Mitigation Bank Credits			**0.0158**

Riparian Impacts: Caltrans proposes to complete riparian restoration activities at a 1.21:1 ratio, or 0.0132 acre, at the project site (Table 5). Though impacts are minimal and in order to ensure no net loss of riparian habitats as a result of construction activities, the project's On-site Revegetation Plan proposes 85% of installed plants will be alive at the end of the maintenance and monitoring period (Year 5) in all planted areas. Caltrans endeavors to ensure the survival of as many planted individuals as reasonable possible however, 85% of the proposed restoration acreage (0.0132 acre) will be greater than the original impact acreage (0.0109 acre).

Table 5. Riparian Impacts, On-site Offsets, and Off-site Mitigation.

Proposed Mitigation	On-site Offsets at Gualala Shoulders Project Riparian Re-establishment
Project Impacts (acres)	***0.0109***
Mitigation Ratio Proposed	1.21:1
Mitigation Required (acres)	0.0132
Mitigation Proposed (acres)	0.0132
Remaining Impacts Requiring Mitigation (acres)	***0.0000***
Total On-site Riparian Re-establishment Mitigation	**0.0132**

Table 6 below provides a summary of the impacted habitats and acres proposed to be established, restored, enhanced, and/or preserved. Table 7 provides a summary of the estimated impacts, on-site offsets, and proposed off-site mitigation acreage for wetlands, non-wetland waters, and riparian habitats to provide compensatory mitigation for the project impacts.

Table 6. Impacted Resources, Proposed On-site Offsets, and Off-site Mitigation for Gualala Shoulders Project.

Habitats	Area Established	Area Restored	Area Enhanced	Area Preserved
Wetlands	-	0.0097 acre (on-site) 0.2492 acre (off-site)[1]	-	-
Non-Wetland Waters	-	0.0055 acre (on-site) 0.0158 acre (off-site)[1]	-	-
Riparian Habitats	-	0.0132 acres (on-site)	-	-

[1] *Off-site compensatory mitigation for impacted resources will be accomplished through use of contracted mitigation bank credits for waters of the U.S./State (wetlands/non-wetland waters) at the Mendocino Coast Mitigation Bank. Wetland credits will be "wetland re-establishment" credits as to meet SWRCB's no net loss policy for wetlands.*

Table 7. Summary of Estimated Impacts for Gualala Shoulders Project with Proposed On-site Offsets and Off-Site Mitigation.

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Overview of Project Impacts, On-site Offsets, and Off-site Mitigation				
Total Temporary Impacts to Waters of the U.S. and State (CWA Wetlands)	0.0097	0.0097	-	On-site restoration of temporarily impacted wetlands (0.0097 acre); Remaining temporary impacts (0.0648 acre) recategorized to "permanent" and assessed at a higher mitigation ratio (2:1) as maintenance and monitoring will not be performed; Additional off-site compensatory mitigation of 0.2492 acre via the use of contracted credits from the Mendocino Coast Mitigation Bank
Total Permanent Impacts to Waters of the U.S. and State (CWA Wetlands)	0.1246	-	0.2492	
Wetlands Totals	***0.1343***	***0.0097***	***0.2492***	
Total Temporary Impacts to Waters of the U.S. and State (Non-Wetlands Waters)	0.0055	0.0055	-	On-site restoration of temporarily impacted non-wetland waters
Total Permanent Impacts to Waters of the U.S. and State (Non-Wetland Waters)	0.0079	-	0.0158	Off-site mitigation of 0.0158 acre via the use of contracted mitigation bank credits from the Mendocino Coast Mitigation Bank
Non-Wetland Waters Totals	***0.0134***	***0.0055***	***0.0158***	
Total Permanent Impacts to Riparian	0.0109	0.0132	-	On-site restoration of 0.0132 acre of impacted riparian habitats
Riparian Totals	***0.0109***	***0.0132***	***-***	

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Details for Proposed On-Site Offsets				
Ditch Wetland Creation (temporary impacts) Re-establishment of temporarily impacted wetlands at a 1:1 mitigation ratio		**0.0097**		On-site re-establishment at 1:1 mitigation ratio for temporary impacts to wetlands
Ephemeral Drainage Ditch (Temporary Impacts) Temporary impacts from relocating ephemeral drainage ditch (Ditch-3) after construction activities (e.g., widening) In-kind Culvert Replacement (Temporary Impacts) Temporary impacts to RPW (RPW-1) as a result of in-kind culvert replacement		**0.0055**		On-site non-wetland waters re-establishment of an ephemeral drainage ditch and in-kind replacement of a culvert at 1:1 mitigation ratio for temporary impacts following road widening construction and culvert replacement
Riparian Restoration		**0.0132**		On-site riparian restoration at 1.21:1 mitigation ratio for permanent impacts
Details for Proposed Mitigation Off-site				
Off-site Waters of the U.S./State (wetlands) Mitigation – Use of Contracted Wetland Re-establishment Credits at Mendocino Coast Mitigation Bank Caltrans proposes to use contracted waters of the U.S./State (wetlands) credits at the Mendocino Coast Mitigation Bank			**0.2492**	Use 0.2492 acre of contracted waters of the U.S./State (wetlands) credits at the Mendocino Coast Mitigation Bank following 0.0097 acre of on-site offsets. Credits to be used will be “wetland re-establishment” credits to ensure no net loss of wetlands as a result of the project
Off-site Waters of the U.S./State (non-wetland waters) Mitigation – Use of Contracted Wetland Re-establishment Credits at Mendocino Coast Mitigation Bank Caltrans proposes to use contracted waters of the U.S./State (non-wetland waters) credits at the Mendocino Coast Mitigation Bank			**0.0158**	Use 0.0158 acre of contracted waters of the U.S./State (non-wetland waters) credits at the Mendocino Coast Mitigation Bank following 0.0055 acre of on-site offsets.

References

Federal Geographic Data Committee (FGDC). 2013. *Classification of wetland and deepwater habitats of the United States*. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington DC.

Attachment A. Figures

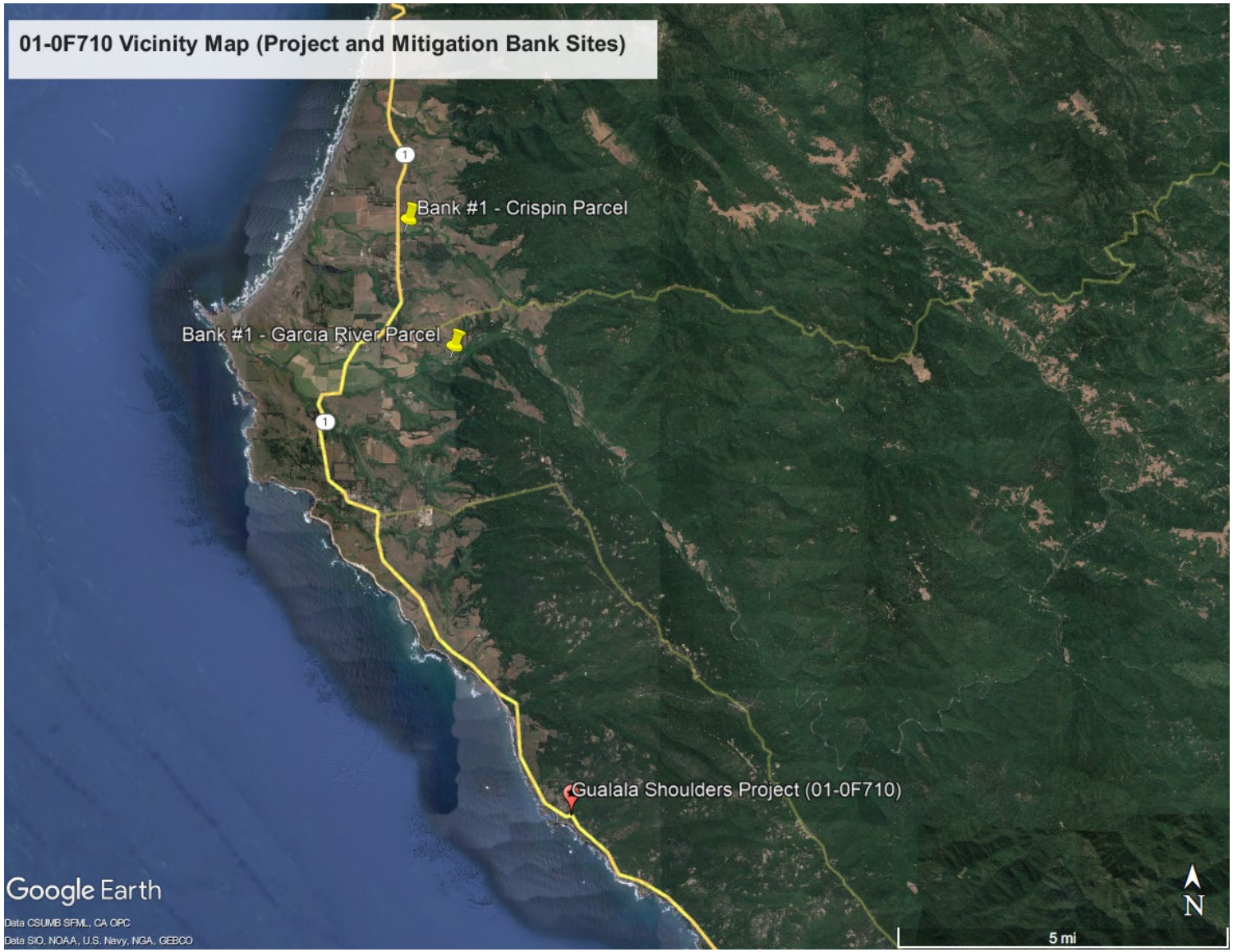


Figure 1. Gualala Shoulders Project and off-site mitigation locations.

Appendix D. Biological Resource Inventory and Invasive Species Summary for Saunders Landing

HEARN EXTENSION
RESOURCE INFORMATIONAL REPORT

FOR

HEARN GULCH
(APNS 142-010-53, 142-010-54, 142-010-03,
142-010-04, 142-010-05, 142-010-06,
AND PORTIONS OF 142-010-RW)
MENDOCINO, CA
MENDOCINO COUNTY

prepared for:
Redwood Coast Land Conservancy
PO Box 1511
Gualala, CA 95445

prepared by:
Spade Natural Resources Consulting
Teresa R Spade, AICP
611 Albion Street
PO Box 1503
Mendocino, CA 95460
(707) 397-1802
spadenrc@gmail.com

May 31, 2020

Table of Contents

Figures

Background: Site visits occurred on May 15 and May 25, 2020. A total of 14 hours of surveying occurred, which consisted of observing plant and plant community species, and where evident, noting special status wildlife species habitat. The survey included searches for potential wetlands, and for areas where bishop pine forest restoration would be appropriate. Three wetland pits were dug to support this effort, and data was collected following the Army Corps Wetland Delineation protocols. The properties surveyed include the LeBoube properties (APNs 142-010-53 [LaBoube 8.2a], and 142-010-54 [LaBoube 3.8a]), the RCLC property directly to the south (142-010-03 [RCLC 0.462a], 142-010-04 [RCLC 1.63], 142-010-05 [RCLC 1.8a], and 142-010-06 [RCLC 1.065a]), and portions of the state Right of Way in the vicinity of these properties.

Investigator: Teresa R Spade, AICP (B.S. Natural Resources Planning and Interpretation, Humboldt State)

Project Area: The ~21 acre project area is located within the California Coastal Zone, at Hearn Gulch, on the east and west sides of Highway One. The property is just north of the Iversen Subdivision and approximately 6 miles south of the City of Point Arena. Areas on the west side of the highway include relatively flat coastal terrace prairie, sloping steeply downward towards Hearn Gulch in the center of the project area. On the east side the project area is a sloping hillside that is a mix of non-native grassland, tanoak forest, bishop pine forest, and riparian area in the gulch.

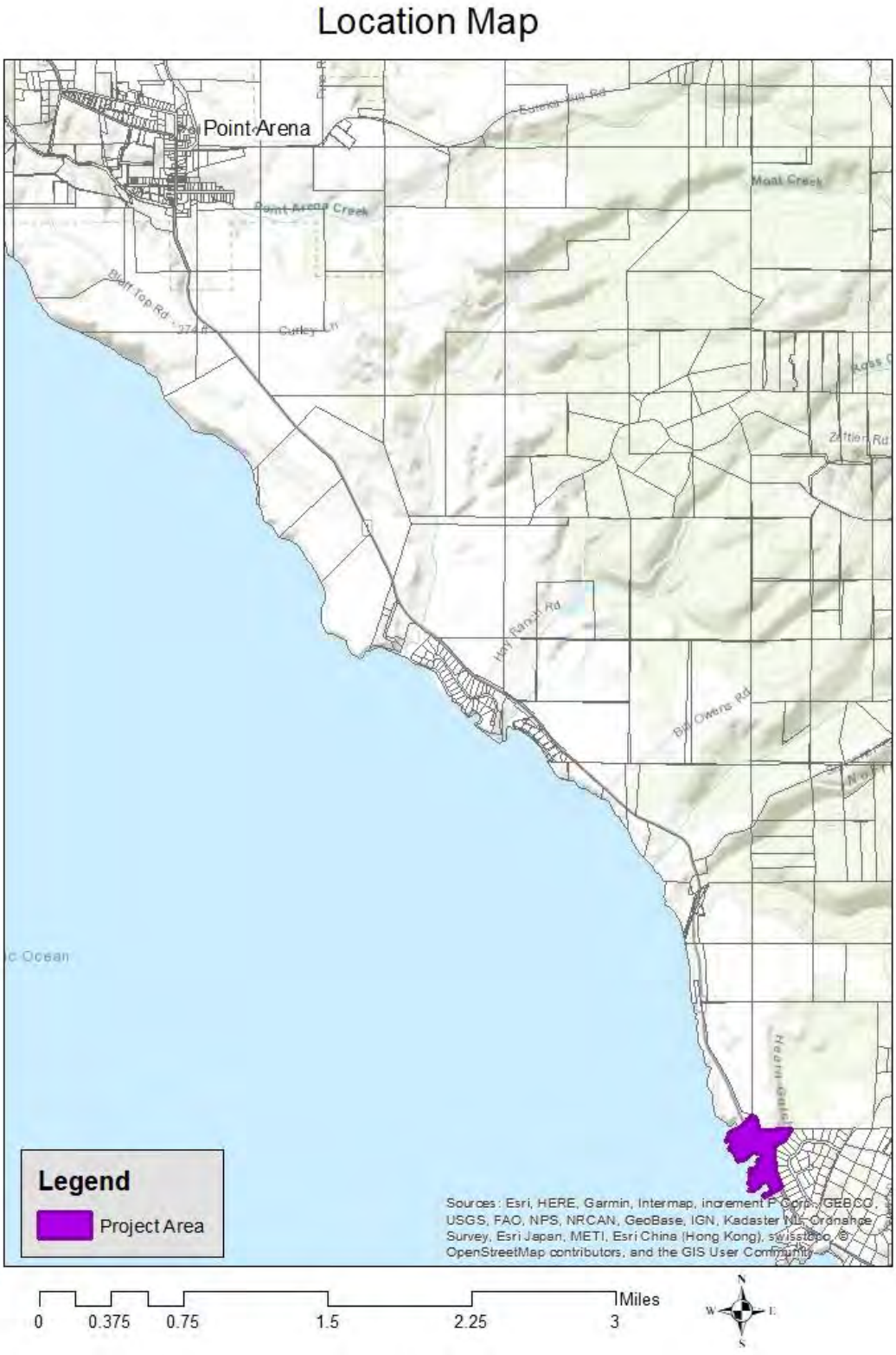


Figure 1. Project location map.

1. Habitat Present

Overall, the habitat quality is high for these properties. The project area is abundant in special status plants and rare vegetation alliances. Evidence of special status wildlife was also noted. This summary will focus on observations on the LeBoube east and west parcels as information should already be available on habitat present for the RCLC property.

1.1. Vegetation Alliances

West: The west side of the LeBoube property is a coastal terrace that is relatively flat. The property slopes steeply downward to the ocean and to Hearn Gulch. Vegetation alliances present are described as follows:

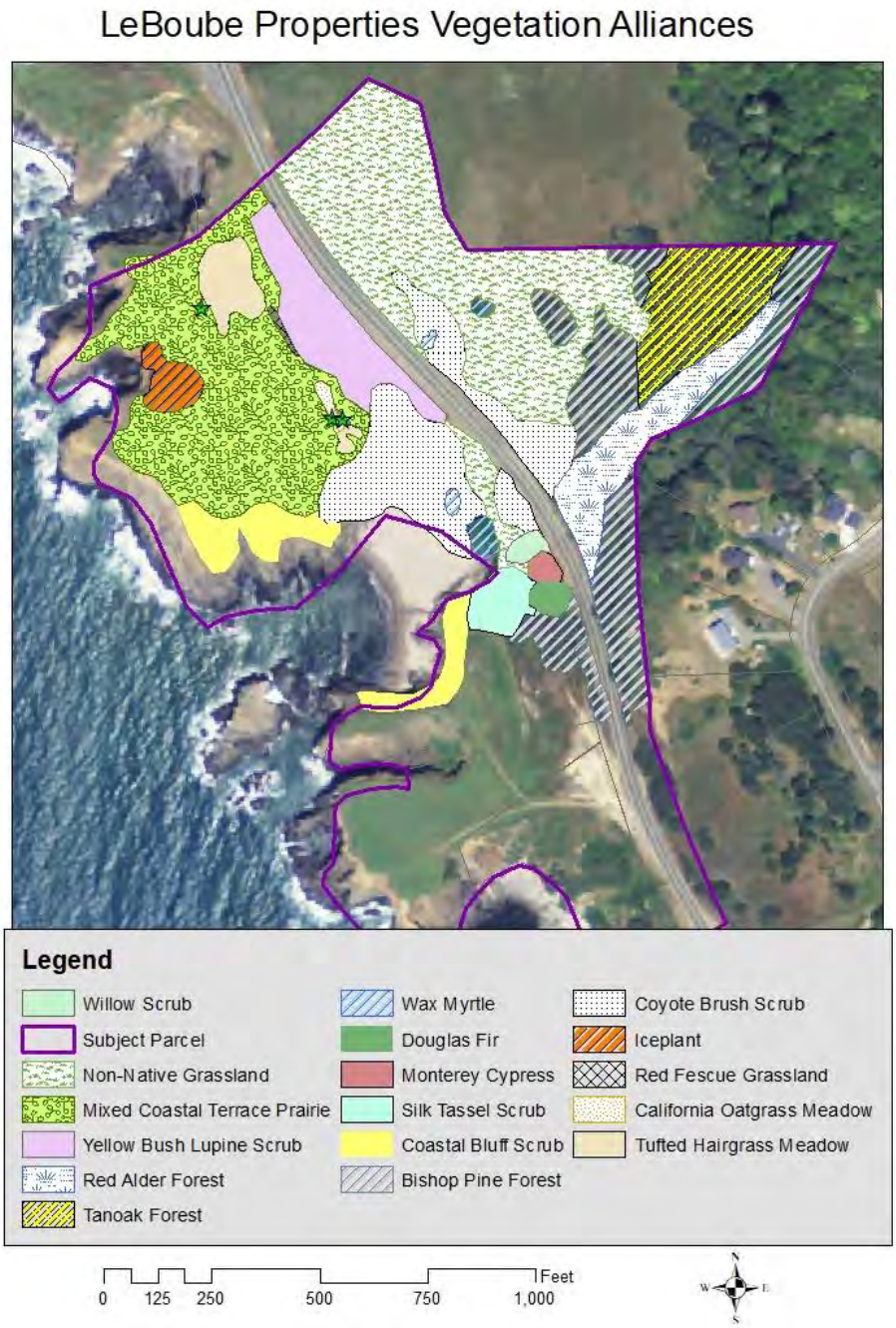


Figure 2. Vegetation alliances map.

Mixed Coastal Terrace Prairie – The areas mapped as mixed coastal terrace prairie contain a significant native plant cover, approximately 80% native cover. Native species present include maritime brome (*Bromus maritimus*), rigid hedge nettle (*Stachys rigida*), yarrow (*Achillea millefolium*), Henderson's angelica (*Angelica hendersonii*), beach strawberry (*Fragaria chiloensis*), gumweed (*Grindelia stricta*), California blackberry (*Rubus ursinus*). There are patches of areas dominated by non-native rattlesnake grass, and other non-natives present such as narrow leaved plantain (*Plantago lanceolata*), Canada bluegrass (*Poa compressa),* and yellow vetch (*Vicia lutea*).

Figure 3. Mixed coastal prairie with Mendocino coast paintbrush.

Yellow Bush Lupine Scrub – this area is closer to the highway and contains clusters of yellow bush lupine (*Lupinus arboreus*), with ripgut brome (*Bromus hordaceous*), field mustard (*Brassica rapa*), rattlesnake grass, California blackberry, slender oat (*Avena barbata*), coyote brush (*Baccharis pilularis*), burclover (*Medicago polymorpha*), and bristly ox tongue (*Helminthotheca echioides*).

Figure 4. Yellow bush lupine scrub.

Tufted Hairgrass Meadow – This area is dominated by tufted hairgrass (*Deschampsia cespitosa*), and also present are beach strawberry, gumweed, purple stemmed checkerbloom (*Sidalcea malviflora purpurea*), blue-eyed grass (*Sisyrinchium bellum*), hairy cat's ear (*Hypochaeris radicata*), and self-heal (*Prunus vulgaris*).

Figure 5. Tufted hairgrass meadow.

California Oatgrass Meadow – This area was noted as having a dominance of California oatgrass (*Danthonia californica*). Other species present are similar to those found in the adjacent tufted hairgrass meadow.

Figure 6. California oatgrass meadow.

Red Fescue Grassland – This area was noted as having a dominance of red fescue (*Festuca rubra*). Other species present are similar to those found in the adjacent mixed coastal terrace prairie.

Figure 7. Red fescue grassland.

Iceplant – this patch is dominated by iceplant (*Carpobrotus chilensis*). Also present are seaside daisy (*Erigeron glaucus*), lizard tail (*Eriophyllum staechadifolium*), and maritime brome.

Figure 8. Iceplant.

Coyote Brush Scrub – Coyote brush dominates, with poison oak (*Toxicodendron diversilobum*), yellow bush lupine, field mustard, rigid hedge nettle, California beeplant (*Scrophularia californica*), wild cucumber (*Marah oreganus*), maple-leaved checkerbloom (*Sidalcea malachroides*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), and cow parsnip (*Heracleum maximum*).

Figure 9. Coyote brush scrub.

Coastal Bluff Scrub – species present include coast buckwheat (*Eriogonum latifolium*), gumweed, California phacelia (*Phacelia californica*), north coast dudleya (*Dudleya farinosa*), lizardtail, iceplant, and wild carrot (*Daucus carota*).

Figure 10. Coastal bluff scrub.

East: The east side of the LeBoube property is a gentle sloping hillside that is covered by non-native grassland and coyote brush scrub, with bishop pine and tanoak forest. The gulch on the east side is a lush riparian area. Vegetation alliances present are described as follows:

Red Alder Forest – The gulch contains red alder (*Alnus rubra*), willow (*Salix* sp.), coffeeberry (*Frangula californica*), sword fern (*Polystichum munitum*), lady fern (*Athyrium filix-femina var. cyclosorum*), red elderberry (*Sambucus racemosa*), wild ginger (*Asarum caudatum*), thimbleberry (*Rubus parviflorus*), wild cucumber, California blackberry, cow parsnip, giant horsetail (*Equisetum telmateia*), bee plant (*Scrophularia californica*), and honeysuckle (*Lonicera hispidula*).

Figure 11. Red alder forest.

Non-Native Grassland – rattlesnake grass and sweet vernal grass were dominant in the grassland on the east side of the highway. Also significantly present were purple velvet grass (*Holcus lanatus*), spring vetch (*Vicia sativa*), sow thistle, Douglas iris (*Iris douglasiana),* blue eyed grass, California poppy (*Eschscholzia californica*), sheep sorrel (*Rumex acetosella*), tufted hairgrass, and coyote brush.

Figure 12. Non-native grassland.

Tanoak Forest – Leaf litter was present under the oaks, inhibiting vegetative growth. Species present include tanoak, honeysuckle, bracken, redwood sorrel (*Oxalis oregana*), black huckleberry (*Vaccinium ovatum*), manzanita (*Arctostaphylos* sp.), and madrone (*Arbutus menziesii*).

Figure 13. Tanoak forest.

Bishop Pine Forest – These areas are dominated by bishop pine (*Pinus muricata*). The understory generally has a moderate layer of pine needles which inhibits vegetative growth. Species observed in and around bishop pines include California blackberry, bedstraw (*Galium* sp.), poison oak, bracken (*Pteridium aquilinum*), honeysuckle, and rush (*Juncus effusus* and *Juncus patens*).

Figure 14. Bishop pine forest.

1.2. Special Status Plants

Special status plants observed on the LeBoube property include:

Mendocino Coast Paintbrush (*Castilleja mendocinensis*).

Figure 15. Mendocino coast paintbrush.

Purple stemmed checkerbloom (*Sidalcea malviflora* ssp. *purpurea*).

Figure 16. Purple stemmed checkerbloom.

1.3. Special Status Wildlife

Shoulderband Snails – Shoulderband snails are present in the vicinity of the iceplant and the adjacent areas that are dominated by seaside daisy.

Cormorant Nests – Cormorant nests were observed on the offshore rock, off of the beach, and on the RCLC property rocky bluff area where it faces these offshore rocks.

Sonoma Tree Vole – Evidence of Sonoma tree vole was observed under the bishop pine trees on the east side of the highway on the LeBoube property, just east of the bridge.

1.4. Wetlands

Wetlands include both presumed coastal act (one parameter) wetlands and Army Corps (three parameter wetlands), and are present in the coastal terrace as grasslands, and also include Hearn Gulch and its riparian area. Three wetland pits were dug and wetland data was recorded on Army Corps data sheets (Western Mountains, Valleys, and Coast Region). The data collected was limited to these three data collection locations, and additional wetlands may be present in the project area. Where wetland data pits were not dug, wetlands were presumed based on presence of hydrology or dominance of hydrophytic plant species. The wetland data sheets are included as Appendix A.

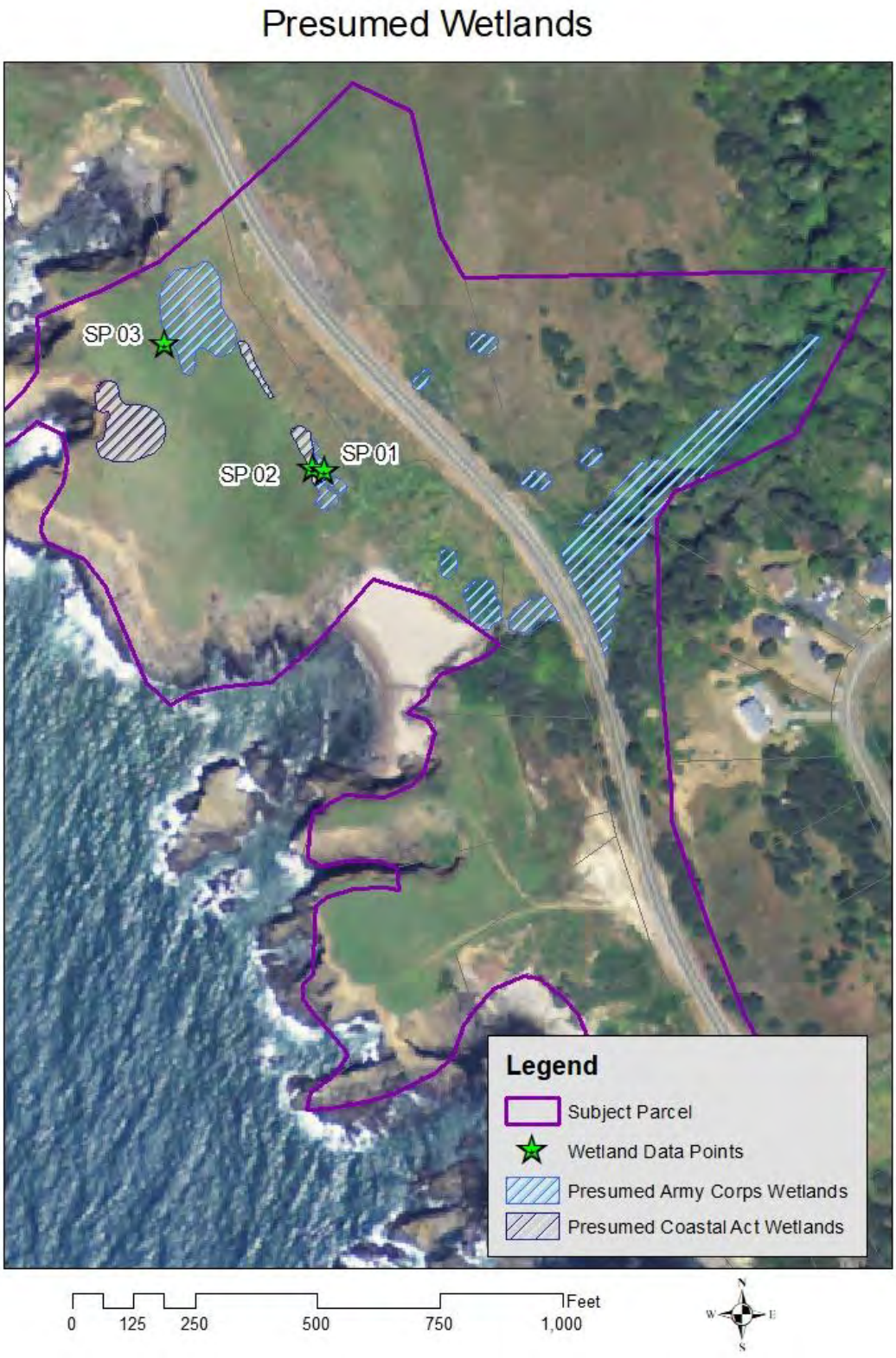


Figure 17. Presumed wetlands.

One parameter and presumed one parameter wetlands include areas where any one of the wetland parameters was found. Those parameters are hydrology, hydric soil, and hydrophytic vegetation. Presumed one parameter wetlands include areas where the following species are dominant:

- Iceplant (FAC)
- Red Fescue (FAC)
- California oatgrass (FAC)

Three parameter and presumed three parameter wetlands include areas where the following are present:

- Hearn Gulch (Stream)
- Tufted Hairgrass Meadows (FACW)
- Wax Myrtle (FACW)

2. Restoration Potential

2.1. Wetlands

The wetlands observed are generally considered high quality wetlands with the exception being the area of iceplant. The iceplant area is approximately 15,000 square feet in size. Iceplant is a facultative species, meaning that it is equally likely in and out of wetlands, so it is not a great wetland indicator, even though this area meets the definition of a coastal act wetland based on the dominance of a facultative wetland plant species. While it would be easy to remove the iceplant and attempt to restore the area, the hydrology may not be there to support more than a facultative species, and the area may not be large enough to justify pursuing wetland credit for restoration. It would be a good area for RCLC to experiment with iceplant removal and seeding with either red fescue or California oatgrass, if one parameter wetland creation is desired. Seaside daisy would also likely do well there.

2.2. Bishop Pine Forest

Three areas that would be appropriate for bishop pine forest restoration include those near existing bishop pine that are currently covered by non-native grassland. Approximately six acres of bishop pine restoration area are found on the easterly LaBoube property, ½ acre on the westerly LaBoube property, and about 1/3 acre on the RCLC property.

Rare plant surveys would need to occur prior to restoration efforts, and rare plants would need to be avoided. Ideally, if large enough areas are identified for this, a controlled burn, overseen by the local fire department, would best prepare the grassland for bishop pine restoration. Otherwise, vegetation would need to be removed to bare soil prior to seeding.

On the RCLC property the restoration area contains fill soil areas and asphalt. The asphalt would need to be removed, and areas where fill soil are may be served by a layer of ash or seed free topsoil prior to seeding.

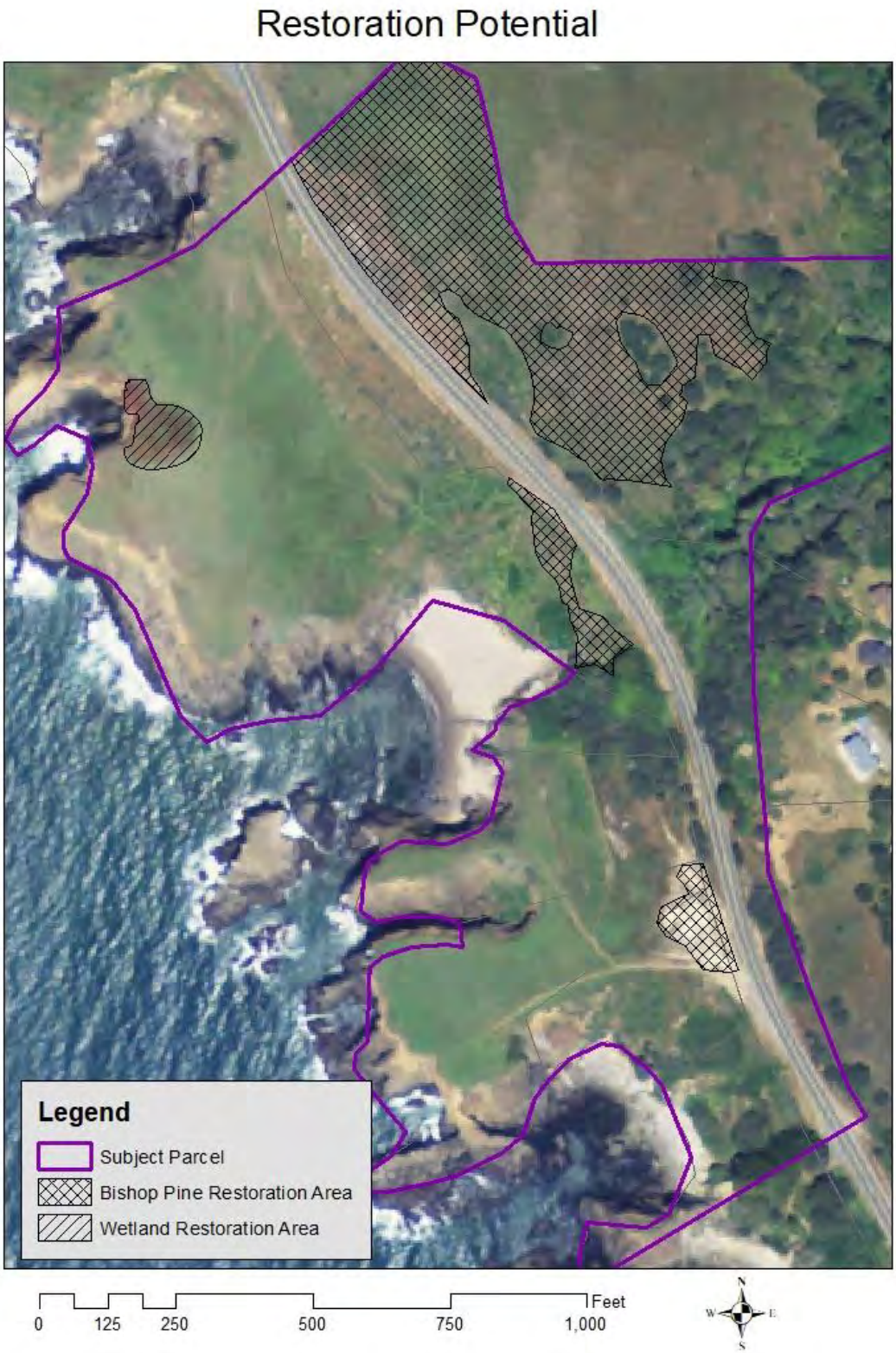


Figure 18. Potential restoration areas.

.

APPENDIX A
Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Hern Gulch City/County: Mendocino Sampling Date: 25MAY2020

Applicant/Owner: LaBoube State: CA Sampling Point: SP01

Investigator(s): Spade Section, Township, Range:

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): slight concave Slope (%): 11°

Subregion (LRR): A Lat: Long: Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes X No ____ (Army Corps 3 Parameter)
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks: Within location dominated by native grasses and with some wetland indicator species such as coyote thistle and blue eyed grass

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30'r)			
1. None			
2.			
3.			
4.			
	/ = Total Cover		
Sapling/Shrub Stratum (Plot size: 20'r)			
1. None			
2.			
3.			
4.			
5.			
	/ = Total Cover		
Herb Stratum (Plot size: 10'r)			
1. Deschampsia cespitosa	30	Y	FACW
2. Dantronia californica	5	N	FAC
3. Sysirinchium bellum	1		FACW
4. Eryngium aramatum	5		FACW
5. Plantago lanceolata	3		FACU
6. Carex rossii	3		NI
7. Briza maxima	1		NI
8. Prunella vulgaris	3		FACU
9. Hypocaeris radicata	6		FACU
10. Lotus corniculata	1		FAC
11. Lysimachia arvensis	+	V	FAC
	58 = Total Cover		
	29/11.6		
Woody Vine Stratum (Plot size: 10'r)			
1. None			
2.			
	/ = Total Cover		

% Bare Ground in Herb Stratum 40%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Only dominant sp. in this location is Deschampsia cespitosa = 1/Meets dominance test

SOIL Hern Gulch Sampling Point: SP01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR2.5/1	100	—	—	—	—	Loam	sand grains visible
4-8	7.5YR2.5/1	100	—	—	—	—	loam clay	higher clay content Sand visible
8-12+	7.5YR3/1	85	10YR2/1	5	—	M	Clay	
—	—	—	7.5YR4/6	10	C	M	—	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Clay

Depth (inches): 4

Hydric Soil Present? Yes X No ___

Remarks: Meets F6 Redox dark surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Relatively dry today. because clay soil starts at 4" deep and the area has a slight slope this area is likely wetter after rain but does not have much capacity to retain water. Surface soil cracks within nearby bare soil are present => meets (B6). High clay content may shrink + swell

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Hern Gulch City/County: Mendocino Sampling Date: 25 MAY 2020

Applicant/Owner: La Bonbe State: CA Sampling Point: SP02

Investigator(s): Spade Section, Township, Range:

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None Slope (%): 10°

Subregion (LRR): A Lat: N 30°51.162 Long: W123°38.956 Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Coastal act one parameter wetland

Remarks: 212 feet west of SP01 + composition of grassland abruptly changes between the two locations

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	\	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20'r)			
1. None			
2.			
3.			
4.			
5.			
	\	= Total Cover	
Herb Stratum (Plot size: 10'r)			
1. Danthonia californica	60	Y	FAC
2. Plantago lanceolata	10	N	FACU
3. Grindelia stricta	10		FACW
4. Sysinirchium bellum	+		FACW
5. Hypocachis radicata	2		FACU
6. Fragaria chiloensis	4		FACU
7. Prunella vulgaris	1		FACU
8. Stachys rigida	+		FACW
9. Briza maxima	+		NI
10. Festuca bromoides (Vulpia brom.)	3		FAC
11. Festuca perennis	+		NI
	92	= Total Cover	
	46/184		
Woody Vine Stratum (Plot size: 10'r)			
1. None			
2.			
	\	= Total Cover	

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Meets Dominance test due to prevalance of Danthonia californica, a FAC plant
Not a strong indicator as FAC plants occur ~ equally in wetlands + uplands
Danthonia californica is considered a FACU plant in adjacent subregions

SOIL Hern Gulch Sampling Point: SP02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17	7.5YR2.5/2	100	—	—	—	—	loam	sand grains visible
17-19+	7.5YR2.5/1	100	—	—	—	—	loamy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: clay

Depth (inches): 17

Hydric Soil Present? Yes ___ No X

Remarks: Clay content increases ~17 inches but no hydric soil indicators were observed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators observed

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Horn Gulch City/County: Mendocino Sampling Date: 25 MAY 2020

Applicant/Owner: La Bouhe State: CA Sampling Point: SP03

Investigator(s): SPADE Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	

Remarks: Location chosen is 10ft outside and downhill of a Deschampsia cespitosa patch with shrink swell cracks in soil that is assumed to be wetland simular to that described by SP01

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	\ = Total Cover		
Sapling/Shrub Stratum (Plot size: 20'r)			
1. None			
2.			
3.			
4.			
5.			
	\ = Total Cover		
Herb Stratum (Plot size: 10'r)			
1. Poa compressa	15	Y	FACU
2. Plantago lanceolata	20	Y	FACU
3. Grindelia stricta	15	Y	FACW
4. Achellia millefolium	2	N	FACU
5. Festuca bromoides (Vulpia)	10		FAC
6. Fragaria chiloensis	7		FACU
7. Hordeum brachyantherum	1		FACW
8. Rumex acetosella	+		FACU
9. Bromus hordaceous	7		FACW
10. Bromus Mantimus	2		NI
11. Deschampsia cespitosa	1		FACW
	80 = Total Cover		
	40/16		
Woody Vine Stratum (Plot size: 10'r)			
1. None			
2.			
	\ = Total Cover		

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL Hern Gulch Sampling Point: SP03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-21+	7.5YR2.5/1	100	—	—	—	—	loam	sand grains visible

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): None present to 21" dep

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No hydric soil indicators observed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators observed.

Teresa R Spade, AICP
Spade Natural Resources Consulting
PO Box 1503
Mendocino, CA 95460
phone: 707-397-1802
spadenrc@gmail.com

To: Kathleen Chasey

Date: July 1, 2020

Dear Kathleen:

I visited the LaBoube property located at APN 142-010-53 on June 22, 2020 to collect data on invasive plants present on the property. My analysis includes plants listed as Limited, Moderate or High, according to the California Invasive Plant Council (Cal-IPC), as well as a few species that are non-native but not listed by Cal-IPC.

The data is summarized as follows, corresponding with the map also provided:

The total area surveyed that was substantially covered by invasive and/or non-native plants was 85,140 square feet in size. Of that area, 60,000 square feet is within the boundaries of the LaBoube property, and 25,064 sf is within the adjacent right of way. About 57, 140 square feet of that area is considered accessible, while around 28,000 sf may be too steep to access. Invasives present were generally identifiable during the time of survey, however some of the species present were not identifiable to specific epithet.

Polygons were created of areas with consistent coverage, and an estimation of coverage of each of the more invasive species was made. The results are as follows:

A 450 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
wild radish	*Raphinus sativus*	Limited	10	45	
bull thistle	*Cirsium vulgare*	Moderate	2	9	
rattlesnake grass	*Briza maxima*	Limited	5	22.5	
wild oat	*Avena barbata*	Moderate	2	9	
sow thistle	*Sonchus asper*	Non Native	2	9	

B 500 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	*Carduus pycnocephalus*	Moderate	1	5	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	1	5	

C 1000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
star thistle	*Centaurea* sp.	Mod to High	1	10	
wild radish	*Raphinus sativus*	Limited	1	10	
Italian thistle	*Carduus pycnocephalus*	Moderate	3	30	
field mustard	*Brassica* sp.	Limited to Mod	5	50	

D 1000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
bull thistle	*Cirsium vulgare*	Moderate	15	150	
field mustard	*Brassica sp.*	Limited to Mod	20	200	

E 3500					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
ripgut brome	*Bromus diandrus*	Moderate	3	105	
Italian thistle	*Carduus pycnocephalus*	Moderate	4	140	
sow thistle	*Sonchus asper*	Non Native	2	70	
rattlesnake grass	*Briza maxima*	Limited	40	1400	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	2	70	

F 1200 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
rattlesnake grass	*Briza maxima*	Limited	40	480	
wild oat	*Avena barbata*	Moderate	2	24	
sow thistle	*Sonchus asper*	Non Native	1	12	
Italian thistle	*Carduus pycnocephalus*	Moderate	2	24	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	4	48	
wild radish	*Raphinus sativus*	Limited	30	360	

G 1850 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
rattlesnake grass	*Briza maxima*	Limited	25	462.5	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	5	92.5	
sow thistle	*Sonchus asper*	Non Native	4	74	
Italian thistle	*Carduus pycnocephalus*	Moderate	2	37	

H 350 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
ripgut brome	*Bromus diandrus*	Moderate	4	14	
field mustard	*Brassica sp.*	Limited to Mod	3	10.5	
sow thistle	*Sonchus asper*	Non Native	1	3.5	
wild oat	*Avena barbata*	Moderate	1	3.5	
rattlesnake grass	*Briza maxima*	Limited	7	24.5	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	3	10.5	
Italian thistle	*Carduus pycnocephalus*	Moderate	3	10.5	

I 475 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	9	42.75	
rattlesnake grass	*Briza maxima*	Limited	1	4.75	
bull thistle	*Cirsium vulgare*	Moderate	1	4.75	
sow thistle	*Sonchus asper*	Non Native	1	4.75	

J 6,500 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	50	3,250	

K 8,500 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
sow thistle	*Sonchus asper*	Non Native	5	425	

L 2,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
field mustard	*Brassica* sp.	Limited to Mod	3	60	
Italian thistle	*Carduus pycnocephalus*	Moderate	7	140	

M 1,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	*Carduus pycnocephalus*	Moderate	35	350	
sow thistle	*Sonchus asper*	Non Native	4	40	
field mustard	*Brassica* sp.	Limited to Mod	2	20	

N 5,750 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	*Carduus pycnocephalus*	Moderate	5	287.5	
field mustard	*Brassica* sp.	Limited to Mod	40	2300	
bull thistle	*Cirsium vulgare*	Moderate	2	115	

O 28,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
field mustard	*Brassica* sp.	Limited to Mod	30	8,400	

P 4,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
field mustard	*Brassica* sp.	Limited to Mod	25	1,000	
Italian thistle	*Carduus pycnocephalus*	Moderate	5	200	
bull thistle	*Cirsium vulgare*	Moderate	2	80	
poison hemlock	*Conium maculatum*	Moderate	3	120	

Q 3,750 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	*Carduus pycnocephalus*	Moderate	7	262.5	
purple velvet grass	Holcus lanatus	Moderate	1	37.5	
field mustard	*Brassica* sp.	Limited to Mod	3	112.5	

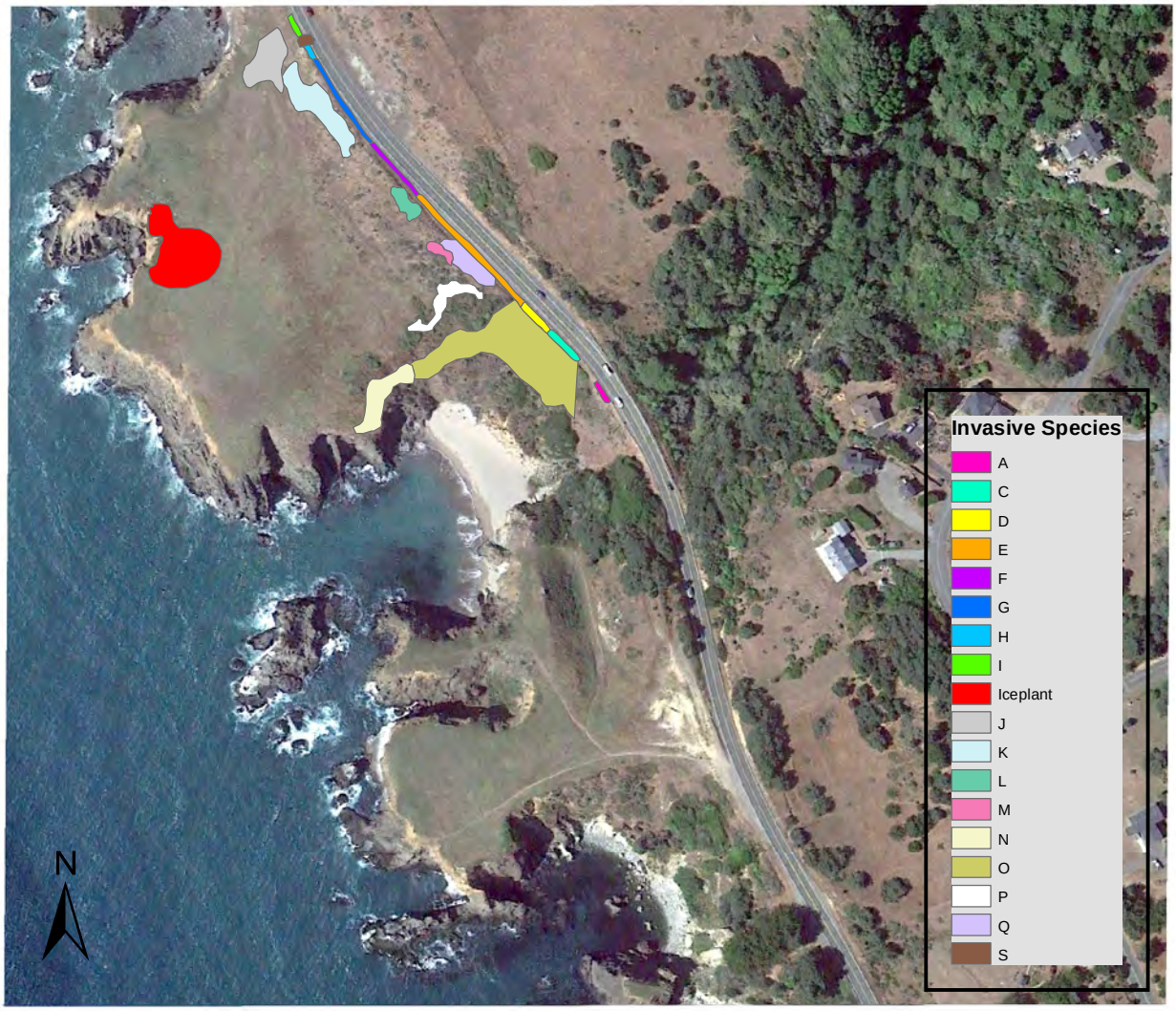
R 15,225 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
iceplant	*Carpobrotus chilensis*	Moderate	60	9,135	

S 90 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Monterey cypress	*Hesperocyparis macrocarpa*	Non native	100	90	

Sincerely,

Teresa R Spade, AICP
Spade Natural Resources Consulting

Saunder's Landing Western Parcel - Invasive Species **Inventory**



Memorandum

Making Conservation a California Way of Life

To: Stephanie Frederickson
Senior Environmental Planner
North Region Mitigation Analysis and Planning
Branch Chief
North Region Environmental, D01 Eureka

Date: November 13, 2023

File: Saunder's Landing Off-site Mitigation
01-MEN-1 / PM 10.2
EA 01-0G600 / EFIS 0117000026
EA 01-43484 / EFIS 0117000133
EA 01-0E110 / EFIS 0113000125

From: Tim Nelson
Environmental Scientist
Mitigation Specialist
North Region Mitigation Analysis and Planning
North Region Environmental, D01 Eureka

SUBJECT: Invasive Species Survey Results for the Eastern Parcel of Saunder's Landing

PROJECT DESCRIPTION

This Memorandum was prepared to conform to California Coastal Commission's (CCC) Coastal Development Permit (CDP) Number (No.) 1-22-0446 Special Condition 9.A.i.a. for the Elk Creek Bridge Replacement Project (01-0E110) and CDP No. 1-22-0711 Special Condition 4.A.1.a. for the Jack Peters Bridge Widening Project (01-43484) regarding the need to conduct a seasonally appropriate invasive plant survey at the offsite mitigation location at Saunder's Landing. The project area is located adjacent to California State Route (SR) 1 between post miles (PM) 10.2 and 10.3, about six miles south of Point Arena, California. The two parcels are bisected by SR 1, containing a 7.50-acre parcel to the west (western parcel, APN 142-010-53) and a 4.5-acre parcel to the east (eastern parcel, APN 142-010-54).

Per the CDP Special Conditions listed above, the California Department of Transportation (Caltrans) is required to conduct a seasonally appropriate survey for invasive plant species on the eastern parcel of Saunder's Landing prior to construction for the bridge projects. On May 23-24, 2023, Caltrans Revegetation Specialist, Loriel Caverly, and Mitigation Specialist, Tim Nelson, conducted non-native invasive species surveys, identifying and mapping species within sixteen (16) polygons. Additionally, seven points were taken where non-native invasive species were identified on the parcel. The analysis includes plants listed as Limited and Moderate according to the California Invasive Plant Council (Cal-IPC), as well as a few species that are non-native but not listed by Cal-IPC. Within the 16 polygons, there were no identified invasive species with a Cal-IPC High ranking. Polygons were created of areas with consistent coverage, and an estimate of coverage of identified invasive plants was made. The results are as follows:

Polygon ID: E-A	Polygon size:	1,077 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	15	161.55	
Briza maxima	rattlesnake grass	Limited	15	161.55	
Holcus lanatus	common velvet grass	Moderate	7	75.39	
Linum bienne	narrow leaved flax	-	2	21.54	

Polygon ID: E-B	Polygon size:	462 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Briza maxima	rattlesnake grass	Limited	2	9.24	
Holcus lanatus	common velvet grass	Moderate	3	13.86	
Rumex acetosella	sheep sorrel	Moderate	<1	3.47	Absolute cover slightly less than 1%

Polygon ID: E-C	Polygon size:	2,620 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	15	393.00	
Avena barbata	slender oat	Moderate	1	26.20	
Briza maxima	rattlesnake grass	Limited	10	262.00	
Holcus lanatus	common velvet grass	Moderate	5	131.00	

Polygon ID: E-D	Polygon size:	777 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	10	77.70	
Briza maxima	rattlesnake grass	Limited	70	543.90	
Hypochaeris radicata	hairy cat's ear	Moderate	<1	5.83	Absolute cover slightly less than 1%
Linum bienne	narrow leaved flax	-	10	77.70	

Polygon ID: E-E	Polygon size:	584 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	10	58.40	
Briza maxima	rattlesnake grass	Limited	70	408.80	
Hypochaeris radicata	hairy cat's ear	Moderate	1	5.84	
Linum bienne	narrow leaved flax	-	10	58.40	

Polygon ID: E-F	Polygon size:	319 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	5	15.95	
Briza maxima	rattlesnake grass	Limited	15	47.85	
Holcus lanatus	common velvet grass	Moderate	1	3.19	
Linum bienne	narrow leaved flax	-	2	6.38	

Polygon ID: E-G	Polygon size:	961 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	20	192.20	
Briza maxima	rattlesnake grass	Limited	10	96.10	
Carduus pycnocephalus	Italian thistle	Moderate	<<1	2.40	Absolute cover much less than 1%, near 0%
Cotoneaster sp.	cotoneaster	Limited-Moderate	<1	7.21	Absolute cover slightly less than 1%
Holcus lanatus	common velvet grass	Moderate	2	19.22	
Hypochaeris radicata	hairy cat's ear	Moderate	<<1	2.40	Absolute cover much less than 1%, near 0%
Linum bienne	narrow leaved flax	-	1	9.61	

Polygon ID: E-H	Polygon size:	752 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	20	150.40	
Briza maxima	rattlesnake grass	Limited	15	112.80	
Cirsium vulgare	bull thistle	Moderate	<<1	1.88	Absolute cover much less than 1%, near 0%
Cotoneaster sp.	cotoneaster	Limited-Moderate	1	7.52	
Holcus lanatus	common velvet grass	Moderate	2	15.04	
Hypochaeris radicata	hairy cat's ear	Moderate	<1	5.64	Absolute cover slightly less than 1%
Linum bienne	narrow leaved flax	-	2	15.04	

Polygon ID: E-I	Polygon size:	1,574 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	25	393.50	
Briza maxima	rattlesnake grass	Limited	25	393.50	
Holcus lanatus	common velvet grass	Moderate	15	236.10	
Hypochaeris radicata	hairy cat's ear	Moderate	1	15.74	
Linum bienne	narrow leaved flax	-	1	15.74	

Polygon ID: E-J	Polygon size:	675 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	15	101.25	
Briza maxima	rattlesnake grass	Limited	1	6.75	
Holcus lanatus	common velvet grass	Moderate	3	20.25	
Hypochaeris radicata	hairy cat's ear	Moderate	1	6.75	

Polygon ID: E-K	Polygon size:	1,047 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	20	209.40	
Briza maxima	rattlesnake grass	Limited	30	314.10	
Holcus lanatus	common velvet grass	Moderate	10	107.40	

Polygon ID: E-L	Polygon size:	7,635 ft^2			
Scientific Name	**Common Name**	**Cal-IPC rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	15	1145.25	
Avena barbata	slender oat	Moderate	2	152.70	
Briza maxima	rattlesnake grass	Limited	25	1908.75	
Holcus lanatus	common velvet grass	Moderate	7	534.45	
Lysimachia arvensis	scarlet pimpernel	-	1	76.35	

Polygon ID: E-M	Polygon size:	29,080 ft^2			
Scientific Name	**Common Name**	**Cal-IPC rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	35	10,178.00	
Briza maxima	rattlesnake grass	Limited	35	10,178.00	
Carduus pycnocephalus	Italian thistle	Moderate	<<1	72.70	Absolute cover much less than 1%, near 0%
Cirsium vulgare	bull thistle	Moderate	1	290.80	
Holcus lanatus	common velvet grass	Moderate	10	2,908.00	
Hypochaeris radicata	hairy cat's ear	Moderate	1	290.80	
Linum bienne	narrow leaved flax	-	1	290.80	
Lupinus arboreus	yellow bush lupine	-	<1	218.10	Locally non-native, not listed by Cal-IPC; Absolute cover slightly less than 1%
Vicia sativa	spring vetch	-	<<1	72.70	Absolute cover much less than 1%, near 0%

Polygon ID: E-N	Polygon size:	13,115 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	35	4,590.25	
Avena barbata	slender oat	Moderate	1	131.15	
Brassica nigra	black mustard	Moderate	1	131.15	
Briza maxima	rattlesnake grass	Limited	35	4,590.25	
Carduus pycnocephalus	Italian thistle	Moderate	10	1311.50	
Holcus lanatus	common velvet grass	Moderate	10	1311.50	
Hypochaeris radicata	hairy cat's ear	Moderate	1	131.15	
Linum bienne	narrow leaved flax	-	1	131.15	
Sonchus asper	sow thistle	-	<<1	32.79	Absolute cover much less than 1%, near 0%
Vicia sativa	spring vetch	-	<1	98.36	Absolute cover slightly less than 1%

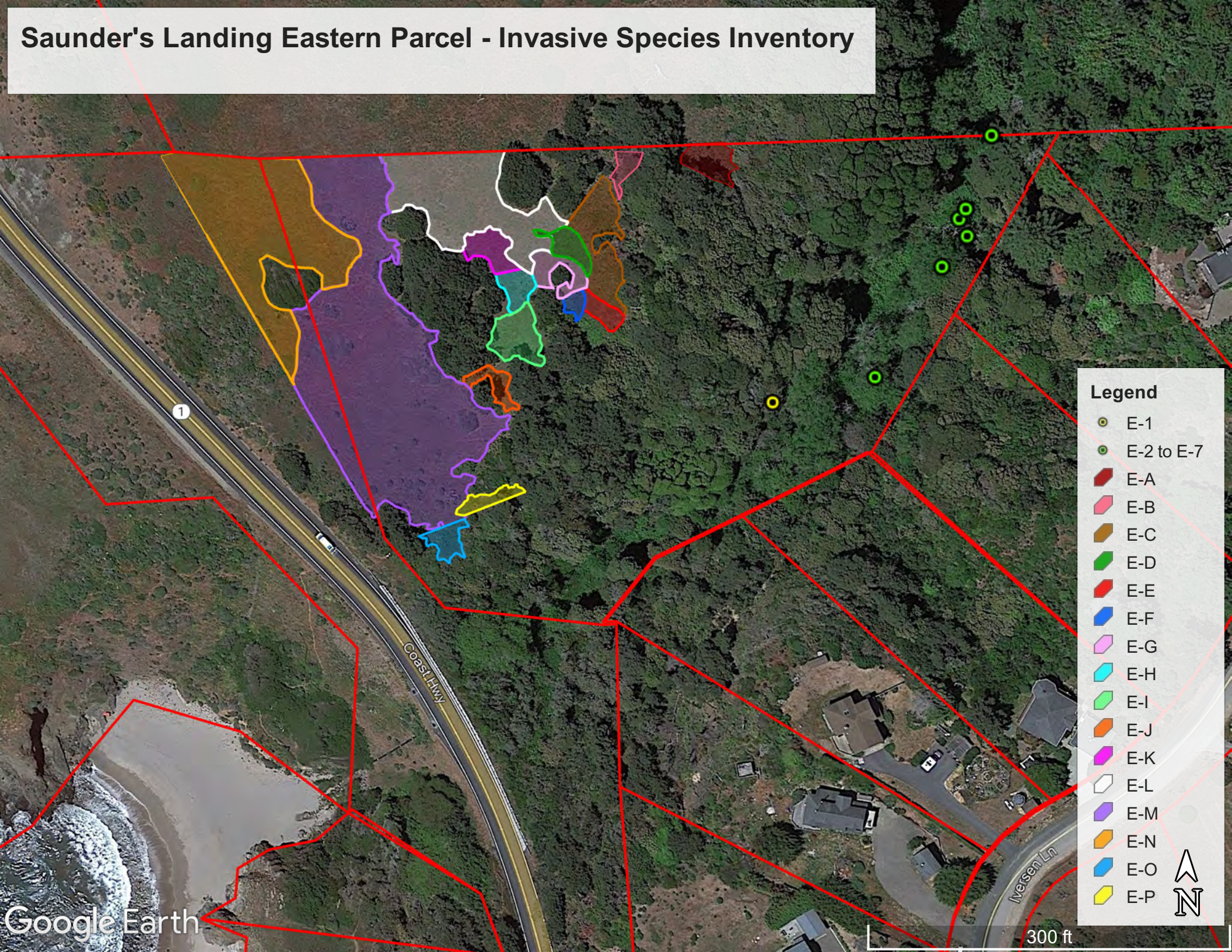
Polygon ID: E-O	Polygon size:	798 ft^2			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	45	359.1	
Briza maxima	rattlesnake grass	Limited	1	7.98	
Holcus lanatus	common velvet grass	Moderate	15	119.7	

Polygon ID: E-P	**Polygon size:**	**660 ft^2**			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Absolute Percent Cover in Polygon**	**Square Foot Coverage in Polygon**	**Notes**
Anthoxanthum odoratum	sweet vernal grass	Limited	5	33	
Holcus lanatus	common velvet grass	Moderate	10	66	

Point ID: E-1			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Notes**
Cirsium vulgare	bull thistle	Moderate	One plant found and removed during survey

Point ID: E-2 through E-7			
Scientific Name	**Common Name**	**Cal-IPC Rating**	**Notes**
Zantedeschia aethiopica	calla lily	Limited	One plant or cluster of plants found at each point. Plants were pulled when possible.

Saunder's Landing Eastern Parcel - Invasive Species Inventory



Appendix E. Draft PAR for Saunders Landing Bishop Pine Restoration Project

Saunder's Landing Bishop PIne Restoration Project Draft Property Analysis Record (PAR)

Mitigation Feature	Activity/ Action	Responsible Party	Description	Frequency	Actions Required	Unit	Number of Units	Cost/ Unit	Annual Cost (single occurrence cost)	Divide Years	Total Cost (annual set-aside)	Assumption #
Habitat Maintenance												
Annual Monitoring for Security and Biological Resources	Biological Monitoring	MLT	Biological monitoring of restored Bishop pine areas	Annually	Complete ocular surveys for restored Bishop pine areas	Labor Hours	16	60	$960	1	$960	1
	Bishop Pine Stand Health Evaluation	MLT	Evaluation of restored Bishop pine areas	Every 5 years	Complete health assessment of Bishop pine community	Labor hours	8	$90	$720	5	$144	2
	Bishop Pine Stand Management	MLT	Manage restored bishop pine areas	Every 5 years	Treatment or removal of dead and diseased Bishop pine vegetation	Labor hours	32	$60	$1,920	5	$384	3
	Mileage	MLT	Vehicle miles roundtrip from Fort Bragg to complete biological monitoring	Annually	100 miles roundtrip from Fort Bragg (50 miles one way)	Item	100	$0.60	$60	0.08	$720	4
									Sub-Total Habitat Maintenance Cost		**$2,208**	
Reporting												
Reporting to Resource Agency	General Inspections	MLT	General Inspections	Annually	Conduct general inspections that will concentrate on an evaluation of the following: health of the restored bishop pine forest, trash accumulation, evidence of unauthorized use of the site, and/or vandalism that jeopardizes the property. The entire perimeter of the restored areas will be covered, as well as meandering transects through its interior. Photo documentation also will be collected. Permanent photo points for taking photographs will be established, and a site map showing the photo point(s) will be prepared for the mitigation project file. Representative photographs will be taken once per year during the same season. 8 hours added to existing endowment for Saunder's Landing to capture assessment of restored Bishop pine areas	Labor Hours	8	$60	$480	1	$480	5
	General Inspection Report	MLT	General Inspection Report	Annually	Report includes a reconciliation of endowment funds expended to date, record of observations, map of mitigation area, photo documentation, maintenance or management actions, and any recommendations for altered management practices. Prepare and submit reports to agencies. 24 hours added to existing endowment for Saunder's Landing for MLT to complete General Inspection Report for restored Bishop pine areas	Labor Hours	24	$70	$1,680	1	$1,680	
									Sub-Total Reporting Costs		**$2,160**	
Administration												
Administration	Project Coordination and Budget Management	MLT	Supervise planning and management of mitigation land	Annually	Coordinate all aspects of mitigation project management, including reconciliation of budget, tracking monthly expenses, annual maintenance work, etc.; Oversee annual general inspections; 40 hours added to existing endowment for Saunder's Landing for MLT to manage aspect of endowment for restored Bishop pine areas	Labor hours	40	$70	$2,800	1	$2,800	6
	Accounting and Fund Management	MLT	Tracking staff time and recovering monthly expenses	Annually	Tracking staff time and recovering monthly expenses; 15 hours added to existing endowment for Saunder's Landing for MLT to manage fiscal accounting for work associated with the restored Bishop pine areas	Labor hours	15	$70	$1,050	1	$1,050	7
	Misc. Office	MLT	Misc. office expenses	Annually	Supplies such as paper, pens, staples, contribute to computer, printer, software purchases, etc.	Item	1	$100	$100	1	$100	8
									Sub-Total Administration Cost		**$3,950**	
Financial Summary - Long Term Costs												
Financial Summary	Ongoing Annual Costs				Sub-Total Habitat Maintenance Costs + Sub-Total Property Management and Maintenance Costs + Sub-Total Administration Costs						$8,318	
	Contingency Expense		10% contingency = Ongoing Annual Costs x 10%.		Fund is to cover unanticipated expenses, adaptive management	Item	1	$832	$832	1	$832	
									Sub-Total Ongoing Annual & Contingency Cost		**$9,150**	
	Endowment Capitalization											
	Funding Endowment	Caltrans	Establish endowment based on 3.5 % return	Lump Sum = Sub-Total Annual Ongoing Cost x 3.5%	Receive endowment funds	Lump Sum	$261,423				$261,423	
									Non-Wasting Endowment to Provide Annual Income =	**$9,150**	**$261,423**	

Saunders Landing Bishop Pine Restoration Project: Draft PAR Analysis for Long-term Management		
Mitigation Feature/Category	**Assump #**	**Assumptions**
General Assumptions*	1	16 hours (8 hours/2 people) to complete ocular surveys
	2	8 hours every 5 years to complete Bishop pine stand health evaluation
	3	32 hours (16 hours/2 people) every 5 years to complete Bishop pine stand management (if necessary)
	4	Assume 100 miles roundrip from Fort Bragg to Saunders Landing at 0.60/mile reimbursement
	5	MLT will need 8 hours to conduct yearly general inspections in order to complete the General Inspection Report to the agencies; MLT will need to direct 24 hours/year to complete General Inspection Report
	6	MLT will need to direct 40 hours/year for Project Management and Coordination
	7	MLT will need 15 hours/year to track staff time and recover monthly expenses for the management of the endowment
	8	Assuming miscellaneous office supplies (paper, ink, etc) will cost ~$100/year

Appendix F. NCRWQCB Concurrence for Use of Mendocino Coast Mitigation Bank Credits

From: Falcone, Gil@Waterboards
To: Nelson, Timothy@DOT; Stewart, Susan@Waterboards
Cc: Haas, Amanda@DOT; Frederickson, Stephanie@DOT; Umbertis, Stephen@DOT
Subject: RE: Gualala Shoulders (01-0F710) Mitigation Discussion
Date: Thursday, August 10, 2023 4:01:08 PM
Attachments: image001.png
image002.jpg

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Tim,

Thanks for checking in and sharing your findings. Yes you heard correctly, for filling of seasonal emergent fresh water wetlands we would be able to accept re-establishment credits (or establishment credits) for similar type of wetlands (seasonal emergent freshwater). The timing of impact to mitigation credit purchase would determine the ratio we would need. I have forgotten what the impact size was at Gualala but it seemed substantially less that what they would have available of for the initial release (below). I don't know what the ratio would be for pre-construction release that will be determined in the BEI but be sure they have plenty for you when you need it. Sorry I can't be more clear but all this stuff has not been worked out at this point so I am just giving you my best guess with where we are with this bank being in development. The timelines in your proposal and credit availability you cite here looks like something we can move forward with. We look forward to you submitting this with your application and we will make a formal determination in that process.

Hope that helps,

Gil

Gil Falcone

Supervisor Southern 401 Certification Unit
North Coast Regional Water Quality Control Board

From: Nelson, Timothy@DOT <Timothy.Nelson@dot.ca.gov>
Sent: Wednesday, August 9, 2023 9:52 AM
To: Falcone, Gil@Waterboards <Gil.Falcone@waterboards.ca.gov>; Stewart, Susan@Waterboards <Susan.Stewart@waterboards.ca.gov>
Cc: Haas, Amanda@DOT <Amanda.Haas@dot.ca.gov>; Frederickson, Stephanie@DOT <Stephanie.Frederickson@dot.ca.gov>; Umbertis, Stephen@DOT <Stephen.Umbertis@dot.ca.gov>
Subject: RE: Gualala Shoulders (01-0F710) Mitigation Discussion

EXTERNAL:

Hi Gil and Susan,

I spoke to our mitigation bankers yesterday about our need for specific credit types and amounts to be available at the time of the first credit release in order for us to use for our Gualala Shoulders 401 permit. I specifically recall you saying "wetland establishment or re-establishment" were required to offset/mitigate for filled wetlands. I relayed this information to Linda at RES and she mentioned that they don't often do "establishment" which would be where you are creating wetlands where they weren't found before (so you establish a wetland but in order to do that, you need to also establish the hydrology). RES informed me that they prefer to work with the natural hydrology since they cannot create new rivers or groundwater in these systems where they don't currently exist. Often RES is asked by the agencies to conduct studies/analyses to ensure the proper hydrology is there in order to support the wetlands that will be created/re-established (completion of hydrology models, H&H reports, etc.). Linda provided a table that will be included in their Draft Bank Enabling Instrument which explains each category of restoration type proposed to be included in the bank. These definitions are from the USACE's 2008 wetland Mitigation Rule.

Table 13. Mitigation Types (Wetland Habitats) - Garcia River and Crispin Bank Parcels

Mitigation/ Restoration Type	Definition	Restoration Actions
Reestablishment	Generation of new aquatic resource acreage and function where historically the same resources were once found but do not currently exist	Grading, planting, seeding, weeding, livestock exclusion (except for flash grazing), woody material mounds, and removal/improvement of human infrastructure (e.g., ditches, roads, etc.)
Rehabilitation	Improvement of many or all ecological functions of existing aquatic resources; can be combined with "enhancement" following approach described in **Exhibit F-1b** of the BEI.	Grading, planting, seeding, weeding, livestock exclusion (except for flash grazing), woody material mounds, and removal/improvement of human infrastructure (e.g., ditches, roads, etc.)
Enhancement	Improvement of a single or few ecological functions of existing aquatic resources; can be combined with "rehabilitation" following approach described in **Exhibit F-1b** of the BEI.	Weeding, and/or livestock exclusion (except for flash grazing)
Preservation	No change to existing aquatic resource acreage or function.	None

Linda did mention that the current proposal will include an adequate amount of seasonal wetland re-establishment credits (~0.90 acre) and riparian wetland/waters re-establishment credits (~0.97 acre) that will available in the first credit release. Would the use of the seasonal wetland re-establishment credits be satisfactory to meet Gualala

Shoulders impacts to the seasonal ditch wetlands?

Thanks Gil and Susan for your continued assistance!

Tim

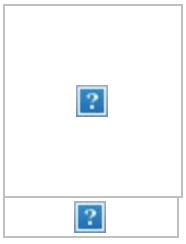
TIM NELSON
Environmental Scientist | Mitigation Specialist
Mitigation Analysis and Planning
Caltrans-District 1 | North Region Environmental
1656 Union Street
Eureka, CA 95501
Cell: 707-492-0158

District Office: Monday-Tuesday
Telework: Wednesday-Friday

From: Nelson, Timothy@DOT
Sent: Monday, July 31, 2023 2:10 PM
To: Stewart, Susan@Waterboards <Susan.Stewart@waterboards.ca.gov>; Falcone, Gil@Waterboards <Gil.Falcone@waterboards.ca.gov>
Cc: Haas, Amanda@DOT <Amanda.Haas@dot.ca.gov>; Frederickson, Stephanie@DOT <Stephanie.Frederickson@dot.ca.gov>; Walker, Liza M@DOT <liza.walker@dot.ca.gov>; Umbertis, Stephen@DOT <Stephen.Umbertis@dot.ca.gov>; Hart, Christopher L@DOT <Christopher.L.Hart@dot.ca.gov>
Subject: RE: Gualala Shoulders (01-0F710) Mitigation Discussion

Thanks for the response Susan! I will check in with the team here and send along a Webex invite as soon as we determine a preferred date/time from the options you provide below.

TIM NELSON
Environmental Scientist | Mitigation Specialist
Mitigation Analysis and Planning
Caltrans-District 1 | North Region Environmental
1656 Union Street
Eureka, CA 95501
Cell: 707-492-0158



From: Stewart, Susan@Waterboards <Susan.Stewart@waterboards.ca.gov>
Sent: Monday, July 31, 2023 2:05 PM
To: Nelson, Timothy@DOT <Timothy.Nelson@dot.ca.gov>; Falcone, Gil@Waterboards <Gil.Falcone@waterboards.ca.gov>
Cc: Haas, Amanda@DOT <Amanda.Haas@dot.ca.gov>; Frederickson, Stephanie@DOT <Stephanie.Frederickson@dot.ca.gov>; Walker, Liza M@DOT <liza.walker@dot.ca.gov>; Umbertis, Stephen@DOT <Stephen.Umbertis@dot.ca.gov>; Hart, Christopher L@DOT <Christopher.L.Hart@dot.ca.gov>
Subject: RE: Gualala Shoulders (01-0F710) Mitigation Discussion

Hello Tim,

We would like to discuss the Mendocino Coast Mitigation Bank proposal in a meeting. I am out of the office on Friday. Could we possibly meet on Wednesday afternoon, or early next week when Gil and I are both available?

8/2 3-4 PM, 4-5 PM
8/7 10-11 AM, 1-2 PM, 3-4 PM, 4-5 PM
8/8 1-2 PM, 2-3 PM

Please let me know if any of these dates will work.

Thank you,

Susan Stewart
Environmental Scientist
Susan.Stewart@waterboards.ca.gov
Office: 707-576-2657

From: Nelson, Timothy@DOT <Timothy.Nelson@dot.ca.gov>
Sent: Thursday, July 27, 2023 3:20 PM
To: Falcone, Gil@Waterboards <Gil.Falcone@waterboards.ca.gov>; Stewart, Susan@Waterboards <Susan.Stewart@waterboards.ca.gov>
Cc: Haas, Amanda@DOT <Amanda.Haas@dot.ca.gov>; Frederickson, Stephanie@DOT <Stephanie.Frederickson@dot.ca.gov>; Walker, Liza M@DOT <liza.walker@dot.ca.gov>; Umbertis, Stephen@DOT <Stephen.Umbertis@dot.ca.gov>; Hart, Christopher L@DOT <Christopher.L.Hart@dot.ca.gov>
Subject: Gualala Shoulders (01-0F710) Mitigation Discussion

Hi Gil and Susan,

Good afternoon! The Caltrans team was hoping to meet once more to discuss mitigation for Gualala Shoulders (01-0F710). Specifically, we wanted to discuss the attached letter

and our proposal to use contracted bank credits from the Mendocino Coast Mitigation Bank in order to satisfy our mitigation obligations for Project impacts. As you can see from the schedule provided within the letter, construction for the Gualala Shoulders safety project will not occur until April 2025. This construction start date is ~1 year after the anticipated date for the Final BEI for Bank #1, ~9 months after the anticipated date for Bank #1 to be permitted, and ~6 months after the anticipated date for the first credit release from Bank #1. Under the current proposal, Caltrans would request a prior to construction condition be placed within the Gualala Shoulders 401 permit (to be submitted in Aug/Sep 2023; needed by 1/15/2024) to allow for the project to reach the Ready to List (RTL) milestone (scheduled 3/25/2024) for construction more than 1 year later (April 2025).

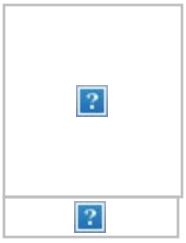
I looked at all our calendars and we have availability to meet on 8/4 from 2-3, 3-4, or 4-5. Please let me know if you can meet on this date and, if so, what time works best for you both.

Thanks for your continued assistance Gil and Susan!

Tim

TIM NELSON
Environmental Scientist | Mitigation Specialist
Mitigation Analysis and Planning
Caltrans-District 1 | North Region Environmental
1656 Union Street
Eureka, CA 95501
Cell: 707-492-0158

District Office: Monday-Tuesday
Telework: Wednesday-Friday



Appendix G. Draft Best Management Practices for Treework on Bishop and Monterey Pine in Mendocino County

DRAFT BEST MANAGEMENT PRACTICES for TREEWORK on BISHOP and MONTEREY PINE
in MENDOCINO COUNTY

Introduction:

Bishop pine (*Pinus muricata*) is experiencing extensive mortality throughout its limited range due to novel pathogens and compounding factors. The primary problematic pathogens are *Ips* species, a group of tiny engraver beetles; a canker causing fungus, pine pitch canker (*Fusarium circinatum*); and a water mold causing root rot dieback (*Phytophthora cinnamomi*). Compounding these pathogens, drought stress and lack of natural regeneration due to lack of fire is causing significant decline of this species.

Monterey pine (*Pinus radiata*) which is not native to the north coast, but has been planted extensively as an ornamental, is a host to most of the pathogens that are contributing to bishop pine decline. Therefore, tree work on Monterey pine should be approached with the same best management practices (BMPs) as with bishop pine.

The following BMPs were developed for any Caltrans contracted work within the Zone of Infestation (ZOI) for pitch canker when working on or around bishop or Monterey pine.

Protocol

When removing or pruning potentially diseased trees, material and equipment must be treated in the following ways:

1. Any green/live material must be burned onsite or chipped to sizes smaller than 6 inches in length within five weeks of tree work. If any logs cannot be chipped the bark must be removed.

   Reason: *Ips* beetles can reproduce in five weeks in cut green material and under bark.

2. Woodchips and/or slash must be buried, burned, or transported away from the work site and away from any other bishop pine populations.

   Reason: To prevent further reproduction or attraction of beetles in the target population or any healthy populations.

3. Chipped wood must be **immediately** buried, burned, or transported away.

   Reason: The volatile terpenes (the pine odor) can attract more beetles to the work location.

4. Transported material should be taken to the nearest landfill or designated disposal facility for prompt burial, chipping and composting, or burning.

   Reason: Decreasing the time and distance involved in transportation will decrease the risk of spreading pathogens.

5. Do not transport diseased wood out of the Zone of Infestation, which in our region includes Mendocino and Sonoma counties.

   Reason: To prevent introducing new pathogens to un-infested areas.

6. When transporting, material must be fully contained or tightly tarped to avoid material dislodgement and escape in route.

   Reason: Pathogens present in tree material (e.g. pitch canker and root rot spores or beetles) might spread to healthy populations in route.

7. Tools and machinery used to prune, cut, or chip material with pitch canker disease must be cleaned and sterilized before use on uninfected trees or in un-infested areas. Isopropyl alcohol 70%, Lysol™, or a 10% solution of bleach (1 part household bleach in 9 parts water) are effective sterilizers.

   Reason: Tools and machinery may transmit pathogenic material to healthy populations.

8. Tools, vehicles, and machinery, including wheels and tracks, must be cleaned from mud and soil and then sterilized (as above) before leaving work site.

   Reason: To prevent spreading soil borne pathogens such as *Phytophthora* species responsible for sudden oak death and root rot diseases.