

Accelerated Large Woody Debris Recruitment in Lagunitas Creek (Project ID: 1728116) 2022

Introduction:

The Salmon Protection and Watershed Network (SPAWN) will conduct a geomorphic assessment, design, and planning for large wood loading recruitment through toppling existing hardwood trees throughout a four (4) mile stretch of Lagunitas Creek on National Park Service (NPS) land in partnership with NPS and Lagunitas Technical Advisory Committee (TAC). The approach being considered is a low-cost, low-impact, highly economical strategy to drastically increase wood loading within Lagunitas Creek. It is unique to the location which has high tree density and has limited liability to downstream structures such as bridges or residential development due to its location inside NPS lands.

The project will develop conceptual, intermediate, and final design plans and Basis of Design documents necessary for construction. The project will also conduct biological and cultural resources surveys needed for the NOAA biological opinion, USFWS biological opinion, and will determine a compliance strategy for NEPA/CEQA through existing programmatic documents.

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

Does the project involve the construction of beaver analogs?

Yes or No

Is the project located in a tidally influenced [California coastal zone](#)?

Yes or No

Objective(s):

This project objectives will accomplish the restoration task of greatly increasing the frequency and volume of large woody debris throughout the central four (4) miles of Lagunitas Creek. This is done to improve conditions for adults, and winter/summer rearing juveniles. This will also help accomplish the Total Maximum Daily Load (TMDL) for large wood loading density in the hardwood channels of Lagunitas Creek at 100 cu meters per hectare. (Napolitano, 2014). Hardwood channels are those adjacent to floodplains vegetated by hardwood trees such as white alder, Oregon ash, and a variety of willow species. Increasing large wood loading by such significant densities in the middle four (4)

miles of Lagunitas Creek will help to improve natural processes such as instream wood recruitment, sediment sorting and storage, and pool habitat formation. Doing so will improve spawning conditions for adults and improve rearing conditions for coho through increased pool complexity, cover, and floodplain connectivity.

Project Description:

This project will conduct a geomorphic assessment, design, and planning for large wood loading recruitment through toppling existing hardwood trees throughout a 4 mile stretch of Lagunitas Creek on National Park Service (NPS) land in partnership with NPS and Lagunitas Technical Advisory Committee. The approach being considered is a low-cost, low-impact, highly economical strategy to drastically increase wood loading within Lagunitas Creek. It is unique to the location which has high tree density and has limited liability to downstream structures such as bridges or residential development due to its location inside NPS lands.

The project will develop conceptual, intermediate, and final design plans and Basis of Design documents necessary for construction. The project will also conduct biological and cultural resources surveys needed for the NOAA biological opinion, USFWS biological opinion, and will determine a compliance strategy for NEPA/CEQA through existing programmatic documents.

Location:

This project occurs in Marin County, California across 4 miles of the mainstem of Lagunitas Creek, referred to as the `Tocaloma` Reach which is on National Park Service land. The Tocaloma Reach extends from the western boundary of Samuel P Taylor State Park, downstream to the confluence of Nicasio Creek. This reach is approximately 4 miles upstream of the mouth of Lagunitas Creek where it meets Tomales Bay. The reach is dominated by hardwood forests of willow, alder, Oregon Ash, and boxelder. The riparian corridor is very thick with an abundance of vegetation, due to the regulated hydrograph.. Project coordinates are: 38.05595, -122.76003

Project Set Up:

SPAWN will lead the project management and administration, this includes contract management with CDFW, invoicing and reporting and overall project coordination. SPAWN will retain a bookkeeper contractor to assist with budget tracking, invoicing, and payroll. SPAWN will lead stakeholder engagement and leadership of the Technical Working Group (TWG). As part of the stakeholder coordination, SPAWN will create a community outreach and communication plan that will include a strategic plan to engage stakeholders within the community of lower Lagunitas Creek and Point Reyes Station regarding the project. This will

include direct mailing and a webinar or town-hall style meeting with Q/A. SPAWN staff included in this task include: Project Supervisor, Communications Manager, Project Manager, Project Foreman, Inter I and Intern II. SPAWN's consultant bookkeeper will include the bookkeeping assistant and accountant.

SPAWN and Prunuske Chatham, Inc. (PCI) will collaboratively evaluate the feasibility and potential benefits of enhancing coho habitat throughout the entire Middle Reach of Lagunitas Creek via increasing small, large, and live wood in the active channel by loading riparian hardwood trees. Project goals are to enhance fluvial geomorphic function to accumulate sediment, increase channel complexity, and improve rearing habitat for coho. PCI staff working on this task include: Principal Landscape Architect, Project Principal/Geomorphologist, Senior Civil Engineer IV, Project Manager/Hydrologist, Principal Environmental Planner. PCI and SPAWN will work with the TWG to select sites with sufficient feasibility to be included in the Conceptual (30%) Designs. After submittal of the Middle Lagunitas Creek Wood Loading Conceptual Plan, SPAWN and PCI will meet with the landowner and the TWG to discuss plan details, alternative approaches, and select an approximately 1-mile demonstration reach for preparation of construction-ready plans for Phase 1 implementation. Desired refinements to the concept design will be discussed with the stakeholders and incorporated into Intermediate (65%) Plans development.

PCI will produce and submit Draft (90%) Design plans that incorporate stakeholder comments and any needed refinements to the overall site designs, and will expand to include construction details, erosion and sediment control, revegetation, and detailed access and staging area plans, as needed. An engineer's construction cost estimate and a bid schedule will be provided with the Final (100%) Design plan submittal.

A post-implementation effectiveness monitoring plan will be developed to assess and document the wood stability and geomorphic response to wood loading for the demonstration reach. Monitoring elements required by permitting agencies will be included and will support development of adaptive management strategies. The geomorphic monitoring plan will likely include pre- and postproject mapping, depending upon the site habitat and process-based restoration objectives.

PCI staff working on this task include: Project Principal/Geomorphologist, Senior Civil Engineer IV, Project Manager/Hydrologist, Principal Environmental Planner, Senior Vegetation Ecologist IV, Senior Biologist III, Registered Civil Engineer II, Registered Landscape Architect I, Environmental Planner III, Registered Professional Forester, Assistant Engineer, Professional Surveyor, Assistant Engineer I.

SPAWN will reach out to the local Native American tribes and invite them to participate in the field assessments and involve interested parties in the TWG

during project development and pilot project design to have the project reflect tribal cultural values to the maximum extent possible.

Materials:

Biological and Geomorphic Field Supplies:

- These supplies include (survey stadia rods, meter tapes)

Waders

- These supplies include waders.

Survey Equipment

- These include total station and RTK.

Field Cameras

- These include time-lapse cameras and fixed station cameras.

Tasks:

Task 1 Detailed Design Plans for Demonstration Reach

Design plans for process-based restoration, wood loading, and coho habitat enhancement at the selected demonstration reach will be advanced through Intermediate (65%), Draft (90%), and Final (100%) Design plans. The majority of design-related work will be completed as part of the Intermediate (65%) Design phase. PCI and SPAWN will identify and map all trees targeted for in-channel wood loading in the selected demonstration reach. Consultations with registered foresters will inform tree selection, site-specific techniques for felling and stabilizing trees, and viability of desired project objectives including stability, risk, longevity, and maintaining riparian zone forest health. The identified trees will be tagged and surveyed with map-grade GPS. Hydraulic analysis will inform anchoring methods and site stability. The drawings will include detailed plan and profile views that articulate the project location; each targeted tree species, size, and identification number; wood loading and stabilizing methods; and construction limits including preliminary access and staging areas to evaluate impacts. Tree alignments will be specified along with the overall site habitat objectives.

A site-specific draft Basis of Design report will be included with the Intermediate (65%) Design plan submittal that addresses all design plan criteria. The Intermediate Plans and draft Basis of Design report will be submitted to the TWG and presented to the Lagunitas TAC, for review and comment.

PCI will produce and submit Draft (90%) Design plans that incorporate stakeholder comments and any needed refinements to the overall site designs, and will expand to include construction details, erosion and sediment control, revegetation, and detailed access and staging area plans, as needed.

Draft technical specifications will be included as sheets in the plan set. General site requirements and technical specifications for mobilization and clearing will be included in the notes sheet. Technical specifications related to the tree work will be included in the construction detail sheet. Erosion control and revegetation specifications will be shown on the associated plan sheets. The 90% plans will

be submitted to the TWG for final technical review and comment. PCI will produce and submit Final (100%) Design Plans that incorporate any final comments and revisions to plans and specification language, as well as the final Basis of Design report. An engineer's construction cost estimate and a bid schedule will be provided with the Final (100%) Design plan submittal. These will serve as the final set of design documents sufficient to support bidding and construction.

Task 2 Special Studies and Environmental Compliance

Special Studies

Lagunitas Creek and the surrounding watershed provide habitat for several special-status species including salmonids, California freshwater shrimp, Pacific lamprey, and northern spotted owls. The biological resources assessment will focus on biological, aquatic, wetland, and botanical resources potentially present within the Lagunitas Creek riparian corridor through the demonstration reach to understand site constraints and to facilitate consultation with National Marine Fisheries and USFWS as needed for environmental compliance purposes. Special studies will be used to guide project design to avoid impacts on biological and wetland resources and to identify avoidance, minimization, and mitigation measures needed to protect resources where impacts cannot be avoided. These studies will meet the standards for evaluation included in the NEPA Guidelines programmatic evaluation procedures and provide sufficient information for consultation with responsible agencies during future permitting efforts. A cultural and tribal resources assessment will provide important information about resources present or potentially present within the demonstration reach. This information will be used to initiate consultation with SHPO and will inform the NEPA analysis for the demonstration reach. SPAWN will reach out to the local Native American tribes and invite them to participate in the field assessments and involve interested parties in the TWG during project development and pilot project design to have the project reflect tribal cultural values to the maximum extent possible.

Regulatory Compliance Strategy

SPAWN and PCI will develop a regulatory compliance strategy for the demonstration project to identify the most efficient approach to meet CEQA, NEPA, and permitting needs. The strategy will identify the CEQA and permitting efficiencies available for wood recruitment projects, including the potential use of the SERP statutory exemption or the use of the categorical exemption for small habitat restoration projects. Depending on the demonstration project size and the availability of programmatic CEQA documents, the strategy may identify the use of a Restoration Programmatic EIR if the demonstration project exceeds the parameters of small habitat restoration and the availability of programmatic CEQA documents.

The project is completely located in National Park Service (NPS) lands within the Golden Gate National Recreation Area; therefore, a National Environmental

Policy Act (NEPA) evaluation is required for issuance of a federal special use permit or other NPS project approval mechanisms. SPAWN and PCI will collaborate with NPS staff to identify the most appropriate means to meet the NEPA requirement, which may include the development of a project-specific NEPA document or the use of programmatic documents, if available. PCI and SPAWN will facilitate discussions between NPS and NOAA-RC to determine if use of the NOAA Fisheries Programmatic Environmental Impact Statement is a viable means to meet the project's NEPA obligations. The NEPA compliance strategy will be integrated into the overall regulatory compliance strategy and timeline. A coordinated agency site visit will support development of the permitting approach and provide opportunity for collaborative discussion. The regulatory compliance strategy will identify permitting pathways that use available permitting efficiencies depending on project size and elements. The strategy will evaluate the use of both large- and small-habitat restoration project permitting pathways, use of the Restoration Management Permit with CDFW, and use of RGP-12 or nationwide permits for federal permitting mechanisms. PCI will hire a subconsultant, named ALTA Consultants. ALTA will assist with the cultural resources investigation and data review. They will prepare the cultural resources investigation report.

PCI staff working on this Task include: Project Manager/Hydrologist, Principal Environmental Planner, Senior Vegetation Ecologist IV, Senior Biologist III, Registered Civil Engineer II, Registered Landscape Architect I, Environmental Planner III, Registered Professional Forester, Assistant Engineer, Professional Surveyor, Assistant Engineer I, Vegetation Ecologist III, Senior Vegetation Ecologist IV, Senior Biologist III, Principal Environmental Planner. ALTA Cultural Resources Subconsultant include: Principal Investigator B, Geographic Information Specialist B, Archeologist C, Tribal Monitor.

Task 3 Monitoring and Evaluation

A geomorphic/hydrologic monitoring plan will be developed to assess and document the geomorphic and hydrologic response to the approach of wood recruitment through toppling trees in the Demonstration Reach. The geomorphic monitoring plan will include pre- and post-project mapping bar and pool features, tracking of wood load density, repeat cross section surveys and Water Level Loggers used for recording water levels. Pre-project and annual repeat cross section surveys will be used to examine the geomorphic response of toppling trees at a high density across the Demonstration Reach, by comparing changes in cross section deposition and erosion patterns. Water level data loggers and time-lapse cameras will be installed to examine the hydrologic response of toppling trees at a high density across the Demonstration Reach, by comparing changes in floodplain activation for given flows. Fixed cameras will be used to capture conditions at the time of field visits. As part of this and prior tasks Mileage will be billed to reimburse travel of personal vehicles to and from the site. Printing and Duplicating will be required to submit permit application materials, review project plans, reports, and details. As part of this project, PCI will install

level loggers and establish monitoring sections at up to three locations, including setting monument pins following stakeholder review of the Intermediate (65%) Design plans. SPAWN will map the existing bar and pool features prior to implementation. Use of Intern Housing Facility will be utilized to provide shortterm housing for volunteer SPAWN interns. Collection of post-project conditions information (i.e., post-project mappings of bar and pool features, estimating the wood density, repeat section surveys, collecting water level data, and estimating changes to floodplain inundation areas) is not included in this project, and is expected to be funded as part of implementation.

Deliverables:

Auguring test pits using a handheld auger and estimating gravel depth using hand driven metal pins. No ground disturbance with heavy equipment. Total number of test pits 10-15.

Final (100%) Design Plans that incorporate any final comments and revisions to plans and specification language, as well as the final Basis of Design report.

Timelines:

Test pits during the summer of 2023 and 2024.

Final 100% design Plans and Basis of Design report delivered by 2/28/2025

Additional Requirements:

The Permittee will not proceed with on the ground implementation until all necessary permits and consultations are secured. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

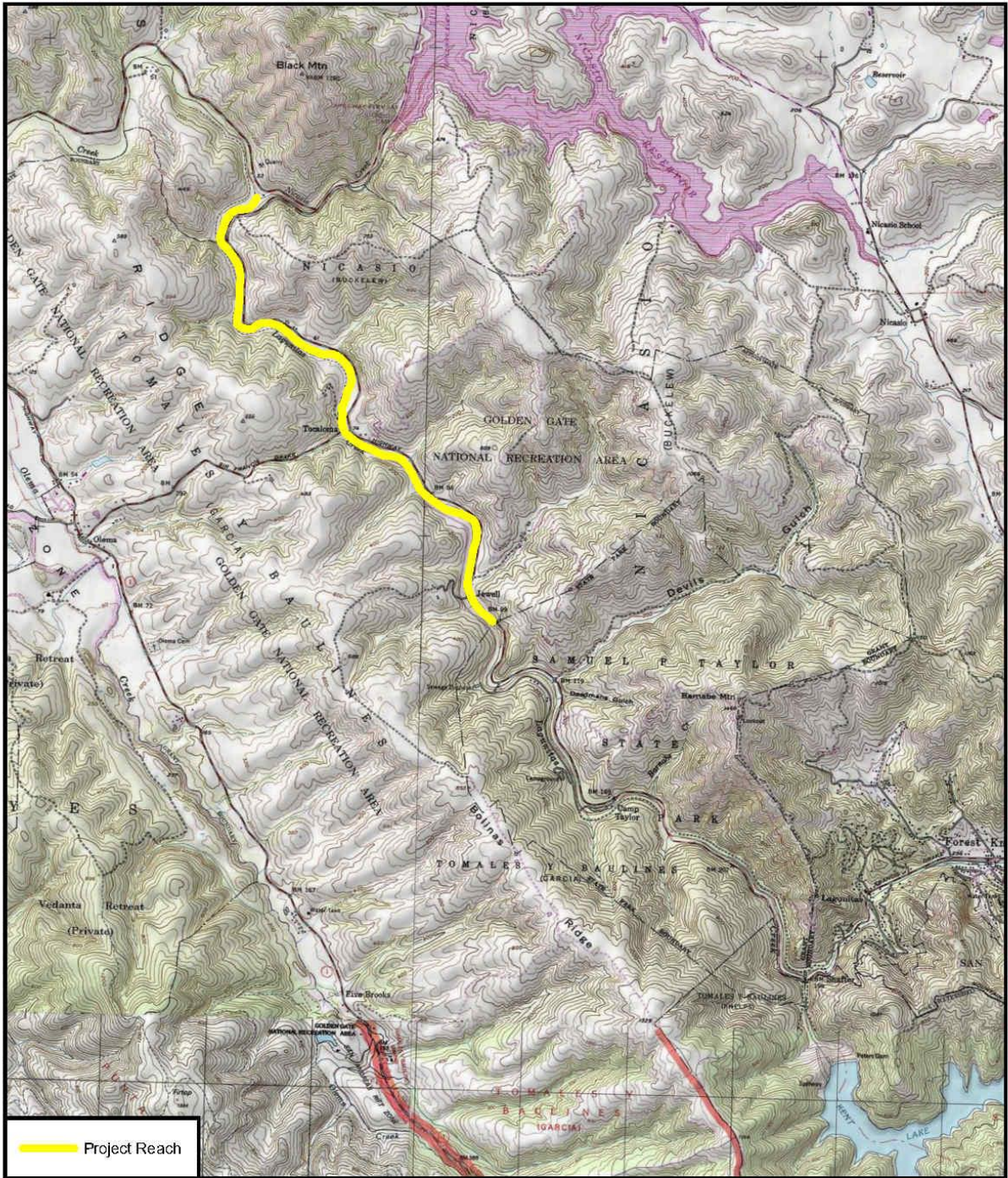
No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment.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

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

standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

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

All habitat improvements will follow techniques described in the *California Salmonids Stream Habitat Restoration Manual*, Volume I and Volume II.

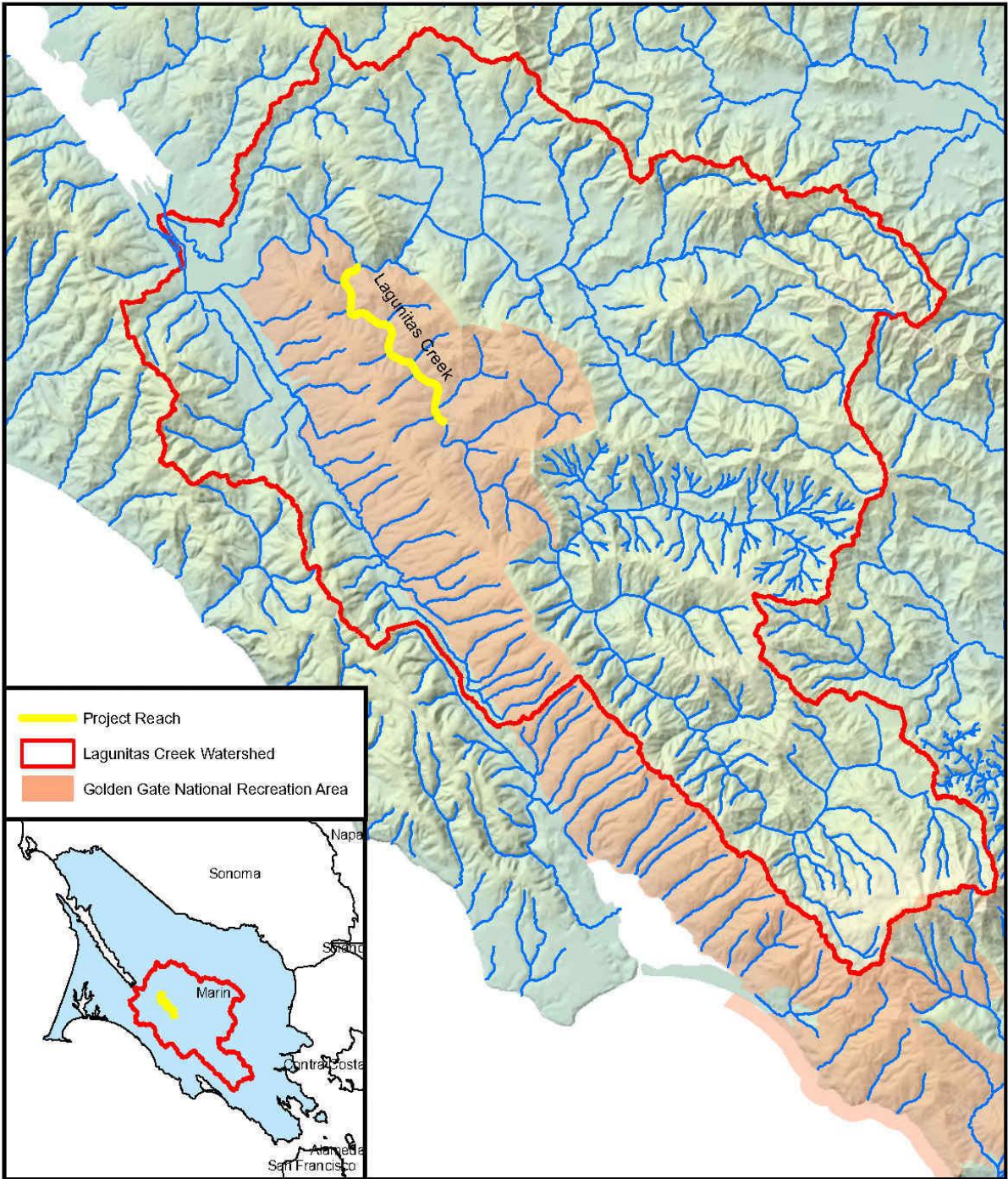


Supplemental Document 4: Project Location Map
 Lagunitas Creek Wood Recruitment Planning Project
 SPAWN

0 0.5 1 Miles

4/9/2021
 USGS 7.5 Minute Quadrangles:
 San Geronimo
 Inverness





- Project Reach
- Lagunitas Creek Watershed
- Golden Gate National Recreation Area



Supplemental Document 5: Watershed Map
Lagunitas Creek Wood Recruitment Planning Project
SPAWN

0 1 2 Miles
4/9/2021
Source: USGS, ESRI



CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE RareFind

Query Summary:

Quad **IS** (Inverness (3812217) **OR** Drakes Bay (3812218) **OR** San Geronimo (3812216) **OR** Tomales (3812228) **OR** Point Reyes NE (3812227) **OR** Petaluma (3812226) **OR** Bolinas (3712286) **OR** Double Point (3712287))

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CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	Dicots	PDNYC010N4	61	14	None	None	G4G5T2	S2	1B.1	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Coastal dunes
<i>Adela operella</i>	Opler's longhorn moth	Insects	IILEE0G040	14	1	None	None	G2	S2	null	null	Ultramafic, Valley & foothill grassland
<i>Agelaius tricolor</i>	tricolored blackbird	Birds	ABPBXB0020	955	5	None	Threatened	G1G2	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Wetland
<i>Agrostis blasdalei</i>	Blasdale's bent grass	Monocots	PMPOA04060	62	19	None	None	G2G3	S2	1B.2	BLM_S-Sensitive, SB_UCSC-UC Santa Cruz	Coastal bluff scrub, Coastal dunes, Coastal prairie
<i>Allium peninsulare</i> var. <i>franciscanum</i>	Franciscan onion	Monocots	PMLIL021R1	25	1	None	None	G5T2	S2	1B.2	null	Cismontane woodland, Ultramafic, Valley & foothill grassland
<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus	Monocots	PMPOA07012	21	8	Endangered	None	G5T1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Freshwater marsh, Marsh & swamp, Riparian scrub, Wetland
<i>Ambystoma californiense</i> pop. 3	California tiger salamander - Sonoma County DPS	Amphibians	AAAAA01183	82	2	Endangered	Threatened	G2G3T2	S2	null	CDFW_WL-Watch List, IUCN_VU-Vulnerable	Cismontane woodland, Meadow & seep, Riparian woodland, Valley & foothill grassland, Vernal pool, Wetland
<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	Dicots	PDFAB08012	76	8	None	None	G4T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Chaparral, Cismontane woodland
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	Dicots	PDBOR01070	93	7	None	None	G3	S3	1B.2	BLM_S-Sensitive, SB_UCBG-UC Botanical Garden at Berkeley, SB_UCSC-UC Santa Cruz	Cismontane woodland, Coastal bluff scrub, Valley & foothill grassland
<i>Antrozous pallidus</i>	pallid bat	Mammals	AMACC10010	420	8	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
<i>Aplodontia rufa</i> phaea	Point Reyes mountain beaver	Mammals	AMAFA01012	9	9	None	None	G5T2	S2	null	CDFW_SSC-Species of Special	Coastal scrub, Meadow & seep

												Concern, IUCN_LC-Least Concern	
Arctostaphylos montana ssp. montana	Mt. Tamalpais manzanita	Dicots	PDERI040J5	15	8	None	None	G3T3	S3	1B.3	SB_UCBG-UC Botanical Garden at Berkeley	Chaparral, Ultramafic, Valley & foothill grassland	
Arctostaphylos virgata	Marin manzanita	Dicots	PDERI041K0	32	24	None	None	G2	S2	1B.2	SB_CaIBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture	Broadleaved upland forest, Chaparral, Closed-cone coniferous forest, North coast coniferous forest	
Ardea alba	great egret	Birds	ABNGA04040	43	4	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland	
Ardea herodias	great blue heron	Birds	ABNGA04010	156	9	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland	
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	Dicots	PDFAB0F7B2	24	11	None	None	G2T2	S2	1B.2	BLM_S-Sensitive, SB_CaIBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley	Coastal dunes, Coastal scrub, Marsh & swamp, Wetland	
Astragalus tener var. tener	alkali milk-vetch	Dicots	PDFAB0F8R1	65	1	None	None	G2T1	S1	1B.2	null	Alkali playa, Valley & foothill grassland, Vernal pool, Wetland	
Athene cunicularia	burrowing owl	Birds	ABNSB10010	2011	3	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland	
Blennosperma nanum var. robustum	Point Reyes blennosperma	Dicots	PDAST1A022	13	12	None	Rare	G4T2	S2	1B.2	null	Coastal prairie, Coastal scrub	
Bombus caliginosus	obscure bumble bee	Insects	IIHYM24380	181	16	None	None	G2G3	S1S2	null	IUCN_VU-Vulnerable	null	
Bombus occidentalis	western bumble bee	Insects	IIHYM24250	306	10	None	None	G2G3	S1	null	USFS_S-Sensitive	null	
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2548	1	None	Threatened	G5	S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland	
Caecidotea tomalensis	Tomales isopod	Crustaceans	ICMAL01220	6	2	None	None	G2	S2S3	null	null	Aquatic, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters	
Calamagrostis crassiglumis	Thurber's reed grass	Monocots	PMPOA17070	15	6	None	None	G3Q	S2	2B.1	null	Coastal scrub, Freshwater marsh, Marsh & swamp, Wetland	
Callophrys mossii marinensis	Marin elfin butterfly	Insects	IILEPE2207	4	3	None	None	G4T1	S1	null	null	Redwood	
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	Dicots	PDCON040D2	42	8	None	None	G4T2T3	S2S3	1B.2	BLM_S-Sensitive	Coastal bluff scrub, Coastal dunes, Coastal scrub, North coast coniferous forest	
Campanula californica	swamp harebell	Dicots	PDCAM02060	155	25	None	None	G3	S3	1B.2	BLM_S-Sensitive	Bog & fen, Closed-cone coniferous	

													forest, Coastal prairie, Marsh & swamp, Meadow & seep, North coast coniferous forest, Wetland
Cardamine angulata	seaside bittercress	Dicots	PDBRA0K010	38	1	None	None	G4G5	S3	2B.1	null		Lower montane coniferous forest, North coast coniferous forest, Wetland
Carex leptalea	bristle-stalked sedge	Monocots	PMCYP037E0	8	1	None	None	G5	S1	2B.2	IUCN_LC-Least Concern		Bog & fen, Freshwater marsh, Marsh & swamp, Meadow & seep, Wetland
Carex lyngbyei	Lyngbye's sedge	Monocots	PMCYP037Y0	37	4	None	None	G5	S3	2B.2	IUCN_LC-Least Concern		Marsh & swamp, Wetland
Castilleja affinis var. neglecta	Tiburon paintbrush	Dicots	PDSCR0D013	7	1	Endangered	Threatened	G4G5T1T2	S1S2	1B.2	SB_CaIBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley		Ultramafic, Valley & foothill grassland
Castilleja ambigua var. humboldtensis	Humboldt Bay owl's-clover	Dicots	PDSCR0D402	31	4	None	None	G4T2	S2	1B.2	BLM_S-Sensitive		Marsh & swamp, Salt marsh, Wetland
Castilleja leschkeana	Point Reyes paintbrush	Dicots	PDSCR0D1R0	2	2	None	None	GX	SX	1A	null		Marsh & swamp, Wetland
Ceanothus decornutus	Nicasio ceanothus	Dicots	PDRHA04440	2	2	None	None	G1	S1	1B.2	null		Chaparral
Ceanothus gloriosus var. porrectus	Mt. Vision ceanothus	Dicots	PDRHA040F7	18	18	None	None	G4T2	S2	1B.3	null		Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Valley & foothill grassland
Ceanothus masonii	Mason's ceanothus	Dicots	PDRHA04200	8	8	None	Rare	G1	S1	1B.2	SB_CaIBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture		Chaparral, Ultramafic
Central Dune Scrub	Central Dune Scrub	Dune	CTT21320CA	24	5	None	None	G2	S2.2	null	null		Coastal dunes
Charadrius nivosus nivosus	western snowy plover	Birds	ABNNB03031	138	5	Threatened	None	G3T3	S2	null	CDFW_SSC-Species of Special Concern, NABCI_RWL-Red Watch List		Great Basin standing waters, Sand shore, Wetland
Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	Dicots	PDSCR0J0C3	80	36	None	None	G4?T2	S2	1B.2	BLM_S-Sensitive		Marsh & swamp, Salt marsh, Wetland
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	Dicots	PDPGN04081	17	1	None	None	G2T1	S1	1B.2	null		Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub
Chorizanthe cuspidata var. villosa	woolly-headed spineflower	Dicots	PDPGN04082	17	12	None	None	G2T2	S2	1B.2	null		Coastal dunes, Coastal prairie, Coastal scrub
Chorizanthe valida	Sonoma spineflower	Dicots	PDPGN040V0	6	4	Endangered	Endangered	G1	S1	1B.1	SB_CaIBG/RSABG-California/Rancho Santa Ana Botanic Garden		Coastal prairie
Cicindela hirticollis gravida	sandy beach tiger beetle	Insects	IICOL02101	34	3	None	None	G5T2	S2	null	null		Coastal dunes
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Dicots	PDAPI0M051	17	6	None	None	G5T4T5	S2?	2B.1	null		Marsh & swamp, Salt marsh, Wetland
Circus hudsonius	northern harrier	Birds	ABNKC11011	54	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern		Coastal scrub, Great Basin grassland, Marsh & swamp, Riparian scrub, Valley & foothill grassland, Wetland
Cirsium andrewsii	Franciscan thistle	Dicots	PDAST2E050	31	13	None	None	G3	S3	1B.2	null		Broadleaved upland forest, Coastal bluff scrub, Coastal

												prairie, Coastal scrub, Ultramafic
Cirsium hydrophilum var. vaseyi	Mt. Tamalpais thistle	Dicots	PDAST2E1G2	14	7	None	None	G2T1	S1	1B.2	null	Broadleaved upland forest, Chaparral, Meadow & seep, Ultramafic, Wetland
Clarkia concinna ssp. raichei	Raiche's red ribbons	Dicots	PDONA050A2	1	1	None	None	G5?T1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley	Coastal bluff scrub
Coastal Terrace Prairie	Coastal Terrace Prairie	Herbaceous	CTT41100CA	8	1	None	None	G2	S2.1	null	null	Coastal prairie
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	Marsh	CTT52410CA	60	1	None	None	G3	S2.1	null	null	Marsh & swamp, Wetland
Coelus globosus	globose dune beetle	Insects	IICOL4A010	50	2	None	None	G1G2	S1S2	null	IUCN_VU-Vulnerable	Coastal dunes
Collinsia corymbosa	round-headed Chinese-houses	Dicots	PDSCR0H060	13	1	None	None	G1	S1	1B.2	null	Coastal dunes
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	635	7	None	None	G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Broadleaved upland forest, Chaparral, Chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, Lower montane coniferous forest, Meadow & seep, Mojavean desert scrub, Riparian forest, Riparian woodland, Sonoran desert scrub, Sonoran thorn woodland, Upper montane coniferous forest, Valley & foothill grassland
Coturnicops noveboracensis	yellow rail	Birds	ABNME01010	45	1	None	None	G4	S1S2	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, NABCI_RWL-Red Watch List, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Meadow & seep
Cypseloides niger	black swift	Birds	ABNUA01010	46	2	None	None	G4	S2	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, NABCI_YWL-Yellow Watch List, USFWS_BCC-Birds of Conservation Concern	null
Danaus plexippus pop. 1	monarch - California overwintering population	Insects	IILEPP2012	383	14	Candidate	None	G4T2T3	S2S3	null	IUCN_EN-Endangered, USFS_S-Sensitive	Closed-cone coniferous forest
Delphinium bakeri	Baker's larkspur	Dicots	PDRAN0B050	6	5	Endangered	Endangered	G1	S1	1B.1	SB_UCBG-UC Botanical Garden at Berkeley	Broadleaved upland forest, Coastal scrub, Valley & foothill grassland
Delphinium luteum	golden larkspur	Dicots	PDRAN0B0Z0	11	3	Endangered	Rare	G1	S1	1B.1	SB_UCBG-UC Botanical Garden at Berkeley	Chaparral, Coastal prairie, Coastal scrub
Dicamptodon ensatus	California giant salamander	Amphibians	AAAAH01020	234	22	None	None	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Aquatic, Meadow & seep, North coast coniferous forest, Riparian forest

<i>Dirca occidentalis</i>	western leatherwood	Dicots	PDTHY03010	90	7	None	None	G2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, North coast coniferous forest, Riparian forest, Riparian woodland
<i>Emys marmorata</i>	western pond turtle	Reptiles	ARAAD02030	1404	14	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
<i>Entosthodon kochii</i>	Koch's cord moss	Bryophytes	NBMUS2P050	4	1	None	None	G1	S1	1B.3	BLM_S-Sensitive	Cismontane woodland
<i>Erethizon dorsatum</i>	North American porcupine	Mammals	AMAFJ01010	523	1	None	None	G5	S3	null	IUCN_LC-Least Concern	Broadleaved upland forest, Cismontane woodland, Closed-cone coniferous forest, Lower montane coniferous forest, North coast coniferous forest, Upper montane coniferous forest
<i>Erigeron supplex</i>	supple daisy	Dicots	PDAST3M3Z0	21	1	None	None	G2	S2	1B.2	SB_UCBG-UC Botanical Garden at Berkeley	Coastal bluff scrub, Coastal prairie
<i>Eriogonum luteolum</i> var. <i>caninum</i>	Tiburon buckwheat	Dicots	PDPGN083S1	26	6	None	None	G5T2	S2	1B.2	null	Chaparral, Cismontane woodland, Coastal prairie, Ultramafic, Valley & foothill grassland
<i>Erysimum concinnum</i>	bluff wallflower	Dicots	PDBRA160E3	30	10	None	None	G3	S2	1B.2	BLM_S-Sensitive	Coastal bluff scrub, Coastal dunes, Coastal prairie
<i>Eucyclogobius newberryi</i>	tidewater goby	Fish	AFCQN04010	127	2	Endangered	None	G3	S3	null	AFS_EN-Endangered, IUCN_VU-Vulnerable	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters, South coast flowing waters
<i>Eumetopias jubatus</i>	Steller sea lion	Mammals	AMAJC03010	38	1	Delisted	None	G3	S2	null	IUCN_EN-Endangered, MMC_SSC-Species of Special Concern	Marine intertidal & splash zone communities, Protected deepwater coastal communities, Rock shore
<i>Falco peregrinus anatum</i>	American peregrine falcon	Birds	ABNKD06071	73	2	Delisted	Delisted	G4T4	S3S4	null	CDF_S-Sensitive, CDFW_FP-Fully Protected	null
<i>Fratercula cirrhata</i>	tufted puffin	Birds	ABNNN12010	17	1	None	None	G5	S1S2	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Protected deepwater coastal communities
<i>Fritillaria</i>	Marin checker	Monocots	PMLIL0V0P1	32	31	None	None	G5T2	S2	1B.1	null	Coastal bluff

lanceolata var. tristulis	lily												scrub, Coastal prairie, Coastal scrub, Ultramafic
Fritillaria liliacea	fragrant fritillary	Monocots	PMLIL0V0C0	82	15	None	None	G2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Cismontane woodland, Coastal prairie, Coastal scrub, Ultramafic, Valley & foothill grassland	
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	Birds	ABPBX1201A	112	14	None	None	G5T3	S3	null	CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern	Marsh & swamp	
Gilia capitata ssp. chamissonis	blue coast gilia	Dicots	PDPLM040B3	37	19	None	None	G5T2	S2	1B.1	SB_UCBG-UC Botanical Garden at Berkeley	Coastal dunes, Coastal scrub	
Gilia capitata ssp. tomentosa	woolly-headed gilia	Dicots	PDPLM040B9	18	7	None	None	G5T2	S2	1B.1	null	Coastal bluff scrub, Riparian woodland, Ultramafic, Valley & foothill grassland	
Gilia millefoliata	dark-eyed gilia	Dicots	PDPLM04130	54	13	None	None	G2	S2	1B.2	BLM_S-Sensitive	Coastal dunes	
Helminthoglypta nickliniana awania	Peninsula coast range shoulderband	Mollusks	IMGASC2361	1	1	None	None	G3T1	S1	null	IUCN_DD-Data Deficient	Coastal prairie, Coastal scrub	
Helminthoglypta stiversiana williamsi	Williams' bronze shoulderband	Mollusks	IMGASC2034	1	1	None	None	G1G2T1	S1	null	IUCN_DD-Data Deficient	null	
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Dicots	PDAST4R065	52	10	None	None	G5T2	S2	1B.2	SB_UCBG-UC Botanical Garden at Berkeley	Valley & foothill grassland	
Hesperexax sparsiflora var. brevifolia	short-leaved evax	Dicots	PDASTE5011	72	10	None	None	G4T3	S3	1B.2	BLM_S-Sensitive	Coastal bluff scrub, Coastal dunes, Coastal prairie	
Hesperoleucus venustus subditus	southern coastal roach	Fish	AFCJB19032	10	4	None	None	GNRT2	S2	null	CDFW_SSC-Species of Special Concern	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters, South coast flowing waters	
Hesperolinon congestum	Marin western flax	Dicots	PDLIN01060	27	6	Threatened	Threatened	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley	Chaparral, Ultramafic, Valley & foothill grassland	
Heteranthera dubia	water star-grass	Monocots	PMPON03010	9	1	None	None	G5	S2	2B.2	IUCN_LC-Least Concern	Marsh & swamp	
Horkelia cuneata var. sericea	Kellogg's horkelia	Dicots	PDROS0W043	58	1	None	None	G4T1?	S1?	1B.1	SB_UCSC-UC Santa Cruz, USFS_S-Sensitive	Chaparral, Closed-cone coniferous forest, Coastal dunes, Coastal scrub	
Horkelia marinensis	Point Reyes horkelia	Dicots	PDROS0W0B0	36	10	None	None	G2	S2	1B.2	null	Coastal dunes, Coastal prairie, Coastal scrub	
Horkelia tenuiloba	thin-lobed horkelia	Dicots	PDROS0W0E0	27	1	None	None	G2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Chaparral, Valley & foothill grassland	
Hydrobates homochroa	ashy storm-petrel	Birds	ABNDC04030	21	1	None	None	G2	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Protected deepwater coastal communities	
Hydrochara rickseckeri	Ricksecker's water	Insects	IICOL5V010	13	1	None	None	G2?	S2?	null	null	Aquatic, Sacramento/San Joaquin flowing	

	scavenger beetle												waters, Sacramento/San Joaquin standing waters
Hypogymnia schizidiata	island tube lichen	Lichens	NLT0032640	10	1	None	None	G2G3	S2	1B.3	null		Chaparral, Closed-cone coniferous forest
Icaricia icarioides paraperes	Point Reyes blue butterfly	Insects	IILEPG801D	2	2	None	None	G5T1T2	S1S2	null	null		Coastal dunes
Ischnura gemina	San Francisco forktail damselfly	Insects	IIODO72010	7	3	None	None	G2	S2	null	IUCN_VU-Vulnerable		null
Lasionycteris noctivagans	silver-haired bat	Mammals	AMACC02010	139	2	None	None	G3G4	S3S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority		Lower montane coniferous forest, Oldgrowth, Riparian forest
Lasiurus blossevillii	western red bat	Mammals	AMACC05060	128	1	None	None	G4	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_H-High Priority		Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland
Lasiurus cinereus	hoary bat	Mammals	AMACC05030	238	6	None	None	G3G4	S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority		Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest
Lasthenia californica ssp. bakeri	Baker's goldfields	Dicots	PDAST5L0C4	19	2	None	None	G3T1	S1	1B.2	null		Closed-cone coniferous forest, Coastal scrub, Marsh & swamp, Meadow & seep
Lasthenia californica ssp. macrantha	perennial goldfields	Dicots	PDAST5L0C5	59	17	None	None	G3T2	S2	1B.2	BLM_S-Sensitive		Coastal bluff scrub, Coastal dunes, Coastal scrub
Laterallus jamaicensis coturniculus	California black rail	Birds	ABNME03041	303	13	None	Threatened	G3T1	S1	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List		Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Layia carnosa	beach layia	Dicots	PDAST5N010	25	6	Threatened	Endangered	G2	S2	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden		Coastal dunes, Coastal scrub
Leptosiphon rosaceus	rose leptosiphon	Dicots	PDPLM09180	31	24	None	None	G1	S1	1B.1	null		Coastal bluff scrub
Lessingia micradenia var. micradenia	Tamalpais lessingia	Dicots	PDAST5S063	9	5	None	None	G2T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture		Chaparral, Ultramafic, Valley & foothill grassland
Lichnanthe ursina	bumblebee scarab beetle	Insects	IICOL67020	8	4	None	None	G2	S2	null	null		Coastal dunes
Lilaeopsis masonii	Mason's lilaeopsis	Dicots	PDAP119030	198	1	None	Rare	G2	S2	1B.1	null		Freshwater marsh, Marsh & swamp, Riparian scrub, Wetland
Lilium maritimum	coast lily	Monocots	PMLIL1A0C0	84	3	None	None	G2	S2	1B.1	BLM_S-Sensitive, SB_BerrySB-Berry Seed Bank, SB_UCBG-UC Botanical Garden at Berkeley		Broadleaved upland forest, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Marsh & swamp, North coast coniferous forest
Lilium pardalinum ssp. pitkinense	Pitkin Marsh lily	Monocots	PMLIL1A0H3	4	1	Endangered	Endangered	G5T1	S1	1B.1	SB_BerrySB-Berry Seed Bank, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_USDA-		Cismontane woodland, Freshwater marsh, Marsh & swamp,

												US Dept of Agriculture	Meadow & seep, Wetland
<i>Limnanthes douglasii</i> ssp. <i>sulphurea</i>	Point Reyes meadowfoam	Dicots	PDLIM02038	12	11	None	Endangered	G4T1	S1	1B.2	null		Cismontane woodland, Coastal prairie, Freshwater marsh, Marsh & swamp, Vernal pool, Wetland
<i>Linderiella occidentalis</i>	California linderiella	Crustaceans	ICBRA06010	508	1	None	None	G2G3	S2S3	null	IUCN_NT-Near Threatened		Vernal pool
<i>Lupinus tidestromii</i>	Tidestrom's lupine	Dicots	PDFAB2B3Y0	21	12	Endangered	Endangered	G1	S1	1B.1	null		Coastal dunes
<i>Melospiza melodia samuelis</i>	San Pablo song sparrow	Birds	ABPBXA301W	41	2	None	None	G5T2	S2	null	CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern		Salt marsh
<i>Microseris paludosa</i>	marsh microseris	Dicots	PDAST6E0D0	38	11	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_SBBG-Santa Barbara Botanic Garden, SB_UCSC-UC Santa Cruz		Cismontane woodland, Closed-cone coniferous forest, Coastal scrub, Valley & foothill grassland
<i>Mielichhoferia elongata</i>	elongate copper moss	Bryophytes	NBMUS4Q022	20	1	None	None	G5	S3S4	4.3	USFS_S-Sensitive		Cismontane woodland
<i>Monardella sinuata</i> ssp. <i>nigrescens</i>	northern curly-leaved monardella	Dicots	PDLAM18162	25	12	None	None	G3T2	S2	1B.2	SB_SBBG-Santa Barbara Botanic Garden		Chaparral, Coastal dunes, Coastal scrub, Lower montane coniferous forest
<i>Navarretia rosulata</i>	Marin County navarretia	Dicots	PDPLM0C0Z0	15	7	None	None	G2	S2	1B.2	BLM_S-Sensitive		Chaparral, Closed-cone coniferous forest, Ultramafic
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	Marsh	CTT52110CA	53	2	None	None	G3	S3.2	null	null		Marsh & swamp, Wetland
Northern Maritime Chaparral	Northern Maritime Chaparral	Scrub	CTT37C10CA	17	1	None	None	G1	S1.2	null	null		Chaparral
Northern Vernal Pool	Northern Vernal Pool	Herbaceous	CTT44100CA	20	1	None	None	G2	S2.1	null	null		Vernal pool, Wetland
<i>Oncorhynchus kisutch</i> pop. 4	coho salmon - central California coast ESU	Fish	AFCHA02034	23	1	Endangered	Endangered	G5T2Q	S2	null	AFS_EN-Endangered		Aquatic
<i>Oncorhynchus mykiss irideus</i> pop. 8	steelhead - central California coast DPS	Fish	AFCHA0209G	44	2	Threatened	None	G5T2T3Q	S2S3	null	AFS_TH-Threatened		Aquatic, Sacramento/San Joaquin flowing waters
<i>Pandion haliaetus</i>	osprey	Birds	ABNK01010	504	1	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch List, IUCN_LC-Least Concern		Riparian forest
<i>Phacelia insularis</i> var. <i>continentis</i>	North Coast phacelia	Dicots	PDHYD0C2B1	15	6	None	None	G2T2	S2	1B.2	SB_UCBG-UC Botanical Garden at Berkeley		Coastal bluff scrub, Coastal dunes
<i>Piperia elegans</i> ssp. <i>decurtata</i>	Point Reyes rein orchid	Monocots	PMORC1X011	3	3	None	None	G4T1	S1	1B.1	null		Coastal bluff scrub, Coastal prairie
<i>Plagiobothrys mollis</i> var. <i>vestitus</i>	Petaluma popcornflower	Dicots	PDBOR0V0Q2	1	1	None	None	G4?TX	SX	1A	null		Marsh & swamp, Salt marsh, Valley & foothill grassland, Wetland
<i>Pleuropogon hooverianus</i>	North Coast semaphore grass	Monocots	PMPOA4Y070	27	4	None	Threatened	G2	S2	1B.1	SB_BerrySB-Berry Seed Bank, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		Broadleaved upland forest, Meadow & seep, North coast coniferous forest, Wetland
<i>Pogonichthys macrolepidotus</i>	Sacramento splittail	Fish	AFCJB34020	15	1	None	None	G3	S3	null	AFS_VU-Vulnerable, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered		Aquatic, Estuary, Freshwater marsh, Sacramento/San Joaquin flowing waters
<i>Polygonum marinense</i>	Marin knotweed	Dicots	PDPGN0L1C0	32	21	None	None	G2Q	S2	3.1	null		Brackish marsh, Marsh & swamp,

													Salt marsh, Wetland
Pomatiopsis binneyi	robust walker	Mollusks	IMGASJ9010	2	1	None	None	G1	S1	null	null	null	
Pomatiopsis californica	Pacific walker	Mollusks	IMGASJ9020	4	1	None	None	G1	S1	null	null	null	
Quercus parvula var. tamalpaisensis	Tamalpais oak	Dicots	PDFAG051Q3	19	5	None	None	G4T2	S2	1B.3	null		Cismontane woodland, Lower montane coniferous forest
Rallus obsoletus obsoletus	California Ridgway's rail	Birds	ABNME05011	99	2	Endangered	Endangered	G3T1	S1	null	CDFW_FP-Fully Protected, NABCI_RWL-Red Watch List		Brackish marsh, Marsh & swamp, Salt marsh, Wetland
Rana boylei	foothill yellow-legged frog	Amphibians	AAABH01050	2478	24	None	Endangered	G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, USFS_S-Sensitive		Aquatic, Chaparral, Cismontane woodland, Coastal scrub, Klamath/North coast flowing waters, Lower montane coniferous forest, Meadow & seep, Riparian forest, Riparian woodland, Sacramento/San Joaquin flowing waters
Rana draytonii	California red-legged frog	Amphibians	AAABH01022	1671	156	Threatened	None	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable		Aquatic, Artificial flowing waters, Artificial standing waters, Freshwater marsh, Marsh & swamp, Riparian forest, Riparian scrub, Riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Rhynchospora californica	California beaked-rush	Monocots	PMCYP0N060	9	1	None	None	G1	S1	1B.1	null		Freshwater marsh, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Wetland
Sagittaria sanfordii	Sanford's arrowhead	Monocots	PMALI040Q0	143	1	None	None	G3	S3	1B.2	BLM_S-Sensitive		Marsh & swamp, Wetland
Serpentine Bunchgrass	Serpentine Bunchgrass	Herbaceous	CTT42130CA	22	1	None	None	G2	S2.2	null	null		Valley & foothill grassland
Setophaga petechia	yellow warbler	Birds	ABPBX03010	78	1	None	None	G5	S3S4	null	CDFW_SSC-Species of Special Concern		Riparian forest, Riparian scrub, Riparian woodland
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	Dicots	PDMAL11012	34	21	None	None	G5T2	S2	1B.2	null		Freshwater marsh, Marsh & swamp, Wetland
Sidalcea hickmanii ssp. viridis	Marin checkerbloom	Dicots	PDMAL110A4	1	1	None	None	G3TH	SH	1B.1	null		Chaparral, Ultramafic
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	Dicots	PDMAL110FL	19	2	None	None	G5T1	S1	1B.2	BLM_S-Sensitive		Broadleaved upland forest, Coastal prairie
Silene scouleri ssp. scouleri	Scouler's catchfly	Dicots	PDCAR0U1MC	23	3	None	None	G5T4T5	S2S3	2B.2	null		Coastal bluff scrub, Coastal prairie, Valley & foothill grassland
Speyeria zerene myrtleae	Myrtle's silverspot butterfly	Insects	IILEPJ608C	17	4	Endangered	None	G5T1	S1	null	null		Coastal dunes
Spirinchus thaleichthys	longfin smelt	Fish	AFCHB03010	46	2	Candidate	Threatened	G5	S1	null	null		Aquatic, Estuary
Stebbinsoseris	Santa Cruz	Dicots	PDAST6E050	19	1	None	None	G2	S2	1B.2	SB_CaIBG/RSABG-		Broadleaved

decipiens	microseris										California/Rancho Santa Ana Botanic Garden, SB_UCSC-UC Santa Cruz	upland forest, Chaparral, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Ultramafic, Valley & foothill grassland
Streptanthus anomalus	Mount Burdell jewelflower	Dicots	PDBRA2G520	2	1	None	None	G1	S1	1B.1	null	Cismontane woodland, Ultramafic
Streptanthus batrachopus	Tamalpais jewelflower	Dicots	PDBRA2G050	8	3	None	None	G2	S2	1B.3	SB_UCSC-UC Santa Cruz	Chaparral, Closed-cone coniferous forest, Ultramafic
Streptanthus glandulosus ssp. pulchellus	Mt. Tamalpais bristly jewelflower	Dicots	PDBRA2G0J2	24	16	None	None	G4T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral, Ultramafic, Valley & foothill grassland
Stygobromus hyporheicus	Hypoheic amphipod	Crustaceans	ICMAL05D80	1	1	None	None	G1	S1	null	null	Aquatic
Syncaris pacifica	California freshwater shrimp	Crustaceans	ICMAL27010	20	3	Endangered	Endangered	G2	S2	null	IUCN_EN-Endangered	Aquatic, Sacramento/San Joaquin flowing waters
Taricha rivularis	red-bellied newt	Amphibians	AAAAF02020	136	1	None	None	G2	S2	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Broadleaved upland forest, North coast coniferous forest, Redwood, Riparian forest, Riparian woodland
Taxidea taxus	American badger	Mammals	AMAJF04010	594	6	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior dunes, lone formation, Joshua tree woodland, Limestone, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic,

												Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland
Thamnomia vermicularis	whiteworm lichen	Lichens	NLTES43860	1	1	None	None	G5	S1	2B.1	null	Chaparral, Valley & foothill grassland
Trachusa gummifera	San Francisco Bay Area leaf-cutter bee	Insects	IIHYM80010	3	1	None	None	G1	S1	null	null	null
Trifolium amoenum	two-fork clover	Dicots	PDFAB40040	26	5	Endangered	None	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley, SB_USDA-US Dept of Agriculture	Coastal bluff scrub, Ultramafic, Valley & foothill grassland
Trifolium polyodon	Pacific Grove clover	Dicots	PDFAB402H0	21	2	None	Rare	G1	S1	1B.1	BLM_S-Sensitive, SB_USDA-US Dept of Agriculture	Closed-cone coniferous forest, Coastal prairie, Meadow & seep, Valley & foothill grassland, Wetland
Triphysaria floribunda	San Francisco owl's-clover	Dicots	PDSCR2T010	50	32	None	None	G2?	S2?	1B.2	null	Coastal prairie, Coastal scrub, Ultramafic, Valley & foothill grassland
Triquetrella californica	coastal triquetrella	Bryophytes	NBMUS7S010	13	1	None	None	G2	S2	1B.2	USFS_S-Sensitive	Coastal bluff scrub, Coastal scrub
Vespericola marinensis	Marin hesperian	Mollusks	IMGASA4140	23	18	None	None	G2	S2	null	null	Chaparral, Meadow & seep, North coast coniferous forest, Riparian woodland
Zapus trinotatus orarius	Point Reyes jumping mouse	Mammals	AMAFH01031	5	3	None	None	G5T1T3Q	S1S3	null	CDFW_SSC-Species of Special Concern	Coastal scrub, Marsh & swamp, Meadow & seep, Valley & foothill grassland