Alliance Redwoods Water Conservation Implementation Project 2020

Introduction:

The Gold Ridge Resource Conservation District (Permittee) will implement water conservation measures and alternative water sourcing for the Alliance Redwoods Conference Grounds, eliminating direct surface water diversion from Dutch Bill Creek and reducing overall diversion by 90%, from an average of 2.8 million gallons per May-October dry season to 300,000 gallons, all of which will be sourced from sidehill wells. The project identified and prioritized through the National Fish and Wildlife Foundation (NFWF)-funded Russian River Water Resources Coho Partnership and developed through California Department of Fish and Wildlife, Fisheries Restoration Grants Program (FRGP) grant P1730403, will increase dry season flows in Dutch Bill Creek by at least 0.05 cubic feet per second (cfs).

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

Objective(s):

The project will implement a series of components, which includes switching water sources and instituting irrigation water conservation measures to reduce Alliance Redwoods' existing potable and non-potable water demand on sources in the central Dutch Bill Creek watershed by 90%. Surface water diversion from Redwood Gulch, a major Dutch Bill Creek tributary, will be eliminated. Successful project implementation is expected to increase streamflow in Dutch Bill Creek by at least 0.05 cfs.

Project Description:

Location:

Alliance Redwoods Conference Grounds is a conference and retreat center and summer camp located at 6250 Bohemian Highway, approximately 2.5-miles north of the town of Occidental, and a mile north of Camp Meeker. The camp is located along the mainstem of Dutch Bill Creek, approximately four miles upstream of its confluence with the lower Russian River at Monte Rio. The confluence of Redwood Gulch, a major west side tributary of Dutch Bill Creek, is located on the Alliance property. Project coordinates are: 38.433245° north, 122.972443° west.

Project Set Up:

Task 1: Administration. The project and grant will be managed and administered by the Permittee. The Permittee Lead Scientist will be the lead for this task, responsible for all administration and management activities and tasks, and will

be assisted in landowner and agency coordination, bidding and contracting by the Permittee Shared Engineer. The Permittee District Administrator will be responsible for setting up the appropriate accounting and invoicing procedures, and will assist with reporting. The Permittee Executive Director will have oversight responsibilities for the overall project. This task includes a subcontractor to carry out labor compliance monitoring for all project activities subject to public works labor rules.Task 2: Permitting. Brelje and Race Consulting Engineers and the Permittee Lead Scientist will be responsible for permitting all construction activities and coordinating California Environmental Quality Act (CEQA) survey work. A complete Scope of Work for Brelje and Race is included as a supplemental document. Surveys for special status activities will be undertaken by the Permittee Ecologist. The Humboldt State University (HSU) Cultural Resources Facility will carry out cultural resource and botany surveys at project work sites, and Pacific Watershed Associates will perform paleontology surveys.Task 3: Construction. Oversight of construction activities will performed by the Permittee Lead Scientist, Shared Permittee Engineer and the project designer, Brelje and Race Consulting Engineers. We anticipate construction activities to be carried out by two qualified construction contractors (one each for the potable and non-potable/conservation project components) holding the appropriate licenses, with each contractor engaging subcontractors for some subtasks.Task 4: Streamflow monitoring. Trout Unlimited (TU) will undertake monitoring of streamflow using an existing stream gage network located on Dutch Bill Creek. Monitoring will be conducted in coordination with the Permittee Lead Scientist.

Materials:

The project is focused on construction of water supply and water conservation infrastructure for both potable and non-potable sources. Materials to be used in construction include but are not limited to a variety of piping, with associated valves and fittings, pumps and high density polyethelyene (HDPE) water tanks for storage of non-potable water and for disinfection contact. The purpose of these materials is to convey water from sources and treatment facilities to places of use. The project also includes materials related to irrigation water conservation, including but not limited to irrigation equipment (sprinkler heads and associated fittings, valves, an irrigation controller, soil moisture sensors, etc.), as well as compost and soil amendments and sod. Upgrades to the Camp Meeker Recreation and Parks District (CMRPD) treatment facility include the construction of a new concrete tank pad and installation of a new telemetry system. All components include electrical supply where appropriate and electrical controls, with associated components as specified in the project plan set. All materials required for the project will be procured by subcontractors.

Tasks:

Task 1. Grant administration:
The grant will be managed and administered by the Permittee, using standard and accepted accounting rules and procedures, and following any Permit or grant-specific guidelines. This task includes periodic invoicing and submission of progress reports, bid package preparation, bidding and subcontracting, implementation photo monitoring and preparation and submission of the draft and final project reports. The task will also include landowner interaction and coordination, including the drafting of an implementation access agreement. The Permittee Lead Scientist will be the lead for this task, responsible for all activities listed above, and will be assisted in landowner and agency coordination, bidding and contracting by the Program Manager and Project Manager. The Permittee District Administrator will be responsible for setting up the appropriate accounting and invoicing procedures and will assist with reporting. The Permittee Executive Director will have oversight responsibilities for the overall project. This task includes a subcontractor to carry out labor compliance monitoring for all project activities subject to public works labor rules. All accounting will be performed in accordance with accepted practices and standards.

Deliverables:
Periodic progress reports
Periodic invoices
Subcontracts
Signed implementation access agreement
Annual reports
Draft project report
Final project report

Start Date: 06/01/2021
End Date: 03/31/2024

Task 2. Permitting:
Brelje and Race Consulting Engineers and the Permittee Lead Scientist will be responsible for permitting all construction activities. Permits are expected to include Sonoma County building permits for water tanks and water treatment facility upgrades, and a well permit for pumping upgrades. Brelje and Race will be the lead in coordinating with the State Division of Drinking Water regarding the potable water treatment upgrades and conveyance. This task also includes surveys for special status species on sites of ground-disturbing activity. We plan to use Fisheries Restoration Grant (FRGP) coordinated permitting for this project, so this task also includes cultural resource, paleontology, and botany surveys. The project does not include stream-related work, so no stream permits are anticipated.

Deliverables:
Sonoma County Building Permits
Division of Drinking Water Approvals

Start Date: 06/01/2020
End Date: 10/31/2022

Task 3. Construction:
Three main project components will be constructed, as outlined below, and detailed in design plans. Oversight of construction activities will be performed by the Permittee Lead Scientist and the project designer, Brelje and Race Consulting Engineers. The Permittee Lead Scientist will oversee the construction of water conservation measures and non-potable water source tasks, with Brelje and Race providing engineering support and inspections. Brelje and Race will oversee construction of the potable water components of the project, assisted by the Permittee Lead Scientist. Construction activities will be subcontracted by Permittee to qualified subcontractors through a competitive bidding process.
Task 3A: Water conservation. Water conservation measures are proposed to reduce demand for athletic field irrigation water. This subtask consists of the following elements, all related to athletic field upgrades:

- Removal of the existing turf and irrigation system.
- Regarding the field, including soil aeration, and addition of compost and other amendments as identified through soil testing.
- Installation of a new irrigation system, including controller, valves, distribution piping, sprinkler heads and soil moisture sensors.

Task 3B: Non-potable water: The source of non-potable water for irrigation will be switched from the existing surface diversion in Redwood Gulch to the sidehill wells that currently serve as a source of potable water. This subtask will be carried out by a qualified subcontractor and will also be overseen by the Permittee Lead Scientist. It consists of the following elements:

- Demolition of existing conveyance infrastructure not proposed for use in the new system.
- Installation of piping, valves, and controls to convey well water to existing water storage site. This includes a new elevated pipe creek crossing.
- Installation of a new day tank and pumps to provide a reservoir for irrigation water adjacent to the athletic field.

Task 3C: Potable water: The source of potable water will be switched from the existing sidehill wells to the Camp Meeker Recreation and Park District (CMRPD) water system. The CMRPD water treatment plant is located adjacent to Alliance Redwoods Conference Grounds (ARCG) property on the east side of Bohemian Highway. This subtask will be overseen by Brelje and Race staff with assistance from the GRRCD Lead Scientist, and consists of the following elements:

- Well upgrades: To reliably provide for water demand on both the CMRPD and ARCG systems, new pumping capacity and controls will be installed on the wellhead in Monte Rio.

- Treatment upgrades: With the addition of ARCG to the CMRPD system, upgrades to treatment capacity and controls are necessary to allow for water treatment and disinfection, while creating the capacity for CMRPD to continue to release water into Dutch Bill Creek to support instream flows during the summer-fall dry season. These include the reconfiguration of water conveyance piping at the treatment facility; the addition of two new tanks to allow for sufficient disinfection contact time and provide storage for water release, pump upgrades, and site improvements to support the new infrastructure.
- Installation of conveyance infrastructure: A new pipeline and pump will be required to convey potable water from the treatment facility to the ARCG distribution system. The pipeline will convey water under Bohemian Highway and across Dutch Bill Creek via an elevated pipeline.
- Installation of improved electrical controls and telemetry to allow the system to be run efficiently under the increased water demand that ARCG will bring.

Deliverables:
Final implemented project components for each subtask

Start Date: 06/01/2021
End Date: 10/31/2022

Task: 4. Streamflow monitoring:
Trout Unlimited (TU) will undertake monitoring of streamflow using an existing stream gage network located on Dutch Bill Creek. Monitoring will be conducted in coordination with the Permittee Lead Scientist. TU will undertake the following activities:

- Stage and water temperature gaging: TU will install one gage in a representative pool near the ARCG site in Dutch Bill Creek and will continue to operate the three existing streamflow gages in the network. Stage and water temperature data will be downloaded monthly during field site visits onto TU's field tablets. Upon return to the office, field crews will upload the raw datasets on to TU's streamflow database. These raw data will then be reviewed and calibrated. TU will manage, maintain, and repair the gage network as needed during the project period.
- Streamflow monitoring: For three summers, beginning in 2021, Trout Unlimited will collect monthly streamflow measurements through the dry season (May through October). Streamflow measurements will be uploaded to TU's database and inspected for quality assurance. Streamflow measurements will be used to develop rating curves of flow as a function of stage. Streamflow datasets will be developed and stored in Trout Unlimited' s database.
- Final report summarizing streamflow conditions: Trout Unlimited will produce a brief final report at the end of the project period summarizing

the results of the streamflow and groundwater monitoring conducted for this grant. Streamflow datasets will be available in excel format upon request and will be uploaded to California Environmental Data Exchange Network (CEDEN) at the end of the project period. Stream gauging will be used to enhance the understanding of existing baseline conditions and detect and evaluate increases in summer-fall dry season streamflow in years following project implementation. Assuming implementation occurs during the summer of 2020, the project will include one partial year of baseline condition monitoring and four years of post-implementation monitoring. NOTE: All TU activities will be funded through cost share sources.

Deliverables:
Annual monitoring reports
Final project monitoring report

Start Date: 06/01/2021
End Date: 03/31/2024

Deliverables:

Task 1. Grant administration:
Deliverables:
Periodic progress reports
Periodic invoices
Subcontracts
Signed implementation access agreement
Annual reports
Draft project report
Final project report

Task 2. Permitting:
Deliverables:
Sonoma County Building Permits
Division of Drinking Water Approvals

Task 3. Construction:
Deliverables:
Final implemented project components for each subtask

Task: 4. Streamflow monitoring:
Deliverables:
Annual monitoring reports
Final project stream flow monitoring report

Timelines:

Task	Deliverable	Delivery Date
Task 1. Grant administration	Periodic progress reports included with Periodic invoices	At least quarterly, but not more frequently than monthly.
Task 1. Grant administration	Subcontracts Signed implementation access agreement	Not later than two months after executed grant agreement.
Task 1. Grant administration	Draft project report	January 31, 2022
Task 1. Grant administration	Final project report	March 31, 2022
Task 2. Permitting	Sonoma County Building Permits Division of Drinking Water Approvals	October 31, 2022
Task 3. Construction	Removal of the existing turf and irrigation system Reconstruction of turf field Installation of a new irrigation system Non-potable water switch over Demolition of existing conveyance infrastructure Installation of piping, valves, and controls Installation of a new day tank and pumps for turf irrigation Potable water switch over Well upgrades Treatment upgrades New pipeline and pump Electrical controls and telemetry	October 31, 2022
Task: 4. Streamflow monitoring	Annual monitoring reports	October 31, annually during the grant period

Task: 4. Streamflow monitoring	Final stream flow monitoring report	March 31, 2024

In general infrastructure construction can occur throughout the year, however where this construction crosses streams, even intermittent streams, work shall be limited to June 15 through October 31.

Additional Requirements:

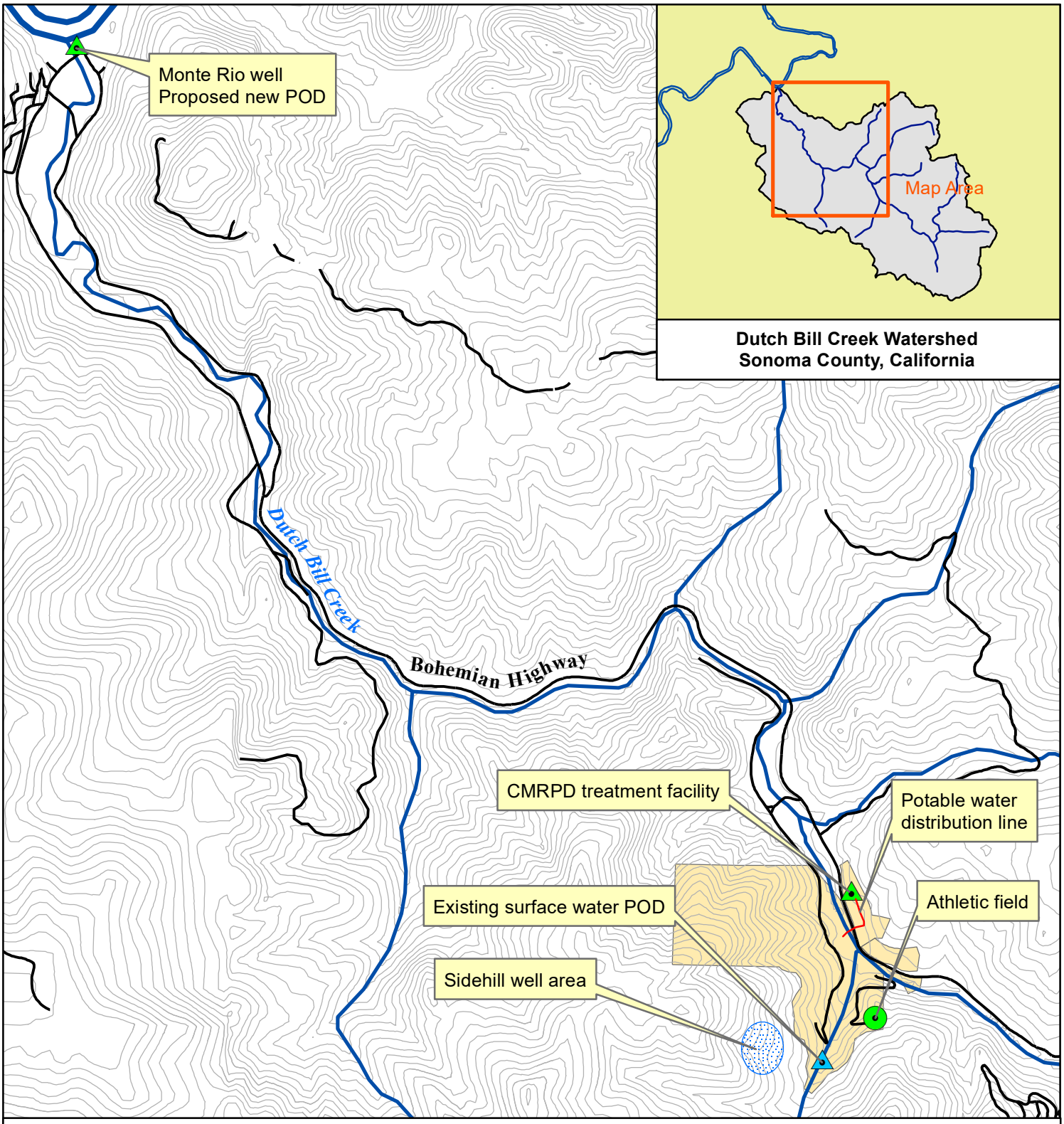
The Permittee will not proceed with on the ground implementation until all necessary permits and consultations are secured. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are 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 Salmonid Stream Habitat Restoration Manual,* Volume I and Volume II.



Dutch Bill Creek Water Conservation Design Project

Project Location Topographic Map
Camp Meeker Quadrangle

Gold Ridge Resource Conservation District
Sonoma County, CA

Streams

Roads

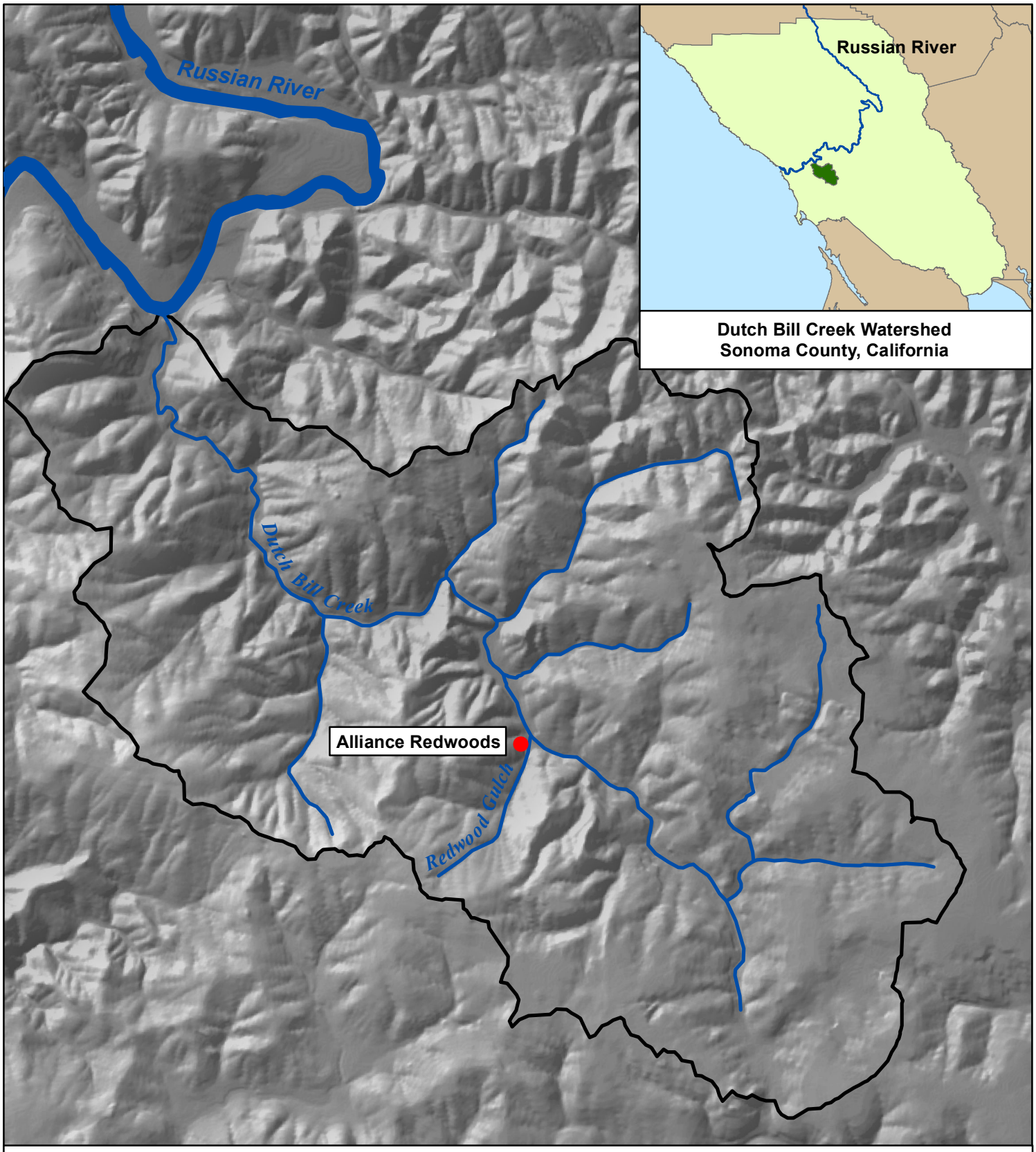
Alliance Redwoods

N

0 0.25 0.5 1 Miles

Contour interval = 40 feet

Gold Ridge RCD
April 2020



Alliance Redwoods Water Conservation Implementation Project

Camp Meeker Quadrangle

N

Streams

Dutch Bill Watershed

Gold Ridge Resource Conservation District
Sonoma County, CA

0 0.5 1 2 Miles

Gold Ridge RCD
April 2020

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Camp Meeker (3812248) OR Valley Ford (3812238) OR Bodega Head (3812331) OR Duncans Mills (3812341) OR Cazadero (3812351) OR Guerneville (3812258) OR Healdsburg (3812257) OR Sebastopol (3812247) OR Two Rock (3812237))

Possible species within the Camp Meeker and surrounding quads for 1723366 - Alliance Redwoods Water Conservation Implementation Project, Sonoma County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abronia umbellata var. breviflora pink sand-verbena	PDNYC010N4	None	None	G4G5T2	S2	1B.1
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Agrostis blasdalei Blasdale's bent grass	PMPOA04060	None	None	G2	S2	1B.2
Allium peninsulare var. franciscanum Franciscan onion	PMLIL021R1	None	None	G5T2	S2	1B.2
Alopecurus aequalis var. sonomensis Sonoma alopecurus	PMPOA07012	Endangered	None	G5T1	S1	1B.1
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Amorpha californica var. napensis Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
Anodonta californiensis California floater	IMBIV04020	None	None	G3Q	S2?	
Anodonta oregonensis Oregon floater	IMBIV04110	None	None	G5Q	S2?	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arborimus pomo Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
Arctostaphylos bakeri ssp. bakeri Baker's manzanita	PDERI04221	None	Rare	G2T1	S1	1B.1
Arctostaphylos bakeri ssp. sublaevis The Cedars manzanita	PDERI04222	None	Rare	G2T2	S2	1B.2
Arctostaphylos densiflora Vine Hill manzanita	PDERI040C0	None	Endangered	G1	S1	1B.1
Arctostaphylos stanfordiana ssp. decumbens Rincon Ridge manzanita	PDERI041G4	None	None	G3T1	S1	1B.1
Ardea alba great egret	ABNGA04040	None	None	G5	S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Blennosperma bakeri Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
Brodiaea leptandra narrow-anthered brodiaea	PMLIL0C022	None	None	G3?	S3?	1B.2
Calamagrostis crassiglumis Thurber's reed grass	PMPOA17070	None	None	G3Q	S2	2B.1
Callophrys mossii marinensis Marin elfin butterfly	IILEPE2207	None	None	G4T1	S1	
Calochortus raichei The Cedars fairy-lantern	PMLIL0D1L0	None	None	G2	S2	1B.2
Calystegia purpurata ssp. saxicola coastal bluff morning-glory	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
Campanula californica swamp harebell	PDCAM02060	None	None	G3	S3	1B.2
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Castilleja uliginosa Pitkin Marsh paintbrush	PDSCR0D380	None	Endangered	GXQ	SX	1A
Ceanothus confusus Rincon Ridge ceanothus	PDRHA04220	None	None	G1	S1	1B.1
Ceanothus foliosus var. vineatus Vine Hill ceanothus	PDRHA040D6	None	None	G3T1	S1	1B.1
Ceanothus purpureus holly-leaved ceanothus	PDRHA04160	None	None	G2	S2	1B.2
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
Cerorhinca monocerata rhinoceros auklet	ABNNN11010	None	None	G5	S3	WL
Charadrius alexandrinus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
Chlorogalum pomeridianum var. minus dwarf soaproot	PMLIL0G042	None	None	G5T3	S3	1B.2
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Chorizanthe cuspidata var. cuspidata San Francisco Bay spineflower	PDPGN04081	None	None	G2T1	S1	1B.2
Chorizanthe cuspidata var. villosa woolly-headed spineflower	PDPGN04082	None	None	G2T2	S2	1B.2
Chorizanthe valida Sonoma spineflower	PDPGN040V0	Endangered	Endangered	G1	S1	1B.1
Cirsium andrewsii Franciscan thistle	PDAST2E050	None	None	G3	S3	1B.2
Clarkia imbricata Vine Hill clarkia	PDONA050K0	Endangered	Endangered	G1	S1	1B.1
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Coastal Brackish Marsh Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
Coastal Terrace Prairie Coastal Terrace Prairie	CTT41100CA	None	None	G2	S2.1	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Cordylanthus tenuis ssp. capillaris Pennell's bird's-beak	PDSCR0J0S2	Endangered	Rare	G4G5T1	S1	1B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Cuscuta obtusiflora var. glandulosa Peruvian dodder	PDCUS01111	None	None	G5T4?	SH	2B.2
Cuscuta pacifica var. papillata Mendocino dodder	PDCUS011A2	None	None	G5T1	S1	1B.2
Cypseloides niger black swift	ABNUA01010	None	None	G4	S2	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
Delphinium bakeri Baker's larkspur	PDRAN0B050	Endangered	Endangered	G1	S1	1B.1
Delphinium luteum golden larkspur	PDRAN0B0Z0	Endangered	Rare	G1	S1	1B.1
Dicamptodon ensatus California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
Dirca occidentalis western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dubiraphia giulianii Giuliani's dubiraphian riffle beetle	IICOL5A020	None	None	G1G3	S1S3	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Erigeron greenei Greene's narrow-leaved daisy	PDAST3M5G0	None	None	G3	S3	1B.2
Erigeron serpentinus serpentine daisy	PDAST3M5M0	None	None	G2	S2	1B.3
Eriogonum cedrorum The Cedars buckwheat	PDPGN087A0	None	None	G1	S1	1B.3
Erysimum concinnum bluff wallflower	PDBRA160E3	None	None	G3	S2	1B.2
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC
Eumetopias jubatus Steller (=northern) sea-lion	AMAJC03010	Delisted	None	G3	S2	
Fissidens pauperculus minute pocket moss	NBMUS2W0U0	None	None	G3?	S2	1B.2
Fratercula cirrhata tufted puffin	ABNNN12010	None	None	G5	S1S2	SSC
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Gilia capitata ssp. chamissonis blue coast gilia	PDPLM040B3	None	None	G5T2	S2	1B.1
Gilia capitata ssp. pacifica Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
Gilia capitata ssp. tomentosa woolly-headed gilia	PDPLM040B9	None	None	G5T1	S1	1B.1
Gilia millefoliata dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
Hesperevax sparsiflora var. brevifolia short-leaved evax	PDASTE5011	None	None	G4T3	S3	1B.2
Horkelia marinensis Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
Horkelia tenuiloba thin-lobed horkelia	PDROS0W0E0	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Hysterocarpus traskii pomo Russian River tule perch	AFCQK02011	None	None	G5T4	S4	SSC
Kopsiopsis hookeri small groundcone	PDORO01010	None	None	G4?	S1S2	2B.3
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasthenia burkei Burke's goldfields	PDAST5L010	Endangered	Endangered	G1	S1	1B.1
Lasthenia californica ssp. bakeri Baker's goldfields	PDAST5L0C4	None	None	G3T1	S1	1B.2
Lasthenia californica ssp. macrantha perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Lavinia symmetricus navarroensis Navarro roach	AFCJB19023	None	None	G4T1T2	S2S3	SSC
Lavinia symmetricus parvipinnis Gualala roach	AFCJB19025	None	None	G4T1T2	S2S3	SSC
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Leptosiphon jepsonii Jepson's leptosiphon	PDPLM09140	None	None	G2G3	S2S3	1B.2
Leptosiphon rosaceus rose leptosiphon	PDPLM09180	None	None	G1	S1	1B.1
Lessingia arachnoidea Crystal Springs lessingia	PDAST5S0C0	None	None	G2	S2	1B.2
Lichnanthe ursina bumblebee scarab beetle	IICOL67020	None	None	G2	S2	
Lilium pardalinum ssp. pitkinense Pitkin Marsh lily	PMLIL1A0H3	Endangered	Endangered	G5T1	S1	1B.1
Limnanthes vinculans Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lupinus tidestromii Tidestrom's lupine	PDFAB2B3Y0	Endangered	Endangered	G1	S1	1B.1
Microseris paludosa marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Navarretia leucocephala ssp. plieantha many-flowered navarretia	PDPLM0C0E5	Endangered	Endangered	G4T1	S1	1B.2
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Northern Vernal Pool Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
Oncorhynchus kisutch pop. 4 coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G4	S2?	
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Pelecanus occidentalis californicus California brown pelican	ABNFC01021	Delisted	Delisted	G4T3T4	S3	FP
Piperia candida white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
Pleuropogon hooverianus North Coast semaphore grass	PMPOA4Y070	None	Threatened	G2	S2	1B.1
Polemonium carneum Oregon polemonium	PDPLM0E050	None	None	G3G4	S2	2B.2
Polygonum marinense Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
Potentilla uliginosa Cunningham Marsh cinquefoil	PDROS1B4A0	None	None	GX	SX	1A
Rana boylii foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Rhynchospora alba white beaked-rush	PMCYP0N010	None	None	G5	S2	2B.2
Rhynchospora californica California beaked-rush	PMCYP0N060	None	None	G1	S1	1B.1
Rhynchospora capitellata brownish beaked-rush	PMCYP0N080	None	None	G5	S1	2B.2
Rhynchospora globularis round-headed beaked-rush	PMCYP0N0W0	None	None	G4	S1	2B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	PDMAL11012	None	None	G5T2	S2	1B.2
Sidalcea malviflora ssp. purpurea purple-stemmed checkerbloom	PDMAL110FL	None	None	G5T1	S1	1B.2
Silene scouleri ssp. scouleri Scouler's catchfly	PDCAR0U1MC	None	None	G5T4T5	S2S3	2B.2
Speyeria zerene myrtleae Myrtle's silverspot butterfly	IILEPJ608C	Endangered	None	G5T1	S1	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
Streptanthus glandulosus ssp. hoffmanii Hoffman's bristly jewelflower	PDBRA2G0J4	None	None	G4T2	S2	1B.3
Streptanthus morrisonii ssp. hirtiflorus Dorr's Cabin jewelflower	PDBRA2G0S2	None	None	G2T1	S1	1B.2
Streptanthus morrisonii ssp. morrisonii Morrison's jewelflower	PDBRA2G0S3	None	None	G2T1?	S1?	1B.2
Syncaris pacifica California freshwater shrimp	ICMAL27010	Endangered	Endangered	G2	S2	
Taricha rivularis red-bellied newt	AAAAF02020	None	None	G4	S2	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thaleichthys pacificus eulachon	AFCHB04010	Threatened	None	G5	S3	
Thamnolia vermicularis whiteworm lichen	NLTES43860	None	None	G5	S1	2B.1
Trifolium amoenum two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
Trifolium buckwestiorum Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Triphysaria floribunda San Francisco owl's-clover	PDSCR2T010	None	None	G2?	S2?	1B.2
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Usnea longissima Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Vespericola marinensis	IMGASA4140	None	None	G2	S2	
Marin hesperian						
Viburnum ellipticum	PDCPR07080	None	None	G4G5	S3?	2B.3
oval-leaved viburnum						

Record Count: 146

Iron Horse Vineyards Fish Screen Implementation Project

2020

Introduction:

The Gold Ridge Resource Conservation District (Permittee) will install a fish screen, designed through Fisheries Restoration Grant Program (FRGP) funded grant (P1830405) on a currently unscreened irrigation and frost protection water diversion at Iron Horse Vineyards, on the mainstem of Green Valley Creek. The existing diversion has a concrete intake structure located on the streambank. The project will reconfigure this structure and retrofit it with a self-cleaning traveling belt fish screen.

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* (Volume I, section VII and Volume II Sections IX and XII https://www.wildlife.ca.gov/Grants/FRGP/Guidance)

Objective(s):

Successful project implementation will result in an effectively screened diversion intake for the Iron Horse diversion on Green Valley Creek. This will prevent juvenile fish rearing in the reach adjacent to the diversion from being pulled into the intake and reduce or eliminate mortality presumed to be occurring because of the diversion.

Project Description:

Location:

Iron Horse Vineyards is located in the Green Valley Creek watershed in Sonoma County, California. The project site is on Iron Horse Vineyards property approximately seven miles northwest of Sebastopol via State Highway 116 north and Ross Station Road. The water diversion intake is located adjacent to the vineyard irrigation pond, approximately 4.4 miles upstream of Green Valley Creek's confluence with the Russian River. Project coordinates are: 38.460890° north, 122.895962° west.

Project Set Up:

The project will be managed by the Permittee, the Gold Ridge Resource Conservation District, and will consist of six tasks. The main deliverable will be successful modification of the existing concrete diversion intake structure and installation of the fish screen.Task 1: Administration. The grant will be managed and administered by the Permittee. The Permittee Lead Scientist will be the lead for this task, responsible for landowner and agency coordination, bidding and contracting and reporting, assisted by the Program Manager. The Permittee District Administrator will be responsible for setting up the appropriate accounting

and invoicing procedures, and will assist with reporting. The Permittee Executive Director will have oversight responsibilities for the overall project. This task includes a subcontractor to carry out labor compliance monitoring for all project activities subject to public works labor rules.Task 2: Regulatory surveys. The Permittee will subcontract with Humboldt State University (HSU)'s Cultural Resources Facility to carry out required botany and cultural resources surveys, and with Pacific Watershed Associates to carry out paleontological surveys for the project work site. We will also contract with an as yet undetermined consultant to perform a wetlands delineation for the project site using United States Army Corps of Engineers (ACOE) standards. The Permittee Lead Scientist will be the lead on this task, coordinating with subcontractors carrying out survey work, assisted by the Permittee Ecologist, who will also carry out surveys for sensitive species.Task 3: Permitting. We anticipate this project falling under the Fisheries Restoration Grants Program (FRGP) Regional General Permit and California Environmental Quality Act (CEQA) Programmatic Mitigated Negative Decleration (MND). The Permittee Lead Scientist will take the lead on permitting, assisted by the Permittee Ecologist, and will be responsible for securing the required permits.Task 4: Dewatering and fish relocation. Dewatering of the channel in the vicinity of the diversion intake structure will primarily be the responsibility of the construction subcontractor. We expect fish relocation to be accomplished in coordination with the California Department of Fish and Wildlife, Grant Manager or Biologist, with assistance from multiple Permittee staff members, including the Permittee Executive Director, Lead Scientist, Ecologist, Program Manager, Permittee Shared Engineer and Project Assistant. To allow for the possibility that California Department of Fish and Wildlife staff will be unable to take the lead on fish relocation, our budget includes a line for hiring a qualified and credentialed biologist to accomplish this task.Task 5: Construction and oversight. A qualified construction subcontractor with a Class A license will be selected using Permittee bidding rules, and will be responsible for on-the-ground implementation work to modify the diversion intake structure and install the fish screen and staff gage. The construction subcontractor will be overseen by the Permittee Lead Scientist and Permittee Shared Engineer, as well as staff from Stetson Engineers, the project designer. Stetson Engineers will also carry out operations and evaluation tasks listed below.Task 6: Water quality monitoring. The Permittee Ecologist will be the lead on the monitoring effort, working with the Permittee Lead Scientist and assisted by the Pemittee Project Assistant.

Materials:

The materials necessary for installation of the fish screen consist of the screen assembly, motor, frame and miscellaneous parts and fasteners as specified in the project plans. These comprise the fish screen installation. In addition, new ¾-inch electrical conduit and wire, electrical controls and a circuit box will be necessary to provide power to the fish screen. All materials are specified in the

project plans, and will be procured by the construction subcontractor. Dewatering materials, including but not limted to straw bales, sandbags, visqueen, poly vinyl chloride (PVC) pipe will also be procured by the construction subcontractor. Erosion control measures will be implemented as appropriate on disturbed areas, including access paths. Materials employed for erosion control will be per the project plans and at the discretion of the subcontractor. These may include silt fencing, straw mulch, fiber rolls and native grass seed, and will be procured by the construction subcontractor. A staff plate for determining discharge will be installed, and will be procured by the construction subcontractor. Handheld water quality monitoring equipment and maintenance supplies will be procured by the Permittee to monitor water quality within and downstream of the project site during construction, per the terms of California Department of Fish and Wildlife's Regional General Permit.

Tasks:

Task 1. Grant administration:
The grant will be managed and administered by the Permittee, using standard and accepted accounting rules and procedures, and following any grant-specific guidelines. This task includes periodic invoicing and submission of progress reports, bid package preparation, bidding and subcontracting, implementation photo monitoring and preparation and submission of the draft and final project reports. The task will also include landowner interaction and coordination, including the drafting of an implementation access agreement.

Deliverables:
Periodic invoices
Periodic progress reports
Signed implementation access agreement
Subcontracts
Annual reports
Draft project report
Final project report

Start Date: 06/01/2021
End Date: 03/31/2023

Task 2. Regulatory surveys:
The Permittee will subcontract with HSU's Cultural Resources Facility and Pacific Watershed Associates to carry out required botany, cultural and paleontological surveys of the project work site, and will also subcontract for a delineation of wetlands within the site. This task also includes surveys for sensitive species, including California red-legged frogs and California freshwater shrimp.

Deliverables:
Survey reports

Start Date: 06/01/2021
End Date: 07/31/2022

Task 3. Permitting:
We anticipate this project falling under the FRGP Regional General Permit and CEQA Programmatic MND. The RCD Lead Scientist will be responsible for preparing and submitting two 1600 Streambed Alteration Agreement Notifications: one for the modification of the existing diversion structure and installation of the fish screen, and the second for ongoing operation of the Iron Horse diversion.

Deliverables:
1600 Streambed Alteration Agreement Notifications for project construction and operation of the diversion

Start Date: 06/01/2021
End Date: 03/31/2022

Task 4. Dewatering and fish relocation:
Dewatering of the channel in the vicinity of the diversion intake structure will primarily be the responsibility of the construction subcontractor, with assistance from RCD staff. Exclusion netting will be set, and dewatering will be accomplished and maintained following standard dewatering procedures as detailed in the attached Dewatering Protocol document. Fish relocation will be accomplished in coordination with the DFW Grant Manager or Biologist, with assistance from multiple RCD staff members. Fish will be removed from the area through seine netting, electrofishing, or another DFW-approved standard method, and will be released in appropriate habitat adjacent to the project site.

Deliverables:
Dewatering and fish relocation reports

Start Date: 08/01/2021
End Date: 10/31/2022

Task 5. Construction and oversight:
This task includes construction all tasks detailed in the plans and specifications for the project, as well as mobilization and demobilization and installation of erosion control measures. Construction tasks include saw cutting and retrofitting the existing concrete diversion structure, fish screen installation (including electrical service, conduit, and controls), staff plate installation, erosion and sediment control and mobilization and demobilization. These activities will be

performed by a qualified construction subcontractor with a Class A General Engineering license. Gold Ridge RCD staff and Stetson Engineers will oversee construction. Stetson Engineers will also compose an operations and maintenance plan and construct a rating curve for the site to inform the operation of the fish screen and diversion, compose an evaluation and monitoring plan and conduct three site visits to evaluate screen operation during the first winter following construction.

Deliverables:
Completed fish screen installation per plans
Operations and maintenance plan
Evaluation and monitoring plan
Evaluation results

Start Date: 08/15/2021
End Date: 03/31/2023

Task 6. Water quality monitoring:
In accordance with DFW permit requirements, RCD staff will procure water quality monitoring equipment and take water quality measurements in accordance with permit conditions at the project site and in the reach immediately downstream. Parameters to be monitored include temperature, dissolved oxygen, conductivity, pH, and turbidity. This task includes determining monitoring station locations, developing protocols, data management and analysis, and composing monitoring reports.

Deliverables:
Construction period water quality monitoring report(s)

Start Date: 08/15/2021
End Date: 10/31/2022

Deliverables:

Task 1. Grant administration
Deliverables:
Periodic invoices
Periodic progress reports
Signed implementation access agreement
Subcontracts
Annual reports
Draft project report
Final project report

Task 2. Regulatory surveys
Deliverables:
Survey reports

Task 3. Permitting
Deliverables:
1600 Streambed Alteration Agreement Notifications for project construction and operation of the diversion

Task 4. Dewatering and fish relocation
Deliverables:
Dewatering and fish relocation reports

Task 5. Construction and oversight
Deliverables:
Completed fish screen installation per plans
Operations and maintenance plan
Evaluation and monitoring plan
Evaluation results

Task 6. Water quality monitoring
Deliverables:
Construction period water quality monitoring report(s)

Timelines:

Task	Deliverable	Delivery Date
Task 1. Grant administration	Periodic invoices Periodic progress reports	Not less than quarterly and not more than monthly
Task 1. Grant administration	Signed implementation access agreement Subcontracts	No more than two months after the grant is executed
Task 1. Grant administration	Annual reports	Annually by October 31
Task 1. Grant administration	Draft project report	January 31, 2023
Task 1. Grant administration	Final project report	March 31, 2023
Task 2. Regulatory surveys	Survey reports	July 31, 2022
Task 3. Permitting	1600 Streambed Alteration Agreement, and Notifications for	March 31, 2022

	project construction and operation of the diversion	
Task 4. Dewatering and fish relocation	Dewatering and fish relocation reports	October 31, 2022
Task 5. Construction and oversight	Completed fish screen installation per plans Operations and maintenance plan Evaluation and monitoring plan Evaluation results	March 31, 2023
Task 6. Water quality monitoring	Construction period water quality monitoring report(s)	October 31, 2022

The construction work season is from July 1 through October 15.

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.

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

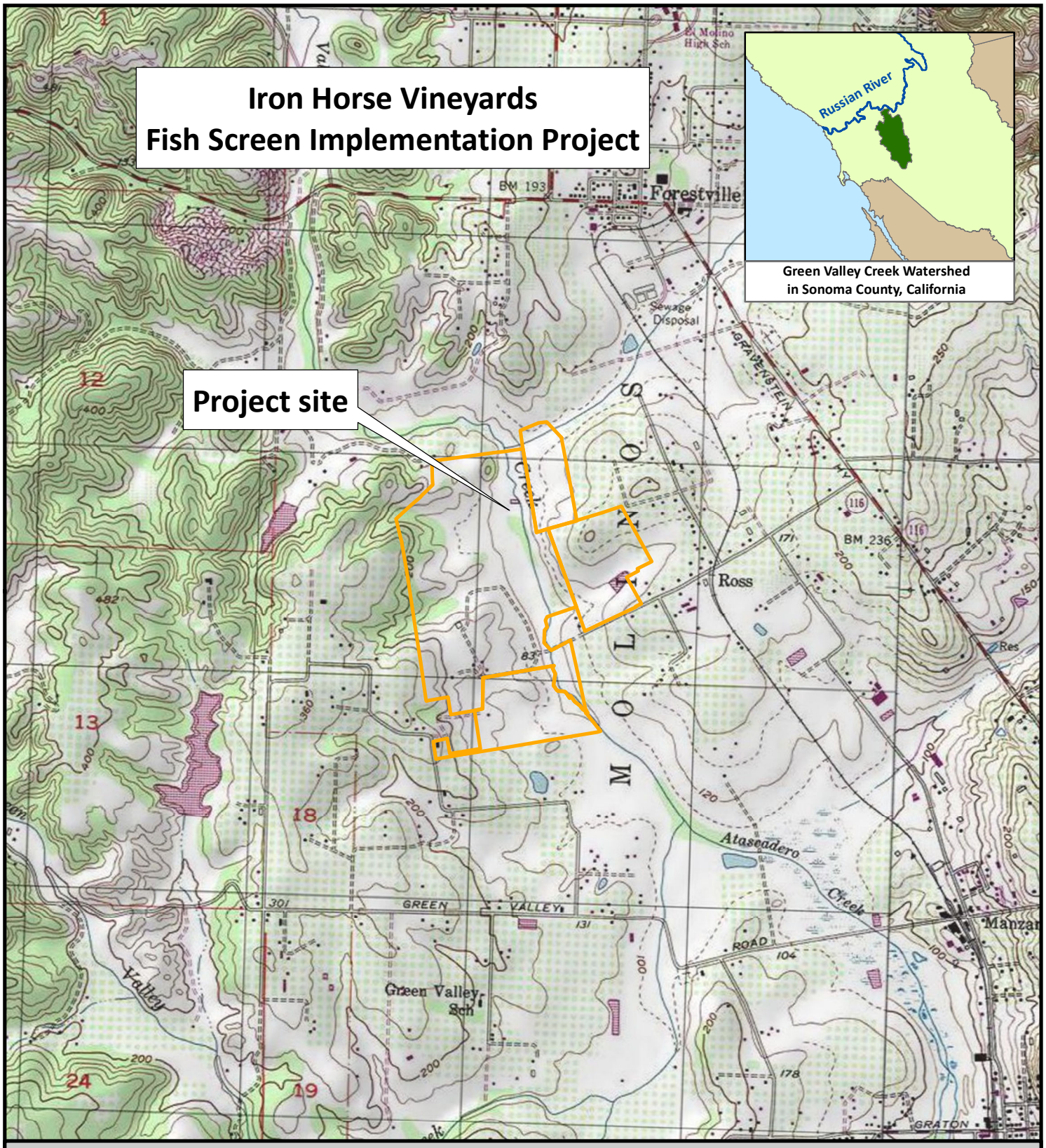
1. Fish dewatering and relocation activities shall only occur between June 15 and October 31 of each year.
2. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual.*
3. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional General Permit and National Marine Fisheries Service (NMFS) Biological Opinion.
4. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
5. USFWS Approved fisheries biologists will provide fish relocation data via the Permittee to the CDFW personnel on a form provided by CDFW.

A 10-year Lake and Streambed Alteration Agreement defining the implementation, operation, and maintenance of the fish screen according to design standards.

1. For fish screen projects, a written agreement must be provided by the Permittee from the landowner or responsible party.
2. Notwithstanding Fish and Game Code Section 6027, the agreement must state that the fish screen will be operated whenever water is being diverted and the possibility of entrainment of salmonids exists.
3. It shall also identify the party responsible for maintaining the screen to ensure that it is functioning as designed.
4. The landowner or responsible party must operate and maintain the fish screen project for a period not less than 10 years.
5. The landowner or responsible party will operate the fish screen to effectively prevent the entrainment of fish whenever water is being diverted and the possibility of entrainment of salmonids exits.
6. The landowner or responsible party will maintain the fish screen and bypass return so that they are functioning as designed and are meeting

National Marine Fisheries Service (NMFS) criteria for fish screens (criteria at time of construction).

7. This shall include regular inspection during operating periods (at least bi-weekly), lubrication, replacement of worn parts, and removal of debris which may affect the operation of the screen.
8. In the event of an act of nature which results in partial or complete failure of the project, the landowner or proponent will not be held responsible for costs incurred after the act of nature. Acts of nature include, but are not limited to, floods, earthquakes, volcanic eruptions, and windstorms.
9. The agreement shall be for a period of 10 years following completion.
10. If proposal is funded the project will be required to be tested at two lifestage design flows (e.g., fall-winter flows for adult salmonids and summer flows for juveniles).



Map 1: Topographic Map
Grantee: Gold Ridge Resource Conservation District
Sonoma County, CA
(Camp Meeker 7.5' Quadrangle, USGS 1969)

GOLD RIDGE RESOURCE CONSERVATION DISTRICT

April 2020

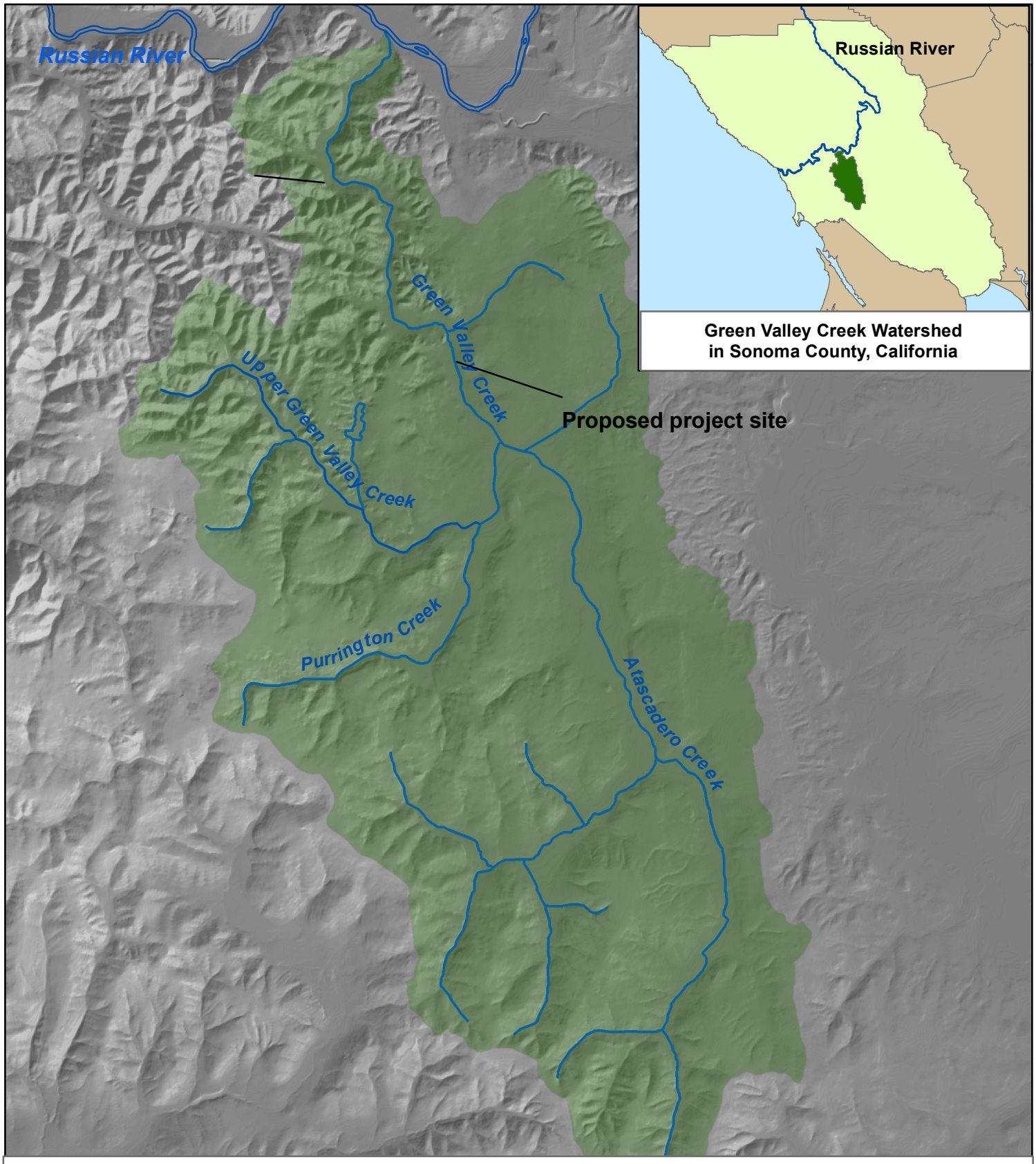
Legend

Iron Horse Vineyards

0 0.25 0.5 1 Miles

1:24,000

N W E S



Iron Horse Vineyards Fish Screen Implementation Project

Map 2: Green Valley Creek Watershed Map
Grantee: Gold Ridge RCD
Sonoma County, CA

Streams
Green Valley Watershed

0 1 2 4 Miles
1:80,000

N

GOLD RIDGE RESOURCE CONSERVATION DISTRICT

April 2020

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Camp Meeker (3812248) OR Valley Ford (3812238) OR Bodega Head (3812331) OR Duncans Mills (3812341) OR Cazadero (3812351) OR Guerneville (3812258) OR Healdsburg (3812257) OR Sebastopol (3812247) OR Two Rock (3812237))

Possible species within the Camp Meeker and surrounding quads for 1723425 - Iron Horse Vineyards Fish Screen Implementation Project

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abronia umbellata var. breviflora pink sand-verbena	PDNYC010N4	None	None	G4G5T2	S2	1B.1
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Agrostis blasdalei Blasdale's bent grass	PMPOA04060	None	None	G2	S2	1B.2
Allium peninsulare var. franciscanum Franciscan onion	PMLIL021R1	None	None	G5T2	S2	1B.2
Alopecurus aequalis var. sonomensis Sonoma alopecurus	PMPOA07012	Endangered	None	G5T1	S1	1B.1
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Amorpha californica var. napensis Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
Anodonta californiensis California floater	IMBIV04020	None	None	G3Q	S2?	
Anodonta oregonensis Oregon floater	IMBIV04110	None	None	G5Q	S2?	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arborimus pomo Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
Arctostaphylos bakeri ssp. bakeri Baker's manzanita	PDERI04221	None	Rare	G2T1	S1	1B.1
Arctostaphylos bakeri ssp. sublaevis The Cedars manzanita	PDERI04222	None	Rare	G2T2	S2	1B.2
Arctostaphylos densiflora Vine Hill manzanita	PDERI040C0	None	Endangered	G1	S1	1B.1
Arctostaphylos stanfordiana ssp. decumbens Rincon Ridge manzanita	PDERI041G4	None	None	G3T1	S1	1B.1
Ardea alba great egret	ABNGA04040	None	None	G5	S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Blennosperma bakeri Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
Brodiaea leptandra narrow-anthered brodiaea	PMLIL0C022	None	None	G3?	S3?	1B.2
Calamagrostis crassiglumis Thurber's reed grass	PMPOA17070	None	None	G3Q	S2	2B.1
Callophrys mossii marinensis Marin elfin butterfly	IILEPE2207	None	None	G4T1	S1	
Calochortus raichei The Cedars fairy-lantern	PMLIL0D1L0	None	None	G2	S2	1B.2
Calystegia purpurata ssp. saxicola coastal bluff morning-glory	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
Campanula californica swamp harebell	PDCAM02060	None	None	G3	S3	1B.2
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Castilleja uliginosa Pitkin Marsh paintbrush	PDSCR0D380	None	Endangered	GXQ	SX	1A
Ceanothus confusus Rincon Ridge ceanothus	PDRHA04220	None	None	G1	S1	1B.1
Ceanothus foliosus var. vineatus Vine Hill ceanothus	PDRHA040D6	None	None	G3T1	S1	1B.1
Ceanothus purpureus holly-leaved ceanothus	PDRHA04160	None	None	G2	S2	1B.2
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
Cerorhinca monocerata rhinoceros auklet	ABNNN11010	None	None	G5	S3	WL
Charadrius alexandrinus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
Chlorogalum pomeridianum var. minus dwarf soaproot	PMLIL0G042	None	None	G5T3	S3	1B.2
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Chorizanthe cuspidata var. cuspidata San Francisco Bay spineflower	PDPGN04081	None	None	G2T1	S1	1B.2
Chorizanthe cuspidata var. villosa woolly-headed spineflower	PDPGN04082	None	None	G2T2	S2	1B.2
Chorizanthe valida Sonoma spineflower	PDPGN040V0	Endangered	Endangered	G1	S1	1B.1
Cirsium andrewsii Franciscan thistle	PDAST2E050	None	None	G3	S3	1B.2
Clarkia imbricata Vine Hill clarkia	PDONA050K0	Endangered	Endangered	G1	S1	1B.1
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Coastal Brackish Marsh Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
Coastal Terrace Prairie Coastal Terrace Prairie	CTT41100CA	None	None	G2	S2.1	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Cordylanthus tenuis ssp. capillaris Pennell's bird's-beak	PDSCR0J0S2	Endangered	Rare	G4G5T1	S1	1B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Cuscuta obtusiflora var. glandulosa Peruvian dodder	PDCUS01111	None	None	G5T4?	SH	2B.2
Cuscuta pacifica var. papillata Mendocino dodder	PDCUS011A2	None	None	G5T1	S1	1B.2
Cypseloides niger black swift	ABNUA01010	None	None	G4	S2	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
Delphinium bakeri Baker's larkspur	PDRAN0B050	Endangered	Endangered	G1	S1	1B.1
Delphinium luteum golden larkspur	PDRAN0B0Z0	Endangered	Rare	G1	S1	1B.1
Dicamptodon ensatus California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
Dirca occidentalis western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dubiraphia giulianii Giuliani's dubiraphian riffle beetle	IICOL5A020	None	None	G1G3	S1S3	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Erigeron greenei Greene's narrow-leaved daisy	PDAST3M5G0	None	None	G3	S3	1B.2
Erigeron serpentinus serpentine daisy	PDAST3M5M0	None	None	G2	S2	1B.3
Eriogonum cedrorum The Cedars buckwheat	PDPGN087A0	None	None	G1	S1	1B.3
Erysimum concinnum bluff wallflower	PDBRA160E3	None	None	G3	S2	1B.2
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC
Eumetopias jubatus Steller (=northern) sea-lion	AMAJC03010	Delisted	None	G3	S2	
Fissidens pauperculus minute pocket moss	NBMUS2W0U0	None	None	G3?	S2	1B.2
Fratercula cirrhata tufted puffin	ABNNN12010	None	None	G5	S1S2	SSC
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Gilia capitata ssp. chamissonis blue coast gilia	PDPLM040B3	None	None	G5T2	S2	1B.1
Gilia capitata ssp. pacifica Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
Gilia capitata ssp. tomentosa woolly-headed gilia	PDPLM040B9	None	None	G5T1	S1	1B.1
Gilia millefoliata dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
Hesperevax sparsiflora var. brevifolia short-leaved evax	PDASTE5011	None	None	G4T3	S3	1B.2
Horkelia marinensis Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
Horkelia tenuiloba thin-lobed horkelia	PDROS0W0E0	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Hysterocarpus traskii pomo Russian River tule perch	AFCQK02011	None	None	G5T4	S4	SSC
Kopsiopsis hookeri small groundcone	PDORO01010	None	None	G4?	S1S2	2B.3
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasthenia burkei Burke's goldfields	PDAST5L010	Endangered	Endangered	G1	S1	1B.1
Lasthenia californica ssp. bakeri Baker's goldfields	PDAST5L0C4	None	None	G3T1	S1	1B.2
Lasthenia californica ssp. macrantha perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Lavinia symmetricus navarroensis Navarro roach	AFCJB19023	None	None	G4T1T2	S2S3	SSC
Lavinia symmetricus parvipinnis Gualala roach	AFCJB19025	None	None	G4T1T2	S2S3	SSC
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Leptosiphon jepsonii Jepson's leptosiphon	PDPLM09140	None	None	G2G3	S2S3	1B.2
Leptosiphon rosaceus rose leptosiphon	PDPLM09180	None	None	G1	S1	1B.1
Lessingia arachnoidea Crystal Springs lessingia	PDAST5S0C0	None	None	G2	S2	1B.2
Lichnanthe ursina bumblebee scarab beetle	IICOL67020	None	None	G2	S2	
Lilium pardalinum ssp. pitkinense Pitkin Marsh lily	PMLIL1A0H3	Endangered	Endangered	G5T1	S1	1B.1
Limnanthes vinculans Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lupinus tidestromii Tidestrom's lupine	PDFAB2B3Y0	Endangered	Endangered	G1	S1	1B.1
Microseris paludosa marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Navarretia leucocephala ssp. plieantha many-flowered navarretia	PDPLM0C0E5	Endangered	Endangered	G4T1	S1	1B.2
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Northern Vernal Pool Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
Oncorhynchus kisutch pop. 4 coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G4	S2?	
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Pelecanus occidentalis californicus California brown pelican	ABNFC01021	Delisted	Delisted	G4T3T4	S3	FP
Piperia candida white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
Pleuropogon hooverianus North Coast semaphore grass	PMPOA4Y070	None	Threatened	G2	S2	1B.1
Polemonium carneum Oregon polemonium	PDPLM0E050	None	None	G3G4	S2	2B.2
Polygonum marinense Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
Potentilla uliginosa Cunningham Marsh cinquefoil	PDROS1B4A0	None	None	GX	SX	1A
Rana boylii foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Rhynchospora alba white beaked-rush	PMCYP0N010	None	None	G5	S2	2B.2
Rhynchospora californica California beaked-rush	PMCYP0N060	None	None	G1	S1	1B.1
Rhynchospora capitellata brownish beaked-rush	PMCYP0N080	None	None	G5	S1	2B.2
Rhynchospora globularis round-headed beaked-rush	PMCYP0N0W0	None	None	G4	S1	2B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	PDMAL11012	None	None	G5T2	S2	1B.2
Sidalcea malviflora ssp. purpurea purple-stemmed checkerbloom	PDMAL110FL	None	None	G5T1	S1	1B.2
Silene scouleri ssp. scouleri Scouler's catchfly	PDCAR0U1MC	None	None	G5T4T5	S2S3	2B.2
Speyeria zerene myrtleae Myrtle's silverspot butterfly	IILEPJ608C	Endangered	None	G5T1	S1	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
Streptanthus glandulosus ssp. hoffmanii Hoffman's bristly jewelflower	PDBRA2G0J4	None	None	G4T2	S2	1B.3
Streptanthus morrisonii ssp. hirtiflorus Dorr's Cabin jewelflower	PDBRA2G0S2	None	None	G2T1	S1	1B.2
Streptanthus morrisonii ssp. morrisonii Morrison's jewelflower	PDBRA2G0S3	None	None	G2T1?	S1?	1B.2
Syncaris pacifica California freshwater shrimp	ICMAL27010	Endangered	Endangered	G2	S2	
Taricha rivularis red-bellied newt	AAAAF02020	None	None	G4	S2	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thaleichthys pacificus eulachon	AFCHB04010	Threatened	None	G5	S3	
Thamnolia vermicularis whiteworm lichen	NLTES43860	None	None	G5	S1	2B.1
Trifolium amoenum two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
Trifolium buckwestiorum Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Triphysaria floribunda San Francisco owl's-clover	PDSCR2T010	None	None	G2?	S2?	1B.2
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Usnea longissima Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Vespericola marinensis	IMGASA4140	None	None	G2	S2	
Marin hesperian						
Viburnum ellipticum	PDCPR07080	None	None	G4G5	S3?	2B.3
oval-leaved viburnum						

Record Count: 146

Buckeye Creek Instream Habitat Enhancement | 2020

Introduction:

The Conservation Fund (TCF) will address forest legacy impacts by adding 95 pieces of large wood to 1.23-miles of Buckeye Creek. The project will increase stream complexity, pool frequency, pool depth, high flow refugia, and over-summer rearing habitat.

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,* Volume I, Section VII. [https://www.wildlife.ca.gov/Grants/FRGP/Guidance]

Objective(s):

The purpose of this project is to enhance instream habitat for salmonids by placing 95 pieces of large woody debris at 37 structure sites to 1.23-miles of Buckeye Creek to increase stream complexity, high flow refugia, pool frequency and rearing habit for salmonids.

Project Description:

Location:

The project is located in Sonoma County in the Buckeye Creek watershed. Buckeye Creek is a tributary to the Gualala River. The project is approximately 16-miles upstream of the confluence of Buckeye Creek and the Gualala River.

To access the project from the town of Gualala take Hwy 1 south approximately eight miles. Turn left onto Annapolis road for approximately seven miles, then turn left onto Soda Springs Rd and travel approximately one mile to the end of the county road. Follow Kelly Rd through Soda Springs Reserve onto the gated logging road. The road parallels Buckeye Creek from this point onward. Travel east (upstream on Buckeye Creek) about three miles. The project starts where Hollow Tree Rd crosses Buckeye Creek at the confluence of Buckeye Creek and Flatridge Creek. Project coordinates are: 38.75772 N Latitude, -123.29862 W Longitude.

Project Set Up:

Task 1: Contract Oversight and Project Management:
TCF Program Manager and TCF Forester will provide all grant and contract oversight and administration tasks including obtaining permits, securing contracts, scheduling, implementation oversight, agency communications, reporting and invoicing. All reporting and billing will be pursuant to the guidelines. Upon final execution of the Grant and prior to receiving a Final Notice to Proceed, TCF will deliver the subcontracts, and assure all permits are finalized.

In addition, TCF Bookkeeper will assist with processing invoices and vendor payments, grant tracking, and reporting.

Task 2: Environmental Compliance and California Environmental Quality Act (CEQA) Assessments:
Humboldt State University, Cultural Resource Facility (HSU CRF) will complete CEQA assessments and reports required for this project, including cultural resource investigations, records searches, tribal consultations, paleontological investigation and summary reports. The HSU CRF Botanist will complete a floristic survey, CNDDB records search, and botanical resources reports. HSU CRF biologist will be available to conduct California Red Legged Frog initial surveys and on-site monitoring work, as needed. When reports are complete, TCF will coordinate with CDFW to secure project coverage under the Programmatic RGP 12 & 78 and 401 certification. TCF will also secure a CDFW 1600 LSAA permit prior to requesting a Notice to Proceed.

Task 3: Pre-Implementation Survey and Design:
Following CDFW approval, Blencowe Watershed Management (BWM) Project Manager and BWM Technician will complete final site layout and flag equipment access routes prior to beginning construction. A pre-implementation effectiveness monitoring survey (e.g. longitudinal profile) will also be completed BWM (PM & Technician) per CDFW Restoration manual guidelines and FGRP guidelines.

Task 4: Implementation:
At least 95 pieces of large wood will be installed throughout the project reach. LWD project implementation will be directed by the BWM Project Manager and Technician. The BWM Faller will complete all direct falling activities, and the Pacific Inland Inc (PII) Licensed Timber Operator will mobilize and operate all rubber-tired equipment for construction of LWD sites. The heavy equipment subcontractor will load logs offsite, bring them to the project site, and unload them.

Task 5: Post-Construction Surveys:
Post-construction surveys, including photographic monitoring, wood inventory, documentation of as-built conditions, cross-sections, and post-project longitudinal profile assessments will be performed by include BWM Project Manager and BWM Technician as required by the grant agreement and required by the FRGP Guidelines for an Instream Habitat (HI) project.

Task 6: Invoicing and Reporting:
Project information will be compiled and analyzed per the requirements of the CDFW Grant Agreement. Annual Progress Report(s) and a Final Report will be provided. The TCF Program Manager and TCF Bookkeeper will compile, format, and submit invoices, reports, and a final budget to CDFW according to grant

timelines. The BWM Project Manager and BWM Technician will assist with final reporting tasks.

Materials:

- TCF Permit Fees: 1600 LSAA as required by CDFW.
- TCF LWD: The landowner will contribute 95 pieces of large wood required for implementation. This will be in-kind cost share.
- TCF Mileage: travel to and from project site.
- PII Mileage: travel to and from project site.
- PII Equipment Mobilization: moving rubber tired tractor to and from project site.
- PII Lodging and per diem: hotel and travel costs.
- BWM Mileage: travel to and from project site.
- BWM Lodging and per diem: hotel and travel costs.
- BWM Straw: for erosion control.
- BWM Earplugs: personal protective equipment.
- BWM Gloves: personal protective equipment.
- BWM Metal tags: identfication of individual LWD.
- BWM Nails: attach metal tags to individual LWD.
- BWM Braided metal choker: movement of LWD.
- BWM 1` all thread: bolting LWD.
- BWM Flat washers: bolting LWD.
- BWM Nylon nuts: bolting LWD

Tasks:

Task 1 TCF will provide all grant and contract oversight and administration tasks including obtaining permits, securing contracts, scheduling, implementation oversight, agency communications, reporting and invoicing. All reporting and billing will be pursuant to the guidelines. Upon final execution of the Grant and prior to receiving a Final Notice to Proceed, TCF will deliver the subcontracts, and assure all permits are finalized.

Task 2 Humboldt State University, Cultural Resource Facility (HSU CRF) will complete CEQA assessments and reports required for this project including cultural resource, botanical, biological and paleontological.

Task 3 Following CDWF notice to proceed, BWM will complete final site layout and flagging of access routes. Pre-implementation surveys will be completed.

Task 4 Install 95 pieces of large wood throughout the project reach by BWM and PII.

Task 5 Post-construction surveys, including photographic monitoring, wood inventory, documentation of as-built conditions, cross-sections, and post-project longitudinal profile assessments will be performed by BWM.

Task 6 Project information will be compiled and analyzed per the requirements of the CDFW Grant Agreement. Annual Progress Report(s) and a Final Report will be provided. The TCF will compile, format, and submit invoices, reports, and a final budget to CDFW according to grant timelines. BWM Project Manager will assist with final reporting tasks.

Deliverables:

Task 1 Project deliverables are the implementation of the project and all documentation required to CDFW including Final Landowner Access Agreement, subcontractor agreements, invoices, and progress reports.

Task 2 Cultural resource, botanical, biological and paleontological reports. CDFW LSAA 1600 Agreement Application.

Task 3 Final site layout plans, if needed. Pre-project longitudinal profile, cross sections, etc. as required by FRGP HI guidelines.

Task 4 Construction of 37 structures with at least 95 pieces of large wood.

Task 5 Actual performance measures by site, as-built drawings, before and after photographs, post-project longitudinal profile and cross sections.

Task 6 Progress Reports (pdf format); Annual Reports (pd format); and Final Grant Report (cd and hard copy), including all pre-and post-project data produced as a part of the project; Final Invoice and Final Budget.

Timelines:

Task 1 04/02/2021 – 03/31/2023

Task 2 04/01/2021 – 09/30/2022

Task 3 06/02/2021 – 07/01/2022

Task 4 07/10/2020 – 10/31/2022

Task 5 11/01/2021 – 02/15/2023

Task 6 04/02/2021 – 03/31/2023

Project’s season’s work window: June 15 – October 31.

Additional Requirements:

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

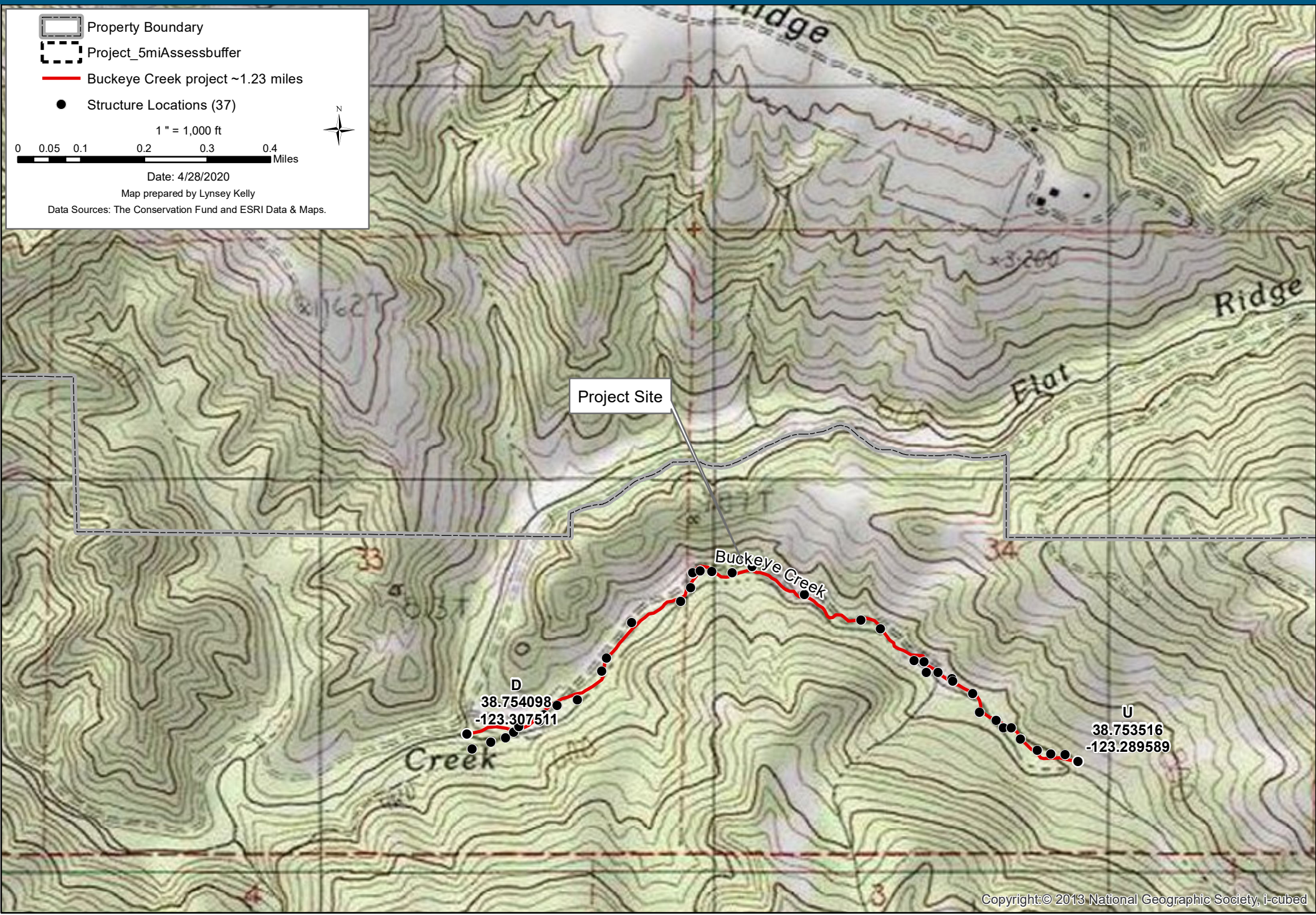
All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out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

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

Final structure design and placement will be determined by field consultation between the Grantee and the Grantor Project Managers. All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual.*

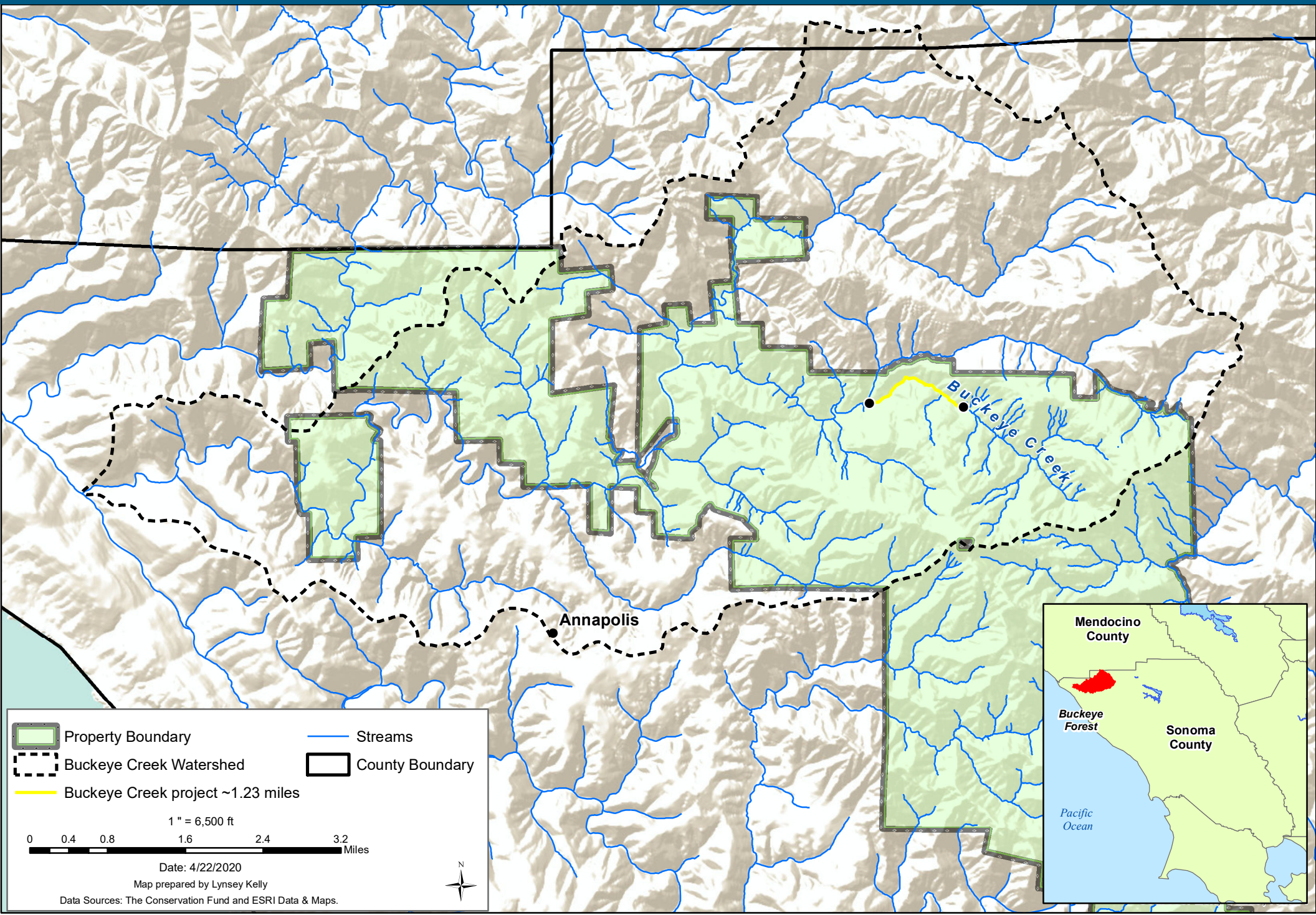
Buckeye Creek Instream Habitat Restoration
Gube Mountain Quadrangle USGS Topographic Map

THE CONSERVATION FUND



Buckeye Creek Watershed - Sonoma County

THE CONSERVATION FUND



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Gube Mountain (3812373) OR Annapolis (3812363) OR Stewarts Point (3812364) OR McGuire Ridge (3812374) OR Zeni Ridge (3812384) OR Ornbaun Valley (3812383) OR Yorkville (3812382) OR Big Foot Mtn. (3812372) OR Tombs Creek (3812362))

Possible species within the Gube Mountain and surrounding quads for 1723455 - Buckeye Creek Instream Habitat Enhancement, Sonoma County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter gentilis northern goshawk	ABNKC12060	None	None	G5	S3	SSC
Agrostis blasdalei Blasdale's bent grass	PMPOA04060	None	None	G2	S2	1B.2
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arborimus pomo Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
Arctostaphylos bakeri ssp. sublaevis The Cedars manzanita	PDERI04222	None	Rare	G2T2	S2	1B.2
Arctostaphylos stanfordiana ssp. raichei Raiche's manzanita	PDERI041G2	None	None	G3T2	S2	1B.1
Astragalus agnicidus Humboldt County milk-vetch	PDFAB0F080	None	Endangered	G2	S2	1B.1
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Brachyramphus marmoratus marbled murrelet	ABNNN06010	Threatened	Endangered	G3G4	S1	
Brasenia schreberi watershield	PDCAB01010	None	None	G5	S3	2B.3
Calochortus raichei The Cedars fairy-lantern	PMLIL0D1L0	None	None	G2	S2	1B.2
Calystegia purpurata ssp. saxicola coastal bluff morning-glory	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
Campanula californica swamp harebell	PDCAM02060	None	None	G3	S3	1B.2
Carex saliniformis deceiving sedge	PMCYP03BY0	None	None	G2	S2	1B.2
Ceanothus confusus Rincon Ridge ceanothus	PDRHA04220	None	None	G1	S1	1B.1
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Cryptantha dissita serpentine cryptantha	PDBOR0A0H2	None	None	G3	S3	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
Dicamptodon ensatus California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erigeron supplex supple daisy	PDAST3M3Z0	None	None	G2	S2	1B.2
Eriogonum cedrorum The Cedars buckwheat	PDPGN087A0	None	None	G1	S1	1B.3
Gilia capitata ssp. pacifica Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
Gilia capitata ssp. tomentosa woolly-headed gilia	PDPLM040B9	None	None	G5T1	S1	1B.1
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
Harmonia guggolziorum Guggolz's harmonia	PDAST650M0	None	None	G1	S1	1B.1
Hesperevax sparsiflora var. brevifolia short-leaved evax	PDASTE5011	None	None	G4T3	S3	1B.2
Horkelia tenuiloba thin-lobed horkelia	PDROS0W0E0	None	None	G2	S2	1B.2
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasthenia californica ssp. macrantha perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2
Lathyrus palustris marsh pea	PDFAB250P0	None	None	G5	S2	2B.2
Lavinia symmetricus parvipinnis Gualala roach	AFCJB19025	None	None	G4T1T2	S2S3	SSC
Lilium maritimum coast lily	PMLIL1A0C0	None	None	G2	S2	1B.1
Lupinus sericatus Cobb Mountain lupine	PDFAB2B3J0	None	None	G2?	S2?	1B.2
Lycopodium clavatum running-pine	PPLYC01080	None	None	G5	S3	4.1
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Oncorhynchus kisutch pop. 4 coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G4	S2?	
Oncorhynchus mykiss irideus pop. 16 steelhead - northern California DPS	AFCHA0209Q	Threatened	None	G5T2T3Q	S2S3	

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Piperia candida white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
Rana boylii foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	PDMAL11012	None	None	G5T2	S2	1B.2
Sidalcea malachroides maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
Sidalcea malviflora ssp. purpurea purple-stemmed checkerbloom	PDMAL110FL	None	None	G5T1	S1	1B.2
Speyeria zerene behrensii Behren's silverspot butterfly	IILEPJ6088	Endangered	None	G5T1	S1	
Streptanthus glandulosus ssp. hoffmanii Hoffman's bristly jewelflower	PDBRA2G0J4	None	None	G4T2	S2	1B.3
Streptanthus morrisonii ssp. morrisonii Morrison's jewelflower	PDBRA2G0S3	None	None	G2T1?	S1?	1B.2
Taricha rivularis red-bellied newt	AAAAF02020	None	None	G4	S2	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Tracyina rostrata beaked tracyina	PDAST9D010	None	None	G2	S2	1B.2
Trifolium buckwestiorum Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
Usnea longissima Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2

Record Count: 53

Iron Horse Vineyards Lower Green Valley Creek Off-Channel Habitat Enhacement Project – Phase 1

2020

Introduction:

The Gold Ridge Resource Conservation District (Permittee) will create 1.85 acres of complex high-flow refugia and winter foraging areas for winter-rearing and out-migrating juvenile coho salmon and steelhead trout, providing accessible off-channel habitat in a reach that is considered critical for rearing fish, thereby contributing to the recovery of salmonid populations in Green Valley Creek and the Russian River.

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* (Volume I section VII and Volume II sections IX and XII https://www.wildlife.ca.gov/Grants/FRGP/Guidance).

Objective(s):

The project includes three main elements:

1. Off-channel habitat features to create areas of frequently inundated, low velocity refuge habitat during winter and spring flows.
2. Large wood structures to create and maintain instream habitat features that will provide complex cover, increase access to low-velocity habitat, and facilitate fish entry to off-channel features.
3. Driveway improvements to ensure fish passage to downstream connector channels and improve water quality impacts from the road.

Project Description:

Location:

The project is located on the reach of Green Valley Creek that runs through the Iron Horse Vineyards property at the end of Ross Station Road, between the towns of Graton and Forestville. The confluence of Atascadero Creek and upper Green Valley Creek is approximately ¼-mile upstream of the project site. Project coordinates are: 38.455315° north, 122.894030° west.

Project Set Up:

The project will be managed by the Permittee, the Gold Ridge Resource Conservation District, and will consist of six tasks. The main deliverable will be successful enhancement of the mainstem of the existing right-bank floodplain from a historically graded agricultural field to a complex, low-velocity, and off-channel habitat with restored connection of seasonal channels to Green Valley Creek mainstem.

Task 1: Administration. The grant will be managed and administered by the Permittee, using standard and accepted accounting rules and procedures, and following grant guidelines. This task includes periodic invoicing and submission of progress reports, bid package preparation, bidding and subcontracting, implementation photo monitoring and preparation and submission of the draft and final project reports. This task will also include landowner interaction and coordination, including the drafting of an implementation access agreement. The Permittee Lead Scientist will be the lead for this task, responsible for all activities listed above, and will be assisted in landowner and agency coordination, bidding and contracting by the Ecologist and Permittee Shared Engineer. The Permittee District Administrator will be responsible for setting up the appropriate accounting and invoicing procedures and will assist with reporting. The Permittee Executive Director will have oversight responsibilities for the overall project. This task includes a subcontractor to carry out labor compliance monitoring for all project activities subject to public works labor rules.

Task 2: Regulatory surveys. The Permittee will subcontract with Humboldt State University (HSU)'s Cultural Resources Facility to carry out required botany and cultural resources surveys, and with Pacific Watershed Associates for paleontological surveys of the project work site. We will also contract with Prunuske Chatham, Inc., for a delineation of wetlands within the site. The Permittee Ecologist will take the lead in coordinating with both the landowner and survey entities and will be assisted by the Permittee Ecologist. The Permittee Ecologist will also be the lead in carrying out surveys for sensitive species, including California red-legged frogs and California freshwater shrimp.

Task 3: Permitting. We anticipate this project falling under the FRGP Regional General Permit and California Environmental Quality Act (CEQA) Programmatic Mitigated Negative Declaration (MND). The Permittee Lead Scientist and Ecologist will be responsible for preparing and submitting a 1600 Streambed Alteration Agreement, as well as exemptions from Stormwater Pollution Prevention Plan and Sonoma County Grading Permit requirements.

Task 4: Dewatering and fish relocation. Dewatering of the channel in the vicinity of the off-channel habitat area inlets and outlets, large wood structure locations and connector channel outlets will primarily be the responsibility of the construction subcontractor, with assistance from Permittee staff. Exclusion netting will be set, and dewatering will be accomplished and maintained following standard dewatering procedures as detailed in the Dewatering Protocol. Fish relocation will be accomplished in coordination with the Grant Manager or Biologist, with assistance from multiple Permittee staff members. Fish will be removed from the area through seine netting, electrofishing, or another Grantor-approved standard method, and will be released in appropriate habitat adjacent to the project site. To allow for the possibility that Grantor staff will be unable to

take the lead on fish relocation, our budget includes a line for hiring a qualified and credentialed biologist to accomplish this task. The Permittee Executive Director, Lead Scientist, Ecologist, Program Manager, Outreach and Project Manager and Project Assistant will assist with fish relocation.

Task 5: Construction and oversight. A qualified construction subcontractor will be selected using Permittee bidding rules, and will be responsible for on-the-ground implementation work including off-channel habitat construction of floodplain features (alcoves, side channels, seasonal wetlands and connector channels), installation of large wood structures (pinch jams, cross-channel jams, habitat structures), driveway improvements (road treatments and culverts), and floodplain revegetation. This work will include all earthwork and grading, installation of large wood structures and driveway improvements as detailed in the plans and specifications for the project, as well as mobilization and demobilization and installation of erosion control measures. The construction subcontractor will be overseen by the Permittee Lead Scientist and Permittee Shared Engineer, as well as staff from Prunuske Chatham, Inc., the project designer, and the geotechnical consultant. Prunuske Chatham, Inc. (PCI) will also compose an evaluation and monitoring plan and conduct post-implementation project effectiveness surveys and associated reporting. PCI Wildlife Biologist will conduct biological surveys (snorkeling surveys or seining) of the functional use of the constructed habitat by target species during the targeted life stage and anticipated time period of use. The Permittee Ecologist will conduct pre-construction endangered species surveys for California red-legged frogs and California freshwater shrimp, conduct pre- and post-project photo monitoring.

Task 6: Water quality monitoring. In accordance with Grantor permit requirements, Permittee staff will procure, install, and maintain water quality monitoring equipment at the project site and in the reach immediately downstream. Parameters to be monitored include temperature, dissolved oxygen, conductivity, pH, and turbidity. The Permittee Ecologist will be the lead on the monitoring effort, working with the Permittee Lead Scientist to identify and procure the appropriate equipment, determining monitoring station locations, developing protocols, overseeing data management and analysis, uploading data to CEDEN and composing monitoring reports. The Permittee Project Assistant will assist in operating and maintaining water quality monitoring equipment, as well as downloading and analyzing data.

Materials:

The materials necessary for installation of the in-channel and off-channel habitat features and driveway improvements consist of the following:

Dewatering activities to occur in the mainstem of Green Valley Creek are necessary to protect the water quality downstream of the project-related disturbance. Materials include silt control filter fabric, impervious liners, cofferdam material, fish and exclusion screens, casings, washed rock. Materials will be purchased by the construction subcontractor.

Large wood structures are used within the site to create and maintain in-stream habitat features. Materials required include 16 logs, 12 rootwads, and 24 vertical log anchors (plus the incorporation of 15-16 onsite salvage trees), anchoring materials (steel threaded rod, steel plate washers, steel nuts), rope, and miscellaneous parts and fasteners as specified in the project plans. These comprise the wood structures in association with off-channel features. Large wood elements will be purchased by the applicant, and all other materials will be procured by the construction subcontractor.

Biotechnical and erosion control features (including willow wattle, brush mattress, and large-wood-structure slash packing) will be implemented as appropriate on disturbed areas. Materials needed include coir mat, erosion control blanket, wedge stakes, weed-free straw mulch, native grass seed and rope along with willow stakes harvested onsite. Protective fencing (t-posts, orange barrier fencing and nylon cable ties and rebar caps) will be installed to protect trees and shrubs from damage associated with clearing and grubbing. Materials will be purchased by the subcontractor.

Driveway improvements including elevating the driveway to provide adequate sub-drainage in the road prism to support improvements to the road surface and allow for increased flow capacity through the two floodplain relief culverts will include materials for paving the road as well as crushed drain rock to elevate the road 12”, road base, two pre-cast concrete box culverts. Materials will be purchased by the applicant.

Floodplain revegetation activities involve revegetating disturbed areas newly created habitats. Revegetation materials include native plant materials (trees, shrubs, vines, forbs, grasses, rushes, and other monocots), planting soil/mulch, 100% biodegradable weed control fabric (hemp or jute) and fasteners (50d nails with washers or 6” staples), all associated browse guard/plant protection cages and irrigation system materials (water tank, filter, valves, mainline, drip tubing, emitters). All materials are specified in the project plans and will be procured by the construction subcontractor except as specified in the project budget and listed above and below.

Water quality monitoring equipment needed to comply with the requirement that projects dewatering waterways monitor and report water quality during dewatering activities. Parameters, such as but not limited to dissolved oxygen,

temperature, conductivity, and turbidity shall be reported. Materials for water quality monitoring activities include two deployable water quality meters (sondes), necessary software for downloading data, calibration solutions, and batteries. All materials will be purchased by the applicant.

Post-project monitoring will be conducted to measure and ensure project effectiveness. Materials include two pressure transducers for monitoring depth data and off-channel habitat connection and inundation (one in off-channel wetland and one in Green Valley Creek channel). Materials will be procured by the subcontractor.

Tasks:

Task 1: Administration:
The grant will be managed and administered by the Permittee, using standard and accepted accounting rules and procedures, and following any grant-specific guidelines. This task includes periodic invoicing and submission of progress reports, bid package preparation, bidding and subcontracting, implementation photo monitoring and preparation and submission of the draft and final project reports. This task will also include landowner interaction and coordination, including the drafting of an implementation access agreement. The Permittee Lead Scientist will be the lead for this task, responsible for all activities listed above, and will be assisted in landowner and agency coordination, bidding and contracting by the Ecologist and RCD Shared Engineer. The RCD District Administrator will be responsible for setting up the appropriate accounting and invoicing procedures and will assist with reporting. The RCD Executive Director will have oversight responsibilities for the overall project. This task includes a subcontractor (most likely Contractor Compliance and Monitoring, Inc.) to carry out labor compliance monitoring for all project activities subject to public works labor rules.

Deliverables:
Project Management including executed subcontracts, Landowner Access Agreement, invoices and associated documentation and progress reports, annual and final reports

Start Date: 06/01/2021
End Date: 03/31/2025

Task 2: Regulatory surveys:
The Permittee will subcontract with HSU's Cultural Resources Facility to carry out required botany and cultural resources surveys, and with Pacific Watershed Associates for paleontological surveys of the project work site. We will also contract with Prunuske Chatham, Inc., for a delineation of wetlands within the site. The Permittee Ecologist will take the lead in coordinating with both the

landowner and survey entities and will be assisted by the Permittee Ecologist. The Permittee Ecologist will also be the lead in carrying out surveys for sensitive species, including California red-legged frogs and California freshwater shrimp.

Deliverables:
Documentation or summary reports for threatened and endangered species surveys, biological monitoring, cultural, archaeological, paleontological, and biological resources surveys

Start Date: 03/01/2022
End Date: 11/01/2024

Task 3: Permitting:
We anticipate this project falling under the FRGP Regional General Permit and CEQA Programmatic MND. The Permittee Lead Scientist and Ecologist will be responsible for preparing and submitting a 1600 Streambed Alteration Agreement, as well as exemptions from Stormwater Pollution Prevention Plan and Sonoma County Grading Permit requirements.

Deliverables:
Copies of Permits, including 1602 and SWPPP and county grading exemption

Start Date: 06/01/2021
End Date: 05/31/2023

Task 4: Dewatering and fish relocation:
Dewatering of the channel in the vicinity of the off-channel habitat area inlets and outlets, large wood structure locations and connector channel outlets will primarily be the responsibility of the construction subcontractor, with assistance from Permittee staff. Exclusion netting will be set, and dewatering will be accomplished and maintained following standard dewatering procedures as detailed in the attached Dewatering Protocol document. Fish relocation will be accomplished in coordination with the DFW Grant Manager or Biologist, with assistance from multiple Permittee staff members. Fish will be removed from the area through seine netting, electrofishing, or another Grantor-approved standard method, and will be released in appropriate habitat adjacent to the project site. Dewatering activities will be done in compliance with *USFWS Best Management Practices to Minimize Adverse Effects to Pacific Lamprey*. The Permittee Executive Director, Lead Scientist, Ecologist, Program Manager, Outreach and Project Manager and Project Assistant will assist with fish relocation.

Deliverables:
Documentation of aquatic species relocated from the project site

Start Date 06/01/2023

End Date 11/01/2024

Task 5: Construction and oversight:
A qualified construction subcontractor will be selected using Permittee bidding rules, and will be responsible for on-the-ground implementation work including off-channel habitat construction of floodplain features (alcoves, side channels, seasonal wetlands and connector channels), installation of large wood structures (pinch jams, cross-channel jams, habitat structures), driveway improvements (road treatments and culverts), and floodplain revegetation. This proposed first phase of the project includes three main elements to meet the restoration objectives of enhancing low-velocity in-channel and off-channel habitats and reducing impacts from driveways and drainages:

1. Upper floodplain off-channel habitat features, including the creation of a seasonal wetland and enhancement of two seasonal connector channels on the floodplain adjacent to Green Valley Creek, will create areas of frequently inundated, low-velocity refuge and rearing habitat during winter and spring flow conditions such that alcoves will have depths of 6 inches to 3 feet during low winter base flow, side channels and low elevation areas in the seasonally flooded wetlands will be inundated at high winter base flows, and the inset floodplain benches, wetlands and connector channels will be activated and accessible to fish during frequent storm events; this feature will function as a very low velocity backwater environment until the high flow connector channels are activated.
2. Large wood structures (pinch jams, cross-channel jams, and habitat structures) will be installed in Green Valley Creek in association with the upper floodplain off-channel habitat and connector side channels to create in-channel complexity and maintain in-stream habitat features.
    a. Pinch jams "pinch" the channel and disrupt the flow field to create large eddies within the floodplain inlet alcove and the acceleration of the flows through the pinch helps keep bedload moving past the alcove and maintain the pool. Each jam consists of multiple logs and rootwads oriented to both narrow the channel and provide complex cover in the downstream pool.
    b. Cross-channel jams involve logs laid across the channel in an upstream facing V-shape to act a low weir at winter base flows and create backwater conditions which locally raises the water surface and increasing the areas of inundation during lower winter and spring streamflow periods, effectively increasing the accessible low-flow-velocity floodplain and alcove habitat area; small openings will be left under the logs along the bank to facilitate juvenile fish passage at lower flows.
    c. Habitat structures are simple single or multiple log structures intended to provide complex cover in alcoves and/or gently influence hydraulics at floodplain opening to facilitate fish entry.

3. Driveway improvements including road treatments and culvert upgrades on the Iron Horse Vineyards access road, which crosses the floodplain and Green Valley Creek, will ensure fish passage from the upper floodplain features to downstream connector channels and reduce water quality impacts from the gravel road surface. The existing private driveway will be elevated to 1) provide adequate sub-drainage in the road prism to support improvements to the raid surface; and 2) allow for increased flow capacity through the two floodplain relief culverts.

This work will include all earthwork and grading, installation of large wood structures and driveway improvements as detailed in the plans and specifications for the project, as well as mobilization and demobilization and installation of erosion control measures. The construction subcontractor will be overseen by the Permittee Lead Scientist and RCD Shared Engineer, as well as staff from Prunuske Chatham, Inc., the project designer, and RGH Consultants, the geotechnical consultant. Prunuske Chatham, Inc. (PCI) will also compose an evaluation and monitoring plan and conduct post-implementation project effectiveness surveys and associated reporting. PCI Wildlife Biologist will conduct biological surveys (snorkeling surveys or seining) of the functional use of the constructed habitat by target species during the targeted life stage and anticipated time period of use. The Gold Ridge Permittee Ecologist will conduct pre-construction endangered species surveys for California red-legged frogs and California freshwater shrimp, conduct pre- and post-project photo monitoring.

Deliverables:
The following will be submitted to demonstrate successful in-channel and off-channel and reestablishment of fish passage flows: As-built construction plans, post longitudinal profile, and pre and post construction photo documentation.

Start Date: 06/01/2023
End Date: 02/28/2025

Task 6: Water quality monitoring:
In accordance with permit requirements, Permittee staff will procure, install, and maintain water quality monitoring equipment at the project site and in the reach immediately downstream. Parameters to be monitored include temperature, dissolved oxygen, conductivity, pH, and turbidity. The Permittee Ecologist will be the lead on the monitoring effort, working with the Permittee Lead Scientist to identify and procure the appropriate equipment, determining monitoring station locations, developing protocols, overseeing data management and analysis, uploading data to CEDEN and composing monitoring reports. The Permittee Project Assistant will assist in operating and maintaining water quality monitoring equipment, as well as downloading and analyzing data.

Deliverables:
Water quality meter calibration datasheets, map of water quality monitoring stations, summary report of water quality data collected continuously throughout the construction period and post-project, receipt of successful data submission to CEDEN.

Start Date: 06/01/2021
End Date: 02/28/2025

Deliverables:

Task 1: Administration:
Deliverables:
Project Management including executed subcontracts Landowner Access Agreement invoices and associated documentation and progress reports annual and final reports.

Task 2: Regulatory surveys:
Deliverables:
Documentation or summary reports for threatened and endangered species surveys, biological monitoring, cultural, archaeological, paleontological, and biological resources surveys.

Task 3: Permitting:
Deliverables:
Copies of Permits, including 1602 and SWPPP and county grading exemption.

Task 4: Dewatering and fish relocation:
Deliverables:
Documentation of aquatic species relocated from the project site.

Task 5: Construction and oversight:
Deliverables:
As-built construction plans post longitudinal profile pre and post construction photo documentation.

Task 6: Water quality monitoring:
Deliverables:
Water quality meter calibration datasheets map of water quality monitoring stations summary report of water quality data collected continuously throughout the construction period and post-project receipt of successful data submission to CEDEN.

Timelines:

Task	Deliverable	Delivery Date
Task 1: Administration	Executed subcontracts and Landowner Access Agreement	No later than two months after grant execution
Task 1: Administration	invoices and associated documentation including progress reports	No less frequent than quarterly and no more frequent than monthly
Task 1: Administration	annual reports	Annually by October 31
Task 1: Administration	Draft final report	January 2, 2025
Task 1: Administration	final report	February 28, 2025
Task 2: Regulatory surveys	Documentation or summary reports for threatened and endangered species surveys, biological monitoring, cultural, archaeological, paleontological, and biological resources surveys	June 30, 2023
Task 3: Permitting	Copies of Permits, including 1602 and SWPPP and county grading exemption	May 31, 2023
Task 4: Dewatering and fish relocation	Documentation of aquatic species relocated from the project site	October 31, 2023
Task 5: Construction and oversight	As-built construction plans post longitudinal profile pre and post construction photo documentation.	February 28, 2025
Task 6: Water quality monitoring	Water quality meter calibration datasheets map of water quality monitoring stations summary report of water quality data collected continuously throughout the construction period and post-project receipt of successful data submission to CEDEN	February 28, 2025

The construction work season is from July 1 through October 15.

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 Salmonid Stream Habitat Restoration Manual*, Volume I and Volume II.

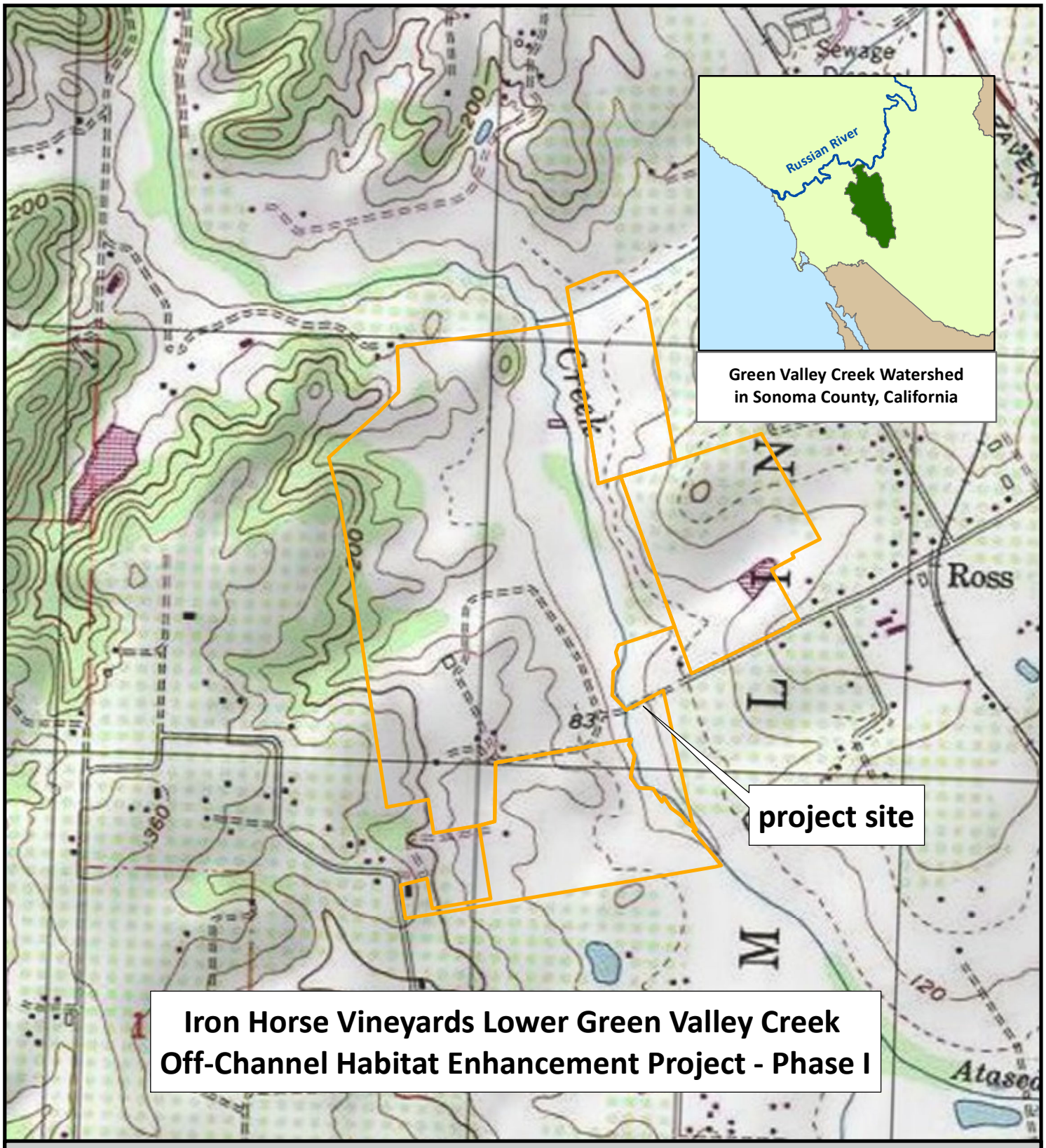
The Permittee shall notify the CDFW a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for CDFW personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of salmonids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

1. Fish dewatering and relocation activities shall only occur between July 1 and October 15 of each year.
2. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual.*
3. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the

USACE Regional General Permit and National Marine Fisheries Service (NMFS) Biological Opinion.

4. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
5. USFWS Approved fisheries biologists will provide fish relocation data via the Permittee to the CDFW personnel on a form provided by CDFW.

Final structure design and placement will be determined by field consultation between the Permittee and the CDFW Personnel.



Map 1: Topographic Map
Grantee: Gold Ridge Resource Conservation District
Sonoma County, CA
(Camp Meeker 7.5' Quadrangle, USGS 1969)

GOLD RIDGE RESOURCE CONSERVATION DISTRICT

April 2020

Legend

Iron Horse Vineyards

0 0.125 0.25 0.5 Miles

1:12,500

N W E S

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Camp Meeker (3812248) OR Valley Ford (3812238) OR Bodega Head (3812331) OR Duncans Mills (3812341) OR Cazadero (3812351) OR Guerneville (3812258) OR Healdsburg (3812257) OR Sebastopol (3812247) OR Two Rock (3812237))

Possible species within the Camp Meeker and surrounding quads for 1723563 - Iron Horse Vineyards Lower Green Valley Creek Off-Channel Habitat Enhancement Project - Phase 1, Sonoma County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abronia umbellata var. breviflora pink sand-verbena	PDNYC010N4	None	None	G4G5T2	S2	1B.1
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Agrostis blasdalei Blasdale's bent grass	PMPOA04060	None	None	G2	S2	1B.2
Allium peninsulare var. franciscanum Franciscan onion	PMLIL021R1	None	None	G5T2	S2	1B.2
Alopecurus aequalis var. sonomensis Sonoma alopecurus	PMPOA07012	Endangered	None	G5T1	S1	1B.1
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Amorpha californica var. napensis Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
Anodonta californiensis California floater	IMBIV04020	None	None	G3Q	S2?	
Anodonta oregonensis Oregon floater	IMBIV04110	None	None	G5Q	S2?	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arborimus pomo Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
Arctostaphylos bakeri ssp. bakeri Baker's manzanita	PDERI04221	None	Rare	G2T1	S1	1B.1
Arctostaphylos bakeri ssp. sublaevis The Cedars manzanita	PDERI04222	None	Rare	G2T2	S2	1B.2
Arctostaphylos densiflora Vine Hill manzanita	PDERI040C0	None	Endangered	G1	S1	1B.1
Arctostaphylos stanfordiana ssp. decumbens Rincon Ridge manzanita	PDERI041G4	None	None	G3T1	S1	1B.1
Ardea alba great egret	ABNGA04040	None	None	G5	S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Blennosperma bakeri Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
Brodiaea leptandra narrow-anthered brodiaea	PMLIL0C022	None	None	G3?	S3?	1B.2
Calamagrostis crassiglumis Thurber's reed grass	PMPOA17070	None	None	G3Q	S2	2B.1
Callophrys mossii marinensis Marin elfin butterfly	IILEPE2207	None	None	G4T1	S1	
Calochortus raichei The Cedars fairy-lantern	PMLIL0D1L0	None	None	G2	S2	1B.2
Calystegia purpurata ssp. saxicola coastal bluff morning-glory	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
Campanula californica swamp harebell	PDCAM02060	None	None	G3	S3	1B.2
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Castilleja uliginosa Pitkin Marsh paintbrush	PDSCR0D380	None	Endangered	GXQ	SX	1A
Ceanothus confusus Rincon Ridge ceanothus	PDRHA04220	None	None	G1	S1	1B.1
Ceanothus foliosus var. vineatus Vine Hill ceanothus	PDRHA040D6	None	None	G3T1	S1	1B.1
Ceanothus purpureus holly-leaved ceanothus	PDRHA04160	None	None	G2	S2	1B.2
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
Cerorhinca monocerata rhinoceros auklet	ABNNN11010	None	None	G5	S3	WL
Charadrius alexandrinus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
Chlorogalum pomeridianum var. minus dwarf soaproot	PMLIL0G042	None	None	G5T3	S3	1B.2
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2

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Chorizanthe cuspidata var. cuspidata San Francisco Bay spineflower	PDPGN04081	None	None	G2T1	S1	1B.2
Chorizanthe cuspidata var. villosa woolly-headed spineflower	PDPGN04082	None	None	G2T2	S2	1B.2
Chorizanthe valida Sonoma spineflower	PDPGN040V0	Endangered	Endangered	G1	S1	1B.1
Cirsium andrewsii Franciscan thistle	PDAST2E050	None	None	G3	S3	1B.2
Clarkia imbricata Vine Hill clarkia	PDONA050K0	Endangered	Endangered	G1	S1	1B.1
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Coastal Brackish Marsh Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
Coastal Terrace Prairie Coastal Terrace Prairie	CTT41100CA	None	None	G2	S2.1	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Cordylanthus tenuis ssp. capillaris Pennell's bird's-beak	PDSCR0J0S2	Endangered	Rare	G4G5T1	S1	1B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Cuscuta obtusiflora var. glandulosa Peruvian dodder	PDCUS01111	None	None	G5T4?	SH	2B.2
Cuscuta pacifica var. papillata Mendocino dodder	PDCUS011A2	None	None	G5T1	S1	1B.2
Cypseloides niger black swift	ABNUA01010	None	None	G4	S2	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
Delphinium bakeri Baker's larkspur	PDRAN0B050	Endangered	Endangered	G1	S1	1B.1
Delphinium luteum golden larkspur	PDRAN0B0Z0	Endangered	Rare	G1	S1	1B.1
Dicamptodon ensatus California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
Dirca occidentalis western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2

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Dubiraphia giulianii Giuliani's dubiraphian riffle beetle	IICOL5A020	None	None	G1G3	S1S3	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Erigeron greenei Greene's narrow-leaved daisy	PDAST3M5G0	None	None	G3	S3	1B.2
Erigeron serpentinus serpentine daisy	PDAST3M5M0	None	None	G2	S2	1B.3
Eriogonum cedrorum The Cedars buckwheat	PDPGN087A0	None	None	G1	S1	1B.3
Erysimum concinnum bluff wallflower	PDBRA160E3	None	None	G3	S2	1B.2
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC
Eumetopias jubatus Steller (=northern) sea-lion	AMAJC03010	Delisted	None	G3	S2	
Fissidens pauperculus minute pocket moss	NBMUS2W0U0	None	None	G3?	S2	1B.2
Fratercula cirrhata tufted puffin	ABNNN12010	None	None	G5	S1S2	SSC
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Gilia capitata ssp. chamissonis blue coast gilia	PDPLM040B3	None	None	G5T2	S2	1B.1
Gilia capitata ssp. pacifica Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
Gilia capitata ssp. tomentosa woolly-headed gilia	PDPLM040B9	None	None	G5T1	S1	1B.1
Gilia millefoliata dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
Hesperevax sparsiflora var. brevifolia short-leaved evax	PDASTE5011	None	None	G4T3	S3	1B.2
Horkelia marinensis Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
Horkelia tenuiloba thin-lobed horkelia	PDROS0W0E0	None	None	G2	S2	1B.2

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Hysterocarpus traskii pomo Russian River tule perch	AFCQK02011	None	None	G5T4	S4	SSC
Kopsiopsis hookeri small groundcone	PDORO01010	None	None	G4?	S1S2	2B.3
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasthenia burkei Burke's goldfields	PDAST5L010	Endangered	Endangered	G1	S1	1B.1
Lasthenia californica ssp. bakeri Baker's goldfields	PDAST5L0C4	None	None	G3T1	S1	1B.2
Lasthenia californica ssp. macrantha perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Lavinia symmetricus navarroensis Navarro roach	AFCJB19023	None	None	G4T1T2	S2S3	SSC
Lavinia symmetricus parvipinnis Gualala roach	AFCJB19025	None	None	G4T1T2	S2S3	SSC
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Leptosiphon jepsonii Jepson's leptosiphon	PDPLM09140	None	None	G2G3	S2S3	1B.2
Leptosiphon rosaceus rose leptosiphon	PDPLM09180	None	None	G1	S1	1B.1
Lessingia arachnoidea Crystal Springs lessingia	PDAST5S0C0	None	None	G2	S2	1B.2
Lichnanthe ursina bumblebee scarab beetle	IICOL67020	None	None	G2	S2	
Lilium pardalinum ssp. pitkinense Pitkin Marsh lily	PMLIL1A0H3	Endangered	Endangered	G5T1	S1	1B.1
Limnanthes vinculans Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lupinus tidestromii Tidestrom's lupine	PDFAB2B3Y0	Endangered	Endangered	G1	S1	1B.1
Microseris paludosa marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S3	

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Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Navarretia leucocephala ssp. plieantha many-flowered navarretia	PDPLM0C0E5	Endangered	Endangered	G4T1	S1	1B.2
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Northern Vernal Pool Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
Oncorhynchus kisutch pop. 4 coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G4	S2?	
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Pelecanus occidentalis californicus California brown pelican	ABNFC01021	Delisted	Delisted	G4T3T4	S3	FP
Piperia candida white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
Pleuropogon hooverianus North Coast semaphore grass	PMPOA4Y070	None	Threatened	G2	S2	1B.1
Polemonium carneum Oregon polemonium	PDPLM0E050	None	None	G3G4	S2	2B.2
Polygonum marinense Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
Potentilla uliginosa Cunningham Marsh cinquefoil	PDROS1B4A0	None	None	GX	SX	1A
Rana boylii foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Rhynchospora alba white beaked-rush	PMCYP0N010	None	None	G5	S2	2B.2
Rhynchospora californica California beaked-rush	PMCYP0N060	None	None	G1	S1	1B.1
Rhynchospora capitellata brownish beaked-rush	PMCYP0N080	None	None	G5	S1	2B.2
Rhynchospora globularis round-headed beaked-rush	PMCYP0N0W0	None	None	G4	S1	2B.1

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Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	PDMAL11012	None	None	G5T2	S2	1B.2
Sidalcea malviflora ssp. purpurea purple-stemmed checkerbloom	PDMAL110FL	None	None	G5T1	S1	1B.2
Silene scouleri ssp. scouleri Scouler's catchfly	PDCAR0U1MC	None	None	G5T4T5	S2S3	2B.2
Speyeria zerene myrtleae Myrtle's silverspot butterfly	IILEPJ608C	Endangered	None	G5T1	S1	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
Streptanthus glandulosus ssp. hoffmanii Hoffman's bristly jewelflower	PDBRA2G0J4	None	None	G4T2	S2	1B.3
Streptanthus morrisonii ssp. hirtiflorus Dorr's Cabin jewelflower	PDBRA2G0S2	None	None	G2T1	S1	1B.2
Streptanthus morrisonii ssp. morrisonii Morrison's jewelflower	PDBRA2G0S3	None	None	G2T1?	S1?	1B.2
Syncaris pacifica California freshwater shrimp	ICMAL27010	Endangered	Endangered	G2	S2	
Taricha rivularis red-bellied newt	AAAAF02020	None	None	G4	S2	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thaleichthys pacificus eulachon	AFCHB04010	Threatened	None	G5	S3	
Thamnolia vermicularis whiteworm lichen	NLTES43860	None	None	G5	S1	2B.1
Trifolium amoenum two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
Trifolium buckwestiorum Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Triphysaria floribunda San Francisco owl's-clover	PDSCR2T010	None	None	G2?	S2?	1B.2
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Usnea longissima Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2

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Vespericola marinensis	IMGASA4140	None	None	G2	S2	
Marin hesperian						
Viburnum ellipticum	PDCPR07080	None	None	G4G5	S3?	2B.3
oval-leaved viburnum						

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